

ARCHITECTURAL SERVICES DEPARTMENT

**STANDARD PHRASEOLOGY
FOR
BILLS OF QUANTITIES
FOR
BUILDING WORKS**

The Government of
The Hong Kong Special Administrative Region
Architectural Services Department
Quantity Surveying Branch

Queensway Government Offices
66 Queensway
Hong Kong

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AIR CONDITIONING INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:

1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	SEA WATER CONDENSING SYSTEM	1	[pipework] (SM.xvii(d)2)	1	pipework and fittings	1	? diameter	m
1	; internally	1	UPVC pipes and fittings ; BS EN ISO 1452-1:2009, BS EN ISO 1452-2:2009, BS EN ISO 4152-3:2010, BS EN ISO 1452-4:2009 and BS EN ISO 1452-5:2009 or BS 3505:1986 ; appropriate grade ; self finish	1	; laid in			
2	; in plant room	2	UPVC pipes and fittings ; BS EN ISO 1452-1:2009, BS EN ISO 1452-2:2009, BS EN ISO 1452-3:2010, BS EN ISO 1452-4:2009 ans BS EN ISO 1452-5:2009 or BS 3505:1986 ; appropriate grade ; protected painting against ultra violet light	2	; embedded in			
3	; externally	3	ductile iron pipes and fittings ; BS EN 545:2010 ; appropriate grade ; screw-on flanges connection ; thickness grade of Class K12 ; metallic zinc coating with bitumen painted externally ; internally lined with cement mortar to BS EN 545:2010, BS EN 598:2007+A1:2009, BS EN 969:2009 type ? [A/B]	3	; suspended from			
		1	; solvent welded joints ; off-site pre-fabricated metal mounting and fixing brackets [UPVC pipes]	4	; fixed to			
		2	; welded joints ; off-site pre-fabricated metal mounting and fixing brackets [ductile iron pipes]	5	; laid on			
		3	; screwed joints ; off-site pre-fabricated metal mounting and fixing brackets [ductile iron pipes]	1	ducts			
				2	trenches			
				3	chases			
				4	in-situ concrete or screeds			
				5	soffits			
				6	walls and columns			
				7	floors			
				2	extra over pipework for	1	[fittings]	nr
						1	? bends	
						2	? elbows	
						3	? branches	
						4	? reducers	
						5	? tees	
						6	? reducing bends	
						7	? reducing tees	
						8	? caps	
						9	? flanged ends	
				3	flow and return header pipes ; blanked off at spare outlets	1	? diameter ; ? long ; with ? nr. ?	nr
				1	; suspended from soffits	x	? x ? branches	
				2	; supporting on floors			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2	[ancillaries] (SM.xvii(d)7)	1	[valves] (SM.xvii(d)7.1)	1	? diameter	nr
1	cast iron valves	1	gate valves	2	to suit ? diameter pipes	nr
2	ductile iron valves	2	globe valves			
3	stainless steel strainers	3	check valves			
4	cast iron strainers	4	butterfly valves			
5	carbon steel strainers	5	motorized control valves ; DDC control			
6	gunmetal automatic air vents	6	drain valves			
7	brass automatic air vents					
		2	auto-strainers (SM.xvii(d)7.4)	1	? diameter	nr
		1	auto-strainers ; rotating inner drum ; automatic backwash arrangement			
		2	auto-strainers ; stationary drum ; automatic backwash arrangement			
		3	[automatic air vents]	1	to suit ? diameter pipes	nr
		1	automatic air vents			
		1	; non-ferrous floats and guides			
		2	; stainless steel floats and guides			
		1	; corrosion resistance valves and seats			
3	[instrumentation] (SM.xvii(d)16)	1	[thermometers]	1	to suit ? diameter pipes	nr
1	thermometers	1	thermometers ; liquid immersion ; complete with thermometer pockets			
2	pressure gauges	2	[pressure gauges]			
3	test plugs ; complete with sealing caps	1	pressure gauges			
4	energy meters ; complete with temperature sensors, flow meters, flow transmitter / converter units, calculator units	3	[test plugs]			
		1	test plugs			
		4	[energy meters]			
		1	energy meters ; integrate with CCMS			
4	sea water cooling towers (SM.xvii(b)2)	1	cooling towers	1	heat rejection capacity ? kW (ref. ?)	nr
1	; glass reinforced plastics (GRP) casings and removable covers ; fan motors ; self-extinguishing PVC fill ; AISI 316 stainless steel support structures, fan guards ; gear boxes, bleed-off pipes, switches and necessary components ; adequate acoustic treatment ; certified by Cooling Tower Institute	1	; induced draught fans ; axial type			
2	; complying statutory noise limit	2	; forced draught fans ; axial type			

AC - AIR CONDITIONING INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 5 condenser water pump sets ; direct driven by electric motors ; cast iron volute split casings (SM.xvii(b)9)
 - 1 ; stuffing boxes ; mechanical seal
 - 2 ; stuffing boxes ; approved packing and bronze lantern ring water seal
 - 3 ; complying statutory noise limit

- 1 sea water pump sets ; centrifugal type
 - 1 ; water temperature greater than 28 degrees Celsius

- 1 water flow rate ? l/s ; differential static pressure ? kPa (ref. ?) nr

3 COOLING WATER CONDENSING SYSTEM

- 1 [pipework] (SM.xvii(d)2)
 - 1 UPVC pipes and fittings ; BS EN ISO 1452-1:2009, BS EN ISO 1452-2:2009, BS EN ISO 1452-3:2010, BS EN ISO 1452-4:2009 and BS EN ISO 1452-5:2009 or BS 3505:1986 ; appropriate grade ; self finish
 - 2 UPVC pipes and fittings ; BS EN ISO 1452-1:2009, BS EN ISO 1452-2:2009, BS EN ISO 1452-3:2010, BS EN ISO 1452-4:2009 and BS EN ISO 1452-5:2009 or BS 3505:1986 ; appropriate grade ; protected painting against ultra violet light
 - 3 steel pipes and fittings ; ISO 65:1981 / BS EN 10255:2004 (medium grade) ; galvanised
 - 4 ductile iron pipes and fittings ; BS EN 545:2010 ; appropriate grade ; screw-on flanges connection ; thickness grade of Class K12 ; metallic zinc coating with bitumen painted externally ; internally lined with cement mortar to BS EN 545:2010, BS EN 598:2007+A1:2009, BS EN 969:2009 type ? [A/B]
 - 5 steel pipes and fittings ; ISO 9330-1 to ISO 9330-3 / BS EN 10217-1 to BS EN 10217-7 with wall thickness not less than 6 ; painted externally
 - 1 ; solvent welded joints ; off-site pre-fabricated metal mounting and fixing brackets [UPVC pipes]
 - 2 ; welded joints ; off-site pre-fabricated metal mounting and fixing brackets [ductile iron pipes, steel pipes]
 - 3 ; screwed joints ; off-site pre-fabricated metal mounting and fixing brackets [ductile iron pipes, steel pipes]

- 1 pipework and fittings
 - 1 ; laid in
 - 2 ; embedded in
 - 3 ; suspended from
 - 4 ; fixed to
 - 5 ; laid on
 - 1 ducts
 - 2 trenches
 - 3 chases
 - 4 in-situ concrete or screeds
 - 5 soffits
 - 6 walls and columns
 - 7 floors

- 1 ? diameter m

2 extra over pipework for

- 1 [fittings] nr
 - 1 ? bends
 - 2 ? elbows
 - 3 ? branches
 - 4 ? reducers
 - 5 ? tees
 - 6 ? reducing bends
 - 7 ? reducing tees
 - 8 ? caps
 - 9 ? flanged ends
 - 10 ? flanges [for 65 size and above steel pipes connecting to an appliance]

- 3 flow and return header pipes ; blanked off at spare outlets
 - 1 ; suspended from soffits
 - 2 ; supporting on floors

- 1 ? diameter ; ? long ; with ? nr. ? x ? x ? branches nr

- 2 [ancillaries] (SM.xvii(d)7)

- 1 [valves] (SM.xvii(d)7.1)

- 1 ? diameter nr

AC - AIR CONDITIONING INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1	cast gunmetal valves	1	gate valves	2	to suit ? diameter pipes	nr
2	bronze valves	2	globe valves			
3	cast iron valves	3	check valves			
4	brass cast iron valves	4	butterfly valves			
5	ductile iron valves	5	motorized control valves ; DDC control			
6	gunmetal strainers	6	drain valves			
7	bronze strainers					
8	cast iron strainers					
9	ductile iron strainers					
10	gunmetal automatic air vents	2	[strainers] (SM.xvii(d)7.4)	1	? diameter	nr
11	brass automatic air vents	1	strainers			
		1	; single type			
		2	; double type			
		3	[automatic air vents]	1	to suit ? diameter pipes	nr
		1	automatic air vents			
		1	; non-ferrous floats and guides			
		2	; stainless steel floats and guides			
		1	; corrosion resistance valves and seats			
3	[instrumentation] (SM.xvii(d)16)	1	[thermometers]	1	to suit ? diameter pipes	nr
1	thermometers	1	thermometers ; liquid immersion ; complete with thermometer pockets			
2	pressure gauges	2	[pressure gauges]			
3	test plugs ; complete with sealing caps	1	pressure gauges			
4	energy meters ; complete with temperature sensors, flow meters, flow transmitter / converter units, calculator units	3	[test plugs]			
		1	test plugs			
		4	[energy meters]			
		1	energy meters ; integrate with CCMS			
4	fresh water cooling towers (SM.xvii(b)2)	1	cooling towers	1	heat rejection capacity ? kW (ref. ?)	nr
1	; glass reinforced plastics (GRP) casings and removable covers ; fan motors ; self-extinguishing PVC fill ; AISI 316 stainless steel support structures, fan guards ; gear boxes, bleed-off pipes, switches and necessary components ; adequate acoustic treatment ; certified by Cooling Tower Institute	1	; induced draught fans ; axial type			
		2	; forced draught fans ; axial type			
2	; complying statutory noise limit					
5	condenser water pump sets ; direct driven by electric motors ; cast iron casings (SM.xvii(b)9)	1	fresh water pump sets	1	water flow rate ? l/s ; differential static pressure ? kPa (ref. ?)	nr
		1	; centrifugal type			
		2	; end suction type			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 ; stuffing boxes ; mechanical seal
- 2 ; stuffing boxes ; approved packing and bronze lantern ring water seal
- 3 ; complying statutory noise limit

- 3 ; vertical spindle type centrifugal pump with end suction at the bottom
- 1 ; water temperature greater than 28 degrees Celsius

4 CHILLED WATER SYSTEM

- 1 ; internally
- 2 ; in plant room
- 3 ; externally

- 1 [pipework] (SM.xvii(d)2)
- 2 design, supply and install [pipework] (SM.xvii(d)2)
- For nos 1 to 2 above
 - 1 steel pipes and fittings ; ISO 65:1981 / BS EN 10255:2004 (medium grade) ; painted externally
 - 2 steel pipes and fittings ; ISO 9330-1 to ISO 9330-3 / BS EN 10217-1 to BS EN 10217-7 with wall thickness not less than 6 ; painted externally
 - 1 ; welded joints ; off-site pre-fabricated metal mounting and fixing brackets
 - 2 ; screwed joints ; off-site pre-fabricated metal mounting and fixing brackets
 - 3 ; ? joints, pre-insulated with ? thick, ? insulation, ? kg/m3 density, Class "0" fire rating
 - 1 ; covered with ? thick galvanized steel jacket / cladding
 - 2 ; covered with ? thick aluminum jacket / cladding
 - 3 ; covered with ? thick stainless steel jacket / cladding

- 1 pipework and fittings
 - 1 ; laid in
 - 2 ; embedded in
 - 3 ; suspended from
 - 4 ; fixed to
 - 5 ; laid on
 - 1 ducts
 - 2 trenches
 - 3 chases
 - 4 in-situ concrete or screeds
 - 5 soffits
 - 6 walls and columns
 - 7 floors

- 1 ? diameter m
- 2 ? diameter ; pre-insulated m
- 3 ? diameter ; pre-insulated with cladding m

2 extra over pipework for

- 1 [fittings] nr
 - 1 ? bends
 - 2 ? elbows
 - 3 ? branches
 - 4 ? reducers
 - 5 ? tees
 - 6 ? reducing bends
 - 7 ? reducing tees
 - 8 ? caps
 - 9 ? flanged ends
 - 10 ? flanges [for 65 size and above steel pipes connecting to an appliance]

- 3 flow and return header pipes ; blanked off at spare outlets (SM.xvii(d)10)
 - 1 ; suspended from soffits
 - 2 ; supporting on floors

- 1 ? diameter ; ? long ; with ? nr. ? x ? x ? branches nr

- 3 [ancillaries] (SM.xvii(d)7)
- 4 design, supply and install [ancillaries] (SM.xvii(d)7)
- For nos 3 to 4 above
 - 1 cast gunmetal valves
 - 2 bronze valves
 - 3 cast iron valves
 - 4 brass cast iron valves
 - 5 ductile iron valves
 - 6 malleable iron valves
 - 7 flow meters

- 1 [valves] (SM.xvii(d)7.1)
 - 1 gate valves
 - 2 globe valves
 - 3 check valves
 - 4 butterfly valves
 - 5 ball float valves
 - 6 pressure reducing valves
 - 7 motorized control valves ; DDC control
 - 8 balancing valves
 - 9 double regulating valves
 - 10 drain valves

- 1 ? diameter nr
- 2 to suit ? diameter pipes nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

8	gunmetal strainers				
9	bronze strainers	2	[flow meters] (SM.xvii(d)7.2)	1	to suit ? diameter pipes nr
10	cast iron strainers	1	flow meters ; BS EN 61000-6-1:2007,		
11	ductice iron strainers		BS EN 61000-6-2:2005, BS EN		
12	gunmetal automatic air vents		61000-6-3:2007+A1:2011 and BS EN		
13	brass automatic air vents		61000-6-4:2007 ; direct reading type		
1	pre-insulated with ? thick, ? insulation, ? kg/m3 density, rigid preformed 'oversize' section, Class "O" fire rating		; complete with flow sensors ; integral signal converter / transmitter, digital display unit		
1	; covered with ? thick galvanized steel split boxes		1 ; electromagnetic and ultrasonic		
2	; covered with ? thick aluminum split boxes	3	[strainers] (SM.xvii(d)7.4)	1	? diameter nr
3	; covered with ? thick stainless steel split boxes	1	strainers		
		1	; single type		
		2	; double type		
		4	[automatic air vents]	1	to suit ? diameter pipes nr
		1	automatic air vents		
		1	; non-ferrous floats and guides		
		2	; stainless steel floats and guides		
		1	; corrosion resistance valves and seats		
5	expansion joints (SM.xvii(d)9)	1	bellow expansion joints	1	? diameter nr
1	; stainless steel	1	; axial movement pattern type	2	to suit ? diameter pipes nr
		2	; angular or lateral movement pattern type		
					For nos 1 to 2 above
				1	; complete with ? insulation
6	[instrumentation] (SM.xvii(d)16)	1	[thermometers]	1	to suit ? diameter pipes nr
7	design, supply and install [instrumentation] (SM.xvii(d)16)	1	[thermometers]		
		1	; liquid immersion ; complete with thermometer pockets		
		2	; air immersion ; complete with sealing plugs and test holes		
For nos 6 to 7 above		2	[pressure gauges]		
1	thermometers	1	pressure gauges		
2	pressure gauges	3	[test plugs]		
3	test plugs ; complete with sealing caps	1	test plugs		
4	energy meters ; complete with temperature sensors, flow meters, flow transmitter / converter units, calculator units	4	[energy meters]		
		1	energy meters ; integrate with CCMS		
8	[pipework insulation] (SM.XVii(g)2)	1	? thick ; fixing externally to pipework and fittings	1	? diameter m
9	design, supply and install [pipework insulation] (SM.XVii(g)2)				

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

For nos 8 to 9 above

- 1 CFC and HCFC free phenolic foam insulation ; rigid preformed section ; 40 kg/m3 density ; Class "O" fire rating ; factory applied double sided reinforced foil vapour barrier ; fixing with approved adhesive
- 2 polystyrene insulation ; preformed or slab ; Class "O" fire rating ; non-self combustible ; ? vapour barrier ; fixing with approved adhesive

- 2 extra over ? thick insulation to pipework for

- 1 [fittings] nr
 - 1 ? bends
 - 2 ? elbows
 - 3 ? branches
 - 4 ? reducers
 - 5 ? tees
 - 6 ? reducing bends
 - 7 ? reducing tees
 - 8 ? caps
 - 9 ? flanged ends

- 3 ? thick ; fixing externally to flow and return header pipes (SM.xvii(d)10)

- 1 ? diameter ; ? long ; with ? nr. ? x ? x ? branches nr

- 10 [ancillaries insulation] (SM.xvii(g)2)
- 11 design, supply and install [ancillaries insulation] (SM.xvii(g)2)

For nos 10 to 11 above

- 1 CFC and HCFC free phenolic foam insulation ; rigid preformed 'oversize' section ; 40 kg/m3 density ; Class "O" fire rating ; factory applied double sided reinforced foil vapour barrier ; fixing with approved adhesive
- 2 polystyrene insulation ; preformed or slab ; Class "O" fire rating ; non-self combustible ; ? vapour barrier ; fixing with approved adhesive

- 1 ? thick ; to valves (SM.xvii(g)5.1)

- 1 [valves] nr
 - 1 ? gate valves
 - 2 ? globe valves
 - 3 ? check valves
 - 4 ? butterfly valves
 - 5 ? pressure reducing valves
 - 6 ? motorized control valves
 - 7 ? balancing valves
 - 8 ? double regulating valves
 - 9 ? drain valves

- 2 ? thick ; to strainers (SM.xvii(g)5.2)

- 1 [strainers] nr
 - 1 ? strainers
 - 1 ; single type
 - 2 ; double type

- 3 ? thick ; to automatic air vents

- 1 [automatic air vents] nr
 - 1 ? automatic air vents

- 12 protective coverings and finishings [to pipework] (SM.xvii(h)2)
- 13 design, supply and install protective coverings and finishings [to pipework] (SM.xvii(h)2)

For nos 12 to 13 above

- 1 ; hammer finish aluminium cladding to CFC and HCFC free phenolic foam insulation
- 2 ; galvanised iron wire netting ; cement plastering and painting to polystyrene insulation

- 1 ? thick ; fixing to ? thick insulation for

- 1 ? diameter pipes m

- 2 extra over ? thick protective coverings and finishings to ? thick insulation for

- 1 [fittings] nr
 - 1 ? bends
 - 2 ? elbows
 - 3 ? branches
 - 4 ? reducers
 - 5 ? tees
 - 6 ? reducing bends
 - 7 ? reducing tees
 - 8 ? caps
 - 9 ? flanged ends

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		3	? thick ; fixing to ? thick insulation for (SM.xvii(d)10)	1	? diameter header pipes ; ? long ; with ? nr. ? x ? x ? branches	nr
14	protective coverings and finishings [to pipework ancillaries] (SM.xvii(h)5)	1	? thick ; fixing to ? thick insulation for	1	[valves]	nr
15	design, supply and install protective coverings and finishings [to pipework ancillaries] (SM.xvii(h)5)			1	? gate valves	
				2	? globe valves	
				3	? check valves	
				4	? butterfly valves	
				5	? pressure reducing valves	
				6	? motorized control valves	
				7	? balancing valves	
				8	? double regulating valves	
				9	? drain valves	
For nos 14 to 15 above						
1	; hammer finish aluminium cladded hinged split boxes to CFC and HCFC free					
2	; galvanised iron wire netting ; cement plastering and painting ; hammer finish aluminium cladded hinged split boxes to polystyrene insulation	2	? thick ; fixing to ? thick insulation for	1	[strainers]	nr
				1	? strainers	
				1	; single type	
				2	; double type	
		3	? thick ; fixing to ? thick insulation for	1	[automatic air vents]	nr
				1	? automatic air vents	
16	design, supply and install [chillers/heat pumps] (SM.xvii(b)1)	1	sea-water cooled chillers	1	cooling capacity ? kW (ref. ?)	nr
		2	fresh water cooled chillers	2	cooling capacity ? kW and heating capacity ? kW (ref. ?)	nr
1	packaged chillers ; ? refrigerant ; factory assembled and tested units ; ARI Standard 550/590:2012 ; BS EN 14511-1:2011 to BS EN 14511-4:2011	3	air-cooled chillers			
		4	ammonia chillers ; pressure relief device and safety switches			
1	; reciprocating type compressors	5	heat pumps ; air-to-water			
2	; centrifugal type compressors	6	heat pumps ; water-to-water			
3	; screw type compressors					
4	; scroll type compressors					
		1	; condensers ; motors ; evaporators ; electronic / microcomputer control panel ; piping connections ; adequate acoustic treatment ; insulations ; all sensing devices, accessories and associated services			
		2	; refrigerant leakage warning alarm [in plant room]			
		3	; complying statutory noise limit			
17	design, supply and install [chillers]	1	water-cooled chillers	1	cooling capacity ? kW (ref. ?)	nr
1	packaged chillers ; ? refrigerant ;	2	air-cooled chillers			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

factory assembled and tested units ;
 ARI Standard 550/590:2012 ; BS EN
 14511-1:2011 to BS EN 14511-4:2011
 1 ; oil-free ; semi-hermetic ;
 variable speed ; two-stage
 centrifugal type compressors
 1 ; condensers ; permanent
 magnet synchronous motors
 with integrated liquid
 refrigerant injection system
 for cooling ; evaporators ;
 electronic / microcomputer
 control panel ; piping
 connections ; adequate
 acoustic treatment ;
 insulations ; sensing
 devices, accessories and
 associated services ; all as
 specified in the Particular
 Specification
 2 ; complying statutory noise
 limit

18	design, supply and install heat recovery chillers ; ? refrigerant ; factory assembled and tested unit ; 1 shell-and-tube type heat recovery condenser and condensing units, three-way modulation valve and receivers 2 plate type heat recovery condenser and condensing units, three-way modulation valve and receivers (SM.xvii(b)1) 1 ; refrigerant leakage warning alarm [in plant room] 2 ; complying statutory noise limit	1	heat recovery chillers	1	cooling capacity ? kW and heating capacity ? kW (ref. ?)	nr
19	design, supply and install emergency discharge system for ammonia chillers ; discharge ; pipework and fittings ; termination diffusers ; lockable and labelled control ductwork 1 ; all associated cables and cabling facilities ; detection devices ; all necessary accessories and ancillaries	1	emergency discharge system	1	? capacity	item
20	design, supply and install emergency apparatus sets ; FSD approved type	1	emergency apparatus sets 1 ; housed in waterproof stainless	1	for ammonia chiller system	item

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

respirators and protective clothing ;
First Aid Kit ; portable ammonia
detector 10-1500 ppm

steel cabinet

21	[expansion tank] (SM.xvii(b)7)	1	expansion tanks	1	? litres	nr
1	galvanised mild steel ; BS 417-2:1987 : Grade A ; welded or riveted ; feed and expansion tank ; adequate insulation with protective coverings and finishings	1	; on roof			
2	pressed steel sectional feed and expansion tank ; BS 1564:1975 ; heavily galvanised ; adequate insulation with protective coverings and finishings					
1	; complete with valves, drain facilities, overflow pipes, accessories and connections					
22	chilled water pump sets (SM.xvii(b)9)	1	chilled water pump sets	1	water flow rate ? l/s ; differential static pressure ? kPa (ref. ?)	nr
23	design, supply and install chilled water pump sets (SM.xvii(b)9)	1	; centrifugal type	2	water flow rate ? l/s ; differential static pressure ? head of water to suit the complete system (ref. ?)	nr
		2	; end suction type			
		3	; vertical spindle type centrifugal pump with end suction at the bottom			
For nos 22 to 23 above		4	; heat recovery water circulation pump sets			
1	; direct driven by electric motors ; cast iron casings	1	; water temperature greater than 28 degrees Celsius			
1	; stuffing boxes ; mechanical seal					
2	; stuffing boxes ; approved packing and bronze lantern ring water seal					
3	; complying statutory noise limit					
1	; adequate insulations					
24	submersible bore well pump sets (SM.xvii(b)9)	1	submersible bore well pump sets ; hung from pit cover	1	water flow rate ? l/s ; differential static pressure ? kPa (ref. ?)	nr
1	; close-coupled, vertical multi-stage centrifugal type water tight construction ; stainless steel ; grade ? [304/316] ; perforated strainers ; water lubricated bearings ; automatic cut-out level switches					
25	sump pump sets (SM.xvii(b)9)	1	sump pump sets	1	water flow rate ? l/s ; differential static pressure ? kPa (ref. ?)	nr
1	; vertical centrifugal type ; double mechanical shaft seal ; submersible electric motor ; cast iron casings ; strainers ; automatic flow level	1	; installed in flammable zones			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		control operated with alarm 1 ; factory built-in suspension device and factory mounted discharge elbow ; guide bars ; cable supports and lifting chains		
	26	design, supply and install removable working and service platform ; rigid construction ; stainless steel fixing bolts and nuts ; all necessary accessories	1 working and service platform 1 ; galvanised steel assembled 2 ; fibreglass reinforced polyester assembled	1 approximate size ? x ? x ? nr
5	HEATING WATER SYSTEM	1 [pipework] (SM.xvii(d)2) 1 steel pipes and fittings ; ISO 65:1981 / BS EN 10255:2004 (medium grade) ; painted externally 2 steel pipes and fittings ; ISO 9330-1 to ISO 9330-3 / BS EN 10217-1 to BS EN 10217-7 with wall thickness not less than 6 ; painted externally 1 ; welded joints 2 ; screwed joints 3 ; ? joints, pre-insulated with ? thick, ? insulation, ? kg/m ³ density, Class "O" fire rating 1 ; covered with ? thick galvanized steel jacket / cladding 2 ; covered with ? thick aluminum jacket / cladding 3 ; covered with ? thick stainless steel jacket / cladding	1 pipework and fittings 1 ; laid in 2 ; embedded in 3 ; suspended from 4 ; fixed to 5 ; laid on 1 ducts 2 trenches 3 chases 4 in-situ concrete or screeds 5 soffits 6 walls and columns 7 floors	1 ? diameter m
			2 extra over pipework for	1 [fittings] 1 ? bends 2 ? elbows 3 ? branches 4 ? reducers 5 ? tees 6 ? reducing bends 7 ? reducing tees 8 ? caps 9 ? flanged ends 10 ? flanges [for 65 size and above steel pipes connecting to an appliance]
			3 flow and return header pipes ; blanked off at spare outlets 1 ; suspended from soffits 2 ; supporting on floors	1 ? diameter ; ? long ; with ? nr. ? x ? x ? branches nr
	2	[ancillaries] (SM.xvii(d)7) 1 cast gunmetal valves 2 bronze valves	1 [valves] (SM.xvii(d)7.1) 1 gate valves 2 globe valves	1 ? diameter 2 to suit ? diameter pipes nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3	cast iron valves	3	check valves		
4	brass cast iron valves	4	double regulating valves		
5	ductile iron valves	5	motorized control valves ; DDC control		
6	flow meters	6	drain valves		
7	gunmetal strainers				
8	bronze strainers				
9	cast iron strainers				
10	ductile iron strainers	2	[flow meters] (SM.xvii(d)7.2)	1	to suit ? diameter pipes nr
11	gunmetal automatic air vents	1	flow meters ; BS EN 61000-6-1:2007, BS EN 61000-6-2:2005, BS EN 61000-6-3:2007+A1:2011 and BS EN 61000-6-4:2007 ; direct reading type ; complete with flow sensors ; integral signal converter / transmitter, digital display unit		
12	brass automatic air vents				
1	pre-insulated with ? thick, ? insulation, ? kg/m3 density, rigid preformed 'oversize' section, Class "O" fire rating				
1	; covered with ? thick galvanized steel split boxes				
2	; covered with ? thick aluminum split boxes				
3	; covered with ? thick stainless steel split boxes	3	[strainers] (SM.xvii(d)7.4)	1	? diameter nr
		1	strainers		
		1	; single type		
		2	; double type		
		4	[automatic air vents]	1	to suit ? diameter pipes nr
		1	automatic air vents		
		1	; non-ferrous floats and guides [automatic air vents]		
		2	; stainless steel floats and guides [automatic air vents]		
		1	; corrosion resistance valves and seats		
3	[instrumentation] (SM.xvii(d)16)	1	[thermometers]	1	to suit ? diameter pipes nr
1	thermometers	1	thermometers ; liquid immersion ; complete with thermometer pockets		
2	pressure gauges				
3	test plugs complete with sealing caps	2	[pressure gauges]		
4	energy meters ; complete with temperature sensors, flow meters, flow transmitter / converter units, calculator units	1	pressure gauges		
		3	[test plugs]		
		1	test plugs		
		4	[energy meters]		
		1	energy meters ; integrate with CCMS		
4	[pipework insulation] (SM.xvii(g)2)	1	? thick ; fixing externally to pipework and fittings	1	? diameter m
1	hydrous calcium silicate and rock wool insulation ; preformed section ; 200 kg/m3 density ; factory applied jacket				
2	preformed rigid glass fibre	2	extra over ? thick insulation to pipework for	1	[fittings] nr
				1	? bends

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

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	insulation ; 64 kg/m3 density ; sealed at all joints by vapour barrier and self adhesive foil tape			2 ? elbows 3 ? branches 4 ? reducers 5 ? tees 6 ? reducing bends 7 ? reducing tees 8 ? caps 9 ? flanged ends	
5	[ancillaries insulation] (SM.xvii(g)5) 1 hydrous calcium silicate and rockwool insulation ; rigid preformed section ; 200 kg/m3 density ; factory applied jacket ; removable cover 2 preformed rigid glass fibre insulation ; 64 kg/m3 density ; sealed at all joints by vapour barrier and self adhesive foil tape	1 ? thick ; to valves (SM.xvii(g)5.1)	1	[valves] 1 ? gate valves 2 ? globe valves 3 ? check valves 4 ? double regulating valves 5 ? motorized control valves 6 ? drain valves	nr
		2 ? thick ; to strainers (SM.xvii(g)5.2)	1	[strainers] 1 ? strainers 1 ; single type 2 ; double type	nr
		3 ? thick ; to automatic air vents	1	[automatic air vents] 1 ? automatic air vents	nr
6	protective coverings and finishings [to pipework] (SM.xvii(h)2) 1 ; hammer finish aluminium cladding 1 to hydrous calcium silicate and rockwool insulation 2 to preformed rigid glass fibre insulation	1 ? thick ; fixing to ? thick insulation for	1	? diameter pipes	m
		2 extra over ? thick protective coverings and finishings to ? thick insulation for	1	[fittings] 1 ? bends 2 ? elbows 3 ? branches 4 ? reducers 5 ? tees 6 ? reducing bends 7 ? reducing tees 8 ? caps 9 ? flanged ends	nr
7	protective coverings and finishings [to pipework ancillaries] (SM.xvii(h)5) 1 ; hammer finish aluminium cladded hinged split boxes 1 to hydrous calcium silicate and rockwool insulation 2 to preformed rigid glass fibre insulation	1 ? thick ; fixing to ? thick insulation for	1	[valves] 1 ? gate valves 2 ? globe valves 3 ? check valves 4 ? double regulating valves 5 ? motorized control valves 6 ? drain valves	nr

AC - AIR CONDITIONING INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			2 ? thick ; fixing to ? thick insulation for		1 [strainers] 1 ? strainers 1 ; single type 2 ; double type	nr
			3 ? thick ; fixing to ? thick insulation for		1 [automatic air vents] 1 ? automatic air vents	nr
	8	heat exchangers ; corrugated pattern ; mild steel framework ; pressure tested ; 5-year leakage free guarantee ; adequate insulations ; double skin aluminium / stainless steel cladding ; all necessary accessories and associated services	1 plate type heat exchanger 1 ; testing pressure 1.5 times the working pressure		1 primary water flow rate ? l/s ; against ? degrees incoming and ? degrees outgoing temperatures ; secondary water flow rate ? I/s against ? degrees incoming and ? degrees outgoing temperatures (ref. ?)	nr
	9	hot water pump sets ; direct driven by electric motor ; approved metal casings (SM.xvii(b)9) 1 ; stuffing boxes ; mechanical seal 2 ; stuffing boxes ; approved packing and bronze lantern ring water seal 1 ; adequate insulations	1 hot water circulation pump sets		1 water flow rate ? l/s ; differential static pressure ? kPa (ref. ?)	nr
6	WATER TREATMENT ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 design, supply and install by water treatment specialist complete water treatment system ; all necessary chemical treatment equipment and plant ; metering pumps, panel box, chemical storage 1 ; control, accessories and connections, piping and fitting, drilling and tapping into circulation system	1 water treatment 1 ; by electrochlorinator 2 ; by biocides 3 ; by chemical agents 4 ; by ozone		1 for sea water 2 for cooling tower/condenser cooling water 3 for chilled water 4 for low pressure hot water	item item item item
	2	[water treatment service] 1 water treatment service by water treatment specialist for commissioning and testing, pre-cleaning, day-to-day water treatment of the installed system ; on-site water treatment service and water analysis, reports ; all labour, testing equipment, chemicals, instruments, interconnecting pipework, accessories and associated services	1 water treatment service 1 ; within Contract Period 2 ; during Maintenance Period 1 ; pre-treatment for dumping of chemical wastes ; Waste Disposal Regulation		1 for sea water 2 for cooling tower/condenser cooling water 3 for chilled water 4 for low pressure hot water	item item item item

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3 water treatment proposal by water treatment specialist ; water specification, method of analysis and testing together with testing report format

1 water treatment proposal

1 for all air conditioning water systems item

7 CONDENSATE DRAIN SYSTEM

- 1 ; internally
- 2 ; in plant room
- 3 ; externally

1 [pipework] (SM.xvii(d)2)
 1 steel pipes and fittings ; ISO 65:1981 / BS EN 10255:2004 (medium grade) ; galvanised
 2 UPVC pipes and fittings ; BS EN ISO 1452-1:2009, BS EN ISO 1452-2:2009, BS EN ISO 1452-3:2010, BS EN ISO 1452-4:2009 and BS EN ISO 1452-5:2009 or BS 3505:1986 ; appropriate grade ; self finish
 3 UPVC pipes and fittings ; BS EN ISO 1452-1:2009, BS EN ISO 1452-2:2009, BS EN ISO 1452-3:2010, BS EN ISO 1452-4:2009 and BS EN ISO 1452-5:2009 or BS 3505:1986 ; appropriate grade ; protected painting against ultra violet light
 1 ; welded joints ; off-site pre-fabricated metal mounting and fixing brackets [steel pipes]
 2 ; screwed joints ; off-site pre-fabricated metal mounting and fixing brackets [steel pipes]
 3 ; solvent welded joints ; off-site pre-fabricated metal mounting and fixing brackets [UPVC pipes]

1 pipework and fittings
 1 ; laid in
 2 ; embedded in
 3 ; suspended from
 4 ; fixed to
 5 ; laid on
 1 ducts
 2 trenches
 3 chases
 4 in-situ concrete or screeds
 5 soffits
 6 walls and columns
 7 floors

1 ? diameter m

2 extra over pipework for

1 [fittings] nr
 1 ? bends
 2 ? elbows
 3 ? branches
 4 ? reducers
 5 ? tees
 6 ? reducing bends
 7 ? reducing tees
 8 ? caps
 9 ? flanged ends
 10 ? flanges [for 65 size and above steel pipe connecting to an appliance]

2 [ancillaries] (SM.xvii(d)7)
 1 cast gunmetal valves
 2 bronze valves
 3 cast iron valves
 4 ductile iron valves
 5 gunmetal automatic air vents
 6 brass automatic air vents

1 [valves] (SM.xvii(d)7.1)
 1 drain valves

1 ? diameter nr
 2 to suit ? diameter pipes nr

2 [automatic air vents]
 1 automatic air vents
 1 ; non-ferrous floats and guides
 2 ; stainless steel floats and guides
 1 ; corrosion resistance valves and seats

1 to suit ? diameter pipes nr

3 [pipework insulation] (SM.xvii(g)2)
 1 CFC and HCFC free phenolic foam insulation ; rigid preformed section

1 25 (minimum) thick ; fixing externally to pipework and fittings

1 ? diameter m

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

8	MECHANICAL VENTILATION SYSTEM	1	hot-dipped galvanised steel sheet ductwork and fittings	1	[rectangular ducts] (SM.xvii(f)2)	1	duct size	m2
1	; internally			1	? thick ; rectangular ducts	1	not exceeding 400	
2	; in plant room	1	; DW/144:2013 low pressure Class "A" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275	1	; fixed to walls and columns	2	400 - 600	
3	; externally	2	; DW/144:2013 medium pressure Class "B" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275	2	; suspended from soffits	3	600 - 800	
		3	; DW/144:2013 high pressure Class "C" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275			4	800 - 1000	
		4	; DW/144:2013 high pressure Class "D" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275			5	1000 - 1250	
		1	; off site prefabricated	2	[circular ducts] (SM.xvii(f)3)	6	1250 - 1600	
		2	; insulated externally (insulation measured separately)	1	? thick ; spirally-wound circular ducts	7	1600 - 2000	
		3	; preinsulated with ? thick closed cell elastomeric rubber insulation ; ? kg/m3 density ; Class "O" fire rating ; with built-in vapour barriers	2	? thick ; straight-seamed circular ducts	8	2000 - 2500	
		4	; preinsulated with ? thick CFC & HCFC free phenolic foam board insulation ; ? kg/m3 density ; Class "O" fire rating ; with built-in vapour barriers	1	; fixed to walls and columns	9	2500 - 3000 maximum	
		5	; preinsulated with ? thick ? insulation ; ? kg/m3 density ; Class "O" fire rating ; with built-in vapour barriers	2	; suspended from soffits	1	(longer side)	
		6	; lined internally with approved acoustic lining materials ; insulated externally (insulation measured separately)					
		1	; covered with ? thick galvanised steel cladding ; all adhered and fixed on ductwork and fitting in factory [insulated ductwork]	3	extra over ? thick [circular ducts] (SM.xvii(f)4)	1	[circular ductwork fittings]	nr
		2	; covered with ? thick hammer finish aluminium cladding ; all adhered and fixed on ductwork and fitting in factory [insulated ductwork]	1	spirally-wound circular ducts for	1	? bends	
				2	straight-seamed circular ducts for	2	? branches	
						3	? tapers	
						4	? offsets	
						5	? tees	
						6	? blank ends	
		2	[ancillaries] (SM.xvii(f)5)	1	[dampers]			
		1	dampers ; galvanised mild steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN	1	volume control dampers ; aerofoil, double skin, opposed blade low leakage type ; approved or accepted by FSD	1	? x ?	nr
						2	to suit ? x ? rectangular ducts	nr
						3	to suit ? diameter circular ducts	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1751:2014 ; padlocking facilities ; position indicators

2 dampers ; stainless steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators

3 grilles ; steel, stove-enamelled finish

4 grilles ; aluminium

5 grilles ; PVC

6 diffusers ; steel, stove-enamelled finish ; pan type ; complete with volume control dampers

7 diffusers ; steel, stove-enamelled finish ; cone type ; complete with volume control dampers

8 diffusers ; aluminium ; pan type ; complete with volume control dampers

9 diffusers ; aluminium ; cone type ; complete with volume control dampers

10 disposable type panel filters ; heavy duty airtight factory fabrication, robust enclosure, holding frames and housing

11 automatic fabric roll filters ; heavy duty airtight factory fabrication, robust enclosure, holding frames and housing

12 washable panel filters ; heavy duty airtight factory fabrication, robust enclosure, holding frames and housing

13 gas filters ; heavy duty airtight factory fabrication, robust enclosure, holding frames and housing

14 automatic recleanable filters ; heavy duty airtight factory fabrication, robust enclosure, holding frames and housing

15 additional filters ; as described in Section C1.21 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation

16 additional filter media ; as described in Section C1.21 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation

2 butterfly dampers ; two plates, edge seamed

3 bifurcating dampers

4 multi-leaf dampers ; two plates

5 multi-leaf dampers ; single plate

6 self-closing dampers ; complete with resilient strips

7 fire or smoke dampers ; single-bladed ; ? hour fire rated ; approved or accepted by FSD

8 fire or smoke dampers ; multi-bladed ; ? hour fire rated ; approved or accepted by FSD

9 combined fire and smoke stop dampers ; aerofoil bladed ; ? hour fire rated ; temperature exposure tested ; replaceable thermal actuator and fusible link

10 motorized shut-off dampers ; ? hour fire rated ; actuated by automatic fire control

11 terminal dampers ; opposed blade type

2 [registers and grilles]

1 supply air grilles

2 exhaust air grilles

3 transfer air grilles

1 ; complete with two adjustable louvres ; opposed blade multi-leaf dampers

2 ; complete with single louvre ; opposed blade multi-leaf dampers

3 [diffusers]

1 supply air diffusers

2 perforated air diffusers

4 [filters]

1 ? thick

1 ; disposable panel filters ; bonded filter element

2 ; disposable pleated panel filters ; bonded to expanded wire mesh

3 ; renewable panel filters

4 ; automatic fabric roll filters ; complete assembly of filter frames, motors, drives, filter blockage sensors, filter media and spare roll

5 ; washable panel filters and

1 ? x ? nr

2 ? diameter nr

1 ? x ? nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 17 galvanised steel mesh bird wires ; complete with all necessary framings (SM.xvii(f)5.12)
- 18 ductwork silencers ; galvanised steel inorganic mineral acoustic filler (SM.xvii(f)1)
- 19 spare filters ; as described in Section B1.1.3 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation

- frames ; rolled or extruded [for additional filters requirement: 20% of each size of the filter cells
- 6 ; gas filters ; module banks
- 7 ; automatic recleanable filter sets ; reinforced fibre-glass ; rotatory tube design
- 8 ; automatic recleanable filter sets ; reinforced fibre-glass ; fixed drum design
- 1 ; for replacement of used filters during testing and commissioning [for all filter types]
- 2 ; for use by Employer's operation staff during Maintenance Period [for disposable type filters, washable type filters and gas filters]
- 3 ; for replacement of used filters before end of Maintenance Period [for all filter types]
- 4 ; for handing over to the Supervising Officer at the expiry of the Maintenance Period

5	[filter media]	1	to suit ? x ? filters	nr
	1 renewable panel filter media			
	2 automatic fabric roll filter media			
	3 automatic recleanable filter media			
	4 automatic recleanable HEPA filter media			
	1 ; for use by Employer's operation staff during Maintenance Period			

6	[bird wire mesh]	1	to suit ? x ? grilles	nr
	1 10 wire mesh		2 to suit ? x ? ducts	nr
			3 to suit ? diameter ducts	nr
			4 to suit ? x ? louvres	nr

7	[silencers]	1	silencers ; ? long (ref. ?)	nr
	1 silencers ; to rectangular ducts			
	2 silencers ; to circular ducts			
	3 silencers ; manifolded ; to rectangular ducts			
	4 silencers ; manifolded ; to circular			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

ducts

3	[duct insulation] (SM.xvii(g)6-8)	1	? thick ; fixing externally to rectangular ductwork (SM.xvii(g)6)	1	generally	m2
1	flexible fibre glass insulation ; minimum ? kg/m3 density ; aluminium foil vapour barrier ; securing to ductwork with metal or nylon pins and clips	2	? thick ; fixing externally to circular ductwork (SM.xvii(g)7)	1	? diameter	m
2	CFC and HCFC free phenolic foam board insulation ; ? kg/m3 density ; Class "0" fire rating ; factory applied double sided reinforced foil vapour barrier ; fixing with approved adhesive	3	extra over ? thick insulation to circular ducts for (SM.xvii(g)8)	1	[circular ductwork fittings]	nr
3	polystyrene insulation ; rigid preformed section ; non-self combustibile ; ? thick vapour barrier ; fixing with approved adhesive			1	? bends	
				2	? branches	
				3	? tapers	
				4	? offsets	
				5	? tees	
				6	? blank ends	
4	protective coverings and finishings [to ductwork insulation] (SM.xvii(h)6-8)	1	? thick ; fixing to ? thick insulation for	1	rectangular ductwork (SM.xvii(h)6)	m2
1	; hammer finish aluminium cladding to CFC and HCFC free phenolic foam insulation			2	? diameter circular ductwork (SM.xvii(h)7)	m
2	; hammer finish aluminium cladding to flexible fibre glass insulation	2	extra over ? thick protective coverings and finishings to ? thick circular ductwork fittings insulation for (SM.xvii(h)8)	1	[circular ductwork fittings]	nr
3	; galvanised steel cladding to CFC and HCFC free phenolic foam insulation			1	? bends	
4	; galvanised steel cladding to flexible fibre glass insulation			2	? branches	
5	; galvanised iron wire netting ; cement plastering and painting to polystyrene insulation			3	? tapers	
				4	? offsets	
				5	? tees	
				6	? blank ends	
5	fire-rated enclosure ; complying Fire Safety Code ; complete with all necessary framings	1	? hour fire-resistant-period enclosure ; BS 476-20:1987	1	to rectangular ducts	m2
				2	to ? diameter ducts	m
6	ventilating fans ; galvanised steel / aluminium alloy casings ; all accessories and mountings (SM.xvii(b)4)	1	ventilating fans ; ? type	1	air volume flow rate ? m3/s ; static pressure ? kPa (ref. ?)	nr
1	; complying statutory noise limit					
7	design, supply and install water scrubber ; fibreglass reinforced polyester resin (FRP) construction ; factory built and assembled unit ; scrubber section with knockdown	1	horizontal draw-throught non-clogging venturi type ; connections to external control circuitry, pipework ; fan and ductwork	1	air flow rate ? l/s (ref. ?)	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

baffles/packing, mist eliminator,
scrubbing liquid distribution system
1 ; fan, chemical feed pumps, chemical
tanks, silencers
1 ; instrumentation, acoustic
enclosure, controls and all
necessary components ; sensors,
flow switch, local and remote
control panels and all necessary
control accessories ;
connections to associated
services

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION	UNIT
9 TOILET EXTRACTION SYSTEM	1 hot-dipped galvanised steel sheet	1 [rectangular ducts] (SM.xvii(f)2)	1 duct size	m2
1 ; internally	ductwork and fittings	1 ? thick ; rectangular ducts	1 not exceeding 400	
2 ; in plant room	1 ; DW/144:2013 low pressure Class "A"	1 ; fixed to walls and columns	2 400 - 600	
3 ; externally	; BS EN 10346:2009, Grade DX51D+Z, coating type Z275	2 ; suspended from soffits	3 600 - 800	
	2 ; DW/144:2013 medium pressure Class "B" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275		4 800 - 1000	
	3 ; DW/144:2013 high pressure Class "C" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275		5 1000 - 1250	
	4 ; DW/144:2013 high pressure Class "D" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275		6 1250 - 1600	
	1 ; off site prefabricated		7 1600 - 2000	
	2 ; insulated externally (insulation measured separately)		8 2000 - 2500	
	3 ; preinsulated with ? thick closed cell elastomeric rubber insulation ; ? kg/m3 density ; Class "O" fire rating ; built-in vapour barriers		9 2500 - 3000 maximum	
	4 ; preinsulated with ? thick CFC & HCFC free phenolic foam board insulation ; ? kg/m3 density ; Class "O" fire rating ; built-in vapour barriers		1 (longer side)	
	5 ; preinsulated with ? thick ? insulation ; ? kg/m3 density ; Class "O" fire rating ; built-in vapour barriers			
	6 ; lined internally with approved acoustic lining materials ; insulated externally (insulation measured separately)			
	1 ; covered with ? thick galvanised steel cladding ; all adhered and fixed on ductwork and fitting in factory			

FIRST DIVISION

SECOND DIVISION

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FOURTH DIVISION

2 ; covered with ? thick hammer finish aluminium cladding ; all adhered and fixed on ductwork and fitting in factory

2	[ancillaries] (SM.xvii(f)5)	1	[dampers]	1	? x ?	nr
1	dampers ; galvanised mild steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators	1	volume control dampers ; aerofoil, double skin, opposed blade low leakage type ; approved or accepted by FSD	2	to suit ? x ? rectangular ducts	nr
2	dampers ; stainless steel ; DM/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators	2	fire or smoke dampers ; single-bladed ; ? hour fire rated ; approved or accepted by FSD			
		3	fire or smoke dampers ; multi-bladed ; ? hour fire rated ; approved or accepted by FSD			
3	grilles ; steel, stove-enamelled finish	2	[registers and grilles]	1	? x ?	nr
4	grilles ; aluminium	1	exhaust air grilles	2	? diameter	nr
5	grilles ; PVC	2	transfer air grilles			
6	galvanised steel mesh bird wires ; complete with all necessary framings (SM.xvii(f)5.12)	1	; complete with two adjustable louvres ; opposed blade multi-leaf dampers			
7	duckwork silencers ; galvanised steel inorganic mineral acoustic filler (SM.xvii(f)1)	2	; complete with single louvre ; opposed blade multi-leaf dampers			
		3	[bird wire mesh]	1	to suit ? x ? grilles	nr
		1	10 wire mesh	2	to suit ? x ? ducts	nr
				3	to suit ? diameter ducts	nr
				4	to suit ? x ? louvres	nr
		4	[silencers]	1	silencers ; ? long (ref. ?)	nr
		1	silencers ; to rectangular ducts			
		2	silencers ; manifolded ; to rectangular ducts			
3	[duct insulation] (SM.xvii(g)6-8)	1	? thick ; fixing externally to rectangular ductwork (SM.xvii(g)6)	1	generally	m2
1	flexible fibre glass insulation ; minimum ? kg/m3 density ; aluminium foil vapour barrier ; securing to ductwork with metal or nylon pins and clips					
2	CFC and HCFC free phenolic foam board insulation ; ? kg/m3 density ; Class "0" fire rating ; factory applied double sided reinforced foil vapour barrier ; fixing with approved adhesive					

FIRST DIVISION

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3 polystyrene insulation ; rigid preformed section ; non-self combustible ; ? thick vapour barrier ; fixing with approved adhesive

4 protective coverings and finishings [to ductwork insulation] (SM.xvii(h)6-8)
 1 ; hammer finish aluminium cladding to CFC and HCFC free phenolic foam insulation
 2 ; hammer finish aluminium cladding to flexible fibre glass insulation
 3 ; galvanised steel cladding to CFC and HCFC free phenolic foam insulation
 4 ; galvanised steel cladding to flexible fibre glass insulation
 5 ; galvanised iron wire netting ; cement plastering and painting to polystyrene insulation

1 ? thick ; fixing to ? thick insulation for

1 rectangular ductwork (SM.xvii(h)6) m2

5 ventilating fans ; galvanised steel / aluminium alloy casings ; all accessories and mountings (SM.xvii(b)4)
 1 ; complying statutory noise limit

1 ventilating fans ; ? type

1 air volume flow rate ? m3/s ; static pressure ? kPa (ref. ?) nr

10 KITCHEN EXTRACTION SYSTEM

1 ; internally
 2 ; in plant room
 3 ; externally

1 stainless steel sheet ductwork and fittings
 1 ; DW/144:2013 low pressure Class "A" ; BS 1449, Part 2 ; Grade ? ; ? finish ; EN 10088 Part 2 ; off site prefabricated
 2 ; DW/144:2013 medium pressure Class "B" ; BS 1449, Part 2 ; Grade ? ; ? finish ; EN 10088 Part 2 ; off site prefabricated
 3 ; DW/144:2013 high pressure Class "C" ; BS 1449, Part 2 ; Grade ? ; ? finish ; EN 10088 Part 2 ; off site prefabricated
 4 ; DW/144:2013 high pressure Class "D" ; BS 1449, Part 2 ; Grade ? ; ? finish ; EN 10088 Part 2 ; off site prefabricated

1 [rectangular ducts] (SM.xvii(f)2)
 1 ? thick ; rectangular ducts
 1 ; fixed to walls and columns
 2 ; suspended from soffits

1 duct size m2
 1 not exceeding 400
 2 400 - 600
 3 600 - 800
 4 800 - 1000
 5 1000 - 1250
 6 1250 - 1600
 7 1600 - 2000
 8 2000 - 2500
 9 2500 - 3000 maximum
 1 (longer side)

2 extract hoods
 1 ; galvanised steel
 2 ; stainless steel Grade 304 ; satin finish
 3 ; aluminium

1 extract hoods
 1 ; ceiling mounted
 1 ; fixed independent of ductwork, make-up air grilles ; lighting fittings, grease filters

1 ? thick ; overall size ? x ? x ? nr

FIRST DIVISION

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FOURTH DIVISION

- 4 ; wired glass
- 5 ; polyester resin-bonded glass fibre
- 6 ; PVC

- 2 ; fixed make-up ductwork ; complete with air grilles ; lighting fittings, grease filters

3	[ancillaries] (SM.xvii(f)5)	1	[dampers]	1	? x ?	nr
1	dampers ; galvanised mild steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators	1	volume control dampers ; aerofoil, double skin, opposed blade low leakage type ; approved or accepted by FSD	2	to suit ? x ? rectangular ducts	nr
2	dampers ; stainless steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators	2	multi-leaf dampers ; two plates			
		3	multi-leaf dampers ; single plate			
		4	fire or smoke dampers ; single-bladed ; ? hour fire rated ; approved or accepted by FSD			
		5	fire or smoke dampers ; multi-bladed ; ? hour fire rated ; approved or accepted by FSD			
3	grilles ; steel, stove-enamelled finish					
4	grilles ; aluminium	2	[registers and grilles]	1	? x ?	nr
5	grilles ; PVC	1	exhaust air grilles			
6	ductwork silencers ; galvanised steel inorganic mineral acoustic filler (SM.xvii(f)1)	1	; complete with two adjustable louvres ; opposed blade multi-leaf dampers			
		2	; complete with single louvre ; opposed blade multi-leaf dampers			
		3	[silencers]	1	silencers ; ? long (ref. ?)	nr
		1	silencers ; to rectangular ducts			
		2	silencers ; manifolded ; to rectangular ducts			
4	ventilating fans ; galvanised steel / aluminium alloy casings ; all accessories and mountings (SM.xvii(b)4)	1	ventilating fans ; ? type	1	air volume flow rate ? m3/s ; static pressure ? kPa (ref. ?)	nr
1	; complying statutory noise limit					
11	CAR PARKING EXTRACTION SYSTEM	1	[rectangular ducts] (SM.xvii(f)2)	1	duct size	m2
1	; internally	1	? thick ; rectangular ducts	1	not exceeding 400	
2	; in plant room	1	; fixed to walls and columns	2	400 - 600	
3	; externally	2	; suspended from soffits	3	600 - 800	
				4	800 - 1000	
				5	1000 - 1250	
				6	1250 - 1600	
				7	1600 - 2000	
				8	2000 - 2500	
				9	2500 - 3000 maximum	
				1	(longer side)	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	DX51D+Z, coating type Z275 ; off site prefabricated	2 [circular ducts] (SM.xvii(f)3)	1 ? diameter	m
4	; DW/144:2013 high pressure Class "D" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated	1 ? thick ; spirally-wound circular ducts		
		2 ? thick ; straight-seamed circular ducts		
		1 ; fixed to walls and columns		
		2 ; suspended from soffits		
		3 extra over ? thick [circular ducts] (SM.xvii(f)4)	1 [circular ductwork fittings]	nr
		1 spirally-wound circular ducts for	1 ? bends	
		2 straight-seamed circular ducts for	2 ? branches	
			3 ? tapers	
			4 ? offsets	
			5 ? tees	
			6 ? blank ends	
2	[ancillaries] (SM.xvii(f)5)	1 [dampers]	1 ? x ?	nr
1	dampers ; galvanised mild steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators	1 volumn control dampers ; aerofoil, double skin, opposed blade low leakage type ; approved or accepted by FSD	2 to suit ? x ? rectangular ducts	nr
2	dampers ; stainless steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators	2 fire or smoke dampers ; single-bladed ; ? hour fire rated ; approved or accepted by FSD	3 to suit ? diameter circular ducts	nr
3	grilles ; steel, stove-enamelled finish	2 [registers and grilles]	1 ? x ?	nr
4	grilles ; aluminium	1 exhaust air grilles	2 ? diameter	nr
5	grilles ; PVC	1 ; complete with two adjustable louvres ; opposed blade multi-leaf dampers		
6	galvanised steel mesh bird wires ; complete with all necessary framings (SM.xvii(f)5.12)	2 ; complete with single louvre ; opposed blade multi-leaf dampers		
7	ductwork silencers ; galvanised steel inorganic mineral acoustic filler (SM.xvii(f)1)	3 [bird wire mesh]	1 to suit ? x ? grilles	nr
		1 10 wire mesh	2 to suit ? x ? ducts	nr
			3 to suit ? diameter ducts	nr
			4 to suit ? x ? louvres	nr
		4 [silencers]	1 silencers ; ? long (ref. ?)	nr
		1 silencers ; to rectangular ducts		
		2 silencers ; to circular ducts		
		3 silencers ; manifolded ; to rectangular ducts		
		4 silencers ; manifolded ; to circular ducts		

AC - AIR CONDITIONING INSTALLATION

FIRST DIVISION

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	3	fire-rated enclosure ; complying Fire Safety Code ; complete with all necessary framings	1	? hour fire-resistant-period enclosure ; BS 476-20:1987	1	to rectangular ducts	m2	
					2	to ? diameter ducts	m	
	4	ventilating fans ; galvanised steel / aluminium alloy casings ; all accessories and mountings (SM.xvii(b)4) 1 ; complying statutory noise limit	1	ventilating fans ; ? type	1	air volume flow rate ? m3/s ; static pressure ? kPa (ref. ?)	nr	
12	DESIGN, SUPPLY AND INSTALL SMOKE EXTRACTION SYSTEM	1	hot-dipped galvanised steel sheet ductwork and fittings	1	[rectangular ducts] (SM.xvii(f)2)	1	duct size	m2
	1 ; internally	1	; DW/144:2013 low pressure Class "A" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated	1	? thick ; rectangular ducts	1	not exceeding 400	
	2 ; in plant room	2	; DW/144:2013 medium pressure Class "B" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated	2	? thick ; rectangular transfer ducts	2	400 - 600	
	3 ; externally	3	; DW/144:2013 high pressure Class "C" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated	1	; fixed to walls and columns	3	600 - 800	
		4	; DW/144:2013 high pressure Class "D" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated	2	; suspended from soffits	4	800 - 1000	
						5	1000 - 1250	
						6	1250 - 1600	
						7	1600 - 2000	
						8	2000 - 2500	
						9	2500 - 3000 maximum	
						1	(longer side)	
				2	[circular ducts] (SM.xvii(f)3)	1	? diameter	m
				1	? thick ; spirally-wound circular ducts			
				2	? thick ; straight-seamed circular ducts			
				1	; fixed to walls and columns			
				2	; suspended from soffits			
				3	extra over ? thick [circular ducts] (SM.xvii(f)4)	1	[circular ductwork fittings]	nr
				1	spirally-wound circular ducts for	1	? bends	
				2	straight-seamed circular ducts for	2	? branches	
						3	? tapers	
						4	? offsets	
						5	? tees	
						6	? blank ends	
	2	[ancillaries] (SM.xvii(f)5)	1	[dampers]	1	? x ?	nr	
	1	dampers ; galvanised mild steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators	1	volume control dampers ; aerofoil, double skin, opposed blade low leakage type ; approved or accepted by FSD	2	to suit ? x ? rectangular ducts	nr	
	2	dampers ; stainless steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN	2	fire or smoke dampers ; single-bladed ; ? hour fire rated ; approved or accepted by FSD	3	to suit ? diameter circular ducts	nr	
			3	fire or smoke dampers ; multi-bladed ; ? hour fire rated ; approved or accepted by FSD				

FIRST DIVISION

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	1751:2014 ; padlocking facilities ; position indicators	4	combined fire and smoke stop dampers ; aerofoil bladed ; ? hour fire rated ; temperature exposure tested ; replaceable thermal actuator and fusible link ; electric motor actuated ; FSD approved		
3	grilles ; steel, stove-enamelled finish				
4	grilles ; aluminium				
5	grilles ; PVC				
6	diffusers ; steel, stove-enamelled finish ; pan type ; complete with volume control dampers				
7	diffusers ; steel, stove-enamelled finish ; cone type ; complete with volume control dampers	2	[registers and grilles]	1	? x ? nr
8	diffusers ; aluminium ; pan type ; complete with volume control dampers	1	exhaust air grilles	2	? diameter nr
9	diffusers ; aluminium ; cone type ; complete with volume control dampers	1	; complete with two adjustable louvres ; opposed blade multi-leaf dampers		
10	galvanised steel mesh bird wires ; complete with all necessary framings (SM.xvii(f)5.12)	2	; complete with single louvre ; opposed blade multi-leaf dampers		
11	ductwork silencers ; galvanised steel inorganic mineral acoustic filler (SM.xvii(f)1)	3	[diffusers]	1	? x ? nr
		1	supply air diffusers	2	? diameter nr
				3	to suit ? m3/s designed air volume flow rate nr
		4	[bird wire mesh]	1	to suit ? x ? grilles nr
		1	10 wire mesh	2	to suit ? x ? ducts nr
				3	to suit ? diameter ducts nr
				4	to suit ? x ? louvres nr
		5	[silencers]	1	silencers ; ? long (ref. ?) nr
		1	silencers ; to rectangular ducts		
		2	silencers ; to circular ducts		
		3	silencers ; manifolded ; to rectangular ducts		
		4	silencers ; manifolded ; to circular ducts		
3	fire-rated enclosure ; complying Fire Safety Code ; complete with all necessary framings	1	? hour fire-resistant-period enclosure ; BS 476-20:1987	1	to rectangular ducts m2
				2	to ? diameter ducts m
4	ventilating fans ; galvanised steel / aluminium alloy casings ; all accessories and mountings (SM.xvii(b)4)	1	ventilating fans ; ? type	1	air volume flow rate ? m3/s ; static pressure ? kPa (ref. ?) nr
1	; complying statutory noise limit	1	; ? hour fire rated		
		1	; coated with finishing materials capable of withstanding exposure to temperature of 250 degrees Celsius for one (1) hour		
		1	; 1 hour (minimum) fire rated enclosure		

AC - AIR CONDITIONING INSTALLATION

FIRST DIVISION

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13 FUME EXTRACTION SYSTEM
 1 ; internally
 2 ; in plant room
 3 ; externally

1 plastic ductwork and fittings
 1 ; DW/154:2000 ; ISO 6453:1985 ; off site prefabricated

1 [circular ducts] (SM.xvii(f)3)
 1 ? thick ; circular ducts
 1 ; fixed to walls and columns
 2 ; suspended from soffits

1 ? diameter m

2 extra over ? thick [circular ducts] (SM.xvii(f)4)
 1 circular ducts for

1 [circular ductwork fittings] nr
 1 ? bends
 2 ? branches
 3 ? tapers
 4 ? offsets
 5 ? tees
 6 ? blank ends

2 [ancillaries] (SM.xvii(f)5)
 1 dampers ; galvanised mild steel ; DM/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators
 2 dampers ; stainless steel ; DM/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators
 3 grilles ; steel, stove-enamelled finish
 4 grilles ; aluminium
 5 grilles ; PVC
 6 gas filters ; heavy duty airtight factory fabrication, robust enclosure, holding frames and housing
 7 ductwork silencers ; galvanised steel inorganic mineral acoustic filler (SM.xvii(f)1)

1 [dampers]
 1 volume control dampers ; aerofoil, double skin, opposed blade low leakage type ; approved or accepted by FSD
 2 self-closing dampers ; complete with resilient strips

1 to suit ? diameter circular ducts nr

2 [registers and grilles]
 1 exhaust air grilles
 1 ; complete with two adjustable louvres ; opposed blade multi-leaf dampers
 2 ; complete with single louvre ; opposed blade multi-leaf dampers

1 ? diameter nr

3 [filters]
 1 ? thick
 1 ; gas filters ; module banks

4 [silencers]
 1 silencers ; to circular ducts
 2 silencers ; manifolded ; to circular ducts

1 silencers ; ? long (ref. ?) nr

3 ventilating fans ; galvanised steel / aluminium alloy casings ; all accessories and mountings (SM.xvii(b)4)
 1 ; complying statutory noise limit

1 ventilating fans ; ? type

1 air volume flow rate ? m3/s ; static pressure ? kPa (ref. ?) nr

14 DESIGN, SUPPLY AND INSTALL OF PRESSURIZATION OF STAIRCASES SYSTEM
 1 ; internally

1 hot-dipped galvanised steel sheet ductwork and fittings
 1 ; DW/144:2013 low pressure Class "A" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site

1 [rectangular ducts] (SM.xvii(f)2)
 1 ? thick ; rectangular ducts
 1 ; fixed to walls and columns
 2 ; suspended from soffits

1 ducts size m2
 1 not exceeding 400
 2 400 - 600
 3 600 - 800
 4 800 - 1000

FIRST DIVISION

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	prefabricated		5	1000 - 1250	
2	; DW/144:2013 medium pressure Class "B" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated		6	1250 - 1600	
			7	1600 - 2000	
3	; DW/144:2013 high pressure Class "C" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated		8	2000 - 2500	
			9	2500 - 3000 maximum	
			1	(longer side)	

		2	[circular ducts] (SM.xvii(f)3)	1	? diameter m
4	; DW/144:2013 high pressure Class "D" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated	1	? thick ; spirally-wound circular ducts		
		2	? thick ; straight-seamed circular ducts		
		1	; fixed to walls and columns		
		2	; suspended from soffits		

		3	extra over ? thick [circular ducts] (SM.xvii(f)4)	1	[circular ductwork fittings] nr
		1	spirally-wound circular ducts for	1	? bends
		2	straight-seamed circular ducts for	2	? branches
				3	? tapers
				4	? offsets
				5	? tees
				6	? blank ends

2	[ancillaries] (SM.xvii(f)5)	1	[dampers]	1	? x ? nr
1	dampers ; galvanised mild steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators	1	volume control dampers ; aerofoil, double skin, opposed blade low leakage type ; approved or accepted by FSD	2	to suit ? x ? rectangular ducts nr
		2	self-closing dampers ; complete with resilient strips	3	to suit ? diameter circular ducts nr
2	dampers ; stainless steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators	3	fire or smoke dampers ; single-bladed ; ? hour fire rated ; approved or accepted by FSD		
		4	fire or smoke dampers ; multi-bladed ; ? hour fire rated ; approved or accepted by FSD		
3	grilles ; steel, stove-enamelled finish	5	combined fire and smoke stop dampers ; aerofoil bladed ; ? hour fire rated ; temperature exposure tested ; replaceable thermal actuator and fusible link		
4	grilles ; aluminium	6	pressure relief dampers		
5	grilles ; PVC	7	motorised pressure relief dampers		
6	galvanised steel mesh bird wires ; complete with all necessary framings (SM.xvii(f)5.12)				
7	ductwork silencers ; galvanised steel inorganic mineral acoustic filler (SM.xvii(f)1)				

		2	[registers and grilles]	1	? x ? nr
		1	exhaust air grilles	2	? diameter nr
		1	; complete with two adjustable louvres ; opposed blade multi-leaf dampers		
		2	; complete with single louvre ;		

FIRST DIVISION

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opposed blade multi-leaf dampers

			3	[bird wire mesh] 1 10 wire mesh		1	to suit ? x ? grilles	nr	
						2	to suit ? x ? ducts	nr	
						3	to suit ? diameter ducts	nr	
						4	to suit ? x ? louvres	nr	
			4	[silencers] 1 silencers ; to rectangular ducts 2 silencers ; to circular ducts 3 silencers ; manifolded ; to rectangular ducts 4 silencers ; manifolded ; to circular ducts		1	silencers ; ? long (ref. ?)	nr	
		3	fire-rated enclosure ; complying Fire Safety Code ; complete with all necessary framings	1	? hour fire-resistant-period enclosure ; BS 476-20:1987	1	to rectangular ducts	m2	
						2	to ? diameter ducts	m	
		4	ventilating fans ; galvanised steel / aluminium alloy casings ; all accessories and mountings (SM.xvii(b)4) 1 ; complying statutory noise limit	1	ventilating fans ; ? type 1 ; ? hour fire rated 1 ; coated with finishing materials capable of withstanding exposure to temperature of 250 degrees Celsius for one (1) hour 1 ; ? hour fire rated enclosure	1	air volume flow rate ? m3/s ; static pressure ? kPa (ref. ?)	nr	
15	AIR CONDITIONING SYSTEM 1 ; internally 2 ; in plant room 3 ; externally	1	hot-dipped galvanised steel sheet ductwork and fittings 1 ; DW/144:2013 low pressure Class "A" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 2 ; DW/144:2013 medium pressure Class "B" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 3 ; DW/144:2013 high pressure Class "C" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 4 ; DW/144:2013 high pressure Class "D" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 1 ; off site prefabricated 2 ; insulated externally (insulation measured separately) 3 ; preinsulated with ? thick closed cell elastomeric rubber insulation ; ? kg/m3 density ;	1	[rectangular ducts] (SM.xvii(f)2) 1 ? thick ; rectangular ducts 1 ; fixed to walls and columns 2 ; suspended from soffits	1	duct size 1 not exceeding 400 2 400 - 600 3 600 - 800 4 800 - 1000 5 1000 - 1250 6 1250 - 1600 7 1600 - 2000 8 2000 - 2500 9 2500 - 3000 maximum 1 (longer side)	m2	
					2	[circular ducts] (SM.xvii(f)3) 1 ? thick ; spirally-wound circular ducts 2 ? thick ; straight-seamed circular ducts 1 ; fixed to walls and columns 2 ; suspended from soffits	1	? diameter	m

FIRST DIVISION

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FOURTH DIVISION

	Class "O" fire rating ; built-in vapour barriers	3 [oval ducts] (SM.xvii(f)3)	1 ? x ?	m
4	; preinsulated with ? thick CFC & HCFC free phenolic foam board insulation ; ? kg/m3 density ; Class "O" fire rating ; built-in vapour barriers	1 ? thick ; spirally-wound oval ducts 2 ? thick ; straight-seamed oval ducts 1 ; fixed to walls and columns 2 ; suspended from soffits		
5	; preinsulated with ? thick ? insulation ; ? kg/m3 density ; Class "O" fire rating ; built-in vapour barriers	4 extra over ? thick [circular ducts] (SM.xvii(f)4) 1 spirally-wound circular ducts for 2 straight-seamed circular ducts for	1 [circular ductwork fittings] 1 ? bends 2 ? branches 3 ? tapers 4 ? offsets 5 ? tees 6 ? blank ends 7 ? angle duct flanges	nr
6	; lined internally with approved acoustic lining materials ; insulated externally (insulation measured separately)			
1	; covered with ? thick galvanised steel cladding ; all adhered and fixed on ductwork and fitting in factory	5 extra over ? thick [oval ducts] (SM.xvii(f)4) 1 spirally-wound oval ducts for 2 straight-seamed oval ducts for	1 [oval duct fittings] 1 ? x ? bends 2 ? x ? branches 3 ? x ? tapers 4 ? x ? transformations ; to circular 5 ? x ? offsets 6 ? x ? blank ends 7 ? x ? angle duct flanges	nr
2	; covered with ? thick hammer finish aluminium cladding ; all adhered and fixed on ductwork and fitting in factory			
2	flexible ductwork ; BS 476-12:1991 Rating Class P ; BS 476-6:1989+A1:2009 performance index not exceeding 12 ; Part 7 Class 1 ; tear-resistant fabric liner and cover ; impregnated and coated with plastics (SM.xvii(f)6)	1 flexible ducts ; fixed to rigid ductwork or equipment spigots	1 ? diameter 1 ; not exceeding 0.50m long 2 ; 0.50 - 1.00m long 3 ; 1.00 - 1.50m long 4 ; 1.50 - 2.00m long maximum	nr
3	flexible ductwork ; BS 476-12:1991 Rating Class P ; BS 476-6:1989+A1:2009 performance index not exceeding 12 ; Part 7 Class 1 ; flexible corrugated (SM.xvii(f)6) 1 ; stainless steel 2 ; aluminium 3 ; tin plated steel 4 ; aluminium coated steel 1 ; tubing coated with plastic materials			
4	[ancillaries] (SM.xvii(f)5) 1 galvanised mild steel plenum boxes ; factory fabricated ; complete with appropriate insulation (SM.xvii(f)5.3)	1 [plenum boxes] 1 plenum boxes	1 ? x ? 2 size ? x ? x ? 3 to suit external louvres ; ? x ?	nr nr nr

FIRST DIVISION

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THIRD DIVISION

FOURTH DIVISION

	fabrication, robust enclosure and holding frames	5	[filters]	1	? x ?	nr
18	gas filters ; heavy duty airtight factory fabrication, robust enclosure, holding frames and housing	1	? thick	1		
19	automatic recleanable filters ; heavy duty airtight factory fabrication, robust enclosure, holding frames and housing	2		2		
20	automatic recleanable HEPA filters ; heavy duty airtight factory fabrication, robust enclosure, holding frames and housing	3		3		
21	additional filter ; as described in Section C1.21 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation	4		4		
22	additional filter media ; as described in Section C1.21 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation	5		5		
23	cleaning detergent for washable type filters ; as described in Section C1.21 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation	6		6		
24	fluid for viscous type filters ; as described in Section C1.21 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation	7		7		
25	activated oxygen air purifiers ; Electro-magnetic Compatibility (EMC) compliance ; UL 867:2011	8		8		
26	ultra-violet sterilizing lights ; UV tubes ; tube fitting set ; electric supply unit and monitoring unit ; UL 153:2014 and UL 1598:2008	9		9		
27	washing facilities for washable filters ; filter cleaning tank ; 1 thick (minimum) stainless steel AISI 316 ; duplicate cleaning tanks ; complete with 18 diameter drain cock and external handles (SM.xvii(b)7)	10		10		
28	galvanised steel mesh bird wires ; complete with all necessary framings (SM.xvii(f)5.12)	11		11		
		12		12		
		13		13		
		14		14		
		1		1		

FIRST DIVISION

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29 ductwork silencers ; galvanised steel inorganic mineral acoustic filler (SM.xvii(f)1)
 30 spare filters ; as described in Section B1.1.3 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation

2 ; for use by Employer's operation staff during Maintenance Period [for disposable type filters, washable type filters and gas filters]
 3 ; for replacement of used filters before end of Maintenance Period [for all filter types]
 4 ; for handing over to Supervising Officer at expiry of Maintenance Period

6	[filter media]	1	to suit ? x ? filters	nr
	1 renewable panel filter media			
	2 automatic fabric roll filter media			
	3 automatic recleanable filter media			
	4 automatic recleanable HEPA filter media			
	1 ; for use by Employer's operation staff during Maintenance Period			
7	cleaning detergent packs	1	10 litres per washable filter installation	item
	1 ; for use by Employer's operation staff during Maintenance Period			
	2 ; provided before end of Maintenance Period			
8	fluid packs ; recommended by filter manufacturer	1	sufficient for one complete change	item
	1 ; for use by Employer's operation staff during Maintenance Period			
	2 ; provided before end of Maintenance Period			
9	[activated oxygen air purifiers] (SM.xvii(b)10)	1	? x ? ; suitable for duct mounting	nr
	1 activated oxygen air purifiers ; factory fabricated and assembled ; screw-in electrode, power generator, control device and unit ; switches ; support brackets and stiffeners			
10	[ultra-violet sterilizing lights] (SM.xvii(b)10)	1	? x ?	nr
	1 ultra-violet sterilizing lights ; emitter tube, power generator,			

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THIRD DIVISION

FOURTH DIVISION

built-in regulators

		11	[filter cleaning tank] 1 filter duplicate cleaning tank sets	1	? x ? x 400 nr
		12	[bird wire mesh] 1 10 wire mesh	1 2 3 4	to suit ? x ? grilles to suit ? x ? ducts to suit ? diameter ducts to suit ? x ? louvres nr nr nr nr
		13	[silencers] 1 silencers ; to rectangular ducts 2 silencers ; to circular ducts 3 silencers ; manifolded ; to rectangular ducts 4 silencers ; manifolded ; to circular ducts	1	silencers ; ? long (ref. ?) nr
5	[duct insulation] (SM.xvii(g)6-8) 1 flexible fibre glass insulation ; minimum ? kg/m3 density ; aluminium foil vapour barrier ; securing to ductwork with metal or nylon pins and clips 2 CFC and HCFC free phenolic foam board insulation ; ? kg/m3 density ; Class "0" fire rating ; factory applied double sided reinforced foil vapour barrier ; fixing with approved adhesive 3 polystyrene insulation ; rigid preformed section ; non-self combustible ; ? thick vapour barrier ; fixing with approved adhesive	1 2 3 4	? thick ; fixing externally to rectangular ductwork (SM.xvii(g)6) ? thick ; fixing externally to circular ductwork (SM.xvii(g)7) ? thick ; fixing externally to oval ductwork (SM.xvii(g)7) extra over ? thick insulation to circular ducts for (SM.xvii(g)8)	1	generally ? diameter ? x ? [circular ductwork fittings] 1 ? bends 2 ? branches 3 ? tapers 4 ? offsets 5 ? tees 6 ? blank ends 7 ? angle duct flanges m2 m m nr
		5	extra over ? thick insulation to oval ducts for	1	[oval duct fittings] 1 ? x ? bends 2 ? x ? branches 3 ? x ? tapers 4 ? x ? transformations ; to circular 5 ? x ? offsets 6 ? x ? blank ends 7 ? x ? angle duct flanges nr

FIRST DIVISION

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6	protective coverings and finishings [to ductwork insulation] (SM.xvii(h)6-8)	1	? thick ; fixing to ? thick insulation for	1	rectangular ductwork (SM.xvii(h)6)	m2	
	1 ; hammer finish aluminium cladding to CFC and HCFC free phenolic foam insulation		2		? diameter circular ductwork (SM.xvii(h)7)	m	
	2 ; hammer finish aluminium cladding to flexible fibre glass insulation		3		? x ? oval ductwork (SM.xvii(h)7)	m	
	3 ; galvanised steel cladding to CFC and HCFC free phenolic foam insulation		2	extra over ? thick protective coverings and finishings to ? thick circular ductwork fittings insulation for (SM.xvii(h)8)	1	[circular ductwork fittings]	nr
	4 ; galvanised steel cladding to flexible fibre glass insulation			1	? bends		
5 ; galvanised iron wire netting ; cement plastering and painting to polystyrene insulation			2	? branches			
			3	? tapers			
			4	? offsets			
			5	? tees			
			6	? blank ends			
			7	? angle duct flanges			
		3	extra over ? thick protective coverings and finishings to ? thick oval ductwork fittings insulation for (SM.xvii(h)8)	1	[oval duct fittings]	nr	
			1		? x ? bends		
				2	? x ? branches		
				3	? x ? tapers		
				4	? x ? transformations ; to circular		
				5	? x ? offsets		
				6	? x ? blank ends		
				7	? x ? angle duct flanges		
7	[acoustic insulation] (SM.xvii(g)6-8)	1	[acoustic insulation to ductwork]	1	rectangular ducts	m2	
	1 acoustic ductlag to ASTM E-90 ; 5 kg/m2 surface weight lead sheet/24 kg/m3 density glass fibre ; factory applied aluminium vapour barrier jacket		1		? thick ; fixing externally to	2	? diameter circular ducts
	2 acoustic ductlag to ASTM E-90 ; barium loaded vinyl sheet/24 kg/m3 density glass fibre ; factory applied aluminium vapour barrier jacket			3	? x ? oval ducts	m	
		2	extra over ? thick acoustic insulation to circular ducts for (SM.xvii(g)8)	1	[circular ductwork fittings]	nr	
			1		? bends		
				2	? branches		
				3	? tapers		
				4	? offsets		
				5	? tees		
				6	? blank ends		
				7	? angle duct flanges		
		3	extra over ? thick acoustic insulation to oval ducts for	1	[oval duct fittings]	nr	
			1		? x ? bends		
				2	? x ? branches		
				3	? x ? tapers		
				4	? x ? transformations ; to circular		
				5	? x ? offsets		
				6	? x ? blank ends		
				7	? x ? angle duct flanges		

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8	fire-rated enclosure ; complying Fire Safety Code ; complete with all necessary framings	1	? hour fire-resistant-period enclosure ; BS 476-20:1987	1	to rectangular ducts	m2
				2	to ? diameter ducts	m
				3	to ? x ? oval ducts	m
9	air handling units (AHUs) ; ISO 9001:2008/Corr 1:2009 'type' tested ; with all components from one manufacturer ; including fans, coils, steam humidifiers, access doors, air filters, thermal and acoustic insulation (SM.xvii(b)3) 1 ; galvanised steel casing 2 ; aluminium alloy casing [with UV application] 3 ; stainless steel 304 casing [with UV application]	1	[air handling unit] 1 air handling units (AHU) ; rigid double skin fully modular construction 2 fresh air handling unit (FAU) 3 primary air handling unit (PAU) 1 ; ? type 2 ; floor mounted 3 ; ceiling mounted 4 ; outdoor applications, factory applied anti-corrosion treatment 5 ; indoor applications, anti-corrosion treatment	1	supply air volume flow rate ? m3/s 1 ; total cooling capacity ? kW 2 ; total cooling capacity ? kW ; total heating capacity ? kW 1 (ref. ?) 2 ; humidification capacity ? kg/hr steam (ref. ?)	nr
10	[terminal units] (SM.xvii(b)10) 1 variable air volume (VAV) terminal units ; pneumatic controlled 2 variable air volume (VAV) terminal units ; electronic controlled 3 variable air volume (VAV) terminal units ; DDC controlled 4 constant air volume (CAV) terminal units 1 ; factory fabricated and tested ; all necessary components ; galvanised steel casings and mountings ; thermal and acoustic insulations	1	[terminal units] 1 single duct variable air volume (VAV) terminal units 2 dual duct variable air volume (VAV) terminal units 3 single duct constant air volume (CAV) terminal units 4 dual duct constant air volume (CAV) terminal units 1 ; ceiling mounted 2 ; complete with heaters ; ceiling mounted	1	VAV terminal units 2 CAV terminal units For nos 1 to 2 above 1 ; ? [state number of inlets] inlets 1 (ref. ?) 2 ; total heating capacity ? kW (ref. ?)	nr nr
11	fan coil units (FCU) ; to ISO 9001:2008/Corr 1:2009 ; complete with fans, air filters, coils, motors, electric heater [if required], stainless steel / plastics / reinforced glass fibre / corrosion resistant drain pans ; all necessary components (SM.xvii(b)10) 1 ; galvanised steel casings and mountings ; thermal and acoustic insulation	1	fan coil units (FCU) 1 ; cooling 2 ; cooling and heating 3 ; cassette type 1 ; ceiling mounted 2 ; wall mounted 3 ; floor mounted 4 ; exposed type	1	supply air volume flow rate ? m3/s ; total cooling capacity ? kW 1 (ref. ?) 2 ; total heating capacity ? kW (ref. ?)	nr
12	ventilating fans ; galvanised steel / aluminium alloy casings ; all accessories and mountings as required (SM.xvii(b)4) 1 ; complying statutory noise limit	1	ventilating fans ; ? type	1	air volume flow rate ? m3/s ; static pressure ? kPa (ref. ?)	nr

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	13	[dehumidifiers] (SM.xvii(b)10)	1	dehumidifiers	1	flow rate ? kg/hour (ref. ?)	nr
	1	wheel type desiccant dehumidifiers ; complete with rotors, ? [electric or gas] type reactivation heater, process air fans, reactivation fans, process air prefilters, reactivation air prefilters, control panels and built-in direct digital controller ; all necessary components ; sheet steel casings and safety devices					
	2	liquid type desiccant dehumidifiers ; weatherproof design ; collection section, heat pumping section and regeneration section ; all necessary components					
16	UNITARY AIR CONDITIONING SYSTEM ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 [pipework] (SM.xvii(d)2)	1	pipework and fittings [VRV system]	1	liquid refrigerant pipes	m
		1 copper pipes, BS EN 1057:2006+A1:2010 (light gauge) ; fittings, ISO 2016:1981 or BS EN 6708:1996 and ISO 7268:1983/Amd1:1984 (BS EN 1254-1 to BS EN 1254-4)	1	; between VRV condensing unit (ref. ?) and ? nr. direct expansion units (ref. ?)	2	suction pipes	m
		2 copper pipes, BS EN 12735-1:2010 ; fittings, ASME B16.22	2	pipework and fittings			
		3 copper pipes, BS EN 12735-2:2010 ; fittings, ASME B16.22	1	; between condensing unit (ref. ?) and direct expansion unit (ref. ?)			
		4 copper pipes, BS EN 12735-1:2010 ; fittings, ISO 7005-1:2011, ISO 7005-2:1988 and ISO 7005-3:1988	1	; fixed to walls and columns			
		5 copper pipes, BS EN 12735-2:2010 ; fittings, ISO 7005-1:2011, ISO 7005-2:1988 and ISO 7005-3:1988	2	; suspended from soffits			
		6 Black extra heavy seamless steel pipes, BS EN 10216-1:2002 grade 1.0255 ; fittings, ISO 7005-1:2011, ISO 7005-2:1988 and ISO 7005-3:1988					
		1 ; capillary or compressed type joints ; off-site pre-fabricated metal mounting and fixing brackets					
		2 ; welded joints ; off-site pre-fabricated metal mounting and fixing brackets					
		3 ; flanged joints ; off-site pre-fabricated metal mounting and fixing brackets					
	2	CFC free flexible closed cell elastomeric insulation ; 65 kg/m3 density ; Class "O" fire rating ;	1	? thick [VRV system]	1	liquid refrigerant pipes	m
			1	; fixing externally to pipework and fittings	2	suction pipes	m

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	factory applied talc coating / on-site applied talc coating on inner surface ; vapour barrier sealed ; fixing with approved adhesive (SM.xvii(g)2)		1 ; between VRV condensing unit (ref. ?) and ? nr. direct expansion units (ref. ?)		
	1 ; protection finish coats recommended by manufacturer		2 ? thick		
			1 ; fixing externally to pipework and fittings		
			1 ; between condensing unit (ref. ?) and direct expansion unit (ref. ?)		
3	protective coverings and finishing [to pipework] (SM.xvii(h)2)	1	? thick ; fixing to ? thick insulation for	1	liquid refrigerant pipes m
	1 ; recommended by manufacturer			2	suction pipes m
4	split packaged unit (SM.xvii(b)10)	1	direct expansion units	1	total cooling capacity ? kW nr
	1 ; direct expansion units ; complete with cooling coils, valves, blowers, air filters, galvanised steel painted casings and insulations		1 ; ceiling mounted	1	(ref. ?)
			2 ; wall mounted	2	; total heating capacity ? kW (ref. ?)
	2 ; air cooled condensing units ; complete with compressors, condensing coils, fans and motors control, safety devices, piping and all necessary accessories; factory assembled galvanised steel painted weatherproof casings		3 ; floor mounted		
	1 ; complying statutory noise limit	2	air cooled condensing units	1	to match direct expansion unit (ref. ?) nr
5	variable refrigerant volume (VRV) system ; multi-zone modular split type ; each zone with one air-cooled outdoor condensing unit and a group of fan coil units ; all necessary components and adequate insulations (SM.xvii(b)10)	1	direct expansion units	1	total cooling capacity ? kW nr
	1 ; direct expansion units		1 ; reverse cycle	1	(ref. ?)
	2 ; air cooled condensing units		1 ; ceiling mounted	2	; total heating capacity ? kW (ref. ?)
	1 ; frequency inverted control		2 ; wall mounted		
	1 ; complying statutory noise limit		3 ; floor mounted		
6	single packaged air-conditioner (SM.xvii(b)10)	1	single package air conditioner ; self-contained type	1	total cooling capacity ? kW nr
	1 ; rotary compressors			1	(ref. ?)
	2 ; scroll compressors			2	; total heating capacity ? kW (ref. ?)
	3 ; reciprocating compressors				
	1 ; condenser coil ; condenser fan and motor ; direct expansion cooling coil ; blower ; air				

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filter ; drier ; weather-proof
galvanised sheet steel painted
casing ; all factory wired
controls, factory assembled
components and piping ; safety
devices ; adequate insulation

7	hot-dipped galvanised steel sheet ductwork and fittings	1	[rectangular ducts] (SM.xvii(f)2)	1	duct size	m2
1	; DW/144:2013 low pressure Class "A" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated	1	? thick ; rectangular ducts	1	not exceeding 400	
2	; DW/144:2013 medium pressure Class "B" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated	1	; fixed to walls and columns	2	400 - 600	
3	; DW/144:2013 high pressure Class "C" ; BS EN 10346:2009, Grade DX51D+Z, coating type Z275 ; off site prefabricated	2	; suspended from soffits	3	600 - 800	
1	; insulated externally (insulation measured separately)			4	800 - 1000	
2	; preinsulated with ? thick closed cell elastomeric rubber insulation ; ? kg/m3 density ; Class "O" fire rating ; built-in vapour barriers			5	1000 - 1250	
3	; preinsulated with ? thick CFC & HCFC free phenolic foam board insulation ; ? kg/m3 density ; Class "O" fire rating ; built-in vapour barriers	2	[circular ducts] (SM.xviii(f)3)	6	1250 - 1600	
4	; preinsulated with ? thick ? insulation ; ? kg/m3 density ; Class "O" fire rating ; built-in vapour barriers	1	? thick ; spirally-wound circular ducts	7	1600 - 2000	
5	; lined internally with approved acoustic lining materials ; insulated externally (insulation measured separately)	2	? thick ; straight-seamed circular ducts	8	2000 - 2500	
1	; covered with ? thick galvanised steel cladding ; all adhered and fixed on ductwork and fitting in factory	1	; fixed to walls and columns	9	2500 - 3000 maximum	
2	; covered with ? thick hammer finish aluminium cladding ; all adhered and fixed on ductwork and fitting in factory	2	; suspended from soffits	1	(longer side)	
		3	extra over ? thick [circular ducts] (SM.xviii(f)4)			
		1	spirally-wound circular ducts for	1	? diameter	m
		2	straight-seamed circular ducts for			
				1	[circular ductwork fittings]	nr
				1	? bends	
				2	? branches	
				3	? tapers	
				4	? offsets	
				5	? tees	
				6	? blank ends	

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- 8 [ancillaries] (SM.xvii(f)5)
 - 1 dampers ; galvanised mild steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators
 - 2 dampers ; stainless steel ; DW/144:2013 ; CIBSE Commissioning Code Series A and BSRIA Application Guide ; flanged type ; BS EN 1751:2014 ; padlocking facilities ; position indicators
 - 3 grilles ; steel, stove-enamelled finish
 - 4 grilles ; aluminium
 - 5 grilles ; PVC
 - 6 washable panel filters ; heavy duty airtight factory fabrication ; robust enclosure, holding frames and housing

- 1 [dampers]
 - 1 volume control dampers ; aerofoil, double skin, opposed blade low leakage type ; approved or accepted by FSD
 - 2 butterfly dampers ; two plates, edge seamed
 - 3 bifurcating dampers
 - 4 multi-leaf dampers ; two plates
 - 5 multi-leaf dampers ; single plate
 - 6 self-closing dampers ; complete with resilient strips
 - 7 fire or smoke dampers ; single-bladed ; ? hour fire rated ; approved or accepted by FSD
 - 8 fire or smoke dampers ; multi-bladed ; ? hour fire rated ; approved or accepted by FSD
 - 9 combined fire and smoke stop dampers ; aerofoil bladed ; ? hour fire rated ; temperature exposure tested ; replaceable thermal actuator and fusible link
 - 10 motorized shut-off dampers ; ? hour fire rated ; actuated by automatic fire control
 - 11 terminal dampers ; opposed blade type

- 1 ? x ? nr
- 2 to suit ? x ? rectangular ducts nr
- 3 to suit ? diameter circular ducts nr

-
- 2 [registers and grilles]
 - 1 supply air grilles
 - 2 return air grilles
 - 3 transfer air grilles
 - 1 ; complete with two adjustable louvres ; opposed blade multi-leaf dampers
 - 2 ; complete with single louvre ; opposed blade multi-leaf dampers

-
- 1 ? x ? nr
 - 2 ? diameter nr

-
- 3 [filters]
 - 1 ? thick
 - 1 ; washable panel filters and frames ; rolled or extruded

-
- 1 ? x ? nr

-
- 9 [duct insulation] (SM.xvii(g)6-8)
 - 1 flexible fibre glass insulation ; minimum ? kg/m3 density ; aluminium foil vapour barrier ; securing to ductwork with metal or nylon pins and clips
 - 2 CFC and HCFC free phenolic foam

-
- 1 ? thick ; fixing externally to rectangular ductwork (SM.xvii(g)6)
 - 2 ? thick ; fixing externally to circular ductwork (SM.xvii(g)7)

-
- 1 generally m2
 - 1 ? diameter m

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	board insulation ; ? kg/m3 density ; Class "O" fire rating ; factory applied double sided reinforced foil vapour barrier ; fixing with approved adhesive	3	extra over ? thick insulation to circular ducts for (SM.xvii(g)8)	1	[circular ductwork fittings]	nr
	3 polystyrene insulation ; rigid preformed section ; non-self combustible ; ? thick vapour barrier ; fixing with approved adhesive			1	? bends	
				2	? branches	
				3	? tapers	
				4	? offsets	
				5	? tees	
				6	? blank ends	
10	protective coverings and finishings [to ductwork insulation] (SM.xvii(h)6-8)	1	? thick ; fixing to ? thick insulation for	1	rectangular ductwork (SM.xvii(h)6)	m2
	1 ; hammer finish aluminium cladding to CFC and HCFC free phenolic foam insulation			2	? diameter circular ductwork (SM.xvii(h)7)	m
	2 ; hammer finish aluminium cladding to flexible fibre glass insulation	2	extra over ? thick protective coverings and finishings to ? thick circular ductwork fittings insulation for (SM.xvii(h)8)	1	[circular ductwork fittings]	nr
	3 ; galvanised steel cladding CFC and HCFC free phenolic foam insulation			1	? bends	
	4 ; galvanised steel cladding to flexible fibre glass insulation			2	? branches	
	5 ; galvanised iron wire netting ; cement plastering and painting to polystyrene insulation			3	? tapers	
				4	? offsets	
				5	? tees	
				6	? blank ends	
11	design, supply and install maintenance servicing platform ; rigid galvanised mild steel construction ; railings, steel cat ladder and safety wings ; well protected against corrosion	1	servicing platform	1	for unitary air-conditioners ; approximate size ? x ? x ?	nr
17	ELECTRICITY SUPPLY ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	design, supply and install low voltage motor control switchboard (ref. ?) complete with cubicle, interconnecting ancillaries and schematic diagram (SM.xviii(b)1)	1	? A	nr
	1 ; multi-cubicle type ; IEC 61439-1:2011 and IEC 61439-2:2011 ; IP31, floor mounted ; located in plant room ; comprising the following:-		1 horizontally withdrawable type air circuit breakers (ACBs) (SM.xviii(b)1.7)	1	; four poles	
			1 ; IEC 60947-2:2013 ; fully metalclad with earth terminals	2	; TPN	
			1 ; complete with ? D.C. shunt trip coils			
			1 ; electrical and mechanical interlocking devices ; padlocking facilities and keys			
		2	moulded case circuit breakers (MCCBs) (SM.xviii(b)1.7)	1	? A	nr
		1	; IEC 60947-2:2013 ; not less than ? kA breaking capacity	1	; four poles	
		1	; handle lock attachment complete with padlock and three keys	2	; triple poles	
		2	; withdrawn type ; handle lock	3	; double poles	

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	attachment complete with padlock and three keys			
3	3 ; plug-in type ; handle lock attachment complete with padlock and three keys			
3	fuse-switch ; complying Code of Practice for the Electricity (Wiring) Regulations (Cap.406E) (SM.xviii(b)1.14)	1	? A	nr
	1 ; SPN			
	2 ; DPN			
	3 ; TPN			
4	relays (SM.xviii(b)1.19)	1	overload protection	nr
		2	earth leakage protection	nr
5	meter (SM.xviii(b)1.19)	1	digital multifunction power meter 1 ; housed in integrated enclosure, single front access industrial grade	nr
		2	power factor meters	nr
		3	ammeters	nr
		1	complete with ammeter selector switch for phase selection	
		4	voltmeters	nr
		1	complete with voltmeter selector switches for phase selection	
6	current transformers (SM.xviii(b)1.9)	1	? A/5A	nr
	1 ; for ammeters			
	2 ; for protection			
7	HRC fuses (SM.xviii(b)1.10)	1	? A	nr
	1 ; complete with carriers			
8	link ; neutral (SM.xviii(b)1.10)	1	approved type	nr
9	indicating lamps (SM.xviii(b)1.19)	1	indication lamps	nr
	1 ; ? V DC			
	1 ; built-in transformers			
10	busbars ; hard drawn high conductivity	1	? A	nr

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copper ; BS EN 13601:2013,
 electro-tinned
 1 ; TPN
 1 ; enclosed inside motor control
 switchboard

11	motor control switchboard cubicle ; self supporting (SM.xviii(b)1.19) 1 ; steel construction ; back detachable panels, mounting brackets ; cable supports ; durable nameplates and finishes	1	overall size ?m long x ?m wide x ?m high	nr
12	allow for the provision of the following items	1	all interconnecting, control and ancillary wiring for motor control switchboard	item
		2	copper earth bars of ample size including fixings, connections and all necessary earthing and bonding accessories for motor control switchboard	item
		3	anti-condensation heaters and thermostats	item
		4	completion tests and inspection	item
		5	hydraulic operated handling truck for handling air circuit breakers and all necessary accessories	item
		6	set of portable earthing equipment for each main incoming air circuit breaker	item
		7	battery chargers/batteries system 1 ; automatic trickle type battery chargers with manual booster 1 ; nickel-cadmium batteries ; voltmeters ; ammeters 1 ; and battery test facilities ; internal wiring	item
		8	operating handles 1 ; jigs and the like for fixing and removal of the detachable panels and normal charging, closing, opening, racking in and out operation of all circuit breaker complete with brass hooks and fixing boards	item
		9	insulation mats 1 ; on floors in front of and at	item

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				the rear of the motor control cubicle switchboard 1 ; length to suit the switchboard	
				10 complete set of fuses for each rating of fuses in all switch-fuses and fuse-switches complete with fixing wooden board	item

		13	schematic diagram in ? [location]	1 schematic wiring diagram for motor control switchboard mounted on frame with transparent perspex 1 ; fixing adjacent to the motor control switchboard	item

2	moulded case circuit breaker (MCCB) distribution boards (SM.xviii(b)1.15) 1 ; rust proofed sheet metal construction ; IEC 61439-1:2011 / IEC 61439-2:2011 1 ; ingress protection IP41 ; spare ways provision 1 ; busbars ; integral main isolating switches (MCCBs measured separately)	1	MCCB distribution boards 1 ; double-pole 2 ; triple-pole 1 ; rated short circuit withstand current not less than ? kA 1 ; fixed to walls and columns	1 ? way ; ? A 2 blanking plates for spare ways	nr nr

3	busbar chambers (SM.xviii(b)1.18) 1 ; sheet steel 1 ; totally enclosed type 1 ; internal cables and busbar connections to associated control gears and switchgears	1	busbar chambers 1 ; four bars ; for ? number outgoing circuits 1 ; fixed to walls and columns	1 ? A	nr

4	moulded case circuit breakers (MCCBs)	1	MCCBs ; ? pole (SM.xviii(b)1) 1 ; IEC 60947-2:2013, IP30 protection ; rated short circuit breaking capacity not less than ? kA 1 ; facility for padlocking 1 ; fixed in distribution boards 2 ; fixed to walls and columns	1 ? A	nr

5	variable speed drives (VSDs), IEC 60068-2-6:2007, IEC 60068-2-27:2008, IEC 61000-4-2:2008, IEC 61000-4-3:2010, IEC 61000-4-4:2012, IEC 61000-4-5:2014 and ISO 9001:2015	1	for pumps	1 ? kW	nr
		2	for ventilating fans		

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	1 ; housed in integrated enclosure, single front-access 1 ; IP20 minimum protection 2 ; IP54 minimum protection			
6	switches, switchfuses, fuseswitches ; air-break type contacts	1 switches (SM.xviii(b)1.11) 2 switchfuses (SM.xviii(b)1.13) 3 fuseswitches (SM.xviii(b)1.14) For nos 1 to 3 above 1 ; SPN 2 ; TPN 1 ; for MCCB boards ; fixed to walls and columns 2 ; for equipment ; fixed to walls and columns 3 ; for busbar chambers ; fixed to walls and columns	1 ? A	nr
7	automatic power factor correction capacitor 1 ; wall mounting cubicle type 2 ; floor mounting cubicle type	1 capacitor bank, static primary capacitor units, associated equipment	1 ? kVAR	nr
8	contactors ; complying Code of Practice for the Electricity (Wiring) Regulations (Cap.406E) (SM.xviii(b)1.16) 1 ; emergency stops	1 [contactors] (SM.xviii(b)1.16) 1 contactors	1 ? A 1 ; to suit ventilating fans (ref. ?) 2 ; to suit fan coil units (ref. ?)	nr
9	motor starters ; air-break triple-pole electro-magnetic type, IEC 60947-4-1:2009 or IEC 62271-106:2011/CORR 1:2014 (SM.xviii(b)1.17)	1 direct on line (DOL) starters 2 star-delta starters 3 auto-transformer starters	1 ? A 1 ; to suit cooling towers (ref. ?) 2 ; to suit sea water condenser water pumps (ref. ?) 3 ; to suit fresh water condenser water pumps (ref. ?) 4 ; to suit chillers (ref. ?) 5 ; to suit chilled water pumps (ref. ?) 6 ; to suit submersible bore well pumps (ref. ?) 7 ; to suit sump pumps (ref. ?) 8 ; to suit heat exchangers (ref. ?) 9 ; to suit hot water pumps (ref. ?) 10 ; to suit ventilating fans (ref. ?) 11 ; to suit air handling units	nr

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(ref. ?)

10	solid state softstart motor starters ; power electronic type ; IEC 60068-2-6:2007, IEC 60068-2-27:2008, IEC 61000-4-2:2008, IEC 61000-4-3:2010, IEC 61000-4-4:2012, IEC 61000-4-5:2014 (SM.xviii(b)1.17)	1	solid state softstart motor starters	1	? A	nr
				1	; to suit cooling towers (ref. ?)	
				2	; to suit sea water condenser water pumps (ref. ?)	
				3	; to suit fresh water condenser water pumps (ref. ?)	
				4	; to suit chillers (ref. ?)	
				5	; to suit chilled water pumps (ref. ?)	
				6	; to suit submersible bore well pumps (ref. ?)	
				7	; to suit sump pumps (ref. ?)	
				8	; to suit heat exchangers (ref. ?)	
				9	; to suit hot water pumps (ref. ?)	
				10	; to suit ventilating fans (ref. ?)	
				11	; to suit air handling units (ref. ?)	
11	power supply cables (SM.xviii(f)1) 1 ; ?/? V XLPE-insulated 1 ; galvanised steel wires armoured [multi-core cables] 2 ; aluminium strip armoured [multi-core cables] 3 ; non-magnetic aluminium wire or strip armoured [single-core cables] 1 ; PVC sheathed copper conductors	1	power supply cables 1 ; from motor control switchboard (ref. ?) to local motor control panels (ref. ?) for ACMV equipment 1 ; fixed to cable trays or cable ladders (motor control switchboard, local motor control panel, cable trays and cable ladders measured separately)	1	? mm2 ; ? core cables	m
		2	[accessories] (SM.xviii(f)2) 1 tee-joint ; joint boxes	1	? mm2 ; ? core cables	nr
		3	termination glands ; non-ferrous mechanical type ; BS EN 62444:2013 ; accommodated in auto-transformer cable boxes (SM.xviii(f)4)			
12	final circuits (SM.xviii(g)2) 1 ; approved power supply cables 2 ; PVC-insulated ; copper conductors 1 ; drawn into and including conduit/trunking ; all necessary cabling facilities ; fixing and earth continuity	1	from cooling tower local control panel (ref. ?)	1	? x ? mm2 ; ? core cables	nr
		2	from sea water pump local control panel (ref. ?)	2	; to cooling towers (ref. ?)	
		3	from fresh water pump local control panel (ref. ?)	2	; to sea water condenser water pumps (ref. ?)	
		4	from chiller local control panel (ref. ?)	3	; to fresh water condenser water pumps (ref. ?)	
				4	; to chillers (ref. ?)	
				5	; to chilled water pumps (ref. ?)	

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		5	from chilled water pump local control panel (ref. ?)			?)	
		6	from hot water pump local control panel (ref. ?)			6 ; to submersible bore well pumps (ref. ?)	
		7	from packaged unit local control panel (ref. ?)			7 ; to sump pumps (ref. ?)	
		8	from VRV split type packaged unit local control panel (ref. ?)			8 ; to heat exchangers (ref. ?)	
		9	from isolators (isolators measured separately)			9 ; to hot water pumps (ref. ?)	
		10	from fused spur units (fused spur units measured separately)			10 ; to ventilating fans (ref. ?)	
						11 ; to water scrubbers (ref. ?)	
						12 ; to air handling units (ref. ?)	
						13 ; to VAV terminal units (ref. ?)	
						14 ; to CAV terminal units (ref. ?)	
						15 ; to fan coil units (ref. ?)	
						16 ; to dehumidifiers (ref. ?)	
						17 ; to split packaged units ; direct expansion units (ref. ?)	
						18 ; to split packaged units ; air cooling condensing units (ref. ?)	
						19 ; to VRV ; direct expansion units (ref. ?)	
						20 ; to VRV ; air cooling condensing units (ref. ?)	
						21 ; to single packaged air conditioners (ref. ?)	

13	perforated steel trays and fittings to BS EN 10149-1:2013 ; hot dipped galvanised to ISO 1460:1992 and ISO 1461:2009	1	trays and fittings (SM.xviii(e)1)	1	? wide		m
			1 ; fixed to walls and columns				
			2 ; suspended from soffits				
		2	[accessories] (SM.xviii(e)3)	1	bends		nr
			1 extra over ? wide trays for	2	tees		nr
				3	crosses		nr
				4	rising bends		nr
				5	reducing bends		nr
				6	reducing tees		nr
				7	reducing crosses		nr

14	wire mesh cable trays and fitting to IEC 61537:2006 ; hot dipped galvanised to ISO 1461:2009						

15	[ladders and fittings] (SM.xviii(e)2)	1	ladders and fittings	1	? wide		m
	1 hot rolled steel cable ladders and fittings to BS EN 10149-1:2013 ; hot dipped galvanised to ISO 1460:1992 and ISO 1461:2009		1 ; fixed to walls and columns				
			2 ; suspended from soffits				

AC - AIR CONDITIONING INSTALLATION

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	2	stainless steel cable ladders and fittings ; 316S31, ISO 683-13:1986 1 ; heavy duty type	2	[accessories] (SM.xviii(e)3) 1 extra over ? wide 1 galvanised steel ladders 2 stainless steel ladders 1 for	1	bends	nr		
					2	tees	nr		
					3	four-way crossovers	nr		
					4	internal risers	nr		
					5	external risers	nr		
					6	straight reducers	nr		
					7	offsets	nr		

18		CONTROL SYSTEM - AUTOMATIC CONTROL SYSTEM (ACS) ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	[1.5 thick main control panels] (SM.xix(b)1.9) 1 control panels, hairling finished stainless steel construction 1 ; complete with indicating lights, ammeters, gauges, control switches, motor starters, contactors (motor starters and contactors measured separately), push buttons, alarm chimes, alarm indicating lights ; alarm mute buttons, control wiring ; flush galvanised iron supports and accessories and other necessary equipment to enable remote operation and monitoring of all A/C equipment 1 ; all other necessary instrument and accessories	1	1.5 thick main control panel 1 ; floor mounted type	1	located in ? room ; main control panel (ref. ?)	nr

	2	[1.6 thick main control panels] (SM.xix(b)1.9) 1 steel control panels, factory built assemblies, self supporting and framing, IP41 protection ; to IEC 61439-1:2011 and IEC 61439-2:2011 1 ; complete with LED indicating lamps, digital multifunction power meter, relays, timers, selectors, control switches, motor starters, contactors (motor starters and contactors measured separately), control wiring and other necessary equipment to enable remote operation and monitoring of all A/C equipment 1 ; all other necessary instrument and accessories	1	1.6 thick local control panel 1 ; wall mounted type	1	located in ? room 1 ; cooling tower local control panel (ref. ?) 2 ; sea water pump local control panel (ref. ?) 3 ; fresh water pump local control panel (ref. ?) 4 ; chiller local control panel (ref. ?) 5 ; chilled water pump local control panel (ref. ?) 6 ; hot water pump local control panel (ref. ?) 7 ; fan local control panel (ref. ?) 8 ; fan coil unit local control panel (ref. ?) 9 ; AHU local control panel (ref. ?) 10 ; packaged unit local control panel (ref. ?) 11 ; VRV split type packaged unit local control panel (ref. ?) 12 ; VAC local control panel	nr		

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(ref. ?)

<p>3 [2 thick control panels] (SM.xix(b)1.9) 1 design, supply and install steel control panels, type tested cubicle ; to IEC 61439-1:2011 and IEC 61439-2:2011 1 ; complete with indicating lamps, ammeters, voltmeters, relays, timers, selectors, control switches, motor starters, contactors (motor starters and contactors measured separately), fire resistant cables, control wiring and other necessary equipment to enable remote operation and monitoring of A/C equipment 1 ; all other necessary instrument and accessories</p>	<p>1 2 thick control panels 1 ; wall mounted type</p>	<p>1 located in ? room nr 1 ; smoke extraction system local control panel (ref. ?) 2 ; pressurization of staircases system local control panel (ref. ?)</p>
<p>4 [final circuits] (SM.xviii(g)2) 1 electrical control circuits ; associated with ACMV equipment 1 ; connections to control panels (control panels measured separately) ; interconnecting wiring, cables, conduits, cabling facilities ; relays, contactors, sensors and control devices 1 ; all necessary instrument and accessories</p>	<p>1 from main control panel (ref. ?)</p>	<p>1 to cooling tower local control panel (ref. ?) nr 2 to sea water pump local control panel (ref. ?) nr 3 to fresh water pump local control panel (ref. ?) nr 4 to chiller local control panel (ref. ?) nr 5 to chilled water pump local control panel (ref. ?) nr 6 to hot water pump local control panel (ref. ?) nr 7 to fan local control panel (ref. ?) nr 8 to fan coil unit local control panel (ref. ?) nr 9 to AHU local control panel (ref. ?) nr 10 to packaged unit local control panel (ref. ?) nr 11 to VRV split type packaged unit local control panel (ref. ?) nr 12 to VAC local control panel (ref. ?) nr 13 to smoke extraction system local control panels (ref. ?) nr 14 to pressurization of staircases system local control panels (ref. ?) nr</p>

AC - AIR CONDITIONING INSTALLATION

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			2	from cooling tower local control panel (ref. ?)		1	to cooling towers (ref. ?)	nr
			3	from sea water pump local control panel (ref. ?)		2	to sea water condenser water pumps (ref. ?)	nr
			4	from fresh water pump local control panel (ref. ?)		3	to fresh water condenser water pumps (ref. ?)	nr
			5	from chilled local control panel (ref. ?)		4	to chillers (ref. ?)	nr
			6	from chilled water pump local control panel (ref. ?)		5	to chilled water pumps (ref. ?)	nr
			7	from hot water pump local control panel (ref. ?)		6	to hot water pumps (ref. ?)	nr
			8	from fan local control panel (ref. ?)		7	to ventilating fans (ref. ?)	nr
			9	from fan coil unit local control panel (ref. ?)		8	to air handling units (ref. ?)	nr
			10	from AHU local control panel (ref. ?)		9	to fan coil units (ref. ?)	nr
			11	from packaged unit local control panel (ref. ?)		10	to split packaged units ; direct expansion units (ref. ?)	nr
			12	from VRV split type packaged unit local control panel (ref. ?)		11	to split packaged units ; air cooling condensing units (ref. ?)	nr
			13	from VAC local control panel (ref. ?)		12	to VRV ; direct expansion units (ref. ?)	nr
						13	to VRV ; air cooling condensing units (ref. ?)	nr

			14	from smoke extraction system local motor control panels (ref. ?)		1	to ventilating fans (ref. ?)	nr
			15	from pressurization of staircases system local motor control panels (ref. ?)				

19	CONTROL SYSTEM - CENTRAL CONTROL AND MONITORING SYSTEM (CCMS) ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	central equipment	1	central equipment (SM.xix(b)1)	1	general purpose controller (SM.xix(b)1.3)	nr
		1	; complete with all components and accessories	1	; housed in the central control console	2	monitor (SM.xix(b)1.5)	nr
		1	; including interfacing, interconnecting and internal wirings, jointing and making all busbars, cables, conduits, fixings			3	printer (SM.xix(b)1.6)	nr
						4	central database repository (SM.xix(b)1.9)	nr
						5	gateway/interfacing units (SM.xix(b)1.9)	nr
						6	server ; ANSI/ASHRAE standard 135 (SM.xix(b)1.9)	nr
						7	router (SM.xix(b)1.9)	nr

				2	central control console for housing equipment (SM.xix(b)1.4)	1	located in ? room	nr
				1	; fixing and support			

				3	CCMS operator workstation ; ANSI/ASHRAE standard 135 with BTL listed (SM.xix(b)1.3)	1	personal computer	nr
						2	mouse and keyboard	nr
						3	minimum 21" monitor	nr
						4	alarm printer capable of handling continuous paper	nr
						5	A3 ink printer	nr
						6	A3 laser printer	nr

FIRST DIVISION

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				7	a 16-bit/full duplex audio system complete with speakers	nr
				4	software and back-up copies (SM.xix(b)3)	1 generally item
				5	uninterrupted power supply (SM.xix(b)4.1) 1 ; supplying power with suitable capacity not less than one hour ; complete with batteries and chargers ; supply and interconnecting wiring	1 backup for CCMS item
				6	intercommunication wiring network for data transmission (SM.xix(c)1) 1 ; approved cable 1 ; including conduit, trunking and accessories	1 from central equipment to all peripheral equipment item 2 between peripheral equipment item
2	wiring network ; standard network support, remote communication, system expansion and support on open system protocols	1	wiring network	1	general network	item
				2	level 1 network	item
				3	level 2 network	item
				4	level 3 network	item
				5	local area network (LAN)	item
3	portable terminal hardware	1	portable terminal hardware ; complete with power supply unit and all necessary components and accessories ; rechargeable battery (SM.xix(b)2.4)	1	generally	nr
4	DDC units/unitary controllers (SM.xix(b)2.4)	1	[DDC units/unitary controllers] 1 DDC units 2 unitary controllers 1 ; complete with power supply units and all necessary components and accessories 1 ; all necessary internal wirings, fixings	1	DDC units/unitary controllers (ref. ?)	nr
5	control and monitoring circuits (SM.xix(d)1) 1 ; approved cables 1 ; conduit and cabling facilities 1 ; all necessary sensors, relays, contactors, control devices and instrument ; earth continuity and terminations	1	[ACMV sub-system] 1 from DDC units/unitary controllers (ref. ?)	1	to chiller water circuits	nr
				2	to heating water circuits	nr
				3	to cooling towers	nr
				4	to chillers	nr
				5	to chilled water pumps	nr
				6	to sea water pumps	nr
				7	to heating water pumps	nr
				8	to motor control centre	nr
				9	to HAU	nr

AC - AIR CONDITIONING INSTALLATION

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- 10 to PAU nr
- 11 to ventilation fans nr
- 12 to VAV boxes nr
- 13 to CAV boxes nr
- 14 to FCU nr
- 15 to computer AHU nr
- 16 to gas tight dampers nr
- 17 to fire dampers nr
- 18 to smoke/fire dampers nr
- 19 to chilled water feed and expansion tank nr
- 20 to heating water feed and expansion tank nr
- 21 to water treatment nr
- 22 to room condition monitoring for ? [room] nr
- 23 to cooling energy monitoring nr

-
- 2 [other CCMS sub-system]
 - 1 from DDC units/unitary controllers (ref. ?)
 - 1 ; for other CCMS sub-system
 - 2 from outstations (ref. ?)
 - 3 from interfacing units (ref. ?)
 - 1 to ACMV monitoring and control nr
 - 2 to electrical system monitoring nr
 - 3 to lighting control nr
 - 4 to energy conservation programmes nr
 - 5 to emergency generators nr
 - 6 to fire pumps nr
 - 7 to sprinkler valves nr
 - 8 to security installation monitoring nr
 - 9 to lifts nr
 - 10 to escalators nr
 - 11 to garage CO monitoring and control nr
 - 12 to mechanical pumping and plumbing control and monitoring nr
 - 13 to normal, emergency and preventive maintenance notification and works ordering nr
 - 14 to IAQ measurement nr

-
- 20 AIR CONDITIONING SUNDRIES ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY
 - 1 the following items in respect of the whole Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation
 - 1 allow for
 - 1 marking the positions of holes, mortices, chases and the like in the structure (SM.xvii(i)3) item
 - 2 inspection, testing and commissioning of the complete ACMV Installation (SM.xvii(i)4) item
 - 1 ; all as described in the Particular Specification and Part H of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control

FIRST DIVISION

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System Installation
 [Guidance Notes:
 1. Project Officers should refer to the guidance notes set out in the Collection page of Air Conditioning Installation of this Model Bills of Quantities for the applicability of this item.
 2. This item should be deleted if the pre-tender estimate of the ACMV Installation excluding the sum for T&C of ACMV Installation is greater than or equal to \$3 million.]

- 3 providing all necessary (SM.xvii(i)5) item
 - 1 power and water, diesel, gas and fuels in connection with testing, commissioning and maintenance
 [Guidance Notes:
 1. Project Officers should refer to the guidance notes set out in the Collection page of Air Conditioning Installation of this Model Bills of Quantities for the applicability of this item.
 2. This item should be deleted if the pre-tender estimate of the ACMV Installation excluding the sum for T&C of ACMV Installation is greater than or equal to \$3 million.]
- 4 disinfection of the whole air duct installation before handover including supplying / providing ten bottles of one litre approved disinfection agent item
- 5 cleaning interior of all ductwork by rotating mechanical brush and removing contaminants by high efficiency vacuum pumps item
- 6 providing item
 - 1 installation drawings ; all as described in the Particular Specification and Section A4.2 of the General Specification for Air-conditioning, Refrigeration, Ventilation and

FIRST DIVISION

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THIRD DIVISION

FOURTH DIVISION

- Central Monitoring and Control System Installation
- 2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation
- 3 Operation and Maintenance (O&M) Manual and User Manual ; all as described in the Particular Specification and Section A4.4 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation
- 7 providing sample boards ; all as described in Section A3.7 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation item
- 8 providing [mock-up] (SM.xvii(i)10) item
 - 1 mock-ups
 - 2 prototypes
 - 3 mock-ups and prototypes
- 9 supplying [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described
- 10 supplying and fixing [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described

FIRST DIVISION

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THIRD DIVISION

FOURTH DIVISION

11 supplying and fixing fire stopping to walls and floors item

 2 allow for the requirements on indoor air quality (IAQ) attainment 1 providing air cleaning, treatment and conditioning, testing and commissioning of the indoor air quality (IAQ) installation, assessments and measurements item

1 ; all as described in the Particular Specification and Part D of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation
 [Guidance Note: This item should be deleted if the pre-tender estimate of the ACMV Installation excluding the sum for T&C of ACMV Installation is greater than or equal to \$3 million.]

2 providing training, operation and maintenance requirements for IAQ installation item

1 ; all as described in the Particular Specification and Part D of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation

3 providing indoor air quality (IAQ) certification by IAQ CIB and registration of IAQ certificates ; all as described in the Particular Specification
 [Guidance Notes: 1. This item should be deleted if the pre-tender estimate of the ACMV Installation excluding the sum for T&C of ACMV Installation is less than \$3 million. 2. PQS to check if this requirement is included in the Particular Specification for complying OI No. 02/2009] item

 3 allow for 1 Level One Services ; mandatory item

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 providing all training, inspection, attendance, operation and maintenance services during Maintenance Period ; as described in Part I of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation ; including
 - 2 Level Two Services ; full and comprehensive maintenance services item
- For nos 1 to 2 above
- 1 [Guidance Note: PQS to check with PS]

*** END OF REPORT ***

BROADCAST RECEPTION INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:
 1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	DESIGN, SUPPLY AND INSTALL TERRESTRIAL MASTER ANTENNA TELEVISION SYSTEM	1	central equipment (SM.xix(b)1)	1	terrestrial aerials	1	TV aerials, gain at least 13 dB, front to back ratio of at least 28 dB	nr
1	; internally	1	; aerials ; 75 ohms unbalanced impedance, able to operate under loading pressure with sustained wind speed 170 km/hr and gusts 240 km/hr, stainless steel masts, earthed and lightning protected, durable protective coating ; stainless steel aerial mask	1	; suitable for analogue and digital terrestrial television	2	FM aerials, gain at least 6 dB	nr
2	; in plant room	2	; preamplifiers ; 75 ohms impedance (input and output), suitable for analogue and digital terrestrial television	2	preamplifiers ; to suit PAL I System ; frequency FM 88 to 108 MHz and TV 54 to 862 MHz	1	preamplifiers	nr
3	; externally	3	; filters ; 75 ohms impedance (input and output), suitable for analogue and digital terrestrial television	3	TV bandpass preamplifiers ; frequency range within CH 21 to CH 60	2	TV bandpass preamplifiers	nr
		4	; amplifiers ; 75 ohms nominal impedance (input and output), suitable for analogue and digital terrestrial television, properly earthed	4	FM bandpass preamplifiers ; frequency range 88 to 108 MHz	3	FM bandpass preamplifiers	nr
		5	; frequency converters ; 75 ohms impedance (input and output)	5	TV bandpass filters ; frequency range within CH 21 to CH 60	4	TV bandpass filters	nr
		6	; UHF modulators, modulating video signals to UHF range channels	6	FM bandpass filters ; frequency range 88 to 108 MHz	5	FM bandpass filters	nr
		1	; connection to power source ; interconnecting wirings and signal cables ; interfaces and accessories	7	wideband amplifiers ; to suit PAL I System ; internally or externally fully screened metal box, mounting legs	1	wideband amplifiers	nr
		1	; weatherproof housing [preamplifiers]	8	FM channel amplifiers with processor ; frequency range 88 to 108 MHz	2	FM channel amplifiers with processor	nr
				9	TV channel amplifiers with processor and automated gain control (AGC) modules ; to suit PAL I System ; AGC modules	3	TV channel amplifiers with processor and AGC modules	nr
				For nos 8 to 9 above				
				1	; modular type construction plug-in units, metal-screened internally			
				10	frequency converters ; frequency range	1	frequency converters	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

87 to 108 MHz

		11	output frequency range 54 to 862 MHz 1 fixed channel 2 channel selectable	1	UHF modulators	nr
2	peripheral equipment (SM.xix(b)2) 1 ; splitters 2 ; tee units 3 ; fiber optical transmitters 4 ; fiber optical return path transmitters 5 ; fiber optical transceivers with return path 6 ; fiber optical splitters 1 ; cascaded mode of operation ; return path [splitters and tee] 2 ; modular design [fiber optical transmitters and fiber optical return path transmitters / transceivers / splitters]	1	frequency range 5 to 862 MHz 1 ; 13 dB minimum mutual attenuation between outputs [splitters] 2 ; 28 dB minimum mutual attenuation between outputs [tee units]	1	splitters	nr
		2	frequency range 54 to 862 MHz	1	tee units	nr
		2	frequency range 54 to 862 MHz	1	fiber optical transmitters	nr
		3	return path frequency 5 to 42 MHz	1	fiber optical return path transmitters	nr
		4	frequency range 54 to 862 MHz ; return path range 5 to 42 MHz	1	fiber optical transceivers with return path	nr
		5	optical wavelength 1310 nm +/- 10 nm	1	fiber optical splitters	nr
3	signal/control circuits ; cables, conduits, trunkings and accessories ; clear identification and labels	1	from central equipment (SM.xix(c)1)	1	to all peripheral equipment	item
		2	linking (SM.xix(c)2)	2	between peripheral equipment	item
4	final circuit ; coaxial cables ; low emission of smoke and corrosive gases to IEC 60332-1-1:2004+AMD1:2015, IEC 61034-2:2005+AMD1:2013 and IEC 60754-1:2011 1 ; laying in separate trunkings (measured separately) and drawing into and including steel conduits and fittings and/or flexible steel conduits ; all cabling facilities 1 ; earth continuity conductors ; clear identification and labels	1	75 ohms type copper cable ; permanent turning radius 10 times(min) of cable diameter 1 from splitters 2 from tee units	1	to data outlets	nr
				2	to FM/TV outlets	nr
5	field equipment (SM.xix(d)6) 1 ; outlet, socket type, frequency dividing network and sockets, identified labels	1	FM/TV/data outlet ; frequency range 54 to 862 MHz and return path frequency 5 to 42 MHz	1	FM/TV/data outlets	nr

BCRI - BROADCAST RECEPTION INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3	DESIGN, SUPPLY AND INSTALL SATELLITE MASTER ANTENNA TELEVISION (SMATV) SYSTEM	1	central equipment (SM.xix(b)1)	1	dish antennas ; solid aluminium plate	1	not less than 3m diameter	nr
1	; internally	1	; antennas ; installation to OFCA requirements, able to operate under loading pressure with sustained wind speed 170 km/hr and gusts 240 km/hr, steel frameworks mounting, earthed and lightning protected, durable protective coating	2	positioned in focus point of antenna	1	feedhorns	nr
2	; in plant room	2	; feedhorns ; suitable for circular and linear C-band and Ku-band reception, prime-focus reflectors, polarizers ; accessories recommended by manufacturers	3	input frequency C-band, 3.7 to 4.2 GHz ; Ku-band, 10.75 to 12.75 GHz	1	low noise amplifiers	nr
3	; externally	3	; low noise amplifier (LNA)/low noise block down converter (LNB) ; installation to manufacturer's recommendation	4	multi-system compatible	2	low noise block down converters	nr
		4	; satellite receivers and modulators ; designed RF signals, video parameters and audio parameters ; properly earthed	5	input frequency 950 to 2050 MHz	1	satellite receivers	nr
		5	; satellite amplifiers			1	satellite amplifiers	nr
		1	; interconnecting wirings and signal cables ; interfaces and accessories [antennas]					
		2	peripheral equipment (SM.xix(b)2)	1	frequency range 950 to 2050 MHz	1	splitters	nr
		1	; splitters	1	; 13 dB minimum mutual attenuation between outputs [splitters]	2	tee units	nr
		2	; tee units	2	; 28 dB minimum mutual attenuation between outputs [tee units]			
		1	; cascaded mode of operation					
		3	signal/control circuits ; cables, conduits, trunkings and accessories ; clear identification and labels	1	from central equipment (SM.xix(c)1)	1	to all peripheral equipment	item
				2	linking (SM.xix(c)2)	2	between peripheral equipment	item
		4	final circuit ; coaxial cables ; low emission of smoke and corrosive gases to IEC 60332-1-1:2004+AMD1:2015, IEC 61034-2:2005+AMD1:2013 and IEC 60754-1:2011	1	75 ohms type copper cable ; permanent turning radius 10 times of cable diameter	1	to data outlets	nr
		1	; laying in separate trunkings (measured separately) and drawing into and including steel conduits and fittings and/or flexible steel conduits ; all cabling facilities ; clear identification and labels	1	from splitters	2	to FM/TV outlets	nr
		1	; earth continuity conductors	2	from tee units			
		5	field equipment (SM.xix(d)6)	1	FM/TV/data outlet, frequency range 54 to	1	FM/TV/data outlets	nr

BCRI - BROADCAST RECEPTION INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 ; outlet, socket type, frequency
dividing network and sockets,
identified labels

862 MHz and return path frequency 5 to
42 MHz

4 BROADCAST RECEPTION INSTALLATION
SUNDRIES ; INTERNALLY, IN PLANT ROOM AND
EXTERNALLY

1 the following items are in respect of
the whole Broadcast Reception
Installation

1 allow for

- 1 marking the positions of holes,
mortices, chases and the like in
the structure (SM.xix(e)1) item
- 2 inspection, testing and
commissioning of the complete
Broadcast Reception Installation
(SM.xix(e)2) item
 - 1 ; all as described in the
Particular Specification and
Part D of the General
Specification for Broadcast
Reception Installation
- 3 inspection, attendance, operation
and maintenance of the complete
Broadcast Reception Installation
during Maintenance Period item
 - 1 ; all as described in the
Particular Specification,
Section E1 and E3 of the
General Specification for
Broadcast Reception
Installation
- 4 providing all necessary item
 - 1 power and water, diesel and
fuels in connection with
testing, commissioning and
maintenance (SM.xix(e)3)
- 5 providing item
 - 1 installation drawings ; all as
described in the Particular
Specification and Section A4.2
of the General Specification
for Broadcast Reception
Installation
 - 2 as-built drawings ; all as
described in the Particular
Specification and Section A4.3
of the General Specification
for Broadcast Reception
Installation
 - 3 Operation and Maintenance
(O&M) Manuals and User Manuals
; all as described in the
Particular Specification and
Section A4.4 of the General

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

Specification for Broadcast
Reception Installation

- 6 providing training to Employer's staff as described in the Particular Specification, Section E1 and E2 of the General Specification for Broadcast Reception Installation item
- 7 providing sample boards ; all as described in Section A3.7 of the General Specification for Broadcast Reception Installation item
- 8 supplying [sleeves] item
 - 1 conduit sleeves
 - 2 cable sleeves
 - 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described
- 9 supplying and fixing [sleeves] item
 - 1 conduit sleeves
 - 2 cable sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described
- 10 supplying and fixing fire stopping to walls and floors item

*** END OF REPORT ***

BRICKWORK AND BLOCKWORK

FIRST DIVISION

1 BRICKWORK

SECOND DIVISION

- 1 common bricks [GS9.02]
 - 2 engineering bricks [GS9.04]
 - 3 loadbearing bricks [GS9.04]
 - 4 concrete bricks [GS9.06]
 - 5 fire bricks [GS9.05]
- For nos 1 to 5 above
- 1 ; LD units [only for engineering & loadbearing bricks]
 - 2 ; HD units [only for engineering & loadbearing bricks]
 - 3 ; tested to BS 1902-3.13 or ISO 12678-2 [GS9.05 - only for fire bricks]
 - 4 ; ?
- 1 ; cement mortar (1:3) [GS9.22]
 - 2 ; cement/lime mortar (1:1:6) [GS9.22]
 - 3 ; cement/lime mortar (1:2:9) [GS9.22]
 - 4 ; firebrick mortar [GS9.22]
 - 5 ; ?

THIRD DIVISION

- 1 vertical walls (SM.viii(a).2)
 - 2 hollow walls (SM.viii(a).2.4)
 - 3 filling in openings
 - 4 dwarf walls (SM.viii(a).5)
 - 5 isolated piers and chimney stacks (SM.viii(a).4)
 - 6 tapering walls with one face battering
 - 7 tapering walls with both faces battering
 - 8 walls built battering
 - 9 backing to masonry ; cutting and bonding (SM.viii(a).2.5)
- For nos 1 to 9 above
- 1 ; one face battered at the rate of ?
 - 2 ; both faces battered at the rate of ?
 - 3 ; circular on plan ; cutting and templates
-
- 10 closing cavities of hollow walls (SM.viii(a).7)
 - 1 ; with ?

FOURTH DIVISION

- 1 half brick walls ; ? thick m2
- 2 one brick walls ; ? thick m2
- 3 one and a half brick walls ; ? thick m2
- 4 exceeding one and a half brick walls ; ? thick m2
- 5 reduced brickwork ; ? thick [for wall exceeding one and a half brick thick and multiple of half brick thick] m2
- 6 ? thick [brick on edge] m2
- 7 ? average thick [for tapering walls] m2
- 8 ? thick ; cutting [where not a multiple of half brick thick] m2
- 9 ? thick inner skin ; ? thick outer skin ; ? thick cavity ; wall ties at 900 centres horizontally and 320 centres vertically staggered m2

-
- 10 closing cavities of hollow walls (SM.viii(a).7)
 - 1 ; with ?

-
- 11 [arches]
 - 1 arches
 - 2 arches of unusual outline
 - 1 ; purpose made bricks
 - 2 ; ?
 - 1 ; as shown on drawing nr. ?
 - 2 ; ?

-
- 1 ? wide on face ; ? wide exposed soffit ; pointing ? girth m
 - 2 ? [arches of unusual outline fully described] nr

-
- 12 [cills, coping, etc.]
 - 1 plain cills
 - 2 moulded cornices
 - 3 splayed plinth cappings
 - 4 bullnosed copings
 - 1 ; ? purpose made bricks
 - 2 ; ?
 - 3 ; all headers ; facing and pointing ? girth
 - 4 ; all sketchers ; facing and pointing ? girth
 - 1 ; projecting ? from face of wall
 - 2 ; sunk ? from face of wall
 - 3 ; built overhand
 - 4 ; ? wide ; ? courses high

-
- 1 straight (SM.viii(a).10.1.1) m
 - 2 curved (SM.viii(a).10.1.2) m

-
- 13 [sundry brick built items]

-
- 1 ? x ? x ? nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			1 pier caps ; pointing 2 key blocks ; pointing 3 corbels ; pointing 4 ? 1 ; ? purpose made bricks 2 ; ?	

			14 extra over brickwork for	1 bedding and pointing in sealant compound m2
2 BLOCKWORK	1 hollow concrete blocks [GS9.07] 2 solid concrete blocks [GS9.06] 3 ? hollow tiles 4 ? patent blocks For nos 1 to 4 above 1 ? long x ? high 2 ? 1 ; cement mortar (1:3) [GS9.22] 2 ; cement/lime mortar (1:1:6) [GS9.22] 3 ; cement/lime mortar (1:2:9) [GS9.22] 4 ; ?	1 walls or partitions 1 in isolated positions 1 ; finished smooth and pointing with a flush joint 1 one side 2 both sides	1 ? thick m2	

			2 cutting, toothing and bonding end of wall to ? wall each alternate course ; extra material (SM.viii(a).17)	1 ? thick m

			3 extra over blockwork for	1 bedding and pointing in sealant compound m2
3 BRICK FACEWORK	1 extra over common bricks in any mortar for 2 extra over engineering bricks in any mortar for 3 extra over loadbearing bricks in any mortar for 4 extra over concrete bricks in any mortar for 5 extra over ? bricks in any mortar for	1 [fair face, facings] 1 fair face ; pointing 2 ? facing bricks ; pointing 3 ? facing bricks ; size ? x ? x ? ; headers bonded to backing brickwork ; pointing 1 ; built overhand 2 ; face battered at the rate of ? 3 ; curved 1 ; ?	1 walls and the like m2 2 plain bands ; ? wide m	
4 GLASS BLOCKS	1 hollow glass blocks [GS9.08] 1 ; transparent 2 ; non-transparent 3 ; light directive 4 ; solar reflective 5 ; ? 1 ; coloured 2 ; as ? ; ref. ? 1 ; bedding in cement/lime mortar (1:2:9) [GS9.45] 2 ; bedding in cement/lime mortar (1:1:6) [GS9.45] 3 ; pointing both sides	1 type ? [GS9.08] 1 ; ? x ? x ? 2 ; ? 2 forming movement joints [GS9.45] 3 two coats bituminous paint [GS9.45] For nos 2 to 3 above 1 ; around perimeter 2 ; ?	1 walls or panels m2 1 ; curved 1 [sizes] m 1 ? wide [GS9.45] 2 ? x ? [GS9.45] 1 inorganic joint filler 2 ? 1 ; sealing with ? x ? standard 2 ; sealing with ? x ?	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

[GS9.45]
 4 ; pointing both sides in ?
 [GS9.45]
 5 ; ?

one part polysulphide
 sealant [GS6.62]
 3 ; sealing with ? x ?
 two part polysulphide
 sealant [GS6.62]
 4 ; sealing with ?
 5 both sides [GS9.45]

 4 expanded metal reinforcement 1 ? wide [GS9.45] m
 5 mild steel rod reinforcement 2 ? diameter m

For nos 4 to 5 above
 1 ; galvanised [GS9.20]
 2 ; bituminous coated [GS9.20]
 3 ; weighing not less than 1.6 kg/m2
 1 ; in hollow glass block walls or
 panels
 2 ; ?

5 DAMP PROOF COURSES

1 two layers of 2 ply bituminous paper
 [GS9.10]
 2 two layers of fibre based bitumen to BS
 6398 Class B
 3 ?

1 horizontal 1 over 225 wide m2
 2 vertical 2 ? wide [where less than 225 wide] m

For nos 1 to 2 above
 1 ; curved ; extra cutting

For nos 1 to 3 above
 1 ; ? levelling mortar bed
 2 ; ?
 1 ; measured net - allow for laps
 2 ; ?

6 SUNDRIES

1 sundry items

1 raking out joints of existing 1 [rake joints] m2
 1 common brickwork 1 as key for asphalt
 2 engineering brickwork 2 ?
 3 facing brickwork
 4 concrete brickwork
 5 concrete blockwork
 6 ?

2 closing cavities of hollow walls 1 [close cavities] m
 1 at ends with 100 blockwork
 2 at ends with ? blockwork
 3 at ends with ? facing bricks
 4 ?
 1 set on edge

3 cutting toothing and bonding ends of 1 [cut, tooth, bond] m
 1 wall to existing ? wall 1 ? thick common brickwork
 2 ? 2 ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	1	each alternate course ; extra material		
	2	?		

4		preparing tops of existing brick walls to receive new	1	? wide m

5		fireclay glazed	1	? x ? m
6		fireclay unglazed	2	? diameter m
For nos 5 to 6 above				
	1	flue linings ; rebated		
	2	flue linings ; socketed		
	3	flue linings ; butt jointed		
	4	? ; rebated		
	5	? ; socketed		
	6	? ; butt jointed		
	7	?		
	1	; ? mortar (?)		
	2	; ?		
	1	; cutting to form bends and easings		
	2	; ?		

7		fire bricks linings [GS9.05] (SM.viii(a).22)	1	? thick m2
	1	; tested to BS 1902-3.13 or ISO 12678-2		
	2	; ?		
	1	; firebrick mortar		
	2	; ?		
	1	; ? ; bonding to backing [fully described]		
	2	; ?		

8		expanded metal reinforcement	1	? wide m
9		mild steel rod reinforcement	2	? diameter m
For nos 8 to 9 above				
	1	; galvanised [GS9.20]		
	2	; bituminous coated		
	3	; ?		
	1	; weighing not less than 1.6 kg/m2		
	2	; ?		
	1	; in walls		
	2	; ?		

10		steel bonding rods	1	6 diameter x [for bonding ends of

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- | | | | |
|---|--|--------------------|----|
| 1 | ; bituminous coated [GS9.11] | walls to concrete] | nr |
| 2 | ; ? | 1 350 long | |
| 1 | ; cutting and pinning one end to concrete [GS9.38] | 2 ? long | |
| 2 | ; shot firing one end to concrete | | |
| 3 | ; ? | | |
| 1 | ; building one end into joint of brickwork | | |
| 2 | ; ? | | |

-
- | | | | |
|----|--|---|----|
| 11 | steel bonding ties ; galvanised ; fanged at both ends [GS9.11, 9.38] | 1 3 x 20 x ? long [for bonding ends of walls to concrete - 350 long ; for bonding walls to face of concrete - 150 long] | nr |
| 1 | ; casting one end into concrete | | |
| 2 | ; cutting and pinning one end to concrete | | |
| 3 | ; shot firing one end to concrete | | |
| 4 | ; ? | | |
| 1 | ; building one end into joint of brickwork | | |
| 2 | ; ? | | |

-
- | | | | |
|----|---|---|----|
| 12 | expanded metal bonding ties ; galvanised | 1 ? wide x ? long [for bonding ends of walls to concrete ; see GS9.11 for widths/length required] | nr |
| 13 | expanded metal bonding ties ; bituminous coated | | |

For nos 12 to 13 above

- | | | | |
|---|--|--|--|
| 1 | ; weighing not less than 1.6 kg/m2 | | |
| 1 | ; cutting and pinning one end to concrete | | |
| 2 | ; shot firing one end to concrete | | |
| 3 | ; ? | | |
| 1 | ; building one end into joint of brickwork | | |
| 2 | ; ? | | |

7 BRICK PAVINGS AND STEPS OR BLOCK

- | | | | |
|----------------------|---|--|--|
| 1 | common bricks | | |
| 2 | ? facing bricks | | |
| 3 | engineering bricks | | |
| 4 | concrete blocks | | |
| 5 | ? | | |
| For nos 1 to 5 above | | | |
| 1 | ; butt joints | | |
| 2 | ; ? | | |
| 1 | ; bedding, jointing and pointing in cement mortar (1:3) | | |
| 2 | ; ? | | |

- | | | | |
|---|--|-----------|----|
| 1 | pavings | 1 ? thick | m2 |
| 1 | ; bricks laid on face | | |
| 2 | ; bricks laid on edge | | |
| 3 | ; bricks laid on end | | |
| 4 | ; ? | | |
| 1 | ; herringbone pattern | | |
| 2 | ; ? | | |
| 1 | to falls not exceeding 15 degrees from horizontal | | |
| 2 | to falls and cross falls and slopes exceeding 15 degrees from horizontal | | |
| 3 | to slopes exceeding 15 degrees from horizontal | | |

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2	steps	1	? wide x ? high	m
1	; bricks laid on face			
2	; bricks laid on edges			
3	; bricks laid on end			
4	; ?			
1	; herringbone pattern			
2	; ?			
1	; curved			
2	; ?			

*** END OF REPORT ***

COMPRESSED AIR SYSTEM

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:
 1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	DESIGN, SUPPLY AND INSTALL COMPRESSED AIR SYSTEM	1	[pipework] (SM.xvii(d)2)	1	pipework and fittings	1	? diameter	m
	1 ; internally	1	steel pipes and fittings ; medium grade ; BS EN 10255:2004 ; galvanised internally and externally [For steel tube sizes up to 80 nominal bore, pressure up to and including 1000 kPa]	1	; laid in			
	2 ; in plant room	2	steel pipes and fittings ; heavy grade ; BS EN 10255:2004 ; galvanised internally and externally [For steel tube sizes up to 80 nominal bore, pressure above 1000 kPa]	2	; embedded in			
	3 ; externally	3	steel pipes and fittings ; BS EN 13480:2012 and BS EN 10217-2:2002 ; galvanised internally and externally	3	; suspended from			
		1	; screwed joints	4	; fixed to			
		2	; welded flange joints	5	; laid on			
				1	ducts			
				2	trenches			
				3	chases			
				4	in-situ concrete or screeds			
				5	soffits			
				6	walls and columns			
				7	floors			
				2	extra over pipework for			
						1	[fittings]	nr
						1	? bends	
						2	? elbows	
						3	? branches	
						4	? reducers	
						5	? tees	
						6	? reducing bends	
						7	? reducing tees	
						8	? caps	
						9	? flanged ends	
		2	[ancillaries] (SM.xvii(d)7)	1	[valves] (SM.xvii(d)7.1)	1	? diameter	nr
		1	gunmetal valves	1	gate valves			
		2	bronze valves	2	check valves			
		3	cast iron valves	3	ball valves			
		4	copper alloy valves	4	relief or safety valves ; enclosed adjustable spring loaded type			
		5	steel valves	5	pressure reducing valves ; full way type			
		6	cast steel valves					

CAS - COMPRESSED AIR SYSTEM

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			6	stop and isolating valves ; screw down type		
			7	stop and isolating valves ; gate type		
	3	air line lubricators ; aluminium die casting body ; transparent plastic type bowl and bowl guard (SM.xvii(d)7)	1	air line lubricators ; oil fog type with adjustable drip	1	to suit working pressure and air flow rate of system nr
	4	oil separators ; combined check and minimum pressure valves, all accessories (SM.xvii(d)7)	1	oil separators; complete with easily removable filters	1	? diameter nr
	5	[instrumentation] (SM.xvii(d)16) 1 pressure gauges ; ISO 4126-1:2013 and BS EN 837-1:1998 2 drain traps (SM.xvii(d)7)	1	[pressure gauges] (SM.xvii(d)16.2) 1 pressure gauges	1	to suit ? diameter pipes nr
			2	[drain traps] 1 drain traps ; float-operated and automatic		
	6	air compressors (SM.xvii(b)10) 1 ; single stage ; air-cooled ; rotary screw type with oil injection ; suction silencer, framed system diagram, all piping, safety device, control and necessary accessories	1	air compressors 1 ; fitted with intercoolers 2 ; fitted with aftercoolers	1	discharge pressure ? kPa nr
	7	air line filters ; aluminium die casting body, bronze filters, auto drain (SM.xvii(b)10)	1	air line filters ; 5 micrometer grade	1	to suit working pressure of system nr
	8	air receivers ; steel welded fabrication 1 ; BS 5169:1992 Class III Grade E [for storage capacity up to 500 litres] 2 ; BS 5169:1992 Class II Grade C [for storage capacity above 500 litres]	1	air receivers ; welded bosses ; properly sized supply, delivery, drain, valves, manholes, plugs, identification plates, supports ; all necessary accessories 1 ; vertically mounted 2 ; horizontally mounted	1	storage capacity of ? L nr
3	DESIGN, SUPPLY AND INSTALL COMPRESSED AIR SYSTEM - ELECTRICITY SUPPLY ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 [final circuits] (SM.xviii(g)2) 1 multi-core armoured cables ; installed in outdoor underground G.I. pipes with draw wires 2 PVC cables ; run in concealed conduits with draw wires	1	from isolators (isolators measured separately)	1	? x ? mm2 nr 1 ; to air compressors (ref. ?) 2 ; to compressed air system control panel (ref. ?)
4	DESIGN, SUPPLY AND INSTALL COMPRESSED	1 [central equipment] (SM.xix(b)1)	1	compressed air system control panel	1	located in plant room (ref. ?) nr

CAS - COMPRESSED AIR SYSTEM

FIRST DIVISION

AIR SYSTEM - CONTROL ; INTERNALLY, IN
PLANT ROOM AND EXTERNALLY

SECOND DIVISION

1 control panel ; 2 thick galvanised
steel sheet construction ; vermin
proof ; IP 54 enclosures

THIRD DIVISION

1 ; wall-mounted type
2 ; floor-mounted type

FOURTH DIVISION

2 [final circuit] (SM.xviii(g)2)
1 control and monitoring circuits
1 ; approved cables
1 ; complete with cable trays,
cable trunkings, conduits
and fittings

1 from compressed air system control panel
(ref. ?)

1 to air compressors (ref. ?) nr

5 DESIGN, SUPPLY AND INSTALL COMPRESSED
AIR SYSTEM - SUNDRIES ; INTERNALLY, IN
PLANT ROOM AND EXTERNALLY

1 the following items in respect of the
whole Compressed Air System

1 allow for

1 marking the positions of holes,
mortices, chases and the like in
the structure (SM.xvii(i)3) item

2 inspection, testing and
commissioning of the complete
Compressed Air System
(SM.xvii(i)4) item
1 ; all as described in the
Particular Specification and
Part D of the General
Specification for Mechanical
Installations

3 inspection, attendance, operation
and maintenance during Maintenance
Period item
1 ; all as described in the
Particular Specification,
Sections E1 and E3 of the
General Specification for
Mechanical Installations

4 providing all necessary item
1 power and water, diesel, gas
and fuels in connection with
testing, commissioning and
maintenance (SM.xvii(i)5)

5 particular requirements on
inspection and testing as
described in Section C8.6 of the
General Specification for
Mechanical Installations item

6 providing item
1 installation drawings ; all as
described in the Particular
Specification and Section A4.2
of the General Specification
for Mechanical Installations

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Mechanical Installations
- 3 Operation and Maintenance (O&M) Manuals and User Manuals ; all as described in the Particular Specification and Section A4.4 of the General Specification for Mechanical Installations
- 7 training of users and operation and maintenance agents as described in the Particular Specification, Section E1 and E2 of the General Specification for Mechanical Installations item
- 8 providing sample boards as described in Section A3.7 of the General Specification for Mechanical Installations item
- 9 supplying [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described
- 10 supplying and fixing [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described
- 11 supplying and fixing fire stopping to walls and floors item
- 12 providing metal labels/plates as described in Section B2.1 of the General Specification for Mechanical Installations item
 - 1 for greasing and oiling points
 - 2 for items of equipment

CAS - COMPRESSED AIR SYSTEM

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

requiring spare parts

*** END OF REPORT ***

CONCRETE WORKS

CONC - CONCRETE WORKS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

<p>1 IN-SITU CONCRETE</p> <p>1 ; liquid retaining structures [GS6.42.2]</p> <p>2 ; water tanks [GS6.63]</p> <p>3 ; watertight basement construction ; waterstops for construction joints [GS6.64]</p> <p>4 ; roads, carparks and paved areas [GS6.66]</p> <p>1 ; critical structures [GS6.54]</p> <p>2 ; intermediate structures [GS6.54 - deemed to be intermediate where not specified]</p> <p>3 ; massive concrete construction [GS6.54]</p> <p>1 ; in connection with demolition works [GS6.76 and GS8.23]</p> <p>2 ; ALL PROVISIONAL</p>	<p>1 concrete (SM.vii(a))</p> <p>1 ; sulphate resisting [GS6.27]</p> <p>2 ; rapid hardening</p> <p>3 ; PFA content ? %</p> <p>4 ; no-fines [GS6.47]</p> <p>5 ; air entrained [Standard Details]</p> <p>6 ; grade ?/?</p> <p>7 ; cement and 5 vermiculite aggregate (1:6 by volume) [Standard Details]</p> <p>8 ; ? % recycled coarse aggregate [GS6.42.3 and GS8.22]</p> <p>1 ; water repellent containing an approved water-reducing admixture [GS6.36 and GS6.42]</p> <p>2 ; approved superplasticising admixtures [GS6.36]</p> <p>3 ; moderate exposure [GS6.42 - deemed to be moderate where not specified]</p> <p>4 ; severe exposure [GS6.42]</p> <p>1 ; pouring at the rate of ? m3/hour</p> <p>2 ; placing by pumping</p> <p>3 ; mechanically tamping</p> <p>4 ; compacting with vibrators (SM.vii(a)m.7)</p> <p>5 ; ?</p> <p>2 reinforced concrete</p> <p>1 ; sulphate resisting [GS6.27]</p> <p>2 ; rapid hardening</p> <p>3 ; PFA content ? %</p> <p>4 ; no-fines [GS6.47]</p> <p>5 ; air entrained [Standard Details]</p> <p>6 ; grade ?/?</p> <p>7 ; cement and 5 vermiculite aggregate (1:6 by volume) [Standard Details]</p> <p>8 ; ? % recycled coarse aggregate [GS6.42.3 and GS8.22]</p> <p>1 ; water repellent containing an approved water-reducing admixture [GS6.36 and GS6.42]</p> <p>2 ; approved superplasticising admixtures [GS6.36]</p> <p>3 ; moderate exposure [GS6.42 - deemed to be moderate where not specified]</p> <p>4 ; severe exposure [GS6.42]</p> <p>1 ; pouring at the rate of ? m3/hour</p> <p>2 ; placing by pumping</p> <p>3 ; mechanically tamping</p> <p>4 ; ?</p>	<p>1 [foundations, bases, etc]</p> <p>1 foundations</p> <p>2 isolated stanchion or column bases</p> <p>3 pile caps</p> <p>4 ground beams</p> <p>5 transfer beams</p> <p>6 ?</p> <p>-----</p> <p>2 blinding</p> <p>1 under foundations and beams</p> <p>2 under ?</p> <p>3 beds</p> <p>4 machine bases</p> <p>5 benching under fitments [Standard Detail]</p> <p>6 suspended slabs</p> <p>1 ; horizontal [susp slabs only]</p> <p>2 ; sloping not exceeding 15 degrees from horizontal [susp slabs only]</p> <p>3 ; sloping exceeding 15 degrees from horizontal [susp slabs only]</p> <p>-----</p> <p>7 transfer plates</p> <p>-----</p> <p>8 filling and topping</p> <p>1 in suspended coffered slabs (SM.vii(a).19)</p> <p>2 in suspended troughed slabs</p> <p>3 to hollow blocks (measured separately) in suspended slabs</p> <p>1 ; horizontal</p> <p>2 ; sloping not exceeding 15 degrees from horizontal [susp slabs only]</p> <p>3 ; sloping exceeding 15 degrees from horizontal [susp slabs only]</p> <p>-----</p> <p>9 [walls]</p> <p>1 walls</p> <p>2 retaining walls</p> <p>3 ?</p> <p>-----</p>	<p>1 generally</p> <p>1 ; PROVISIONAL</p> <p>-----</p> <p>1 [thick] (SM.vii(a)11.1)</p> <p>1 ? thick</p> <p>2 average ? thick</p> <p>1 ; PROVISIONAL</p> <p>2 ; ?</p> <p>-----</p> <p>1 [thick]</p> <p>1 ? thick</p> <p>1 ; PROVISIONAL</p> <p>2 ; ?</p> <p>-----</p> <p>1 generally</p> <p>1 ; PROVISIONAL</p> <p>-----</p> <p>1 [thick]</p> <p>1 ? thick</p> <p>2 average ? thick</p> <p>1 ; PROVISIONAL</p> <p>2 ; ?</p> <p>-----</p>	<p>m3</p> <p>m3</p> <p>m3</p> <p>m3</p>
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FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

<p>3 lightweight concrete</p> <p>1 ; sulphate resisting [GS6.27]</p> <p>2 ; rapid hardening</p> <p>3 ; no-fines [GS6.47]</p> <p>4 ; air entrained [Standard Details]</p> <p>5 ; grade ?/?</p> <p>6 ; cement and 5 vermiculite aggregate (1:6 by volume) [Standard Details]</p> <p>7 ; ? % recycled coarse aggregate [GS6.42.3 and GS8.22]</p> <p>1 ; water repellent containing an approved water-reducing admixture [GS6.36 and GS6.42]</p> <p>2 ; approved superplasticising admixtures [GS6.36]</p> <p>3 ; moderate exposure [GS6.42 - deemed to be moderate where not specified]</p> <p>4 ; severe exposure [GS6.42]</p> <p>1 ; pouring at the rate of ? m3/hour</p> <p>2 ; placing by pumping</p> <p>3 ; mechanically tamping</p> <p>4 ; compacting with vibrators (SM.vii(a)m.7)</p> <p>5 ; ?</p> <p>4 reinforced lightweight concrete</p> <p>1 ; sulphate resisting [GS6.27]</p> <p>2 ; rapid hardening</p> <p>3 ; no-fines [GS6.47]</p> <p>4 ; air entrained [Standard Details]</p> <p>5 ; grade ?/?</p> <p>6 ; cement and 5 vermiculite aggregate (1:6 by volume) [Standard Details]</p> <p>7 ; ? % recycled coarse aggregate [GS6.42.3 and GS8.22]</p> <p>1 ; water repellent containing an approved water-reducing admixture [GS6.36 and GS6.42]</p> <p>2 ; approved superplasticising admixtures [GS6.36]</p> <p>3 ; moderate exposure [GS6.42 - deemed to be moderate where not specified]</p> <p>4 ; severe exposure [GS6.42]</p> <p>1 ; pouring at the rate of ? m3/hour</p> <p>2 ; placing by pumping</p> <p>3 ; mechanically tamping</p> <p>4 ; ?</p>	<p>10 columns</p> <p>11 beams</p> <p>12 stairs</p> <p>13 casings to [structural steelwork] (SM.vii(a).22)</p> <p>1 steel beams</p> <p>2 steel stanchions</p> <p>3 ?</p> <p>14 [curbs, copings, etc]</p> <p>1 curbs</p> <p>2 copings</p> <p>3 projecting cills</p> <p>4 strings</p> <p>5 cornices</p> <p>6 ?</p> <p>15 filling around Asiatic W.C. pan ; volume of pan not deducted</p> <p>-----</p> <p>16 thickenings to beds</p> <p>1 ; under walls, partitions and the like</p> <p>2 ; under channels</p> <p>-----</p> <p>17 surface water channels in level ground (SM.vii(a).5)</p> <p>18 stepped channels to slopes</p> <p>For nos 17 to 18 above</p> <p>1 ; square</p> <p>2 ; rectangular</p> <p>3 ; half round</p> <p>4 ; segmental</p> <p>1 ; ? thick sides ; ? thick bases</p> <p>1 ; excavation, disposal, formwork and rendering</p> <p>-----</p> <p>19 small bases for</p> <p>1 fencing posts and the like</p> <p>2 ?</p>	<p>1 generally</p> <p>1 ; PROVISIONAL</p> <p>-----</p> <p>1 ? (average) wide x ? thick</p> <p>1 ; PROVISIONAL</p> <p>-----</p> <p>1 ? wide x ? (average) deep waterway</p> <p>1 ; sloping</p> <p>2 ; stepping to faces of embankments</p> <p>3 ; ? expansion joints at ? maximum centres</p> <p>4 ; ?</p> <p>1 ; ? x ? x ? anchor blocks under at ? maximum centres</p> <p>2 ; ? high steps graded to falls 1 in ? ; including forming ? nr. ? diameter weep hole through each step [stepped channels]</p> <p>3 ?</p> <p>1 ; straight</p> <p>2 ; curved</p> <p>3 ; ?</p> <p>4 ; PROVISIONAL</p> <p>-----</p> <p>1 ? x ? x ? deep</p> <p>1 ; PROVISIONAL</p>	<p>m3</p> <p>m</p> <p>m</p> <p>nr</p>
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CONC - CONCRETE WORKS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 GUN APPLIED REINFORCED CONCRETE
(SM.VII(B))

1 reinforced concrete
 1 ; sulphate resisting [GS6.27]
 2 ; rapid hardening
 3 ; no-fines [GS6.47]
 4 ; air entrained [Standard Details]
 5 ; grade ?/?
 6 ; cement and 5 vermiculite aggregate
 (1:6 by volume) [Standard Details]
 7 ; ? % recycled coarse aggregate
 [GS6.42.3 and GS8.22]
 1 ; water repellent containing an
 approved water-reducing
 admixture [GS6.36 and GS6.42]
 2 ; approved superplasticising
 admixtures [GS6.36]
 3 ; moderate exposure [GS6.42 -
 deemed to be moderate where not
 specified]
 4 ; severe exposure [GS6.42]
 1 ; ? [preparatory work,
 method of application and
 finish to surfaces to be
 given here]

1 slabs
 1 tops
 2 soffits
 2 walls
 3 beams
 4 columns

1 ? thick m2
 1 ; curved

3 REINFORCEMENT (SM.VII(C))
 1 ; in connection with demolition works
 [GS6.76 and GS8.23]
 1 ; ALL PROVISIONAL

1 [bars] (SM.vii(c).2)
 1 plain steel reinforcing bars
 2 ribbed steel reinforcing bars
 3 ?
 1 ; epoxy coated [GS6.25.1 to
 6.25.14]
 2 ; ALL PROVISIONAL
 3 ; ?

1 general reinforcement
 2 links, stirrups and binders
 3 spaces and charis
 4 helical reinforcement
 5 ?

1 round bars kg
 2 indented bars kg
 3 square bars kg
 For nos 1 to 3 above
 1 ; ? diameter
 2 ; ? x ? [square bars]
 1 ; 12.00 - 15.00m long
 2 ; specially bent to curve
 3 ; ?
 1 ; PROVISIONAL

2 fabric reinforcement ; BS 4483 [GS6.14]
 (SM.vii(c).5)
 1 ; ALL PROVISIONAL
 2 ; ?

1 square mesh
 1 ; ref. A142 ; weighing 2.22 kg/m2
 2 ; ref. A193 ; weighing 3.02 kg/m2
 3 ; ref. A252 ; weighing 3.95 kg/m2
 1 ; 200 minimum side and end laps
 ; measured net - allow for laps
 2 ; ?

1 in concrete m2
 2 in tension strips ; ? wide m
 For nos 1 to 2 above
 1 ; specially bent to curve
 2 ; ?
 1 ; PROVISIONAL

3 proprietary anti-burglar reinforcement
 (SM.vii(c).6)

1 ? [state brand, type and ref.]

1 ? diameter m
 1 ; PROVISIONAL

4 couplers (SM.vii(c).4)

1 ? [state brand, type and ref.]

1 for ? diameter ? bars nr

CONC - CONCRETE WORKS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

5 threading ends of bars (SM.vii(c).3)

1 for couplers (measured separately)

1 ? diameter ? bars

nr

4 FORMWORK
 1 ; water tanks [GS6.63]
 2 ; watertight basement construction [GS6.64]
 1 ; in connection with demolition works [GS6.76 and GS8.23]
 1 ; ALL PROVISIONAL

1 sawn formwork
 2 formwork to produce fair faced finish [GS6.72]
 3 formwork to produce rough board finish [GS6.73]
 4 sawn formwork left in
 5 formwork linings left in
 6 permanent formwork

1 [surfaces msd square]
 1 vertical surfaces
 2 flat surfaces
 3 sloping surfaces

1 foundations, pile caps, ground beams and the like m2
 2 piers, columns and stanchions (SM.vii(d).6) m2
 3 walls (SM.vii(d).5) m2
 4 edges and breaks in walls exceeding 300 wide m2
 5 soffits of suspended slabs (SM.vii(d).2) m2
 6 soffits of suspended landing m2
 7 soffits of suspended coffered slabs ? overall thick ; measured flat overall ; ? x ? x ? mould size ; ? profile at ? centres both ways (SM.vii(d).4) m2
 8 soffits of suspended troughed slabs ? overall thick ; measured flat overall ; ? x ? x ? mould size ; ? profile at ? centres both ways (SM.vii(d).4) m2
 9 soffits of transfer plates m2
 10 sides and soffits of beams (SM.vii(d).7) m2
 11 sides and soffits of transfer beams m2
 12 soffits of stairs m2
 13 soffits of openings in walls exceeding 300 wide m2
 14 upper surfaces exceeding 15 degrees from horizontal m2
 15 edges of beds exceeding 300 wide m2
 16 edges and breaks in suspended slabs exceeding 300 wide m2
 17 edges and breaks in slabs exceeding 300 wide m2
 18 curbs or upstands exceeding 300 wide m2
 19 ? m2

For nos 1 to 6 above
 1 ; provide certification by an independent professional engineer at various stages for the adequacy of the design as well as its proper execution [GS6.02(ii) - only where specifically required]
 2 ; ?
 1 ; lining with
 2 ; ?
 3 plywood
 4 wallboard
 5 hardboard
 6 paper
 7 wood boards
 8 cork slabs
 9 ?
 1 ; bonding to concrete [where lining left in or permanent]
 2 ; fixing with ? [where lining left in]
 3 ; ?

For nos 1 to 19 above
 1 ; 200 - 300 thick [solid susp slabs]
 2 ; 300 - 400 thick [solid susp slabs]
 3 ; exceeding 1.00m deep [deep beams]
 1 ; strutting 3.50 - 5.00m high
 2 ; strutting 5.00 - 6.50m high
 3 ; strutting 6.50 - 8.00m

high

- 4 ; to one face only ; to ? thick walls ; ? to other face [state background - wall only]
- 5 ; permanent to both faces [wall only]
- 6 ; permanent to one face only ; to ? thick walls ; ? to other face [state background - wall only]
- 1 ; curved
- 2 ; curved ; ? radius [sides of piers, columns and stanchions only]
- 3 ; curved in more than one direction [soffits of slabs, landings only]

2	complex shapes (SM.vii(d).17)	1	? [dimension description and diagram]	
	1 ; in more than one direction		1 ; ? x ? overall	nr
			2 ; ? x ? x ? overall	
			3 ; ?	
			1 ; as drawing nr. ?	

3	[surfaces msd linear]	1	edges and breaks in walls	
	1 vertical surfaces	2	edges of beds	m
	2 flat surfaces	3	edges and breaks in suspended slabs	m
	3 sloping surfaces	4	edges and breaks in slabs	m
	1 ; not exceeding 300 wide	5	curbs or upstands	m
	2 ; ?	6	risers	m
		7	undercut risers	m
		8	open strings	m
			For nos 1 to 8 above	
		1	; strutting 3.50 - 5.00m high	
		2	; strutting 5.00 - 6.50m high	
		3	; strutting 6.50 - 8.00m high	
		4	; ?	
		1	; straight	
		2	; curved	

4	[edges and soffits of copings, cills, strings, cornices, eaves overhangs and the like]	1	exceeding 500 girth	
	1 vertical surfaces	2	not exceeding 300 girth	m2
	2 flat surfaces	3	300 - 500 girth	m
			For nos 1 to 3 above	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3	sloping surfaces	1	; ?	
1	; edges and soffits of copings, cills, strings, cornices, eaves overhangs and the like	1	; straight	
		2	; curved	

5	extra over formwork to	1	exceeding 500 girth	m2
1	piers, columns and stanchions	2	not exceeding 300 girth	m
2	walls	3	300 - 500 girth	m
3	sides and soffits of beams			
4	edges of suspended slabs exceeding 300 wide			
5	curbs or upstands			
6	?			
1	; for formwork to projecting surfaces of copings, cills, strings, cornices, eaves overhangs and the like			
1	; exceeding 1.00m deep			
2	; strutting 3.50 - 5.00m high			
3	; strutting 5.00 - 6.50m high			
4	; strutting 6.50 - 8.00m high			
5	; ?			
	1 ; curved			
	2 ; curved ; ? radius [piers, columns and stanchions]			
	3 ; ?			

6	labours on formwork	1	[labours]	m
		1	rounded edges of concrete	
		2	moulded edges of concrete	
		3	?	
		1	; straight	
		2	; curved	

7	fillets on formwork	1	? x ?	m
1	; planted on to form grooves (SM.vii(d).13)	1	; straight	
2	; forming ornamental features	2	; curved	
3	; ?			

8	surfaces of [small features]	1	? x ?	nr
1	cantilever ends or brackets and the like	2	? x ? x ?	nr
2	ends of steps and the like			
3	caps and bases to pilasters, columns and the like			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
		4 ?	
7	sawn boxings to form the following	1 holes for (SM.vii(d).15) 1 pipes, cables and the like 2 ? 1 ; exceeding 150 diameter	1 [holes] item 1 generally
		2 openings	1 [openings] nr 1 0.50 - 0.60m2 (SM.vii(d).16) 2 0.60 - 0.70m2 3 0.70 - 0.80m2 4 0.80 - 0.90m2 5 0.90 - 1.00m2 1 ; through ? thick concrete 2 ; ?
5	PRECAST CONCRETE	1 precast concrete 1 ; grade ?/? 2 ; ?	1 ? x ? [insert N in trigger for cills, lintols, steps & all units over 2.00m long] m 1 ; weathered 2 ; twice weathered 3 ; sunk weathered 4 ; splayed 5 ; twice splayed 6 ; ? 1 ; reinforced 2 ? 1 ; curved [cills, cornices, lintols, caps etc] 2 ; straight units 3 ; straight units laid to curve 4 ; curved units 5 ; fair faced finish ? girth and pointing with a flush joint all round 6 ; units exceeding 2.00m long 7 ; ?
		10 landings 11 channel covers 12 path edgings 13 road curbs 14 protective cover slabs to pipes (SM.vii(e).9) 15 facade panels For nos 1 to 15 above 1 ; bedding in cement mortar (1:3) 2 ; bedding in cement/lime mortar (1:1:6) 3 ; bedding in cement/lime mortar (1:2:9) 4 ; ?	2 [angle stones, kneelers etc.] nr (SM.vii(e).4) 1 angle stones 2 kneelers 3 bonders 4 stoolings 5 ? 1 ; to ? ; ? x ? [state type & size of cills, cornices,

lintols, caps etc]
2 ; ?

16	[covers, slabs, steps]	1	? x ? x ?	nr
	1 cover planks	1	(extremes)	
	2 duct covers	2	; ? times weathered	
	3 pier caps	3	; rebated on	
	4 spandrel steps (SM.vii(e).6)	4	; twice rebated on	
	5 circular steps	5	two long edges	
	6 winders	6	two short edges	
	7 landings	7	all edges	
	8 dropper kerbs (SM.vii(e).8)	1	; reinforcing with	
	9 planters	2	? diameter plain steel	
	10 posts		bars at ? centres both	
	11 bollards		ways	
	12 seat slabs	3	? diameter plain steel	
	13 bench slabs		bars at ? centres one way	
	14 ?	4	? diameter plain steel	
			bars at ? centres other	
			way	
		5	; ? diameter plain steel	
			links at ? centres	
		6	; ? diameter plain steel	
			lifting lugs	
		1	; fair faced finish to	
			top	
		2	; fair faced finish to	
			top and edges	
		3	; fair faced finish to	
			all surfaces	
		4	; ?	

17	hollow blocks (SM.vii(a).27)	1	? x ? x ? [GS6.67]	nr
	1 ; 25 thick outer casing and web	1	; filling exposed ends with	
	2 ; grooved both sides		concrete 25 thick	
	3 ; ?	2	; ?	
	1 ; laying with butt joints on			
	formwork (measured separately)			
	2 ; ?			
	1 ; in suspended slabs			
	2 ; ?			

18	slab partitions	1	? thick ; ? x ? high	nr
	1 ; reinforcing with ? diameter plain	1	; forming notch at bottom of	
	steel bars at ? centres both ways		slab	
	2 ; ?	2	; forming ? notches at bottom	
	1 ; finished on all exposed		of slab	
	surfaces with 6 thick white			
	terrazzo Mix Type A			
	2 ; finished on all exposed			
	surfaces with 6 thick white			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

lining left in]
3 ; ?

[for piers, columns
and stanchions]

2	complex shapes (SM.vii(d).17 1 ; in more than one direction	1	? [dimension description and diagram]	nr
			1 ; ? x ? overall	
			2 ; ? x ? x ? overall	
			3 ; ?	
			1 ; as drawing nr. ?	

3	[surfaces msd linear]	1	edges of suspended slabs	m
	1 vertical surfaces		1 ; straight	
	2 flat surfaces		2 ; curved	
	3 sloping surfaces			
	1 ; not exceeding 300 wide			
	2 ; ?			

4	extra over formwork to	1	exceeding 500 girth	m2
	1 piers, columns and stanchions		2 not exceeding 300 girth	m
	2 sides and soffits of beams		3 300 - 500 girth	m
	3 edges of suspended slabs exceeding 300 wide			
	4 ; exceeding 1.00m deep			
	5 ; ?			
	1 ; for formwork to projecting surfaces of copings, cills, strings, cornices, eaves overhangs and the like			
	1 ; strutting 3.50 - 5.00m high			
	2 ; strutting 5.00 - 6.50m high			
	3 ; strutting 6.50 - 8.00m high			
	4 ; ?			
	1 ; curved			
	2 ; curved ; ? radius [pipers, columns and stanchions]			
	3 ; ?			

5	boxings to form holes for pipes, cables and the like exceeding 150 diameter	1	[boxings]	item
			1 generally	

6	boxings to form openings	1	[boxings]	nr
			1 ? - ?m2	
			1 ; through ? thick concrete	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

<p>4 formwork to produce fair faced finish [GS6.72]</p> <p>5 formwork to produce rough board finish [GS6.73]</p> <p>6 sawn formwork left in</p> <p>7 formwork linings left in</p> <p>For nos 4 to 7 above</p> <p>1 ; provide certification by an independent professional engineer at various stages for the adequacy of the design as well as its proper execution [GS6.02(ii) - only where specifically required]</p> <p>2 ; ?</p> <p>1 ; lining with</p> <p>2 ; ?</p> <p>3 plywood</p> <p>4 wallboard</p> <p>5 hardboard</p> <p>6 paper</p> <p>7 wood boards</p> <p>8 cork slabs</p> <p>9 ?</p> <p>1 ; bonding to concrete [where lining left in or permanent]</p> <p>2 ; fixing with ? [where lining left in]</p> <p>3 ; ?</p>	<p>1 [surfaces msd square]</p> <p>1 vertical surfaces</p> <p>2 flat surfaces</p> <p>3 sloping surfaces</p> <hr/> <p>2 complex shapes (SM.vii(d).17</p> <p>1 ; in more than one direction</p> <hr/> <p>3 [surfaces msd linear]</p> <p>1 vertical surfaces</p> <p>2 flat surfaces</p> <p>3 sloping surfaces</p> <p>1 ; not exceeding 300 wide</p> <p>2 ; ?</p> <hr/> <p>4 extra over formwork to</p> <p>1 piers, columns and stanchions</p> <p>2 sides and soffits of beams</p> <p>3 edges of suspended slabs exceeding 300 wide</p> <p>4 ; exceeding 1.00m deep</p> <p>5 ; ?</p> <p>1 ; for formwork to projecting surfaces of copings, cills, strings, cornices, eaves overhangs and the like</p> <p>1 ; strutting 3.50 - 5.00m high</p> <p>2 ; strutting 5.00 - 6.50m</p>	<p>1 [surfaces]</p> <p>1 piers, columns and stanchions</p> <p>2 soffits of suspended slabs</p> <p>3 sides and soffits of beams</p> <p>4 edges of suspended slabs</p> <p>5 ; 200 - 300 thick [solid susp slab]</p> <p>6 ; 300 - 400 thick [solid susp slab]</p> <p>7 ; exceeding 1.00m deep [deep beams]</p> <p>1 ; strutting 3.50 - 5.00m high</p> <p>2 ; strutting 5.00 - 6.50m high</p> <p>3 ; strutting 6.50 - 8.00m high</p> <p>4 ; ?</p> <p>1 ; curved</p> <p>2 ; curved ; ? radius [for piers, columns and stanchions]</p> <hr/> <p>1 ? [dimension description and diagram]</p> <p>1 ; ? x ? overall</p> <p>2 ; ? x ? x ? overall</p> <p>3 ; ?</p> <p>1 ; as drawing nr. ?</p> <hr/> <p>1 edges of suspended slabs</p> <p>1 ; straight</p> <p>2 ; curved</p> <hr/> <p>1 ; not exceeding 300 girth</p> <p>2 ; 300 - 500 girth</p> <p>3 ; not exceeding 500 girth</p>	<p>m2</p> <p>nr</p> <p>m</p> <p>m</p> <p>m2</p>
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FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			high		
			3 ; strutting 6.50 - 8.00m		
			high		
			4 ; ?		
			1 ; curved		
			2 ; curved ; ? radius		
			[pipers, columns and		
			stanchions]		
			3 ; ?		

		5	boxings to form holes for pipes, cables and the like exceeding 150 diameter	1	[boxings] item
				1	generally

		6	boxings to form openings	1	[boxings] nr
				1	? - ?m ²
				1	; through ? thick concrete

8	ducts ; permanent sheathing of suitable diameter to enclose tendons (SM.vii(f).3)	1	ducts	1	[ducts - insert N in trigger] m
	1 ; in reinforced concrete	2	curved ducts	1	for tendon formed of ?
	1 beams and slabs			1	strands, each ? diameter
	2 columns			1	; in lengths 12.00 - 15.00m
	3 ?			2	; in lengths 15.00 - 18.00m
	1 ; pressure grouting after tensioning			3	; in lengths ? - ?m

9	SUPPLYING ONLY tendons comprising the following prestressing strands ; measured net lengths between outer faces of anchorages - allow for extra lengths for tensioning (SM.vii(f).4.1)	1	? wire strands	1	[diameter] kg
				1	of ? diameter
				1	; UTS ? KN [UTS = Ultimate Strength]

10	FIXING ONLY the following tendons in straight or curved sheathing (measured separately) (SM.vii(f).4.2)	1	tendons	1	[strands] nr
				1	formed of ? strands, each ? diameter
				1	; ? long between outer faces of anchorages
				1	debonded from the concrete ; covered with sleeves [GS7.50 - only where specified]

11	tensioning the following tendons (SM.vii(f).4.3)	1	tendons	1	[strands] nr
				1	formed of ? strands, each ? diameter
				2	; ? long
				1	; jacking force of ? KN

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 ; applied from one end
- 2 ; applied from both ends

12 anchorages ; complete assemblies comprising anchor plates, guides, cones, wedges and the like ; fixing in position ; formwork to form recesses ; filling recesses with ? after completion of stressing [GS7.22] (SM.vii(f).5)

- 1 live anchorages
 - 2 dead anchorages
 - 3 loop type dead anchorages
- For nos 1 to 3 above
- 1 ; fixed to beams and slabs
 - 2 ; fixed to columns
 - 3 ; fixed to ?

- 1 [tendons] nr
- 1 for tendon formed of ? strands, each ? diameter
- 2 for ? tendon formed of ? strands, each ? diameter
- 3 ?

13 testing

- 1 allow for submitting to the Architect a sample of each type of anchorage to be used together with two test pieces from each coil of strand

- 1 [fees] item
- 1 paying all fees and charges in connection with testing each of these items by an authority specified by the Architect

- 7 PRECAST PRESTRESSED CONCRETE
- 1 ; pre-tensioned in the mould
 - 2 ; post-tensioned on the ground after casting
 - 3 ; cast in sections, assembled and post-tensioned before erection
 - 4 ; cast in sections for assembly in-situ and post-tensioned after erection
 - 5 ; post-tensioned after hoisting but capable of self support
 - 6 ; post-tensioned after hoisting but requiring support until tensioning is complete
- 1 ; in beams and slabs
 - 2 ; in columns
 - 3 ; in ?
 - 1 ; as drawing nr. ?
 - 2 ; ?

- 1 precast concrete (SM.vii(g).2)
 - 1 ; grade ?/?
 - 2 ; ?

- 1 slabs
- 2 beams
- 3 columns

- 1 [section] nr
- 1 ? x ? x ? long
- 2 ? diameter x ? long
 - 1 ; square section
 - 2 ; rectangular section
 - 3 ; circular section
 - 4 ; l-section
 - 1 ; fair faced finish ? girth ; ? long
 - 2 ; ?

- 4 hoisting, fixing and bedding units
 - 1 ; in cement grout
 - 2 ; in cement mortar (1:3)

- 1 ? x ? x ? nr
 - 2 ? diameter x ? nr
- For nos 1 to 2 above
- 1 ; slabs
 - 2 ; beams
 - 3 ; columns
 - 4 ; ?
 - 1 ; ? long
 - 2 ; not exceeding 1.50m long, average ? long
 - 3 ; 1.50 - 3.00m long, average ? long
 - 4 ; 3.00 - 4.50m long, average ? long
 - 5 ; ? - ?m long, average ? long
 - 1 ; bearing above ground level
 - 2 not exceeding 3.00m

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

straight or curved sheathing (measured separately) (SM.vii(f).4.2)

1 formed of ? strands, each ? diameter
 1 ; ? long between outer faces of anchorages
 1 debonded from the concrete ; covered with sleeves [GS7.50 - only where specified]

6 tensioning the following tendons (SM.vii(f).4.3)

1 tendons

1 [strands] nr
 1 formed of ? strands, each ? diameter
 1 ; jacking force of ? KN
 1 ; applied from one end
 2 ; applied from both ends

7 anchorages ; complete assemblies comprising bearing plates, guides, cones, wedges and the like ; fixing in position ; formwork to form recesses ; filling recesses with ? after completion of stressing [GS7.22] (SM.vii(f).5)

1 live anchorages
 2 dead anchorages
 3 loop type dead anchorages
 For nos 1 to 3 above
 1 ; fixed to beams and slabs
 2 ; fixed to columns
 3 ; fixed to ?

1 [tendons] nr
 1 for tendon formed of ? strands, each ? diameter
 2 for ? tendons formed of ? strands, each ? diameter
 3 ?

8 testing

1 allow for submitting to the Architect a sample of each type of anchorage to be used together with two test pieces from each coil of strand

1 [fees] item
 1 paying all fees and charges in connection with testing each of these items by an authority specified by the Architect

8 MOVEMENT JOINTS

1 joints in concrete [GS6.61 and GS6.62] (SM.vii(a).28)

1 forming movement joints ; formwork ; temporary fillets ; ? surface coatings and formation of rebates or other labour

1 between two wall faces m2
 1 ; ? wide
 2 ; left open
 3 ; filling with
 4 impregnated fibreboard joint fillers
 5 inorganic joint fillers
 6 ; cutting joint filler
 7 ; cutting and perforating joint filler
 8 ; ? dowels at ? centres
 1 ; plane
 2 ; curved
 2 [joints msd linear] m
 1 in beds
 2 in suspended slabs
 3 in walls

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 4 in beams
- 5 in columns
- 6 ?
- 1 ; ? wide x ? deep
- 2 ; ? wide x ? girth
- 3 ; left open
- 4 ; filling with
- 5 impregnated fibreboard joint fillers
- 6 inorganic joint fillers
- 7 ; ? wide
- 8 ; ? girth
- 9 ; cutting joint filler
- 10 ; cutting and perforating joint filler
- 11 ; ? dowels at ? centres
 - 1 ; straight
 - 2 ; curved

- 3 [joints msd nr.] nr
- 1 across beams
- 2 across curbs
- 3 ?
- 1 ; ? wide x ? deep [may be grouped in ranges of sizes]
- 2 ; ? wide x ? girth [may be grouped in ranges of sizes]
- 3 ; left open
- 4 ; filling with
- 5 impregnated fibreboard joint fillers
- 6 inorganic joint fillers
- 7 ; ? wide
- 8 ; ? girth
- 9 ; cutting joint filler
- 10 ; cutting and perforating joint filler
- 11 ; ? dowels at ? centres

-
- 2 pointing to movement joints with 1 ? x ? m
 - 1 standard grade mastic 1 ; including backing rod
 - 2 hot applied joint sealant 2 ; ?
 - 3 cold poured joint sealant [GS6.61]
 - 4 one part gun-grade polysulphide-based sealant
 - 5 two part polysulphide-based sealant
 - 6 ?
 - 1 ; one side
 - 2 ; both sides
-

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		3 [cover strips, cover plates, fire stops]	1 ? x ? flats	m
		1 aluminium	2 ? x ? x ? angles	m
		2 stainless steel		
		3 galvanised steel	For nos 1 to 2 above	
		4 ?	1 ; straight	
		1 cover strips	2 ; curved	
		2 cover plates	1 ; PROVISIONAL	
		3 fire stops		
		1 to structural movement joints		
		2 ; ? [state fixing method]		
<hr/>				
		4 waterstops (SM.vii(a).31)	1 ? wide	m
		1 ; PVC [GS6.61]	1 ; casting into concrete	
		2 ; rubber	1 ; temporary fixing to formwork	
		1 ; flat dumbbell section	1 ; straight	
		2 ; centre bulb section	2 ; curved	
		3 ; externally placed section	3 ; PROVISIONAL	
		1 ; ?		
			2 welded	nr
			1 angles	
			2 flat mitres	
			3 tees	
			4 flat tees	
			5 flat intersections	
			6 ?	
			1 ; on ? wide waterstop	
			2 ; ?	
			1 ; PROVISIONAL	
			2 ; ?	
			3 prefabricated	nr
			1 angles	
			2 flat mitres	
			3 tees	
			4 flat tees	
			5 flat intersections	
			6 ?	
			1 ; on ? wide waterstop	
			2 ; ?	
			1 ; welded joints	
			2 ; PROVISIONAL	
			3 ; ?	
<hr/>				
9 SUNDRIES	1 sundry items	1 accessories cast into in-situ concrete	1 [bonding ties]	m2
		1 ; steel	1 ? diameter x ? long rods	
		2 ; galvanised steel	1 spacing at ? centres both ways	
		3 ; stainless steel	2 spacing at ? centres one way and at ? centres other way	
		4 ; plastic		
		5 ; ?		
		1 ; bonding ties		

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; sprinkling on and lightly
trowelling in before setting at the
rate of 2 kg/m2
3 ; ?

8 applying one coat 1 on concrete surfaces m2
9 applying two coat

For nos 8 to 9 above
1 of bituminous paint [common item]

10 forming channels in concrete beds 1 [channels] (SM.vii(a).7) m
1 ; rectangular 1 ? wide x ? (average) deep
2 ; segmental 2 ? diameter
3 ; half round 1 ; straight
4 ; ? 2 ; curved
1 ; formwork 3 ; ?
2 ; ?

2 testing 1 core tests to plain or reinforced 1 ? diameter x ? deep nr
concrete ; thicknesses and locations as
directed by the Architect or his
representative ; making good core hole
with similar concrete and all works
disturbed [GS6.57, 6.58, 6.60]
1 ; PROVISIONAL

2 watertightness test for water tanks 1 tank size ; approximately ? x ? x
[GS6.63] ? deep internally item

*** END OF REPORT ***

DEMOLITIONS AND ALTERATIONS

DEM - DEMOLITIONS AND ALTERATIONS

FIRST DIVISION

1 DEMOLITIONS

SECOND DIVISION

- 1 demolishing or taking down
 - 2 demolishing or taking down involving the removal of materials containing ? [state asbestos, toxic and dangerous or other hazardous materials] as specified in Appendix ?
- For nos 1 to 2 above
- 1 to the top surface of concrete at the lowest floor level
 - 2 to ground level
 - 3 to ? level
 - 4 carried out by a Registered Specialist Contractor for demolition works on register maintenance by Buildings Department
 - 5 designed by a Registered Structural Engineer
 - 6 method of demolition and disposal of demolition waste to comply with GS2.17-2.23 (SM.iv(a).S2&3)
 - 7 ?

THIRD DIVISION

- 1 individual structures (SM.iv(a).2)
 - 2 parts of structures (SM.iv(a).3)
 - 3 all structures (SM.iv(a).4)
- For nos 1 to 3 above
- 1 ; containing prestressed members
 - 2 ; containing asbestos-containing materials
 - 3 ; containing ? [state type of toxic and dangerous or other hazardous materials]
- 1 ; in ? [state works or constructions which contain these toxic materials]
 - 2 ; ? [state quantities in m3, m2, m or nr.]
 - 3 ; as identified in drawing nr.?

FOURTH DIVISION

- 1 ? x ? x ? high item
- 1 to parapet
- 2 to ridge
- 3 to ?
- 4 ; single storey
- 5 ; ? storeys
- 6 ; brick building
- 7 ; concrete building
- 8 ; reinforced concrete framed building
- 9 ; timber framed building
- 10 ; steel framed building
- 11 ; ?
- 1 ; leaving parts of old walls temporarily in position as buttresses
- 2 ; located at ?
- 3 ; as delineated on drawing nr. ?
- 4 ; ?
- 1 ; materials remaining the property of Employer ; setting aside and storing materials on site
- 2 ; ? remaining the property of Employer [state specific materials] ; setting aside and storing materials on site
- 3 ; setting aside materials for re-use ; storing on site
- 4 ; shoring and scaffolding (SM.iv(a)m.3)
- 5 ; making good structures
- 6 ; temporarily diverting, maintaining or sealing off existing services
- 7 ; ?

2 REMOVAL OF ASBESTOS-CONTAINING MATERIALS [GS2.42 - 2.54]

3 REMOVAL OF ? MATERIALS [STATE TYPE OF TOXIC, DANGEROUS OR OTHER HAZARDOUS MATERIALS]

- 1 Design, provision, installation, inspection, testing, supervision, monitoring, sampling, maintenance, cleaning up and subsequent removal of the special precautionary measures
- 1 ; as specified in Appendix ? for the controlled removal and disposal of asbestos-containing materials

- 1 [Establishment cost]
- 1 decontamination facilities including three-chamber air lock, negative air pressure ventilation and air filtration system, air monitoring and sampling and complete sealing of floor, wall and ceiling
- 2 temporary barriers and hoardings

- 1 [locations] item
- 1 ?/F
- 2 ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; as specified in Appendix ? for the controlled removal and disposal of ? materials [state type of toxic, dangerous or other hazardous materials]
 3 ; as identified in drawing nr. ?
 4 ; ?

completed with warning signs
 3 waste disposal facilities including temporary containment barriers
 4 respirators and protective clothing
 5 ?

2 removal and disposal of asbestos-containing materials
 1 ; as identified in drawing nr. ?
 2 ; ?

1 [Works related cost]
 1 corrugated cement sheets
 2 floor tiles with adhesives
 3 sprayed acoustic ceiling plaster
 4 hollow cement pipes
 5 pipe laggings
 6 ?

1 [locations] item
 1 ?/F
 2 ?
 1 ; ? m3
 2 ; ? m2
 3 ; ? m
 4 ; ? nr.
 5 ; ?

3 removal and disposal of ? [state type of toxic, dangerous or other hazardous materials]
 1 ; as identified in drawing nr. ?
 2 ; ?

1 in ? [state works or constructions which contain these toxic materials]

1 [locations] item
 1 ?/F
 2 ?
 1 ; ? m3
 2 ; ? m2
 3 ; ? m
 4 ; ? nr.
 5 ; ?

4 ALTERATIONS

1 alteration works to existing ? [group by location e.g. rooms or floors]
 1 ; as delineated on drawing nr. ?
 2 ; ?

1 cutting or enlarging openings through [walls & slabs] (SM.iv(b).2)
 1 concrete
 2 reinforced concrete
 3 brick
 4 stone
 5 metal
 6 ?
 7 walls ? thick
 8 slabs ? thick
 9 ?
 1 ; located at ?
 2 ; ?
 3 ; cutting and pinning ? lintol over reinforced with ? [give details of lintol]
 4 ; cutting and pinning ? trimmers around openings [give details of trimmers]
 5 ; forming ? arch over [give details of arch]
 6 ; cutting and pinning ? sill [give details of sill]
 7 ; ?
 1 ; quoining up jambs

1 [sizes] item
 1 ? x ?
 2 ? wide x ? high
 3 ? [give details/sizes of enlarged openings]

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 2 ; extending finishings and making good
- 3 ; shoring and scaffolding (SM.iv(d).1)
- 4 ; ?

-
- 2 blocking up or partially blocking up openings through (SM.iv(b).3)
 - 1 walls
 - 2 slabs
 - 3 ?
 - 4 ; located at ?
 - 5 ; ?
 - 1 ; concrete grade ?/? ? thick
 - 2 ; reinforced concrete grade ?/? ? thick
 - 3 ; ? brickwork in ? mortar ? thick
 - 4 ; ? stonework in ? mortar ? thick
 - 5 ; steel plate ? thick
 - 6 ; formwork
 - 7 ; ? diameter plain steel reinforcement bars at ? centres one way
 - 8 ; ? diameter plain steel reinforcement
 - 9 ; bonding to existing with ? [give details of bonding]
 - 10 ; cutting, tothing and bonding to existing each alternate course ; extra material
 - 11 ; welding to existing
 - 12 ; bolting to existing
 - 13 ; ?
 - 1 ; taking out
 - 2 ; carefully taking out
 - 3 ; ? threshold [give details]
 - 4 ; ? lintol [give details]
 - 5 ; ? arch [give details]
 - 6 ; ? sill [give details]
 - 7 ; ? remaining the property of Employer
 - 8 ; setting aside and storing materials on site
 - 9 ; setting aside materials for re-use
 - 10 ; extending finishings and making good
 - 11 ; protecting
 - 12 ; shoring and scaffolding [only where lintols/arches removed] (SM.iv(d).1)

- 1 [sizes] item
 - 1 ? x ?
 - 2 ? wide x ? high
 - 3 ? [give details/sizes of partially blocked up openings]

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

13 ; ?

<p>3 pulling down [walls, partitions, suspended ceilings, floors, roofs, staircases etc] (SM.iv(b).4)</p> <p>1 concrete</p> <p>2 reinforced concrete</p> <p>3 brick</p> <p>4 stone</p> <p>5 timber</p> <p>6 metal</p> <p>7 ?</p> <p>1 walls</p> <p>2 partitions</p> <p>3 suspended ceilings slabs</p> <p>4 floors</p> <p>5 roofs</p> <p>6 staircases</p> <p>7 ?</p> <p>8 ; located at ?</p> <p>9 ; ?</p> <p>1 ; approximately ? x ? [give dims where practical]</p> <p>2 ; approximately ? m2 [give quantities where practical]</p> <p>3 ; approximately ? m3 [give quantities where practical]</p> <p>4 ; shoring and scaffolding</p> <p>5 ; making good structures</p> <p>6 ; extending and making good ? [give details of extending finishes and finishing]</p> <p>7 ; toxic / hazardous material, state type</p> <p>8 ; ?</p>	<p>1 [overall size of thickness] item</p> <p>1 ? thick</p> <p>2 ? wide ; ? total going ; ? total rise [staircases]</p> <p>3 ?</p>
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<p>4 taking down fittings and fixtures (SM.iv(b).5)</p> <p>1 ; located at ?</p> <p>2 ; ?</p> <p>3 ; materials remaining the property of Employer</p> <p>4 ; ? remaining the property of Employer [state specific materials]</p> <p>5 ; setting aside and storing the materials on site</p> <p>6 ; setting aside materials for re-use</p> <p>7 ; ?</p> <p>1 ; protecting</p> <p>2 ; ?</p> <p>1 ; extending and making good ? [give details of finishes</p>	<p>1 [fittings and fixtures] item</p> <p>1 ? x ?</p> <p>2 ? x ? x ?</p> <p>3 ?</p> <p>1 hardwood</p> <p>2 mild steel</p> <p>3 aluminium</p> <p>4 vitreous china</p> <p>5 fireclay</p> <p>6 ?</p> <p>1 doors</p> <p>2 windows</p> <p>3 counters</p> <p>4 cupboards</p> <p>5 shelving</p> <p>6 wash hand basins</p>
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FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			9	repairing, adapting and refixing (SM.iv(b).10)		1	[fittings]	item	
				1 existing fittings and fixtures		1	? x ?		
				2 ?		2	? x ? x ?		
				1 ; located at ?		3	?		
				2 ; ?		1	hardwood		
				1 ; replacing all broken parts		2	mild steel		
				2 ; extending and making good		3	aluminium		
				? [give details of finishes and finishing]		4	vitreous china		
						5	fireclay		
						6	?		
						1	doors		
						2	windows		
						3	counters		
						4	cupboards		
						5	wash hand basins		
						6	sinks		
						7	w.c. suites		
						8	?		
						9	; hanging		
						10	; plugging		
						11	; cutting and pinning fixing lugs		
						12	; cutting and pinning brackets		
						13	; connections to service pipes		
						14	; ? nr.		
						15	; ?		
			10	stripping out plumbing and engineering services (SM.iv(b).11)		1	? installation [state type of installation]	item	
				1 ; located at ?					
				2 ; ?					
				3 ; materials remaining the property of Employer					
				4 ; ? remaining the property of Employer [state specific materials]					
				5 ; ?					
				1 ; setting aside and storing the materials on site					
				2 ; setting aside materials for re-use					
				3 ; ?					
				1 ; protecting					
				2 ; temporarily diverting, maintaining or sealing off existing services					
				3 ; ?					
5	SUNDRIES		1	temporary [screens & roofs] (SM.iv(c).1)	1	[screens]	1	providing ; erecting ; maintaining [measured square]	m2
				1 screens		1	weather screens		

DEM - DEMOLITIONS AND ALTERATIONS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 roofs
3 ?

2 dustproof screens
3 ?
1 ; temporary rainwater disposal
to ? [give details]
2 ; ?
1 ; temporary doors size ? x ?
; ? nr.
2 ; temporary windows size ? x
? ; ? nr.
3 ; ?

1 ; altering and adapting as
necessary during the Contract
; removing on completion ;
making good all work disturbed
2 ; ?
2 ? x ? [enumerated] nr
1 ; providing ; erecting ;
maintaining ; altering and
adapting as necessary during
the Contract ; removing on
completion ; making good all
work disturbed
2 ; ?

2 Optional - not due to changes made in
Corrigendum No. GS2007-02 ; material of
shoring is not normally stated in
dwgs/spec shoring

1 [shores] (SM.iv(d).1)
1 raking shores
2 flying shores
3 ?
1 ; to walls or columns of
existing concrete structure
2 ; to walls or columns of
existing reinforced concrete
structure
3 ; to walls or columns of
existing brick structure
4 ; to walls or columns of
existing stone structure
5 ; to walls and columns of
existing steel structure
6 ; ?
1 ; on grid lines ?
2 ; as delineated on drawing
nr. ?
3 ; propping against edge of
suspended floors at ? [give
floor levels which are
propped]
4 ; ?

1 providing ; erecting ; maintaining
? months item
2 taking over existing and repairing
as necessary ; maintaining ?
months item
3 adapting ; ? [state details] ;
maintaining ? months item
For nos 1 to 3 above
1 ; cutting holes and pockets in
the structure
2 ; ?
1 ; clearing away on
completion
2 ; ?
1 ; making good all work
disturbed
2 ; ?

6 CREDIT VALUE

1 allowing credit

1 for the value of materials

1 arising from [demolitions &
alterations] item
1 demolitions
2 alterations

*** END OF REPORT ***

DIESEL GENERATING SETS INSTALLATION

DGSI - DIESEL GENERATING SETS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:

1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	DIESEL GENERATING SETS INSTALLATION	1	Design, supply and install Diesel Generating Sets and associated equipment ; as detailed in the Particular Specification, Section C12 of the General Specification for Electrical Installation and drawing nr. ?	1	Diesel Generating Sets Installation	1	diesel generating engine	item
	1 ; in plant room						1 ; alternator ; electrical battery starting system ; cooling system	
							1 ; lubricating oil system	
							2 ; exhaust system and ductwork	
							3 ; exhaust system and ductwork and silencers	
							1 ; necessary equipment and accessories	
						2	all pipework and accessories	item
						3	fuel supply system	item
							1 ; underground fuel storage tank/ ? litre daily service fuel tank and supporting frame ; fuel transfer pumping system ; oil drip trays ; oil resistant flexible hose	
							2 ; fuel oil transfer pump	
							3 ; fuel oil hand pump	
							1 ; diesel fuel level switches ; quick closing mechanism ; painting ; all necessary pipeworks, valves, fittings and accessories	
						4	topping up of all fuel tanks with fuel upon satisfactory completion of tests	item
						5	lifting hoist	item

DGSI - DIESEL GENERATING SETS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

				1 ; trolley	
				6 acoustic treatment installation to the whole diesel generating sets installation and generator room	item
				7 electrical installation	item
				1 ; all cabling works including sensor cables	
				1 ; earthing system	
				8 control cubicle	item
				1 ; panel ; switchgear ; wiring ; control equipment	
				1 ; rubber mats and accessories	
				2 ; protective devices against mechanical & electrical failure according to C12.3.2 of the General Specification for Electrical Installations	
				1 ; clean contacts for alarm to be connected for remote indication	
				2 ; clean contacts for indication to be connected for remote indication	
				9 interfacing with central control and monitoring system (CCMS)	item
				1 ; complete with interfacing panels, contactors, relays, microswitches, transducers, transformers, signal and control cables, conduits and other necessary accessories ; connection to direct digital control system, CCMS or direct digital controllers (DDC)	
				10 protective guard	item
3	DIESEL GENERATING SETS INSTALLATION SUNDRIES	1	the following items are in respect of the whole Diesel Generating Sets Installation	1	allow for
	1 ; in plant room				
				1	marking the positions of holes, mortices, chases and the like in the structure (SM.xviii(j)1)
				2	testing the complete Diesel Generating Sets Installation ; all as described in the Particular Specification and Section C12.13 of the General Specification for

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

Electrical Installation
(SM.xviii(j)2&3) item

3 inspection, attendance, operation and maintenance of the complete Diesel Generating Sets Installation during Maintenance Period item

1 ; all as described in the Particular Specification, Section E1 and E3 of the General Specification for Electrical Installation

4 providing all necessary power and water, (SM.xviii(j)3) item

1 diesel and fuels in connection with inspection, testing and commissioning, and maintenance

5 providing installation drawings ; all as described in the Particular Specification and Section A4.2 of the General Specification for Electrical Installation (SM.xviii(j)5) item

2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Electrical Installation (SM.xviii(j)7)

3 Operation and Maintenance (O&M) Manuals and User Manuals ; all as described in the Particular Specification and Section A4.4 of the General Specification for Electrical Installation (SM.xviii(j)11)

6 providing training to Employer's staff as described in the Particular Specification, Section E1 and E2 of the General Specification for Electrical Installation item

7 providing sample boards ; all as described in the Particular Specification and Section A3.7 of the General Specification for

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

Electrical
Installation

- | | | | |
|----|---|--|------|
| | | | item |
| 8 | schematic diagrams ; all as described in Section C12.12 of the General Specification for Electrical Installation | | item |
| 9 | providing | | item |
| | 1 mock-ups | | |
| | 2 prototypes | | |
| | 3 mock-ups and prototypes (SM.xviii(j)8) | | |
| 10 | supplying [sleeves] | | item |
| | 1 pipe sleeves | | |
| | 2 conduit sleeves | | |
| | 3 cable sleeves | | |
| | 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described | | |
| 11 | supplying and fixing [sleeves] | | item |
| | 1 pipe sleeves | | |
| | 2 conduit sleeves | | |
| | 3 cable sleeves | | |
| | 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described | | |
| 12 | supplying and fixing fire stopping to walls and floors (SM.xviii(j)17) | | item |

*** END OF REPORT ***

DRAINAGE

DRAIN - DRAINAGE

FIRST DIVISION

- 1 SOIL AND SURFACE WATER DRAINAGE
- 2 UNDERGROUND PIPE DUCTS

SECOND DIVISION

- 1 excavating trenches for drain pipes (SM.ix.2)
 - 2 excavating trenches for pipe ducts (SM.ix.3)
- For nos 1 to 2 above
- 1 ; commencing at
 - 2 ; ?
 - 1 natural ground level
 - 2 site formation level
 - 3 reduced level
 - 4 ? below site formation level
 - 5 basement level
 - 6 ?

THIRD DIVISION

- 1 not exceeding 200 internal diameter (SM.ix.2.1,SM.ix.3.1)
- 2 ? internal diameter (SM.ix.2.2,SM.ix.3.2)
- 3 ? pipes, ? diameter (SM.ix.2.3,SM.ix.3.3)

FOURTH DIVISION

- 1 [depths] m
 - 1 0.25m average depth
 - 2 0.50m average depth
 - 3 0.75m average depth
 - 4 1.00m average depth
 - 5 1.25m average depth
 - 6 1.50m average depth
 - 7 1.75m average depth
 - 8 2.00m average depth
 - 9 2.25m average depth
 - 10 2.50m average depth
 - 11 ?m average depth
 - 1 for pipes without beds
 - 2 for pipes on beds
 - 3 for pipes on beds and surrounds

-
- 3 extra over excavation and disposal at any depth for (SM.ix.24)

- 1 breaking up and removing materials met with in excavation

- 1 [surface pavings] m2
 - 1 surface concrete ? thick
 - 2 concrete paving ? thick
 - 1 ; with hardcore under
 - 2 ; with ?
- 2 [materials met with in excavation] m3
 - 1 brickwork
 - 2 blockwork
 - 3 stone masonry walls
 - 4 slab foundations
 - 5 unreinforced concrete
 - 6 reinforced concrete
 - 1 ; PROVISIONAL

-
- 4 [beds, surrounds]
 - 1 granular bedding ; recycled material [DI GS B2.5.2]
 - 2 granular bedding ; non-recycled material [DI GS B2.5.2]
 - 3 concrete ; grade 10/20 [DI GS B2.1.4]
 - 4 reinforced concrete ; grade 20/20 [DI GS B2.1.4]
 - 5 ?

- 1 beds (SM.ix.4)
- 2 benchings (SM.ix.5)
- 3 beds and haunches
- 4 beds and surrounds (SM.ix.6)
- 5 beds and backfilling
- 6 surrounds to vertical pipes
- 7 ?

- 1 [size] m
 - 1 ? x ? under ? diameter pipes
 - 2 ? x ? to ? diameter pipes
 - 3 ? x 100 over ? diameter pipes
 - 4 ?
 - 1 ; surrounds minimum ? thick
 - 2 ; ?

- For nos 1 to 7 above
- 1 ; formwork
 - 2 ; blinding under beds [DI GS B2.5.4]
 - 3 ; polythene sheeting [DI GS B2.5.4]
 - 4 ; ?

-
- 5 reinforcement
 - 1 ; plain steel reinforcing bars [DI GS B2.1.4]
 - 2 ; ribbed steel reinforcing bars [DI GS B2.1.4]

- 1 general reinforcement

- 1 10 diameter kg
- 2 ? diameter kg

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
	3 ; ?		
6 [drain pipes, pipe service ducts]	1 concrete pipes and fittings ; class L ; reinforced [DI GS C2.1.1]	1 pipes	1 ? internal diameter m
	2 concrete pipes and fittings ; class L ; unreinforced [DI GS C2.1.1]	1 ; on bed ; in trench (SM.ix.7.1)	1 ; with ? wrapping all round
	3 concrete pipes and fittings ; class M ; reinforced [DI GS C2.1.1]	2 ; vertical	1 already included in SMM4.IX coverage rule C.4
	4 concrete pipes and fittings ; class M ; unreinforced [DI GS C2.1.1]	3 ; fixed on walls and columns	
	5 concrete pipes and fittings ; class H ; <reinforced [DI GS C2.1.1]	4 ; in ducts below ground or below floors (SM.ix.7.2)	
	6 concrete pipes and fittings ; class H ; unreinforced [DI GS C2.1.1]	5 ; ?	
	7 vitrified clay pipes and fittings [DI GS C2.1.2]	2 pipes ; suspended	
	8 cast iron pipes and fittings [DI GS C2.1.3]	1 ; cast iron	
	9 coupling jointed cast iron pipes and fittings [DI GS C2.1.3]	2 ; gunmetal	
	10 ductile iron pipes and fittings [DI GS C2.1.4]	3 ; ?	
	11 uPVC pipes and fittings [DI GS C2.1.5]	4 pipe supports	
	12 concrete porous drain pipes and fittings [DI GS C2.1.6]	5 composite pipe supports	
	13 unglazed clayware field drain pipes and fittings [DI GS C2.1.6]	1 ; split rings	
	14 perforated vitrified clay pipes and fittings [DI GS C2.1.6]	2 ; threaded stems	
	15 perforated plastic pipes and fittings [DI GS C2.1.6]	3 ; backplates	
	16 ?	4 ; group hangers of welded angles	
	1 ; spigot and socket joints	5 ; ?	
	2 ; flexible spigot and socket joints [DI GS C2.1.1 - C2.1.6]	1 ; plugging and fixing with brass screws	
	3 ; flexible sleeve joints	2 ; cutting and pinning to concrete	
	4 ; flexible "O" ring joints	3 ; ?	
	5 ; flexible joints		
	6 ; flanged and bolted joints	3 extra over pipes for (SM.ix.9)	1 [fittings] nr
	7 ; solvent weld joints for jointing to plastic pipes		1 ? bends
	8 ; open joints		2 ? bends with bolted access door
	9 ; lead run joints [DI GS B2.8.2]		3 ? x ? x ? single branch junctions
	10 ; cold caulking joints [DI GS B2.8.2]		4 ? x ? x ? double branch junctions
	11 ; coupling joints [DI GS C2.1.3]		5 ? - ? diminishing connectors
			6 adaptors
			7 mechanical ball joints
			8 puddle flanges
			9 ? blank caps
			10 ? socket plugs
			11 ? flexible joints [DI GS B2.5.1]
			12 ?
			1 ; with ? wrapping all round
7 [pipe accessories]	1 concrete	1 traps	1 ? outlet nr
	2 vitrified clayware	2 running traps	1 ; inspection arm and stopper
		3 intercepting traps (SM.ix.22)	2 ; ?

DRAIN - DRAINAGE

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3 cast iron
 4 ?
 1 traps, gullies, gratings and the like

4 ?
 For nos 1 to 4 above
 1 ; bedding and surrounding with concrete grade 20/20 ? thick
 2 ; ?
 1 ; formwork
 2 ; excavation and disposal
 3 ; ?
 1 ; jointing to pipes
 2 ; ?

5 gullies
 6 grease interceptors
 7 ?

1 ? outlet nr
 2 ? trapped outlet nr

For nos 5 to 7 above
 1 ; bedding and surrounding with concrete grade 20/20 ? thick
 2 ; ?
 1 ; formwork
 2 ; excavation and disposal
 3 ; ?
 1 ; jointing to pipes
 2 ; ?

For nos 1 to 2 above
 1 ; ? x ? rebated tops
 2 ; ? diameter rebated tops
 3 ; ? x ? cast iron hinged gratings and frames
 4 ; ? diameter cast iron hinged gratings and frames
 5 ; ?
 1 ; removable galvanised steel strainers with handles
 2 ; ?

8 [hoppers]
 1 raising surrounds ; 100 concrete grade 20/20 sides to gullies in forming hoppers ; 150 reinforced concrete grade 20/20 cover slab ; four 12 diameter plain steel bars ; openings for gratings (gratings measured separately) ; dishing to outlets and inlets
 1 ; excavation, disposal and formwork

1 hoppers ? x ? x ? deep internally nr

9 fresh air inlets
 1 ; brass front
 2 ; mica flap
 3 ; ?
 1 ; jointing to pipes

1 100 x 150 nr
 2 ? x ? nr

10 [gratings]
 1 gully gratings and frames
 2 road gully gratings and frames
 3 kerb type gully covers with hinged

1 [size] nr
 1 ? x ?
 2 ? diameter
 3 ; triangular

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		<ul style="list-style-type: none"> 4 lids 1 ; hinged 2 ; ? 1 ; bedding and haunching frames in cement mortar 	<ul style="list-style-type: none"> 4 ; double triangular 5 ; ? 1 ; light duty 2 ; medium duty 3 ; heavy duty 4 ; ref. ? 5 ; ? 1 ; weighing approximately ? kg 	
8	flexible waterproof membrane	<ul style="list-style-type: none"> 1 [membrane] 1 plastic sheeting [DI GS B2.5.5] 2 ? 	<ul style="list-style-type: none"> 1 laying under drain bedding 	m2
9	surface channels, road margins [DI GS B2.11.1, C1.1.4]	<ul style="list-style-type: none"> 1 hardcore filling 	<ul style="list-style-type: none"> 1 under channels average ? thick [under channels in fill] 1 ; blinding with fine filling material 	m2
		<ul style="list-style-type: none"> 2 concrete 1 ; sulphate resisting 2 ; ? 3 ; grade 20/20 1 ; road margins 2 ; channels 3 ; stepped channels to slopes 4 ; square 5 ; rectangular 6 ; half round 7 ; segmental 8 ; ? wide x ? thick [road margins] 9 ; ? thick sides [channels] 10 ; ? thick bottoms [channels] 11 ; ? 1 ; excavation, disposal and formwork 2 ; movement joints at ? maximum centres [DI GS B2.11.3] 3 ; rendering surfaces with 12 thick cement and sand (1:3) trowelled smooth [channels] 4 ; fair-faced finish [channels - DI GS B2.11.1] 5 ; ? 	<ul style="list-style-type: none"> 1 [waterways] 1 ? wide x ? (average) deep waterway 2 ? wide x ? extreme deep splayed waterway [road margins] 3 ; 350 girth x 80 thick apron one side [across slopes] 4 ; ? 1 ; stepping to faces of embankments [down slopes] 2 ; ? x ? x ? anchor blocks under at ? maximum centres [down slopes] 3 ; ? high steps graded to 1 in ? fall ; forming ? nr. ? diameter weep hole through each step [for stepped channels] 4 ; ? 1 ; curved 	m
			<ul style="list-style-type: none"> 2 extra over waterways for forming sump below channel invert 1 ; ? x ? x ? deep internally 2 ; ? 1 ; ? sides 2 ; ? bottom 3 ; ? 1 ; cast iron grating 2 ; ? 	nr

		3	precast concrete ; grade 20/20 ; channel covers 1 ; in 600 lengths 1 ; 6 diameter plain steel bars, ? nr. longitudinal and ? nr. transverse 1 ; notching 25 x 150 at each end 2 ; fair faced finish to top 3 ; fair faced finish to top and edges 4 ; fair faced finish to all surfaces	1	? thick x ? wide	m
		4	cast iron channel gratings 1 ; in 600 lengths 1 ; as ? ref. ? 2 ; ? wide framing 3 ; ? x ? slots at ? centres			
10	piers, thrust blocks and the like	1	concrete 1 ; grade 10/20 2 ; grade 20/20 3 ; ? 1 ; formwork 2 ; blinding under beds 1 ; excavation and disposal	1	[piers, thrust blocks] 1 piers 2 thrust blocks 3 ? 1 ; ? x ? x ? high 1 ; top surfaces sloping ? degrees from horizontal	nr
		2	[brickwork, blockwork] 1 common bricks [GS9.02] 2 solid concrete blocks ; ? long x ? high [GS9.06] 1 ; cement mortar (1:3) 2 ; ?			
11	applying [paint] 1 knotting 2 two coats of black bitumastic paint 3 ; ? 1 ; on cast iron 2 ; on coated cast iron 3 ; ? 1 ; before fixing 2 ; ?	1	[pipes, fittings] 1 pipes 2 channel gratings 3 gully gratings and frames 4 road gully gratings and frames 5 kerb type gully covers with hinged lids 6 ? 1 ; all surfaces 2 ; ?	1	[size] 1 not exceeding 50 diameter 2 50 - 100 diameter 3 ? diameter 4 ? thick x ? wide 2 ? x ?	m nr
3	MANHOLES, INSPECTION CHAMBERS AND THE LIKE	1	[manholes, etc - not of a standard design] 1 manholes ; ? nr. [DI GS B2.11.1 - B2.11.3]	1	[depths] 1 not exceeding 1.50m deep 2 1.50 - 3.00m deep 3 3.00 - 4.50m deep	m ³

DRAIN - DRAINAGE

FIRST DIVISION

SECOND DIVISION

- 2 inspection chambers ; ? nr.
- 3 catchpits ; ? nr.
- 4 soakways ; ? nr.
- 5 back inlet gully traps ; ? nr.
- 6 cesspools ; ? nr.
- 7 septic tanks ; ? nr.
- 8 petrol interceptors ; ? nr.
- 9 filtration tanks ; ? nr.
- 10 grease traps ; ? nr.
- 11 ? ; ? nr.

THIRD DIVISION

- 4 reduced level
- 5 ? below site formation level
- 6 basement level
- 7 ?

FOURTH DIVISION

- 4 ? - ?m deep
- 2 extra over excavation for breaking up and removing obstructions met with in excavation m3
 - 1 ; brickwork
 - 2 ; blockwork
 - 3 ; stone masonry walls
 - 4 ; slab foundations
 - 5 ; unreinforced concrete
 - 6 ; reinforced concrete
 - 7 ; ?
- 3 extra over excavation for breaking up and removing m2
 - 1 ; concrete pavings
 - 2 ; surface concrete and the like
 - 3 ; ?
 - 1 ? thick
 - 1 ; with hardcore under
 - 2 ; ?

-
- 2 excavated material
 - 1 backfilling m3
 - 1 ; depositing
 - 2 ; compacting

-
- 3 surplus excavated material
 - 1 [disposal] m3
 - 1 removing from site
 - 2 depositing on site in permanent spoil heaps
 - 3 spreading on site
 - 1 ; average ? thick
 - 2 ; ?

-
- 4 [filling]
 - 1 graded filter material
 - 2 graded 75 aggregate
 - 3 ?
 - 1 filling m3
 - 1 under slabs
 - 2 against walls
 - 3 inside manholes, pits
 - 4 ?
 - 1 ; depositing
 - 2 ; compacting
 - 3 ; ?

- 2 filling m2
 - 1 under slabs
 - 2 against walls
 - 3 inside manholes, pits
 - 4 ?
 - 1 average ? thick
 - 1 ; blinding with fine

filling material
 2 ; compacting
 3 ; ?

 5 surfaces of graded 75 aggregate 1 blinding with fine filling material m2

6 [concrete] 1 [foundations, beds, slabs, walls] m3
 1 concrete 1 filling
 2 reinforced concrete 2 blinding
 1 ; sulphate resisting 3 beds
 1 ; grade 20/20 [DI GS B2.1.4] 4 suspended slabs
 2 ; grade ? 5 walls
 6 ?
 1 ; horizontal
 2 ; sloping
 3 ; sloping exceeding 15 degrees from horizontal
 4 ; ?
 1 ; ? thick
 2 ; ? average thick
 3 ; PROVISIONAL
 4 ; ?

2 benching ; formwork m2
 1 ; forming half-round main channels and three-quarter branch channels
 2 ; finishing to steep falls from sides
 1 ; rendering surfaces with 15 cement and sand (1:3) trowelled smooth
 1 ; average ? thick

7 reinforcement 1 general reinforcement ; round bars kg
 1 ; plain steel reinforcing bars 1 ; ? diameter
 2 ; ribbed steel reinforcing bars 1 ; bent to curve
 3 ; ? 2 ; ?
 1 ; PROVISIONAL

8 fabric reinforcement ; BS 4483 1 in concrete m2
 1 ; square mesh ; ref. A142 ; weighing 2.22 kg/m2
 2 ; square mesh ; ref. A193 ; weighing 3.02 kg/m2
 3 ; square mesh ; ref. A252 ; weighing 3.95 kg/m2
 4 ; ?
 1 ; 300 minimum side and end laps

1 ; bolted fabrication
2 ; welded connections

1 ; ? x ? x ? frames
1 ; in cleats>

15	[steel]	1	? x ? overall	nr
	1 hot-rolled steel to BS EN 10025	1	; ? x ? x ? frames	
	2 hot-finished steel to BS EN 10210	2	; ? diameter grille bars	
	1 ; grade S275	3	; ?	
	2 ; grade S355JR	1	; all necessary screws	
	1 ; galvanised ; framed		fixings, fixing lugs,	
	grilles ; welded connections		ironmongery and fittings	

16	collecting from Government Logistics Department and FIXING ONLY manhole covers and frames [supplied by Employer]	1	? x ? clear opening	nr
	1 ; bedding and haunching frame in cement mortar	1	; weighing approximately ? kg	
	1 ; sealing cover in grease			

17	cast iron pipes and fittings [DI GS C2.1.3]	1	? internal diameter	m
	1 ; lead run joints	1	; fixed to walls and columns [in backdrops]	
	2 ; cold caulking joints	2	; ?	
		2	extra over pipes for [fittings]	nr
		1	; ? shoes [in backdrops]	
		2	; ? bends	
		3	; ? bends with bolted access door	
		4	; ? x ? x ? single branch junctions	
		5	; ? x ? x ? swept branch junctions	
		6	; ? blank caps	
		7	; ?	

18	cast iron manhole covers and frames to BS EN 1561:2011 Grade EN-GJL-150 [not supplied by Employer, DI GS C2.3.6]	1	[opening]	nr
	1 ; class A15 ref. ?	1	? x ? clear opening	
	2 ; class B125 ref. ?	2	? diameter clear opening	
	3 ; class C250 ref. ?	1	; weighing approximately ? kg	
	4 ; class D400 ref. ?			
	5 ; class E600 ref. ?			
	6 ; class F900 ref. ?			
	7 ; as ?			
	1 ; recessed [where in floor finishes]			
	2 ; double seal [where inside building]			
	3 ; ?			

		1 ; bedding and haunching frame in cement mortar		
		2 ; sealing cover in grease		

	19	step irons [DI GS B2.3.5]	1	general purpose pattern nr
		1 ; malleable iron	1	; casting into concrete
		2 ; galvanised	2	; ?

	20	fresh air inlets	1	100 x 150 nr
		1 ; brass front		
		2 ; mica flap [on vent pipes]		
		1 ; jointing to pipes		

	21	copper wire balloon gratings [on vent pipes]	1	to suit ? internal diameter pipes nr

	22	spatterdash	1	all internal surfaces of concrete m2

	23	cement and sand (1:3) rendering [GS18.45, DI GS B2.11.1]	1	walls ; ? thick m2
		1 ; internal surfaces	1	; two coats
		1 ; trowelled finish	2	; one coat
			2	soffits ; ? thick m2
			1	; one coat
			2	; ? coat

	24	applying [paint]	1	pipes m
		1 knotting	1	; not exceeding 50 diameter
		2 ; ?	2	; 50 - 100 diameter
		3 two coats of black bitumastic paint	3	; ? diameter
		1 ; on cast iron	1	; before fixing
		2 ; on coated cast iron	2	; ?

2		[manholes, inspection chambers, soakaways, back inlet gully traps, etc. - standard design]	1	? x ? x ? deep internal size nr
	1	manholes	1	; not exceeding 1.00m total depth
	2	inspection chambers	2	; 1.00 - 1.50m total depth
	3	soakaways	3	; 1.50 - 2.00m total depth
	4	back inlet gully traps	4	; ? - ?m total depth
	5	cesspools		
	6	septic tanks		
	7	grease traps		
	8	petrol interceptors		
	9	?		
			1	[manholes, inspection chambers, soakaways and the like]
		1 concrete grade ?		
		2 ; ? thick bases ; ? thick walls and ? thick cover slabs		
		3 ; ? thick bases ; ? thick cover slabs ; 225 thick walls in common bricks in cement mortar		
		4 ; ? thick bases ; ? thick concrete grade ? precast cover slabs and fair faced on top ; 225 thick walls in common bricks in cement mortar		
		5 ; ?		
		1 ; coated cast iron ? duty		

standard triangular access covers and frames for ? x ? clear opening ; bedding and haunching frames in cement mortar ; sealing cover in grease and fine sand
 2 ; coated cast iron ? duty standard circular access covers and frames for ? diameter clear opening ; bedding and haunching frames in cement mortar ; sealing cover in grease and fine sand
 1 ; including all necessary excavation, disposal and backfilling, concrete blindings, benchings and channels, steel reinforcement, formwork, cast iron step irons, cement and sand rendering, connection to drains and pipes, painting ; complete as detailed on drawing nr ?

	3	intercepting traps	1	? intercepting traps ; cleaning arms and stoppers with rubber sealing rings and stainless steel chains ; bedding and surrounding with concrete grade ?? at bottom of manholes 1 ; ?	1	[? diameter] 1 150 diameter 2 225 diameter 3 300 diameter 4 ? diameter	nr
4		CONNECTION WITH PUBLIC SEWERS OUTSIDE SITE BOUNDARY	1	excavating trench for drain pipes ; commencing at existing ground level	1	?m average depth	m
	2	extra over excavation and disposal at any depth for	1	breaking up and removing	1	existing concrete paving ? thick with hardcore under ; including making good disturbed areas upon completion	m2
	3	concrete ; grade 10/20	1	beds and surrounds ; formwork	1	? x ? under ? diameter pipes ; surrounds minimum ? thick	m
	4	cast iron pipes and fittings	1	pipes ; on bed ; in trench	1	? internal diameter	m
	5	spun concrete pipes and fittings ; class ? ; reinforced					

For nos 4 to 5 above
 1 ; spigot and socket joints

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

6 connection to public sewers

1 joints of pipes to walls of existing manholes
 1 ; searching and identifying locations ; excavation, shoring and strutting, backfilling ; temporary diversion of or plugging up drain, as required ; forming holes trimmed with steel reinforcement ; building in end of new drain pipes, cutting concrete benching for new main or branch channels, making good concrete walls, cement and sand rendering and all other works disturbed to match existing ; removing debris

1 connection of ? diameter cast iron drain pipe nr
 2 connection of ? diameter concrete drain pipe nr

5 SUNDRIES

1 work to existing manholes and the like

1 joints of pipes to existing walls
 1 ; temporary diversion of or plugging up drains, as required ; forming holes trimmed with steel reinforcement ; building in end of new drain pipes, cutting concrete benching for new main or branch channels, making good concrete walls, cement and sand rendering and all other works disturbed to match existing ; removing debris

1 connection of ? diameter pipes through ? thick walls nr

2 alterations to concrete channels and benchings
 1 ; temporary diversion of or plugging up drains, as required ; cutting concrete benchings for forming main or branch channels ; cement and sand rendering and all other works disturbed to match existing ; removing debris

1 ? x ? [size of benchings] nr

2 testing [DI GS B2.5.2 and Part D]

1 testing the whole of the works in accordance with the General Specification for Plumbing and Drainage Installation ; remedying any defects ; re-testing as necessary ; leaving in sound order

1 soil and surface water drainage systems including granular bedding material item

*** END OF REPORT ***

DIAPHRAGM WALLING

DW - DIAPHRAGM WALLING

FIRST DIVISION

1 DIAPHRAGM WALLING

SECOND DIVISION

1 the following in diaphragm walls
 1 ; ?m long x ?m deep overall
 2 ; ?m girth x ?m deep overall
 3 ; as drawing nr. ?
 4 ; ?
 1 ; adjacent to existing structure
 2 ; adjacent to ?
 3 ; ?
 1 ; curved
 2 ; ALL PROVISIONAL
 3 ; ?

THIRD DIVISION

1 providing and assembling plant on site (SM.v(h).2)
 1 ; subsequently dismantling and removing

 2 excavating trenches ? wide for ? thick diaphragm walls (SM.v(h).3)
 1 ; commencing at natural ground level
 2 ; commencing at site formation level
 3 ; commencing at reduced level
 4 ; commencing at ? below site formation level
 5 ; commencing at basement level
 6 ; commencing at ?

 3 extra over excavation and disposal at any depth (SM.v(h).4)
 1 for breaking up and removing
 2 ?

 4 [concrete] (SM.v(h)5&10)
 1 concrete
 2 reinforced concrete
 3 ; sulphate resisting [GS6.27]
 4 ; rapid hardening
 5 ; PFA content ? %
 6 ; liquid retaining structures [GS6.42.2]
 7 ; critical structures [GS6.54]
 8 ; intermediate structures [GS6.54 - deemed to be intermediate where not specified]
 9 ; massive concrete construction [GS6.54]
 10 ; ?
 1 ; grade ?/?
 2 ; ? recycled aggregates [GS6.42.3]
 3 ; water repellent containing an approved water-reducing admixture
 4 ; ?
 1 ; moderate exposure [GS6.42 - deemed to be moderate where not specified]
 2 ; severe exposure [GS6.42]
 3 ; pouring at the rate of ?
 4 ; placing by tremie pipe
 5 ; ?

FOURTH DIVISION

1 diaphragm walling equipment item

 1 maximum depth ?m m3
 1 ; removing surplus excavated materials from site

 1 bedrock m3

 1 diaphragm walls m3
 1 ; ? thick
 2 ; ?
 1 ; formwork
 2 temporary guide walls m
 1 ; one side ; ? wide x ? deep
 2 ; both sides ; ? wide x ? deep
 3 ; ?
 1 ; excavating and disposal ; formwork
 2 ; ?
 1 ; breaking up and removing on completion of diaphragm walls
 2 ; ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

<p>5 [reinforcement] (SM.v(h).6)</p> <p>1 plain steel reinforcing bars</p> <p>2 ribbed steel reinforcing bars</p> <p>3 ?</p> <p>1 ; epoxy coated [GS6.25.1 to 6.25.14]</p> <p>2 ; general reinforcement</p> <p>1 ; links, stirrups and binders</p> <p>2 ; helical reinforcement</p> <p>3 ; ?</p>	<p>1 round bars</p> <p>2 indented bars</p> <p>kg</p> <p>kg</p> <p>For nos 1 to 2 above</p> <p>1 ; ? diameter</p> <p>1 ; 12.00 - 15.00m long</p> <p>2 ; ?</p> <p>1 ; specially bent to curve</p> <p>2 ; PROVISIONAL</p> <p>3 ; ?</p>
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<p>6 sawn formwork [measured where specifically required]</p> <p>1 ; vertical surfaces</p> <p>2 ; flat surfaces</p> <p>3 ; sloping surfaces</p> <p>4 ; ?</p> <p>1 ; provide certification by an independent professional engineer at various stages for the adequacy of the design as well as its proper execution [GS6.02(ii) - only where specifically required]</p>	<p>1 diaphragm walls</p> <p>m2</p>
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<p>7 trimming and cleaning faces of diaphragm walls (SM.v(h).8)</p>	<p>1 [finishes]</p> <p>1 roughly squared finish</p> <p>2 hammer dressed finish</p> <p>3 ? finish</p> <p>m2</p>
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<p>8 preparing tops of diaphragm walls</p> <p>1 ; to receive cappings</p> <p>2 ; to receive ?</p> <p>3 ; ?</p> <p>1 ; straightening or bending and cleaning projecting reinforcement</p> <p>2 ; ?</p>	<p>1 ? thick</p> <p>m</p>
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<p>9 cutting off diaphragm wall to ? level [state specified level] (SM.v(h).7)</p> <p>1 ; straightening or bending and cleaning projecting reinforcement</p> <p>2 ; ?</p>	
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<p>10 waterproof joints [measured where specifically required] (SM.v(h).9)</p>	<p>1 [position]</p> <p>1 in walls</p> <p>2 between panels</p> <p>3 ?</p> <p>m</p>
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FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 ; as drawing nr. ?
2 ; ?

11 guide walls (SM.v(h).10) 1 ? [limitation on design and
1 ; one side construction stated] m
2 ; both sides

12 ancillary works (SM.v(h).11) 1 preparing cast-in pockets nr
2 forming chases at junctions m

For nos 1 to 2 above
1 ; ? [details stated]
2 ; ? x ? x ? deep
3 ; ? x ?
1 ; formwork
2 ; preparing cast-in
reinforcement
1 ; filling and making
good all works
disturbed

13 testing (SM.v(h).12) 1 ? [details stated] nr

*** END OF REPORT ***

ELECTRICAL INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:
 1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	INCOMING MAINS 1 ; internally 2 ; in plant room 3 ; externally	1 transit blocks (SM.xviii(b)1) 1 ; fixed to walls inside L.V. Switch Room 1 ; including busbar sections 1 ; bolted connection to the busbar trunkings	1 approved type	1 ? A	nr
		2 incoming main supply cables	1 incoming main supply cables 1 ; supplied and fixed by Supply Company	1 connections to Low Voltage Cubicle Switchboards 1 ; necessary accessories	item
			2 electricity supply cables 1 ; signal cables ; control wirings 1 ; cabling facilities ; contacts, terminal strips, etc. 1 ; all necessary accessories	1 connections and interfacing between Low Voltage Cubicle Switchboards and 1 generators 2 power factor improvement system 3 secondary battery and chargers system	item
	3 600/1000V cross-linked polyethylene (XLPE) insulated cables ; operating temperature not exceeding 90 degrees Celsius to IEC 60502-1:2004/Amd 1:2009 1 ; PVC sheathed 1 ; with armour 1 ; solid copper conductors 2 ; stranded copper conductors		1 power cables (SM.xviii(f)1) 1 ; laid in trenches 2 ; laid in open ducts 3 ; laid on arm or hangers 4 ; fixed to cable trays or ladders or other surface 5 ; drawn into underground pipe duct 6 ; laid or drawn into trunking	1 ? mm2 1 ; single-core cables 2 ; two-core cables 3 ; three-core cables 4 ; four-core cables	m
	4 600/1000V cross-linked polyethylene (XLPE) insulated cables ; low emission of smoke and corrosive gases when		2 [accessories] 1 straight-through joints for copper	1 ? mm2 ; ? core cables	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

				2 ; plug-in type	
				2 ? A feeder units	nr
				3 ? A flange ends	nr
				4 ? A expansion units across building structure	nr
				5 ? A fire barriers	nr
				6 ? A intermediate suspension units	nr
				7 ? A insulated thrust blocks	nr
				8 ? A thrust blocks ; built-in type	nr
				9 ? A thrust-absorbing devices	nr
				10 ? A ?	nr
3	MAIN AND SUB-MAIN DISTRIBUTION	1	450/750V PVC insulated cables ; general purpose ; operating temperature not exceeding 70 degrees Celsius to code designation 60227 IEC 01 of IEC 60227-3:1993/Amd 1:1997	1	? mm2 ; ? core cables
	1 ; internally		1 ; non-sheathed	1	straight-through joints for copper conductors ; joint boxes (SM.xviii(f)2)
	2 ; in plant room		1 ; solid copper conductors	2	tee-joints for copper conductors ; joint boxes (SM.xviii(f)2)
	3 ; externally		2 ; stranded copper conductors	3	cable termination glands (SM.xviii(f)4)
				2	cast iron, compound filled cable terminating boxes (SM.xviii(f)5)
		2	450/750V PVC insulated cables ; general purpose ; operating temperature not exceeding 70 degrees Celsius to code designation 60227 IEC 02 of IEC 60227-3:1993/Amd 1:1997	1	size ? x ? x ?
			1 ; non-sheathed	1	? mm2
			1 ; flexible copper conductors	1	; single-core cables
				2	; twin cables
				3	; flat twin cables
				4	; twisted twin cables
				5	; circular twin core cables
				6	; three-core cables
				7	; four-core cables
				8	; five-core cables
				9	; multi-core cables
				10	; ? core cables
		3	300/500V heat resistant ethylene-vinyl acetate rubber or other equivalent synthetic elastomer insulated cables ; operating temperature not exceeding 110 degrees Celsius to code designation 60245 IEC 06 of IEC 60245-7:1994/Amd 1:1997	1	? mm2 ; ? core cables
			1 ; non-sheathed	1	straight-through joints for copper conductors ; joint boxes (SM.xviii(f)2)
			1 ; solid copper conductors	2	tee-joints for copper conductors ; joint boxes (SM.xviii(f)2)
		4	450/750V heat resistant ethylene-vinyl acetate rubber or other equivalent synthetic elastomer insulated cables ; operating temperature not exceeding 110 degrees Celsius to code designation 60245 IEC 04 of IEC 60245-7:1994/Amd 1:1997	3	cable termination glands (SM.xviii(f)4)
				3	cast iron, compound filled cable terminating boxes (SM.xviii(f)5)
		5	450/750V thermosetting insulated cables		

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees Celsius to code designation H07Z-U and H07Z-R of BS EN 50525-3-41:2011
- 6 450/750V fire resistant, thermosetting insulated cables ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees Celsius ; fire performance to BS 6387:2013 ; BS 8491:2008 / BS EN 50200:2015 ; BS EN 60332-1-2:2004/Amd 1:2015 / BS EN 60332-3-24:2009 ; BS EN 61034-2:2005/Amd 1:2013 ; BS EN 60754-1:2014 / BS EN 60754-2:2014

For nos 4 to 6 above

- 1 ; non-sheathed
- 1 ; solid copper conductors
- 2 ; stranded copper conductors
- 7 600/1000V PVC insulated cables ; operating temperature not exceeding 70 degrees Celsius to IEC 60502-1:2004/Amd 1:2009
- 1 ; PVC sheathed
- 2 ; thermoplastic polyethylene (PE) sheathed
- 1 ; with armour ; solid copper conductors
- 2 ; with armour ; stranded copper conductors
- 3 ; solid copper conductors
- 4 ; stranded copper conductors
- 8 600/1000V cross-linked polyethylene (XLPE) insulated cables ; operating temperature not exceeding 90 degrees Celsius to IEC 60502-1:2004/Amd 1:2009
- 9 600/1000V ethylene propylene rubber (EPR) insulated cables ; operating temperature not exceeding 90 degrees Celsius to IEC 60502-1:2004/Amd 1:2009

For nos 8 to 9 above

- 1 ; PVC sheathed
- 1 ; with armour ; solid copper conductors
- 2 ; with armour ; stranded copper conductors
- 3 ; solid copper conductors
- 4 ; stranded copper conductors

FIRST DIVISION

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FOURTH DIVISION

- 10 300/500V light PVC insulated cables ;
operating temperature not exceeding 70
degrees Celsius to code designation
60227 IEC 10 of IEC 60227-4:1992/Amd
1:1997
1 ; PVC sheathed
 1 ; solid copper conductors
 2 ; stranded copper conductors
- 11 300/500V PVC insulated cables ;
operating temperature not exceeding 70
degrees Celsius
1 to national type (Table 3) of BS
6004:2012
2 to national type (Table 4) of BS
6004:2012
3 to national type (Table 5) of BS
6004:2012
1 ; PVC sheathed
 1 ; solid copper conductors
 2 ; stranded copper conductors
 3 ; stranded copper conductors
 and circuit protective
 conductors
- 12 450/750V thermosetting insulated cables
; low emission of smoke and corrosive
gases when affected by fire ; operating
temperature not exceeding 90 degrees
Celsius to national type (Table 4) of BS
7211:2012
1 ; sheathed
 1 ; solid copper conductors
 2 ; stranded copper conductors
- 13 300/500V thermosetting insulated cables
; low emission of smoke and corrosive
gases when affected by fire ; operating
temperature not exceeding 90 degrees
Celsius to national type (Table 5) of BS
7211:2012
1 ; sheathed
 1 ; solid copper conductors
 2 ; stranded copper conductors and
 circuit protective conductors
- 14 300/500V fire resistant, thermosetting
insulated cables ; low emission of smoke
and corrosive gases when affected by
fire ; operating temperature not
exceeding 90 degrees Celsius to BS
7629-1:2015 ; Cable Category Standard 30
/ Cable Category Standard 60 / Cable
Category Standard Enhanced 120 / Cable

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Category Standard as required complying with the FSD requirement ; fire performance to BS 6387:2013 ; BS 8491:2008 / BS EN 50200:2015 ; BS EN 60332-1-2:2004/Amd 1:2015 / BS EN 60332-3-24:2009 ; BS EN 61034-2:2005/Amd 1:2013 ; BS EN 60754-1:2014 / BS EN 60754-2:2014
 1 ; solid copper conductors
 2 ; stranded copper conductors, metallic layer, un-insulated full size circuit protective conductors

15	600/1000V cross-linked polyethylene (XLPE) insulated cables ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees Celsius to IEC 60502-1:2004/Amd 1:2009	1	power cables (SM.xviii(f)1) 1 ; laid in trenches 2 ; laid in open ducts 3 ; laid on arm or hangers 4 ; fixed to cable trays or ladders or other surface 5 ; drawn into underground pipe duct 6 ; laid or drawn into trunking 7 ; drawn into conduit 8 ; drawn into existing conduit	1	? mm2 1 ; single-core cables 2 ; multi-core cables 3 ; two-core cables 4 ; three-core cables 5 ; four-core cables	m
16	450/750V fire resistant, thermosetting insulated cables ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees Celsius ; fire performance to BS 6387:2013 ; BS 8491:2008 / BS EN 50200:2015 ; BS EN 60332-1-2:2004/Amd 1:2015 / BS EN 60332-3-24:2009 ; BS EN 61034-2:2005/Amd 1:2013 ; BS EN 60754-1:2014 / BS EN 60754-2:2014	2	[accessories] 1 straight-through joints for copper conductors ; joint boxes (SM.xviii(f)2) 2 tee-joints for copper conductors ; joint boxes (SM.xviii(f)2) 3 cable termination glands (SM.xviii(f)4)	1	? mm2 ; ? core cables	nr
For nos 15 to 16 above						
	1 ; sheathed 1 ; with armour ; solid copper conductors 2 ; with armour ; stranded copper conductors 3 ; solid copper conductors 4 ; stranded copper conductors	3	cast iron, compound filled cable terminating boxes (SM.xviii(f)5)	1	size ? x ? x ?	nr
17	600/1000V cross-linked polyethylene (XLPE) insulated cables ; operating temperature not exceeding 90 degrees Celsius to IEC 60502-1:2004/Amd 1:2009 1 ; PVC sheathed 2 ; with armour 1 ; solid copper conductors 2 ; stranded copper conductors					
18	600/1000V fire resistant, cross-linked polyethylene (XLPE) insulated cables ; low emission of smoke and corrosive gases when affected by fire					

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- 1 ; operating temperature not exceeding 90 degrees Celsius to Category F2 / Category F30 / Category F60 / Category F120 / Category as required complying with the FSD requirement of BS 7846:2015 ; fire performance to BS 6387:2013 ; BS 8491:2008 / BS EN 50200:2015 ; BS EN 60332-1-2:2004/Amd 1:2015 / BS EN 60332-3-24:2009 ; BS EN 61034-2:2005/Amd 1:2013 ; BS EN 60754-1:2014 / BS EN 60754-2:2014
 - 1 ; sheathed ; with armour ; solid copper conductors
 - 2 ; sheathed ; with armour ; stranded copper conductors

- 19 500V (light duty grade) mineral insulated cables ; to IEC 60702-1:2002/Amd 1:2015 and IEC 60702-2:2002/Amd 1:2015
- 20 750V (heavy duty grade) mineral insulated cables ; to IEC 60702-1:2002/Amd 1:2015 and IEC 60702-2:2002/Amd 1:2015

- For nos 19 to 20 above
 - 1 ; copper sheathed
 - 1 ; plastic outer coverings of low smoke halogen free or low smoke zero halogen ; IEC 60754-1:2011/Corr 1:2013
 - 2 ; copper conductors

- 21 600/1000V PVC insulated cables ; operating temperature not exceeding 70 degrees Celsius to IEC 60502-1:2004/Amd 1:2009
 - 1 ; PVC sheathed
 - 1 ; with armour
 - 1 ; solid copper conductors
 - 2 ; stranded copper conductors

 22 cable cover tiles

1 laid on top of bedding layer to power cables buried direct in ground

1 ? x ? x ? overall size

nr

 23 [PVC conduits and fittings]

- 1 rigid plain PVC conduits, IEC 61386-21:2002 and fittings, IEC 61386-1:2008
- 2 pliable conduits, IEC 61386-22:2002 and fittings, IEC 61386-1:2008

- 1 conduits and fittings (SM.xviii(c)1)
 - 1 ; fixed to walls and columns or soffits
 - 2 ; bedded in or chased to walls and columns or floors

1 ? diameter

m

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24	heavy gauge steel conduits and fittings ; IEC 61386-21:2002 ; longitudinally welded type	2	[accessories] (SM.xviii(c)2)	1	outlet boxes	nr	
		1	extra over ? mm diameter conduits for	2	adaptable boxes	nr	
				3	floor trap boxes	nr	
				4	rectangular junction boxes	nr	
				5	pedestal boxes	nr	
				6	flame proof boxes	nr	
				7	?	nr	
				For nos 1 to 7 above			
				1	? x ? x ?		
25	flexible steel conduits and fittings ; IEC 61386-23:2002 1 ; metallic type with PVC oversheath ; solid type brass adaptors	1	conduits and fittings (SM.xviii(c)3)	1	? diameter	nr	
				1	; not exceeding 0.5m long		
				2	; 0.5 - 1.0m long		
				3	; 1.0 - 1.5m long		
				4	; 1.5 - 2.0m long		
26	[plastic cable trunkings] 1 plastic cable trunkings and fittings to IEC 61084-1:2007/Amd 1:1993 2 PVC cable trunkings and fittings to IEC 61084-1:2007/Amd 1:1993 1 ; purpose-made riveted covers 2 ; purpose-made clip-on covers 1 ; cable supporting facilities	1	surface trunkings and fittings (SM.xviii(d)1) 1 ; fixed to walls and columns 2 ; fixed to soffits	1	? x ? ; ? compartments	m	
27	[steel surface and raised floor trunkings] 1 steel cable surface trunkings and fittings to IEC 61084-1:1993 2 steel cable raised floor trunkings and fitting to IEC 61084-1:1993 1 ; removable covers 2 ; hinged 1 ; cable supporting facilities	2	[accessories] (SM.xviii(d)2) 1 extra over ? x ? ; ? compartment surface trunkings for	1	bends	nr	
				2	tees	nr	
				3	crosses	nr	
				4	reducing bends	nr	
				5	reducing tees	nr	
				6	reducing crosses	nr	
				7	reducers	nr	
				8	stop ends	nr	
				9	internal fire barriers	nr	
				10	?	nr	
28	perforated steel trays and fittings to BS EN 10149-1:2013 ; hot dipped galvanised to ISO 1460:1992 and ISO 1461:2009	1	trays and fittings (SM.xviii(e)1)	1	? wide	m	
		2	ladders and fittings (SM.xviii(e)2)				
		For nos 1 to 2 above					
29	wire mesh cable trays and fittings to IEC 61537:2006 ; hot dipped galvanised to ISO 1461:2009	1	; fixed to walls and columns				
		2	; fixed to soffits				
30	hot rolled steel cable ladders and fittings to BS EN 10149-1:2013 ; hot dipped galvanised to ISO 1460:1992 and ISO 1461:2009 ; heavy duty type	3	[accessories] (SM.xviii(e)3) 1 extra over ? wide trays for 2 extra over ? wide ladders for	1	bends	nr	
				2	tees	nr	
				3	crosses	nr	
31	stainless steel cable ladders and			4	reducing bends	nr	

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fittings ; 316S31, ISO 683-13:1986 ;
heavy duty type

5 reducing tees nr
6 reducing crosses nr
7 reducers nr
8 stop ends nr
9 rising bends nr
10 offsets nr
11 ? nr

32 [busbar trunkings]
1 busbar trunkings and fittings ; IEC
61439-1:2011 and IEC 61439-6:2012 ;
galvanised sheet steel construction
1 ; air-insulated ; totally
enclosed type
2 ; all-insulated ; totally
enclosed type
1 ; not less than IP54 of IEC
60529:2013/Corr 2:2015
2 ; not less than IP55 of IEC
60529:2013/Corr 2:2015
3 ; not less than IP66 of IEC
60529:2013/Corr 2:2015

1 triple pole and full rated neutral
(SM.xviii(d)3)

2 [fittings] (SM.xviii(d)4)
1 extra over ? A ; triple pole and
full rated neutral busbar trunkings
for

3 [accessories] (SM.xviii(d)5)
1 triple pole and full rated neutral

1 ? A mains m
1 ; fixed to walls and columns
2 ; fixed to soffits

1 elbows/bends nr
2 tees nr
3 reducers nr
4 intersection units nr
5 stop ends nr
6 ? nr

1 ? A tap-off units nr
1 ; bolt-on type
2 ; plug-in type

2 ? A feeder units nr
3 ? A flange ends nr
4 ? A suspension units across
building structure nr
5 ? A fire barriers nr
6 ? A intermediate suspension units nr
7 ? A insulated thrust blocks nr
8 ? A thrust blocks ; built-in type nr
9 ? A thrust-absorbing devices nr
10 ? A ? nr

33 fire resistant panels

1 panels ; fire resistance period of ?
hours ; supporting frames

1 enclosures to trunkings and trays m2
1 ; fixed to soffits

34 air break switchgears to IEC
60947-3:2015

1 [air break switchgears] (SM.xviii(b)1)
1 switches
2 switchfuses
3 fuseswitches
1 ; SPN
2 ; TPN
1 ; for MCCB boards ; fixed to
walls and columns
2 ; for equipment ; fixed to
walls and columns
3 ; for busbar chambers ;
fixed to walls and columns

1 ? A nr

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		2 [air break switchgears] (SM.xviii(b)1)	
		1 contactor switches	
		1 ; SP	
		2 ; TP	
		1 ; for MCB boards ; fixed to walls and columns	
		2 ; for equipment ; fixed to walls and columns	
		3 ; for busbar chamber ; fixed to walls and columns	
<hr/>			
35 [voltage dip ride-through device]	1 voltage dip ride-through device	1 CVT, stabilized output voltage of +/-3% under full load ; input voltage between +10% to -50%	nr
1 constant voltage transformer (CVT)	1 ; for ? equipment ; fixed to walls and columns	2 STSVR, stabilized output voltage of +/-10% ; input voltage between +10% to -50%	nr
2 static tap switches voltage regulator (STSVR)	2 ; for ? installation ; fixed to walls and columns	3 VDRI, capable to perform for 200 ms duration ; remaining supply voltage at 50% of nominal voltage	nr
1 ; UL certified ; testing to IEC 61000-4-11:2004 and IEC 61000-4-34:2005			
3 voltage dip ride-through inverter (VDRI)			
1 ; complying with SEMI-F47, IEC 61000-4-11:2004 and IEC 61000-4-34:2005			
<hr/>			
36 busbar chambers to IEC 61439-1:2011 and IEC 61439-6:2012	1 busbar chambers (SM.xviii(b)1)	1 ? A	nr
1 ; sheet steel	1 ; four fully sized, hard drawn solid electro-tinned copper busbars to BS EN 13601:2013 ; length sufficient for ? number outgoing circuits		
1 ; totally enclosed type	1 ; fixed to walls and columns		
1 ; internal cables and busbar connections to associated control gears and switchgears			
<hr/>			
37 miniature circuit breaker (MCB) distribution boards to IEC 61439-1:2011 and IEC 61439-3:2012/Corr 1:2013 ; IP41 minimum	1 MCB distribution boards (SM.xviii(b)1)	1 ? way ; ? A	nr
1 ; sheet steel ; totally enclosed type	1 ; SPN	2 blanking plates for	nr
1 ; busbars ; ferrules ; integral incoming switch-disconnector (MCBs measured separately)	2 ; TPN	1 single pole spare ways	
2 ; busbars to BS EN 13601:2013 ; ferrules ; integral incoming switch-disconnector (MCBs measured separately)	1 ; switch-disconnector to category AC 22A	2 triple pole spare ways	
3 ; busbars ; ferrules (MCBs and incoming switch-disconnector measured separately)	2 ; switch-disconnector to category AC 23A		
4 ; busbars to BS EN 13601:2013 ;	1 ; flush mounted to walls		
	2 ; surface mounted to walls		

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ferrules (MCBs and incoming switch-disconnector measured separately)

38	moulded case circuit breaker (MCCB) distribution boards ; sheet steel ; IEC 61439-1:2011, IEC 61439-2:2011 and IEC 61439-3:2012/Corr 1:2013 ; IP41 minimum 1 ; busbars ; integral main isolating switches (MCCBs and MCBs measured separately) 2 ; busbars to BS EN 13601:2013 ; integral main isolating switches (MCCBs and MCBs measured separately) 3 ; busbars ; main isolating switches (MCCBs, MCBs and main isolating switches measured separately) 4 ; busbars to BS EN 13601:2013 ; main isolating switches (MCCBs, MCBs and main isolating switches measured separately)	1	MCCB distribution boards (SM.xviii(b)1) 1 ; DP 2 ; TPN 1 ; rated short circuit withstand current not less than ? kA 1 ; fixed to walls and columns	1	? way ; ? A 2 blanking plates for 1 single pole spare ways 2 triple pole spare ways	nr nr
39	miniature circuit breakers (MCBs) to IEC 60898-1:2003	1	MCBs ; ? pole (SM.xviii(b)1) 1 ; rated instantaneous tripping current Type B 2 ; rated instantaneous tripping current Type C 1 ; rated short circuit breaking capacity not less than ? kA 1 ; fixed in distribution boards	1	? A	nr
40	moulded case circuit breakers (MCCBs) to IEC 60947-2:2013	1	MCCBs ; ? pole (SM.xviii(b)1) 1 ; rated short circuit breaking capacity not less than ? kA ; facility for padlocking 1 ; fixed in distribution boards	1	? A	nr
41	residual current-operated circuit breakers without integral overcurrent protection (RCCBs) to IEC 61008-1:2006	1 2	RCCBs ; double pole (SM.xviii(b)1) RCCBs ; four pole (SM.xviii(b)1) For nos 1 to 2 above 1 ; instantaneous tripping type without time delaying function ; rated residual operating current ?mA ; rated short circuit making and breaking capacity not less than 3 kA 1 ; rail mounted in distribution boards	1	? A	nr

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42	residual current-operated circuit breakers with integral overcurrent protection (RCBO) to IEC 61009:2013/Amd 2 Corr 1:2014	1	RCBOs ; double pole (SM.xviii(b)1)	1	? A	nr	
		2	RCBOs ; four pole (SM.xviii(b)1)				
		3	RCBOs ; single pole				
		For nos 1 to 3 above					
		1	instantaneous tripping				
		1	type B ; rated short circuit making and breaking capacity not less than 6 kA				
		2	type C ; rated short circuit making and breaking capacity not less than 6 kA				
		1	rail mounted in distribution boards				
43	combined miniature circuit breakers and residual current-operated circuit breakers without integral overcurrent protection (MCBs/RCCBs)	1	MCBs/RCCBs ; ? pole (SM.xviii(b)1)	1	? A	nr	
		1	instantaneous tripping type without time delaying function ; rated residual operating current ?mAa ; rated short circuit breaking capacity not less than 3 kA				
		1	fixed in distribution boards				
44	combined miniature circuit breakers and residual current-operated circuit breakers with integral overcurrent protection (MCBs/RCBOs)	1	MCBs/RCBOs ; ? pole (SM.xviii(b)1)	1	? A	nr	
		1	instantaneous tripping				
		1	type B				
		2	type C				
		1	rated short circuit making and breaking capacity not less than 6 kA				
45	active harmonic filters	1	active harmonic filters ; IEC 61000-4-2:2008, IEC 61000-4-3:2010, IEC 61000-4-4:2012 and IEC 61000-4-5:2014, IEC 61000-6-2:2016 and IEC 61000-6-4:2011 ; all as detailed in the Electrical General Specification	1	? kVA	nr	
		1	complete with diagnostics control panel, built-in RS485/232 serial communication ports, power monitoring system, protection devices for thermal overload, internal short circuit and inverter bridge abnormal operation, read-out indicators, circuit breakers, control push buttons and all necessary accessories	1	connection to distribution boards		
		1	housed in high quality steel sheet industrial grade cabinet to IP21 with front door and key				

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lock
 2 ; housed in high quality steel sheet industrial grade cabinet to IP55 with front door and key lock
 1 ; all necessary interfacing works with other equipment (SM.xviii(b)1)

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
4 GENERAL LIGHTING AND SMALL POWER	1 final circuits (SM.xviii(g)2)	1 from distribution board ref. ?	1 to lighting points nr
1 ; internally	1 ; 450/750V thermosetting insulated cables ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees Celsius to code designation H07Z-U and H07Z-R of BS EN 50525-3-41:2011	1 ; ? mm2 ; ? core cables	1 ; battery power supply
2 ; in plant room	1 ; non-sheathed ; solid copper conductors		1 ; local switch control
3 ; externally	2 ; non-sheathed ; stranded copper conductors		2 ; central control
	1 ; drawing into and including conduits and fittings and/or flexible conduits and fittings or any cable installing facilities as specified ; controlling cables ; earth continuity conductors		3 ; grid switch control
			4 ; dimmer switch control
			5 ; contractor control
			2 to lighting track points nr
			1 ; local switch control
			3 to lighting switch points nr
			1 ; fixed in bedhead trunkings
			2 ; fixed in grid switch panels
			1 ; one way
			2 ; two way
			3 ; intermediate
			1 ; sparkless type
			2 ; waterproof type ; IP ?
			4 to dimmer switch points nr
			1 ; one way
			5 to contactor switch points nr
			6 to time switch points nr
			1 ; waterproof ; IP ?
			7 to fan regulator points nr
			8 to fused clock connector unit points nr
			9 to unswitched or switched fused connector unit points nr
			For nos 8 to 9 above
			1 ; ring
			2 ; radial
			10 to unswitched or switched socket points nr
			1 ; ? gangs
			1 ; ring

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				2 ; radial	
				1 ; contactor switch control	
				2 ; fixed in bedhead trunkings	
				3 ; waterproof ; IP ?	
3	final circuits (SM.xviii(g)2)			11 to unswitched or switched fused spur unit points	nr
	1 ; 450/750V PVC insulated cables ; general purpose ; operating temperature not exceeding 70 degrees Celsius to code designation 60227 IEC 01 of IEC 60227-3:1993/Amd 1:1997			1 ; ring	
	1 ; non-sheathed ; solid copper conductors			2 ; radial	
	2 ; non-sheathed ; stranded copper conductors			1 ; contactor switch control	
	1 ; drawing into and including conduits and fittings and/or flexible conduits and fittings or any cable installing facilities as specified ; controlling cables ; earth continuity conductors			12 to insulated terminal block points	nr
				13 to isolator points	nr
				14 to DP switch points	nr
				For nos 13 to 14 above	
				1 ; waterproof ; IP ?	
				2 ; flameproof	
				15 to photocell device points	nr
				1 ; waterproof ; IP ?	
				16 to changeover switch points ; double air-break, four-pole type, to IEC 60947-6-1:2005	nr
				1 ; manually controlled	
				2 ; automatically controlled	
				17 to shaver supply unit points	nr
				1 ; ring	
				2 ; radial	
				18 to cooker control unit points	nr
				19 to hand / face dryer points	nr
				20 to hand / face dryer switch points	nr
				21 to sensors	nr
				1 ; passive infrared (PIR) sensors	
				2 ; ultrasonic sensors	
				3 ; dual technology sensors	
				4 ; daylight sensors	

4	final circuits (SM.xviii(g)2)	1	from distribution board ref. ?	1 to lighting points	nr
	1 ; 500V (light duty grade) mineral insulated cables ; IEC 60702-1:2002/Amd 1:2015 and IEC 60702-2:2002/Amd 1:2015		1 ; ? mm2 ; ? core cables	1 ; local switch control	
	2 ; 750V (heavy duty grade) mineral insulated cables ; IEC			2 ; central switch control	
				1 ; waterproof ; IP ?	
				2 to lighting switch points	nr
				1 ; one way	

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	60702-1:2002/Amd 1:2015 and IEC 60702-2:2002/Amd 1:2015 1 ; plastic outer coverings of low smoke halogen free or low smoke zero halogen ; IEC 60754-1:2011/Corr 1:2013 ; copper conductors 1 ; fixed to walls and columns or ceilings with any cable installing facilities			2 ; two way 3 ; intermediate 1 ; waterproof ; IP ? 3 to unswitched or switched socket points nr 1 ; ? gangs 1 ; ring 2 ; radial 1 ; contactor switch control 2 ; waterproof ; IP ?

5	450/750V PVC insulated cables ; general purpose ; operating temperature not exceeding 70 degrees Celsius to code designation 60227 IEC 01 of IEC 60227-3:1993/Amd 1:1997 1 ; non-sheathed 1 ; solid copper conductors 2 ; stranded copper conductors	1	power cables (SM.xviii(f)1) 1 ; laid or drawn into trunking 2 ; drawn into conduit 3 ; drawn into existing conduit 4 ; drawn into existing trunking	1 ? mm2 m 1 ; single-core cables 2 ; twin cables 3 ; flat twin cables 4 ; twisted twin cables 5 ; circular twincore cables 6 ; three-core cables 7 ; four-core cables 8 ; five-core cables 9 ; multi-core cables 10 ; ? core cables
6	450/750V PVC insulated cables ; general purpose ; operating temperature not exceeding 70 degrees Celsius to code designation 60227 IEC 02 of IEC 60227-3:1993/Amd 1:1997 1 ; non-sheathed 1 ; flexible copper conductors	2	[accessories] 1 straight-through joints for copper conductors ; joint boxes (SM.xviii(f)2) 2 tee-joints for copper conductors ; joint boxes (SM.xviii(f)2) 3 termination glands (SM.xviii(f)4)	1 ? mm2 ; ? core cables nr
7	300/500V heat resistant ethylene-vinyl acetate rubber or other equivalent synthetic elastomer insulated cables ; operating temperature not exceeding 110 degrees Celsius to code designation 60245 IEC 06 of IEC 60245-7:1994/Amd 1:1997 1 ; non-sheathed 1 ; solid copper conductors	3	cast iron, compound filled cable terminating boxes (SM.xviii(f)5)	1 size ? x ? x ? nr
8	450/750V heat resistant ethylene-vinyl acetate rubber or other equivalent synthetic elastomer insulated cables ; operating temperature not exceeding 110 degrees Celsius to code designation 60245 IEC 04 of IEC 60245-7:1994/Amd 1:1997			
9	450/750V thermosetting insulated cables ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees Celsius to code designation H07Z-U and H07Z-R of BS EN 50525-3-41:2011			

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10 450/750V fire resistant, thermosetting insulated cables ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees Celsius ; fire performance to BS 6387:2013 ; BS 8491:2008 / BS EN 50200:2015 ; BS EN 60332-1-2:2004/Amd 1:2015 / BS EN 60332-3-24:2009 ; BS EN 61034-2:2005/Amd 1:2013 ; BS EN 60754-1:2014 / BS EN 60754-2:2014

For nos 8 to 10 above

- 1 ; non-sheathed
- 1 ; solid copper conductors
- 2 ; stranded copper conductors

11 600/1000V PVC insulated cables ; operating temperature not exceeding 70 degrees Celsius to IEC 60502-1:2004/Amd 1:2009

- 1 ; PVC sheathed
- 2 ; thermoplastic polyethylene (PE) sheathed
 - 1 ; with armour ; solid copper conductors
 - 2 ; with armour ; stranded copper conductors
 - 3 ; solid copper conductors
 - 4 ; stranded copper conductors

12 600/1000V cross-linked polyethylene (XLPE) insulated cables ; operating temperature not exceeding 90 degrees Celsius to IEC 60502-1:2004/Amd 1:2009

13 600/1000V ethylene propylene rubber (EPR) insulated cables ; operating temperature not exceeding 90 degrees Celsius to IEC 60502-1:2004/Amd 1:2009

For nos 12 to 13 above

- 1 ; PVC sheathed
 - 1 ; with armour ; solid copper conductors
 - 2 ; with armour ; stranded copper conductors
 - 3 ; solid copper conductors
 - 4 ; stranded copper conductors

14 300/500V light PVC insulated cables ; operating temperature not exceeding 70 degrees Celsius to code designation 60227 IEC 10 of IEC 60227-4:1992/Amd 1:1997

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- 1 ; PVC sheathed
 - 1 ; solid copper conductors
 - 2 ; stranded copper conductors

- 15 300/500V PVC insulated cables ;
operating temperature not exceeding 70
degrees Celsius
 - 1 to national type (Table 3) of BS
6004:2012
 - 2 to national type (Table 4) of BS
6004:2012
 - 3 to national type (Table 5) of BS
6004:2012
 - 1 ; PVC sheathed
 - 1 ; solid copper conductors
 - 2 ; stranded copper conductors
 - 3 ; stranded copper conductors
and circuit protective
conductors

- 16 450/750V thermosetting insulated cables
; low emission of smoke and corrosive
gases when affected by fire ; operating
temperature not exceeding 90 degrees
Celsius to national type (Table 4) of BS
7211:2012
 - 1 ; sheathed
 - 1 ; solid copper conductors
 - 2 ; stranded copper conductors

- 17 300/500V thermosetting insulated cable ;
low emission of smoke and corrosive
gases when affected by fire ; operating
temperature not exceeding 90 degrees
Celsius to national type (Table 5) of BS
7211:2012
 - 1 ; sheathed
 - 1 ; solid copper conductors
 - 2 ; stranded copper conductors
 - 1 and circuit protective
conductors

- 18 300/500V fire resistant, thermosetting
insulated cables ; low emission of smoke
and corrosive gases when affected by
fire ; operating temperature not
exceeding 90 degrees Celsius to BS
7629-1:2015 ; Cable Category Standard 30
/ Cable Category Standard 60 / Cable
Category Standard Enhanced 120 / Cable
Category Standard as required complying
with the FSD requirement ; fire
performance to BS 6387:2013 ; BS
8491:2008 / BS EN 50200:2015 ; BS EN

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- 60332-1-2:2004/Amd 1:2015 / BS EN
60332-3-24:2009 ; BS EN 61034-2:2005/Amd
1:2013 ; BS EN 60754-1:2014 / BS EN
60754-2:2014
1 ; solid copper conductors
2 ; stranded copper conductors,
matellic layer, un-insulated full
size circuit protective conductors
- 19 600/1000V cross-linked polyethylene
(XLPE) insulated cables ; low emission
of smoke and corrosive gases when
affected by fire ; operating temperature
not exceeding 90 degrees Celsius to IEC
60502-1:2004/Amd 1:2009
- 20 450/750V fire resistant, thermosetting
insulated cables ; low emission of smoke
and corrosive gases when affected by
fire ; operating temperature not
exceeding 90 degrees Celsius ; fire
performance to BS 6387:2013 ; BS
8491:2008 / BS EN 50200:2015 ; BS EN
60332-1-2:2004/Amd 1:2015 / BS EN
60332-3-24:2009 ; BS EN 61034-2:2005/Amd
1:2013 ; BS EN 60754-1:2014 / BS EN
60754-2:2014
- For nos 19 to 20 above
1 ; sheathed
1 ; with armour ; solid copper
conductors
2 ; with armour ; stranded copper
conductors
3 ; solid copper conductors
4 ; stranded copper conductors
- 21 300/500V ordinary PVC insulated flexible
cables ; operating temperature not
exceeding 70 degrees Celsius to code
designation 60227 IEC 53 of IEC
60227-5:2011
1 ; PVC sheathed
1 ; copper conductors
- 22 300/500V ordinary tough rubber insulated
flexible cables ; operating temperature
not exceeding 60 degrees Celsius to code
designation 60245 IEC 53 of IEC
60245-4:2011
1 ; rubber sheathed
1 ; copper conductors
- 23 450/750V rubber insulated flexible
cables ; operating temperature not

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- exceeding 60 degrees Celsius to code designation 60245 IEC 66 of IEC 60245-4:2011
 1 ; heavy polychloroprene or other equivalent synthetic elastomer sheathed
 1 ; copper conductors
- 24 300/500V PVC insulated flexible cables ; operating temperature not exceeding 70 degrees Celsius to code designation H05V-K of BS EN 50525-2-31:2011
- 25 300/500V PVC insulated heat resisting flexible cables ; operating temperature not exceeding 90 degrees Celsius to code designation H05V2-K of BS EN 50525-2-31:2011
- 26 300/500V braided, silicone rubber insulated flexible cables ; operating temperature not exceeding 180 degrees Celsius to code designation H05SJ-K of BS EN 50525-2-41:2011
- For nos 24 to 26 above
 1 ; non-sheathed
 1 ; copper conductors
- 27 300/500V flexible cables ; suitable for use with appliance and equipment intended for domestic, office and similar environments to BS EN 50525-2-11:2011
 1 ; copper conductors
- 28 300/500V ordinary duty rubber insulated flexible cables ; operating temperature not exceeding 60 degrees Celsius to code designation H05RR-F of BS EN 50525-2-21:2011
 1 ; sheathed
 1 ; copper conductors
- 29 450/750V heavy duty rubber insulated flexible cables ; operating temperature not exceeding 60 degrees Celsius to code designation H07RN-F of BS EN 50525-2-21:2011
 1 ; PCP or equivalent synthetic elastomer sheathed
 1 ; copper conductors
- 30 450/750V heavy duty heat resisting ethylene propylene rubber (EPR) or equivalent synthetic elastomer insulated

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flexible cables ; operating temperature not exceeding 90 degrees Celsius to code designation H07BN4-F of BS EN 50525-2-21:2011
 1 ; CSP or equivalent synthetic elastomer sheathed
 1 ; copper conductors

- 31 300/500V heat resistant, ethylene-vinyl acetate rubber or other equivalent synthetic elastomer insulated flexible cables ; operating temperature not exceeding 110 degrees Celsius to code designation 60245 IEC 07 of IEC 60245-7:1994/Amd 1:1997
- 32 450/750V heat resistant, ethylene-vinyl acetate rubber or other equivalent synthetic elastomer insulated flexible cables ; operating temperature not exceeding 110 degrees Celsius to code designation 60245 IEC 05 of IEC 60245-7:1994/Amd 1:1997
- 33 300/500V heat resistant, silicone rubber insulated flexible cables ; operating temperature not exceeding 180 degrees Celsius to code designation 60245 IEC 03 of IEC 60245-3:1994/Amd 1:1997/Amd 2:2011

For nos 31 to 33 above
 1 ; non-sheathed
 1 ; copper conductors

<p>34 600/1000V cross-linked polyethylene (XLPE) insulated cables ; operating temperature not exceeding 90 degrees Celsius to IEC 60502-1:2004/Amd 1:2009 1 ; PVC sheathed 1 ; with armour 1 ; solid copper conductors 2 ; stranded copper conductors</p>	<p>1 power cables (SM.xviii(f)1) 1 ; laid in trenches 2 ; laid in open ducts 3 ; laid on arm or hangers 4 ; fixed to cable tray or ladders or other surface 5 ; drawn into underground pipe duct 6 ; laid or drawn into trunking</p>	<p>1 ? mm² ; ? core cables</p>	<p>m</p>
<p>35 600/1000V cross-linked polyethylene (XLPE) insulated cables ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees Celsius to IEC 60502-1:2004/Amd 1:2009</p>	<p>2 [accessories] 1 straight-through joints for copper conductors ; joint boxes (SM.xviii(f)2) 2 tee-joints for copper conductors ; joint boxes (SM.xviii(f)2) 3 termination glands (SM.xviii(f)4)</p>	<p>1 ? mm² ; ? core cables</p>	<p>nr</p>
<p>36 600/1000V fire resistant, cross-linked polyethylene (XLPE) insulated cables ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees</p>	<p>3 cast iron, compound filled cable</p>	<p>1 size ? x ? x ?</p>	<p>nr</p>

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Celsius to Category F2 / Category F30 / Category F60 / Category F120 / Category as required complying with the FSD requirement of BS 7846:2015 ; fire performance to BS 6387:2013 ; BS 8491:2008 / BS EN 50200:2015 ; BS EN 60332-1-2:2004/Amd 1:2015 / BS EN 60332-3-24:2009 ; BS EN 61034-2:2005/Amd 1:2013 ; BS EN 60754-1:2014 / BS EN 60754-2:2014

terminating boxes (SM.xviii(f)5)

For nos 35 to 36 above

- 1 ; sheathed ; with armour ; solid copper conductors
- 2 ; sheathed ; with armour ; stranded copper conductors

37 500V (light duty grade) mineral insulated cables ; to IEC 60702-1:2002/Amd 1:2015 and IEC 60702-2:2002/Amd 1:2015

38 750V (heavy duty grade) mineral insulated cables ; to IEC 60702-1:2002/Amd 1:2015 and IEC 60702-2:2002/Amd 1:2015

For nos 37 to 38 above

- 1 ; copper sheathed
 - 1 ; plastic outer coverings of low smoke halogen free or low smoke zero halogen ; IEC 60754-1:2011/Corr 1:2013
 - 2 ; copper conductors

39 600/1000V PVC insulated cables ; operating temperature not exceeding 70 degrees Celsius to IEC 60502-1:2004/Amd 1:2009

- 1 ; PVC sheathed
 - 1 ; with armour
 - 1 ; solid copper conductors
 - 2 ; stranded copper conductors

40 cable cover tiles

1 laid on top of bedding layer to power cables buried direct in ground

1 ? x ? x ? overall size

nr

41 [PVC conduits and fittings]

- 1 rigid plain PVC conduits, IEC 61386-21:2002 and fittings, IEC 61386-1:2008
- 2 pliable conduits, IEC 61386-22:2002 and fittings, IEC 61386-1:2008

1 conduits and fittings (SM.xviii(c)1)

- 1 ; fixed to walls and columns or soffits
- 2 ; fixed on floors
- 3 ; bedded in walls and columns or floors

1 ? diameter

m

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42	heavy gauge steel conduits and fittings ; IEC 61386-21:2002 ; longitudinally welded type	4 ; chased to walls and columns or floors		
		2 [accessories] (SM.xviii(c)2)	1 outlet boxes	nr
		1 extra over ? mm diameter conduits for	2 adaptable boxes	nr
		1 ; PVC boxes	3 floor trap boxes	nr
		2 ; cast iron boxes	4 rectangular junction boxes	nr
		3 ; galvanised boxes	5 pedestal boxes	nr
			6 flame proof boxes	nr
			7 ?	nr
			For nos 1 to 7 above	
			1 ? x ? x ?	
43	flexible steel conduits and fittings ; IEC 61386-23:2002	1 conduits and fittings (SM.xviii(c)3)	1 ? diameter	nr
	1 ; metallic type with PVC oversheath ; solid type brass adaptors		1 ; not exceeding 0.5m long	
			2 ; 0.5 - 1.0m long	
			3 ; 1.0 - 1.5m long	
			4 ; 1.5 - 2.0m long	
44	[plastic cable trunkings]	1 surface trunkings and fittings (SM.xviii(d)1)	1 ? x ? ; ? compartments	m
	1 plastic cable trunkings and fittings to IEC 61084-1:2007/Amd 1:1993	1 ; fixed to walls and columns		
	2 PVC cable trunkings and fittings to IEC 61084-1:2007/Amd 1:1993	2 ; fixed to soffits		
	1 ; purpose-made riveted covers			
	2 ; purpose-made clip-on covers	2 [accessories] (SM.xviii(d)2)	1 bends	nr
	1 ; cable supporting facilities	1 extra over ? x ? ; ? compartment	2 tees	nr
		surface trunkings for	3 crosses	nr
45	steel cable trunkings and fittings to IEC 61084-1:1993		4 reducing bends	nr
	1 ; removable covers		5 reducing tees	nr
	2 ; hinged covers		6 reducing crosses	nr
	1 ; cable supporting facilities		7 reducers	nr
			8 stop ends	nr
			9 internal fire barriers	nr
			10 ?	nr
46	perforated metal trays and fittings to BS EN 10149-1:2013 ; hot dipped galvanised to ISO 1460:1992 and ISO 1461:2009	1 trays and fittings (SM.xviii(e)1)	1 ? wide	m
		2 ladders and fittings (SM.xviii(e)2)		
		For nos 1 to 2 above		
47	wire mesh cable trays and fittings to IEC 61537:2006 ; hot dipped galvanised to ISO 1461:2009	1 ; fixed to walls and columns		
		2 ; fixed to soffits		
48	hot rolled steel cable ladders and fittings to BS EN 10149-1:2013 hot dipped galvanised to ISO 1460:1992 and ISO 1461:2009 ; heavy duty type	3 [accessories] (SM.xviii(e)3)	1 bends	nr
		1 extra over ? wide trays for	2 tees	nr
		2 extra over ? wide ladders for	3 crosses	nr
49	stainless steel cable ladders and fittings ; 316S31, ISO 683-13:1986 ;		4 reducing bends	nr
			5 reducing tees	nr

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heavy duty type

- 6 reducing crosses nr
- 7 reducers nr
- 8 stop ends nr
- 9 rising bends nr
- 10 offsets nr
- 11 ? nr

- 50 luminaries (SM.xviii(h)1)
 - 1 ; complete with lamps or tubes and control gears and ballasts
 - 1 ; connections to cables and conduits system ; earthing and bonding
 - 1 ; provision of all necessary component parts, suspension rods hangers and fixings

- 1 fluorescent fittings
 - 1 ; electronic ballasts
 - 1 ; fixed to walls and columns, ceilings or false ceilings

- 1 ? no. x ? W nr
- 1 ; ? mm ; batten type
- 2 ; ? x ? ; ? diffusers
- 3 ; ? x ? ; parabolic reflectors ? type
- 4 ; ? mm ; for exit sign boxes
- 5 ?
 - 1 ; surface mounted
 - 2 ; recess mounted
 - 3 ; pendant mounted
 - 4 ; semi-recessed mounted
 - 1 ; complete with battery and charger ; sensors (ref. ?)
 - 2 ; complete with dimming ballast (ref. ?)
 - 3 ; dust proof (ref. ?)
 - 4 ; vandal resistant (ref. ?)
 - 5 (ref. ?)

- 2 fluorescent fittings ; self-contained emergency maintained type
- 3 fluorescent fittings ; self-contained emergency non-maintained type
- For nos 2 to 3 above
 - 1 ; lamps, control gear
 - 2 ; energy saving lamps, control gear
 - 1 ; electronic ballast ; battery and charger, ? hour emergency operation ; provision of all necessary component parts ; fixed to walls and columns, ceilings or false ceilings
 - 2 ; dimmable electronic ballast, high energy efficient ; battery and charger, ? hour emergency operation ; provision of all necessary component parts ; fixed to walls and columns, ceilings or false ceilings

- 1 ? no. x ? W nr
- 1 ; ? mm ; batten type
- 2 ; ? x ? ; ? diffusers
- 3 ; ? x ? ; parabolic reflectors ? type
- 4 ; ? mm ; for exit sign boxes
- 5 ?
 - 1 ; surface mounted
 - 2 ; recess mounted
 - 3 ; pendant mounted
 - 4 ; semi-recessed mounted
 - 1 ; complete with battery and charger ; sensors (ref. ?)
 - 2 ; dust proof (ref. ?)
 - 3 ; vandal resistant (ref. ?)
 - 4 (ref. ?)

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<p>4 fluorescent fittings ; flameproof type ; complete with</p>	<p>1 ? no. x ? W</p>	<p>nr</p>
<p>5 fluorescent fittings ; weatherproof type ; complete with</p>	<p>1 ; ? mm ; batten type 2 ; ? x ? ; ? diffusers 3 ; ? x ? ; parabolic reflectors ? type</p>	
<p>For nos 4 to 5 above</p>	<p>4 ; ? mm ; for exit sign boxes 5 ?</p>	
<p>1 ; lamps, control gear</p>	<p>1 ; surface mounted</p>	
<p>2 ; energy saving lamps, control gear</p>	<p>2 ; recess mounted</p>	
<p>1 ; electronic ballast ; battery and charger, ? hour emergency operation ; provision of all necessary component parts ; fixed to walls and columns, ceilings or false ceilings</p>	<p>3 ; pendant mounted 4 ; semi-recessed mounted 1 ; complete with battery and charger ; sensors (ref. ?) 2 ; complete with dimming ballast (ref. ?)</p>	
<p>6 fluorescent fittings ; compact bulkhead lamp type</p>	<p>3 ; dust proof (ref. ?) 4 ; vandal resistant (ref. ?) 5 (ref. ?)</p>	
<p>1 ; provision of all necessary component parts</p>		
<p>1 ; fixed to walls and columns, ceilings or false ceilings</p>		

<p>7 circular fluorescent light fittings complete with</p>	<p>1 ? no. x ? W 1 ; ? diameter ; ? diffuser 1 ; surface mounted (ref. ?)</p>	<p>nr</p>
<p>1 lamps, control gear</p>		
<p>2 energy saving lamps, control gear</p>		
<p>1 ; electronic ballast</p>		
<p>1 ; provision of all necessary component parts ; fixed to walls and columns, ceilings or false ceilings</p>		
<p>2 ; battery and charger, ? hour emergency operation ; provision of all necessary component parts ; fixed to walls and columns, ceilings or false ceilings</p>		

<p>8 spot light fittings</p>	<p>1 ? no. x ? W 1 ; complete with dimming ballasts 2 ? 1 ; track mounted (ref. ?)</p>	<p>nr</p>
<p>1 ; provision of all necessary component parts</p>		
<p>1 ; fixed to walls and columns, ceilings or false ceilings</p>		

<p>9 [indication/engaged light fittings]</p>	<p>1 ? no. x ? W 1 ; surface mounted (ref. ?)</p>	<p>nr</p>
<p>1 indication light fittings</p>		
<p>2 engaged light fittings</p>		
<p>1 ; LED lamps ; all necessary component parts</p>		
<p>1 ; fixed to walls and columns, ceilings or false</p>		

ceilings

10	night light fittings	1	? no. x ? W	nr
	1 ; provision of all necessary component parts		1 ; surface mounted	
	1 ; fixed to walls and columns, ceilings or false ceilings		2 ; recess mounted	
			1 (ref. ?)	
11	bulkhead light fittings	1	? no. x ? W	nr
	1 ; fluorescent lamp type		1 ; surface mounted	
	2 ; elliptical high pressure mercury vapour discharge lamp type ; ? degree K		2 ; recess mounted	
	1 ; provision of all necessary component parts		3 ; with on/off switches ; ? long adjustable arm and hemispherical reflector	
	1 ; fixed to walls and columns, ceilings or false ceilings		1 (ref. ?)	
	2 ; fixed to bedhead trunkings			
12	dark room safe light fittings	1	? no. x ? W	nr
13	corrosive resistant down light fittings		1 ; surface mounted	
	For nos 12 to 13 above		2 ; recess mounted	
	1 ; provision of all necessary component parts		1 (ref. ?)	
	1 ; fixed to walls and columns, ceilings or false ceilings			
14	shielded down light fittings	1	? no. x ? W	nr
	1 ; provision of all necessary component parts		1 ; surface mounted (ref. ?)	
	1 ; fixed to walls and columns, ceilings or false ceilings			
15	down light fittings	1	? no. x ? W	nr
	1 ; provision of all necessary component parts		1 ; surface mounted	
	1 ; fixed to walls and columns, ceilings or false ceilings		2 ; recess mounted	
			1 (ref. ?)	
16	high bay light fittings	1	? no. x ? W	nr
	1 ; provision of all necessary component parts		1 ; pendant mounted	
	1 ; fixed to walls and columns, ceilings or false ceilings		2 ; surface mounted	
			1 (ref. ?)	

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		17 bollard light fittings	1 ? no. x ? W	nr
		1 ; MBF lamp type	1 ; ? diameter ; surface mounted	
		1 ; provision of all necessary component parts	(ref. ?)	
		1 ; fixed to walls and columns, ceilings or false ceilings		

		18 lantern light fittings	1 ? no. x ? W	nr
		1 ; elliptical high pressure mercury vapour discharge lamp type ; ? degree K	1 ; vapour discharge lamps (ref. ?)	
		1 ; provision of all necessary component parts		
		1 ; fixed to pole tops ; ?m high from floor (pole measured separately)		

		19 steplight light fittings	1 ? no. x ? W	nr
		1 ; compact fluorescent lamp type	1 ; recess mounted (ref. ?)	
		1 ; provision of all necessary component parts		
		1 ; fixed to walls and columns ; ?m high from floor		

		20 floodlighting luminaires ; IEC 60598-1:2014 and IEC 60598-2-5:2015 ; IP54 minimum to IEC 60529:2013/Corr 2:2015 ; aluminium main body ; reflecting ; front glasses ; lampholder assemblies ; removal drain plugs ; stirrup provisions	1 ? no. x ? W	nr
		1 ; all component parts ; terminating boxes ; internal wirings ; control gears and boxes ; mounting facilities	1 ; MBIL linear metal halide lamp (ref. ?)	
		1 ; fixed to poles (poles measured separately)	2 ; SON-TD linear high pressure lamp (ref. ?)	
		2 ; fixed to walls and columns		

51	lighting emitting diode (LED) luminaires ; electronic drivers and LED modules ; type test certification ; RoHS compliance ; connections to cables and conduit system ; earthing and bonding ; provision of all necessary component parts, hangers and fixings	1 LED luminaires ; AC 220V rating voltage	1 ? no. x ? W	nr
		1 ; general-purpose	2 ? no. x ? W, ? V	nr
		2 ; recessed	3 size ?	nr
		3 ; ?	4 ? K colour temperature	nr
		1 ; IP2X protection		
		2 ; IP54 protection	For nos 1 to 4 above	
		3 ; IP? protection	1 ; (ref.)	
			2 ; (ref.), ? colour	

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52 lamp poles (SM.xviii(h)1) 1 ; mild steel pipes and modules ; service boxes ; MCB control boxes and associated distribution cables and devices ; identification numbering ; framed location drawing in switch room ; as drawing nr. ?	1 lamp poles	1 4.5m high	nr
	1 ; structure foundation calculations by registered structural engineer	2 7.5m high	nr
		3 12m high	nr
		4 ?m high	nr

53 luminaries track system	1 luminaries track system IEC 60570:2003	1 ? A rated current per conductors	nr
	1 ; ? pole ; accessories	1 ; surface mounted	
	1 ; fixed to walls and columns, ceilings or false ceilings	2 ; suspended	

54 accessories of approved type (SM.xviii(h)3)	1 lighting switches	1 ? A ; ? gang	nr
	1 ; single pole ; quick make-and-break type	1 ; one way	
	1 ; fixed to walls and columns	2 ; two way	
	2 ; fixed to bedhead trunkings	3 ; ? way	
		4 ; intermediate	
		1 ; plastic insulated front plates	
		2 ; metalclad front plates	
		3 ; watertight construction with minimum IP54 protection to IEC 60529:2013/Corr 2:2015	
		4 ; sparkless type	
		5 ? 1 ; surface mounted 2 ; flush mounted	

	2 dimmer switches	1 ? A ; ? gang	nr
	1 ; fixed to walls and columns	1 ; one way	
		2 ; two way	
		3 ; ? way	
		4 ; intermediate	
		1 ; surface mounted	

	3 lighting grid switch panels	1 ? A ; ? gang	nr
	1 ; ? pole	1 ; surface mounted	
	1 ; fixed to walls and columns		

	4 time switches	1 ? A	nr
	1 ; metal boxes ; inspection glass windows	1 ; 7 days operation	
	2 ; moulded boxes ; inspection glass windows	2 ; 24-hour operation	
	1 ; minimum IP53 to IEC 60529:2013/Corr 2:2015		
	1 ; fixed to walls and columns		

5	unswitched socket outlets	1	? A ; ? gang	nr
	1 with plugs	1	; in hazardous area ;	
	2 ?		sparkless switch control	
	1 ; with residual current devices			
	2 ?	2	? A ; ? gang	nr
	1 ; fixed to walls and columns	1	; metalclad front plates	
	2 ; fixed to trunkings	2	; bronze front plates	
		3	; weatherproof ; minimum IP55 to IEC 60529:2013/Corr 2:2015	
		4	; UV stablized, chemically and impact resistant ; minimum IP66	
		5	; industrial type ; minimum IPX4 to IEC 60529:2013/Corr 2:2015	
		6 ?		
		1	; surface mounted	
		2	; flush mounted	
6	switched socket outlets	1	? A ; ? gang	nr
	1 ; integral double pole switches	1	; metalclad front plates	
	2 with plugs ; integral double pole switches	2	; bronze front plates	
	1 ; with residual current devices	3	; flameproof	
	2 ?	4	; weatherproof ; minimum IP55 to IEC 60529:2013/Corr 2:2015	
	1 ; fixed to walls and columns	5	; UV stablized, chemically and impact resistant ; minimum IP66	
	2 ; fixed to trunkings	6	; industrial type ; minimum IPX4 to IEC 60529:2013/Corr 2:2015	
		7	; splashproof	
		8	; X-ray	
		9 ?		
		1	; surface mounted	
		2	; flush mounted	
7	fused spur units	1	? A	nr
	1 ; integral double pole switches and pilot lights	1	; metalclad front plates	
	2 ; integral flex outlets	2	; bronze front plates	
	3 ; integral double pole switches, pilot lights and flex outlets	3	; flame proof	
	1 ; fixed to walls and columns, ceilings or false ceilings	4 ?		
		1	; surface mounted	
		2	; flush mounted	
8	fused clock connectors	1	? A	nr
	1 ; ? pole type	1	; surface mounted	
	1 ; fixed to walls and columns, ceilings or false ceilings	2	; flush mounted	

9	unswitched fused connection units			
1	; ? pole type with neon/LED indications ; fuse link ; earth terminal			
1	; fixed to walls and columns, ceilings or false ceilings			
10	switched fused connection units			
1	; ? pole type with neon indicators ; integral switch			
1	; fixed to walls and columns, ceilings or false ceilings			

11	insulated terminal blocks	1	? A	nr
1	; TPN ; rated voltage 435V minimum between terminals	1	; surface mounted	
1	; fixed to walls and columns, ceilings or false ceilings			

12	isolator switches	1	? A	nr
1	; SPN	1	; waterproof ; IP54 minimum	
2	; TPN	2	; flameproof	
1	; fixed to walls and columns	3	?	
		1	; surface mounted	

13	double pole switches ; integrated pilot lights	1	? A	nr
1	; fixed to walls and columns	1	; waterproof ; IP54 minimum	
2	; flush mounted	2	?	
		1	; surface mounted	

14	shaver supply units ; IEC 61558-1:2009/Corr 3:2011	1	? A	nr
1	; fixed to walls and columns	1	; surface mounted	
		2	; flush mounted	

15	contactor switches	1	? A	nr
1	; SP	1	; surface mounted	
2	; TP			
1	; fixed to walls and columns			

16	photocell devices ; BS667:2005	1	approved type	nr
1	; fixed to walls and columns	1	; time delay circuitry	
		1	; waterproof ; IP ?	

17	fan regulators ; D.P. switch control ; pilot light	1	? A	nr
1	; fixed to walls and columns	1	; surface mounted	

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			18 passive infrared (PIR) sensors	1	360 degree field of view	nr
			19 ultrasonic sensors	2	180 degree field of view	nr
			20 dual technology sensors			
			21 daylight sensors			
			For nos 18 to 21 above		For nos 1 to 2 above	
			1 ; operating voltage 12-36V D.C / 220V +/-6% A.C. ; indoor temperature 0 degree to 40 degree C ; relative humidity 95% (maximum)		1 ; for air conditioning units	
			1 ; ceiling mount		2 ; for lighting on/off switching or dimming	
			2 ; wall mount			

	55	? thick stainless steel x-ray viewing boxes (SM.xviii(h)3)	1 X-ray viewing boxes	1	single type	nr
		1 ; ? diameter circular fluorescent tubes	1 ; fixed to walls and columns to suit viewing boxes	2	twin type	nr
		1 ; ? mm thick transparent perspex				

5		CALL BELL SYSTEM				
		1 ; internally	1 ? mm2 ; single-core cables	1	call buzzer points at ? room	nr
		2 ; in plant room	1 ; from call boxes to the following outlet points	2	indication lamp points at ? room	nr
		3 ; externally	2 ?			

			2 ? mm2 ; single-core cables	1	call box points in ? room	nr
		1 electric supply and control circuits (SM.xviii(g)2)	1 ; from indicating panel in ? room (ref. ?) to the following outlet points			
		1 ; PVC insulated cables ; drawing into and including conduits and fittings				
		2 ; PVC twin flexible cables ; cabling facilities				
		1 ; earth continuity conductors				

			3 ? mm2 ; single-core cables	1	from panel in ? room to panel in ? room	nr
			1 ; between indication panels			

	2	accessories (SM.xviii(h)3)	1 bells ; underdome type ; fixed to substantial frame	1	low tone call bells	nr

			2 buzzers ; contained in insulating plastic case	1	low tone call buzzer	nr
			1 ; large solid terminals and rubbing contacts			

			3 call bell pushes	1	call bell pushes	nr
			1 ; fixed in 35 deep conduit box			
			2 ; fixed on plastic pattress			
			1 ; flush pattern			
			2 ; weatherproof			

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		4	table-type pushes 1 ; single way 2 ; multiple way 1 ; plastic bases, top plates and label holders 2 ; 35 deep concealed conduit box for concealed conduit installation	1	table-type pushes	nr
		5	indication lights 1 ; fixed to walls and columns	1	indication lights 1 ; ? W lamps 1 ; surface mounted 2 ; suitable for 24V A.C. (ref. ?)	nr
3	call boxes (SM.xviii(h)3) 1 ; flexible cables connected to wall outlets 1 ; indicating lights ; push buttons ; reset buttons 1 ; all necessary interconnecting wiring	1	call boxes 1 ; mounting on table tops 2 ; mounting on walls and columns	1	call boxes 1 ; located in ? room	nr
4	[panels] (SM.xviii(h)3) 1 indication panels ; complete power supply units ; indicating lights 2 call panels ; complete power supply units ; indicating lights 1 ; push buttons ; low tone buzzers 2 ; push buttons ; reset buttons ; low tone buzzers 1 ; all necessary interconnecting wiring (ref. ?)	1	[panels] 1 indication panels 2 call panels 1 ; mounting on walls and columns	1	indication panels	nr
				2	call panels	nr
					For nos 1 to 2 above 1 ; located in ? room	
5	steel cable trunkings and fittings to IEC 61084-1:1993 1 ; removable covers 2 ; hinged covers 1 ; cable supporting facilities	1	surface trunkings and fittings (SM.xviii(d)1) 1 ; fixed to walls and columns 2 ; fixed to soffits	1	? x ? ; ? compartments	m
		2	[accessories] (SM.xviii(d)2) 1 extra over ? x ? ; ? compartment surface trunkings for	1	bends	nr
				2	tees	nr
				3	crosses	nr
				4	reducing bends	nr
				5	reducing tees	nr
				6	reducing crosses	nr
				7	reducers	nr

EE - ELECTRICAL INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

				8 stop ends	nr
				9 internal fire barriers	nr
				10 ?	nr
6 EOS ; TELEPHONE AND PABX SYSTEM	1 steel cable trunkings and fittings to IEC 61084-1:1993	1 surface trunkings and fittings (SM.xviii(d)1)	1 ? x ? ; ? compartments		m
7 EOS ; COMPUTER SYSTEM					
8 EOS ; INTER-COMMUNICATION AND PUBLIC ADDRESS SYSTEM	1 ; removable covers	1 ; fixed to walls and columns			
	2 ; hinged covers	2 ; fixed to soffits			
9 EOS ; STAFF PAGING SYSTEM	1 ; cable supporting facilities				
10 EOS ; CCTV					
For nos 6 to 10 above		2 [accessories] (SM.xviii(d)2)	1 bends		nr
1 ; internally		1 extra over ? x ? ; ? compartment	2 tees		nr
2 ; in plant room		surface trunkings for	3 crosses		nr
3 ; externally			4 reducing bends		nr
			5 reducing tees		nr
			6 reducing crosses		nr
			7 reducers		nr
			8 stop ends		nr
			9 internal fire barriers		nr
			10 ?		nr
	2 conduit system for final circuit (SM.xviii(g)2)	1 from trunkings system (trunkings measured separately) to	1 telephone outlet points		nr
	1 ; including conduits and fittings and/or flexible conduits and fittings or any cable installing facilities as specified ; complete with drawn wires		2 fax outlet points		nr
			3 computer outlet points		nr
			4 loud speaker outlet points		nr
			5 microphone outlet points		nr
			6 digital display control outlet points		nr
			7 intercom unit outlet points		nr
			8 intercom master unit outlet points		nr
			9 volume control outlet points		nr
			10 data outlet points		nr
			11 CCTV monitor outlet points		nr
			12 CCTV camera outlet points		nr
			13 ? outlet points		nr
	3 accessories ; ? type	1 outlet plates for (SM.xviii(h)3)	1 telephone outlet boxes		nr
	1 ; galvanised sheet metal plate finished		2 computer outlet boxes		nr
	1 ; moulded blank plates		3 loudspeaker outlet boxes		nr
	2 ; steel cover plates		4 microphone outlet boxes		nr
	1 ; connection to wiring and conduit system ; earth continuity conductors		5 digital display control outlet boxes		nr
			6 public address equipment outlet boxes		nr
			7 intercom unit outlet boxes		nr
			8 intercom master unit outlet boxes		nr
			9 volume control outlet boxes		nr
			10 CCTV monitor outlet boxes		nr
			11 CCTV camera outlet boxes		nr
			12 ? outlet boxes		nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

For nos 1 to 12 above
1 ; ? x ?

4	[PVC conduits and fittings] 1 rigid plain PVC conduits, IEC 61386-21:2002 and fittings, IEC 61386-1:2008 2 pliable conduits, IEC 61386-22:2002 and fittings, IEC 61386-1:2008	1 conduits and fittings (SM.xviii(c)1) 1 ; fixed to surface of walls and columns or soffits 2 ; bedded in or chased to walls and columns or floors	1 ? diameter	m
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5	heavy gauge steel conduits and fittings ; IEC 61386-21:2002 ; longitudinally welded type	2 [accessories] (SM.xviii(c)2) 1 extra over ? mm diameter conduits for	1 outlet boxes 2 adaptable boxes 3 floor trap boxes 4 rectangular junction boxes 5 pedestal boxes 6 flame proof boxes	nr nr nr nr nr nr
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For nos 1 to 6 above
1 ? x ? x ?

6	flexible steel conduits and fittings ; IEC 61386-23:2002 1 ; metallic type with PVC sheathed ; solid type brass adaptors	1 conduits and fittings (SM.xviii(c)3)	1 ? diameter 1 ; not exceeding 0.5m long 2 ; 0.5 - 1.0m long 3 ; 1.0 - 1.5m long 4 ; 1.5 - 2.0m long	nr
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11 TRUNKING, LADDER AND TRAY
1 ; internally
2 ; in plant room
3 ; externally

1	[trunkings and fittings] 1 plastic trunkings and fittings to IEC 61084-1:2007/Amd 1:1993 2 PVC trunkings and fittings to IEC 61084-1:2007/Amd 1:1993 1 ; purpose-made rivetted covers 2 ; clip on covers 1 ; cable supporting facilities	1 surface trunkings and fittings (SM.xviii(d)1) 1 ; fixed to walls and columns 2 ; fixed to soffits	1 ? x ? ; ? compartments	m
2	steel cable trunkings and fittings to IEC 61084-1:1993 1 ; removable covers 2 ; hinged covers 1 ; cable supporting facilities	2 [accessories] (SM.xviii(d)2) 1 extra over ? x ? ; ? compartment surface trunkings for	1 bends 2 tees 3 crosses 4 reducing bends 5 reducing tees 6 reducing crosses 7 reducers 8 stop ends 9 internal fire barriers 10 ?	nr nr nr nr nr nr nr nr nr nr

3	steel underfloor trunkings and fittings to IEC 61084-1:2007/Amd 1:1993 and IEC 61084-2-2:2007 1 ; covers	1 underfloor trunkings and fittings (SM.xviii(d)1) 1 ; fixed to floors	1 ? x ? ; ? compartments	m
		2 extra over ? x ? ; ? compartment underfloor trunkings for (SM.xviii(d)2)	1 bends 2 tees	nr nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3	crosses	nr
4	reducing bends	nr
5	reducing tees	nr
6	reducing crosses	nr
7	reducers	nr
8	stop ends	nr
9	internal fire barriers	nr
10	side outlets	nr
11	end outlets	nr
12	floor boxes	nr
13	?	nr

4	bedhead trunkings and fittings ; ? type 1 ; cover face plates including all necessary perforations 1 ; running joints and fixed (power sockets, switches, etc. mounted on bedhead trunkings measured separately)	1	bedhead trunkings and fittings (SM.xviii(d)1) 1 ; flush mounted on walls and columns 2 ; surface mounted on walls and columns	1	? x ? ; ? compartments	m
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2	extra over ? x ? ; ? compartment bedhead trunkings for (SM.xviii(d)2)	1	bends	nr
		2	tees	nr
		3	crosses	nr
		4	reducing bends	nr
		5	reducing tees	nr
		6	reducing crosses	nr
		7	reducers	nr
		8	stop ends	nr
		9	internal fire barriers	nr
		10	?	nr

5	steel skirting trunkings and fittings to IEC 61084-1:1993 1 ; covers	1	skirting trunkings and fittings (SM.xviii(d)1) 1 ; fixed to walls and columns	1	? x ? 1 ; ? compartments	m
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2	extra over ? x ? ; ? compartment skirting trunkings for (SM.xviii(d)2)	1	bends	nr
		2	tees	nr
		3	crosses	nr
		4	reducing bends	nr
		5	reducing tees	nr
		6	reducing crosses	nr
		7	reducers	nr
		8	stop ends	nr
		9	internal fire barriers	nr
		10	termination pieces	nr
		11	conduit connection boxes	nr
		12	punched short lid sections for ?-gang accessories	nr
		13	socket mounting plinths	nr
			1 ; single	
			2 ; twin	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION	
			14 ?	nr
	6 perforated metal trays and fittings to BS EN 10149-1:2013 ; hot dipped galvanised to ISO 1460:1992 and ISO 1461:2009	1 trays and fittings (SM.xviii(e)1) 2 ladders and fittings (SM.xviii(e)2)	1 ? wide	m
	7 wire mesh cable trays and fittings to IEC 61537:2006 ; hot dipped galvanised to ISO 1461:2009	For nos 1 to 2 above 1 ; fixed to walls and columns 2 ; fixed to soffits		
	8 [ladders and fittings] 1 hot rolled steel cable ladders and fittings to BS EN 10149-1:2013 ; hot dipped galvanised to ISO 1460:1992 and ISO 1461:2009 ; heavy duty type 2 stainless steel cable ladders and fittings ; 316S31, ISO 683-13:1986 ; heavy duty type	3 [accessories] (SM.xviii(e)3) 1 extra over ? wide trays for 2 extra over ? wide ladders for	1 bends 2 tees 3 crosses 4 reducing bends 5 reducing tees 6 reducing crosses 7 reducers 8 stop ends 9 rising bends 10 offsets 11 ?	nr nr nr nr nr nr nr nr nr nr nr
	9 fire resistant panels	1 panels ; fire resistance period of ? hours ; supporting frames	1 enclosures to trunkings and trays 1 ; fixed to soffits	m2
12 ELECTRICAL APPLIANCES 1 ; internally 2 ; in plant room 3 ; externally	1 SUPPLYING and FIXING the following items 1 ; complete with all conduits and cables ; flexible cords and plugs connections to adjacent power source 2 take delivery from Government Logistic Centre and FIXING ONLY the following items 1 ; complete with all necessary electrical connections to adjacent power source	1 electrical appliances (SM.xviii(b)1)	1 hand / face dryers 1 ; wall mounted 2 sink water heaters 1 ; hot water capacity ? litres ; ? kW 1 ; wall mounted 3 room coolers 1 ; type 'C' 2 ; type 'R' 1 ; complete with drain pipes, supporting hangers and fixings 4 sweep auto cycle / oscillating fans 5 sweep fans 6 sweep desk fans 7 sweep pedestal fans	nr nr nr nr nr nr nr nr nr nr nr nr nr
			For nos 4 to 7 above 1 ; ? m3/s speed ; fan blade diameter ? 1 ; ceiling mounted	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

				2 ; wall mounted	
				3 ?	
				8 domestic exhaust fans	nr
				1 ; fan size 150	
				2 ; fan size 230	
				3 ; fan size 300	
				9 refrigerators ; energy label Grade	
				1	nr
				1 ; frost free type	
				2 ; automatic defrost type	
				1 ; minimum total storage capacity of ? litre ; frozen food storage compartment ? litres ; size ? x ? x ?	
				10 electrical tea urns	nr
				1 ; ? litres ; ? kW	
				11 electric hot plates	nr
				1 ; ? diameter ; ? kW	
				12 quartz clocks	nr
				1 ; battery operated	
				1 ; wall mounted	

13 LIGHTNING PROTECTION ; IEC 62305-1:2010	1 air termination (SM.xviii(i)3)	1 copper rods	1 ? diameter		nr
1 ; internally		1 ; approved type	1 ; ? high		
2 ; in plant room		1 ; including all brackets, clamps and connections			
3 ; externally		1 ; fixed to structure			

	2 lightning tapes (SM.xviii(i)2)	1 tinned copper tapes	1 25 x 3mm		m
	1 ; supported at approved spacing	2 copper tapes			
	1 ; including jointing and fixing	For nos 1 to 2 above			
		1 ; fixed to top of roofs			
		2 ; fixed to top of walls and columns or soffits			
		3 ; laid in underground PVC ducts (PVC ducts measured separately)			

	3 down conductors (SM.xviii(i)2)	1 annealed tinned copper strips/tapes	1 25 x 3mm		m
	1 ; high quality metal spacer saddles at 1m apart maximum	2 annealed copper rods	2 12 diameter		m
	1 ; double rivetted joints	For nos 1 to 2 above			
	2 ; clamp joints	1 ; fixed to walls and columns or soffits			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

4	earth electrodes ; complying Electricity Supply Lines (Protection) Regulation (SM.xviii(i)5)	1	earth plate electrodes 1 ; copper ; ? thick 1 ; laid underground 1 ; approved copper connector-clamps ; connected to ? x ? earth tapes to achieve specified earth impedance	1	? x ?	m	
		2	earth tape electrodes 1 ; copper strip ; ? thick 1 ; laid underground 1 ; approved copper connector-clamps ; connected to ? x ? earth tapes to achieve specified earth impedance				
		3	earth rod electrodes 1 ; copper 2 ; stainless steel 3 ; galvanised steel 1 ; hardened steel point penetrating ends 1 ; driving into ground within earth pits	1	? diameter 1 ; ? long	nr	
5	test joints (SM.xviii8.4) 1 ; phosphor bronze 2 ; gunmetal 3 ; copper	1	heavy circular base ; bolted with heavy circular cover	1	test joints	nr	
6	bonds (SM.xviii8.3) 1 ; all accessories	1	connecting lightning protection system to other metal work	1	475/0.5 diameter flexible copper strands	nr	
		2	connecting movable items to lightning protection system	2	? / ? diameter flexible copper strands	nr	
				3	25 x 3 soft annealed copper strips	nr	
7	notice plates	1	galvanised metal frames 1 ; welded 2 ; comprising angle frames ? x ? x ?	1	to suit ? x ? opening	nr	
		2	plastic cover plates 1 ; engraving with English letters and Chinese characters in red colour	1	? x ? x ? thick	nr	
14	EARTHING AND BONDING	1	equipotential bonding to all exposed and	1	allow for	1	main equipotential bonding ;

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 ; internally, in plant room and externally

extraneous conductive parts of non electric services
 1 ; complete with all component clamps and accessories ; complying Electricity (Wiring) Regulations ; all as described in the Particular Specification and the General Specification for Electrical Installation

except for system item
 2 supplementary equipotential bonding ; except for system item

For nos 1 to 2 above
 1 [GUIDANCE NOTE : PQS SHOULD CHECK THE PARTICULAR SPECIFICATION.]

2 [earth conductors]
 1 copper tapes
 2 tinned copper tapes
 1 ; supported at approved spacing ; including jointing and fixing

1 tapes (SM.xviii(i)2)
 1 ; fixed to wall and columns or soffits
 2 ; fixed to cable trays
 3 ; fixed to cable ladders
 4 ; fixed to trunkings

1 ? x ? m

3 ? / ? PVC insulated ? cables ; copper conductors

1 cables (SM.xviii(f)1)
 1 in conduits

1 ? mm2 m
 1 ; single-core

4 earth terminals (SM.xviii(i)7)

1 tinned solid copper earth terminal
 1 ; connections of all earth tapes
 1 ; fixed to walls and columns

1 approved size m

5 earth electrodes ; complying Electricity Supply Lines (Protection) Regulation (SM.xviii(i)5)

1 earth plate electrodes
 1 ; copper ; ? thick
 1 ; laid underground
 1 ; approved copper connector-clamps ; connected to ? x ? earth tapes to achieve specified earth impedance
 2 earth tape electrodes
 1 ; copper strips ; ? thick
 1 ; laid underground
 1 ; approved copper connector-clamps ; connected to ? x ? earth tapes to achieve specified earth impedance

1 ? x ? m

3 earth rod electrodes
 1 ; copper
 2 ; stainless steel
 3 ; galvanised steel
 1 ; hardened steel point penetrating ends
 1 ; driving into ground within

1 for ? system nr
 1 ; ? diameter ; ? long

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

earth pits

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
15 ELECTRICAL INSTALLATION SUNDRIES 1 ; internally, in plant room and externally	1 the following items are in respect of the whole Electrical Installation	1 allow for	<p>1 marking the positions of holes, mortices, chases and the like in the structure (SM.xviii(j)1) item</p> <p>2 inspection, testing and commissioning of the complete Electrical Installation (SM.xviii(j)2&3) item</p> <p>1 (Inspection and testing for Low Voltage Cubicle Switchboards Installation ; testing of Diesel Generating Sets Installation and Uninterruptible Power Supply System measured separately) 1 ; all as described in the Particular Specification and Section D1 to D3 of the General Specification for Electrical Installation</p> <p>3 inspection, attendance, operation and maintenance of the complete Electrical Installation during Maintenance Period item</p> <p>1 (Inspection, operation and maintenance of Low Voltage Cubicle Switchboards Installation, Diesel Generating Sets Installation and Uninterruptible Power Supply System during Maintenance Period measured separately) 1 ; all as described in the Particular Specification and Section E1 and E3 of the General Specification for Electrical Installation</p> <p>4 providing all necessary (SM.xviii(j)3) item</p> <p>1 power and water, diesel and fuels in connection with inspection, testing and commissioning and maintenance</p> <p>5 providing item</p> <p>1 installation drawings ; all as</p>

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- described in the Particular Specification and Section A4.2 of the General Specification for Electrical Installation (SM.xviii(j)5)
- 2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Electrical Installation (SM.xviii(j)7)
- 3 Operation and Maintenance (O&M) Manuals and User Manuals ; all as described in the Particular Specification and Section A4.4 of the General Specification for Electrical Installation (SM.xviii(j)11)
- 6 providing training of Employer's staff as described in the Particular Specification, Section E1 and E2 of the General Specification for Electrical Installation item
- 7 providing sample boards ; all as described in the Particular Specification and Section A3.7 of the General Specification for Electrical Installation item
- 8 providing item
 - 1 mock-ups
 - 2 prototypes
 - 3 mock-ups and prototypes (SM.xviii(j)8)
- 9 supplying [sleeves] item
 - 1 conduit sleeves
 - 2 cable sleeves
 - 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described
- 10 supplying and fixing [sleeves] item
 - 1 conduit sleeves
 - 2 cable sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

as described

- 11 supplying and fixing fire stopping
to walls and floors
(SM.xviii(j)17) item

- 12 supplying and fixing one complete
set of spare fuses in accordance
with Section B1.8 of the General
Specification for Electrical
Installation item
1 ; including wooden board with
painting

*** END OF REPORT ***

EXCAVATION

EXC - EXCAVATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 SITE PREPARATION

1 site clearance (SM.vi(a).2)

1 clearing the site (SM.vi(a)2.4)

1 removing off site item
 1 or burning all rubbish, tall grass, shrubs, bushes and the like and trees not exceeding 600 girth, including grubbing up roots [GS3.16]
 2 ?

2 disposal of existing spoil heaps or rubbish dumps left by previous contractors (SM.vi(a)2.7)

1 removing off site item
 1 ; to a dumping area provided by Employer (SM.vi(a)2.7.1)
 2 ; to a tip provided by Contractor (SM.vi(a)2.7.2)
 1 ; average ?m from excavation
 2 ; ?

3 cutting down trees (SM.vi(a)2.1)
 1 ; not in open area (SM.vi(a)2.2)
 2 ; in area without vehicular access (SM.vi(a)2.2)

1 0.60 - 0.90m girth (SM.vi(a)2.1.1) nr
 2 ? to ? girth (SM.vi(a)2.1.2) nr
 For nos 1 to 2 above
 1 ; providing and maintaining temporary identity labels or markings
 2 ; grubbing up roots and removing off site or burning
 3 ; filling voids with ?
 4 ; ?

4 removing existing tree stumps (tree cut by others) (SM.vi(a)2.3)

1 ? [describe details] nr
 1 ; filling voids with ?

5 cutting turf to be preserved (SM.vi(a)2.5)

1 average ? thick m2
 1 ; laying out on site
 2 ; stacking on site
 3 ; ?
 1 ; for future use
 2 ; for immediate use

6 stripping top soil for preservation (SM.vi(a)2.6)

1 average ? deep m2
 1 ; depositing in separate spoil heaps
 2 ; spreading average ?m from excavation
 3 ; depositing in permanent spoil heaps average ? km from excavation
 4 ; ?
 1 ; on site

EXC - EXCAVATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; off site

			7	preserving trees [GS2.37 to GS2.41]	1	? to ? girth	nr	
					1	; providing and maintaining temporary identity labels or markings		
					2	; including all temporary works		
					3	; ?		
2	EXCAVATION	1	excavating (SM.vi(a)3)	1	over site to reduce levels (SM.vi(a)3.2)	1	not exceeding 0.20m deep	m3
						1	; average ? deep	
						2	generally	m3
			2	into sides of banks (SM.vi(a)3.3)	1	generally	m3	
			3	[basements, trenches, pits]	1	[depth]	m3	
			1	basements and similar (SM.vi(a)3.4)	1	not exceeding 1.50m deep		
			2	surface trenches (SM.vi(a)3.5)	2	1.50 - 3.00m deep		
			3	trenches below basement level (SM.vi(a)3.6)	3	3.00 - 4.50m deep		
			4	pits for column or stanchion bases (SM.vi(a)3.7)	4	4.50 - 6.00m deep		
			5	pits for pile caps (SM.vi(a)3.7)	5	? - ?m deep		
			6	pits for isolated piers (SM.vi(a)3.7)	1	; PROVISIONAL		
			7	pits for manholes (SM.vi(a)3.7)	2	; ?		
			8	?				
				1	; commencing at natural ground level			
				2	; commencing at site formation level			
				3	; commencing at reduced level			
				4	; commencing at ?m below site formation level			
				5	; commencing at basement level			
				6	; commencing at ?			
			4	trenches for [pipes, etc.] (SM.vi(a)3.9, SM.vi(a)3.10, SM.vi(a)3.11)	1	[average depth] (SM.vi(a)3.9.1, SM.vi(a)3.10.1, SM.vi(a)3.11.1)	m	
			1	curbs ? x ? ; with beds	1	0.25m average depth		
			2	curbs ? x ? ; without beds	2	0.50m average depth		
			3	pipes or cables not exceeding 55 diameter, with beds	3	0.75m average depth		
			4	pipes or cables not exceeding 55 diameter, without beds	4	1.00m average depth		
			5	pipes or cables exceeding 55 - 110 diameter, with beds	5	1.25m average depth		
					6	1.50m average depth		
					7	1.75m average depth		
					8	2.00m average depth		

EXC - EXCAVATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 6 pipes or cables exceeding 55 - 110 diameter, without beds
- 7 pipes or cables ? diameter with beds
- 8 pipes or cables ? diameter without beds
- 9 multiple pipes, ? nr. ? diameter (SM.vi(a)3.11.2)
 - 1 ; commencing at natural ground level
 - 2 ; commencing at site formation level
 - 3 ; commencing at reduced level
 - 4 ; commencing at ?m below site formation
 - 5 ; commencing at basement level
 - 6 ; commencing at ?
 - 1 ; not exceeding 1.50m deep
 - 2 ; 1.50 - 3.00m deep
 - 3 ; 3.00 - 4.50m deep
 - 4 ; 4.50 - 6.00m deep
 - 5 ; ? - ?m deep

- 9 2.25m average depth
- 10 2.50m average depth
- 11 ?m average depth

5 [post holes] (SM.vi(a)3.8)

- 1 post holes
- 2 ?
 - 1 ; commencing at natural ground level
 - 2 ; commencing at site formation level
 - 3 ; commencing at reduced level
 - 4 ; commencing at ?m below site formation level
 - 5 ; commencing at basement level
 - 6 ; commencing at ?

1 not exceeding 0.30m3 (SM.vi(a)3.8) nr

2 extra over excavation and disposal at any depth for (SM.vi(a)4)

1 breaking up and removing materials met with in excavation (SM.vi(a)4.1-5)

- 1 [surface pavings] m2
 - 1 surface concrete ? thick (SM.vi(a)4.1)
 - 2 concrete pavings ? thick (SM.vi(a)4.1)
 - 1 ; with hardcore under
 - 2 ; ?
- 2 [materials met with in excavation] m3
 - 1 brickwork
 - 2 blockwork
 - 3 stone masonry walls
 - 4 slab foundations
 - 5 unreinforced concrete
 - 6 reinforced concrete

EXC - EXCAVATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3 FILLING AND DISPOSAL

1 filling

- 1 [exc filling msd cube] (SM.vi(a)7)
- 1 excavated material
- 2 obtained from materials on site (SM.vi(a)7.0.2)
- 3 obtained from specified off site area (SM.vi(a)7.0.3)
- 4 imported from Contractor's own source (SM.vi(a)7.0.4)
- 5 rock [GS3.23v]
- 6 soil-cement fill ; cement/sand/inorganic soil (1:3:12) [GS3.27, GS26.66]
- 7 top soil
- 8 ?

- 1 [kind of backfilling - m3] (SM.vi(a)7) m3
- 1 backfilling to excavation (SM.vi(a)7)
- 2 filling in making up levels (SM.vi(a)8)
- 3 filling for forming embankments or terraces (SM.vi(a)8)
- 4 filling to planters (SM.vi(a)9)
- 5 ?
- 1 ; depositing
- 2 ; depositing in ? layers
- 3 ; ?
- 1 ; compacting [GS3.22]
- 2 ; compacting by vibratory roller [GS3.22]
- 3 ; ?

- 2 [surface treatment] (SM.vi(a)12)
- 1 surfaces of filling [GS3.17(v)]

- 1 [surface] m2
- 1 blinding surface with fine filling materials
- 2 ?

2 disposal (SM.vi(a)6)

- 1 surplus excavated material (SM.vi(a)6.1)
- 2 existing spoil heaps or rubbish dump left by previous contractors (SM.vi(a)6.2)

- 1 [disposal] m3
- 1 depositing on site in permanent spoil heaps
- 2 removing from site (SM.vi(a)6.1.2)
- 1 ; depositing to dumping area provided by Employer
- 2 ; to a tip provided by Contractor
- 1 ; average ?m from excavation
- 2 ; ? [details of location on site, dumping area]

4 TREATMENT OF SURFACES

1 surface treatments

- 1 sides of cuttings (SM.vi(a)13.2)
- 2 sides of embankments (SM.vi(a)13.1)

- 1 trimming and compacting to slope (SM.vi(a)13.1, SM.vi(a)13.2) m2

- 3 surfaces of rock (SM.vi(a)13.3)

- 1 trimming to produce fair face (SM.vi(a)13.3) m2
- 1 ; within the tolerance specified in General Specification for Building clause 3.11

EXC - EXCAVATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
			2 ; ?
		4 [for application of top soil for turfing] (SM.vi(a)13.4) 1 existing ground 2 subsoil area	1 cleaning for application of top soil for turfing [GS25.05] m2 1 ; ripping [GS25.05 (f)] 2 ; scarifying [GS25.05 (g)] 3 ; ?
		5 sub-grade for roads and paving (SM.vi(a)13.5)	1 compacting by roller [GS3.26a] m2 2 ? m2
		6 [other treatment] 1 herbicide 2 selective weed filler 3 insecticide	1 applied to the surface of ground m2 1 ; at the rate of ?
5 TEMPORARY SHORING AND SUPPORTS	1 allowing for temporary shoring and supports (SM.vi(a)5.1.1)	1 to vertical face of 1 reduced level excavation 2 excavation into banks 3 ? 1 ; exceeding 1.50m high 2 ; ? 1 ; for construction of retaining wall and similar 2 ; ?	1 [height, length] item 1 minimum face height ?m 1 ; maximum face height ?m 2 ; ? 1 ; approximate overall length ?m 2 ; ?
6 EXCAVATION AND LATERAL SUPPORT WORKS	1 allowing for designing, erecting, maintaining, altering and adapting as necessary excavation and lateral support works including removal of the same on completion 1 ; as drawing nr. ?	1 to vertical face of 1 excavation 2 ? 1 ; for construction of basement and similar 2 ; ?	1 [height, length] item 1 approximate length ?m x width ?m 2 ? 1 ; overall height ?m
7 SPRAYED CONCRETE SURFACING	1 concrete surfacing mix ? ; applied by spraying (SM.vi(a)16.1)	1 generally	1 [surfaces] m2 1 to slope 1 ; ? thick (SM.6(a)16.1.1) 2 ; fabric reinforcement to BS 4483 ; ref ? [GS6.14]
8 HARDCORE OR GRANULAR FILLING	1 hardcore [GS3.01vi] 2 rock filling material [GS3.01v(a)] 3 recycled rock filling material (Grade 200) [GS3.01v(b)] 4 graded filler material [GS3.25] 5 ?	1 [hardcore filling msd cube] (SM.vi(a)10) 1 filling 2 backfilling [GS3.25]	1 [kind of filling] m3 1 in making up levels 2 behind retaining walls [GS3.25] 3 in beds 4 in vertical beds 5 in bed sloping 15 degrees from the horizontal

EXC - EXCAVATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

6 ?
 1 ; depositing and
 compacting in layers
 [GS3.20]

 2 [hardcore filling msd square] 1 [kind of filling] m2
 1 filling 1 in making up levels average ?
 2 backfilling [GS3.25] thick

2 behind retaining walls ? thick
 [GS3.25]
 3 in beds ? thick
 4 in vertical beds ? thick
 5 in bed sloping 15 degrees from
 the horizontal ? thick

 3 [surface treatment] (SM.vi(a)11, SM.vi(a)12, SM.vi(a)13) 1 [surface] (SM.vi(a)11, SM.vi(a)12, SM.vi(a)13) m2

1 surfaces of
 1 hardcore [GS3.20]
 2 rock filling material [GS3.20]
 3 recycled rock filling material
 (Grade 200)
 4 ?

1 blinding surface with fine
 filling material
 2 handpacking slopes and
 vertical faces
 3 ?

9 SUNDRIES

1 treatments to sheet piling

 1 cutting or burning through steel sheet piling (SM.vi(a)17, SM.v(b)6.1) 1 unit ? x ? overall m
 1 ; removing from site 1 ; ? section ?
 2 ; cutoffs becoming Contractor's property ; (allowing for credit value measured separately) 2 ; section modulus ? cm3/m
 3 ; ?

 2 withdrawing steel sheet piling installed by others and removing from site (SM.vi(a)18) 1 [vert/raking] m2
 1 vertical
 2 raking

1 units ? x ? overall (SM.v(b)8.1)
 1 ; ? section ?
 2 ; section modulus ? cm3/m
 3 ; ?
 1 ; withdrawn units becoming Contractor's property ; (allowing for credit value measured separately)

 3 allowing for the credit value of sheet piling 1 arising from offcuts m2
 2 arising from withdrawn units m2

1 units ? x ? overall (SM.v(b)8.1)
 1 ; ? section ?
 2 ; section modulus ? cm3/m
 3 ; ?

EXC - EXCAVATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2	treatments to diaphragm wall	1	cutting off top of diaphragm wall (SM.v(h)7.1, SM.vi(a)23)	1	[size]	m
		1	; ? x ? caisson	1	? thick	
		2	; ? diameter caisson			
		3	; ? cm2 sectional area caisson			
3	pile head treatments	1	cutting off heads of piles (SM.vi(a)19.1, SM.vi(a)19.2, SM.vi(a)19.3)	1	[sizes]	nr
		1	; precast concrete piles (SM.v(c)12.1.1)	1	? x ?	
		2	; cast in-situ piles (SM.v(d)11.1.1)	2	? diameter	
		3	; bored piles (SM.v(e)8.1.1)	3	? cm2 sectional area	
		4	; steel piles (SM.v(f)8.1)	4	? section	
		1	; straightening or bending and cleaning projecting reinforcement	5	section modulus ? cm3/m	
		2	; ?	6	?	
		1	; removing debris from site	1	; not exceeding 1.00m length	
		2	; ?	2	; 1.00 - 2.50m	
					3 ; 2.50 - 4.00m	
			4 ; ?			
4	caisson head treatments	1	breaking up the lining above finished casting level of the concrete core (SM.v(g)9.1)	1	[sizes - insert N in trigger]	m
		1	; associated excavation	1	? minimum internal diameter	
		1	; removing material from site			
		2	cutting off top of caisson for raising on ; straightening or bending and cleaning projecting reinforcement	1	[sizes]	nr
				1	? x ? caisson	
				2	? diameter caisson	
				3	? cm2 sectional area caisson	
5	compaction tests [GS3.21]	1	tests to determine [GS3.21]	1	[tests]	nr
				1	the maximum dry density and optimum moisture content in accordance with Geospec 3 [GS3.21]	
				2	the in-situ field density and moisture content in accordance with Geospec 3 [GS3.21]	
				3	?	
				1	; PROVISIONAL	
		2	; ?			
6	record survey	1	oversite topographical survey [GS3.03]	1	by an approved independent firm	item
				1	; before any work carried out under the Contract	
				2	; including preparing record	

EXC - EXCAVATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

drawings
3 ; ?

*** END OF REPORT ***

EXTERNAL WORKS

EXT - EXTERNAL WORKS

FIRST DIVISION

1 SITE PREPARATION

SECOND DIVISION

1 site clearance

THIRD DIVISION

1 clearing the site (SM.vi(a)2.4)

FOURTH DIVISION

1 removing off site item

1 or burning all rubbish, tall grass, shrubs, bushes and the like and trees not exceeding 600 girth, including grubbing up roots [GS3.16]

 2 cutting down trees [GS25.70]
 1 ; not in open area (SM.vi(a)2.2)
 2 ; in area without vehicular access (SM.vi(a)2.2)

1 0.60 to 0.90m girth nr
 2 ? to ? girth nr

For nos 1 to 2 above
 1 ; grubbing up roots and removing off site or burning
 2 ; retaining stumps in-situ, sealed with approved sealant
 3 ; filling void with ?
 4 ; providing and maintaining temporary identity labels or markings

 3 cutting turf to be preserved

1 average ? thick m2
 1 ; laying out on site
 2 ; stacking on site
 3 ; ?
 1 ; for future use
 2 ; for immediate use
 3 ; ?

 4 stripping top soil for preservation

1 average ? deep m2
 1 ; depositing in separate spoil heaps
 2 ; spreading average ?m from excavation
 3 ; depositing in permanent spoil heaps average ?km from excavation
 4 ; ?
 1 ; on site
 2 ; off site

 5 preserving trees [GS2.37 to GS2.41]

1 0.60 to 0.90m girth nr
 2 ? to ? girth nr

For nos 1 to 2 above
 1 ; providing and maintaining temporary identity labels or markings
 2 ; including all temporary works
 3 ; ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2	demolishing or taking down	1	all structures	1	on the site	item
1	to the top surface of concrete at the lowest floor level			1	; as delineated on drawing nr. ?	
2	to ground level			1	; shoring and scaffolding	
3	to ? level			2	; ?	
4	?					
		2	individual structures	1	? x ? x ? high	item
				1	to parapet	
				2	to ridge	
				3	?	
				1	; single storey	
				2	; ? storeys	
				3	; ?	
				1	; brick building	
				2	; concrete buiding	
				3	; reinforced concrete framed building	
				4	; timber building	
				5	; metal framed building	
				6	; located at ?	
				7	; shoring and scaffolding	
				8	; ?	
		3	[fencing & hoarding]	1	? high	m
		1	chain link fencing	1	; located at ?	
		2	metal hoarding	2	; ?	
		3	?	1	; grubbing up bases	
				2	; making good pavings	
				3	; ?	
		4	allowing credit for the value of materials	1	arising from demolition	item
3	taking over ; altering when required	1	metal hoarding	1	? high	m
1	; maintaining for the duration of the Contract			1	; located at ?	
1	; removing on completion			2	; ?	
1	; touching up and repainting surfaces and logos as required					
4	providing ; erecting ; altering when required	1	metal hoarding Type ? ; steel to ? ; galvanised ; including posts, corrugated sheet panel coverings, cappings, base plates ; dowel bolts, cleats, runners, handrails, rafters, purlins, concrete	1	? high ; ? clear width walkway	m
1	; maintaining for the duration of the Contract					
1	; removing on completion					

EXT - EXTERNAL WORKS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	1 ; applying primer and two coats of synthetic paint on all exposed surfaces including painting logos and lettering		bases	
	2 ; making good all works distrubed after removal		1 ; providing and maintaining luminaries with ? long tubular fluorescent lamps 20W at ?m spacing	
			1 ; excavating post bases	
			2 ; disposing of surplus excavated material	
			3 ; ?	
<hr/>				
2	RETAINING WALLS	1	excavation	1
				generally
				m3
<hr/>				
		2	excavating	1
			1 surface trenches	[depth]
			2 trenches for retaining walls	1 not exceeding 1.50m deep
			3 pits for pile caps	2 1.50 - 3.00m deep
			4 ?	3 3.00 - 4.50m deep
			1 ; commencing at	4 ?
			2 ; ?	
			1 natural ground level	
			2 site formation level	
			3 reduced level	
			4 ? below site formation level	
			5 basement level	
			6 ?	
<hr/>				
		3	extra over excavation and disposal at any depth	1
			1 for breaking up and removing	[surface pavings]
				1 surface concrete ? thick
				2 concrete pavings ? thick
				3 ?
				1 ; with hardcore under
				2 ; ?
				2 [materials met with in excavation]
				1 brickwork
				2 concrete
				3 reinforced concrete
				4 ?
<hr/>				
		4	excavated material	1
		5	filling material imported from Contractor's own source	[kind of filling]
				1 backfilling to excavation
				2 filling in forming embankments or terraces
				3 ?
				1 ; depositing
				2 ; depositing in ? layers
				3 ; compacting
				4 ; compacting by roller
				5 ; ?
<hr/>				

6	surplus excavated material	1	[disposal]	m3
		1	removing from site	
		2	depositing on site in permanent spoil heaps	
		3	spreading on site	
		4	?	
		1	; average ?m from excavation	
		2	; ?	
7	surface treatments	1	trimming and compacting to slope	m2
	1 ; sides of cuttings			
	2 ; sides of embankments			
	3 ; ?			
8	allowing for temporary shoring and supports	1	[height, length]	item
	1 to vertical faces of excavation into banks	1	minimum face height ?m	
	2 ?	2	; ?	
	1 ; for construction of retaining walls or similar	1	; approximate overall length ?m	
	2 ; ?	2	; ?	
	1 ; exceeding 1.50m high			
	2 ; ?			
9	[backfilling behind walls]	1	behind retaining walls	m3
	1 hardcore backfilling	1	; depositing and compacting in layers	
	2 rock fill backfilling			
	3 recycled rock filling material (Grade 200) backfilling	2	; ?	
	4 graded filter material backfilling			
	5 ?			
10	pile head treatments	1	[sizes]	nr
	1 ; cleaning heads of ? piles [state pile type]	1	? diameter	
	2 ; cutting off heads of ? piles [state pile type]	2	? x ?	
	3 ; ?	3	? cm2 sectional area	
	1 ; straightening or bending and cleaning projecting reinforcement	4	? section	
	2 ; ?	5	section modulus ? cm3/m	
	1 ; removing debris from site	6	?	
	2 ; ?	1	; not exceeding 1.00m length	
		2	; 1.00 - 2.50m length	
		3	; 2.50 - 4.00m length	
		4	; ?	
11	compaction tests to determine	1	[tests]	nr
		1	the maximum dry density and	

optimum moisture content in accordance with Geospec 3 [GS3.21]
 2 the in-situ field density and moisture content in accordance with Geospec 3 [GS3.21]
 3 ?
 1 ; PROVISIONAL
 2 ; ?

2 concrete works

1 [concrete]
 1 concrete
 2 reinforced concrete
 3 ?
 1 ; grade ?/?
 2 ; ?
 1 ; sulphate resisting
 2 ; rapid hardening
 3 ; no-fines
 4 ; ? % recycled coarse aggregates
 5 ; moderate exposure
 6 ; severe exposure
 7 ; ?

1 [bulk fillings, foundations, etc.] m3
 1 filling behind retaining walls
 2 foundations, attached bases or pile caps
 3 isolated bases or pile caps
 4 ground beams
 5 ?
 2 [beds & walls] m3
 1 blinding under foundations
 2 beds
 3 retaining walls
 4 ?
 1 ; ? thick
 2 ; ?
 3 thickenings to beds m
 1 under walls
 2 ; ?
 1 ; ? (average) wide x ? thick
 2 ; ?

2 [reinforcement]
 1 plain steel reinforcing bars
 2 ribbed steel reinforcing bars
 3 ; epoxy coated
 4 ?
 1 ; general reinforcement
 2 ; links, stirrups and binders
 3 ; helical reinforcement
 4 ; ?
 1 ; PROVISIONAL
 2 ; ?

1 round bars kg
 2 indented bars kg
 3 square bars kg
 For nos 1 to 3 above
 1 ; ? diameter
 2 ; ? x ? [square bars]
 1 ; 12.00 - 15.00m long
 2 ; specially bent to curve
 3 ; ?
 1 ; PROVISIONAL
 2 ; ?

3 fabric reinforcement ; BS 4483
 1 ; square mesh
 2 ; ?
 1 ; ref. A142 ; weighing 2.22 kg/m2

1 in concrete m2
 2 in tension strips m
 1 ; ? wide
 2 ; ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; ref. A193 ; weighing 3.02
kg/m2

3 ; ref. A252 ; weighing 3.95
kg/m2

4 ; ?

1 ; 200 minimum side and end
laps

2 ; measured net - allow for
laps

3 ; ?

1 ; specially bent to curve

4 [formwork]

1 sawn formwork

2 formwork to produce fair faced
finish

3 formwork to produce rough board
finish

4 sawn formwork left in

5 ?

1 ; provide certification by an
independent professional
structural or civil engineer at
various stages for the adequacy
of the design as well as its
proper execution [only where
specifically required]

2 ; ?

1 ; lining with plywood

2 ; lining with wallboard

3 ; lining with hardboard

4 ; ?

1 vertical surfaces [measured
square] m2

1 ; foundations, pile caps,
ground beams and the like

2 ; walls

3 ; edges and breaks in walls
exceeding 300 wide

4 ; edges of beds exceeding 300
wide

5 ; ?

1 ; curved

2 ; ?

2 vertical surfaces [measured
linear] m

1 ; not exceeding 300 wide

2 ; ?

1 ; edges and breaks in
walls

2 ; edges of beds

3 ; edges and breaks in
slabs

4 ; ?

1 ; curved

5 forming movement joints ; formwork ;
temporary fillets ; ? surface coatings
and formation of rebates or other
labours

1 [joints] m

1 in beds

2 in walls

3 in columns

1 ; ? wide x ? deep

2 ; ? wide x ? girth

3 ; left open

4 ; filling with

5 impregnated fibreboard
joint fillers

6 inorganic joint fillers

7 ; ? wide

8 ; ? girth

9 ; cutting joint filler

10 ; cutting and perforating
joint filler

11 ; ? dowels at ? centres
 1 ; straight
 2 ; curved

 6 pointing to movement joints with 1 ? x ? m
 1 standard grade mastic 1 ; including backing rod
 2 hot poured joint sealant 2 ; ?
 3 cold poured joint sealant [GS6.61]
 4 one part polysulphide sealant
 5 two part polysulphide sealant
 6 ?
 1 ; one side
 2 ; both sides

 7 waterstops 1 ? wide m
 1 ; PVC 1 ; casting into concrete
 2 ; rubber 2 ; ?
 3 ; ? 1 ; temporary fixing to
 1 ; flat dumbbell section formwork
 2 ; centre bulb section 2 ; ?
 3 ; externally placed section 3 ; straight
 4 ; ? 4 ; curved
 1 ; as ? 1 ; PROVISIONAL
 2 ; ? 2 ; ?
 2 [mitres & angles] nr
 1 welded
 2 prefabricated
 1 angles
 2 flat mitres
 3 tees
 4 flat tees
 5 flat intersections
 6 ?
 7 on ? wide waterstop
 1 ; welded joints
 2 ; PROVISIONAL
 3 ; ?

 8 applying [bituminous paint] 1 on concrete surfaces m2
 1 one coat of bituminous paint
 2 two coats of bituminous paint
 3 ?

 9 plastic weep pipes ; casting into 1 ? diameter x ? long nr
 concrete

 3 plastering 1 spatterdash 1 all surfaces of concrete m2

		2	external rendering		1	? thick	m2
			1 ; one coat			1 ; curved	
			2 ; two coats			2 ; ?	
			3 ; three coats				
			1 ; walls and columns				
			2 ; ?				
		3	granolithic Mix Type "C"				
			1 ; one coat				
			2 ; two coats				
			3 ; three coats				
			4 ; ? colour				
			5 ; ?				
			1 ; wood floated finish				
			2 ; steel trowelled finish				
			3 ; stiff brushed finish				
			4 ; ?				
			1 ; walls and columns				
			2 ; ?				
		4	forming joints in ? finishes		1	? x ?	m
			1 ; priming surfaces of joints			1 ; horizontal	
			1 ; pointing with polysulphide liquid polymer sealant			2 ; vertical	
			2 ; ?			3 ; sloping	
						4 ; ?	
						1 ; curved	
						2 ; ?	
		5	[dividing & cover strips]		1	? x ?	m
			1 ? plastic			2 ? x ? x ?	m
			2 brass				
			3 stainless steel			For nos 1 to 2 above	
			4 ?			1 ; curved	
			1 dividing strips			2 ; ?	
			2 cover strips			1 ; ?	
			1 ; bedding in wall finish				
			2 ; ?				
4	painting	1	applying [external paint]		1	over 300 girth	m2
			1 two coats of cement paint				
			2 two coats of external textured paint				
			3 ?				
			1 ; applied by spray				
			2 ; ?				
			1 ; on concrete walls and columns				
			2 ; on fair faced concrete walls and columns				
			3 ; on rendered walls and columns				

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

4 ; on ?

3 ROADS AND PAVED AREAS

- 1 [road & paved areas]
 - 1 paved areas
 - 2 access roads and car parking
 - 3 footways
 - 4 cycle tracks

1 excavating over site to reduce levels

1 not exceeding 0.20m deep m3
1 ; average ? deep

2 gerenally m3
1 ; PROVISIONAL
2 ; ?

2 excavating into banks

1 generally m3

3 excavating trenches for curbs ? x ?

1 average ? deep [in multiple of m
0.25m]

- 1 ; with beds
- 2 ; without beds
 - 1 ; commencing at
 - 2 ; ?
 - 1 natural ground level
 - 2 site formation level
 - 3 reduced level
 - 4 ? below site formation level
 - 5 basement level
 - 6 ?

4 extra over excavation and disposal at any depth
1 for breaking up and removing

1 [surface pavings] m2
1 surface concrete ? thick
2 concrete pavings ? thick
3 ?
1 ; with hardcore under
2 ; ?

2 [materials met with in excavation] m3
1 brickwork
2 concrete
3 reinforced concrete
4 ?

5 excavated material

1 [kind of filling - msd cube] m3

6 filling material imported from Contractor's own source

- 1 filling in making up levels
- 2 filling in forming embankments or terraces
- 3 ?
 - 1 ; depositing
 - 2 ; depositing in ? layers
 - 3 ; compacting
 - 4 ; compacting by vibratory roller
 - 5 ; ?

7	surplus excavated material	1	[disposal]	m3
		1	removing from site	
		2	depositing on site in permanent spoil heaps	
		3	spreading on site	
		4	?	
		1	; average ?m from excavation	
		2	; ?	
8	surface treatments	1	trimming and compacting to slope	m2
	1 ; sides of cuttings			
	2 ; sides of embankments			
	3 ; ?			
9	[filling]	1	filling in making up levels	m3
	1 hardcore		[measured cube]	
	2 rock filling material	1	; depositing and compacting in layers	
	3 recycled rock filling material (Grade 200)	2	; ?	
	4 sand			
	5 granular material			
	6 ?			
10	surfaces of	1	[treatment]	m2
	1 hardcore	1	blinding with fine filling material	
	2 rock filling material	2	compacting as General Specification for Building clause 3.26(a)(ii)	
	3 recycled rock filling material (Grade 200)	3	rolling as General Specification for Building clause 3.26(a)(iv)	
	4 granular material	4	?	
	5 road formation			
	6 ?			
11	compaction tests to determine	1	[tests]	nr
		1	the maximum dry density and optimum moisture content in accordance with Geospec 3 [GS3.21]	
		2	the in-situ field density and moisture content in accordance with Geospec 3 [GS3.21]	
		3	?	
		1	; PROVISIONAL	
		2	; ?	
12	[concrete]	1	[foundations & curbs]	m3
	1 concrete	1	foundations	

FIRST DIVISION

SECOND DIVISION

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FOURTH DIVISION

2	reinforced concrete	2	curbs	
3	?	3	?	
1	; grade ?/?	1	; PROVISIONAL	
2	; ?	2	; ?	
1	; sulphate resisting	2	[beds, etc.]	m3
2	; mixed with an approved hardening admixture in accordance with the manufacturer's instructions	1	blinding under foundations	
3	; ? % recycled coarse aggregates	2	beds	
4	; repid hardening	3	?	
5	; no-fines	1	; ? thick	
6	; ?	2	; ?	
		3	steps	m3
		4	thickenings to beds	m
		1	; under walls	
		2	; ?	
		1	; ? (average) wide x ? thick	
		2	; ?	

13	forming channels in concrete beds	1	[channels] (SM.vii(a).7)	m
1	; rectangular	1	? wide x ? (average) deep	
2	; segmental	2	? diameter	
3	; half round	1	; straight	
4	; ?	2	; curved	
1	; formwork	3	; ?	
2	; ?			

14	[reinforcement]	1	round bars	kg
1	plain steel reinforcing bars	1	; ? diameter	
2	ribbed steel reinforcing bars	1	; 12.00 - 15.00m long	
3	?	2	; specially bent to curve	
1	; general reinforcement	3	; ?	
2	; links, stirrups and binders	1	; PROVISIONAL	
3	; ?	2	; ?	
1	; PROVISIONAL			
2	; ?			

15	fabric reinforcement ; BS 4483	1	in concrete	m2
1	; square mesh			
2	; ?	2	in tension strips	m
1	; ref. A142 ; weighing 2.22 kg/m2	1	; ? wide	
2	; ref. A193 ; weighing 3.02 kg/m2	2	; ?	
3	; ref. A252 ; weighing 3.95 kg/m2	1	; specially bent to curve	
4	; ?			
1	; 200 minimum side and end laps			

2 ; measured net - allow for
laps
3 ; ?

16 [formwork]	1 vertical surfaces [msd square] m2
1 sawn formwork	1 ; foundations and the like
2 formwork to produce fair faced finish	2 ; curbs
3 ?	3 ; ?
1 ; lining with plywood	1 ; curved
2 ; lining with wallboard	2 ; ?
3 ; lining with hardboard	2 vertical surfaces [msd linear] m
4 ; ?	1 ; not exceeding 300 wide
	2 ; ?
	1 ; foundations and the like
	2 ; curbs
	3 ; edges of beds
	4 ; edges and breaks in slabs
	5 ; risers
	6 ; open strings
	7 ; ?
	1 ; curved
	2 ; ?

17 precast concrete	1 ? x ? m
1 ; grade ?/?	1 edgings
2 ; ?	2 curbs
	3 gutter channels
	4 ?
	1 ; rounded
	2 ; half battered
	3 ; splayed
	4 ; ?
	5 ; bedding in cement mortar (1:3)
	6 ; bedding and haunching in cement mortar (1:3) one side
	7 ; bedding and haunching in cement mortar (1:3) both sides
	8 ; ?
	1 ; straight units
	2 ; straight units laid to curve
	3 ; curved units
	4 ; fair faced finish to all exposed surfaces
	5 ; flush pointing
	6 ; ?

2	[angle stones, etc.]	nr
1	angle stones	
2	quadrants	
3	?	
1	; to ? ; ? x ? [state type & size of edgings, curbs]	
2	; ?	

18	precast concrete paving slabs ; PS ? [GS24.03]	1	[surfaces]	m2
	1 ; ? x ? x ? thick		1 floors	
	1 ; smooth finish		2 ?	
	2 ; finish		1 ; on ? bedding	
	3 ; ?		2 ; ?	
	1 ; bedding in sand			
	2 ; ?			

19	precast concrete paving blocks ; BS 7533-3:2005 + A1.2009, BS EN 1338:2003 & PS ? [GS24.03]	1	[surfaces]	m2
	1 ; ? x ? x ?		1 floors	
	2 ; ?		2 treads	
	1 ; natural colour		3 ?	
	2 ; ? colour		1 ; on 25 bedding	
	3 ; smooth finish		2 ; ?	
	4 ; ? finish		1 ; laying to butt joint pattern	
	5 ; ?		2 ; laying to break joint pattern	
	1 ; bedding in lime and sand or cement mortar (1:3) bedding to the stated thicknesses [GS18.112]		3 ; ?	
	2 ; pointing in cement, lime and sand or granite fines (1:3:6) [GS18.112]			
	3 ; ?			

20	forming movement joints in concrete ; formwork	1	[joints]	m
			1 ? wide x ? deep	
			2 ? wide x ? girth	
			3 ?	
			1 ; left open	
			2 ; filling with	
			3 impregnated fibreboard joint fillers	
			4 inorganic joint fillers	
			5 ; ? wide	
			6 ; ? girth	
			7 ; cutting joint filler	
			8 ; cutting and perforating joint filler	
			9 ; ? dowels at ? centres	

1 ; straight
2 ; curved

21	pointing to movement joints with	1	? x ?	m
	1 standard grade mastic	1	; including backing rod	
	2 hot poured joint sealant	2	; ?	
	3 cold poured joint sealant [GS6.61]			
	4 one part polysulphide sealant			
	5 two part polysulphide sealant			
	6 ?			
	1 ; one side			
	2 ; ?			
22	surfaces of concrete	1	finishing with	m2
		1	a wood float	
		2	a steel trowel or power float	
		3	a stiff brush	
		4	a board edge	
		5	?	
23	[concrete hardeners, etc.]	1	to concrete floors	m2
	1 treating surfaces with an approved liquid hardener			
	2 treating surfaces with carborundum grains			
	3 ?			
	1 ; in accordance with the manufacturer's instructions			
	2 ; sprinkling on and lightly trowelling in before setting at the rate of 2 kg/m2			
	3 ; ?			
24	[waterproof membranes]	1	laying on ?	m2
	1 layer of reinforced waterproof building paper	1	; measured net - allow for laps	
	2 layer of polythene sheeting			
	3 bituthene waterproofing membrane			
	4 ?			
	1 ; lapped at joints			
	2 ; ?			
25	local granite	1	? x ?	m
	1 ; finely squared dressed surface finish to all exposed surfaces	1	; curbs, fenders and the like	
	2 ; ?	2	; steps *[In Nr. ?] *Note : Insert for steps	
	1 ; bedding in cement mortar	3	; rounded	
	2 ; bedding and haunching in cement mortar one side	4	; half battered	
		5	; splayed	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3 ; bedding and haunching in
cement mortar both sides
4 ; ?
1 ; flush pointing
2 ; ?

6 ; rebated
7 ; chamfered
8 ; circular rebated
9 ; ?
1 ; straight
2 ; curved ; all cutting ;
templates
3 ; ?

2 extra over steps for nr
1 fair ends
2 stoolings
3 ?

26 granolithic 1 [surfaces] m2
1 Mix Type "A" 1 floors
2 Mix Type "B" 2 treads and risers
3 Mix Type "C" 3 ?
4 Mix Type "D" 1 ; ? thick
5 ? 1 ; curved
1 ; ? colour 2 ; ?
2 ; ?
1 ; wood floated finish
2 ; steel trowelled finish
3 ; rubbed finish
4 ; washed finish
5 ; ?

27 road surfacing in accordance with 1 sub-base m2
Section 9 of the General Specification
for Civil Engineering Works, current
edition 1 ; crushed rock as Table 9.1
2 ; lean concrete ; grade ?
3 ; ?
1 issued by the Civil Engineering and 1 ; in beds ? thick on
Development Department of the Hong sub-grade
Kong SAR Government 2 ; ?
2 ? 1 ; compacting ;
preparing sub-grade
2 ; ?
2 recycled sub-base m2
1 ; crushed rock, crushed
concrete or clean crushed
inert demolition material ; as
Clause 9.03 ; ?
1 ; in beds ? thick on
sub-grade
2 ; ?
1 ; compacting ;
preparing sub-grade
2 ; ?
3 roadbase m2

- 1 ; bituminous material as Table 9.3 ; ? nominal maximum aggregate size with ? % bitumen content
- 2 ; lean concrete ; grade ?
- 3 ; ?
 - 1 ; in beds ? thick on ?
 - 2 ; ?
 - 1 ; compacting ; applying tack coat
 - 2 ; ?

- 4 [regulating, base, wearing & friction course] m2
 - 1 regulating course
 - 2 base course
 - 3 wearing course
 - 4 friction course
 - 1 ; bituminous material as Table 9.3 ; ? nominal maximum aggregate size with ? % bitumen content
 - 2 ; ?
 - 1 ; in beds ? thick on ? ; compacting
 - 2 ; ?

-
- 28 [dividing strips] m
 - 1 brass 1 ; curved
 - 2 stainless steel 2 ; ?
 - 3 ?
 - 1 dividing strips
 - 2 ?
 - 1 ; bedding in ?
 - 2 ; ?

-
- 29 non-slip inserts to treads m
 - 1 ; rounded top edge 1 ; curved
 - 2 ; ? 2 ; ?
 - 1 ; bedding in groove
 - 2 ; ?

-
- 30 marking out m
 - 1 ; applying two thick coats of standard hot thermoplastic materials ; BS 3262-3, BS EN 1824 and BS EN 1871 [GS21.21(a)] 1 ; ? wide
 - 2 ; ?
 - 2 ; applying two thick coats of alkyd resin hot thermoplastic materials ; BS EN 1824 and BS EN 1871 [GS21.21(b)] 2 [letters, characters] nr
 - 1 letters or numerals
 - 2 Chinese characters
 - 3 ?
 - 1 ; ? high

EXT - EXTERNAL WORKS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			3 ; ? 1 ; on bitumen macadam roads 2 ; on ?		2 ; ? 3 arrow heads 1 ; ? wide x ? long 2 ; ? wide x ? girth 1 ; straight 2 ; curved		nr	
4	FENCING AND BALUSTRADING	1	excavating	1	post holes 1 ; commencing at 2 ; ? 1 natural ground level 2 site formation level 3 reduced level 4 ? below site formation level 5 basement level 6 ?	1	not exceeding 0.30m3	nr
		2	concrete 1 ; sulphate resisting 2 ; rapid hardening 3 ; ? 1 ; grade ?/? 2 ; ?	1	small bases for 1 fencing posts 2 ?	1	? x ? x ? deep	nr
		3	sawn hardwood	1	[timber fence posts] 1 intermediate posts 2 intermediate strainer posts 3 end strainer posts 4 corner strainer posts 5 gate posts 6 strut posts 7 ? 1 ; driving into ground 2 ; setting in concrete bases (measured separately) 3 ; ?	1	? x ? x ? long 1 ; ? times holed to ? diameter 2 ; ?	nr
		4	plastic handrails	1	handrails 1 ; as ? [state manufacturer and type] 2 ; ?	1	fixing over ? x ? steel core rail (measured separately) 1 ; including welding joints, ends, bends, ramps, wreaths and quadrants 2 ; ?	m
		5	fencing 1 ; erected on 2 ; ? 1 existing paving	1	[chain link materials] 1 galvanised steel wire to BS 4102 2 plastic coated galvanised steel wire to BS 4102 grade A	1	? high 2 ? For nos 1 to 2 above	m m

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 support walls
3 ?

3 plastic coated steel wire to BS 4102 grade B
4 ?
1 ; netting to BS EN 10223-2 / BS EN 10223-4 / BS EN 10223-5 / BS EN 10223-6
2 ; netting as ? [state manufacturer and type]
3 ; chain link mesh
4 ; 3.55 diameter wire and 75 mesh
5 ; ? diameter wire and ? mesh
6 ; ? diameter straining wire
7 ; ? diameter selvedge wire
8 ; ? diameter barbed wire ; ? strands
9 ; straining tight
10 ; ?
11 ; fixing with steel strips
1 ; with and including ? x ? x ? high ? [state material] posts at ? centres
2 ; including all fittings, fixing screws and bolts
3 ; as drawing nr. ?

1 ; setting out to a curve but straight between posts
2 ; to ground sloping exceeding 15 degrees from the horizontal

2 extra over for [end posts, angle posts etc.]
1 end posts
2 angle posts
3 integral gate posts
4 straining posts
5 ?
1 ; galvanised steel to BS EN 10025 grade ?
2 ; ?
1 square hollow sections
2 rectangular hollow sections
3 tubular sections
4 channels
5 angles
6 ?
7 ; including all fittings, fixing screws and bolts

1 [sizes, height and depth] nr
1 ? x ? x ? high above ground
2 ? diameter x ? high above ground
1 ; ? depth below ground
2 ; ? [details of struts and backstays stated]
1 ; setting in concrete bases (measured separately)
2 ; ?

3 [independent gate posts] (SM.xv(f)4)
1 galvanised steel to BS EN 10025 grade ?
1 gate posts
2 strut posts
3 ?
1 ; square hollow sections
2 ; rectangular hollow

1 [sizes, height and depth] nr
1 ? x ? x ? high above ground
2 ? diameter x ? high above ground
1 ; ? depth below ground
1 ; ? x ? x ? thick base plate ; bolted
2 ; setting in concrete

		sections		bases (measured separately)	
		3 ; tubular sections		3 ; ?	
		4 ; ?			
<hr/>					
6	framed wall mounted handrails ; steel to BS EN 10025 grade ? ; galvanised	1 [handrails]	1 flats		nr
	1 ; welded connections	1 core rails	1 ; ? x ?		
	2 ; bolted connections	2 hand rails	2 ; ?		
	3 ; tap screwed connections	3 ?	1 ; ? long		
	4 ; ?				
	1 ; to single flight of steps				
	2 ; to ? nr. flights of steps				
	3 ; to ?				
<hr/>					
7	gates ; steel to BS EN 10025 grade ? ; galvanised ; welded connections	1 single leaf	1 gate size ? x ? high overall		nr
		2 double leaf	2 ?		nr
		For nos 1 to 2 above			
		1 ; ? x ? x ? angle framing			
		2 ; ? diameter tubular framing			
		3 ; ? x ? x ? square hollow section framing			
		4 ; ? x ? x ? rectangular hollow section framing			
		1 ; ? nr. ? x ? panels infill with			
		1 high tensile steel fabric ; spot welding			
		2 ; ? diameter bars at ? centres			
		3 ; 75 x 25 oblong hole mesh ; to BS ? ; ? diameter wire ; spot welding			
		4 ; ?			
		5 ; including gate stops, gate catches and gate stays			
		6 ; as drawing nr. ?			
<hr/>					
		3 ironmongery	1 pivot hinges		nr
			1 ; 15 x 40 x 300 girth plate once bent and once rounded		
			2 ; ?		
			1 ; 25 diameter hardened steel rod 40 long with washer		
			2 ; ?		
			1 ; 50 x 50 x 16 plate twice rounded and once holed for 25 diameter		
			2 ; ?		
			2 sliding bolts		nr

EXT - EXTERNAL WORKS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

				1	; 20 diameter shoot 500 girth once bent		
				2	; 20 diameter shoot 975 long		
				3	; 50 x 50 x 10 holed guide twice rounded		
				4	; 50 x 50 x 10 holed guide twice rounded		
				5	; 50 x 50 x 10 holed guide twice rounded with 25 stop		
				6	; ?		
				1	; ? x ? x ? slotted hasp twice bent		
				2	; ? x ? x ? slotted hasp three times bent		
				3	; ? x ? x ? staple holed and twice rounded		
				4	; ? x ? x ? fanged staple holed and twice rounded		
				5	; ?		
				1	; 25 diameter x 100 long tubing set in concrete		
				2	; ?		
				3	brass padlocks		nr
				1	; ? [give size]		
				2	; ?		

8	framed tubular balustrades ; steel to BS EN 10025 grade ? ; galvanised	1	[rails, balusters, etc.]	1	tubing		m
	1 ; welded joints		1 top rails		1 ; ? nominal bore		
	2 ; tap screwed joints		2 bottom rails		2 ; ? nominal bore *[In Nr. ?]		
	3 ; screwed and socketed joints		3 balusters		*Note : Insert for balusters		
	4 ; ?		4 ?		3 ; ?		
	1 ; to single stairs						
	2 ; to nr. ? stairs	2	extra over for forming opening portions	1	overall size ? x ?		nr
	3 ; to ?				1 ; ironmongery comprising ?		
	1 ; to ? [give location]				[give details]		
	2 ; ?						

9	applying one coat primer,	1	[paint surfaces]	1	over 300 girth		m2
	1 two undercoats and one finishing coat of synthetic paint		1 general surfaces		2 not exceeding 300 girth		m
	1 ; on galvanised metal		2 individual members of balustrades, fencing, railings and gates and the like				
	2 ; ?		3 mesh covered or ornamental fencing, railings and gates and the like ; both sides measured flat overall				
			4 ?				

5	EXTERNAL SERVICES	1	water installation	1	excavating trenches for service pipes	1	0.75m average depth
							m

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1	; commencing at natural ground level	2	1.00m average depth	m
2	; commencing at site formation level	3	? average depth	m
3	; commencing at reduced level			
4	; commencing at ? below site formation level			
5	; commencing at basement level			
6	; commencing at ?			

2	[bedding materials]	1	[size]	m
1	granular material	1	? x ? under ? diameter pipes	
2	concrete ; grade 10/20	2	? x 100 over ? diameter pipes	
3	reinforced concrete ; grade 20/20	3	?	
4	?	1	; surrounds minimum ? thick	
1	; beds	2	; ?	
2	; beds and haunches			
3	; beds and surrounds			
4	; beds and backfilling			
5	; slabs			
6	; ?			
1	; formwork			
2	; ?			

3	general reinforcement	1	[size]	kg
1	; plain steel reinforcing bars	1	10 diameter	
2	; ribbed steel reinforcing bars	2	? diameter	

4	stop cock pits	1	225 x 225 x 600 internally	nr
1	; 75 concrete grade ?? base			
2	; half brick sides in seconds quality bricks in cement mortar ; flush pointing internally			
3	; ?			
1	; cast iron hinged cover and frame			
2	; ?			
1	; excavating ; disposing of surplus excavated material			
2	; ?			

2	electrical installation	1	excavating trenches for cables or ducts	1	0.75m average depth	m
		1	; commencing at natural ground level	2	1.00m average depth	m
		2	; commencing at site formation level	3	? average depth	m
		3	; commencing at reduced level			
		4	; commencing at ? below site formation level			
		5	; commencing at basement level			
		6	; commencing at ?			

2	[bedding materials]	1	[size]	m
---	---------------------	---	--------	---

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 granular material
- 2 sand
- 3 concrete ; grade 10/20
- 4 ?
 - 1 ; beds
 - 2 ; beds and haunches
 - 3 ; beds and surrounds
 - 4 ; beds and backfilling
 - 5 ; ?
 - 1 ; formwork
 - 2 ; ?

- 1 ? x ? under cables
- 2 ? x ? under ? diameter ducts
- 3 ?
 - 1 ; surrounds minimum ?
thick
 - 2 ; ?

-
- 3 temporary draw-in pits
 - 1 ; complete with 50 x 50 x 600 long
timber location marker
 - 2 ; ?
 - 1 including excavating,
backfilling with clean sand, and
disposing of surplus excavated
material

- 1 [size] nr
- 1 600 x 600 x 600 internally
- 2 ? x ? x ? internally

-
- 4 earth pits
 - 1 ; 75 concrete grade ?/? base
 - 2 ; half brick sides in seconds
quality bricks in cement mortar ;
flush pointing internally
 - 3 ; ?
 - 1 ; precast concrete grade ?/?
cover slab reinforced with 12
diameter plain steel bars at 150
centres both ways and finished
fair on top
 - 2 ; cast iron hinged cover and
frame
 - 3 ; ?
 - 1 ; excavating ; disposing of
surplus excavated material
 - 2 ; ?

- 1 450 x 450 x 750 internally nr

-
- 5 [ducts & fittings]
 - 1 UPVC ducts and fittings
 - 2 plastic ducts and fittings
 - 3 galvanised steel ducts and fittings
 - 4 cast iron ducts and fittings
 - 5 ? ducts and fittings
 - 1 ; solvent welded joints
 - 2 ; screwed joints
 - 3 ; ? joints
 - 1 ; laying in trenches
 - 2 ; cable draw wires
 - 3 ; ?

- 1 ? diameter m
- 2 extra over ducts for [fittings] nr
- 1 ? made bends
- 2 ? welded junctions
- 3 ? bends
- 4 ? elbows
- 5 ? offsets
- 6 ? branches
- 7 ? tees
- 8 ? crosses
- 9 ?

		6	pipe protection	1	? diameter	m
			1 ; protective petroleum based tape			
			2 ; ?			
			1 ; wrapping around			
			2 ; ?			
			1 plastic pipes and fittings			
			2 galvanised steel pipes and fittings			
			3 cast iron pipes and fittings			
			4 spun iron pipes and fittings			
			5 ductile iron pipes and fittings			
			6 copper pipes and fittings			
			7 ?			
	3		gas installation	1	excavating trenches for service pipes	1 075m average depth m
			1 ; commencing at natural ground level			2 1.00m average depth m
			2 ; commencing at site formation level			3 ? average depth m
			3 ; commencing at reduced level			
			4 ; commencing at ? below site formation level			
			5 ; commencing at basement level			
			6 ; commencing at ?			
		2	[bedding materials]	1	[size]	m
			1 granular material		1 ? x ? under ? diameter pipes	
			2 sand		2 ? x 100 over ? diameter pipes	
			3 concrete ; grade 10/20		3 ?	
			4 reinforced concrete ; grade 20/20		1 ; surrounds minimum ?	
			5 ?		thick	
			1 ; beds		2 ; ?	
			2 ; beds and haunches			
			3 ; beds and surrounds			
			4 ; beds and backfilling			
			5 ; slabs			
			6 ; ?			
			1 ; formwork			
			2 ; ?			
		3	general reinforcement	1	[size]	kg
			1 ; plain steel reinforcing bars		1 10 diameter	
			2 ; ribbed steel reinforcing bars		2 ? diameter	
		4	[pipes & fittings]	1	? diameter	m
			1 galvanised steel pipes and fittings			
			2 cast iron pipes and fittings		2 extra over pipes for [fittings]	nr
			3 spun iron pipes and fittings		1 ? bends	
			4 ductile iron pipes and fittings		2 ? branches	
			5 ? pipes and fittings		3 ?	

		1 ; screwed joints		
		2 ; ? joints		
		1 ; laying in trenches		
		2 ; ?		

	5	pipe protection	1 ? diameter	m
		1 ; protective petroleum based tape		
		2 ; ?		
		1 ; wrapping around		
		2 ; ?		
		1 galvanised steel pipes and fittings		
		2 cast iron pipes and fittings		
		3 spun iron pipes and fittings		
		4 ductile iron pipes and fittings		
		5 ?		

4	telephone installation	1 excavating trenches for cables or ducts	1 0.75m average depth	m
		1 ; commencing at natural ground level	2 1.00m average depth	m
		2 ; commencing at site formation level	3 ? average depth	m
		3 ; commencing at reduced level		
		4 ; commencing at ? below site formation level		
		5 ; commencing at basement level		
		6 ; commencing at ?		

	2	[bedding materials]	1 [size]	m
		1 granular material	1 ? x ? under cables	
		2 sand	2 ? x ? under ? diameter ducts	
		3 concrete ; grade 10/20	3 ?	
		4 reinforced concrete ; grade 20/20	1 ; surrounds minimum ?	
		5 ?	thick	
		1 ; beds	2 ; ?	
		2 ; beds and haunches		
		3 ; beds and surrounds		
		4 ; beds and backfilling		
		5 ; ?		
		1 ; formwork		
		2 ; ?		

	3	cable draw pits	1 600 x 600 x 550 internally	nr
		1 ; 300 x 150 concrete grade ?/? strip foundations		
		2 ; 75 bed of rubble fill as base		
		3 ; 150 concrete grade ?/? sides finished fair one side and with rebated tops		
		4 ; ?		
		1 ; formwork		

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			2 ; 700 x 700 x 50 precast concrete cover reinforced with 12 diameter plain steel bars at 150 centres both ways and finished fair on top with adjustable handles		
			3 ; ?		
			1 ; excavating ; disposing of surplus excavated material		
			2 ; ?		
		4	[ducts & fittings]	1	? diameter m
		1	UPVC ducts and fittings		
		2	plastic ducts and fittings	2	extra over ducts for [fittings] nr
		3	galvanised steel ducts and fittings	1	? made bends
		4	cast iron ducts and fittings	2	? welded junctions
		5	? ducts and fittings	3	? bends
		1	; solvent welded joints	4	? elbows
		2	; screwed joints	5	? offsets
		3	; ? joints	6	? branches
		1	; laying in trenches	7	?
		2	; cable draw wires		
		3	; ?		
6	SUNDRIES	1	connection to public mains outside side boundary	1	? diameter m
				1	; ?m average depth
		2	extra over excavation and disposal at any depth for breaking up and removing	1	existing concrete paving ? thick with hardcore under ; including making good disturbed areas upon completion m2
		3	[bedding materials]	1	? x ? under ? diameter pipes m
		1	granular materials	1	; surrounds minimum ? thick
		2	concrete ; grade 10/20		
		1	; beds		
		2	; beds and surrounds		
		1	; formwork		
		4	[pipes and fittings]	1	? diameter m
		1	galvanised steel pipes and fittings	2	extra over pipes for ? bends nr
		2	ductile iron pipes and fittings ; metallic zinc coated		
		1	; solvent welded joints		
		2	; flanged and bolted joints		
		1	; laying in trenches		
		5	joints of pipes to existing public mains	1	connection of ? diameter

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1	; searching and identifying locations ; excavation, shoring and strutting, backfilling ; temporary diversion of or plugging up existing pipes, as required ; coupling adaptors ; making good all works disturbed to match existing ; removing debris	galvanised steel pipe	nr
2		connection of ? diameter ductile iron pipe	nr

*** END OF REPORT ***

FIRE SERVICE INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:

1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	FIRE HYDRANT AND HOSEREEL SYSTEM	1	[pipework] (SM.xvii(d)2)	1	pipework and fittings	1	? diameter	m
3	DESIGN, SUPPLY AND INSTALL FIRE HYDRANT AND HOSEREEL SYSTEM	1	galvanised mild steel pipes ; medium grade (minimum) ; BS EN 10255:2004 / ISO 65:1981 / BS EN 10217-1:2002 ; fittings ; BS EN 10241:2000 / BS EN 10242:1995	1	; laid in	2	; embedded in	
		2	galvanised mild steel pipes ; heavy grade (minimum) ; BS EN 10255:2004 / ISO 65:1981 ; fittings ; BS EN 10241:2000 / BS EN 10242:1995 ; pressure rating greater than system working pressure	3	; suspended from	4	; fixed to	
		3	ductile iron pipes and fittings ; BS EN 545:2010 ; coated externally with metallic zinc layer covered with bituminous finishing layer to BS 3416:1991 Type II ; lined internally with bitumen / cement mortar	4	; laid on	5	; laid on	
		4	carbon steel pipes ; grade P265TR1 to BS EN 10216-1:2013 / BS EN 10217-1:2002 ; fittings ; BS EN 10253-1:1999 / BS EN 10253-2:2007	1	ducts	2	trenches	
		1	; coupling joints [steel and ductile iron pipes]	3	chases	4	in-situ concrete or screeds	
		2	; flanged joints ; factory-applied [steel pipes outside plant room, exposed]	5	soffits	6	walls and columns	
		3	; screwed joints [steel pipes]	7	floors	1	; cleaned after jointing ; two coats bituminous paint ; wrapped with self-amalgamating tapes before laying [ducts, trenches]	
		4	; flanged joints ; factory-applied [steel pipes]	2	extra over pipework for	1	[fittings] (SM.xvii(d)3&4)	nr
						1	? bends	
						2	? elbows	
						3	? branches	
						4	? reducers	
						5	? tees	
						6	? reducing bends	
						7	? reducing tees	
						8	? caps	
						9	? flanged ends	
				3	flow and return header pipes ; blanked off at open ends (SM.xvii(d)10)	1	? diameter ; ? long ; with ? nr. ? x ? x ? branches	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
		1 ; suspended from soffits	
		2 ; supporting on floors	
2	[ancillaries] (SM.xvii(d)7)	1 [valves] (SM.xvii(d)7.1)	1 ? diameter nr
1	cast iron / ductile iron body valves	1 gate valves	2 to suit ? diameter pipes nr
2	cast gunmetal / bronze body valves	2 globe valves	
3	cast iron body strainers	3 non-return valves/check valves ; BS EN 1561:2011 / BS EN 1563:2011	
4	gunmetal / bronze body strainers	4 ball float valves ; slow closing ; minimum PN10 pressure rating	
5	gunmetal / brass automatic air vents ; stainless steel floats and guides ; non-corrodible valves and seats	5 pressure reducing valve sets ; BS EN 1567:1999 ; spring-loaded	
6	orifice plates	6 butterfly valves ; BS EN 593:2009+A1:2011 ; bubble light shut off	
7	vortex inhibitors	7 drain valves/cocks	
	1 ; PN 16 [valves]	8 silent check valves	
	2 ; PN 25 [valves]		
	3 ; heavy duty [valves]		
		2 [strainers]	1 ? diameter nr
		1 pipeline strainers ; Y-type	
		1 ; brass screen	
		2 ; stainless steel screen	
		3 [air vents]	1 ? diameter nr
		1 automatic air vents ; complete with integral lock-shield valves / valves with suitable locking device and air release pipe	2 to suit ? diameter pipes nr
		4 [orifice plates]	1 to suit system balancing nr
		1 LPCB or UL approved type	
		5 [vortex inhibitors]	1 to suit ? diameter pipes nr
		1 LPCB approved type ; operation under positive head conditions	
3	expansion joints (SM.xvii(d)9)	1 axial pattern bellow type ; with liners ; external protective sleeves	1 ? diameter nr
1	; stainless steel ; BS EN 10088-1:2014 No. 1.4401 ; life expectancy twenty years (minimum)	2 angular or lateral movement type	2 to suit ? diameter pipes nr
4	[hydrant outlets]	1 single type	1 65 diameter outlets with suitable bore screwed inlets nr
1	hydrant outlets ; gunmetal construction ; screw-down globe type	2 double type	

FIRST DIVISION

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THIRD DIVISION

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	stop valves ; necessary fittings	For nos 1 to 2 above		
2	pressure reducing hydrant outlets	1 ; housed in cabinet		
	1 ; parity valves and pipe connection ; necessary fittings [for pressure reducing hydrant outlet only]			
	2 ; self-contained type ; necessary fittings [for pressure reducing hydrant outlet only]			

5	fire services inlets ; gunmetal construction ; screw-down globe type stop valves ; integral spring loaded resilient seated non-return valves ; necessary fittings	1 twin type ; housed in cabinet	1	65 diameter inlets with suitable bore screwed outlets nr

6	hose reels ; die cast light alloy drums ; brass hub and shaft ; necessary fittings and supporting brackets ; sheet metal boxes for hose reel nozzles ; padlocks and keys	1 swing-out type 2 fixed type For nos 1 to 2 above 1 ; housed in cabinet	1	FSD approved type ; not less than 19 internal bore and 30m long nr 1 ; reinforced rubber hoses 2 ; PVC hoses 1 ; copper alloy nozzles

7	street hydrants ; cast iron construction ; fixed to foundations ; tested to BS EN ISO 5167-1:2003 and PD ISO/TR 9464:2008	1 pedestal type	1	one 65 outlet ; water flow rate 2,000 l/min (minimum) with running pressure of 170 kPa (minimum) nr 2 twin 65 outlet ; water flow rate 4,000 l/min (minimum) with running pressure of 170 kPa (minimum) nr

8	[instrumentation] (SM.xvii(d)16)	1 [pressure gauges]	1	to suit ? diameter pipes nr
	1 pressure gauges ; BS EN 837-1:1998 ; brass cases and dials ; siphon pipework and connections ; isolating valves/cocks (SM.xvii(d)16.2)	1 pressure gauges		
	2 water flow alarm switches ; magnetic / vane type ; pipework and connection	2 [water flow alarm switches] 1 water flow alarm switches ; LPCB approved type 1 ; capable of standing 1600 kPa (minimum) test pressure 2 ; capable of standing 1.5 times the working pressure		
	3 flow switches ; pipework and connection ; visual and audible warnings			
	4 pressure switches ; pipework and connection ; visual and audible warnings	3 [flow switches] 1 pressure switches 1 ; detecting for unauthorized use of system water		

9	[pumps] (SM.xvii(b)9)	1 end suction type	1	duty pump sets nr
	1 pumps sets ; cast iron casings ; driving motor ; water seal connection, vents, drains, priming	2 horizontal spindle type centrifugal pumps 3 vertical spindle type centrifugal pumps	2	standby pump sets nr 3 jockey pump sets ; complying Building Energy Code nr

FIRST DIVISION

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plugs, associated pipework and anti-vibration mountings ; adjacent emergency stops ; all necessary components and accessories

For nos 1 to 3 above
 1 ; actuated by manual fire call point [fire hydrant and hose reel system]
 2 ; actuated by flow switch [street hydrant system]

For nos 1 to 3 above
 1 ; capable of delivering ? l/s at ? kPa static pressure (ref. ?)

4 AUTOMATIC SPRINKLER SYSTEM
 1 ; internally
 2 ; in plant room
 3 ; externally

1 [pipework] (SM.xvii(d)2)
 1 galvanised mild steel pipes ; medium grade (minimum) ; BS EN 10255:2004 / ISO 65:1981 / BS EN 10217-1:2002 ; fittings ; BS EN 10241:2000 / BS EN 10242:1995
 2 galvanised mild steel pipes ; heavy grade (minimum) ; BS EN 10255:2004 / ISO 65:1981 ; fittings ; BS EN 10241:2000 / BS EN 10242:1995 ; pressure rating greater than system working pressure
 3 ductile iron pipes and fittings ; BS EN 545:2010 ; coated externally with metallic zinc layer covered with bituminous finishing layer to BS 3416:1991 Type II ; lined internally with bitumen / cement mortar
 4 carbon steel pipes ; grade P265TR1 to BS EN 10216-1:2013 / BS EN 10217-1:2002 ; fittings ; BS EN 10253-1:1999 / BS EN 10253-2:2007
 1 ; coupling joints [steel and ductile iron pipes]
 2 ; flanged joints ; factory-applied [steel pipes outside plant room, exposed]
 3 ; screwed joints [steel pipes]
 4 ; flanged joints ; factory-applied [steel pipes]

1 pipework and fittings
 1 ; laid in
 2 ; embedded in
 3 ; suspended from
 4 ; fixed to
 5 ; laid on
 1 ducts
 2 trenches
 3 chases
 4 in-situ concrete or screeds
 5 soffits
 6 walls and columns
 7 floors
 1 ; cleaned after jointing ; two coats bituminous paint ; wrapped with self-amalgamating tapes before laying [ducts, trenches]

1 ? diameter m
 1 [fittings] (SM.xvii(d)3&4) nr
 1 ? bends
 2 ? elbows
 3 ? branches
 4 ? reducers
 5 ? tees
 6 ? reducing bends
 7 ? reducing tees
 8 ? caps
 9 ? flanged ends

2 extra over pipework for
 3 flow and return header pipes ; blanked off at open ends (SM.xvii(d)10)
 1 ; suspended from soffits
 2 ; supporting on floors

1 ? diameter ; ? long ; with ? nr. ? x ? x ? branches nr

2 [ancillaries] (SM.xvii(d)7)
 1 cast gunmetal / bronze body valves
 2 cast iron / ductile iron body valves
 3 cast iron body strainers
 4 gunmetal / bronze body strainers
 5 gunmetal automatic air vents ; stainless steel floats and guides ; non-corrodible valves and seats

1 [valves] (SM.xvii(d)7.1)
 1 gate valves
 2 globe valves
 3 non-return valves/check valves ; BS EN 1561:2011 / BS EN 1563:2011
 4 drain valves/cocks
 5 silent check valves

1 ? diameter nr
 2 to suit ? diameter pipes nr

FIRST DIVISION

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6	brass automatic air vents ; stainless steel floats and guides ; non-corrodible valves and seats	2	[strainers]	1	? diameter	nr
7	orifice plates	1	pipeline strainers ; Y-type 1 ; brass screen			
8	vortex inhibitors 1 ; PN 16 [valves] 2 ; PN 25 [valves] 3 ; heavy duty [valves]	2	2 ; stainless steel screen			
		3	[air vents]	1	? diameter	nr
		1	automatic air vents ; complete with integral lock-shield valves / valves with suitable locking device and air release pipe	2	to suit ? diameter pipes	nr
		4	[orifice plates]	1	to suit system balancing	nr
		1	LPCB or UL approved type			
		5	[vortex inhibitors]	1	to suit ? diameter pipes	nr
		1	LPCB approved type ; operation under positive head conditions			
3	expansion joints (SM.xvii(d)9) 1 ; stainless steel ; BS EN 10088-1:2014 No. 1.4401 ; life expectancy twenty years (minimum)	1	axial pattern bellow type ; with liners ; external protective sleeves	1	? diameter	nr
		2	angular or lateral movement type	2	to suit ? diameter pipes	nr
4	sprinklers/sprinkler heads ; quick response ; yoke arm, escutcheon, adaptor and cover plate 1 ; chromium plated finish [exposed location] 2 ; polyester white colour finish [exposed location] 3 ; natural brass finish [inside false ceiling]	1	heat sensitive quartzoid bulb ; temperature rating 68 degrees Celsius	1	pendant type	nr
		2	high hazard class and goods protection ; temperature rating 93 degrees Celsius	2	upright type	nr
				3	side wall type	nr
				4	flush pattern, pendant type	nr
5	sprinkler inlets ; gunmetal construction ; screw-down globe type stop valves ; integral spring loaded resilient seated non-return valves ; necessary fittings	1	twin type ; housed in cabinet	1	65 diameter inlets with suitable bore screwed outlets	nr
6	sprinkler guards ; corrosion resistance ; brass, wax coated	1	fixed to sprinkler pipes	1	65 high (maximum)	nr
7	[instrumentation] (SM.xvii(d)16) 1 pressure gauges ; BS EN 837-1:1998 ; brass cases and dials ; siphon pipework and connections ; isolating	1	[pressure gauges]	1	to suit ? diameter pipes	nr
		1	pressure gauges			

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		valves/cocks (SM.xvii(d)16.2)	2 [subsidiary stop valves]	1 ? diameter	nr
	2	subsidiary stop valves ; electric monitoring type ; capable to generate visual and audible signal	1 subsidiary stop valves	2 to suit ? diameter pipes	nr
	3	tamper-proof electric switches ; associated wiring and installation, complying LPC Rules and General Specification	3 [electric switches]	1 to suit sprinkler system	nr
	4	sprinkler control valve sets ; comprising pressure gauges, valves, alarm and monitoring devices, water motor gongs, testing facilities and retarding chambers ; all necessary accessories ; complying LPC Rules	4 [sprinkler control valve sets]	1 ? diameter	nr
	5	water flow alarm switches ; high sensitivity ; actuated by operation of one sprinkler head	1 sprinkler control valve sets 1 ; duplicate alarm valve arrangement 2 ; alarm valve with bypass arrangement	2 to suit ? diameter pipes	nr
	6	butterfly valves (anti-pollution valves) without stop screw and lock nut on handle ; complying FSD Requirements and Circular Letters	5 [water flow alarm switches]	1 to suit ? diameter pipes	nr
			1 water flow alarm switches ; LPCB approved type 1 ; adequate drain points 2 ; automatic flow switch testing system and controlling test panels		
			6 [butterfly valves]	1 ? diameter	nr
			1 butterfly valves		
	8	[pumps] (SM.xvii(b)9)	1 end suction type	1 duty pump sets	nr
	1	pump sets ; cast iron casings ; driving motor ; water seal connection, vents, drains, priming plugs, associated pipework and anti-vibration mountings ; adjacent emergency stops ; all necessary components and accessories	2 horizontal spindle type centrifugal pumps	2 standby pump sets	nr
			3 vertical spindle type centrifugal pumps	3 jockey pump sets ; complying Building Energy Code	nr
			For nos 1 to 3 above	For nos 1 to 3 above	
			1 ; controlled by independent LPCB approved pressure switches	1 ; capable of delivering ? l/s at ? kPa static pressure (ref. ?)	
5	PRE-ACTION INSTALLATION	1 [pipework] (SM.xvii(d)2)	1 pipework and fittings	1 ? diameter	m
	1 ; internally	1 copper pipes ; seamless half hard type (R250 BS EN 1173:2008) ; BS EN 1057:2006+A1:2010 ; 28 diameter (maximum) ; gauge to suit system working pressure ; fittings ; 54 diameter (maximum) ; gauge to suit system working pressure ; BS EN 1254-1:1998 and BS EN 1254-2:1998	1 ; laid in 2 ; embedded in 3 ; suspended from 4 ; fixed to 5 ; laid on		
	2 ; in plant room	2 copper pipes ; seamless hard drawn type (R290 BS EN 1173:2008) ; BS EN 1057:2006+A1:2010 ; fittings ; 54 diameter (maximum) ; BS EN	1 ducts 2 trenches 3 chases 4 in-situ concrete or screeds 5 soffits 6 walls and columns 7 floors		
	3 ; externally				

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	1254-1:1998 and BS EN 1254-2:1998		1 ; cleaned after jointing ; polished ; heat resisting clear synthetic varnish ; wrapped with self-amalgamating tapes before laying [ducts, trenches]	
	1 ; capillary joint ; BS EN 1254-1:1998			
	2 ; compression joint ; BS EN 1254-2:1998			
	3 ; brazing ; BS EN ISO 10564:1997			
		2 extra over pipework for		1 [fittings] (SM.xvii(d)3&4) nr 1 ? bends 2 ? elbows 3 ? branches 4 ? reducers 5 ? tees 6 ? reducing bends 7 ? reducing tees 8 ? caps 9 ? flanged ends
		3 flow and return header pipes ; blanked off at open ends (SM.xvii(d)10) 1 ; suspended from soffits 2 ; supporting on floors		1 ? diameter ; ? long ; with ? nr. ? x ? x ? branches nr
2 [ancillaries] (SM.xvii(d)7)	1 stop valves 1 normally open 2 by pass ; normally strapped and padlocked closed 2 non-return valves 3 pressure relief valves 4 filters	1 to suit dry pipe installation		1 ? diameter nr 2 to suit ? diameter pipes nr
3 dry pendent sprinklers ; complete with valve mechanism		1 dry pendent sprinklers		1 adjustable standard type nr 2 adjustable recessed type nr
4 sprinkler guards ; corrosion resistance ; brass, wax coated		1 fixed to sprinkler pipes		1 65 high (maximum) nr
5 [instrumentation] (SM.xvii(d)16)	1 solenoid valves 2 pre-action alarm valves 3 restrictors ; non-corrosive ; rounded edge orifice	1 [solenoid valves] 1 solenoid valves 2 [pre-action alarm valves] 1 pre-action alarm valves		1 ? diameter nr 2 to suit ? diameter pipes nr
		3 [restrictors] 1 restrictors		1 to suit ? diameter pipes nr

FIRST DIVISION

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FOURTH DIVISION

6 quick-acting test valves, outlet nozzles, and 32 diameter pipework

1 quick-acting valves

1 to suit 32 diameter pipes nr

7 air compressors
1 ; capable to fully pressurize in 1 hr. ; automatic off-loading devices recommended by manufacturer

1 air compressors

1 pressure range recommended by the manufacturer nr

6 RECYCLING SYSTEM
1 ; internally
2 ; in plant room
3 ; externally

1 [pipework] (SM.xvii(d)2)
1 galvanised mild steel pipes ; medium grade (minimum) ; BS EN 10255:2004 / ISO 65:1981 / BS EN 10217-1:2002 ; fittings ; BS EN 10241:2000 / BS EN 10242:1995
2 galvanised mild steel pipes ; heavy grade (minimum) ; BS EN 10255:2004 / ISO 65:1981 ; fittings ; BS EN 10241:2000 / BS EN 10242:1995 ; pressure rating greater than system working pressure
3 ductile iron pipes and fittings ; BS EN 545:2010 ; coated externally with metallic zinc layer covered with bituminous finishing layer to BS 3416:1991 Type II ; lined internally with bitumen / cement mortar
4 carbon steel pipes ; grade P265TR1 to BS EN 10216-1:2013 / BS EN 10217-1:2002 ; fittings ; BS EN 10253-1:1999 / BS EN 10253-2:2007
1 ; coupling joints [steel and ductile iron pipes]
2 ; flanged joints ; factory-applied [steel pipes outside plant room, exposed]
3 ; screwed joints [steel pipes]
4 ; flanged joints ; factory-applied [steel pipes]

1 pipework and fittings
1 ; laid in
2 ; embedded in
3 ; suspended from
4 ; fixed to
5 ; laid on
1 ducts
2 trenches
3 chases
4 in-situ concrete or screeds
5 soffits
6 walls and columns
7 floors
1 ; cleaned after jointing ; two coats bituminous paint ; wrapped with self-amalgamating tapes before laying [duct, trenches]

1 ? diameter m

2 extra over pipework for

1 [fittings] (SM.xvii(d)3&4) nr
1 ? bends
2 ? elbows
3 ? branches
4 ? reducers
5 ? tees
6 ? reducing bends
7 ? reducing tees
8 ? caps
9 ? flanged ends

3 flow and return header pipes ; blanked off at open ends (SM.xvii(d)10
1 ; suspended from soffits
2 ; supporting on floors

1 ? diameter ; ? long ; with ? nr. ? x ? x ? branches m

2 recycling heat detectors ; stainless steel heat probe ; factory set trip temperature ; mechanical switch

1 heat sensitive, electrical detector ; 60 degrees Celsius detection rating

1 LPCB approved type nr

FIRST DIVISION

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3	sprinkler heads	1	sprinkler heads ; LPCB and FSD approved type	1	upright type	nr
				2	pendant type	nr
4	sprinkler guards ; corrosion resistance ; brass, wax coated	1	fixed to sprinkler pipes	1	65 high (maximum)	nr
5	[instrumentation] (SM.xvii(d)16)	1	[flow control valve]	1	? diameter	nr
	1 flow control valves ; quick opening, differential diaphragm type with spring loaded floating clapper ; timer	1	flow control valve ; LPCB approved type	2	to suit ? diameter pipes	nr
6	air compressor ; complete with actuators, valves, filters, air maintenance devices, thermal protection, controls, wiring, pipework and all necessary accessories	1	air compressor ; direct driven type ; operated by air pressure switches ; low smoke fire resistant cables complying Modified BS 5839-1 Clause 26.2	1	to suit recycling system	nr

7 DRENCHER SYSTEM
 1 ; internally
 2 ; in plant room
 3 ; externally

1	[pipework] (SM.xvii(d)2)	1	pipework and fittings	1	? diameter	m
	1 galvanised mild steel pipes ; medium grade (minimum) ; BS EN 10255:2004 / ISO 65:1981 / BS EN 10217-1:2002 ; fittings ; BS EN 10241:2000 / BS EN 10242:1995		1 ; laid in			
	2 galvanised mild steel pipes ; heavy grade (minimum) ; BS EN 10255:2004 / ISO 65:1981 ; fittings ; BS EN 10241:2000 / BS EN 10242:1995 ; pressure rating greater than system working pressure		2 ; embedded in			
	3 ductile iron pipes and fittings ; BS EN 545:2010 ; coated externally with metallic zinc layer covered with bituminous finishing layer to BS 3416:1991 Type II ; lined internally with bitumen / cement mortar		3 ; suspended from			
	4 carbon steel pipes ; grade P265TR1 to BS EN 10216-1:2013 / BS EN 10217-1:2002 ; fittings ; BS EN 10253-1:1999 / BS EN 10253-2:2007		4 ; fixed to			
	1 ; coupling joints [steel and ductile iron pipes]		5 ; laid on			
	2 ; flanged joints ; factory applied [steel pipes outside plant room, exposed]		1 ducts			
	3 ; screwed joints [steel pipes]		2 trenches			
	4 ; flanged joints ; factory applied [steel pipes]		3 chases			
			4 in-situ concrete or screeds			
			5 soffits			
			6 walls and columns			
			7 floors			
			1 ; cleaned after jointing ; two coats bituminous paint ; wrapped with self-amalgamating tapes before laying [ducts, trenches]			
		2	extra over pipework for	1	[fittings] (SM.xvii(d)3&4)	nr
				1	? bends	
				2	? elbows	
				3	? branches	
				4	? reducers	
				5	? tees	
				6	? reducing bends	
				7	? reducing tees	
				8	? caps	
				9	? flanged ends	

FIRST DIVISION

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		3	flow and return header pipes ; blanked off at open ends (SM.xvii(d)10) 1 ; suspended from soffits 2 ; supporting on floors	1	? diameter ; ? long ; with ? nr. ? x ? x ? branches	nr
2	[ancillaries] (SM.xvii(d)7) 1 cast gunmetal / bronze body valves 2 cast iron / ductile iron body valves 3 cast iron body strainers 4 gunmetal / bronze body strainers 5 gunmetal automatic air vents ; stainless steel floats and guides ; non-corrodible valves and seats 6 brass automatic air vents ; stainless steel floats and guides ; non-corrodible valves and seats 7 orifice plates 8 vortex inhibitors 1 ; PN 16 [valves] 2 ; PN 25 [valves] 3 ; heavy duty [valves]	1	[valves] (SM.xvii(d)7.1) 1 gate valves 2 globe valves 3 non-return valves/check valves ; BS EN 1561:2011 / BS EN 1563:2011 4 drain valves/cocks 5 silent check valves	1	? diameter	nr
		2	[strainers] 1 pipeline strainers ; Y-type 1 ; brass screen 2 ; stainless steel screen	1	? diameter	nr
		3	[air vents] 1 automatic air vents ; complete with integral lock-shield valves / valves with suitable locking device and air release pipe	1	? diameter	nr
				2	to suit ? diameter pipes	nr
		4	[orifice plates] 1 LPCB or UL approved type	1	to suit system balancing	nr
		5	[vortex inhibitors] 1 LPCB approved type ; operation under positive head conditions	1	to suit ? diameter pipes	nr
3	expansion joints (SM.xvii(d)9) 1 ; stainless steel ; BS EN 10088-1:2014 No. 1.4401 ; life expectancy twenty years (minimum)	1	axial pattern bellow type ; with liners ; external protective sleeves	1	? diameter	nr
		2	angular or lateral movement type	2	to suit ? diameter pipes	nr
4	drencher heads ; recommended by the manufacturer	1	drencher heads	1	approved type	nr
5	[instrumentation] (SM.xvii(d)16) 1 pressure gauges ; BS EN 837-1:1998 ; brass cases and dials ; siphon pipework and connections ; isolating valves/cocks (SM.xvii(d)16.2) 2 deluge valves ; manual release	1	[pressure gauges] 1 pressure gauges	1	to suit ? diameter pipes	nr
		2	[deluge valves] 1 deluge valves	1	? diameter	nr
				2	to suit ? diameter pipes	nr

FIRST DIVISION

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THIRD DIVISION

FOURTH DIVISION

	3	sprinkler flow switches ; with test facilities	3	[sprinkler flow switches] 1 sprinkler flow switches	1	for actuating drencher system	nr		
	6	[pumps] (SM.xvii(b)9) 1 pump sets ; cast iron casings ; driving motor ; water seal connection, vents, drains, priming plugs, associated pipework and anti-vibration mountings ; adjacent emergency stops ; all necessary components and accessories	1	end suction type	1	duty pump sets	nr		
			2	horizontal spindle type centrifugal pumps	2	standby pump sets	nr		
			3	vertical spindle type centrifugal pumps	3	jockey pump sets ; complying Building Energy Code	nr		
					For nos 1 to 3 above				
					1	; capable of delivering ? l/s at ? kPa static pressure (ref. ?)			
8	1	DESIGN, SUPPLY AND INSTALL GASEOUS EXTINGUISHING SYSTEM 1 ; internally 2 ; in plant room 3 ; externally	1	[pipework] (SM.xvii(d)2) 1 galvanised mild steel pipes and fittings ; heavy grade ; BS EN 10255:2004 ; 40 diameter (maximum) 2 galvanised mild steel pipes and fittings ; heavy grade ; ISO 65:1981 ; 40 diameter (maximum) 3 electric resistance and induction welded carbon steel pipes and fittings ; BS EN 10217-1:2002 with wall thickness not lower than ASME B36.10M-2004 Schedule No. 80 pipe Grade P265TR1 / ASTM A106/A106M:2008 Grade A ; hot finished / cold Schedule 80 4 carbon steel pipes and fittings ; NFPA 2001:2015 5 carbon steel pipes and fittings ; BS EN 10217-1:2002 with wall thickness not lower than ASME B36.10M-2004 Schedule No. 80 pipe Grade P265TR1 6 carbon steel pipes and fittings ; heavy grade ; ISO 65:1981 7 seamless carbon steel pipes and fittings ; ASTM A106 / A106M:2008 Grade A ; hot finished / cold schedule 80 [for high temperature service] 1 ; coupling joints 2 ; flanged joints ; factory-applied 3 ; screwed joints 4 ; screwed and socket joints	1	pipework and fittings 1 ; laid in 2 ; embedded in 3 ; suspended from 4 ; fixed to 5 ; laid on 1 ducts 2 trenches 3 chases 4 in-situ concrete or screeds 5 soffits 6 walls and columns 7 floors 1 ; cleaned after jointing ; two coats bituminous paint ; wrapped with self-amalgamating tapes before laying [ducts, trenches]	1	? diameter	m
			2	extra over pipework for	1	[fittings] (SM.xvii(d)3&4) 1 ? bends 2 ? elbows 3 ? branches 4 ? reducers 5 ? tees 6 ? reducing bends 7 ? reducing tees 8 ? caps 9 ? flanged ends	nr		
	2	discharge nozzles ; robust construction ; discharge orifices ; brass / stainless steel ; necessary accessories	1	discharge nozzles	1	working pressure ? ; temperature ?	nr		

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3	[gas cylinder] (SM.xvii(b)10)	1	[cylinders ; seamless steel construction]	1	set of ? cylinders ; each capacity ? kg	nr
1	gas cylinders ; rechargeable and re-usable type ; seamless steel construction ; BS EN ISO 9809-1:2010 and BS EN ISO 9809-3:2010	1	carbon dioxide cylinders			
2	gas cylinders ; rechargeable and re-usable type ; seamless steel construction ; API-ASME Code for Unfired Pressure Vessels for Petroleum Liquids and Gases	2	[cylinders ; NFPA 2001:2015]			
3	gas cylinders ; rechargeable and re-usable type ; NFPA 2001:2015	1	clean agent cylinders			
1	; gas valves ; check valves ; actuators ; pressure gauges ; flexible hose ; liquid measuring device ; low pressure supervisory switch ; all release devices and mechanism, all necessary accessories ; mounting and supports					
4	system odoriser ; automatically treating gas released from cylinder ; all necessary accessories (SM.xvii(b)10)	1	odorisers / oil of wintergreen	1	citrus odour	nr
				2	distinctive odour	nr
5	automatic/manual lock of unit ; key switches	1	automatic/manual lock off units	1	for fire detection and system control	nr
6	emergency release handle ; direct mechanism ; removable pin	1	emergency release handle	1	installed near gas cylinders	nr
7	manual release units ; pull handles in glass box ; "break glass" box cover	1	manual release units	1	installed at ? [position]	nr
8	warning lights and notices ; indicator lights ; 1.6 thick metal plate explanatory/warning notices ; connection to power	1	green indicator lights and warning notices	1	fixed on entrance doors	nr
		2	amber indicator lights and warning notices			
		3	red indicator lights and warning notices			
9	smoke detectors	1	smoke detectors ; analogue addressable ; point-type ; BS EN 54-7:2001	1	pendant mounting	nr
				2	surface mounting	nr
				3	semi-recessed mounting	nr
10	heat detectors	1	heat detectors ; analogue addressable ; point-type ; Class A2 ; BS EN 54-5:2001	1	combined fixed temperature and rate-of-temperature-rise	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 ; flush mounting
- 2 ; surface mounting

11	multi-sensors detectors	1	multi-sensors detectors ; analogue addressable ; point-type ; BS EN 54-7:2001 ; FSD approved ; design operating life 10 years (minimum)	1	sensors recommended by manufacturer	nr
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12	gaseous extinguishing system control panels (SM.xviii(b)1)	1	gaseous extinguishing system control panel ; adjustable time delay unit ; sealed, nickel-metal hydride type battery ; battery charger ; ammeter ; voltmeter ; relays ; contacts ; switches 1 ; necessary accessories ; indication devices ; connection to electrical power source	1	gaseous extinguishing control panel (ref. ?)	nr
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13	control and monitoring circuits ; fire resistant cables ; complying with Section B9.9 of the General Specification for Fire Service Installation ; FSDCoP, FSD Requirements and Circular Letters ; low smoke zero halogen type ; complete with cable trays, cable trunkings, conduits and fittings	1	from gaseous extinguishing system control panel	1	to automatic / manual lock off units	nr
				2	to emergency release handle	nr
				3	to manual release units	nr
				4	to warning lights	nr

9	DESIGN, SUPPLY AND INSTALL AUDIO/VISUAL ADVISORY SYSTEM ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	central equipment for audio system ; fire resisting cables and conduits ; complying as described in Section B9.9 of the General Specification for Fire Service Installation ; ancillary components and accessories ; connections to other equipment and spur units (spur units measured separately)	1	[central equipment] 1 equipment ; mounted in stainless steel enclosure and equipment rack (enclosure and equipment rack measured separately)	1	pre-amplifiers	nr
						2	amplifiers	nr
						3	recording and play back devices and decks	nr
						4	CD/DVD decks	nr
						5	desktop microphones ; single zone type ; condenser microphone on gooseneck ; cable minimum 1000 long ; plug	nr

2	enclosure and equipment rack ; 1.6 thick minimum BS EN 10088-1:2005 No. 1.4401 stainless steel sheet construction	1	[enclosure and equipment racks] 1 enclosure and equipment racks ; wall mounted	1	for audio system	nr
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3	loudspeakers ; crisp, clear audio reproduction, alarm tone signalling (SM.xix(d)6) 1 ; sheet steel construction 2 ; high impact ABS plastic construction 1 ; tapped transformers ;	1	loudspeakers 1 ; wall mounted 2 ; ceiling mounted 3 ; flush mounted on false ceiling 1 ; surface mounting boxes ; conduit knock-out [without false ceiling]	1	maximum output rating 1 Watt, frequency response within +3 and -7dB from 100 to 10,000 Hz	nr
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FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

integrated attenuators ; back enclosure

4	microphone control panels ; 1.6 thick BS EN 10088-1:2014 No. 1.4401 stainless steel housing ; well-ventilated and free from vermin and corrosion proof 1 ; speaker zone switchbank and annunciator module ; tape transfer, power supervisor and remote transmission module ; automatic timer sequencer ; alarm failure transfer units ; general alarm and all call module ; alarm input transfer module ; battery and charger ; accessories ; connection to power ; wirings and conduits	1	control panels ; located in ? room 1 ; wall mounted type	1	control panels (ref. ?)	nr
5	visual system ; coloured and flashing lights ; illuminated exit/directional signs ; BS ISO 3864-1:2011, BS 5499-4:2013, BS EN 60598-1:2015 (Incorporating corrigendum December 2015), BS EN 60598-2-22:2014 (Incorporating corrigendum June 2014), BS 5266-1:2011, BS EN 50172:2004, BS EN 1838:2013 ; FSDCoP, FSD Requirements and Circular Letters 1 ; battery, battery chargers, wiring, testing facilities ; changeover switches ; connection to power and all accessories	1	illuminated exit/directional signs ; integrated flashing light control gear ; lamp-holder sets	1	size ?	nr
		2	low-level lights ; internally illuminated ; direction indicated ; flashing light control gear			
		3	low-level directional signs ; non-flashing photo-luminous type			
6	[final circuits] (SM.xviii(g)2) 1 control and monitoring circuits ; fire resistant cables ; complying with Section B9.9 of the General Specification for Fire Service Installation ; FSDCoP, FSD Requirements and Circular Letters ; low smoke zero halogen type ; complete with cable trays, cable trunkings, conduits and fittings	1	[control and monitoring circuits] 1 from control panel (ref. ?)	1	to pre-amplifiers	nr
				2	to amplifiers	nr
				3	to recording and play back devices and decks	nr
				4	to CD/DVD decks	nr
				5	to microphones	nr
				6	to exit/directional signs	nr
		2	[amplifier output circuits] 1 from amplifiers ; low power loss and interference protected twin cables	1	to loudspeakers	nr
2	amplifier output circuits ; fire resistant cables ; complying with Section B9.9 of the General Specification for Fire Service Installation ; FSDCoP, FSD Requirements and Circular Letters ; low smoke zero halogen type ; complete with cable trays, cable					

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trunkings, conduits and fittings

10 MANUAL AND AUTOMATIC FIRE ALARM SYSTEM ;
INTERNALLY, IN PLANT ROOM AND EXTERNALLY

1 manual call points ; non-combustible and
corrosion resistant construction ;
non-deteriorating alloy contacts ;
concealed "test" device (SM.xviii(h)2)
1 ; intrinsically safe [hazardous
areas]

1 break-glass type / resettable type ; BS
EN 54-11:2001 ; Type A
2 break-glass type / resettable type ; BS
EN 54-11:2001 ; addressable / integrated
with interfacing module

1 flush semi-recessed mounting nr
2 surface mounting nr

For nos 1 to 2 above
1 ; waterproof to IP 66 minimum
2 ; fixed at 0.90 - 1.20m above
finished floor level ; FSD approved
;

2 heat detectors ; point-type
(SM.xviii(h)2)
1 ; Class A2, BS EN 54-5:2001
2 ; Class BR or CR ; BS EN 54-5:2001
[pantry, domestic kitchen]
3 ; Class CS, DS, ES, FS or GS ; BS EN
54-5:2001 [boiler room, commercial
kitchen]
1 ; analogue addressable ;
continuous non-condensing under
relative humidity up to 95%
non-air-conditioned space and
air-conditioned space ; LED
indicators enable 360 degrees
viewing ; all necessary
accessories
2 ; analogue addressable ;
continuous non-condensing under
relative humidity up to 99% ;
LED indicators enable 360
degrees viewing ; all necessary
accessories [plant room, boiler
room or specified area]
1 ; intrinsically safe ;
factory certified ; remote
LED indicators [heat
detectors in dangerous good
stores, fuel oil tank rooms]

1 minimum IP 43 protection
1 ; flush mounting
2 ; surface mounting

1 combined fixed temperature and
rate-of-temperature-rise nr

3 ionisation smoke detectors ; point-type
(SM.xviii(h)2)
1 ; BS EN 54-7:2001 ; analogue
addressable ; continuous
non-condensing under relative
humidity up to 99% and 95% in
non-airconditioned space and
air-conditioned space ; radioactive

1 ionization smoke detectors
1 ; working life 10 years (minimum)
2 ; working life 10 years (minimum) ;
harsh type ; anti-condensation
provision

1 pendant mounting nr
2 surface mounting nr
3 semi-recessed mounting nr

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isotopes with radiation level of less than 0.1 mr/h at 100m ; minimum two ionization chambers ; built-in signal integration feature ; LED indicators enable 360 degrees viewing ; all necessary accessories ; submissions

4	optical smoke detectors ; point-type (SM.xviii(h)2) 1 ; BS EN 54-7:2001 ; analogue addressable ; continuous non-condensing under relative humidity up to 99% and 95% in non-airconditioned space and air-conditioned space ; detection chamber housing ; infra-red light emitter and silicon DIN photo diode sensor ; LED indicators enable 360 degrees viewing ; all necessary accessories 1 ; intrinsically safe ; factory certified ; remote LED indicators [hazardous areas]	1	optical smoke detectors ; working life 10 years (minimum)	1	pendant mounting	nr
				2	surface mounting	nr
				3	semi-recessed mounting	nr
5	multi-sensor detectors ; point-type (SM.xviii(h)2) 1 ; analogue addressable ; continuous non-condensing combination of heat and smoke sensors ; approved by FSD ; operating life 10 years (minimum) ; LED indicators enable 360 degrees viewing ; all necessary accessories 1 ; intrinsically safe ; factory certified ; remote LED indicators [hazardous areas]	1	multi-sensor detectors ; working life 10 years (minimum)	1	pendant mounting	nr
				2	surface mounting	nr
				3	semi-recessed mounting	nr
6	translators ; in zoned intrinsically safe circuit (SM.xviii(h)2)	1	translators	1	installed at ? [location]	nr
7	safety barriers ; in zoned intrinsically safe circuit	1	safety barriers	1	installed at ? [location]	nr
8	remote alarm indicator lamps (SM.xviii(h)2) 1 ; LED indicators enable 360 degrees viewing ; visible at 6m (minimum) in an ambient light of 500 lux (maximum) ; necessary wirings and	1	remote alarm indicator lamps ; for detectors	1	ceiling mounting	nr
				2	door mounting	nr

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	conduits		
9	visual alarm units ; ? [colour] alarm signalling strobe light and associated lens/reflectors system ; back up emergency power supply, battery supply ; all necessary accessories (SM.xviii(h)2)	1 visual alarm units 1 ; flashing light ; NFPA 72:2016 2 ; flashing light ; Modified BS 5839-1 Section 17	1 surface mounting 2 semi-flush mounting nr nr
10	alarm bells ; BS EN 54-3:2014 ; capable of producing sound level of 80 dB(A) (minimum) at 3m ; high performance and reliability micro mortar ; back up emergency power supply, battery supply (SM.xviii(h)2)	1 alarm bells 1 ; suitable for use in addressable system [analogue addressable manual and automatic fire alarm system]	1 [gong diameter] 1 minimum 150 diameter gongs 2 ? diameter gongs nr
11	addressable interface modules ; mounted into junction box ; LED lights (SM.xviii(h)2)	1 monitor modules ; supervised initiating circuit ; fault indicating facilities and testing facilities 2 control modules ; supervising and monitoring wiring to alarm bell, flashing light units, indicator units and interface relay 3 fault isolator modules	1 monitor modules 2 control modules 3 fault isolator modules nr nr nr
12	testers ; high level located ; stainless steel label plates (SM.xviii(h)2)	1 testers ; easily accessible ; flush mounted type	1 for break glass units 2 for heat detectors 3 for smoke detectors nr nr nr
13	remote monitoring units and covers ; battery powered ; microprocessors ; multi-punched hanging straps ; steel chassis plates ; control devices ; local audio alarm ; remote monitoring and alarm ; alarm panels (measured separately) ; necessary accessories and wirings	1 remote monitoring units and covers ; addressable type ; security control and monitoring of portable hand-operated appliances	1 wall mounting nr
11	PORTABLE HAND-OPERATED APPLIANCES ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 [supply and fix] (SM.xvii(b)10) 1 fire blankets and sand buckets 2 fire extinguishers ; rechargeable hand-operated type ; manufactured and tested to recognized international standards ; batch-approved certificate/mark 3 fixed sprayer units ; self contained, automatically operated ; sprinkler head or other actuation device complying with UL, FM, NFPA,	1 [fire blankets/sand buckets] 1 fire blankets ; BS 7944:1999 ; heavy duty reusable type 2 sand buckets ; galvanised steel and painted red ; mounting brackets 1 ; wall mounted 2 ; housed in cabinet 1 FSD approved heavy duty type 2 10 litres capacity (minimum) nr nr
		2 [fire extinguishers] 1 water type	1 ? capacity nr

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BS or other relevant international standards and approved by FSD

- 2 foam type ; cartridge operated
- 3 dry-powder type ; cartridge operated
- 4 carbon dioxide type
- 5 Novec 1230 type
- 6 FM200 type
 - 1 ; wall mounted
 - 2 ; housed in cabinet

- 3 [fixed sprayer units]
 - 1 insert gas type ; additional identification symbols at door entrance
 - 2 dry powder type
 - 1 ; wall mounted

12 ELECTRICITY SUPPLY ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY

- 1 [switchgear and equipment] (SM.xviii(b)1)
 - 1 starters

- 1 [starters]
 - 1 direct on line starters
 - 2 star-delta starters
 - 3 auto-transformer starters

- 1 ? A nr
 - 1 to suit fire service pumps (ref. ?)
 - 2 to suit sprinkler pumps (ref. ?)
 - 3 to suit drencher pumps (ref. ?)

- 2 [electricity supply] (SM.xviii(g)2)
 - 1 fire resistant cables ; complying with Section B9.9 of the General Specification for Fire Service Installation ; FSDCoP, FSD Requirements and Circular Letters ; low smoke zero halogen type ; complete with cable trays, cable trunkings, conduits and fittings

- 1 from electricity supply points/isolators
- 2 from starter panels (ref. ?)

- 1 ? mm2, ? core cables nr
 - 1 ; to fire service pump starter panels (ref. ?)
 - 2 ; to sprinkler pump starter panels (ref. ?)
 - 3 ; to drencher pump starter panels (ref. ?)
- 1 ? mm2, ? core cables nr
 - 1 ; to fire service pumps (ref. ?)
 - 2 ; to sprinkler pumps (ref. ?)
 - 3 ; to drencher pumps (ref. ?)

13 CONTROL SYSTEM - AUTOMATIC CONTROL SYSTEM (ACS) ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY

- 1 [central equipment] (SM.xix(b)1)
 - 1 control and indicating panels

- 1 fire alarm control and indicating panels ; BS EN 54-2:1997+A1:2006 (Incorporating corrigenda January 2007 and July 2009) ; 1.6 thick minimum BS EN 10088-1:2005 No. 1.4401 stainless steel sheet construction ; BS EN 60529:1992+A2:2013 IP 52 protection ; FSD approved
- 2 fire alarm control and indicating panels ; ISO 9001:2015 ; proprietary manufactured ; FSD approved

- For nos 1 to 2 above
 - 1 ; glazed lockable door ; detection

- 1 conventional fire alarm control and indicating panels nr
- 2 combined conventional fire alarm and automatic sprinkler system alarm control and indicating panels nr
- 3 automatic fire alarm control and indicating panels ; microprocessor type nr
- 4 combined automatic fire alarm and automatic sprinkler system alarm control and indicating panels ; microprocessor type nr

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	and alarm devices ; surge arresters ; battery and charger sets ; interconnecting wiring and conduits ; all provisions, components and accessories ; signal transmission to FSD	5	automatic sprinkler system alarm control and indicating panels	nr
		6	addressable fire alarm control and indicating panels ; analogue addressable intelligent type ; minimum 10% spare capacity for future expansion	nr
		7	pre-action system control panels ; stand-by battery power supply capable of operating the system for at least 72 hours	nr

3	control panels ; FSD approved type ; proprietary built and factory-wired ; all necessary relays, timers, switches, alarm and trouble lights ; components and accessories ; signal transmission to FSD	1	recycling system control panels	nr
		2	drencher system control panels	nr

4	alarm repeater panels ; 1.6 thick minimum BS EN 10088-1:2014 No. 1.4401 stainless steel sheet construction	1	alarm repeater panels	nr
	1 ; glazed lockable door ; detection and alarm devices ; surge arresters ; interconnecting wiring and conduits ; battery and charger sets ; all provision, components and accessories	1	; (ref. ?)	
		2	; with engraved laminated plastic mimic diagram (ref. ?)	

5	remote alarm panels ; 1.6 thick minimum BS EN 10088-1:2014 No. 1.4401 stainless steel sheet construction ; FSD approved	1	remote alarm panels ; addressable	nr
	1 ; glazed lockable door ; detection and alarm devices ; surge arresters ; battery and charger sets ; interconnecting wiring and conduits ; all provision, components and accessories ; signal transmission to FSD	1	; (ref. ?)	

6	starter panels ; 1.6 thick minimum mild steel sheet construction ; BS EN 60529:1992+A2:2013 IP 65 protection	1	for fire service pumps (ref. ?)	nr
	1 ; lockable door ; detection and alarm devices ; surge arresters ; battery and charger sets ; interconnecting wiring and conduits ; necessary components and accessories	2	for sprinkler pumps (ref. ?)	nr
		3	for drencher pumps (ref. ?)	nr

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<p>2 [final circuits] (SM.xviii(g)2)</p> <p>1 alarm, detection and control circuits</p> <p>1 ; fire resistant cables ; complying with Section B9.9 of the General Specification for Fire Service Installation ; FSDCoP, FSD Requirements and Circular Letters ; low smoke zero halogen type ; complete with cable trays, cable trunkings, conduits and fittings</p>	<p>1 [from]</p> <p>1 from conventional fire alarm control and indicating panel</p> <p>2 from addressable fire alarm control and indicating panel</p> <p>3 from automatic fire alarm control and indicating panel</p> <p>4 from automatic sprinkler system alarm control and indicating panel</p> <p>5 from combined conventional fire alarm and automatic sprinkler system alarm control and indicating panels</p> <p>6 from combined automatic fire alarm and automatic sprinkler system alarm control and indicating panels</p> <p>7 from alarm repeated panels (ref. ?)</p> <p>8 from starter panels (ref. ?)</p> <p>9 from pre-action system control panel</p> <p>10 from recycling system control panel</p> <p>11 from drencher system control panel</p> <p>12 from remote alarm panel (ref. ?)</p>	<p>1 to A/C system control panel nr</p> <p>2 to lift installation control panel nr</p> <p>3 to security system control panel nr</p> <p>4 to smoke extraction system control panel nr</p> <p>5 to pressurization of staircases system control panel nr</p> <p>6 to automatic sprinkler system alarm control and indicating panel nr</p> <p>7 to pre-action system control panel nr</p> <p>8 to recycling system control panel nr</p> <p>9 to drencher system control panel nr</p> <p>10 to gaseous extinguishing system control panel nr</p> <p>11 to microphone control panel nr</p> <p>12 to alarm repeater panel nr</p> <p>13 to mimic diagram nr</p> <p>14 to smoke detectors nr</p> <p>15 to heat detectors nr</p> <p>16 to recycling heat detectors nr</p> <p>17 to multi-sensor detectors nr</p> <p>18 to visual alarm units and signals nr</p> <p>19 to alarm bells nr</p> <p>20 to manual call points nr</p> <p>21 to water flow alarm switches nr</p> <p>22 to electric alarm pressure switches nr</p> <p>23 to subsidiary stop valves nr</p> <p>For nos 14 to 23 above</p> <p>1 ; via addressable interface modules</p> <p>24 to remote monitoring units nr</p> <p>25 to sprinkler control valve sets nr</p> <p>26 to pre-action alarm valves nr</p> <p>27 to flow control valves nr</p> <p>28 to deluge valves nr</p> <p>29 to fire service pumps (ref. ?) nr</p> <p>30 to sprinkler pumps (ref. ?) nr</p> <p>31 to drencher pumps (ref. ?) nr</p>
<p>3 fire service computer system</p>	<p>1 fire service computer system ; high-resolution monitor, keyboard, printer, signal cabling facilities and central processing unit ; sufficient capacity and memories ; power supply and battery chargers set</p> <p>1 ; internet</p> <p>2 ; network link</p> <p>1 ; all software, hardware,</p>	<p>1 fire service computer system ; located at ? item</p>

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control devices ; all ancillary components and accessories

	4	web cameras ; good quality high-resolution colour images ; all ancillaries components ; connections to fire service computer system	1	web cameras ; remote monitoring of room environment and fire service equipment ; initial fire alarm checking 1 concealed, protective housing [public areas]	1	located at 1 fire service pump room 2 fire control room/centre 3 ? [public area]	nr	
14	EMERGENCY LIGHTING ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	battery emergency lighting system ; emergency luminaries ; BS EN 60598-2-22:2014 (Incorporating corrigendum June 2014) ; flame and ignition resistant ; operate at 70 degrees Celsius (SM.xviii(h)1) 1 ; connections to power supply ; fire resistant cables and conduits ; ancillary components and accessories ; back up by emergency generator [central supplied emergency luminaries]	1	design, supply and install central supplied emergency luminaries 1 ; central battery power supply ; ISO 9001 2 ; central battery power supply ; BS EN 62040 series 3 ; uninterrupted power supply 2 self-contained emergency luminaries ; maintained type 3 self-contained emergency luminaries ; non-maintained type For nos 2 to 3 above 1 ; main power supply ; battery and charger set ; charge indicator	1	? no. x ? W emergency lighting luminaries	nr
	2	testing facilities ; simulating normal supply failure ; ancillary components and accessories	1	testing facilities for	1	centrally supplied emergency luminaries 2 self-contained emergency luminaries ; maintained type 3 self-contained emergency luminaries ; non-maintained type	item item item	
	3	design, supply and install central monitoring, testing and logging (CMTL) system ; central computer units ; built-in test facilities ; fail test alarm and warning ; all necessary equipment and components	1	CMTL system ; automatic type ; performing all routing test functions	1	for self-contained emergency luminaries ; maintained type 2 for self-contained emergency luminaries ; non-maintained type	item item	
15	EXIT SIGN ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	exit signs ; BS ISO 3864-1:2011, BS 5499-4:2013, BS EN 60598-1:2015 (Incorporating corrigendum December 2015), BS EN 60598-2-22:2014 (Incorporating corrigendum June 2014), BS 5266-1:2011, BS EN 50172:2014 ; BS EN 1838:2013 ; related directional signs ; maintained operation luminaries ; connections to power supply	1	central supplied exit signs ; connected to central battery set 2 self-contained exit signs ; battery back up 1 complying FSDCoP and Fire Safety Code requirements	1	size ?	nr

FS - FIRE SERVICE INSTALLATION

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(SM.xviii(h)1)
 1 ; fire resistant wirings and
 conduits ; ancillary components and
 accessories

16 FIRE SERVICES SUNDRIES ; INTERNALLY, IN
 PLANT ROOM AND EXTERNALLY

1 the following items are in respect of
 the whole Fire Service Installation

1 allow for

- 1 marking the positions of holes,
 mortices, chases and the like in
 the structure (SM.XVii(i)3) item
- 2 inspection, testing and
 commissioning of the complete Fire
 Service Installation (SM.xvii(i)4) item
 1 ; all as described in
 Particular Specification and
 Part D of the General
 Specification for Fire Service
 Installation
- 3 inspection, attendance, operation
 and maintenance of the complete
 Fire Service Installation item
 1 ; all as described in
 Particular Specification,
 Section E1 and E3 of the
 General Specification for Fire
 Service Installation
- 4 providing all necessary
 (SM.xvii(i)5) item
 1 power and water, diesel, gas
 and fuels in connection with
 testing, commissioning and
 maintenance
- 5 providing item
 1 installation drawings ; all as
 described in the Particular
 Specification and Section A4.2
 of the General Specification
 for Fire Service Installation
 2 as-built drawings ; all as
 described in the Particular
 Specification and Section A4.3
 of the General Specification
 for Fire Service Installation
 3 Operation and Maintenance
 (O&M) Manuals and User Manuals
 ; all as described in the
 Particular Specification and
 Section A4.4 of the General
 Specification for Fire Service
 Installation

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- 6 providing training of employer's staff as described in the Particular Specification, Section E1 and E2 of the General Specification for Fire Service Installation item
- 7 providing sample boards ; all as described in Section A3.7 of the General Specification for Fire Service Installation item
- 8 supplying and fixing fire stopping to walls and floors (SM.xvii(i)16) item
- 9 supplying and fixing necessary sleeves, caulking and flashing for work through waterproof layers or structures item
- 10 supplying and fixing by other trades necessary sleeves, caulking and flashing for work through waterproof layers or structures item
- 11 providing telephone linking with FSD's approved agency for Maintenance Period ; alarm transmitters ; power supply and conduit works ; including all initial, rental and maintenance charges item
- 12 providing [mock-up] (SM.xvii(i)10) item
 - 1 mock-ups
 - 2 prototypes
 - 3 mock-ups and prototypes
- 13 supplying [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cables sleeves
 - 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described
- 14 supplying and fixing [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cables sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described

*** END OF REPORT ***

FUEL SUPPLY SYSTEM

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:

1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	DESIGN, SUPPLY AND INSTALL FUEL SUPPLY SYSTEM	1	[pipework] (SM.xvii(d)2)	1	pipework and fittings	1	? diameter	m
	1 ; internally		1 carbon steel pipes and fittings ; heavy quality ; ISO 65:1981 [up to 80 diameter]		1 ; laid in			
	2 ; in plant room		2 steel pipes and fittings ; BS 1600:1991 [80 diameter or above]		2 ; embedded in			
	3 ; externally		1 ; flanged joints		3 ; suspended from			
			2 ; screwed joints		4 ; fixed to			
					5 ; laid on			
					1 ducts			
					2 trenches			
					3 chases			
					4 in-situ concrete or screeds			
					5 soffits			
					6 walls and columns			
					7 floors			
					1 ; complete with protections [trenches]			
				2	extra over pipework for	1	[fittings]	nr
							1 ? bends	
							2 ? branches	
							3 ? reducers	
							4 ? tees	
							5 ? reducing bends	
							6 ? reducing tees	
							7 ? caps	
							8 ? flanged ends	
		2	[ancillaries] (SM.xvii(d)7)	1	[valves] (SM.xvii(d)7.1)	1	? diameter	nr
			1 cast steel valves ; full way type		1 gate valves			
			2 bronze valves ; full way type		2 ball valves			
			3 bronze strainers		3 check valves			
			4 cast iron strainers		4 drain valves			
					5 remote control quick closing gate valves			

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		1 ; complete with emergency pull-off connects		
		2 [strainers] (SM.xvii(d)7.4)		
		1 strainers		
		1 ; single type		
		2 ; double type		
3	[instrumentation] (SM.xvii(d)16)	1 [pressure gauges]	1 to suit ? diameter pipes	nr
	1 pressure gauges	1 pressure gauges		
	2 air/water meters			
	3 level switches ; IEC 60079-0:2011 Group II A, Temperature Class T1 ; comprising a level sensor and a switch unit ; controller ; casing ; all necessary electrical components and control wirings ; BASEEFA certification	2 [air/water meters]		
		1 pedestal type ; comprising white dial gauge, pressure regulator, built-in filter, air hose, screw-down water dispenser, accessories and associated pipework		
		3 [level switches]	1 installed inside fuel tank	nr
		1 level switches ; capable to control on/off operation of remote system ; on-site calibration of level settings	2 installed outside fuel tank	nr
		1 ; suitable for Zone 0 hazardous area		
		2 ; suitable for Zone 1 hazardous area		
4	daily service fuel tanks ; mild steel construction ; stiffeners and support frames ; socket connections ; fittings ; union couplings, valves, gauges and oil drip tray (SM.xvii(b)7)	1 daily services fuel tanks ; for plants and appliances	1 ? litre capacity	nr
	1 ; all accessories and associated services ; pipework connection and fittings			
5	underground horizontal fuel storage tanks ; EN 12285-1:2003 ; hydraulically tested ; internally linseed oil thick coating and externally painted ; tank chambers, gauges ; dipsticks tank-hole covers (SM.xvii(b)7)	1 underground horizontal fuel storage tank	1 ? litre capacity	nr
	1 ; all accessories, associated services and calibration	1 ; for plants and appliances		
		2 ; for vehicle refueling		
6	fuel transfer pumps ; high quality cast iron construction ; high tensile steel shafts ; flame proof coupling motors ;	1 fuel transfer pumps ; rotary, positive displacement type	1 duty pumps ; design capacity ? (ref. ?)	nr
		1 ; for plants and appliances	2 standby pumps ; design capacity ?	

FUEL - FUEL SUPPLY SYSTEM

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		valves ; strainers ; switches (SM.xvii(b)9) 1 ; complete with composite pump control cubicles (composite pump control cubicles measured separately), alarm, wiring works ; all necessary accessories and overload protection	2 ; for vehicle refueling	(ref. ?)	nr
	7	hand pumps ; 25 inlet ; outlet and flexible oil resistant pipes ; all necessary accessories	1 hand pumps ; semi-rotary double acting type 1 ; for plants and appliances 2 ; for vehicle refueling	1 flow rate of ? l/s	nr
	8	fuel dispensing units ; integral dispensing pumps and accessories ; control, LCD crystal display, conduits ; electrical wirings, earthing electrodes and protection	1 fuel dispensing units ; weather-proof type ; approved by FSD 2 petrol dispensing units ; with vapour recovery system ; coaxial dispenser hose ; full compliance with Air Pollution Control (Petrol Filling Stations) (Vapour Recovery) Regulations	1 fuel dispensing units ; suitable for diesel oil 2 petrol dispensing units ; for vehicle refueling	nr nr
3	DESIGN, SUPPLY AND INSTALL FUEL SUPPLY SYSTEM - ELECTRICITY SUPPLY ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 [final circuits] (SM.xviii(g)2) 1 multi-core armoured cables ; installed in outdoor underground G.I. pipes with draw wires 2 PVC cables ; run in concealed conduits with draw wires	1 from isolators (isolators measured separately) 2 from fused spur units (fused spur units measured separately)	1 ? x ? mm2 1 ; to fuel transfer pumps (ref. ?) 2 ; to fuel transfer pump control cubicle (ref. ?)	nr
4	DESIGN, SUPPLY AND INSTALL FUEL SUPPLY SYSTEM - CONTROL ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 [central equipment] (SM.xix(b)1) 1 control cubicles ; certificate issued by BASEEFA 1 ; EIMCSP and IP 65 enclosure to IEC 60529:2013/Corr 2:2015 ; protection type EEx d flameproof	1 fuel transfer pump control cubicles ; suitable for operation in Zone 1 hazardous area ; wall-mounted type	1 located in plant room (ref. ?)	nr
	2	[final circuit] (SM.xviii(g)2) 1 control and monitoring circuits 1 ; approved cables 1 ; complete with cable trays, cable trunkings, conduits and fittings	1 from fuel transfer pump control cubicle (ref. ?)	1 to fuel transfer pumps (ref. ?)	nr
	3	[final circuit] (SM.xviii(g)2) 1 alarm, detection and control circuits 1 ; approved cables 1 ; complete with cable trays,	1 from fuel transfer pump control cubicle (ref. ?)	1 to level switches	nr

FUEL - FUEL SUPPLY SYSTEM

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cable trunkings, conduits
and fittings

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
5 DESIGN, SUPPLY AND INSTALL FUEL SUPPLY SYSTEM - SUNDRIES ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 the following items in respect of the whole Fuel Supply System	1 allow for	1 marking the positions of holes, mortices, chases and the like in the structure (SM.xvii(i)3) item 2 inspection, testing and commissioning of the complete Fuel Supply System (SM.xvii(i)4) item 1 ; all as described in the Particular Specification and Part D of the General Specification for Mechanical Installations 3 inspection, attendance, operation and maintenance during Maintenance Period item 1 ; all as described in the Particular Specification, Sections E1 and E3 of the General Specification for Mechanical Installations 4 providing all necessary power and water, diesel, gas and fuels in connection with testing, commissioning and maintenance (SM.xvii(i)5) item 5 particular requirements on inspection and testing as described in Section C4.6 of the General Specification for Mechanical Installations item 6 providing item 1 installation drawings ; all as described in the Particular Specification and Section A4.2 of the General Specification for Mechanical Installations 2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Mechanical Installations 3 Operation and Maintenance (O&M) Manuals and User Manuals ; all as described in the Particular Specification and Section A4.4 of the General

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

Specification for Mechanical Installations

- 7 training of users and operation and maintenance agents as described in the Particular Specification, Section E1 and E2 of the General Specification for Mechanical Installations item
- 8 providing sample boards as described in Section A3.7 of the General Specification for Mechanical Installations item
- 9 supplying [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described
- 10 supplying and fixing [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described
- 11 supplying and fixing fire stopping to walls and floors item
- 12 providing metal labels/plates as described in Section B2.1 of the General Specification for Mechanical Installations item
 - 1 for greasing and oiling points
 - 2 for items of equipment requiring spare parts

*** END OF REPORT ***

GLAZING

GLAZ - GLAZING

FIRST DIVISION

1 GENERAL GLAZING (INCLUDING ACRYLIC AND POLYCARBONATE SHEETS)

SECOND DIVISION

- 1 clear sheet glass [GS20.03]
- 2 clear float glass [GS20.02]
- 3 cast glass [GS20.04]
- 4 rolled glass [GS20.04]
- 5 wired cast glass [GS20.05]
- 6 wired polished glass [GS20.05]
- 7 polished glass
- 8 tinted glass [GS20.09]
- 9 coated glass [GS20.10]
- 10 laminated glass [GS20.01.01, GS20.11]
- 11 laminated safety and security glass [GS20.11]
- 12 polycarbonate sheet [GS20.12(i)(a)]
- 13 polycarbonate sheet with surface hardened treatment [GS20.12(i)(b)]
- 14 ? glass [give proprietary name and type]

For nos 1 to 14 above

- 1 ; heat strengthened [GS20.07]
- 2 ; fully tempered [GS20.08]
- 3 ; translucent [GS20.04]
- 4 ; obscured [GS20.04]
- 5 ; ? hour FRP
- 6 ; protective [GS20.11]
- 7 ; bullet resistant [GS20.11]
- 8 ; blast resistant installations [GS20.11]
- 1 ; ? quality (SM.xx(a).1)
- 2 ; double edge seals [GS20.01.03]
- 3 ; edges sealed with ? [give details]
- 4 ; factory-sealed units
- 5 ; ?
- 1 ; ? coating [GS20.10]
- 2 ; ? colour [GS20.09, 20.10]
- 3 ; ? type [GS20.10]
- 4 ; ? intensity [GS20.09]
- 5 ; ? performance [GS20.10, 20.11]
- 6 ; ? plastic film [GS20.01.06]
- 7 ; ?

THIRD DIVISION

- 1 ? thick
 - 2 ? thick (minimum) [Guidance note : for Contractor-designed / fire-rated items, Project Officers to add "(minimum)" in Particular Specifications and tender drawings]
 - 3 ? nominal weight
- For nos 1 to 3 above
- 1 ; to wood
 - 2 ; to metal
 - 3 ; to ?
 - 4 with
 - 1 sprigs
 - 2 clips
 - 3 spring clips
 - 4 wood beads or mouldings
 - 5 metal beads or mouldings
 - 6 ?
 - 7 and
 - 1 silicone [GS20.16, 20.17.08]
 - 2 structural sealant [GS20.16, 20.01.12, 20.17.08, 20.26]
 - 3 polysulphide [GS20.16]
 - 4 linseed oil putty [GS20.16]
 - 5 approved proprietary brand putty [GS20.16]
 - 6 approved proprietary brand non-setting compound [GS20.16]
 - 7 wash leather
 - 8 India rubber
 - 9 plastic glazing strips or the like
 - 10 ?
 - 11 ; front and back bedded
 - 12 ; joints between glass and beads sealed with an approved silicone sealant [GS20.28]

FOURTH DIVISION

- 1 panes m2
 - 1 not exceeding 0.15 m2
 - 2 0.15 - 4.00 m2
 - 3 exceeding 4.00 m2
 - 4 ? - ? m2
 - 1 ; in irregular shapes, measured square
 - 2 ; in flat panes set to curve
 - 3 ; ?
 - 2 louvres ? wide [insert N in trigger] m
 - 1 ; ? finish to edges
 - 2 ; ?
 - 3 panes nr
 - 4 bent panes (SM.xx(a).7) nr
- For nos 3 to 4 above
- 1 ; ? x ?
 - 2 ; ? x ? x ? girth
 - 1 ; ? radius bent in short direction
 - 2 ; ? radius bent in long direction
 - 3 ; ? radius bent in both directions
 - 4 ; ?
 - 1 ; brilliant cut ; ? [describe decoration]
 - 2 ; with ? holes [number, size and type of holes stated]
 - 3 ; ?
 - 5 grinding [msd super] m2
 - 6 sandblasting [msd super] m2
 - 7 embossing [msd super] m2
 - 8 engraving [msd super] m2
 - 9 ? m2
- For nos 5 to 9 above
- 1 ; surfaces of glass
 - 2 ; surfaces of glass, partly obscured
 - 3 ; surfaces of glass, wholly obscured
 - 4 ; surfaces of bent glass
 - 5 ; ?
 - 10 grinding [msd nr] nr
 - 11 sandblasting [msd nr] nr
 - 12 embossing [msd nr] nr

					13 engraving [msd nr]	nr
					For nos 10 to 13 above	
					1 ; surfaces of glass	
					2 ; surfaces of glass, partly obscured	
					3 ; surfaces of glass, wholly obscured	
					4 ; surfaces of bent glass	
					5 ; ?	
					1 ; ? x ?	
					2 ; ?	
					1 ; numerals or letters	
					2 ; Chinese characters	
					3 ; symbols	
					4 ; ? ; as drawing nr. ?	
					14 polishing	m
					1 ; plain edges of glass	
					2 ; rounded edges of glass	
					3 ; bevelled edges of glass ? wide	
					4 ; ?	
					1 ; curved	
					2 ; to bent panes	
2	GLASS WALL LININGS, FLOORS, BALUSTRADES AND RAILINGS	1 clear float glass		1 squash court armoured glass wall system ; ? thick ; including all necessary mullions, fixings, framings, neoprene strips, sealant pointing, cement and sand packing and ironmongery to doors	1 approximate overall size ? x ? high	item
		2 tinted glass				
		3 polished glass			2 ?	item
		4 wire polished glass			1 ; with ? nr. doors ; ? x ? high	
		5 laminated glass		1 ; fixing strictly in accordance with the manufacturer's instructions	2 ; ?	
		6 ?		1 ; as drawing nr. ?		
				2 ; ?		
		For nos 1 to 6 above				
		1 ; fully tempered [GS20.08]				
		2 ; ?				
		1 ; ? quality				
		2 ; silvering and protecting with undercoat paint				
			2 mirror wall linings		1 in panels	m2
			1 ; ? thick		1 ; ? girth x ? high (overall)	
			2 ; ? nominal weight		2 ; ?	
			1 ; ? x ? x ? thick galvanised steel to BS EN 10025 grade ? channel framing surround			
			2 ; ? x ? x ? thick aluminium channel framing surround			
			3 ; ? x ? x ? thick aluminium colour anodised channel framing surround			
			4 ; ? x ? x ? thick channel framing surround			
			5 ; ?			
			1 ; mitres at corners ; plugging and screwing to			

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
		walls	
		2 ; sealing joints with approved sealant	
		3 ; ?	

		3 glass balustrades	1 ? (overall) high m
		4 glass railings	2 ? m
		5 ?	
		For nos 3 to 5 above	
		1 ; ? thick	
		2 ; ? nominal weight	
		3 ; ?	
		1 ; galvanised steel to BS EN 10025 grade ? fixing trough at bottom, all supporting metalwork, structural sealant joints and rounded edges at exposed edges	
		2 ; stainless steel fixing trough at bottom, all supporting metalwork, structural sealant joints and rounded edges at exposed edges	
		3 ; ?	
		1 ; at ? [state locations]	
		2 ; as drawing nr. ?	
		3 ; ?	

3 MIRRORS, GLASS SHELVES AND SUNDRY GLAZING WORKS	1 clear float glass [GS20.02] 2 selected clear float glass[GS20.06]	1 ? thick 2 ? nominal weight	1 mirrors (SM.xx(c).2) nr 2 shelves (SM.xx(c).3) nr
	For nos 1 to 2 above	For nos 1 to 2 above	For nos 1 to 2 above
	1 ; silvering and protecting with undercoat paint	1 ; to walls	1 ; ? x ?
	2 ; ?	2 ; placing on and including shelf brackets and supports	2 ; ? diameter
		3 ; placing in grooves	1 ; bevelling edges [GS20.06]
		4 ; ?	2 ; square edges [GS20.06]
		1 ; with ? chromium plated brass dome headed screws and rubber washers	3 ; ?
		2 ; ?	1 ; ?

	3 domelights	1 type ?	1 overall size nr
	1 ; ref. ?	1 ; ? shape	1 ; ? x ?
		2 ; ?	2 ; ? diameter
		1 ; ? thick	3 ; ?
		2 ; ? nominal weight	1 ; fixing with ?
		1 wired cast glass	2 ; ?
		2 wired polished glass	1 ; to concrete curbs
		3 ?	2 ; ?

GLAZ - GLAZING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

*** END OF REPORT ***

IRONMONGERY

FIRST DIVISION

1 IRONMONGERY

SECOND DIVISION

1 collecting from Government Logistics
Department and FIXING ONLY [GS14.01]

THIRD DIVISION

1 hinges [FO]
1 ; fixing to metal
2 ; ?

FOURTH DIVISION

1 [hinges] nr
1 butt hinges
2 parliament hinges
3 spring hinges ; single action
4 ?
1 ; 63 x 35
2 ; 76 x 41
3 ; 76 x 48
4 ; 102 x 76
5 ; 102 x 152 [parliament
hinges]
6 ; ?

2 bolts [FO]
1 ; fixing to metal
2 ; ?

1 [bolts] nr
1 barrel bolts
2 flush bolts ; lever type
3 lavatory indicating bolts
4 ?
1 ; 75
2 ; 100
3 ; 150
4 ; 250
5 ; ?

3 door and drawer handles [FO]
1 ; fixing to metal
2 ; ?

1 [handles and pulls] nr
1 pull handles
2 bow handles
3 wardrobe handles
4 drawer pulls
5 flush pulls
6 combined cylinder ring and
door pulls
7 ?
1 ; 100
2 ; 150
3 ; 200
4 ; 300
5 ; 75 x 45 [cylinder ring &
door pulls]
6 ; 100 x 52 [flush pulls]
7 ; ?

4 locks and latches [FO]
1 ; fixing to metal
2 ; ?

1 [locks and latches] nr
1 mortice locks
2 mortice latches
3 cylinder rim night latches
4 cylinder mortice night latches
5 drawer locks
6 ?
1 ; horizontal
2 ; upright

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 3 ; ?
- 1 ; dead
- 2 ; cylinder
- 3 ; with thumb-turn
- 4 ; rebated forend
- 5 ; ?

5	lock and latch furniture [FO]	1	[furniture]		nr
	1 ; fixing to metal		1	single knob furniture	
	2 ; ?		2	set of knob furniture	
			3	set of lever handles	
			4	keyhole escutcheons	

6	door fittings [FO]	1	[fittings]		nr
	1 ; fixing to metal		1	finger plates	
	2 ; ?		2	cabin hooks	
			3	door chains and keeps	
			4	ball catches	
			5	inspection lenses ; wide angle	
			6	rubber door stops	
			7	?	
			1	; double hinged [cabin hooks]	
			2	; for concrete [door stops]	
			3	; ?	
			1	; 330 x 82 [finger plates]	
			2	; 150 [cabin hooks]	
			3	; 250 [cabin hooks]	
			4	; ?	

7	cupboard fittings [FO]	1	[catches]		nr
	1 ; fixing to metal		1	cupboard catches	
	2 ; ?		2	ball catches	
			3	magnetic door catches	
			4	?	
			1	; small	
			2	; large	
			3	; ?	

8	door closers [FO]	1	[closers]		nr
	1 ; fixing to metal		1	overhead door closers	
	2 ; ?		2	floor springs	
			3	?	
			1	; single action	
			2	; double action	
			3	; ?	
			1	; setting boxes in floor ; filling with	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

hydraulic fluid
2 ; ?

		9	hat and coat hooks [FO] 1 ; fixing to metal 2 ; plugging and screwing 3 ; ?		1	[hooks] 1 coat hooks 2 hat and coat hooks 3 ? 1 ; with rubber buffer 2 ; ?	nr
2	SUPPLYING AND FIXING ironmongery 1 ; ? [state proprietary name ; name of manufacturer]	1	hinges [S&F] 1 ; fixing to metal 2 ; ?		1	continuous hinges 1 ; brass 2 ; satin finish stainless steel 3 ; ? 1 ; ? x ? [give size] 2 ; ? 1 ; ref. ? 2 ; ?	m
					2	[hinges] 1 butt hinges [GS14.20] 2 rising butt hinges 3 falling butt hinges 4 parliament hinges 5 backflap hinges 6 ? 1 ; BS EN 1935 Grade ? 2 ; extra heavy duty 3 ; brass 4 ; satin finish stainless steel 5 ; anodised aluminium 6 ; ? 1 ; ? x ? 2 ; class ? 3 ; ref. ? 4 ; ?	nr
		2	bolts [S&F] 1 ; fixing to metal 2 ; ?		1	[bolts] 1 barrel bolts [GS14.87, 14.100] 2 flush bolts ; lever type [GS14.89] 3 lavatory indicating bolts 4 ? 1 ; brass 2 ; chromium plated brass 3 ; satin finish stainless steel 4 ; satin anodised aluminium 5 ; ? 1 ; ? long	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; BS EN 12051 class ?
[GS14.87]
3 ; ref. ?
4 ; ?

3	door and drawer handles [S&F]	1	[handles and pulls]	nr
	1 ; fixing to metal		1 pull handles [GS14.77]	
	2 ; ?		2 flush pulls [GS14.100]	
			3 drawer pulls [GS14.100]	
			4 ?	
			1 ; chromium plated brass	
			2 ; satin finish stainless steel	
			3 ; satin anodised aluminium	
			4 ; ?	
			1 ; ? x ? projection	
			2 ; ? x ? deep	
			3 ; ref. ?	
			4 ; ?	

4	locks and latches [S&F]	1	[locks & latches]	nr
	1 ; fixing to metal		1 mortice locks [GS14.56]	
	2 ; ?		2 mortice latches	
			3 cylinder rim night latches	
			4 cylinder mortice night latches	
			5 drawer locks [GS14.100]	
			6 cash drawer locks	
			7 security locks [GS14.61]	
			8 ?	
			1 ; horizontal	
			2 ; upright	
			3 ; dead	
			4 ; cylinder	
			5 ; with thumb-turn	
			6 ; rebated forend	
			7 ; ?	
			1 ; lock cylinder to BS EN 1303 Grade 3 [GS14.69]	
			2 ; lock cylinder to BS EN 1303 Grade 5 [GS14.70]	
			3 ; ? x ?	
			4 ; ? x ? x ?	
			5 ; ref. ?	
			6 ; in master-keying suites	
			7 ; ?	

5	lock and latch furniture [S&F]	1	[furniture]	nr
	1 ; fixing to metal		1 single knob furniture	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; ?

- [GS14.76]
- 2 set of knob furniture [GS14.76]
- 3 set of lever handles [GS14.76]
- 4 keyhole escutcheons
- 5 ?
- 1 ; for locks
- 2 ; for ? locks [state lock type]
- 3 ; for latches
- 4 ; class ?
- 5 ; ?
- 1 ; satin finish stainless steel
- 2 ; satin anodised aluminium
- 3 ; ref. ?
- 4 ; ?

-
- 6 door fittings [S&F]
 - 1 ; fixing to metal
 - 2 ; plugging and screwing
 - 3 ; ?

-
- 1 [fittings] nr
 - 1 push plates [GS14.78]
 - 2 kick plates [GS14.78]
 - 3 door holders
 - 4 cabin hooks
 - 5 limit stays
 - 6 friction stays
 - 7 door selectors [GS14.55]
 - 8 door guards [GS14.96]
 - 9 door viewers [GS14.97]
 - 10 door stops [GS14.91]
 - 11 ?
 - 1 ; satin finish stainless steel
 - 2 ; satin anodised aluminium
 - 3 ; wall mounted [door stops]
 - 4 ; for concrete [door stops]
 - 5 ; ?
 - 1 ; ? x ?
 - 2 ; ? x ? x ? thick
 - 3 ; BS EN 1158 class ? [door selectors]
 - 4 ; ref. ?
 - 5 ; ?

-
- 7 cupboard fittings [S&F]
 - 1 ; fixing to metal
 - 2 ; ?

-
- 1 [catches] nr
 - 1 ball catches [GS14.100]
 - 2 magnetic door catches [GS14.100]
 - 3 ?
 - 1 ; ref. ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; ?

 8 door closers [S&F] 1 [closers] nr
 1 ; fixing to metal 1 overhead door closers [GS14.28
 2 ; ? 2 - 14.40]

2 floor springs ; single action
 [GS14.41 - 14.48]

3 floor springs ; double action
 [GS14.41 - 14.48]

4 ?
 1 ; setting boxes in floor ;
 filling with hydraulic
 fluid

2 ; BS EN 1154 class ? ;
 power adjustable [closers
 GS14.35]

3 ; BS EN 1154 class ? ;
 universal arm [closers
 GS14.36]

4 ; BS EN 1154 class ? ;
 adjustable door mounted
 [closers GS14.39]

5 ; BS EN 1154 class ? ;
 transom mounted [closers
 GS14.40]

6 ; BS EN 1154 class ? ;
 power adjustable [springs
 GS14.47, 14.48 Table 14.1]

7 ; ?
 1 ; ? construction
 [state materials]
 2 ; fitted to fire door
 [GS14.31]

3 ; ref. ?
 4 ; ?

 9 panic exit devices [S&F] 1 [panic exit devices] nr
 1 ; fixing to metal 1 horizontal bar operated panic
 2 ; ? exit device [GS14.81]

2 ?
 1 ; BS EN 1125 Grade ?
 [GS14.82, 14.83]

2 ; with vertical shoots

3 ; for single door ? wide

4 ; for pair of doors ? wide
 x ? high

5 ; ?

1 ; ref. ?

2 ; ?

 10 hat and coat hooks [S&F] 1 [hat & coat hooks] nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 ; fixing to metal
- 2 ; ?

- 1 coat hooks [GS14.95]
- 2 hat and coat hooks [GS14.95]
- 3 ?
- 1 ; satin finish stainless steel
- 2 ; satin anodised aluminium
- 3 ; ?
- 1 ; ? projection
- 2 ; with rubber buffers
- 3 ; ref. ?
- 4 ; ?

-
- 11 shelf fitting [S&F]
 - 1 ; fixing to metal
 - 2 ; plugging and screwing
 - 3 ; ?

-
- 1 [slotted channels] m
 - 1 slotted channels
 - 2 ?
 - 1 ; satin finish stainless steel
 - 2 ; satin anodised aluminium
 - 3 ; ?
 - 1 ; ? x ?
 - 2 ; ref. ?
 - 3 ; ?
 - 2 [shelf brackets] nr
 - 1 shelf brackets
 - 2 adjustable shelf brackets
 - 3 ?
 - 1 ; satin finish stainless steel
 - 2 ; satin anodised aluminium
 - 3 ; ?
 - 1 ; ? x ?
 - 2 ; ? x ? projection
 - 3 ; ref. ?
 - 4 ; ?

-
- 12 curtain tracks [S&F]
 - 1 ; fixing to metal
 - 2 ; plugging and screwing
 - 3 ; ?

-
- 1 curtain tracks [GS14.111] nr
 - (SM.xiv.10)
 - 1 ; rigid UPVC T box section
 - 2 ; enamelled steel C section
 - 3 ; regular duty
 - 4 ; double duty
 - 5 ; ?
 - 1 ; ? length (overall)
 - 2 ; brackets at ? (maximum) centres [GS14.119]
 - 3 ; end stops [GS14.119]
 - 4 ; centre overlap sets [GS14.119]
 - 5 ; ? nylon slides per metre [GS14.119]
 - 6 ; ? nylon runners per

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

metre [GS14.119]

7 ; cord operating

8 ; ?

1 ; ref. ?

2 ; ?

13	[sliding/folding door gear]	1	gear set comprising	sets
	1 sliding door gear	2	?	sets
	2 folding door gear			
	3 sliding/folding door gear		For nos 1 to 2 above	
	1 ; BS EN 1527 [GS14.92]	1	? top tracks ? section ref. ?	
	2 ; to door size ? x ? high	2	? bottom tracks ? section	
	3 ; fixing to metal		ref. ?	
	4 ; plugging and screwing	3	? channels ? ref. ?	
	5 ; ?	4	? brackets ? ref. ?	
		5	? hangers ? ref. ?	
		6	? guide ? ref. ?	
		7	? sliders ? ref. ?	
		8	? flush pulls ? ref. ?	
			[GS14.93]	
		9	? door lock ? ref. ?	
			[GS14.93]	
		10	? ; ?	

14	toilet fittings [measured here where not included in Section XVII]	1	[toilet roll holders and dishes]	nr
		1	chromium plated toilet roll holders	
		2	enamelled toilet roll holders	
		3	chromium plated paper towel holders	
		4	enamelled soap dishes	
		5	?	
		1	; ref. ?	
		2	; ?	

15	signs and lettering	1	signs	nr
	1 ; fixing to metal	1	; plastic	
	2 ; plugging and screwing	2	; brass	
	3 ; ?	3	; satin anodised aluminium	
		4	; in two layers	
		5	; ?	
		1	; ? x ?	
		2	; ? x ? x ? thick	
		3	; each ? x ? x ? thick	
		4	; ? letters ? high	
		5	; ? Chinese characters ? high	
		6	; ? numerals ? high	
		7	; ?	
		1	; etched on	
		2	; cut on	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3 ; silk-screened on
4 ; ?

2 [letters & numerals] nr
1 letters or numerals
2 Chinese characters
3 card holders
4 ?
1 ; plastic
2 ; brass
3 ; satin anodised aluminium
4 ; ?
1 ; ? high
2 ; ? x ?
3 ; ?

2	SUNDRIES	1	sundry items	1	mosquito gauze [GS13.31]	1	[gauze]	m2
						1	plastic covered glass fibre 7 x 7 mesh per 10 square millimetres	
						2	copper wire 11 x 11 mesh per 10 square millimetres [GS13.31]	
						3	?	
						1	; fixing with wood beads (measured separately)	
						2	; ?	
				2	plastic handrails	1	fixing over ? x ? steel core rail (measured separately)	m
				1	; as ? [state manufacturer and type]	1	; including welding joints, ends, bends, ramps, wreaths and quadrants	
				2	; ?	2	; ?	
				3	[hanging/curtain/towel rails]	1	? diameter x ? thick ; ? length (overall)	nr
				1	shower curtain rails ; tubular [GS14.112]	2	?	nr
				2	towel rails ; tubular [GS14.113]			
				3	hanging rails ; tubular			
				1	; stainless steel heavy duty			
				2	; ?			
				1	; plugging and screwing with stainless steel screws [GS14.120, 14.121]			
				2	; bends			
				3	; end flange plates			
				4	; brackets at ? (maximum) centres			
				5	; centre hanging brackets ; ? drop ; ? nr.			

6 ; intermediate hanging
brackets ; ? drop ; ? nr.
7 ; ?

4	water bars [GS14.110]	1	? x ?	m
	1 ; galvanised steel	2	? x ? x ? long	nr
	2 ; stainless steel			
	3 ; aluminium			
	4 ; brass			
	1 ; bedding in waterproofing cement mortar [GS14.118]			

5	[dowels]	1	[sizes]	nr
	1 dowels [GS14.107, 14.115]	1	? diameter x ? long [dowels]	
	2 fixing cramps [GS14.108, 14.116]	2	? x ? x ? girth [fixing cramps]	
	1 ; galvanised steel	3	?	
	2 ; ?			
	1 ; bedding in cement mortar [GS14.115]	1	; once bent; twice holed	
		2	; ?	
		1	; fanged end	
		2	; ?	

6	metal trims	1	? x ? [Flat]	m
	1 ; steel	2	? x ? x ? [angles and channels]	m
	2 ; aluminium			
	3 ; stainless steel			
	4 ; ?			
	1 ; flat strips			
	2 ; angles			
	3 ; channels			
	4 ; ?			
	1 ; fixing by bolts (measured separately)			
	2 ; plugging and screwing			

7	door seals	1	? x ? wide	m
	1 ; ? [material stated]			
	2 ; ref. ?			
	1 ; fixing with stainless steel screws			
	2 ; fixing into including forming grooves at edge of door			
	3 ; fixing with ?			

*** END OF REPORT ***

LANDSCAPING

LANDS - LANDSCAPING

FIRST DIVISION

1 TURFING AND GRASS SEEDING

SECOND DIVISION

1 soiling, turfing and seeding

THIRD DIVISION

1 [topsoil]
 1 Topsoil
 2 Fabricated Soil Mix
 3 Lightweight Soil Mix
 1 ; imported
 2 ; ?

FOURTH DIVISION

1 ? average thick m2
 1 ; in general areas
 2 ; ?
 1 ; spreading and levelling
 2 ; ?

 2 spot turfing 1 in general areas m2
 3 sprigging

For nos 2 to 3 above

1 ; ? [type of grass stated]
 1 ; applying pre-turfing
 fertilizer at the rate of ? g/m2
 2 ; laying sprigs at ? centres
 both ways
 3 ; ?
 1 ; top dressing with Topsoil
 or Fabricated Soil Mix
 [GS25.43 and 25.55]
 2 ; cutting and rolling
 [GS25.49]
 3 ; ?

 4 close turfing 1 on level or to slopes not m2
 1 ; laying ? [type of grass and size exceeding 1 in 7
 and thickness of turves stated] 2 to slopes exceeding 1 in 7 m2
 2 ; laying turves previously cut and
 stored on site
 1 ; applying pre-turfing
 fertilizer at the rate of ? g/m2
 2 ; fixing with pegs at ? centres
 both ways
 3 ; ?
 1 top dressing with Topsoil or
 Fabricated Soil Mix [GS25.43
 and 25.55]
 2 ; cutting and rolling
 [GS25.49]
 3 ; ?

 5 [broadcast seeding for grassed area] 1 in general areas m2
 1 raking surfaces to a fine tilth
 [GS25.47]
 1 ; applying pre-seeding
 fertilizer at the rate of ? g/m2
 2 ; ?
 1 ; broadcast ? at the rate of
 ? g/m2 [state type of seeds
 and seed mix GS25.53(a)]
 2 ; mulching

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- 3 ; covering seeds by lightly working into surface
- 4 ; covering seeds by spreading sufficient soil to cover seeds
- 5 ; ?

6	sundries		1 ? edging to grassed areas [material stated]	m
			2 ?	m
			1 ; ?	
			2 ; ? x ?	

2	hydroseeding ; carried out by Specialist sub-contractor on the "List of Approved Suppliers of Materials and Specialist Contractors" under the category of "Landscaping - Hydroseeding (Class II)	1	[hydroseeding for grassed area] 1 scarifying surfaces to a rough textured finish 2 ? 1 ; hydroseeding ? [detail of mix used] 2 ; hydroseeding a blend of mulch at the rate of 200 g/m2, seed mix at the rate of 35 g/m2, pre-seeding fertilizer at the rate of 100 g/m2, soil binding agent at the rate of 25 g/m2 and dye at the rate of 0.5 - 0.05 g/m2 [GS25.45(d)] 3 ; ? 1 ; applying post-seeding fertilizer at the rate of ? g/m2 2 ; protecting sprayed hydroseeded surfaces with protective layer 3 ; spiking or stapling in position 4 ; ?	1	in general areas	m2
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2	PLANTING (SM.XXII(C))	1	cultivating	1	[cultivating surfaces] 1 weeding ? [give details] 2 scarifying surfaces [GS25.05(g)] 3 cultivating surfaces ? deep [GS25.06] 4 ripping surfaces ? deep [GS25.05(f)] 5 ?	1	in general areas	m2
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2	surfaces applications (SM.xxii(c)2)	1	applying 1 herbicide at the rate of ? kg/m2 2 selected weedkillers at the rate of	1	in general areas	m2
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before delivery to
site

		3 [aquatic plants, indoor and outdoor potted plants] (SM.xxii(c)9, SM.xxii(c)10, SM.xxii(c)11, SM.xxii(c)12, SM.xxii(c)13)	1 ? [give botanical name]	nr
		1 aquatic plants [GS25.61]	1 ; ? [give size]	
		2 indoor potted or container plants	1 ; ? [give details of pots or containers]	
		3 outdoor potted or container plants	2 ; ?	
		4 ?		
		4 decorative cut trees in pots or containers		
		1 ; ? [give description of decorative cutting]		
		1 ; as drawing nr. ?		
4 planting only [plant specimens]	1 preparing ground ; notch planting		1 [trees & shrubs] [msd nr.]	nr
5 collecting from ? and transplanting	2 preparing ground ; pit planting		1 seedling trees	
6 transplanting	3 preparing ground ; ?		2 whip trees	
			3 light standard trees	
			4 standard trees	
			5 heavy standard trees	
			6 semi-mature trees	
			7 small shrubs	
			8 large shrubs	
			9 herbaceous	
			10 ground cover plants	
			11 climbers	
			12 palms	
			13 bamboos	
			14 conifers	
			15 succulents	
			16 aquatic plants	
			17 approximate ? m high and ? m spread	
			18 ?	
			1 ; ? [give details of initial cutting back]	
			2 ; ?	
For nos 4 to 6 above	For nos 1 to 3 above		2 [shrubs & plants] [msd square]	m2
1 ; plant specimens	1 ; ? nr. x ? x ? x ? steel angle stakes ? m long treated with one coat primer and one coat of approved paint [GS25.24(a)]		1 small shrubs [GS25.34(b)]	
2 ; including provision of temporary storage [for temporary transplanting only]	2 ; ? nr. x ? x ? x ? galvanised steel angle guying stakes ? m long treated with one coat primer and one coat of approved paint [GS25.24(e)]		2 large shrubs [GS25.34(c)]	
3 ; ?	3 ; ? nr. x ? diameter x ? long bamboo stakes [GS25.24(b)]		3 ground cover plants [GS25.34(a)]	
1 ; in existing cultivated or grassed areas	4 ; ?		1 ; ? [give details of initial cutting back]	
2 ; in cultivated or grassed areas prepared by others	1 ; plastic coated wire ties [GS25.24(c)]		2 ; ?	
3 ; in paved areas	2 ; nylon rope ties [GS25.24(c)]			
1 ; supplying measured separately	3 ; stainless steel braided wire ties [GS25.24(c)]			
2 ; ?	4 ; multi-strand twisted stainless steel wire guys [GS25.24(d)]			
	5 ; rot-proof rope guys [GS25.24(d)]			
	6 ; plastic coated wire guys [GS25.24(d)]			
	7 ; trunking protection [GS25.24(f)]			
	8 ; root barrier around tree pits [GS25.24(g)]			
	9 ; ? diameter			
	10 ; fitted with flexible rubber or plastic sleeves			

		11 ; ?	2 ; ? nr. per m2
		1 ; refilling with ? [special materials and give details]	
		2 ; watering [give details]	
7	boulders [GS25.04]	1 supplying and placing 1 local boulders 2 Serpentine boulders 3 Great Lake Rock 4 Ying Rock 5 Yellow Soap Stone 6 ? 1 of ? type 2 of ? texture 3 of ? colour 4 ? 1 ; size ? x ? x ? high 2 ; ? 2 selecting from boulders on site and placing 1 ; size ? x ? x ? high 2 ; ?	1 [placing method] [GS25.08(a) & (b)] nr 1 [for boulders not exceeding 1800 high] fixing in position ; wedging with small rocks ; partially sunk below ground 2 [for boulders exceeding 1800 high] fixing in position ; wedging with small rocks ; partially sunk below ground ; concrete base and haunching 3 ?
8	drainage layer [GS25.11, 25.12]	1 [aggregate types] 1 drainage aggregate ; 25 - 50 diameter 2 lightweight aggregate ; 20 - 50 diameter 3 gravel ; 10 - 30 diameter 4 pea gravel ; 5 - 12 diameter 5 ? 1 ; in planter boxes 2 ; ? 2 [filter layer] 1 geotextile filter fabric 2 ? 1 ; as General Specification for Building Table 25.1 type ? ; lapped at joints 2 ; ? 1 ; in planter boxes 2 ; ?	1 [thickness] m2 1 spreading and levelling 2 ? 1 ; ? thick 1 [layers] m2 1 single layer 2 double layer 3 ? 1 ; measured net ; allow for laps
9	sundries	1 supplying and fixing artificial plants 1 ; ? [state method of fixing] 2 ; ? 1 ; ? [give details of pots or containers]	1 ? [give size and details] nr 1 ; ?

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- 2 ; ?
- 1 ; filling pots with ? ;
backfilling with ? thick
aggregate ; supporting,
securing and protecting
- 2 ; ?

-
- 2 mulching [GS25.20, 25.39 and 25.41] 1 ? deep m2
(SM.xxii(c)14)
 - 1 ; ? [materials]
 - 1 ; to planted areas
 - 2 ; to ? surfaces
 - 1 ; after planting

-
- 3 [protective fencing for planting works] 1 [height] m
[GS25.22]
 - 1 protective bamboo fencing 2 900 high
 - 2 ? 3 ? high
 - 1 ; vertical metal stakes treated
with one coat primer and one
coat of approved paint
 - 2 ; 10 - 20 diameter bamboo
palings at 150 centres

-
- 4 plant labels [GS25.21] 1 [type] nr
 - 1 ; 100 x 50 x 2 white scrylic labels 1 holed and secured to plant
with nylon rope
 - 1 ; ? 2 ?
 - 1 ; with botanical and Chinese
name in heat embossed black
lettering

-
- 5 Safety precautions in Tree Works 1 generally item
 - 1 allowing for all safety precautions
in tree works [GS25.110 and 25.111]
 - 1 ; all as described in the
General Specification for
Building
 - 2 ; ?

-
- 10 Establishment Works 1 [period] item
 - 1 allowing for the maintenance of the
Landscape Works 1 for a period of six months
 - 1 ; all as described in the General
Specification for Building 2 for a period of twelve months
 - 2 ; ? 3 ?

3 GREEN PLANTING SYSTEMS

- 1 designing, supplying and fixing
- 1 vertical green wall systems
- 2 horizontal green roof systems

- 1 vertical greening wall systems 1 for ? m2
- 1 ; fixed to concrete planter walls
and beams 2 for ? sets

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- 2 ; satin finish stainless steel grade 316 / ?
- 3 ; including all necessary wire meshes, frames, supports, anchors, accessories, fixing screws, bolts, ironmongery and pinning lugs
- 4 ; all in accordance with the manufacturer's instructions ;
- 5 ; as drawing nr. ?
- 6 (plants measured separately)

- 2 ; fixed to ?
- 2 horizontal green roof systems
- 1 ; fixed to roofs
- 2 ; fixed to ?

4 STATUES, SCULPTURES AND STONE FEATURES

- 1 supplying and fixing
 - 1 statues
 - 2 sculptures
 - 3 stone features
 - 4 ?
- 2 ; stone / fibre glass or non-combustible material approved by the Supervising Officer / ?
- 3 ; including all necessary frames, supports, anchors, accessories, fixing screws, bolts, ironmongery and fittings
- 4 ; assembling, jointing, cutting and pinning lugs
- 5 ; as drawing nr. ?

- 1 statues
 - 2 sculptures
 - 3 stone features
 - 4 ?
- For nos 1 to 4 above
- 1 ; fixed to concrete floors

- 1 ? x ? x ? high overall nr
- 2 ? x ? x ? high overall sets

*** END OF REPORT ***

LIQUEFIED PETROLEUM GAS INSTALLATION

FIRST DIVISION

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2	[ancillaries] (SM.xvii(d)7)	1	[valves] (SM.xvii(d)7.1)	1	? diameter	nr
1	malleable iron valves ; ASTM A 47 / A 47M-99:2014	1	isolating valves ; globe type	2		
2	ductile iron valves ; ASTM A 395 / A 395M-99:2014	2	non-return valves ; suitable for liquid or vapour use	3		
3	steel valves	3	ball valves ; BS EN ISO 17292:2015	4		
4	brass valves	4	quick-acting shut-off valves ; lever operation	5		
		5	emergency shut-off valves ; thermal and manual means of closing	6		
		6	excess flow valves	7		
		7	pressure relief valves ; spring-loaded, automatic operation ; self-detachable weatherproof cap and chain	8		
		8	hydrostatic relief valves ; pressure setting 2.4MPa to 2.75MPa ; self-detachable weatherproof cap and chain	9		
		9	drain valves			
3	[pressure regulators/governors] (SM.xvii(d)7)	1	primary pressure regulator	1	capable of maintaining outlet pressure of ? kPa	nr
1	pressure regulators	2	active-monitor regulator			
2	pressure governors	3	secondary pressure regulator			
	1 ; BS EN 12864:2001+A3:2009, BS EN 13785:2005+A1:2008, BS EN 13786:2004+A1:2008	4	service governor			
4	[instrumentation] (SM.xvii(d)16)	1	[pressure gauges]	1	to suit ? diameter pipes	nr
1	pressure gauges ; stainless steel	1	pressure gauges ; mounting connection protected			
2	temperature gauges ; indirect type with pockets	2	[temperature gauges]			
3	content gauges	1	temperature gauges			
4	meters ; BS EN 12405-1:2005+A2:2010, BS EN 1359:1999, BS EN 12261:2002, BS EN 12480:2015 ; corrosion resistant body ; maintenance-free construction	3	[content gauges]			
		1	to read % water capacity			
		2	to read % rated LPG capacity			
		4	[meters]	1	to suit LPG grade, pressure and flow	nr
		1	meters			
			1 ; housed in box for mechanical protection, sufficient ventilation			
5	vaporisers ; flameproof design electric elements and components with enclosure to BS EN 60079-1:2014 ; pressure relief valves ; liquid control device ;	1	vaporisers	1	vaporising capacity	nr
		1	; indirect heated type	1	? litre/min	
				2	? kg/hour	

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	non-bimetal heat input control (SM.xvii(b)10) 1 ; control valves ; water level indicator and low water level out off ; gauges ; drain valves and shut-off valves ; all facilities and safety devices				
6	gas appliances (SM.xvii(b)10)	1	domestic instantaneous type water heater ; room sealed balanced flue type 1 ; built-in temperature regulator, flame failure detector, automatic gas shut-off valves, pilot burner, automatic piezo-electric ignition device and all necessary accessories 2 ; complying the mandatory requirement under the Government Green Specification ; built-in temperature regulator, flame failure detector, automatic gas shut-off valves, pilot burner, automatic piezo-electric ignition device and all necessary accessories [with heat input not exceeding 70 kW] 2 burners ; robust and durable metallic alloy ; combustion chamber, heat exchanger and all necessary components and accessories 3 gas cookers ; domestic type	1 ? kW	nr
7	liquid-draw LPG cylinders ; supporting frames, all necessary accessories and safety devices (SM.xvii(b)10)	1	liquid-draw LPG cylinders	1 ? kg	nr
8	vapour-draw LPG cylinders ; supporting frames, all necessary accessories and safety devices (SM.xvii(b)10)	1	vapour-draw LPG cylinders	1 ? kg	nr
9	multi-cylinders in cylinder banks ; with flexible hose, manifold, pipeworks ; manual and automatic changeover device, safety devices ; supporting frames and all necessary accessories (SM.xvii(b)10)	1	multi-cylinders	1 ? no. ? kg	nr
10	storage vessels (SM.xvii(b)7)	1	underground	1 ? litre capacity	nr
11	mounded tanks	2	above ground		
	For nos 10 to 11 above		For nos 1 to 2 above		

LPG - LIQUEFIED PETROLEUM GAS INSTALLATION

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- 1 ; vertical
- 2 ; horizontal
- 1 ; steel construction ; Gas Authority approval ; post-weld heat treated ; adequate supports ; all necessary valves, level device, gauges ; earthing connection ; piping and accessories ; warning signs ; fitted with cathodic protection system

- 1 ; fitted with manholes
- 2 ; fitted with inspection openings

3	LIQUEFIED PETROLEUM GAS INSTALLATION - ELECTRICITY SUPPLY ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	[final circuits] (SM.xviii(g)2)	1	from isolators (isolators measured separately)	1	? x ? mm2	nr
		1	power supply cables ; BS EN 60079-14:2014 and BS EN 60079-10-1:2009 ; run in conduits with draw wires	2	from fused spur units (fused spur units measured separately)	1	; to vaporisers (ref. ?)	
						2	; to domestic instantaneous type water heaters (ref. ?)	
						3	; to burners (ref. ?)	
						4	; to gas cookers (ref. ?)	
						5	; to gas leakage detection control panel (ref. ?)	
4	LIQUEFIED PETROLEUM GAS INSTALLATION - CONTROL ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	design, supply and install control panels (SM.xix(b)1.9)	1	gas leakage detection control panel (ref. ?)	1	located in plant room	nr
		1	; all as specified in the Particular Specification and drawing nr. ?	1	; wall-mounted type			
		2	[final circuits] (SM.xviii(g)2)	1	from gas leakage detection control panel (ref. ?)	1	to gas detectors	nr
		1	alarm, detection and control circuits					
		1	; control cables ; BS EN 60079-14:2014 and BS EN 60079-10-1:2009					
		1	; complete with cable trays, cable trunkings, conduits and fittings					
		3	gas detectors (SM.xix(d)4.9)	1	flammable type	1	gas detectors	nr
5	LIQUEFIED PETROLEUM GAS INSTALLATION - SUNDRIES ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	the following items in respect of the whole Liquefied Petroleum Gas Installation	1	allow for	1	marking the positions of holes, mortices, chases and the like in the structure (SM.xvii(i)3)	item
						2	inspection, testing and commissioning of the complete Liquefied Petroleum Gas Installation (SM.xvii(i)4)	item
						1	; all as described in the Particular Specification and Part D of the General	

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FOURTH DIVISION

Specification for Liquefied Petroleum Gas Installation

- 3 inspection, attendance, operation and maintenance for the complete Liquefied Petroleum Gas Installation during Maintenance Period (SM.xvii(i)11) item
 - 1 ; all as described in the Particular Specification, Part E1 and E3 of the General Specification for Liquefied Petroleum Gas Installation

- 4 providing all necessary item
 - 1 electricity, water, liquefied petroleum gas, town gas and fuel, calibrated equipment and instrument, apparatus, tools, consumables and non-consumable materials (SM.xvii(i)5)
 - 1 in connection with testing, commissioning and maintenance

- 5 providing item
 - 1 installation drawings ; all as described in the Particular Specification and Section A4.2 of the General Specification for Liquefied Petroleum Gas Installation
 - 2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Liquefied Petroleum Gas Installation
 - 3 Operation and Maintenance (O&M) Manuals and User Manuals ; all as described in the Particular Specification and Section A4.4 of the General Specification for Liquefied Petroleum Gas Installation

- 6 training to Employer's staff as described in Section E1 and E2 of the General Specification for Liquefied Petroleum Gas Installation item

- 7 providing sample boards as described in Section A3.7 of the General Specification for

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Liquefied Petroleum Gas
Installation item

8 supplying [sleeves] item

- 1 pipe sleeves
- 2 conduit sleeves
- 3 cable sleeves
 - 1 (sleeves fixing by others)
and filling holes so
formed in walls, floors
and ceilings with approved
packing materials as
described

9 supplying and fixing [sleeves] item

- 1 pipe sleeves
- 2 conduit sleeves
- 3 cable sleeves
 - 1 through walls, floors and
ceilings including filling
holes so formed with
approved packing materials
as described

10 supplying and fixing fire stopping
to walls and floors item

*** END OF REPORT ***

MEDICAL GAS INSTALLATION

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THIRD DIVISION

FOURTH DIVISION

2	bronze valves 1 ; complete with ? thick extruded aluminium shroud, vinyl-coated, beige, textured finish / minimum 2 thick galvanised steel lockable and ventilated valve boxes ; HTM 02-01 and BS 5682 ; stainless steel hinged cover, breakable glass panel, keys	2	check valves		
		3	ball valves		
		4	relief or safety valves ; enclosed adjustable spring loaded type		
		5	pressure reducing valves ; full way type		
		6	stop and isolating valves ; screw down type		
		7	stop and isolating valves ; gate type		
3	filters	2	[filters]		
4	silencers ; low resistance type ; limit noise level to NC76 (maximum) ; necessary accessories	1	air filters		
		2	oil filters		
		3	bacterial filters		
		4	duct filters		
		3	silencers		
3	expansion joints (SM.xvii(d)9) 1 ; copper flexible hose 2 ; stainless steel ; external protective sleeve	1	bellow expansion joints	1	? diameter nr
		1	; axial movement pattern type screw end	2	to suit ? diameter pipes nr
		2	; axial movement pattern type flange end		
4	fire-rated enclosure ; complying Fire Safety Code ; complete with all necessary framings	1	2 hour fire-resistant-period enclosure	1	to ? diameter pipes m
				2	to protected areas or lobbies m2
5	medical gas terminal outlets ; HTM 02-01 ; BS EN ISO 9170-1, BS 5682 ; spring-loaded cut-off valves and outlet sockets ; satin finish stainless steel plated face plates with a factory fixed plastic film for protection	1	medical gas terminal outlets ;	1	? diameter outlets nr
		1	fixed to walls and columns		
		2	fixed to bedhead trunkings		
6	emergency inlet ports ; complete with lockable valves, non-return valves and blanked connecting ports	1	emergency inlet ports	1	? diameter nr
				2	to suit ? diameter pipes nr
7	air mist separators ; cyclone type ; capable of extracting 99% of liquid particles of between 5 and 40 microns ; automatic drain traps with valved manual bypass ; connection to nearest drains	1	air mist separators	1	to suit ? diameter pipes nr
8	[instrumentation] (SM.xvii(d)16) 1 pressure gauges ; ISO 4126-1:2013	1	[pressure gauges] (SM.xvii(d)16.2) 1 pressure gauges	1	to suit ? diameter pipes nr

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	and BS EN 837-1:1998			
	2 drain traps (SM.xvii(d)7)	2 [drain traps]		
	3 pressure switches	1 drain traps ; float-operated and automatic		
		3 [pressure switches]		
		1 pressure switches		
9	air compressors (SM.xvii(b)10)	1 air compressors	1 discharge pressure ? kPa	nr
	1 ; single stage ; air-cooled ; rotary screw type with oil injection ; suction silencer, framed system diagram, all piping, safety device, control and necessary accessories	1 ; fitted with intercoolers		
		2 ; fitted with aftercoolers		
10	air receivers ; vertical type ; constructed of welded mild steel plate, with dished ends, all in accordance with BS EN 286-1, with test certificates	1 air receivers ; welded bosses ; properly sized supply, delivery, drain, valves, manholes, plugs, identification plates, supports ; all necessary accessories	1 storage capacity of ? l	nr
11	twin column desiccant air dryers ; automatically cycled operation of two desiccant beds ; moisture indicators ; dew point indicators ; alarm gauges ; pressure gauges and valves ; electric heaters ; internal wirings and necessary accessories	1 twin column desiccant air dryers	1 capacity of passing free air equivalence ? litres/min ; capable of drying air from 42 degree Celsius (saturated) to minus 40(-40) degree Celsius (atmospheric dew point) and carbon monoxide content not greater than 5.5 mg/m3 (5 ppm) of carbon monoxide or more than 0.0005 mg/litre of oil mist (particulate) at standard temperature and pressure	nr
12	[tanks]	1 vacuum reservoir tanks	1 ? litres capacity	nr
	1 vacuum reservoir tanks ; manufactured in accordance with BS EN 286-1 designed for working pressure of 500 mm Hg below atmosphere and a minimum test of 400 kPa ; saddles or legs with ribbed neoprene pads ; inspection openings ; cleaning points ; vacuum gauges with petcock	2 vacuum drain tanks		
	2 vacuum drain tanks ; welded mild steel cylinders ; level sight glass			
	1 ; complete with valves, drains, vents, overflows, covers, supports, accessories and connections			

MG - MEDICAL GAS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

13	air-cooled vacuum pump sets ; silent design ; pressure lubricated ; direct driven by electric motors to IEC 60085 insulation Class F and BS 5000 ; type-tested ; complete with oil pressure gauge, built-in non-return valve and stuffing boxes ; drain piping and all necessary accessories	1	air-cooled vacuum pump sets	1	flow rate ? l/s ; differential static pressure ? kPa (ref. ?)	nr		
14	exhauster units ; multi-stage lateral channel pumps ; directly driven by electric motors ; no lubrication within casings ; anti-vibration mountings ; all necessary accessories	1	exhauster units	1	generally	nr		
15	cylinder storage racks ; approved rigid frame assembly ; safety chains	1	cylinder storage racks	1	holding duty banks ; ? nrs medical gas cylinders ; each containing ? litre gas	nr		
				2	holding emergency bank ; ? nrs medical gas cylinders ; each containing ? litre gas	nr		
				3	holding free standing spare medical gas cylinders ; each containing ? litre gas	nr		
16	manifold installation ; HTM 02-01 ; including manifold control panel, regulators, pressure gauges, pressure switches, filters, valves, etc. ; manifold header pipes and flexible tail pipes with gas cylinder connectors ; all piping and necessary accessories ; interconnecting wirings and control cables ; power cables and connection to power source ; conduits and cable facilities ; all as described in the Particular Specification and the Drawings	1	automatic changeover manifolds	1	located in ? room	item		
		2	manual changeover manifolds					
14	MEDICAL GAS ALARM SYSTEM	1	[ancillaries] (SM.xvii(d)7)	1	valve box assembly	1	for one medical gas	nr
		1	valve box assembly ; approved type ; stainless steel carcass and lockable hinged cover with breakable glass panel ; line pressure / vacuum alarm panel ; isolating valves ; pressure switches ; dry contacts	1	; recess wall mounted	2	for two medical gases	nr
						3	for ? medical gases	nr
15	ELECTRICITY SUPPLY ; INTERNALLY, IN	1	variable speed drives (VSDs), IEC	1	for pumps	1	? kW	nr

MG - MEDICAL GAS INSTALLATION

FIRST DIVISION

PLANT ROOM AND EXTERNALLY

SECOND DIVISION

60068-2-6:2007, IEC 60068-2-27:2008, IEC
61000-4-2:2008, IEC 61000-4-3:2010, IEC
61000-4-4:2012, IEC 61000-4-5:2014 and
ISO 9001:2015
1 ; housed in integrated enclosure,
single front-access
1 ; IP20 minimum protection
2 ; IP54 minimum protection

THIRD DIVISION

FOURTH DIVISION

2	switches, switchfuses, fuseswitches ; complying Code of Practice for the Electricity (Wiring) Regulations (Cap.406E) and C12.1.3(b) of EE GS on voltage dip protection ; air-break type contacts	1 switches (SM.xviii(b)1.11) 2 switchfuses (SM.xviii(b)1.13) 3 fuseswitches (SM.xviii(b)1.14) For nos 1 to 3 above 1 ; SPN 2 ; TPN 1 ; for equipment ; fixed to walls and columns	1 ? A	nr
3	motor starters ; air-break triple-pole electro-magnetic type, IEC 60947-4-1:2009 or IEC 62271-106:2011/CORR 1:2014 ; complying IEC 61000 and C12.1.3(b) of EE GS on voltage dip protection ; 0 - 30 minutes time delay (SM.xviii(b)1.17)	1 direct on line (DOL) starters 2 star-delta starters 3 auto-transformer starters	1 ? A 1 ; to suit ? pumps (ref. ?)	nr
4	solid state softstart motor starters ; power electronic type ; IEC 60068-2-6:2007, IEC 60068-2-27:2008, IEC 61000-4-2:2008, IEC 61000-4-3:2010, IEC 61000-4-4:2012 and IEC 61000-4-5:2014 ; C12.1.3(b) of EE GS on voltage dip protection ; 0 - 30 minutes time delay (SM.xviii(b)1.17)	1 solid state softstart motor starters	1 ? A 1 ; to suit ? pumps (ref. ?)	nr
5	final circuits (SM.xviii(g)2) 1 ; approved power supply cables 2 ; XLPE low smoke zero halogen insulated ; copper conductors 1 ; drawn into and including conduit / trunking to HTM 02-01 ; all necessary cabling facilities ; fixing and earth continuity	1 from isolators (isolators measured separately) 2 from fused spur units (fused spur units measured separately)	1 ? x ? mm ² ; ? core cables 1 ; to ? pumps (ref. ?) 2 ; to air compressors (ref. ?) 3 ; to air dryers 4 ; to ? system control panels	nr
6	perforated steel trays and fittings to BS EN 10149-1:2013 ; hot dipped galvanised to ISO 1460:1992 and ISO	1 trays and fittings (SM.xviii(e)1) 1 ; fixed to walls and columns 2 ; suspended from soffits	1 ? wide	m

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			2 [accessories] (SM.xviii(e)3)	1 bends	nr
			1 extra over ? wide trays for	2 tees	nr
7	[ladders and fittings] (SM.xviii(e)2)	1	ladders and fittings	1 ? wide	m
1	hot rolled steel cable ladders and fittings to BS EN 10149-1:2013 ; hot dipped galvanised to ISO 1460:1992 and ISO 1461:2009	1	; fixed to walls and columns		
		2	; suspended from soffits		
2	stainless steel cable ladders and fittings ; 316S31, ISO 683-13:1986	2	[accessories] (SM.xviii(e)3)	1 bends	nr
1	; heavy duty type	1	extra over ? wide trays for	2 tees	nr
		1	galvanised steel ladders	3 four-way crossovers	nr
		2	stainless steel ladders	4 internal risers	nr
		1	for	5 external risers	nr
				6 straight reducers	nr
				7 offsets	nr
16	CONTROL SYSTEM - AUTOMATIC CONTROL SYSTEM (ACS) ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1	[? thick control panels] (SM.xix(b)1.9)	1 located in ? room	nr
		1	control panels, hairline finished stainless steel construction	1 ; ? local control panel (ref. ?)	
		1	; complete with indicating lights, ammeters, gauges, control switches, motor starters, contactors (motor starters and contactors measured separately), push buttons, alarm chimes, alarm indicating lights ; alarm mute buttons, control wiring ; flush galvanised iron supports and accessories and other necessary equipment to enable remote operation and monitoring of all medical gas equipment	2 ; ? system local control panel (ref. ?)	
		1	; all other necessary instrument and accessories		
2	steel control panels, factory built assemblies, self supporting and framing, IP? protection ; to IEC 61439-1:2011 and IEC 61439-2:2011				
1	; complete with LED indicating lamps, ammeters, voltmeters, relays, timers, selectors, control switches, motor starters, contactors (motor starters and contactors measured separately), control wiring and other necessary equipment to enable remote operation and monitoring of all medical gas equipment				
		1	; all other necessary		

MG - MEDICAL GAS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

17 MEDIAL GAS SUNDRIES ; INTERNALLY, IN
PLANT ROOM AND EXTERNALLY

1 the following items in respect of the
whole medical gas installation

1 allow for

- 1 marking the positions of holes, mortices, chases and the like in the structure (SM.xvii(i)3) item
- 2 inspection, testing and commissioning of the complete medical gas installation (SM.xvii(i)4) item
 - 1 ; all as described in the Particular Specification, HTM 02-01, Part H of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation and Part D of the General Specification for Electrical Installation
- 3 inspection, attendance, operation and maintenance during Maintenance Period item
 - 1 ; all as described in the Particular Specification, HTM 02-01, Sections I1 and I3 of the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation, Sections E1 and E3 of the General Specification for Electrical Installation
- 4 providing all necessary item
 - 1 power and water, diesel, gas and fuels in connection with testing, commissioning and maintenance (SM.xvii(i)5)
- 5 providing item
 - 1 installation drawings ; all as described in the Particular Specification, Section A4.2 of both the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation and the General Specification for Electrical Installation
 - 2 as-built drawings ; all as described in the Particular

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

Specification, HTM 02-01,
 Section A4.3 of both the
 General Specification for
 Air-conditioning,
 Refrigeration, Ventilation and
 Central Monitoring and Control
 System Installation and the
 General Specification for
 Electrical Installation

3 Operation and Maintenance
 (O&M) Manuals and User Manuals
 ; all as described in the
 Particular Specification, HTM
 02-01, Section A4.4 of both
 the General Specification for
 Air-conditioning,
 Refrigeration, Ventilation and
 Central Monitoring and Control
 System Installation and the
 General Specification for
 Electrical Installation

4 document submission to FSD,
 relevant government department
 and Authority ; all as
 described in the Particular
 Specification

6 training of users and operation
 and maintenance agents as
 described in the Particular
 Specification, HTM 02-01, Section
 I1 and I2 of the General
 Specification for
 Air-conditioning, Refrigeration,
 Ventilation and Central Monitoring
 and Control System Installation
 and Section E1 of the General
 Specification for Electrical
 Installation item

7 providing sample boards as
 described in HTM 02-01 and Section
 A3.7 of both the General
 Specification for
 Air-conditioning, Refrigeration,
 Ventilation and Central Monitoring
 and Control System Installation
 and the General Specification for
 Electrical Installation item

8 supplying [sleeves] item
 1 pipe sleeves
 2 conduit sleeves
 3 cable sleeves
 1 (sleeves fixing by others)

and filling holes so formed in walls, floors and ceilings with approved packing materials as described

- 9 supplying and fixing [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described
- 10 supplying and fixing fire stopping to walls and floors item
- 11 acoustic treatment installation to the whole medical gas installation ; all as described in the Particular Specification and both the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation and CIBSE Guide [Guidance Note: PQS please check with PBSE on the current version and section of CIBSE Guide/other relevant materials should refer.] item

*** END OF REPORT ***

PAINTING

PAINT - PAINTING

FIRST DIVISION

- 1 PAINTING
- 1 ; externally

SECOND DIVISION

- 1 applying [paint spec. for walls & ceilings]
- 1 two coats of limewash [GS21.70 Table 21.1]
- 2 two coats of cement paint
- 3 two coats of external textured paint
- 4 one thinned coat and two full coats of emulsion paint
- 5 one coat water based lime resistant primer and two full coats of emulsion paint [for use on new lime based plaster]
- 6 one thinned coat and two full coats of textured emulsion paint
- 7 one coat water based lime resistant primer and two full coats of textured emulsion paint [for use on new lime based plaster]
- 8 one thinned coat and two full coats of anti-mould acrylic emulsion paint
- 9 one coat water based lime resistant primer and two full coats of anti-mould acrylic emulsion paint [for use on new lime based plaster]
- 10 one coat primer, one binder coat and one finishing spatter coat of multi-colour paint applied by spray
- 11 one coat sealer, one undercoat and one finishing coat of synthetic paint [GS21.70 Table 21.4 (for insulating board or acoustic tiles only)]
- 12 one coat alkali resisting primer, one undercoat and one finishing coat of synthetic paint
- 13 one undercoat and one finishing coat of cold cure epoxy paint
- 14 one coat of pesticidal coating
- 15 one coat of water repellent liquid [GS21.06]
- 16 one coats of tar
- 17 two coats of tar
- 18 two thick coats of marking paint
- 19 one coat alkali resisting primer, one undercoat flat synthetic paint and one finishing coat of fluorescent paint
- 20 one coat alkali resisting primer, one undercoat white synthetic paint and one finishing coat of white synthetic paint finished gloss with fine grain reflective aggregate
- 21 ?
- 1 ; applied by spray

THIRD DIVISION

- 1 [surfaces]
- 1 concrete walls and columns
- 2 fair faced concrete walls and columns
- 3 fair faced brick or block walls and columns
- 4 rendered walls and columns
- 5 plastered walls and columns
- 6 texture plastered walls and columns
- 7 fibreboard, insulating board or acoustic tiles to walls and columns
- 8 concrete ceilings and beams
- 9 fair faced concrete ceilings and beams
- 10 rendered ceilings and beams
- 11 plastered ceilings and beams
- 12 texture plastered ceilings and beams
- 13 fibreboard, insulating board or acoustic tiles to ceilings and beams
- 14 concrete grilles ? thick ; both sides measured flat overall
- 15 tarmacadam floors
- 16 ?

FOURTH DIVISION

- 1 over 300 girth m2
- 1 ; 3.50 - 5.00m above floor level
- 2 ; 5.00 - 6.50m above floor level
- 3 ; ? - ?m above floor level
- 2 not exceeding 300 girth m
- 3 isolated surfaces not exceeding 0.50m2 nr

PAINT - PAINTING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

				0.50m2	nr
				1 not exceeding 50 diameter	
				2 50 - 100 diameter	
				3 ? diameter [over 100, state diameter]	

		3 [air bricks, rainwater heads, etc.]		1 ? diameter	nr
		1 air bricks		2 ? x ?	nr
		2 rainwater heads			
		3 ventilating gratings			
		4 ?			

5	applying [paint spec. for woodwork]	1 [surfaces]		1 over 300 girth	m2
1	one coat wood preservative [GS21.70 Table 21.3]	1 general surfaces		2 not exceeding 300 girth	m
2	two coats wood preservative [GS21.70 Table 21.3]	2 floors		3 isolated surfaces not exceeding 0.50m2	nr
3	three coats linseed oil [GS21.70 Table 21.3]	3 windows, glazed screens and glazed doors ; both sides measured flat overall			
4	one coat pesticidal coating [GS21.70 Table 21.3]	4 individual members of balustrades, fencing, railings and the like			
5	one coat primer, stopping, painting one undercoat and one finishing coat of synthetic paint [GS21.70 Table 21.3]	5 grilled or louvred surfaces ; both sides measured flat overall			
6	one coat primer, stopping, painting two undercoats and one finishing coat of synthetic paint [GS21.70 Table 21.3]	6 ?			
7	two coats of chalkboard paint [GS21.70 Table 21.3]				
8	one undercoat and one finishing coat of polyurethane paint [GS21.70 Table 21.3]				
9	two coats of sealer [GS21.83]				
10	two coats of varnish [GS21.70 Table 21.3]				
11	three coats of varnish [GS21.70 Table 21.3]				
12	three coats of cellulose lacquer [GS21.70 Table 21.3]				
13	?				
	1 ; applied by spray				
	2 ; applied in bands 75 wide [GS21.61 - pesticidal coating only]				
	3 ; ?				
	1 ; on wood				
	2 ; before fixing				
	3 ; ?				
6	staining to approval ; applying				

PAINT - PAINTING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

[GS21.35]

7 knotting ; applying

For nos 6 to 7 above

- 1 one coat wood preservative
- 2 two coats wood preservative
- 3 three coats linseed oil
- 4 one coat pesticidal coating
- 5 one coat primer, stopping, painting one undercoat and one finishing coat of synthetic paint
- 6 one coat primer, stopping, painting two undercoats and one finishing coat of synthetic paint
- 7 one coat primer, stopping, painting one undercoat and one finishing coat of intumescent paint
- 8 two coats of chalkboard paint
- 9 one undercoat and one finishing coat of polyurethane paint
- 10 two coats of sealer [GS21.83]
- 11 two coats of varnish
- 12 three coats of varnish
- 13 three coats of cellulose lacquer
- 14 ?
 - 1 ; applied by spray
 - 2 ; applied in bands 75 wide [GS21.61 - pesticidal coating only]
 - 3 ; ?
 - 1 ; on wood
 - 2 ; before fixing
 - 3 ; ?

2 POLISHING OR CLEAR FINISHING
1 ; externally

- 1 [polishing or clear finishing]
- 1 bodying in and french polishing
 - 2 staining to approval, bodying in and french polishing
 - 3 twice wax polishing [GS21.70 Table 21.3]
 - 4 three times wax polishing
 - 5 ?
 - 1 ; on wood
 - 2 ; ?

- 1 [surfaces]
- 1 general surfaces
 - 2 floors [GS21.66]
 - 3 windows, glazed screens and glazed doors ; both sides measured flat overall
 - 4 grilled or louvred surfaces ; both sides measured flat overall
 - 5 general surfaces of marble or polished granite and the like

1 over 300 girth m2
2 isolated surfaces not exceeding 300 girth m

3 SIGNWRITING
1 ; externally

- 1 marking out ; applying thick coat synthetic paint [GS21.69]
- 1 ; on concrete
 - 2 ; on plaster
 - 3 ; on metal
 - 4 ; on wood
 - 5 ; on asphalt

- 1 lines
2 broken line

1 ? wide m
1 ; straight
2 ; curved

- 3 [letters, etc]
1 arrow heads or tails

1 ? high nr
1 ; straight

PAINT - PAINTING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 6 ; ?
- 1 ; before fixing
- 2 ; ?

- 2 letters
- 3 numerals
- 4 stops and punctuation marks
- 5 Chinese characters
- 6 symbols or logos
- 7 ?
- 1 ; plain
- 2 ; shaded

- 2 ; curved

<p>4 [PAPERHANGING INCLUDING SHEET PLASTIC AND FABRIC LININGS]</p> <ul style="list-style-type: none"> 1 paper hanging 2 sheet plastic and fabric linings <ul style="list-style-type: none"> 1 ; externally 	<p>1 [paper and linings]</p> <ul style="list-style-type: none"> 1 lining 2 decorative 3 washable 4 embossed 5 vinyl 6 ? 7 wall paper 8 sheet plastic lining 9 fabric linings <ul style="list-style-type: none"> 1 ; Messrs. ? 2 ; Pattern ref. ? <ul style="list-style-type: none"> 1 ; fixing with adhesive recommended by the wall paper manufacturer 2 ; fixing with adhesive recommended by linings manufacturer 3 ; fixing with ? 	<p>1 [papering and covering]</p> <ul style="list-style-type: none"> 1 papering 2 covering <hr/> <p>2 border strips</p> <hr/> <p>3 corners</p> <p>4 motifs</p>	<p>1 [surfaces] m2</p> <ul style="list-style-type: none"> 1 plastered walls and columns 2 plastered ceilings and beams <hr/> <p>1 Pattern ref. ? m</p> <p>2 ? m</p> <hr/> <p>1 Pattern ref. ? nr</p> <p>2 ? nr</p>
<p>5 WORK TO EXISTING SURFACES</p> <ul style="list-style-type: none"> 1 ; externally 	<p>1 cleaning with proprietary chemical solution ; in accordance with the manufacturer's instructions [GS21.79]</p> <hr/> <p>2 scrubbing with detergent : rinsing [GS21.80]</p> <hr/> <p>3 scrubbing with scouring powder ; rubbing down ; rinsing [GS21.81]</p> <hr/> <p>4 scrubbing with detergent ; applying one</p>	<p>1 stonework</p> <hr/> <p>1 Shanghai plaster [GS21.80]</p> <hr/> <p>1 terrazzo</p> <p>2 rubbed granolithic</p> <hr/> <p>1 thermoplastic</p>	<p>1 walls and columns m2</p> <hr/> <p>1 [surfaces] m2</p> <ul style="list-style-type: none"> 1 walls and columns 2 ceilings and beams 3 ? <ul style="list-style-type: none"> 1 ; 3.50 - 5.00m above floor level 2 ; 5.00 - 6.50m above floor level 3 ; ? - ?m above floor level <hr/> <p>1 [surfaces] m2</p> <ul style="list-style-type: none"> 1 floors 2 walls and columns 3 ? <hr/> <p>1 floors m2</p>

PAINT - PAINTING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	coat of liquid wax emulsion [GS21.81]	2 vinyl 3 cork		
5	cleaning with solution of acid [GS21.84]	1 glazed tiling 2 mosaic tiling	1	[surfaces] m2 1 floors 2 walls and columns 3 ceilings and beams 4 ? 1 ; 3.50 - 5.00m above floor level 2 ; 5.00 - 6.50m above floor level 3 ; ? - ?m above floor level
6	cleaning with solution of detergent and disinfectant [GS21.85]	1 synthetic paint 2 varnish work	1	[surfaces] m2 1 general surfaces 2 windows, glazed screens and glazed doors ; both sides measured flat overall 3 individual members of balustrades, fencing, railings and the like 4 ? 2 over 300 girth m2 3 not exceeding 300 girth m 4 isolated surface not exceeding 0.5m2 nr
7	cleaning with spirits of salts ; rinsing [GS21.86]	1 sanitary fittings	1	[fittings] nr 1 W.C. suite 2 wash hand basin 3 bath 4 cleaners sink 5 ?
8	scraping ; wire brushing ; scrubbing with a solution of chloride of lime ; rinsing [GS21.87] 1 ; applying two coats of non-toxic black paint 2 ; ?	1 concrete 2 galvanised steel	1	internal surfaces of water tanks m2
9	scraping ; brooming down ; stopping ; bringing forward bare spots with new material ; applying [paint spec. for walls, columns, ceilings, beams, grilles]	1 [surfaces] 1 concrete walls and columns 2 fair faced concrete walls and columns 3 fair faced brick or block walls and columns	1	over 300 girth m2 1 ; 3.50 - 5.00m above floor level 2 ; 5.00 - 6.50m above floor level 3 ; ? - ?m above floor level
10	scraping ; washing down ; stopping ;			

PAINT - PAINTING

FIRST DIVISION

SECOND DIVISION

- bringing forward bare spots with new material ; applying
- 11 scraping ; washing down ; stopping ; rubbing down ; applying primer to and bringing forward bare spots with undercoat ; applying
- 12 stripping off ; washing down ; stopping ; sealing ; applying
- 13 ?
- For nos 9 to 13 above
- 1 one coat of limewash
- 2 two coats of limewash [GS21.70 Table 21.1]
- 3 one coat of cement paint
- 4 two coats of cement paint
- 5 one coat of external textured paint
- 6 two coats of external textured paint
- 7 one full coat of emulsion paint
- 8 two full coats of emulsion paint
- 9 one full coat of textured emulsion paint
- 10 two full coats of textured emulsion paint
- 11 one full coat of anti-mould acrylic emulsion paint
- 12 two full coats of anti-mould acrylic emulsion paint
- 13 one binder coat and one finishing spatter coat of multi-colour paint applied by spray
- 14 one finishing coat of synthetic paint
- 15 one undercoat and one finishing coat of synthetic paint [GS21.70 Table 21.4]
- 16 one finishing coat of cold cure epoxy paint
- 17 one undercoat and one finishing coat of cold cure epoxy paint
- 18 one coat of pesticidal coating
- 19 one coat of water repellent liquid [GS21.06]
- 20 one coat of tar
- 21 two coats of tar
- 22 one thick coat of marking paint
- 23 two thick coats of marking paint
- 24 one finishing coat of fluorescent paint
- 25 one undercoat white synthetic paint and one finishing coat of fluorescent paint
- 26 one finishing coat of white synthetic paint finished gloss with

THIRD DIVISION

- 4 rendered walls and columns
- 5 plastered walls and columns
- 6 texture plastered walls and columns
- 7 fibreboard, insulating board or acoustic tiles to walls and columns
- 8 concrete ceilings and beams
- 9 fair faced concrete ceilings and beams
- 10 rendered ceilings and beams
- 11 plastered ceilings and beams
- 12 texture plastered ceilings and beams
- 13 fibreboard, insulating board or acoustic tiles to ceilings and beams
- 14 concrete grilles ? thick ; both sides measured flat overall
- 15 tarmacadam floors
- 16 ?

FOURTH DIVISION

- 2 not exceeding 300 girth m
- 3 isolated surface not exceeding 0.5m2 nr

PAINT - PAINTING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	fine grain reflective aggregate			
27	one undercoat white synthetic paint and one finishing coat of white synthetic paint finished gloss with fine grain reflective aggregate			
28	?			
	1 ; applied by spray			
	2 ; applied in bands 75 wide [GS21.61 - (pesticidal coating only)]			
	3 ; ?			
	1 ; on			

14	cleaning with detergent ; applying [paint spec. for structural steel - GS15.61 and 15.63 Table 15.7]	1	[surfaces]	1 over 300 girth m2
	1 painting system Type A as General Specification for Building Table 15.7		1 general surfaces	2 not exceeding 300 girth m
	2 painting system Type B as General Specification for Building Table 15.7		2 members of roof trusses and lattice steelwork	3 isolated surfaces not exceeding 0.50m2 nr
	3 painting system Type C as General Specification for Building Table 15.7		3 ?	
	4 painting system Type D as General Specification for Building Table 15.7			
	5 painting system Type F as General Specification for Building Table 15.7			
	6 painting system Type G as General Specification for Building Table 15.7			
	7 ?			
	1 ; on structural steel			
	1 ; applied by spray			

15	[paint spec. for metalwork, plastic]	1	[surfaces]	1 over 300 girth m2
	1 washing down ; scraping ; wire brushing ; rubbing down ; bringing forward bare spots with rust inhibitor, primer and undercoat ; applying [GS21.70 Table 21.2]		1 general surfaces	2 not exceeding 300 girth m
	2 washing down ; scraping ; wire brushing ; rubbing down ; bringing forward bare spots with one coat solution of acetone/benzol ; applying		2 windows, glazed screens and glazed doors ; both sides measured flat overall	3 isolated surfaces not exceeding 0.50m2 nr
	3 washing down ; scraping ; rubbing down ; priming ; bringing forward bare spots with undercoat, applying		3 individual members of balustrades, fencing, railings and the like	
			4 mesh covered or ornamental fencing, railings, gate and the like ; both sides measured flat overall	
			5 radiators	
			6 corrugated surfaces ; measured flat overall	
			7 grilled or louvred surfaces ; both	

PAINT - PAINTING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

4	washing down ; bringing forward bare spots with black bitumen coating solution ; applying knotting	8	sides measured flat overall ?		
5	stripping off ; washing down ; applying primer,	2	pipes and conduits	1	over 300 girth m2
6	stripping off ; washing down ; applying rust inhibitor, primer,	3	eaves gutters ; inside and out	2	not exceeding 300 girth m
1	one coat primer only			3	isolated surfaces ; not exceeding 0.50m2 nr
2	one finishing coat of synthetic paint				
3	one undercoat and one finishing coat of synthetic paint	4	[air bricks, rainwater heads, etc.]	1	? x ? nr
4	one finishing coat of metallic paint	1	air bricks	2	? diameter nr
5	one undercoat and one finishing coat of metallic paint	2	rainwater heads		
6	two undercoats and one finishing coat of metallic paint	3	ventilating gratings		
7	one finishing coat of heat resisting paint	4	?		
8	one undercoat and one finishing coat heat resisting paint				
9	two undercoats and one finishing coat heat resisting paint				
10	one finishing coat of acid resisting paint				
11	one undercoat and one finishing coat of acid resisting paint				
12	two undercoats and one finishing coat of acid resisting paint				
13	one undercoat and one finishing coat of mould-resistant paint				
14	two undercoats and one finishing coat of mould-resistant paint [GS21.77]				
15	one coat of black enamel				
16	two coats of non-toxic paint				
17	one finishing coat of polyurethane paint				
18	one undercoat and one finishing coat of polyurethane paint				
19	one coat polyurethane red lead primer, one undercoat and one finishing coat of polyurethane paint				
20	one finishing coat of cold cure epoxy paint				
21	one undercoat and one finishing coat of cold cure epoxy paint				
22	one coat epoxy red oxide chromate primer, one undercoat and one finishing coat of cold cure epoxy paint				
23	one coat of black bitumastic				

PAINT - PAINTING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	paint			
24	two coats of black bitumastic paint			
25	?			
	1 ; applied by spray			
	2 ; on metal			
	3 ; on galvanised metal			
	4 ; on coated cast iron			
	5 ; on copper			
	6 ; on plastic			
	7 ; ?			

16	washing down ; applying [paint spec. for woodwork - GS21.70 Table 21.3]	1	[surfaces]	1 over 300 girth m2
			1 general surfaces	2 not exceeding 300 girth m
17	washing down ; scraping ; rubbing down ; knotting ; priming ; stopping ; bringing forward bare spots with undercoat ; applying	2	floors	3 isolated surfaces not exceeding 0.50m2 nr
		3	windows, glazed screens and glazed doors ; both sides measured flat overall	
18	washing down ; scraping ; rubbing down ; stopping ; bringing forward bare spots with epoxy filler and undercoat ; applying	4	individual members of balustrades fencing, railings and the like	
		5	grilled or louvred surfaces ; both sides measured flat overall	
19	washing down ; scraping ; rubbing down ; bringing forward bare spots with varnish ; applying	6	?	
20	rubbing down ; filing ; rubbing down ; applying			
21	sanding down ; removing all traces of polish ; applying			
22	stripping off ; washing down ; applying			
23	stripping off ; washing down ; staining to approval ; applying			
24	stripping off ; washing down ; knotting ; applying			
25	?			
For nos 16 to 25 above				
	1 one coat wood preservative			
	2 two coats wood preservative			
	3 two coats linseed oil			
	4 one coat pesticidal coating			
	5 one finishing coat of synthetic paint			
	6 one undercoat and one finishing coat of synthetic paint			
	7 one coat primer, stopping, one undercoat and one finishing coat of synthetic paint			
	8 one coat primer, stopping, two undercoats and one finishing coat of synthetic paint			
	9 one finishing coat of intumescent paint			

PAINT - PAINTING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 10 one coat primer, stopping, one undercoat and one finishing coat of intumescent paint
- 11 one coat of chalkboard paint
- 12 two coats of chalkboard paint
- 13 one finishing coat of polyurethane paint
- 14 one undercoat and one finishing coat of polyurethane paint
- 15 two finishing coats of polyurethane paint
- 16 one coat of varnish
- 17 two coats of varnish
- 18 one coat of cellulose lacquer
- 19 two coats of cellulose lacquer
- 20 ?
 - 1 ; applied by spray
 - 2 ; applied in bands 75 wide [GS21.61 - pesticidal coating only]
 - 3 ; ?
 - 1 ; on wood
 - 2 ; before fixing
 - 3 ; ?

-
- 26 [polishing]
 - 1 rubbing down ; filling ; rubbing down
 - 2 sanding down
 - 1 ; wax polishing
 - 2 ; twice wax polishing [GS21.70 Table 21.3]
 - 3 ; ?
 - 1 ; on wood
 - 2 ; ?

-
- 1 [surfaces]
 - 1 general surfaces
 - 2 floors [GS21.66]
 - 3 windows, glazed screens and glazed doors ; both sides measured flat overall
 - 4 grilled or louvred surfaces ; both sides measured flat overall
 - 5 ?

-
- 1 over 300 girth m2
 - 2 isolating surfaces not exceeding 300 girth m

6 TESTING

-
- 1 on site delivery checks [GS21.96 - 21.98]
 - 2 quality control testing [GS21.91 - 21.93]
 - 3 surveillance tests [GS21.94 - 21.95]

-
- 1 carry out tests as General Specification for Building clause ? on [select from GS21.96 to 21.98 as appropriate - only where specifically requested]
 - 2 carry out tests as General Specification for Building clause ? on [select from GS21.91 to 21.93 as appropriate - only where specifically requested]
 - 3 provide and deliver sample to an Accredited Laboratory as General Specification for Building clauses 21.94 and 21.95 [for multi-layer acrylic paint - only where specifically requested]

-
- 1 * emulsion paint/synthetic paint/multi-layer acrylic paint [* select as appropriate] item

*** END OF REPORT ***

PILING AND CAISSONS

PIL - PILING AND CAISSONS

FIRST DIVISION

1 STEEL SHEET PILING (SM.V(B))
 1 ; PROVISIONAL
 2 ; ?

SECOND DIVISION

1 plant

2 pre-boring pile holes

3 supplying, handling, transporting and
 pitching sheet piles (SM.v(b).2)

4 driving sheet piles

THIRD DIVISION

1 providing and assembling on site
 (SM.v(b).1)
 1 ; subsequently dismantling and
 removing

1 pre-boring

1 units ? x ? overall [give size of
 section e.g. 400 x 125]
 1 ; ? thick weldable structural steel
 to BS EN 10248-1 grade S270GP
 2 ; ?
 1 ; ? Section ? [e.g. Frodingham
 Section 1B]
 2 ; section modulus ? cm³/m
 3 ; ?

2 extra over units ? x ? overall
 (SM.v(b).4)
 1 ; ? Section ?
 2 ; section modulus ? cm³/m
 3 ; ?
 1 for

1 units ? x ? overall
 1 ; ? Section ?
 2 ; section modulus ? cm³/m
 3 ; ?

FOURTH DIVISION

1 piling equipment item

1 [sizes - insert N in trigger] m
 1 ; for units ? x ? overall
 piles
 2 ; ?
 1 ; vertical
 2 ; raking ; ? degrees off
 the vertical
 1 ; filling voids
 between sides of piles
 and bores with ?
 [state materials]
 2 ; ?
 1 ; depth of
 individual bores
 not exceeding
 10.00m
 2 ; depth of
 individual bores
 10.00 - 15.00m
 3 ; ?

1 design length ?m m²
 1 ; vertical
 2 ; raking ; ? degrees off the
 vertical

1 [corner piles, etc.] m
 1 corner piles
 2 junction piles
 3 non standard make up piles
 with interlocked width of ?
 4 ?
 1 ; vertical
 2 ; raking ; ? degrees off
 the vertical

1 [vert/raking] m²
 1 vertical
 2 raking ; ? degrees off the
 vertical

		2	extra over units ? x ? overall (SM.v(b).4) 1 ; ? Section ? 2 ; section modulus ? cm3/m 3 ; ? 1 for	1	[corner piles, etc.] 1 corner piles 2 junction piles 3 non standard make up piles with interlocked width of ? 4 ? 1 ; vertical 2 ; raking ; ? degrees off the vertical	m
5	underground obstructions	1	excavating, breaking up and removing (SM.v(b).5)	1	underground obstructions 1 ; backfilling 2 ; ? 1 ; removing surplus material from site 2 ; ?	item
		2	excavating to expose obstructions 1 ; commencing at natural ground level 2 ; commencing at site formation level 3 ; commencing at reduced level 4 ; commencing at ? level	1	[depth] 1 not exceeding 1.50m deep 2 1.50 - 3.00m deep 3 3.00 - 4.50m deep 4 4.50 - 6.00m deep 5 ? - ?m deep	m3
		3	extra over excavation and disposal for 1 breaking up and removing 2 ?	1	obstructions	m3
		4	excavated material	1	backfilling to excavation	m3
		5	surplus excavated material	1	removing from site to a tip provided by Contractor	m3
6	withdrawing sheet piles	1	withdrawn units becoming Contractor's property ; (allowing for credit value measured separately) 1 ; removing from site 2 ; ?	1	units ? x ? overall (SM.v(b).8) 1 ; ? Section ? 2 ; section modulus ? cm3/m 3 ; ?	m2
7	sundries	1	cutting or burning through sheet piling (SM.v(b).6) 1 ; cutoffs becoming Contractor's property ; (allowing for credit value measured separately) 2 ; ? 1 ; removing from site	1	units ? x ? overall 1 ; ? thick 2 ; ? 1 ; ? Section ? 2 ; section modulus ? cm3/m 3 ; ?	m

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; ?

		2	cutting or burning holes through sheet piling (SM.v(b).7)	1	units ? x ? overall 1 ; ? thick 2 ; ? 1 ; ? Section ? 2 ; section modulus ? cm3/m 3 ; ? 1 ; ? diameter 2 ; ? x ? 3 ; ?	nr
8	temporary strutting and shoring [single item] (SM.v(b).9) 1 ; lateral support 1 ; designed by a Registered Structural Engineer [GS4.07]	1	providing, erecting, maintaining, altering and adapting as necessary 1 ; dismantling 2 ; ? 1 ; removing from site 2 ; ?	1	piling face [state any special requirements] 1 ?m long x ?m high 2 ?m long x ?m (average) high 3 ?m girth x ?m high 4 ?m girth x ?m (average) high 5 ?	item
9	temporary strutting and shoring [msd details] 1 ; lateral support 2 ; hot-rolled steel to BS EN 10025 grade ? 3 ; ? 1 ; bolted fabrication 2 ; welded fabrication 3 ; ? fabrication 1 ; altering and adapting as necessary 2 ; dismantling 3 ; removing from site 4 ; ?	1	walings and strutting	1	[sections] 1 ? x ? x ? kg universal beams 2 ? x ? x ? kg universal columns 3 ? x ? x ? kg joists 4 ? x ? x ? kg channels 5 ? x ? x ? kg tees 6 ? x ? x ? kg angles 7 ? thick plates	kg
		2	connections, caps and bases	1	[sections] 1 ? x ? x ? kg joists 2 ? x ? x ? kg channels 3 ? x ? x ? kg tees 4 ? x ? x ? kg angles 5 ? thick plates 1 ; in cleats, brackets, plates, packing pieces, etc. 2 ; in ?	kg
		3	high strength friction grip bolts [GS15.07]	1	? diameter x ? long	nr
		4	precision hexagonal bolts	1	; ? [state details of holding down bolts]	
			For nos 3 to 4 above 1 ; nuts and washers 2 ; nuts and tapered washers			
		5	holding down bolts			

FIRST DIVISION

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			1 ; nuts and plate washers	
			2 ; nuts and ? plate washers	
		6	expansion bolts	
		1	; loose bolt type	
		2	; bolt projecting type	
		3	; as ? ref. ?	
10	temporary pedestals and anchor blocks	1	reinforced concrete	1 pedestal [insert N in trigger] m3
	1 for temporary strutting and shoring	1	; grade ?/?	
	2 for ?	2	; ?	
	1 ; breaking up after use ; removing from site			
	2 ; ?	2	reinforcement	1 round bars kg
	1 ; making good the permanent structure	1	; plain steel reinforcing bars	2 indented bars kg
	2 ; ?	2	; ribbed steel reinforcing bars	
		3	; ?	For nos 1 to 2 above
		1	; general reinforcement	1 ; ? diameter
		2	; links, stirrups and binders	1 ; 12.00 - 15.00m long
		3	; ?	2 ; 15.00 - 18.00m long
		1	; PROVISIONAL	3 ; ?
		2	; ?	1 ; specially bent to curve
				2 ; ?
		3	sawn formwork	1 vertical surfaces of pedestal m2
11	credit value	1	allowing for the credit value of materials	1 arising from offcuts m
				2 arising from withdrawn units m2
				For nos 1 to 2 above
				1 of ? Section ? sheet piles
				2 of section modulus ? cm3/m sheet piles
				3 ?
				1 ; becoming Contractor's property
				2 ; ?
				1 ; removing from site
				2 ; ?
2	PRECAST CONCRETE PILES	1	plant	1 piling equipment item
	1 ; PROVISIONAL			
	2 ; ?	1	providing and assembling on site (SM.v(c).1)	
		1	; subsequently dismantling and removing	
		2	supplying piles (SM.v(c).2)	1 [sizes - insert N in trigger] m
	1 ; sulphate resisting	1	piles	1 ? x ?
	2 ; rapid hardening	2	trial piles (SM.v(c).13)	2 ? diameter

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<p>3 ; ? 1 ; grade ?/? 2 ; ? 1 ; casting on site permitted 2 ; ?</p>	<p>3 ?</p>	<p>3 ? cm2 sectional area 4 ?</p>	<p>2 [heads/shoes] nr 1 heads (SM.v(c).4) 2 shoes (SM.v(c).5) 3 rock shoes (SM.v(c).6) 4 ? 1 ; weighing ? kg 2 ; ? 1 ; to suit ? x ? piles 2 ; to suit ? diameter piles 3 ; to suit ? cm2 sectional area piles 4 ; ?</p>
<hr/>			
<p>3 reinforcement (SM.v(c).3)</p>	<p>1 [reinforcement] 1 plain steel reinforcing bars 2 ribbed steel reinforcing bars 3 ? 1 ; general reinforcement 2 ; links, stirrups and binders 3 ; helical reinforcement 4 ; ? 1 ; PROVISIONAL</p>	<p>1 round bars kg 2 indented bars kg For nos 1 to 2 above 1 ; ? diameter 1 ; 12.00 - 15.00m long 2 ; 15.00 - 18.00m long 3 ; ? 1 ; specially bent to curve 2 ; ?</p>	
<hr/>			
<p>4 handling, transporting and pitching piles (SM.v(c).7)</p>	<p>1 [piles - handling] 1 piles 2 trial piles 3 ?</p>	<p>1 [sizes - insert N in trigger] m 1 ? x ? 2 ? diameter 3 ? cm2 sectional area 4 ? 1 ; vertical 2 ; raking ; ? degrees off the vertical</p>	
<hr/>			
<p>5 pre-boring pile holes (SM.v(c).8) 1 ; PROVISIONAL</p>	<p>1 pre-boring</p>	<p>1 [sizes - insert N in trigger] m 1 for ? diameter piles 2 for ? piles 1 ; vertical 2 ; raking ; ? degrees off the vertical 3 ; ? 1 ; filling voids between sides of piles and bores with ? [state materials] 2 ; ? 1 ; depth of</p>	

individual bores
not exceeding
10.00m
2 ; depth of
individual bores
10.00 - 15.00m
3 ; ?

6	driving piles (SM.v(c).9)	1	[piles driving]	1	[sizes - insert N in trigger]	m
		1	piles	1	? x ?	
		2	trial piles	2	? diameter	
		3	?	3	? cm ² sectional area	
				4	?	
		2	dollyng piles below ground (SM.v(c).10)	1	; vertical	
				2	; raking ; ? degrees off the vertical	
				3	; ?	
7	underground obstructions (SM.v(c).11)	1	excavating, breaking up and removing	1	underground obstructions	item
				1	; backfilling	
				2	; ?	
				1	; removing surplus material from site	
				2	; ?	
		2	excavating to expose obstructions	1	[depth]	m ³
		1	; commencing at natural ground level	1	not exceeding 1.50m deep	
		2	; commencing at site formation level	2	1.50 - 3.00m deep	
		3	; commencing at reduced level	3	3.00 - 4.50m deep	
		4	; commencing at ? level	4	4.50 - 6.00m deep	
				5	? - ?m deep	
		3	extra over excavation and disposal for	1	obstructions	m ³
		1	breaking up and removing			
		2	?			
		4	excavated material	1	backfilling to excavation	m ³
		5	surplus excavated material	1	removing from site to a tip provided by Contractor	m ³
8	pile head treatments (SM.v(c).12)	1	cutting off heads of piles [GS5.24]	1	[sizes]	nr
		1	; straightening or bending and cleaning	1	? x ?	
		2	; ?	2	? diameter	
				3	? cm ² sectional area	
		1	projecting reinforcement	4	?	
		2	?	1	; in length not exceeding	

PIL - PILING AND CAISSONS

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			1 ; removing debris from site	1.0m	
			2 ; ?	2 ; in length 1.00 - 2.50m	
				3 ; in length ? - ?m	
		2	wire brushing, preparing and applying a thick protective coat of approved cement grout on exposed surfaces of all reinforcing bars and dowels projecting from pile heads [not measurable unless subsequent pile caps done by others later]	1 generally	item
9	testing	1	compaction tests to determine	1 [tests]	nr
				1 the maximum dry density and optimum moisture content in accordance with Geospec 3 [GS3.21]	
				2 the in-situ field density and moisture content in accordance with Geospec 3 [GS3.21]	
				3 ?	
				1 ; PROVISIONAL	
				2 ; ?	
		2	loading tests (SM.v(c).14)	1 [types]	nr
			1 ; to minimum of ? [state test loading]	1 initial	
				2 subsequent	
				3 ?	
				1 ; providing new loading platform and kentledge	
				2 ; ?	
				1 ; PROVISIONAL	
				2 ; ?	
		3	non-destructive integrity test of piles [GS5.33 & Annex 'F']	1 [types]	nr
			1 ; preparing [GS5.34]	1 ; dynamic test [GS5.37]	
			2 ; executed by an approved Testing Firm [GS5.32]	2 ; ?	
			3 ; ?	1 ; PROVISIONAL	
				2 ; ?	
3	CAST IN-SITU CONCRETE PILES IN DRIVEN CASINGS [GS - PERCUSSION CAST IN-SITU CONCRETE PILES]	1	plant	1	piling equipment
	1 ; PROVISIONAL				item
	2 ; ?				
		1	providing and assembling on site (SM.v(d).1)	1 [pile casings]	1 [sizes - insert N in trigger]
			1 ; subsequently dismantling and removing	1 pile casings	1 ? x ?
		2	supplying, handling, transporting, pitching (SM.v(d).2)		m

FIRST DIVISION

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FOURTH DIVISION

1 driving and withdrawing steel casings ; boring or excavation ; removal of bored or excavated materials

2 trial pile casings
3 ?
1 ; ? wall thickness

2 ? diameter
3 ? cm2 sectional area
4 ?
1 internally
2 ?
1 ; vertical
2 ; raking ; ? degrees off the vertical
3 ; ?

2 [driving heads, shoes] nr
1 driving heads
2 shoes
3 rock shoes
4 ?
1 ; weighing ? kg
2 ; ? pile [state size]
3 ; ?
1 ; to suit ? x ? casings
2 ; to suit ? diameter casings
3 ; to suit ? cm2 sectional area casings
4 ; ?

2 extra over for (SM.v(d).3,SM.v(d).4)

1 excavation and special casings for enlarged bases nr
1 ; ? [state size]
1 to suit ? x ? piles
2 to suit ? diameter piles
3 to suit ? cm2 sectional area piles
4 to suit ?
1 internally
2 ; ?
2 excavation for and removal of surface and underground obstructions item
1 ; backfilling to excavation
2 ; ?
1 ; removing surplus material from site
2 ; ?

3 underground obstructions (SM.v(d).4)

1 excavating
1 ; commencing at natural ground level
2 ; commencing at site formation level
3 ; commencing at reduced level
4 ; commencing at ? level

1 [depth] m3
1 not exceeding 1.50m deep
2 1.50 - 3.00m deep
3 3.00 - 4.50m deep
4 4.50 - 6.00m deep
5 ? - ?m deep

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		2	extra over excavation and disposal for 1 breaking up and removing 2 ?	1	obstructions	m3
		3	excavated material	1	backfilling to excavation	m3
		4	surplus excavated material	1	removing from site to a tip provided by Contractor	m3
4	[concrete] (SM.v(d).8)	1	[cast piles]	1	[sizes - insert N in trigger]	m
	1 concrete		1 piles		1 ? x ?	
	2 reinforced concrete		2 trial piles (SM.v(d).12)		2 ? diameter	
	3 ?		3 ?		3 ? cm2 sectional area	
	1 ; sulphate resisting				4 ?	
	2 ; rapid hardening					
	3 ; ?					
	1 ; grade ??/?					
	2 ; ?					
		2	extra over	1	enlarged bases (SM.v(d).9)	nr
			1 ? x ?		1 ; ? diameter	
			2 ? diameter		2 ; ? x ? x ?	
			3 ? cm2 sectional area		3 ; ? diameter x ?	
			4 ?		4 ; ?	
			1 piles			
			2 trial piles			
			3 ?			
			1 for			
5	reinforcement (SM.v(d).10)	1	[reinforcement]	1	round bars	kg
			1 plain steel reinforcing bars	2	indented bars	kg
			2 ribbed steel reinforcing bars			
			3 ?		For nos 1 to 2 above	
			1 ; general reinforcement		1 ; ? diameter	
			2 ; links, stirrups and binders		1 ; 12.00 - 15.00m long	
			3 ; helical reinforcement		2 ; 15.00 - 18.00m long	
			4 ; ?		3 ; ?	
			1 ; PROVISIONAL		1 ; specially bent to curve	
					2 ; ?	
6	sawn formwork	1	[surfaces]	1	piles above ground	m2
			1 vertical surfaces		1 ; curved	
			2 flat surfaces		2 ; ?	
			3 sloping surfaces			
7	pile head treatments (SM.v(d).11)	1	cutting off heads of piles [GS5.24]	1	[sizes]	nr
			1 ; straightening or bending and cleaning		1 ? x ?	
			2 ; ?		2 ? diameter	
					3 ? cm2 sectional area	

FIRST DIVISION

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		<ul style="list-style-type: none"> 1 projecting reinforcement 2 ? 1 ; removing debris from site 2 ; ? 	<ul style="list-style-type: none"> 4 ? 1 ; in length not exceeding 1.00m 2 ; in length 1.00 - 2.50m 3 ; in length ? - ?m

		2 wire brushing, preparing and applying a thick protective coat of approved cement grout on exposed surfaces of all reinforcing bars and dowels projecting from pile heads [not measurable unless subsequent pile caps done by others later]	1 generally item

8	drill holes [GS5.20]	<ul style="list-style-type: none"> 1 plant <ul style="list-style-type: none"> 1 ; providing and assembling on site ; subsequently dismantling and removing 	1 drilling equipment item

		<ul style="list-style-type: none"> 2 drilling holes <ul style="list-style-type: none"> 1 ; commencing at natural ground level 2 ; commencing at site formation level 3 ; commencing at reduced level 4 ; commencing at ? level 	<ul style="list-style-type: none"> 1 ? diameter holes [insert N in trigger] m 1 ; subsequently pressure grouting 2 ; ? <ul style="list-style-type: none"> 1 with cement and sand (1:3) 2 with ? <ul style="list-style-type: none"> 1 ; PROVISIONAL 2 ; ?

9	testing	1 compaction tests to determine	<ul style="list-style-type: none"> 1 [tests] nr <ul style="list-style-type: none"> 1 the maximum dry density and optimum moisture content in accordance with Geospec 3 [GS3.21] 2 the in-situ field density and moisture content in accordance with Geospec 3 [GS3.21] 3 ? <ul style="list-style-type: none"> 1 ; PROVISIONAL 2 ; ?

		<ul style="list-style-type: none"> 2 loading tests <ul style="list-style-type: none"> 1 ; to minimum of ? [state test loading] 	<ul style="list-style-type: none"> 1 [types] nr <ul style="list-style-type: none"> 1 initial 2 subsequent 3 ? <ul style="list-style-type: none"> 1 ; providing new loading platform and kentledge 2 ; ? <ul style="list-style-type: none"> 1 ; PROVISIONAL

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2 ; ?

			3 non-destructive integrity test of piles [GS5.33 & Annex 'F']	1 [types]	nr
			1 ; preparing [GS5.34]	1 pile integrity test	
			2 ; executed by an approved Testing Firm [GS5.32]	2 ?	
			3 ; ?	1 ; PROVISIONAL	
				2 ; ?	
4 BORED PILES (SM.V(E))	1 plant	1 providing and assembling on site (SM.v(e).1)		1 drilling equipment	item
1 ; PROVISIONAL		1 ; subsequently dismantling and removing		2 piling equipment	item
2 ; ?					
	2 pre-drilling	1 pre-drilling		1 [insert N in trigger]	m
		1 ; diameter bores as required by the Specification and Drawings for determining the bedrock profile		1 drilling depth not exceeding 15.00m	
		2 ; commencing from existing ground level		2 drilling depth 15.00 - 30.00m	
		3 ; commencing from ? level		3 ? - ?m [in further stage of 15.00m]	
		4 ; including supplying water to drill holes, obtaining samples, making records, providing final reports, backfilling drill holes with ?			
		5 ; ALL PROVISIONAL			
		6 ; ?			
	3 boring (SM.v(e).2)	1 pile holes		1 ? diameter [insert N in trigger]	m
		1 ; removing surplus excavated material from site		1 ; for piles	
		2 ; ?		2 ; for trial piles	
				3 ; ?	
				1 ; vertical	
				2 ; raking ; ? degrees off the vertical	
				1 ; depth not exceeding 10.00m	
				2 ; depth 10.00 - 15.00m	
				3 ; ?	
		2 extra over		1 enlarged bases	nr
		1 pile holes		1 ; ? diameter	
		2 trial pile holes		2 ; ? x ? x ?	
		3 ?		3 ; ? diameter x ?	
		1 ; ? diameter		4 ; ?	
		2 ; ? minimum internal diameter [for permanent linings]		2 toeing into bedrock [insert N in trigger]	m
		1 for		1 ; not exceeding 0.50m length	

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			2 ; 0.50 - 1.00m length	
			3 ; 1.00 - 1.50m length	
			4 ; ? - ?m length	
			3 permanent linings ? thick	m
4	post construction proof drilling	1 proof drilling	1 [insert N in trigger]	m
		1 ; diameter bores as required by the Specification and Drawings for determining the length of rock socket	1 drilling depth not exceeding 15.00m	
		2 ; commencing from ? level	2 drilling depth 15.00 - 30.00m	
		3 ; including supplying water to drill holes, obtaining samples, making records, providing final reports, backfilling drill holes with ?	3 ? - ?m [in further stage of 15.00m]	
		4 ; ALL PROVISIONAL		
		5 ; ?		
5	underground obstructions (SM.v(e).7)	1 excavating, breaking up and removing	1 underground obstructions	item
			1 ; backfilling	
			2 ; ?	
			1 ; removing surplus material from site	
			2 ; ?	
6	underground obstructions (SM.v(e).7)	1 excavating	1 [depth]	m3
		1 ; commencing at natural ground level	1 not exceeding 1.50m deep	
		2 ; commencing at site formation level	2 1.50 - 3.00m deep	
		3 ; commencing at reduced level	3 3.00 - 4.50m deep	
		4 ; commencing at ? level	4 4.50 - 6.00m deep	
			5 ? - ?m deep	
		2 extra over excavation and disposal for	1 obstructions	m3
		1 breaking up and removing		
		2 ?		
		3 excavated material	1 backfilling to excavation	m3
		4 surplus excavated material	1 removing from site to a tip provided by Contractor	m3
7	permanent linings	1 ? [state material]	1 around piles ? minimum internal diameter	m
		1 ; ? thick		
8	[concrete] (SM.v(e).4)	1 filling	1 [sizes - insert N in trigger]	m

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<p>1 concrete</p> <p>2 reinforced concrete</p> <p>3 ?</p> <p>1 ; sulphate resisting</p> <p>2 ; rapid hardening</p> <p>3 ; ?</p> <p>1 ; grade ?/?</p> <p>2 ; ?</p>	<p>1 to pile holes</p> <p>2 to trial pile holes</p> <p>3 to ?</p>	<p>1 ? x ?</p> <p>2 ? diameter</p> <p>3 ? cm2 sectional area</p> <p>4 ?</p>
<hr/>		
<p>9 reinforcement (SM.v(e).6)</p>	<p>2 extra over</p> <p>1 filling to pile holes</p> <p>2 filling to trial pile holes</p> <p>3 ?</p> <p>1 ? diameter</p> <p>2 ? internal diameter [for permanent lining]</p> <p>1 for</p>	<p>1 enlarged bases nr</p> <p>1 ; ? diameter</p> <p>2 ; ? x ? x ?</p> <p>3 ; ? diameter x ?</p> <p>4 ; ?</p> <p>2 toeing into bedrock [insert N in trigger] m</p> <p>1 ; not exceeding 0.50m length</p> <p>2 ; 0.50 - 1.00m length</p> <p>3 ; 1.00 - 1.50m length</p> <p>4 ; ? - ?m length</p> <p>3 permanent lining ? thick m</p>
<hr/>		
<p>10 sawn formwork</p>	<p>1 [surfaces]</p> <p>1 vertical surfaces</p> <p>2 flat surfaces</p> <p>3 sloping surfaces</p>	<p>1 round bars kg</p> <p>2 indented bars kg</p> <p>For nos 1 to 2 above</p> <p>1 ; ? diameter</p> <p>1 ; 12.00 - 15.00m long</p> <p>2 ; 15.00 - 18.00m long</p> <p>3 ; ?</p> <p>1 ; specially bent to curve</p> <p>2 ; ?</p>
<hr/>		
<p>11 pile head treatments (SM.v(e).8)</p>	<p>1 cutting off heads of piles [GS5.24]</p> <p>1 ; straightening or bending and cleaning</p> <p>1 projecting reinforcement</p> <p>2 ?</p> <p>1 ; removing debris from site</p> <p>2 ; ?</p>	<p>1 [sizes] nr</p> <p>1 ? x ? pile</p> <p>2 ? diameter pile</p> <p>3 ? cm2 sectional area</p> <p>1 ; in length not exceeding 1.00m</p> <p>2 ; in length 1.00 - 2.50m</p> <p>3 ; in length ? - ?m</p>
<hr/>		
	<p>2 wire brushing, preparing and applying a thick protective coat of approved cement grout on exposed surfaces of all</p>	<p>1 generally item</p>

reinforcing bars and dowels projecting from pile heads [not measurable unless subsequent pile caps done by others later]

12 testing	1 compaction tests to determine	1 [tests] nr
		1 the maximum dry density and optimum moisture content in accordance with Geospec 3 [GS3.21]
		2 the in-situ field density and moisture content in accordance with Geospec 3 [GS3.21]
		3 ?
		1 ; PROVISIONAL
		2 ; ?
	2 loading tests	1 [types] nr
	1 ; to minimum of ? [state test loading]	1 initial
		2 subsequent
		3 ?
		1 ; providing new loading platform and kentledge
		2 ; ?
		1 ; PROVISIONAL
		2 ; ?
	3 koden tests	1 vertically and bell-out nr
		1 ; PROVISIONAL
		2 ; ?
	4 concrete coring test (SM.v(e).12)	1 ? diameter core to ? diameter pile [insert N in trigger] m
	1 ; commencing from ? level	1 ; subsequently pressure grouting
	2 ; ?	2 ; ?
	1 ; below commencing level of bored pile excavation	1 with cement and sand (1:3)
	2 ; below ?	2 with ?
	5 non-destructive integrity test of piles [GS5.33 & Annex 'F']	1 ? diameter ? (state material) sonic tubes [GS5.35] m
	1 ; preparing [GS5.34]	1 ; subsequently pressure grouting
	2 ; executed by an approved Testing Firm [GS5.32]	2 ; ?
	3 ; ?	1 with cement and sand (1:3)
		2 ; ?
		3 ; PROVISIONAL
		2 sonic tests nr

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				3	pile integrity test	nr		
				For nos 2 to 3 above				
				1	; PROVISIONAL			
				2	; ?			
5	STEEL PILES (SM.V(F))	1	plant	1	providing and assembling on site (SM.v(f).1)	1	drilling equipment	item
	1 ; PROVISIONAL					2	piling equipment	item
	2 ; ?			1	; subsequently dismantling and removing			
		2	pre-drilling pile holes	1	pre-drilling	1	[insert N in trigger]	m
				1	; diameter bores as required by the Specification and Drawings for determining the bedrock profile	1	drilling depth not exceeding 15.00m	
				2	; commencing from existing ground level	2	drilling depth 15.00 - 30.00m	
				3	; commencing from ? level	3	? - ?m [in further stage of 15.00m]	
				4	; including supplying water to drill holes, obtaining samples, making records, providing final reports, backfilling drill holes with ?			
				5	; ALL PROVISIONAL			
				6	; ?			
		3	pre-boring pile holes (SM.v(f).9)	1	pre-boring	1	[sizes - insert N in trigger]	m
	1 ; PROVISIONAL					1	for ? diameter piles	
						2	for ? piles	
						1	; vertical	
						2	; raking ; ? degrees off the vertical	
						3	; ?	
						1	; filling voids between sides of piles and bores with ? [state material]	
						2	; ?	
						3	; depth of individual bores not exceeding 10.00m	
						4	; depth of individual bores 10.00 - 15.00m	
						5	; ? - ?m [in further stage of 5.00m]	
		4	post construction proof drilling	1	proof drilling	1	[insert N in trigger]	m
				1	; diameter bores as required by the Specification and Drawings for determining the length of rock socket	1	drilling depth not exceeding 15.00m	
						2	drilling depth 15.00 - 30.00m	
						3	? - ?m [in further stage of	

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		2 ; commencing from ? level	15.00m]
		3 ; including supplying water to drill holes, obtaining samples, making records, providing final reports, backfilling drill holes with ?	
		4 ; ALL PROVISIONAL	
		5 ; ?	
<hr/>			
5	supplying piles (SM.v(f).2)	1 [piles - supplying]	1 [sizes - insert N in trigger] m
		1 "H" section piles	1 ? x ? [state size of cross section]
		2 ? section piles	2 ?
		3 "H" section trial piles	
		4 ? section trial piles	
		1 ; steel to BS EN 10025 grade ? [GS5.18(i)]	
		2 ; ? thick	
		3 ; weighing ? kg/m	
		4 ; ?	
		1 ; ? Section ? [e.g. Frodingham Section 2C]	
		2 ; section modulus ? cm ³ /m	
		3 ; ?	
<hr/>			
6	handling, transporting and pitching piles (SM.v(f).3)	1 [piles - handling]	1 [sizes - insert N in trigger] m
		1 piles	1 ? x ?
		2 trial piles	2 ?
		3 ?	
			1 "H" Section piles
			2 ? Section piles
			3 ? piles
			1 ; vertical
			2 ; raking ; ? degrees off the vertical
			3 ; ?
<hr/>			
7	driving piles (SM.v(f).4)	1 [piles -driving]	1 [sizes - insert N in trigger] m
		1 piles	1 ? x ?
		2 trial piles	2 ?
		3 ?	
			1 "H" Section piles
			2 ? Section piles
			3 ? piles
			1 ; vertical
			2 ; raking ; ? degrees off the vertical
			3 ; ?
<hr/>			
8	underground obstructions (SM.v(f).7)	1 excavating, breaking up and removing	1 underground obstructions item
			1 ; backfilling
			2 ; ?
			1 ; removing surplus material from site

2 ; ?

9	underground obstructions (SM.v(f).7)	1	excavating	1	[depth]	m3
		1	; commencing at natural ground level	1	not exceeding 1.50m deep	
		2	; commencing at site formation level	2	1.50 - 3.00m deep	
		3	; commencing at reduced level	3	3.00 - 4.50m deep	
		4	; commencing at ? level	4	4.50 - 6.00m deep	
				5	? - ?m deep	
2	extra over excavation and disposal for	1	breaking up and removing	1	obstructions	m3
		2	?			
3	excavated material	1	backfilling to excavation		m3	
4	surplus excavated material	1	removing from site to a tip provided by Contractor		m3	
10	[concrete] (SM.v(f).6)	1	filling	1	[sizes]	m
		1	concrete	1	? x ?	
		2	reinforced concrete	2	? diameter	
		3	?	3	? cm2 sectional area	
		1	; sulphate resisting	4	?	
		2	; rapid hardening			
		3	; ?			
		1	; grade ?/?			
		2	; ?			
11	reinforcement	1	[reinforcement]	1	round bars	kg
		1	plain steel reinforcing bars	2	indented bars	kg
		2	ribbed steel reinforcing bars			
		3	?			
		1	; general reinforcement	For nos 1 to 2 above		
		2	; links, stirrups and binders	1	; ? diameter	
		3	; helical reinforcement	1	; 12.00 - 15.00m long	
		4	; ?	2	; 15.00 - 18.00m long	
		1	; PROVISIONAL	3	; ?	
				1	; specially bent to curve	
				2	; ?	
12	pile head treatments (SM.v(f).8)	1	cutting off heads of piles [GS5.24]	1	? x ?	nr
		1	; removing debris from site	2	?	nr
		2	; ?			
				For nos 1 to 2 above		
				1	"H" Section piles	
				2	? Section piles	
				3	? piles	

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	13 testing		1 compaction tests to determine	1 [tests] nr
				1 the maximum dry density and optimum moisture content in accordance with Geospec 3 [GS3.21]
				2 the in-situ field density and moisture content in accordance with Geospec 3 [GS3.21]
				3 ?
				1 ; PROVISIONAL
				2 ; ?
			2 loading tests (SM.v(f).11)	1 [types] nr
			1 ; to minimum of ? [state test loading]	1 initial
				2 subsequent
				3 ?
				1 ; providing new loading platform and kentledge
				2 ; ?
				1 ; PROVISIONAL
				2 ; ?
6	ROCK-SOCKETED STEEL H-PILES	1 plant	1 providing and assembling on site (SM.v(i).1)	1 drilling equipment item
	1 ; PROVISIONAL		1 ; subsequently dismantling and removing from site	2 piling equipment item
	2 ; ?			
	2 pre-drilling (SM.v(i).8)	1 pre-drilling	1 ; ? diameter bores as required by the Specification and Drawings for determining the bedrock profile	1 [insert N in trigger] m
			2 ; commencing from existing ground level	1 drilling depth not exceeding 15.00m
			3 ; commencing from ? level	2 drilling depth 15.00 - 30.00m
			4 ; including supplying water to drill holes, obtaining samples, making records, providing final reports, backfilling drill holes with ?	3 ? - ?m [in further stage of 15.00m]
			5 ; ALL PROVISIONAL	
			6 ; ?	
	3 pre-boring pile holes (SM.v(i).2)	1 pre-boring	1 ; removing surplus excavated material from site	1 ? diameter [insert N in trigger] m
			2 ; commencing from existing ground level	1 ; for piles
			3 ; commencing from ? level	2 ; for trial piles
			4 ; ?	3 ; ?
				1 ; vertical
				2 ; raking ; ? degrees off the vertical
				1 ; depth of individual

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FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION	
				bores not exceeding 10.00m
				2 ; depth of individual bores 10.00 - 15.00m
				3 ; ? - ?m [in further stage of 5.00m]
4 post constructuon proof drilling (SM.v(i).9)	1 proof drilling	1 proof drilling	1 [insert N in trigger]	m
	1 ; ? diameter bores as required by the Specification and Drawings for determining the length of rock socket	1 ; ? diameter bores as required by the Specification and Drawings for determining the length of rock socket	1 drilling depth not exceeding 15.00m	
	2 ; commencing from ? level	2 ; commencing from ? level	2 drilling depth 15.00 - 30.00m	
	3 ; including supplying water to drill holes, obtaining samples, making records, providing final reports, backfilling drill holes with ?	3 ; including supplying water to drill holes, obtaining samples, making records, providing final reports, backfilling drill holes with ?	3 ? - ?m [in further stage of 15.00m]	
	4 ; ALL PROVISIONAL	4 ; ALL PROVISIONAL		
	5 ; ?	5 ; ?		
5 underground obstructions (SM.v(i).6)	1 excavating, breaking up and removing	1 excavating, breaking up and removing	1 underground obstructions	item
			1 ; backfilling voids	
			2 ; ?	
			1 ; removing surplus material from site	
			2 ; ?	
	2 excavating to expose obstructions	2 excavating to expose obstructions	1 [depth]	m3
	1 ; commencing at natural ground level	1 ; commencing at natural ground level	1 not exceeding 1.50m deep	
	2 ; commencing at site formation level	2 ; commencing at site formation level	2 1.50 - 3.00m deep	
	3 ; commencing at reduced level	3 ; commencing at reduced level	3 3.00 - 4.50m deep	
	4 ; commencing at ? level	4 ; commencing at ? level	4 4.50 - 6.00m deep	
			5 ? - ?m deep	
	3 extra over excavation and disposal for	3 extra over excavation and disposal for	1 obstructions	m3
	1 breaking up and removing	1 breaking up and removing		
	2 ?	2 ?		
	4 excavated material	4 excavated material	1 backfilling to excavation	m3
	5 surplus excavated material	5 surplus excavated material	1 removing from site to a tip provided by Contractor	m3
6 permanent linings (SM.v(i).3)	1 steel casings of approved quality	1 steel casings of approved quality	1 casings [insert N in trigger]	m
	1 ; for piles	1 ; for piles	1 ; ? internal diameter	
	2 ; for trial piles	2 ; for trial piles	1 ; vertical	
	3 ; ? thick	3 ; ? thick	2 ; raking ; ? degrees off	

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Item No.	Description	Quantity	Unit
			the vertical
		1	; depth of individual bores not exceeding 10.00m
		2	; depth of individual bores 10.00 - 15.00m
		3	; ? - ?m [in further stage of 5.00m]
		2	backfilling material stated
<hr/>			
7	"H" section piles (SM.v(i).4)	1	[insert N in trigger] m
	1 supplying, handling, transporting, pitching and installing "H" section piles in pile holes	1	vertical
		2	raking ; ? degrees off the vertical
		1	; depth of individual bores not exceeding 10.00m
		2	; depth of individual bores 10.00 - 15.00m
		3	; ? - ?m [in further stage of 5.00m]
<hr/>			
		2	[insert N in trigger] m
	2 supplying, handling, transporting, pitching and installing "H" section trial piles in pile holes	1	vertical
		2	raking ; ? degrees off the vertical
		1	depth of individual bores not exceeding 10.00m
		2	depth of individual bores 10.00 - 15.00m
		3	? - ?m [in further stage of 5.00m]
	3 ?		
	1 ; steel to BS EN 10025-1 & BS EN 10025-2 [GS5.18(i)]		
	2 ; Grade ?		
	3 ; ? x ? x ? kg/m		
	4 ; ? web thickness		
	5 ; ? flange thickness		
	6 ; welded		
	7 ; with one 150 diameter mild steel tube for core testing on hardened grout		
	8 ; ?		
<hr/>			
8	[grout] (SM.v(i).5)	1	[insert N in trigger] m
	1 Grout filling	2	depth of individual bores not exceeding 10.00m
	1 ; ordinary Portland cement and water with an approved non-shrinkage additive	2	depth of individual bores 10.00 - 15.00m
	2 ; 25MPa / 30MPa minimum cube strength	3	? - ?m [in further stage of 5.00m]
	3 ; ?		
		3	?
		For nos 1 to 3 above	
		1 ; ? diameter	
		2 ; ?	
<hr/>			
9	reinforcement	1	round bars kg
	1 [reinforcement]	1	; ? diameter
	1 plain steel shear bars	2	; ? long
	2 ; welded to "H" section piles		

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FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
		3 ; ?	3 ; PROVISIONAL
10	pile head treatment (SM.v(i).7)	1 cutting off heads of piles 1 ; breaking up grout 2 ; all necessary excavation, backfilling and removing debris from site 3 ; ?	1 ? x ? "H" section piles nr
		2 capping plates 1 ; mild steel grade ? 2 ; with ? nr. ? diameter vent holes 3 ; ? nr. ? diameter hole for plug weld 4 ; welded to "H" section piles 5 ?	1 ? x ? x ? thick nr
		3 plain steel U bars 1 ; ? diameter 2 ; welded to capping plate 3 ; ?	1 ? wide x ? long nr
11	testing	1 testing of grout [GS5.21(xxv)] 1 ; ALL PROVISIONAL 2 ; ?	1 [types] nr 1 tests for bleeding and free expansion 2 flow cone efflux tests 3 tests for crushing strength 4 ?
	1 ; all as described in the Specification and Drawings	2 coring tests on hardened grout [GS5.22(xxii)] 1 ; subsequently pressure grouting 2 ; ?	1 ? diameter core from pile nr 1 ; PROVISIONAL 2 ; ?
		3 preparing and providing attendance on Testing Firm carrying out loading tests [GS5.29]	1 [types] nr 1 initial 2 subsequent 3 ? 1 ; providing new loading platform and kentledge 2 ; ? 1 ; PROVISIONAL 2 ; ?
		4 tests of "H" section pile segments [GS5.18(iv)] 1 ; preparing and delivering samples	1 "H" section piles item 2 ?

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to the Public Works Laboratories

2 ; ?

- 5 tests, examinations and inspections of welded joints [GS5.22(xxv)]
 - 1 ; employing an approved independent testing firm to carry out and interpret the inspection and testing ; providing any necessary labour and attendance
 - 2 ; ?

- 7 MINIPILES
 - 1 ; PROVISIONAL
 - 2 ; ?

1 plant

- 1 providing and assembling on site (SM.v(j).1)
 - 1 ; subsequently dismantling and removing from site

- 1 drilling equipment item
- 2 piling equipment item

2 pre-drilling (SM.v(j).9)

- 1 pre-drilling
 - 1 ; ? diameter bores as required by the Specification and Drawings for determining the bedrock profile
 - 2 ; commencing from existing ground level
 - 3 ; commencing from ? level
 - 4 ; including supplying water to drill holes, obtaining samples, making records, providing final reports, backfilling drill holes with ?
 - 5 ; ALL PROVISIONAL
 - 6 ; ?

- 1 [insert N in trigger] m
- 1 drilling depth not exceeding 15.00m
- 2 drilling depth 15.00 - 30.00m
- 3 ? - ?m [in further stage of 15.00m]

3 boring (SM.v(j).2)

- 1 pile holes
 - 1 ; removing surplus excavated material from site
 - 2 ; commencing from existing ground level
 - 3 ; commencing from ? level
 - 4 ; ?

- 1 ? diameter [insert N in trigger] m
- 1 ; for piles
- 2 ; for trial piles
- 3 ; ?
 - 1 ; vertical
 - 2 ; raking ; ? degrees off the vertical
 - 1 ; depth of individual bores not exceeding 10.00m
 - 2 ; depth of individual bores 10.00 - 15.00m
 - 3 ; ?

4 post construction proof drilling (SM.v(j).10)

- 1 proof drilling
 - 1 ; ? diameter bores as required by the Specification and Drawings for determining the length of rock socket

- 1 [insert N in trigger] m
- 1 drilling depth not exceeding 15.00m
- 2 drilling depth 15.00 - 30.00m
- 3 ? - ?m [in further stage of

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		2 ; commencing from ? level	15.00m]
		3 ; including supplying water to drill holes, obtaining samples, making records, providing final reports, backfilling drill holes with ?	
		4 ; ALL PROVISIONAL	
		5 ; ?	
<hr/>			
5	underground obstructions (SM.v(j).6)	1 excavating, breaking up and removing	1 underground obstructions item 1 ; backfilling voids 2 ; ? 1 ; removing surplus material from site 2 ; ?
<hr/>			
		2 excavating to expose obstructions	1 [depth] m3
		1 ; commencing at natural ground level	1 not exceeding 1.50m deep
		2 ; commencing at site formation level	2 1.50 - 3.00m deep
		3 ; commencing at reduced level	3 3.00 - 4.50m deep
		4 ; commencing at ? level	4 4.50 - 6.00m deep 5 ? - ?m deep
<hr/>			
		3 extra over excavation and disposal for	1 obstructions m3
		1 breaking up and removing	
		2 ?	
<hr/>			
6	permanent casings (SM.v(j).3)	1 permanent casings	1 casings [insert N in trigger] m
		1 ; Grade S275J0H structural steel	1 ? internal diameter
		2 ; Grade S275J2H structural steel	1 ; vertical
		3 ; 5 (minimum) thick	2 ; raking ; ? degrees off the vertical
		4 ; ?	
<hr/>			
7	[grout] (SM.v(j).4)	1 filling	1 [sizes - insert N in trigger] m
	1 Grout filling	1 to pile holes	1 ? diameter
	1 ; ordinary Portland cement and water with an approved non-shrinkage additive	2 to trial pile holes	2 ?
	2 ; 25MPa / 30MPa minimum cube strength	3 to ?	
	3 ; ?		
<hr/>			
8	reinforcement (SM.v(j).5)	1 [reinforcement]	1 round bars kg
		1 plain steel reinforcing bars	2 indented bars kg
		2 ribbed steel reinforcing bars	
		3 ?	
		1 ; general reinforcement	For nos 1 to 2 above 1 ; ? diameter
		2 ; links, stirrups and binders	1 ; 12.00 - 15.00m long
		3 ; helical reinforcement	2 ; 15.00 - 18.00m long

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		4 ; ? 1 ; PROVISIONAL	3 ; ? 1 ; specially bent to curve 2 ; ?
		2 couplers 1 ? [state brand, type and ref.]	1 for ? diameter ? bar nr
9	pile head treatments (SM.v(j)).8)	1 cutting off heads of piles 1 ; straightening or bending and cleaning 1 projecting reinforcement 2 ? 1 ; removing debris from site 2 ; ?	1 [sizes] nr 1 ? diameter pile 1 ; length not exceeding 1.00m 2 ; length 1.00 - 2.50m 3 ; length ? - ?m
		2 wire brushing, preparing and applying a thick protective coat of approved cement grout on exposed surfaces of all reinforcing bars and dowels projecting from pile heads [not measurable unless subsequent pile caps done by others later]	1 generally item
10	testing	1 preparing and providing attendance on Testing Firm carrying out loading tests [GS5.29]	1 [types] nr 1 initial 2 subsequent 3 ? 1 ; providing new loading platform and kentledge 2 ; ? 1 ; PROVISIONAL 2 ; ?
		2 testing of grout [GS5.21(xxv)] 1 ; all as described in the Specification and Drawings 1 ; ALL PROVISIONAL 2 ; ?	1 [types] nr 1 tests for bleeding and free expansion 2 flow cone efflux tests 3 tests for crushing strength
8	ROCK ANCHORS 1 ; PROVISIONAL 2 ; ?	1 providing and assembling on site 1 ; subsequently dismantling and removing	1 [equipment] item 1 drilling equipment 2 tendon platform 3 ?
	2 setting up	1 [anchors] 1 anchors	1 type ? nr

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		2 trial anchors		
		3 ? anchors		
3	supplying ; drilling ground and installing 1 rock anchors as drawing nr. ?	1 [anchor lengths] 1 free length of 2 fixed length of 3 ? 1 anchors 2 trial anchors 3 ? anchors 1 ; ? degrees from horizontal 2 ; ?	1 type ? 1 ; ?m total length 2 ; ?	nr
4	supplying and installing anchor heads as drawing nr. ?	1 anchor heads for	1 type ? 1 anchors 2 trial anchors 3 ? anchors	nr
5	[destressing & restressing] 1 destressing anchors 2 restressing anchors 3 ?	1 trial anchors	1 type ?	nr
6	testing	1 water testing	1 fixed lengths of anchor holes 2 pressure grouting ?m lengths of anchor holes 1 after water test failure 2 ? 1 ; re-drilling holes 2 ; ?	nr nr
		2 load testing	1 [test type] 1 simple 2 comprehensive 3 ? 1 stressing tests on type ? anchors 2 stressing tests on type ? trial anchors 3 stressing tests on ? anchors 4 ? 1 ; 1.5 times design load 2 ; ? times design load 3 ; ?	nr

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		3	blast testing		1	on trial anchors	nr
					1	; explosion of test charges	
					2	; ?	
					1	in earthworks	
					2	in caissons	
					3	?	
		4	sample testing		1	allowing for testing one sample of each material	item
					1	used in the rock anchor system	
					2	?	
	7	load monitoring		1	lift off tests		nr
					1	; initial	
					2	; subsequent	
					3	; ?	
					1	; ? hours after lock off	
					2	; executing in Maintenance Period	
					3	; ?	
				2	load cells ; supplying ; installing		
9	PRESSURE GROUTING	1	plant	1	providing and assembling on site		item
					1	; subsequently dismantling and removing	
		2	drilling	1	grout holes		m
					1	; commencing from existing ground level	
					2	; commencing from ? level	
					1	[insert N in trigger]	
					1	? diameter	
					1	; vertically downwards	
					2	; downwards at an angle 0 - 45 degrees to the vertical	
					3	; horizontally or downwards at an angle less than 45 degrees to the horizontal	
					4	; upwards at an angle 0 - 45 degrees to the horizontal	
					5	; upwards at an angle less than 45 degrees to the vertical	
					1	; drilling depth not exceeding 15.00m	
					2	; drilling depth 15.00 - 30.00m	
					3	; ? - ?m [in further stage of 15.00m]	

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3	grouting	1	filling and injection to grout holes	1	generally	kg
1	with cement			2	approximate grouting area in	
2	with silicate based chemical				elevation ? m2	item
3	with ?					
1	; ?					

*** END OF REPORT ***

PLASTERING AND PAVING

PLAST - PLASTERING AND PAVING

FIRST DIVISION

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- 1 INTERNALLY
- 2 EXTERNALLY

1 spatterdash

1 all surfaces of concrete

1 generally m2

2 lathing

- 1 [lathing]
 - 1 wire netting to BS EN 10223-2 [GS18.26]
 - 2 plain expanded steel lathing [GS18.24]
 - 3 ribbed expanded steel lathing [GS18.24]
 - 4 ?
 - 1 ; galvanised
 - 2 ; 50 minimum side and end laps ; measured net - allow for laps
 - 1 ; in repairs

- 1 flush junctions between dissimilar solid backgrounds ; 300 wide [GS18.14] m
- 2 [surfaces] m2
 - 1 walls and columns
 - 2 ceilings including sides and soffits of beams
 - 3 sloping ceilings including sides and soffits of beams
 - 4 fascias and upstands
 - 5 sloping soffits of staircases
 - 6 flewing soffits of staircases
 - 7 flush junctions between dissimilar solid backgrounds
 - 8 on and including ? support system ; ? depth below ceiling
 - 9 ?
 - 1 ; 3.50 - 5.00m above floor level
 - 2 ; 5.00 - 6.50m above floor level
 - 3 ; 6.50 - 8.00m above floor level
 - 4 ; ? - ?m above floor level
 - 1 ; curved
 - 2 ; ?

3 plasterboard

- 1 lath or board ? thick [GS18.31, 18.32]
 - 1 ; scrimmed and plastered joints
 - 2 ; joints
 - 1 ; finishing with ? thick plaster skim coat
 - 2 ; finishing with ?
 - 1 ; in repairs
 - 2 ; ?

- 1 [surfaces] m2
 - 1 walls and columns
 - 2 ceilings including sides and soffits of beams
 - 3 sloping ceilings including sides and soffits of beams
 - 4 fascias and upstands
 - 5 sloping soffits of staircases
 - 6 flewing soffits of staircases
 - 7 on and including ? support system ; ? depth below ceiling
 - 8 ?
 - 1 ; 3.50 - 5.00m above floor level
 - 2 ; 5.00 - 6.50m above floor level
 - 3 ; 6.50 - 8.00m above floor level
 - 4 ; ? - ?m above floor level
 - 1 ; curved
 - 2 ; ?

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4	fire rated enclosure	1	fire rated promat board	1	walls and columns	m2
		2	?			
		For nos 1 to 2 above		2	ceilings and sides and soffits of beams	m2
		1	; ? hour fire resisting period	1	; fixing to concrete soffits	
		2	; ? thick	1	; suspension depth not exceeding 1.50m	
		3	; including approved framings, fittings, fixing bolts and screws	1	; 3.50 - 5.00m above floor level	
		4	; pointing around edges with approved sealant	3	sloping soffits of staircases	m2
		5	; all necessary painting and coating	4	sides of ducts	m2
				1	; size ? x ?	
				1	; at walls	
				5	sides and soffits of ducts	m2
				1	; size ? x ?	
				1	; at ceilings	
5	[screeds]	1	[surfaces]	1	? thick	m2
1	screeds [GS18.71 - 18.82]	1	walls and columns	2	? (average) thick	m2
2	topping screeds [GS18.80 - minimum 15mm thick]	2	ceilings including sides and soffits of beams	For nos 1 to 2 above		
3	lightweight screeds [GS18.80 - minimum 50mm thick]	3	sloping ceilings including sides and soffits of beams	1	; to receive	
4	; one coat	4	sloping soffits of staircases	2	ceramic tiling	
5	; two coats	5	flewing soffits of staircases	3	mosaic tiling	
6	; three coats	6	floors	4	quarry tiling	
7	?	7	roofs	5	glazed tiling	
1	; cement and sand (1:3) [GS18.75]	8	treads and risers	6	stone slabs	
2	; cement and sand (1:4) [GS18.80 - topping screeds (1:4) are required on top of lightweight screeds]	9	cills, copings, horizontal louvres, horizontal sunbreakers and the like [external only]	7	terrazzo	
3	; semi dry cement and sand (1:4) [GS18.126]	10	vertical fins, vertical sunbreakers and the like [external only]	8	wood blocks	
4	; cement and granite fines (1:3) [GS18.75]	11	all surfaces of fitments and the like	9	vinyl or linoleum	
5	; cement and granite fines (1:4) [GS18.80]	12	small features and the like [external only]	10	carpet	
6	; cement, sand and coarse aggregate (1:1.5:3) [GS18.75 - for screeds exceeding 40mm thick]	13	?	11	asphalt	
7	; cement, granite fines and coarse aggregate (1:1.5:3) [GS18.75 - for screeds exceeding 40mm thick]	1	; on lathing	12	screed	
		2	; on plasterboard	13	?	
		3	; to pattern ; as drawing nr. ?	1	; 3.50 - 5.00m above floor level	
		4	; in repairs ; dubbing out ? thick	2	; 5.00 - 6.50m above floor level	
		5	; in confined spaces	3	; 6.50 - 8.00m above floor level	
		6	; ?	4	; ? - ?m above floor level	
				1	; curved	
				2	; ?	
8	; cement and lightweight aggregate (1:6) [GS18.80 (1:6)]	2	[skirtings, strings]	1	? thick	m
		1	skirtings [to receive tiling etc.]	1	x ? high	

PLAST - PLASTERING AND PAVING

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	for floors]		not of similar finishes to wall]	2	x ? (average) high
9	; cement and lightweight aggregate (1:8) [GS18.80 (1:8) for roofs]		(SM.xvi(d)15)	3	x ? (average) wide
		2	wall strings (SM.xvi(d)16)	4	x ? girth
10	; waterproof containing an approved waterproofing admixture mixed under the manufacturer's supervision in strict accordance with their instructions	3	open strings (SM.xvi(d)17)	5	; to receive
		4	curb strings (SM.xvi(d)19)	1	ceramic tiling
11	; water repellent containing an approved water-reducing admixture and with a water/cement ratio of 0.45 [GS6.42]	5	curbs (SM.xvi(d)18)	2	mosaic tiling
		6	?	3	quarry tiling
		1	; on lathing	4	vinyl tiling
		2	; on plasterboard	5	terrazzo
		3	; ?	6	asphalt
		1	; in repairs ; dubbing out ? thick	7	screed
		2	; in confined space	1	; sloping
		3	; ?	2	; sloping with stepped base
12	; air entrained [GS18.72, 18.80]			3	; stepped following profile of treads and risers
13	; ?			4	; curved

3	angle fillets	1	? wide x ? deep	m
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4	[aprons, margins to receive tiling etc.]	1	? x ?	m
---	--	---	-------	---

1	aprons [GS18.100]	1	to vertical edge of floor or landing ; ? x ? return to soffit
2	margins	2	wide curb ; ? x ? wide margin
3	combined curbs and margins	3	wide curb ; to profile of treads and risers ; ? x ? wide margin to treads ; ? x ? wide margin to risers
4	?	4	; to receive
1	; on lathing	5	?
2	; on plasterboard	1	ceramic tiling
3	; ?	2	mosaic tiling
1	; in repairs ; dubbing out ? thick	3	quarry tiling
2	; in confined space	4	vinyl tiling
3	; ?	5	terrazzo
		6	asphalt
		7	screed
		1	; curved
		2	; ?

5	lining to channels [not of similar finishes to floor] (SM.xvi(d)20)	1	? thick ; ? wide x ? deep	m
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1	; on lathing	1	; curved
2	; on plasterboard		
3	; ?		
1	; in repairs ; dubbing out ? thick		
2	; in confined space		
3	; ?		

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

<p>6 extra over ? floor screed ? thick for [give type and thickness to receive tiling etc.]</p>	<p>1 shallow channels within thickness of screed m 2 channels in floors or roofs m</p> <p>For nos 1 to 2 above 1 ; rectangular 2 ; segmental 1 ; ? wide x ? (average) deep 2 ; to receive 1 ceramic tiling 2 mosaic tiling 3 quarry tiling 4 vinyl tiling 5 terrazzo 6 asphalt 7 screed</p> <p>3 filling to pipe trench covers ? x ? wide x ? deep m 4 filling to recessed duct covers and the like ? x ? wide x ? deep m 5 filling to shaped insets ? x ? [describe insets] nr 6 filling to recessed manhole covers and the like ? x ? x ? deep nr 7 filling to mat sinkings ? x ? x ? deep nr</p> <p>For nos 3 to 7 above 1 ; to receive 1 ceramic tiling 2 mosaic tiling 3 quarry tiling 4 vinyl tiling 5 terrazzo 6 asphalt 7 screed 8 vinyl or linoleum</p>	
<p>6 [render, plaster, grano, terrazzo] 1 cement rendering [GS18.45] 2 external rendering [GS18.46] 3 internal lime plastering [GS18.47, 18.48] 4 gypsum plastering [GS18.29, 18.49 - 18.51] 5 acoustic plastering [GS18.35, 18.56] 6 shanghai plastering [GS18.55] 7 cement based premixed plastering ; all in accordance with the manufacturer's instructions</p>	<p>1 [surfaces] 1 walls and columns 2 ceilings including sides and soffits of beams 3 sloping ceilings including sides and soffits of beams 4 sloping soffits of staircases 5 flewing soffits of staircases 6 floors 7 treads and risers 8 cills, copings, horizontal louvres, horizontal sunbreakers and the like</p>	<p>1 ? thick m2 1 ; 3.50 - 5.00m above floor level 2 ; 5.00 - 6.50m above floor level 3 ; 6.50 - 8.00m above floor level 4 ; ? - ?m above floor level 1 ; curved</p>

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

[GS18.58]
 8 gypsum based premixed plastering ;
 all in accordance with the
 manufacturer's instructions [GS18.58
 - for internal use only]
 9 granolithic Mix Type "A" [GS18.93]
 10 granolithic Mix Type "B" [GS18.93]
 11 granolithic Mix Type "C" [GS18.93]
 12 granolithic Mix Type "D" [GS18.93]
 13 terrazzo Mix Type "A" [GS18.97]
 14 terrazzo Mix Type "B" [GS18.97]
 15 terrazzo Mix Type "C" [GS18.97]
 16 ? proprietary finishes
 17 ; one coat
 18 ; two coats
 19 ; three coats
 20 ?
 1 ; ? colour
 2 ; ? colour range
 3 ; ? chippings [GS18.55 - for
 shanghai plaster]
 4 ; waterproof containing an
 approved waterproofing admixture
 mixed under the manufacturer's
 supervision in strict accordance
 with their instructions
 5 ; water repellent containing an
 approved water-reducing
 admixture and with a
 water/cement ratio of 0.45
 [GS6.42]
 6 ; bonding agents [GS18.49 - for
 gypsum plaster when specified]
 7 ; ?
 1 ; laid monolithically
 2 ; spray applied [GS18.56 -
 applicable to acoustic
 plaster or possibly a
 proprietary finish only]
 3 ; wood floated finish
 [GS18.81, 18.95(i)]
 4 ; steel trowelled finish
 [GS18.81, 18.95(i)]
 5 ; textured finish [GS18.18]
 6 ; rough cast finish
 [GS18.18]
 7 ; machine applied textured
 finish [GS18.18]
 8 ; rubbed finish
 [GS18.95(ii)]
 9 ; washed finish
 [GS18.95(iii)]
 10 ; ground smooth finish
 [GS18.97 - terrazzo floors]

9 vertical fins, vertical sunbreakers
 and the like
 10 all surfaces of fitments and the
 like
 11 small features and the like
 12 ?
 1 ; on lathing
 2 ; on plasterboard
 3 ; to pattern as drawing nr. ?
 4 ; in repairs ; dubbing out ?
 thick
 5 ; in confined spaces
 6 ; ?

 2 speed bumps
 1 ; ?

 3 [skirtings, strings]
 1 skirtings
 2 wall strings
 3 open strings
 4 curb strings
 5 curbs
 6 ?
 1 ; on lathing
 2 ; on plasterboard
 3 ; ?
 1 ; in repairs ; dubbing out ?
 thick
 2 ; in confined space
 3 ; ?

 4 [aprons, margins]
 1 aprons [GS18.100]
 2 margins
 3 combined curbs and margins
 4 ?
 1 ; on lathing
 2 ; on plasterboard
 3 ; ?
 1 ; in repairs ; dubbing out ?
 thick
 2 ; in confined space

1 ? wide x ? high overall [insert N
 in trigger] m

 1 ? thick m
 1 x ? high
 2 x ? (average) high
 3 x ? (average) wide
 4 x ? girth
 1 ; square top edge
 2 ; rounded top edge
 3 ; square bottom edge
 4 ; square bottom edge at
 junction with paving
 5 ; coved bottom edge
 6 ; coved bottom edge at
 junction with paving
 7 ; ? x ? return to soffit
 [standard detail]
 1 ; sloping
 2 ; sloping with stepped
 base
 3 ; stepped following
 profile of treads and
 risers
 4 ; curved

 1 ? x ? m
 1 to vertical edge of floor or
 landing ; ? x ? return to
 soffit
 2 wide curb ; ? x ? wide margin
 3 wide curb ; to profile of
 treads and risers ; ? x ? wide
 margin to treads ; ? x ? wide
 margin to risers
 4 ?
 1 ; curved

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	11 ; wax polished finish [GS18.97 - terrazzo walls]		3 ; ?		
	12 ; ?				
		5	lining to channels [not of similar finishes to floor] (SM.xvi(d)20)	1	? thick ; ? wide x ? deep 1 ; curved m
			1 ; on lathing		
			2 ; on plasterboard		
			3 ; ?		
			1 ; in repairs ; dubbing out ? thick		
			2 ; in confined space		
			3 ; ?		
		6	extra over ? thick ? for [give thickness, finish, type and background element] (SM.xvi(d)11)	1	coloured margin ; ? wide m
				2	coloured bands ; ? wide m
				3	channels [of similar finish to floor or roof] m
				1	; rectangular
				2	; segmental
				1	; ? wide x ? deep
				4	filling to pipe trench covers ? x ? wide x ? deep m
				5	filling to recessed duct covers and the like ? x ? wide x ? deep m
				6	filling to recessed manhole covers and the like ? x ? x ? deep nr
				7	filling to shaped insets ? x ? [describe insets] nr
				8	filling to mat sinkings ? x ? x ? deep nr
7	[tile and slab finishes]	1	tiles	1	[surfaces] m2
	1 plain concrete floor tiles [GS18.102]		1 ; bedding loose and jointing in cold bitumen [GS18.119 - for roof tiles]	1	floors and pavings
	2 granolithic concrete floor tiles [GS18.102]		2 ; bedding and jointing in cement and sand (1:4) bedding [GS18.119 - for roof tiles]	2	treads
	3 vitrified ceramic floor tiles [GS18.103]		3 ; bedding and jointing in semi dry mix of cement and sand (1:4) bedding [GS18.118, GS18.124 - option for floor tiles, mosaic floor tiles]	3	risers
	4 clay floor quarry tiles [GS18.103]		4 ; bedding and jointing in cement and sand (1:3) bedding [GS18.118, GS18.122, GS18.124 & GS18.125 - option for floor, wall tiling]	4	walls and columns
	5 terrazzo floor tiles [GS18.104]		5 ; bedding and jointing in cement and granite fines (1:3) bedding [GS18.75 - when required to avoid efflorescence on surface]	5	ceilings including sides and soffits of beams
	6 precast concrete paving slabs [GS18.112]		6 ; bedding in lime and sand or cement	6	sloping ceilings including sides and soffits of beams
	7 stone paving slabs [GS18.111]			7	sloping soffits of staircases
	8 external glazed ceramic wall tiles [GS18.108]			8	flewings soffits of staircases
	9 internal glazed ceramic wall tiles [GS18.185]			9	cills, copings, horizontal louvres, horizontal sunbreakers and the like [external surfaces only]> (SM.xvi(e)6)
	10 ?			10	vertical fins, vertical sunbreakers and the like [external surfaces only]
	1 ; ? x ? x ? [sizes vary according to General]				

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

Specification for Building]
 2 ; ? thick [thickness varies according to General Specification for Building]
 3 ; Messrs. ?
 4 ; ? series [provide details of series type or range, etc. from the manufacturer's catalogue]
 5 ; ? range
 6 ; anti-slip [GS18.103]
 7 ; ? colour
 8 ; ? colour range
 9 ; cushion edged
 10 ; laying and fixing in accordance with the manufacturer's instructions
 11 ; including all necessary accessories [GS18.165 - raised accessed floor]
 12 ; environmentally friendly carpets [GS18.154]
 13 ; ?
 1 ; washed finish [GS18.95(iii), 18.102 - granolithic tiles]
 2 ; rubbed finish [GS18.95(ii), 18.102]
 3 ; exposed aggregate finish [GS18.112 - precast concrete paving slabs]
 4 ; smooth finish [GS18.102 - granolithic tiles]
 5 ; polished finish [GS18.104, 18.111 - stone and terrazzo tiles and slabs]
 6 ; ? finish
 7 ; ?

and sand (1:3) bedding [GS18.127 - for precast concrete paving slabs]
 7 ; fixing with plaster dabs, copper cramps and copper hooks [GS18.126 - stone wall slabs]
 8 ; fixing with 40 x 3 copper wall ties 175 girth [GS18.126 and GS10.23 - stone wall slabs for heights greater than 1.2m above floor level]
 9 ; fixing with continuous kerf clips in sawn grooves bedded in silicone sealant at two opposite edges of each piece of slab ; General Specification for Building Section 16 [GS18.126 and GS16.15 - stone wall slabs for heights greater than 1.2m above floor level]
 10 ; fixing with proprietary tile adhesive [GS18.118, GS18.122, GS18.124, GS18.157 - wall tiles where specified ; GS18.123 - for external wall tiles]
 11 ; fixing to ? with underlay ? type ? thick [GS18.155, 18.160 - carpet floor covering where specified]
 12 ; loose laying on ?
 13 ; fixing to ? with ? floor system [GS18.164 - raised accessed floor]
 14 ; ?
 1 to the stated thickness [GS18.118, GS18.122, GS18.124 - thickness varies]
 2 ; ? additive [additive to bedding only where specified]
 3 ; pointing in
 4 ; ?
 1 bitumen [GS18.119 - roof tiles]
 2 plain cement [GS18.115 - wall tiles ; floor tiles]
 3 coloured cement [GS18.115 - wall tiles ; floor tiles]
 4 proprietary grout [GS18.115 - wall tiles ; floor tiles ; GS18.123 - for external wall tiles]
 5 jointing in cement, lime and sand or granite fines (1:3:6) [GS18.127 - precast concrete paving slabs]
 6 ?

2 slabs
 1 ; bedding loose and jointing in cold

(SM.xvi(e)7)
 11 all surfaces of fitments and the like
 12 small features and the like [external surfaces only]> (SM.xvi(e)8)
 13 ?
 1 ; on ? bedding [give thickness of bedding, varies according to tiles/locations]
 2 ; to pattern as drawing nr. ?
 3 ; in repairs ; dubbing out ? thick
 4 ; in confined space
 5 ; 3.50 - 5.00m above floor level
 6 ; 5.00 - 6.50m above floor level
 7 ; 6.50 - 8.00m above floor level
 8 ; ? - ?m above floor level
 1 ; curved
 2 extra over tiles for [items msd linear] m
 1 rounded edge tiles
 2 nosing bead tiles
 3 internal corner tiles
 4 external corner tiles
 5 setting one row of tiles on splay at angles
 6 special tiles ; ref. ? [dimension description or manufacturer's reference]
 7 ?
 3 extra over tiles for [items msd nr.] nr
 1 tiles rounded on two edges
 2 fair end tiles on mouldings
 3 mitre tiles on mouldings
 4 special tiles ; ref. ? [dimension description or manufacturer's reference]
 5 ?
 4 [skirtings, strings etc.] m
 1 skirtings ? high
 2 wall strings ? (average) high
 3 open strings ? (average) high
 4 aprons ? girth [GS18.100] (SM.xvi(e)12)

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	bitumen [GS18.119 - for roof tiles]	5	curb strings ? girth (SM.xvi(e)13)	
2	; bedding and jointing in cement and sand (1:4) bedding [GS18.119 - for roof tiles]	6	tops and sides of curbs and upstands ? girth (SM.xvi(e)14)	
3	; bedding and jointing in semi dry mix of cement and sand (1:4) bedding [GS18.118, GS18.124 - option for floor tiles, mosaic floor tiles]	7	sides and bottom of channels ? wide x ? deep (SM.xvi(e)15)	
4	; bedding and jointing in cement and sand (1:3) bedding [GS18.118, GS18.122, GS18.124 - option for floor, wall tiling]	8	?	
5	; bedding and jointing in cement and granite fines (1:3) bedding [GS18.75 - when required to avoid efflorescence on surface]	1	; square top edge	
6	; bedding in lime and sand or cement and sand (1:3) bedding [GS18.127 - for precast concrete paving slabs]	2	; rounded top edge	
7	; fixing with plaster dabs, copper cramps and copper hooks [GS18.126 - marble wall slabs]	3	; square bottom edge	
8	; fixing with 40 x 3 copper wall ties 175 girth [GS18.126 and GS10.23 - stone wall slabs for heights greater than 1.2m above floor level]	4	; square bottom edge at junction with paving	
9	; fixing with continuous kerf clips in sawn grooves bedded in silicone sealant at two opposite edges of each piece of slab ; General Specification for Building Section 16 [GS18.126 and GS16.15 - stone wall slabs for heights greater than 1.2m above floor level]	5	; coved bottom edge	
10	; fixing with proprietary tile adhesive [GS18.118, GS18.122, GS18.124 - wall tiles where specified ; GS18.123 - for external wall tiles]	6	; coved bottom edge at junction with paving	
11	; loose laying on ?	7	; splayed bottom edge	
12	; fixing to ? with ? floor system [GS18.164 - raised access floor]	8	; splayed bottom edge at junction with paving	
13	; ?	9	; ?	
1	to the stated thickness [GS18.118, GS18.122, GS18.124 - thickness varies]	1	; level	
2	; ? additive [additive to bedding only where specified]	2	; raking	
3	; pointing in	3	; raking with stepped base	
4	; ?	4	; stepped following profile of treads and risers	
1	bitumen [GS18.119 - roof tiles]	5	; vertical	
2	plain cement [GS18.115 - wall tiles ; floor tiles]	6	; on ? bedding [give thickness of bedding]	
		7	; ?	
		8	; in repairs ; dubbing out ? thick	
		9	; in confined space	
		10	; curved	
		5	filling to trench covers ? x ? wide	m
		6	filling to recessed manhole covers and the like ? x ?	nr
		7	filling to shaped insets ? x ? [describe insets]	nr
		8	filling to mat sinkings ? x ?	nr
			For nos 5 to 8 above	
		1	; joints to line with adjoining work	
		2	; ?	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 3 coloured cement [GS18.115 - wall tiles ; floor tiles]
- 4 coloured grout [GS18.115 - wall tiles ; floor tiles ; GS18.123 - for external wall tiles]
- 5 jointing in cement, lime and sand or granite fines (1:3:6) [GS18.127 - precast concrete paving slabs]
- 6 ?

3 extra over ? to ? for [give type of finish and background element] (SM.xvi(d)16)

- 1 margins in contrasting colour ; ? wide m
- 2 sunk bands in contrasting colour ; ? wide x ? deep m
- 3 raised bands in contrasting colour ; ? wide x ? projection m

4 [tests ; external wall tiles (GS18.123)]
 1 allow for testing of external wall tiling, remedying any defects and re-testing

- 1 in-situ pull-out tests and hammer tapping as General Specification for Building clause 18.123(c) item
- 2 infra-red thermographic scanning as General Specification for Building clause 18.123 ; by an approved specialist [only where specifically requested] item
- 3 ? item

- 8 [rubber and plastic sheet or carpet/tile finishes and the like] (SM.xvi(f))
- 1 vinyl floor tiles [GS18.131]
- 2 semi-flexible vinyl floor tiles [GS18.130]
- 3 linoleum floor tiles [GS18.134]
- 4 rubber floor tiles [GS18.135]
- 5 cork wall tiles
- 6 vinyl sheet [GS18.132]
- 7 foam backed vinyl sheet [GS18.133]
- 8 linoleum sheet [GS18.134]
- 9 rubber sheet [GS18.135]
- 10 cork sheet
- 11 carpet ? type [GS18.141 - 18.143]
- 12 carpet tiles ? type [GS18.153]
- 13 artificial turfing
- 14 line marking on sports pavings
- 15 letters or figures on sports pavings
- 16 tactiles tiles
- 17 ?
- 1 ; ? x ? x ? [sizes vary according to General

- 1 sheets
- 1 ; fixing with adhesive [GS18.118, GS18.122, GS18.124 - wall tiles where specified]
- 2 ; fixing to ? with underlay ? type ? thick [GS18.155, 18.160 - carpet floor covering where specified]
- 3 ; loose laying on ?
- 4 ; fixing to ? with ? floor system [GS18.164 - raised accessed floor]
- 5 ; ?
- 2 tactiles
- 1 ; warning / stop
- 2 ; directional / go
- 3 ; turning / positional

- 1 [surfaces] m2
- 1 floors
- 2 treads
- 3 risers
- 4 strings
- 5 aprons
- 6 walls and columns
- 7 floors and pavings
- 1 ; to pattern as drawing nr. ?
- 1 ; curved
- 2 skirtings ? high m
- 3 kerbs ? girth m
- For nos 2 to 3 above
- 1 ; flush
- 2 ; raking
- 3 ; vertical
- 1 ; curved
- 4 filling to pipe trench covers ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	Specification for Building]			wide	m
2	; ? thick [thickness varies according to General Specification for Building]			5 filling to shaped insets ? x ? [describe insets]	nr
3	; Messrs. ?			6 filling to manhole covers and the like ? x ?	nr
4	; ? series [provide details of series type or range, etc. from the manufacturer's catalogue]			7 filling to mat sinking ? x ?	nr
5	; ? proprietary marking systems			For nos 4 to 7 above	
6	; ? range			1 ; joints to line with adjoining work	
7	; anti-slip [GS18.103]			2 ; ?	
8	; ? colour				
9	; ? colour range			8 [tactiles] floors	m2
10	; laying and fixing in accordance with the manufacturer's instructions			9 [tactiles] bands ? wide	m
11	; including all necessary accessories [GS18.165 - raised accessed floor]	3 lines		1 ? wide	m
12	; environmentally friendly carpets [GS18.154]	4 broken lines			
13	; ?	For nos 3 to 4 above			
1	; emulsion polished finish [GS18.137, 18.140 - on vinyl linoleum, rubber etc.]	1 ; curved			
2	; ? finish	2 ; ?			
3	; ?				
		5 [letters, etc]		1 ? high	nr
		1 letters			
		2 numerals			
		3 Chinese characters			
		4 stops and commas			
		5 ?			
9	[accessories - nosings, inserts] (SM.xvi(e)23)	1 tiles		1 to treads	m
1	vitreous clay ; ? x ? x ? non-slip nosing tiles [standard government detail]	1 ; bedding and jointing in cement and sand (1:4) bedding [option for roof slabs]		1 ; on ? bedding [give thickness of bedding]	
2	? ; ? x ? x ? non-slip inserts [proprietary item ; GS18.88]	2 ; bedding and jointing in semi dry mix of cement and sand (1:4) bedding [option for floor tiles/mosaic floor tiles]		2 ; ?	
3	?	3 ; bedding and jointing in cement and sand (1:3) bedding [option for floor, wall tiles]		3 ; in repairs ; dubbing out ? thick	
1	; ? colour	4 ; bedding and jointing in cement and granite fines (1:3) bedding [GS18.75 - when required to avoid efflorescence on surface]		4 ; curved	
2	; ? colour range	5 ; fixing with adhesive [option for proprietary items]			
3	; ?	6 ; ?			
		1 to the stated thickness [GS18.118, GS18.122, GS18.124 - thickness varies]			
		2 ; pointing in			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 3 ; ?
- 1 plain cement [GS18.115]
- 2 coloured cement
- 3 proprietary grout
- 4 ?

- 2 inserts
- 1 ; bedding and jointing in cement and sand (1:4) bedding [option for roof slabs]
- 2 ; bedding and jointing in semi dry mix of cement and sand (1:4) bedding [option for floor tiles/mosaic floor tiles]
- 3 ; bedding and jointing in cement and sand (1:3) bedding [option for floor, wall tiles]
- 4 ; bedding and jointing in cement and granite fines (1:3) bedding [GS18.75 - when required to avoid efflorescence on surface]
- 5 ; fixing with adhesive [option for proprietary items]
- 6 ; ?
- 1 to the stated thickness [GS18.118, GS18.122, GS18.124 - thickness varies]
- 2 ; pointing in
- 3 ; ?
- 1 plain cement [GS18.115]
- 2 coloured cement
- 3 ?

<p>10 ceramic tactile tiles</p> <ul style="list-style-type: none"> 1 ; ? x ? x ? 2 ; anti-slip 3 ; ? colour range 4 ; bedding and jointing in cement and sand (1:3) bedding to the stated thickness 5 ; pointing in coloured cement 6 ; on screeds (measured separately) 	<p>1 warning / stop tactiles</p> <ul style="list-style-type: none"> 1 ; ? diameter x ? thick studs 2 ; ? nrs. studs per ? x ? standard module <p>2 directional / go tactiles</p> <ul style="list-style-type: none"> 1 ; ? long strip x ? wide x ? thick studs 2 ; ? nrs. studs per ? x ? standard module <p>3 turning / positional tactiles</p> <ul style="list-style-type: none"> 1 ; ? diameter x ? thick studs 2 ; ? nrs. studs per ? x ? standard module 	<p>1 floors</p> <p>2 bands</p> <ul style="list-style-type: none"> 1 ; ? wide <p>3 ? x ? [state size]</p>	<p>m2</p> <p>m</p> <p>nr</p>
<p>11 movement joints</p>	<p>1 forming joints in ? finishes [standard request from "some" architects]</p> <ul style="list-style-type: none"> 1 ; priming surfaces of joints 	<p>1 ? x ?</p> <ul style="list-style-type: none"> 1 ; horizontal 2 ; vertical 	<p>m</p>

PLAST - PLASTERING AND PAVING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		2 ; ?		3 ; sloping	
		1 ; pointing with polysulphide liquid polymer sealant [usually occurs in external mosaic tiling but may occur elsewhere]		4 ; ?	
		2 ; ?		1 ; curved	

		2 forming joints in concrete roofing tiles [GS18.120]		1 ? x ?	m
		1 ; pointing with cold bitumen		1 ; horizontal	
		2 ; pointing with approved sealant		2 ; sloping	
				3 ; ?	
				1 ; curved	

12 sundries		1 [surface treatments]		1 [surfaces]	m2
		1 applying an approved hardening admixture to ? [GS18.86]		1 walls and columns	
		2 treating surfaces of cement and sand finish with an approved dust-reducing sealant [GS18.141 - for carpet]		2 floors	
		3 treating surfaces of stone with an approved sealer [GS18.125 and 18.126 - for stone slabs]		3 ceilings including sides and soffits of beams	
		4 treating surfaces of ? with an approved liquid dust proofer [GS18.85]		4 sloping ceilings including sides and soffits of beams	
		5 treating surfaces of ? with an approved liquid hardener [GS18.85]		5 sloping soffits of staircases	
		6 treating surfaces of ? with carborundum grains		6 flewing soffits of staircases	
		7 ?		7 treads and risers	
		1 ; in accordance with the manufacturer's instructions		8 ?	
		2 ; sprinkling on and lightly trowelling in before setting at the rate of 2 kg/m2		1 ; 3.50 - 5.00m above floor level	
		3 ; ?		2 ; 5.00 - 6.50m above floor level	
				3 ; 6.50 - 8.00m above floor level	
				4 ; ? - ?m above floor level	

		2 polythene vapour barrier [GS18.73, 18.80]		1 on concrete beneath roof screed	m2
				1 ; lap 150 at joints ; measured net - allow for laps	

		3 [dividing & cover strips]		1 3 x 50	m
		1 aluminium		2 ? x ?	m
		2 ? plastic [GS18.87 - state colour required]		3 ? x ? x ?	m
		3 brass		For nos 1 to 3 above	
		4 stainless steel		1 ; curved	
		5 ?		2 ; ?	
		1 dividing strips			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 2 cover strips
- 3 ; bedding in screed
- 4 ; bedding in wall finish
- 5 ; ?
- 1 ; stepped to profile of treads and risers
- 2 ; ?

4	non-slip inserts to treads [GS18.88]	1	15 x 25		m
	1 ; rounded top edge		1 ; curved		
	1 ; bedding in groove		2 ; ?		

5	plastic accessories [GS18.25, 18.53]	1	[accessories]		m
6	galvanised steel accessories [GS18.25, 18.53]		1 angle beads [use only where specified]		
			2 casing beads		
			3 stop beads		
			4 ?		
			1 ; curved		
			2 ; ?		

7	[pipe surrounds]	1	150 x 150 x 150		nr
	1 cement and sand (1:3) [GS18.82]	2	? x ? x ?		nr
	2 cement and granite fines (1:3) [GS18.82]				
	3 ?				
	1 ; surround to pipes above roof level				
	2 ; ?				

13 testing

1	on site delivery checks ; provide all necessary calibrated equipment and carry out tests as General Specification for Building clause ? on [select from GS18.195 to 18.203 as appropriate ; only where specifically requested]	1	*non-slip homogeneous floor tiles/glazed ceramic wall tiles/unglazed vitreous mosaic tiles/glass mosaic tiles/homogeneous coved tile skirting/homogeneous wall tiles/external facing tiles/tile adhesives/tile grouting [*select as appropriate]		item
2	quality control testing ; carry out test as General Specification for Building clause ? on [select from GS18.184 to 18.192 as appropriate ; only where specifically requested]				

3	surveillance tests for tile adhesives and tile grouting	1	tile adhesives and tile grouting		item
	1 ; provide and deliver samples to an Accredited Laboratory as General Specification for Building clause 18.193 and 18.194 [only where specifically requested]	2	wall tiling		item

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; provide samples and site
attendance for pull off tests,
remove and rectify when necessary as
General Specification for Building
clause 18.193 and 18.194 [only where
specifically requested]

*** END OF REPORT ***

PLUMBING INSTALLATION

PLUMB - PLUMBING INSTALLATION

FIRST DIVISION

- 1 COLD WATER
- 2 HOT WATER
- 3 FLUSHING WATER
- 4 POTABLE WATER
- 5 COLD WATER FOR FIRE SERVICES
- 6 COLD WATER FOR AIR-CONDITIONING
- 7 COLD WATER FOR FOUNTAIN
- 8 COLD WATER FOR SWIMMING POOL
- 9 COLD WATER FOR IRRIGATION
- 10 CLEANSING WATER
- 11 DESIGN, SUPPLY AND INSTALL RAINWATER RECYCLING SYSTEM
- 12 ?

For nos 1 to 12 above

- 1 ; internally
- 2 ; in plant room
- 3 ; externally

SECOND DIVISION

- 1 [pipework]
 - 1 UPVC pipes ; BS EN ISO 1452-2:2009 series S8 (SDR 17) PN 12.5 ; fittings [PI GS C1.2.5]
 - 2 UPVC pipes ; BS 3505:1986 Class E or BS EN ISO 1452-2:2009 series S8 ; fittings [PI GS C1.2.5]
 - 3 galvanised mild steel pipes ; medium grade (minimum) ; BS EN 10255:2004, ISO 65:1981 / BS EN 10217-1:2002 ; fittings [PI GS C1.2.1 and FS GS B1.1]
 - 4 ductile iron pipes ; BS EN 545:2010 Class 100 ; ? thickness (minimum) ; fittings ; internal cement lining and external bitumen coating [PI GS C1.2.4]
 - 5 copper pipes ; half hard temper ; BS EN 1057:2006+A1:2010 ; fittings [PI GS C1.2.2]
 - 6 copper pipes ; hard drawn temper ; BS EN 1057:2006+A1:2010 ; fittings [PI GS C1.2.2]
 - 7 copper pipes ; half hard temper ; BS EN 1057:2006+A1:2010 ; factory applied moisture resistant polyethylene sheath [PI GS C1.2.2]
 - 8 copper pipes ; hard drawn temper ; BS EN 1057:2006+A1:2010 ; factory applied moisture resistant polyethylene sheath [PI GS C1.2.2]
 - 9 copper pipes ; half hard temper ; BS EN 1057:2006+A1:2010 ; pre-insulated with factory applied thermal insulation polyethylene sheath ; internal profile ; fittings
 - 10 copper pipes ; hard drawn temper ; BS EN 1057:2006+A1:2010 ; pre-insulated with factory applied thermal insulation polyethylene sheath ; internal profile ; fittings
 - 11 stainless steel pipes ; BS EN 10312:2002+A1:2005 ; fittings [pipe size <= 50 diameter PI GS C1.2.3]
 - 12 stainless steel pipes ; BS EN 10217-7:2014 ; fittings [pipe size > 50 diameter PI GS C1.2.3]
 - 13 ?
 - 1 ; solvent welded joints
 - 2 ; screwed joints
 - 3 ; flanged and bolted joints
 - 4 ; compression joints
 - 5 ; mechanical joints
 - 6 ; joints in accordance with the

THIRD DIVISION

- 1 pipes and fittings
 - 1 ; fixed to
 - 2 ; laid on
 - 3 ; laid in
 - 4 ; suspended
 - 5 ; embedded in
 - 1 walls and columns
 - 2 soffits
 - 3 pipe ducts
 - 4 trenches
 - 5 chases
 - 6 in-situ concrete
 - 7 screeds

2 extra over pipes for

- 3 special joints and connections
 - 1 ; upvc fittings
 - 2 ; cast iron fittings
 - 1 ; joints to
 - 1 UPVC pipes
 - 2 galvanised mild steel pipes
 - 3 ductile iron pipes
 - 4 copper pipes
 - 5 stainless steel pipes

FOURTH DIVISION

- 1 [diameter]
 - 1 ? diameter
 - 2 ? outside diameter [outside diameter for copper]
-
- 1 [fittings]
 - 1 ? bends
 - 2 ? reducing bends
 - 3 ? elbows
 - 4 ? tees
 - 5 ? reducing tees
 - 6 ? crosses
 - 7 ? reducers
 - 8 ? caps
 - 9 ? flanged ends
 - 10 ? plugs
 - 11 ?

-
- 1 to suit ? diameter pipes
 - 1 ; connected to existing pipes
 - 2 ; connected to existing sanitary fittings
 - 3 ; connected to existing equipment

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	manufacturer's instructions		
	7 ; ?		
	1 ; fixing with pipe brackets [PI GS B1.5.1]		
	2 ; ?		

2	expansion loops and compensators (SM.xvii(d).8)	1 ? [give details]	1 to suit ? diameter pipes nr
	1 ; stainless steel		
	2 ; ? [state material]		

3	[ancillaries] [PI GS C1.6, C1.7]	1 [valves]	1 ? diameter nr
	1 low pressure	1 drain valves	
	2 medium pressure	2 stop valves	
	3 high pressure	3 diaphragm or ball type drain valves	
	4 bronze strainers	4 diaphragm or ball type stop valves	
	5 copper alloy strainers	5 non-return valves	
	6 UPVC strainers	6 gate valves	
	7 gunmetal strainers	7 globe valves	
	8 cast iron strainers	8 check valves	
	1 PVC valves	9 control valves	
	2 UPVC valves	10 ball float valves	
	3 brass valves	11 flushing valves	
	4 bronze valves	12 pressure reducing valves ; ? type	
	5 cast iron valves	13 loose jumper stop cocks	
	6 copper alloy valves	14 lockable irrigation water points ; ? [give details and anti-vaccum valves]	
	7 gunmetal valves	15 ?	
	8 stainless steel valves	1 ; flanged	
	9 ?	2 ; ?	
	1 ; joints to UPVC pipes	1 ; copper floats [for fresh water]	
	2 ; joints to galvanised mild steel pipes	2 ; epoxy coated copper floats [for seawater over 50 diameter]	
	3 ; joints to ductile iron pipes	3 ; plastic floats [for seawater under 50 diameter]	
	4 ; joints to copper pipes	4 ; ?	
	5 ; joints to stainless steel pipes		
	6 ?		
		2 [strainers]	
		1 strainers	
		1 ; ? type	

4	insulation [PI GS B1.7, C1.2.2]	1 pipes and fittings	1 ? diameter m
	1 ; ? [material]	1 ; UPVC	
	2 ; ? thick	2 ; galvanised mild steel	
	3 ; fixing with bands	3 ; ductile iron	
	4 ; ?	4 ; copper	
	1 ; externally	5 ; stainless steel	
	2 ; ?	6 ; ?	

PLUMB - PLUMBING INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	1 to		1 ; hot face temperature ? degrees 2 ; ?		
		2	extra over pipes for [for pipes > 50 diameter and copper pipes > 54 diameter]	1	[fittings] nr 1 ? bends 2 ? reducing bends 3 ? elbows 4 ? tees 5 ? reducing tees 6 ? crosses 7 ? reducers 8 ?
		3	[ancillaries] 1 drain valves 2 stop valves 3 gate valves 4 check valves 5 strainers 6 ?	1	? diameter nr
5	collecting from Government Logistics Department and FIXING ONLY [supplied by Employer]	1	ancillaries [Guidance note : For taps to be fixed by the Plumbing Installation Specialist only.]	1	[taps] nr 1 chromium plated pillar taps 2 chromium plated bib taps 1 ; screw down 2 ; self closing 3 ; ? 1 ; hot ; ? diameter 2 ; cold ; ? diameter
6	suppling and fixing 1 ; ? fittings 2 ; ? [state brand names for proprietary products]	1	ancillaries [Guidance note : For taps to be supplied and fixed by the Plumbing Installation Specialist only.]	1	[taps] nr 1 plastic 2 chromium plated 3 pillar taps 4 high necked pillar taps 5 bib taps 6 mixer taps 7 ? 1 as ? ref. ? 2 ref. ? 1 ; screw down 2 ; self closing 3 ; 13 diameter 4 ; 20 diameter 5 ; ?
7	[water tanks] (SM.xvii(b)7) 1 fibre-glass water tanks 2 activated carbon cartridge / sand	1	water tanks 1 ; stainless steel internal and external cat ladders	1	? litres capacity nr 2 capacity to suit complete system nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	filter, tanks; body of fibreglass reinforced plastic (FRP) / injection moulded high impact plastic; filtering media, supported nozzles, nozzle plates and filtering media supports, internal distribution and draw-off trough [Guidance note : PQS to check PS if sand filter is applicable.]	2	filter tanks		
	1 ; complete with valves, drains, vents, overflows, covers, supports, accessories and connections				
8	cold water / hot water / flushing water / cleansing water / rainwater recycling, etc. pump sets ; direct driven by electric motors ; type-tested ; complete with *cast iron / stainless steel Grade 316 / bronze split casings ; stuffing boxes ; drain piping and all accessories [*select as appropriate] (SM.xvii(b)9)	1	? type ; 1 complete with ? litre pressure vessel / pneumatic tank	1	water flow rate ? l/s ; differential static pressure ? kPa (ref. ?) nr
	1 ; centrifugal type ; volute casing				
	2 ; end suction type				
	3 ; vertical centrifugal type				
9	ultra violet treatment unit for rainwater recycling system	1	ultra violet lamp	1	to suit complete system nr
	1 water sterilizes ; complete with automatic cleaning device, control and monitoring provisions and all accessories				
10	[ancillaries for rainwater recycling system] [Guidance note : PQS to check the PS and drawings for the items to be included.]	1	[flush device]	1	to suit complete system nr
	1 flush device		1 first flush device ; complete with slow release drain valve, self draining pipes, float ball and all accessories	2	to suit ? diameter pipes nr
	2 flow meters				
	3 water meters	2	[flow meters]		
	4 pressure gauges		1 in-line flow meter ; electro-magnetic and ultrasonic type		
	5 filters				
		3	[water meters]		
			1 water meters		
		4	[pressure gauges]		
			1 pressure gauges		
		5	[filters]		
			1 vortex filters		

PLUMB - PLUMBING INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			2 sand filters		
			3 activated carbon cartridge filters		
	11 miscellaneous items for rainwater recycling system	1 Allow for		1 health risk assessment for rainwater recycling system	item
				2 water sampling and analysis for monitoring of water quality of treated rainwater	item
13 ELECTRICITY SUPPLY ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 moulded case circuit breaker (MCCB) distribution boards (SM.xviii(b)1.15) 1 ; rust proofed sheet metal construction ; IEC 61439-1:2011 and IEC 61439-2:2011 1 ; ingress protection IP41 ; spare ways provision 1 ; busbars ; integral main isolating switches (MCCBs measured separately)	1 MCCB distribution boards 1 ; double-pole 2 ; triple-pole 1 ; rated short circuit withstand current not less than ? kA 1 ; fixed to walls and columns		1 ? way ; ? A 2 blanking plates for spare ways	nr nr
	2 moulded case circuit breakers (MCCBs)	1 MCCBs ; ? pole (SM.xviii(b)1) 1 ; IEC 60947-2:2013, IP30 protection ; rated short circuit breaking capacity not less than ? kA 1 ; facility for padlocking 1 ; fixed in distribution boards 2 ; fixed to walls and columns		1 ? A	nr
	3 variable speed drives (VSDs), IEC 60068-2-6:2007, IEC 60068-2-27:2008, IEC 61000-4-2:2008, IEC 61000-4-3:2010, IEC 61000-4-4:2012, IEC 61000-4-5:2014 and ISO 9001:2015 1 ; housed in integrated enclosure, single front-access 1 ; IP20 minimum protection 2 ; IP54 minimum protection	1 for pumps		1 ? kW	nr
	4 switches, switchfuses, fuseswitches ; IEC 60947-3:2015 ; air-break type contacts	1 switches (SM.xviii(b)1.11) 2 switchfuses (SM.xviii(b)1.13) 3 fuseswitches (SM.xviii(b)1.14) For nos 1 to 3 above 1 ; SPN 2 ; TPN 1 ; for MCCB boards ; fixed to walls and columns 2 ; for equipment ; fixed to walls		1 ? A	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

and columns

5	motor starters ; air-break triple-pole electro-magnetic type, IEC 60947-4-1:2009 or IEC 62271-106:2011/CORR1:2014 (SM.xviii(b)1.17)	1 direct on line (DOL) starters 2 star-delta starters 3 auto-transformer starters	1 ? A 1 ; to suit cold water / hot water / flushing water / cleansing water / rainwater recycling, etc. pumps (ref. ?)	nr
6	solid state softstart motor starters ; power electronic type ; IEC 60068-2-6:2007, IEC 60068-2-27:2008, IEC 61000-4-2:2008, IEC 61000-4-3:2010, IEC 61000-4-4:2012 and IEC 61000-4-5:2014 (SM.xviii(b)1.17)	1 solid state softstart motor starters	1 ? A 1 ; to suit cold water / hot water / flushing water / cleansing water / rainwater recycling, etc. pumps (ref. ?)	nr
7	final circuits (SM.xviii(g)2) 1 ; approved power supply cables 2 ; PVC-insulated ; copper conductors 1 ; drawn into and including conduit / trunking ; all necessary cabling facilities ; fixing and earth continuity	1 from cold water / hot water / flushing water / cleansing water / rainwater recycling, etc. local control panel (ref. ?) 2 from isolators (isolators measured separately) 3 from fused spur units (fused spur units measured separately)	1 ? x ? mm2 ; ? core cables 1 ; to cold water / hot water / flushing water / cleansing water / rainwater recycling, etc. pumps (ref. ?) 2 ; to cold water / hot water / flushing water / cleansing water / rainwater recycling, etc. pumps local control panels (ref. ?)	nr
14	CONTROL SYSTEM - AUTOMATIC CONTROL SYSTEM (ACS) ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 ? thick local control panels (SM.xix(b)1.9) 1 control panels, hairline finished stainless steel construction 1 ; complete with indicating lights, ammeters, gauges, control switches, motor starters, contactors (motor starters and contactors measured separately), push buttons, alarm chimes, alarm indicating lights ; alarm mute buttons, control wiring ; flush galvanised iron supports and accessories and other necessary equipment to enable remote operation and monitoring of all plumbing equipment ; connection to power source 1 ; all other necessary instrument and accessories 2 steel control panels, factory built assemblies, self supporting and framing, IP41 protection ; to IEC	1 located in ? room 1 ; cold water / hot water / flushing water / cleansing water / rainwater recycling, etc. pump control panel (ref. ?)	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	61439-1:2011 and IEC 61439-2:2011			
	1 ; complete with LED indicating lamps, digital multifunction power meter, relays, timers, selectors, control switches, motor starters, contactors (motor starters and contactors measured separately), control wiring and other necessary equipment to enable remote operation and monitoring of all plumbing equipment ; connection to power source			
	1 ; all other necessary instrument and accessories			
	3 steel control panels, type tested cubicle ; to IEC 61439-1:2011 and IEC 61439-2:2011			
	1 ; complete with indicating lamps, ammeters, voltmeters, relays, timers, selectors, control switches, motor starters, contactors (motor starters and contactors measured separately), fire resistant cables, control wiring and other necessary equipment to enable remote operation and monitoring of all plumbing equipment ; connection to power source			
	1 ; all other necessary instrument and accessories			

2	emergency stops	1	emergency stops	1 for cold water / hot water / flushing water / cleansing water / rainwater recycling, etc. pumps (ref. ?) nr

3	level sensors ; complete with cut-in and cut-out, low and high water alarm	1	level sensors	1 to suit rainwater storage tank nr

4	[final circuits] (SM.xviii(g)2)	1	from cold water / hot water / flushing water / cleansing water / rainwater recycling, etc. local control panel (ref. ?)	1 to cold water / hot water / flushing water pumps (ref. ?) nr
	1 electrical control circuits ; associated with plumbing equipment			2 to ultra violet lamps nr
	1 ; connections to control panels (control panels measured separately) ; interconnecting wiring, cables, conduits, cabling facilities ; relays, contactors, sensors and control devices			3 to filter tanks nr
				4 to emergency stops nr
				5 to level sensors nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 ; all necessary instrument
and accessories

15 EXTERNAL SERVICES

- 1 cold water
- 2 cold water for irrigation
- 3 cold water for fountain
- 4 cold water for swimming pool

- 1 [pipes & fittings]
 - 1 UPVC pipes and fittings
 - 2 plastic pipes and fittings
 - 3 galvanised steel pipes and fittings
 - 4 ductile iron pipes and fittings
 - 5 stainless steel pipes and fittings
 - 6 ? pipes and fittings
 - 1 ; solvent welded joints
 - 2 ; screwed joints
 - 3 ; flanged and bolted joints
 - 4 ; ? joints
 - 1 ; laying in trenches
 - 2 ; ?

- 1 ? diameter m
- 2 extra over pipes for [fittings] nr
 - 1 ? made bends
 - 2 ? welded junctions
 - 3 ? bends
 - 4 ? elbows
 - 5 ? offsets
 - 6 ? branches
 - 7 ? tees
 - 8 ? crosses
 - 9 ?

- 2 high pressure [valves]
 - 1 PVC valves
 - 2 UPVC valves
 - 3 brass valves
 - 4 bronze valves
 - 5 cast iron valves
 - 6 copper alloy valves
 - 7 gunmetal valves
 - 8 stainless steel valves
 - 9 ?
 - 1 ; joints to
 - 2 ; ?
 - 1 UPVC pipes
 - 2 galvanised mild steel pipes
 - 3 ductile iron pipes
 - 4 copper pipes
 - 5 stainless steel pipes
 - 6 ? pipes

- 1 [valves] nr
 - 1 stop valves
 - 2 diaphragm or ball type stop valves
 - 3 gate valves
 - 4 check valves
 - 5 ?
 - 1 ; flanged
 - 2 ; ?
 - 1 ; ? diameter

- 3 pipe protection
 - 1 ; protective petroleum based tape
 - 2 ; ?
 - 1 ; wrapping around
 - 2 ; ?
 - 1 plastic pipes and fittings
 - 2 galvanised steel pipes and fittings
 - 3 cast iron pipes and fittings
 - 4 spun iron pipes and fittings
 - 5 ductile iron pipes and fittings
 - 6 copper pipes and fittings
 - 7 ?

- 1 ? diameter m

PLUMB - PLUMBING INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

5	connection to public mains outside site boundary	1	[pipes and fittings]	1	? diameter	m	
		1	galvanised steel pipes and fittings	2	extra over pipes for ? bends	nr	
		2	ductile iron pipes and fittings ; metallic zinc coated				
		1	; solvent welded joints				
		2	; flanged and bolted joints				
		1	; laying in trenches				
		2	joints of pipes to existing public mains	1	connection of ? diameter galvanised steel pipe	nr	
		1	; searching and identifying locations ; excavation, shoring and strutting, backfilling ; temporary diversion of or plugging up existing pipes, as required ; compling adaptors ; making good all works disturbed to match existing ; removing debris	2	connection of ? diameter ductile iron pipe	nr	
16	PLUMBING INSTALLATION SUNDRIES	1	the following items are in respect of the whole of Plumbing Installation	1	marking the positions of holes, mortices, chases and the like in the structure (SM.xvii(i)3)	item	
1	; internally, in plant room and externally				2	inspection, testing and commissioning of the complete Plumbing Installation ; with and including cleaning and disinfection of plumbing installation for potable use for commissioning, testing of quality of water, and re-disinfection as necessary ; remedying any defects ; re-testing as necessary (SM.xvii(i)4)	item
					1	; all as described in the Particular Specification and Part D of the General Specification for Plumbing Installation	
					3	inspection, attendance, operation and maintenance of the complete Plumbing Installation during Maintenance Period : all as described in the Particular Specification, Section E1 and E3 of the General Specification for Plumbing Installation	item
					4	providing all necessary (SM.xvii(i)5)	item
					1	power and water, diesel, gas	

and fuels in connection with testing, commissioning and maintenance

- 5 providing item
 - 1 installation drawings ; all as described in the Particular Specification and Section A4.2 of the General Specification for Plumbing Installation
 - 2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Plumbing Installation
 - 3 Operation and Maintenance (O&M) Manuals and User Manuals ; all as described in the Particular Specification and Section A4.4 of the General Specification for Plumbing Installation

- 6 providing training to Employer's staff as described in the Particular Specification, Section E1 and E2 of the General Specification for Plumbing Installation item

- 7 providing sample boards ; as described in Section A3.7 of the General Specification for Plumbing Installation item

- 8 providing (mock-up) (SM.xvii(i)10) item
 - 1 mock-up
 - 2 prototypes
 - 3 mock-up and prototypes

- 9 supplying [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described

- 10 supplying and fixing [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described

11 supplying and fixing fire stopping to walls and floors item

2 temporary operation [if specifically required]

1 temporarily operating installations
 1 ; providing a suitably qualified engineer in attendance
 2 ; ?
 1 ; ? special insurance cover
 2 ; ?

1 [installation] item
 1 hot water installation
 2 ? installation
 1 ; operating period of ? days duration
 1 ; for purpose of drying out lagging
 2 ; for purpose of operational instruction for the Employer's staff
 3 ; ?

*** END OF REPORT ***

ROOF TILING

ROOF - ROOF TILING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 CHINESE ROOF TILING [GS12.36 - 12.49]

1 clay tiles [GS12.36]
 1 ; 225 x 225 plain tiles
 2 ; 165 long tapered roll tiles
 3 ; ?
 1 ; single course, single layer
 2 ; single course, double layer
 3 ; double course, single layer
 4 ; double course, double layer
 1 ; ? degree pitch
 2 ; 50 laps [GS12.43]
 3 ; bedding and pointing in
 cement/lime mortar
 4 ; ?

1 horizontal work
 2 sloping work
 3 vertical work
 4 curved work
 5 ?

1 [surfaces] m2
 1 on concrete
 2 on timber
 3 on metal
 4 ?

6 extra over tiling for (SM.xii(a).3)

1 [eaves, ridges] m
 1 eaves courses
 2 ridges
 3 hips
 4 valleys
 5 verges
 6 ?

7 ornamental tiles
 1 ?

1 ? [give details] nr

2 PROPRIETARY ROOF TILING

1 ? tiles (SM.xii(b).2)
 2 ? wall tiles (SM.xii(b).3)
 For nos 1 to 2 above
 1 ; ? x ? tiles
 2 ; ?
 1 ; ? degree pitch (SM.xii(b).2)
 2 ; ? laps
 3 ; bedding and pointing in ?
 4 ; ?

1 horizontal work
 2 sloping work
 3 vertical work
 4 curved work
 5 ?

1 [surfaces] m2
 1 on concrete
 2 on timber
 3 on metal
 4 ?
 1 ; ? x ? battens
 2 ; ? under lay
 3 ; ?

6 abutments
 7 eaves
 8 verges
 9 ridges
 10 hips
 11 vertical angles
 12 valleys

1 special tiles ; ref. ? m
 2 ? [give method of forming] m

13 fittings

1 special tiles ; ref. ? nr
 2 ? nr

*** END OF REPORT ***

STEEL AND METAL WORKS

FIRST DIVISION

1 STRUCTURAL STEEL WORK

SECOND DIVISION

- 1 steel structure
- 1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised [GS15.02]
 - 2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated [GS15.02]
 - 3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed [GS15.02]
 - 4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised [GS15.02]
 - 5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated [GS15.02]
 - 6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed [GS15.02]
 - 7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised [GS15.02]
 - 8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated [GS15.02]
 - 9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed [GS15.02]
 - 10 ; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised [GS15.02]
 - 11 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated [GS15.02]
 - 12 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed [GS15.02]
 - 13 ; hot-finished steel to BS EN 10210-1 ; grade S275J0H ; galvanised [for hollow section only - GS15.02]
 - 14 ; hot-finished steel to BS EN 10210-1 ; grade S275J0H ; coating of zinc ; electroplated [for hollow section only - GS15.02]
 - 15 ; hot-finished steel to BS EN 10210-1 ; grade S275J0H ; coating of zinc ; sprayed [for hollow section only - GS15.02]
 - 16 ; hot-finished steel to BS EN 10210-1 ; grade S275J2H ; galvanised [for hollow section only - GS15.02]
 - 17 ; hot-finished steel to BS EN 10210-1 ; grade S275J2H ; coating of zinc ; electroplated [for hollow section only - GS15.02]
 - 18 ; hot-finished steel to BS EN 10210-1 ; grade S275J2H ; coating of

THIRD DIVISION

- 1 [members]
- 1 columns
 - 2 beams
 - 3 bracing
 - 4 purlins and cladding rails
 - 5 grillages
 - 6 built-up columns, trestles and towers
 - 7 built-up trusses and girders
 - 1 ; In nr. ?
 - 2 ; ?
- 2 [members]
- 1 overhead crane rails
 - 1 ; ? [state details of fixing clips and resilient pads and fittings]
 - 1 ; In nr. ?
 - 2 ; ?
- 3 [fittings only measured separately from the structural units where they are of a different type and / or grade of material]
- 1 ? [give items of fittings]
 - 1 ; steel to BS ? grade ?
 - 2 ; ?
 - 1 ; In nr. ?
 - 2 ; ?

FOURTH DIVISION

- 1 [sections] kg
- 1 ? x ? x ? kg universal beams
 - 2 ? x ? x ? kg universal columns
 - 3 ? x ? x ? kg joists
 - 4 ? x ? x ? kg channels
 - 5 ? x ? x ? kg tees
 - 6 ? x ? x ? kg angles
 - 7 ? thick plates
 - 8 ? x ? x ? kg square hollow sections
 - 9 ? x ? x ? kg rectangular hollow sections
 - 10 ? diameter x ? kg tubular sections
 - 11 ? diameter gauge wires
 - 12 ? diameter gauge cables
 - 13 ? diameter rods
 - 14 ? x ? bars
 - 15 ?
 - 1 ; castellated
 - 2 ; tapered
 - 3 ; curved
 - 4 ; cambered
 - 1 ; top booms [for built-up girders only]
 - 2 ; bottom booms [for built-up girders only]
 - 3 ; uprights [for built-up girders only]
 - 4 ; diagonals [for built-up girders only]
 - 5 ; ?
-
- 1 [sections] kg
- 1 ? x ? x ? kg joists
 - 2 ? x ? x ? kg castellated joists
 - 3 ? x ? x ? kg channels
 - 4 ? x ? x ? kg angles
 - 5 ? x ? x ? kg tees
 - 6 ? x ? x ? kg square hollow sections
 - 7 ? x ? x ? kg rectangular hollow sections
 - 8 ? diameter x ? kg tubular sections
 - 9 ? thick plates
 - 10 ? diameter gauge wires
 - 11 ? diameter gauge cables
 - 12 ? diameter rods
 - 13 ? x ? bars
 - 14 ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 2 ; bearing level 3.00 - 6.00m above ground level [not a major part of the structure]
- 3 ; bearing level ? - ?m above ground level [not a major part of the structure]
- 1 ; bolted fabrication
- 2 ; welded fabrication
- 3 ; riveted fabrication
- 4 ; welded and bolted fabrication
- 5 ; welded and riveted fabrication
- 6 ; bolted and riveted fabrication
- 7 ; falsework designed in accordance with BS 5531 [GS15.33 and 15.34 - only where specifically required]

- 1 ; ? [describe structure including details of design criteria and restrictions]

-
- 15 [surface treatment]
 - 1 sprayed metal coating
 - 2 protective coating
 - 3 other treatment
 - 1 ; applying painting system Type A as General Specification for Building Table 15.7
 - 2 ; applying painting system Type B as General Specification for Building Table 15.7
 - 3 ; applying painting system Type C as General Specification for Building Table 15.7
 - 4 ; applying painting system Type D as General Specification for Building Table 15.7
 - 5 ; applying painting system Type F as General Specification for Building Table 15.7
 - 6 ; applying painting system Type G as General Specification for Building Table 15.7
 - 7 ; on structural steel
 - 8 ; ? of coats in ? thick
 - 9 ; ?
 - 1 ; applied by spray
 - 2 ; before fixing
 - 3 ; ?

1 general surfaces m2

- 16 fire protection to structural steel [GS15.67]
 - 1 ; sprayed mineral coating
 - 2 ; intumescent coating system
 - 3 ; proprietary fire protection board
 - 1 ; ? hour fire rating
 - 2 ; ref. ?

2 LININGS, COVERINGS AND CLADDINGS

- 1 linings
- 2 coverings
- 3 claddings
- For nos 1 to 3 above
 - 1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised [GS15.02]
 - 2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated [GS15.02]
 - 3 ; hot-rolled steel to BS EN 10025 ;

-
- 1 sheet linings
 - 1 ; fixed to concrete
 - 2 ; fixed to ?
 - 1 ; ? thick plywood backings
 - 2 ; ? x ? hardwood grounds at ? centres both ways
 - 3 ; all necessary ? [state material] frames, angles, cleats, fixing lugs, screws and anchor bolts, etc.
 - 4 ; ?

1 ? thick to m2

- 1 walls and columns
- 2 ceilings, and sides and soffits of beams
- 3 fittings
- 4 ?
 - 1 ; 3.50 - 5.00m above floor level
 - 2 ; 5.00 - 6.50m above floor level
 - 3 ; ? - ?m above floor level

FIRST DIVISION

SECOND DIVISION

grade S275 ; coating of zinc,
sprayed [GS15.02]

4 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; galvanised [GS15.02]

5 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; coating of zinc,
electroplated [GS15.02]

6 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; coating of zinc,
sprayed [GS15.02]

7 ; hot-finished steel to BS EN 10210
; grade S275 ; galvanised [GS15.02]

8 ; hot-finished steel to BS EN 10210
; grade S275 ; coating of zinc,
electroplated [GS15.02]

9 ; hot-finished steel to BS EN 10210
; grade S275 ; coating of zinc,
sprayed [GS15.02]

10 ; hot-finished steel to BS EN 10210
; grade S355JR ; galvanised
[GS15.02]

11 ; hot-finished steel to BS EN 10210
; grade S355JR ; coating of zinc,
electroplated [GS15.02]

12 ; hot-finished steel to BS EN 10210
; grade S355JR ; coating of zinc,
sprayed [GS15.02]

13 ; hot-finished steel to BS EN
10210-1 ; grade S275J0H ; galvanised
[for hollow section only - GS15.02]

14 ; hot-finished steel to BS EN
10210-1 ; grade S275J0H ; coating of
zinc ; electroplated [for hollow
section only - GS15.02]

15 ; hot-finished steel to BS EN
10210-1 ; grade S275J0H ; coating of
zinc ; sprayed [for hollow section
only - GS15.02]

16 ; hot-finished steel to BS EN
10210-1 ; grade S275J2H ; galvanised
[for hollow section only - GS15.02]

17 ; hot-finished steel to BS EN
10210-1 ; grade S275J2H ; coating of
zinc ; electroplated [for hollow
section only - GS15.02]

18 ; hot-finished steel to BS EN
10210-1 ; grade S275J2H ; coating of
zinc ; sprayed [for hollow section
only - GS15.02]

19 ; hot-finished steel to BS EN
10210-1 ; grade S355J0H ; galvanised
[for hollow section only - GS15.02]

20 ; hot-finished steel to BS EN
10210-1 ; grade S355J0H ; coating of

THIRD DIVISION

1 ; in ? x ? maximum panels

2 ; pointing joints with
polysulphide sealant

3 ; pointing joints with ?
sealant

4 ; as drawing nr. ?

5 ; ?

FOURTH DIVISION

1 ; curved

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- zinc ; electroplated [for hollow section only - GS15.02]
- 21 ; hot-finished steel to BS EN 10210-1 ; grade S355J0H ; coating of zinc ; sprayed [for hollow section only - GS15.02]
- 22 ; hot-finished steel to BS EN 10210-1 ; grade S355J2H ; galvanised [for hollow section only - GS15.02]
- 23 ; hot-finished steel to BS EN 10210-1 ; grade S355J2H ; coating of zinc ; electroplated [for hollow section only - GS15.02]
- 24 ; hot-finished steel to BS EN 10210-1 ; grade S355J2H ; coating of zinc ; sprayed [for hollow section only - GS15.02]
- 25 ; steel to the code of practice for the structural use of steel ; galvanised [for cold formed open sections only - GS15.04]
- 26 ; steel to the code of practice for the structural use of steel ; coating of zinc ; electroplated [for cold formed open sections only - GS15.04]
- 27 ; steel to the code of practice for the structural use of steel ; coating of zinc ; sprayed [for cold formed open sections only - GS15.04]
- 28 ; steel to BS EN 10219 ; galvanised [for cold formed hollow sections only - GS15.05]
- 29 ; steel to BS EN 10219 ; coating of zinc ; electroplated [for cold formed hollow sections only - GS15.05]
- 30 ; steel to BS EN 10219 ; coating of zinc ; sprayed [for cold formed hollow sections only - GS15.05]
- 31 ; aluminium to BS ? grade ? ; anodized [GS17.07]
- 32 ; aluminium to BS ? grade ? ; ? finish [GS17.07]
- 33 ; aluminium to BS ? grade ? ; ? factory coated [GS17.07]
- 34 ; stainless steel to BS ? grade ? ; ? finish [GS17.09]
- 35 ; stainless steel to BS ? grade ? ; ? factory coated [GS17.09]

3 ROOFING AND FLASHINGS

1 [sheet metal]
1 sheet lead ; BS EN 12588 [GS12.01]

1 roofing
2 flashings

1 ? thick
1 roof coverings

m2

FIRST DIVISION

SECOND DIVISION

- 2 sheet zinc ; BS EN 988
- 3 sheet aluminium ; BS EN 485-1+A1, BS EN 515. BS EN 573-3, AW-1199 [GS12.03]
- 4 sheet copper ; BS EN 1172, CW024A ; grade ? [GS12.02]
- 5 ?

THIRD DIVISION

- For nos 1 to 2 above
- 1 ; lead tacks
- 2 ; zinc clips
- 3 ; aluminium clips
- 4 ; copper clips
- 5 ; ?
- 6 ; ? welded laps ; measured net - allow for laps
 - 1 ; nailing
 - 2 ; copper nailing
 - 3 ; close nailing at ? centres [nailing where <=50mm]
 - 4 ; close copper nailing at ? centres [nailing where <=50mm]
 - 5 ; ?
 - 1 ; on ? [under lays]
 - 2 ; ? [welded laps, standing laps and edges described]

FOURTH DIVISION

- 2 gutters, valleys and coverings to hips and ridges
- 3 aprons and flashings
- 4 stepped flashings
- 5 soakers
- 6 weatherings to cornices
- 7 cavity gutters to hollow walls
- 8 damp proof courses to hollow walls
- 9 linings to doors, walls and the like
- 10 ?
 - 1 ; flat
 - 2 ; sloping, ? degrees pitch
 - 3 ; vertical
 - 4 ; curved
- 2 ? thick isolated strips at edge of asphalt felts and the like m
 - 1 ; ? wide
 - 2 ; ? girth
 - 1 ; flat
 - 2 ; sloping, ? degrees pitch
 - 3 ; vertical
 - 4 ; curved
- 3 ? thick [cesspools, sumps, saddles] nr
 - 1 linings to cesspools ? x ? x ? deep
 - 2 linings to sumps ? x ? x ? deep
 - 3 saddle ? x ?
 - 4 ?

-
- 3 slates ; 475 x 475
 - 1 ; perforated for and with collar
 - 1 ; 75 high soldered on [for side roof outlet]
 - 2 ; 150 high soldered on [for pipes]
 - 1 to suit nr
 - 1 pipes
 - 2 side roof outlet
 - 1 not exceeding 50 diameter
 - 2 50 - 100 diameter
 - 3 ? diameter [over 100, state diameter]

-
- 4 aprons
 - 1 ; 150 high
 - 2 ; ? high
 - 1 ; securing to tops of pipes with galvanised screw clips ; pointing with mastic
 - 2 ; ?
 - 1 to suit pipes nr
 - 1 not exceeding 50 diameter
 - 2 50 - 100 diameter
 - 3 ? diameter [over 100, state diameter]
-

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		5 [dots, plugs]	1 ? [describe in details]	nr
		1 cast lead dots		
		2 soldered dots		
		3 lead plugs		
		4 ?		
		1 ; screwing and plugging		
4 DOORS, GATES, SHUTTERS, GRILLES AND HATCHES	1 [doors, sliding folding partitions, hatches, strong room doors, grilles, screens and louvres and gates]	1 [doors, hatches, sliding doors, strong room doors]	1 door size ? x ? high overall	nr
	1 doors	1 single leaf	1 ; ? nr. ? x ? high wicket door	
	2 sliding folding partitions	2 double leaves	2 ; ? nr. ? x ? high louvred openings in ? thick louvres complete with removable wire mesh	
	3 hatches	1 ; ? [state brand name]	3 ; ? [describe type of operating equipment]	
	4 strong room doors	2 ; ? thick sheet door linings	4 ; ?	
	5 grilles, screens and louvres	3 ; ? x ? x ? angle stiles and rails	1 ; type ?	
	6 gates	4 ; ? x ? x ? angle door frames	2 ; ref. ?	
	1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised	5 ; ?		
	2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated	1 ; ? hour fire-resistance rating		
	3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed	2 ; test certificate submitted for approval		
	4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised	2 [sliding folding partitions]	1 partition size ? x ? high overall	nr
	5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated	1 in ? equal leaves	1 ; ? [describe type of operating equipment]	
	6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed	2 ? folded width	1 ; type ?	
	7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised	1 ; ? [state brand name]	2 ; ref. ?	
	8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated	2 ; ? thick sheet linings		
	9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed	3 ; ? x ? x ? angle stiles and rails		
	10 ; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised	4 ; ? x ? x ? angle door frames		
	11 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated	5 ; ? x ? tracks		
	12 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed	6 ; ? x ? rails		
	13 ; aluminium ; mill finish	7 ; ? shutter hoods [give details]		
	14 ; aluminium ; polished finish	8 ; ?		
	15 ; aluminium ; clear anodised	1 ; ? hour fire resistance rating		
		2 ; test certificate submitted for approval		
		3 [grilles, screens and louvres]	1 ? x ? overall in ? units	nr
		1 single panels	1 ; type ?	
		2 composite panels	2 ; ?	
		1 ; ? x ? x ? frames		
		2 ; ? x ? x ? sub-frames		
		3 ; ? diameter grille bars at ? centres		
		4 ; plastic covered fibre glass mosquito gauze [only for flyscreen]		
		5 ; ? x ? flat horizontal louvre blades at ? vertical centres		

FIRST DIVISION

SECOND DIVISION

- 16 ; aluminium ; colour anodised
 17 ; aluminium ; hardcoat anodic finish
 18 ; stainless steel grade ? ; ? finish
 1 ; welded connections
 2 ; welded and bolted connections
 3 ; tap screwed connections
 4 ; riveted connections
 5 ; ?
 6 ; all necessary screw fixings, fixing lugs, ironmongery, fittings, etc.
 7 ; all necessary screw fixings, fixing lugs, fittings, etc. (ironmongery measured separately)
 8 ; assembling, jointing, cutting and pinning lugs
 9 ; painting backs of frames with one coat bituminous paint before fixing [aluminium only]
 10 ; bedding frames in cement mortar
 11 ; bedding frames in water-proof cement mortar [GS17.36(g) and (h)]
 12 ; pointing joints with silicone sealant
 13 ; all in accordance with the manufacturer's instructions
 14 ; as drawing nr. ?
- 2 designing, supplying and fixing [doors, sliding folding partitions, hatches, strong room doors, grilles, screens and louvres and gates]
 1 doors
 2 sliding folding partitions
 3 hatches
 4 strong room doors
 5 grilles, screens and louvres
 6 gates
 1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised
 2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated
 3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed
 4 ; hot-rolled steel to BS EN

THIRD DIVISION

- 4 [gates]
 1 single leaf
 2 double leaves
 1 ; ? x ? x ? frames
 2 ; ? x ? x ? sub-frames
 3 ; ? diameter grille bars at ? centres
 4 ; ?

FOURTH DIVISION

- 1 gate size ? x ? high overall nr
 1 ; ? [describe type of operating equipment]
 1 ; type ?
 2 ; ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 10025 ; grade S355JR ;
galvanised
- 5 ; hot-rolled steel to BS EN
10025 ; grade S355JR ; coating
of zinc, electroplated
- 6 ; hot-rolled steel to BS EN
10025 ; grade S355JR ; coating
of zinc, sprayed
- 7 ; hot-finished steel to BS EN
10210; grade S275 ; galvanised
- 8 ; hot-finished steel to BS EN
10210 ; grade S275 ; coating of
zinc, electroplated
- 9 ; hot-finished steel to BS EN
10210 ; grade S275 ; coating of
zinc, sprayed
- 10 ; hot-finished steel to BS EN
10210; grade S355JR ; galvanised
- 11 ; hot-finished steel to BS EN
10210 ; grade S355JR ; coating
of zinc, electroplated
- 12 ; hot-finished steel to BS EN
10210 ; grade S355JR ; coating
of zinc, sprayed
- 13 ; aluminium ; mill finish
- 14 ; aluminium ; polished finish
- 15 ; aluminium ; clear anodised
- 16 ; aluminium ; colour anodised
- 17 ; aluminium ; hardcoat anodic
finish
- 18 ; stainless steel grade ? ; ?
finish
- 19 ; ? [state brand name]
- 1 ; welded connections
- 2 ; welded and bolted
connections
- 3 ; tap screwed connections
- 4 ; riveted connections
- 5 ; ?
- 6 ; all necessary screw
fixings, fixing lugs,
ironmongery, fittings, etc.
- 7 ; all necessary screw
fixings, fixing lugs,
fittings, etc. (ironmongery
measured separately)
- 8 ; assembling, jointing,
cutting and pinning lugs
- 9 ; painting back of frames
with one coat bituminous
paint before fixing
[aluminium only]
- 10 ; bedding frames in cement
mortar

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 11 ; bedding frames in
water-proof cement mortar
[GS17.36(g) and (h)]
- 12 ; pointing joints with
silicone sealant
- 13 ; all in accordance with the
manufacturer's instructions
- 14 ; as drawing nr. ?

3	designing, supplying and fixing [roller shutters and grilles and folding doors - GS17.41 - 17.43]	1	[shutters, grilles]	1	? x ? clear opening size	nr
	1 roller shutters	1	roller shutters	2	?	nr
	2 roller grilles	2	roller grilles			
	3 folding doors	3	composite shutters and grilles		For nos 1 to 2 above	
	4 folding shutters		1 ; self-closing	1	; type ?	
	1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised		2 ; manually operating by chain	2	; ref. ?	
	2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated		3 ; electrically operating			
	3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed		4 ; auxiliary manual override			
	4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised		5 ; ?			
	5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated		1 ; ? hour fire resistance rating			
	6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed		2 ; activating by fusible link			
	7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised		3 ; activating by heat detector			
	8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated		4 ; activating by smoke detector			
	9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed					
	10 ; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised	2	[folding doors, folding shutters]	1	? x ? clear opening size	nr
	11 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated	1	folding doors	2	door size ? x ? overall	nr
	12 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed	2	folding shutters			
	13 ; aluminium ; mill finish		1 ; in ? equal leaves		For nos 1 to 2 above	
	14 ; aluminium ; polished finish		2 ; ? folded width	1	; type ?	
	15 ; aluminium ; clear anodised		3 ; manually operating	2	; ref. ?	
			4 ; electrically operating			
			5 ; auxiliary manual override			
			6 ; ?			
			1 ; ? hour fire resistance rating			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 16 ; ?
 1 ; ? [state brand name]
 2 ; channel guides, fixing lugs, brackets, hood casings, operating and locking devices and ironmongery
 3 ; assembling, jointing, cutting and pinning lugs
 4 ; bedding guide channels in cement mortar
 5 ; all in accordance with the manufacturer's instructions
 6 ; as drawing nr. ?

4	designing, supplying and fixing collapsible gates 1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised 2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated 3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed 4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised 5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated 6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed 7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised 8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated 9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed 10 ; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised 11 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated 12 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed 1 ; diamond pattern [standard detail 1 ; welded and riveted connections	1	collapsible gates 1 ; 6 x 50 flat framing to head 2 ; 50 x 50 x 6 angle framing to head 3 ; 6 x 50 flat framing to jambs [standard details] 4 ; 50 x 50 x 6 angle framing to jambs 5 ; ? 12 diameter fixing lugs 50 long, one end welded other end fanged 6 ; ? 12 diameter rawlbolts 100 long 7 ; 15 x 50 flat framing in top and bottom guides 8 ; ? 15 x 50 flat fixing blocks 100 long at jambs 9 ; ? 1 ; pair of 6 x 50 flat vertical end pickets to both edges of gate 2 ; pair of 6 x 50 flat vertical end pickets to both fixed edges of gate and pair of 6 x 50 flat vertical meeting pickets to both moving edges of gates 3 ; pair of 6 x 25 flat vertical running pickets at 112 centres maximum 4 ; 5 x 20 flat diagonal folding tie bars 5 ; 6 diameter riveted pivot points with brass washers and spacers at 200 centres vertically to tie bars and 400 centres vertically to running pickets 6 ; ? 1 ; ? 50 diameter x 15 wide ball bearing rollers 2 ; three retaining catches 3 ; catch hooks	1	? x ? overall	nr
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FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; as drawing nr. ?

4 ; two brass pull handles
 5 ; four brass pull handles
 6 ; locks
 7 ; ?

SECOND DIVISION		THIRD DIVISION		FOURTH DIVISION	
5	trap doors	1	comprising	1	? x ? clear opening size
	1 ; hinged		1 ; ? thick sheet coverings	2	door size ? x ? overall
	2 ; counterbalancing		2 ; ? x ? x ? door frames		
	3 ; sliding		3 ; ? x ? x ? frames		
	1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvained		4 ; ?		
	2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated				
	3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed				
	4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvained				
	5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated				
	6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed				
	7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvained				
	8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated				
	9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed				
	10 ; hot-finished steel to BS EN 10210 ; grade S355JR ; galvained				
	11 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated				
	12 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed				
	13 ; aluminium ; mill finish				
	14 ; aluminium ; polished finish				
	15 ; aluminium ; clear anodised				
	16 ; aluminium ; colour anodised				
	17 ; aluminium ; hardcoat anodic finish				
	18 ; stainless steel grade ? ; ? finish				
	1 ; welded connections				
	2 ; welded and bolted				

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- connections
- 3 ; tap screwed connections
- 4 ; riveted connections
- 5 ; ?
- 6 ; all necessary screw fixings, fixing lugs, tracks, counter balances, balance weights, restraining chains, rollers, ironmongery, fittings, etc.
- 7 ; assembling, jointing, cutting and pinning lugs
- 8 ; painting back of frames with one coat bituminous paint before fixing [aluminium only]
- 9 ; bedding frames in cement mortar
- 10 ; bedding frames in water-proof cement mortar [GS17.36(g) and (h)]
- 11 ; pointing joints with silicone sealant
- 12 ; as drawing nr. ?

- 6 hose reel doors
- 7 sprinkler inlet doors

For nos 6 to 7 above

- 1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised
- 2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated
- 3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed
- 4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised
- 5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated
- 6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed
- 7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised
- 8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated
- 9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed

- 1 single leaf
- 2 double leaves

For nos 1 to 2 above

- 1 ; comprising
- 1 ; ? thick sheet linings
- 2 ; ? x ? x ? door frames
- 3 ; ? x ? x ? frames
- 4 ; ?

- 1 door size ? x ? overall

nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 10 ; hot-finished steel to BS EN 10210
; grade S355JR ; galvanised
- 11 ; hot-finished steel to BS EN 10210
; grade S355JR ; coating of zinc,
electroplated
- 12 ; hot-finished steel to BS EN 10210
; grade S355JR ; coating of zinc,
sprayed
- 13 ; aluminium ; mill finish
- 14 ; aluminium ; polished finish
- 15 ; aluminium ; clear anodised
- 16 ; aluminium ; colour anodised
- 17 ; aluminium ; hardcoat anodic finish
- 18 ; stainless steel grade ? ; ? finish
- 19 ; welded connections
- 20 ; welded and bolted connections
- 21 ; tap screwed connections
- 22 ; riveted connections
- 23 ; ?
- 1 ; all necessary screw fixings,
fixing lugs, ironmongery,
fittings, etc.
- 2 ; assembling, jointing, cutting
and pinning lugs
- 3 ; painting back of frames with
one coat bituminous paint before
fixing [aluminium only]
- 4 ; bedding frames in cement
mortar
- 5 ; bedding frames in water-proof
cement mortar [GS17.36(g) and
(h)]
- 6 ; pointing joints with silicone
sealant
- 1 ; as drawing nr. ?

5	FRAMED WORK, STAIRS, HANDRAILS AND BALUSTRADES (SM.XV(E))	1	framed gratings	1	framing	1	[sections]	m
		2	framed grilles	2	rails	1	bars	
1	; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised	3	framed ventilators	3	louvre blades	2	flats	
2	; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated	For nos 1 to 3 above		For nos 1 to 3 above		3	rods	
3	; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed	1 ; overall size ? x ?		1 ; cranked [for louvre blades]		4	angles	
4	; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised	2 ; overall size ?		2 ; twice cranked		5	tees	
5	; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated	1 ; welded connections				6	channels	
6	; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc,	2 ; bolted connections				7	?	
		3 ; tap screwed connections				1	; ? x ?	
		1 ; In nr. ?				2	; ? diameter	
						3	; ? x ? x ?	
						1	; curved	
				4	fixing lugs	1	[sections]	nr
						1	bars	
						2	flats	

FIRST DIVISION

	sprayed
7	; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised
8	; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated
9	; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed
10	; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised
11	; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated
12	; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed
13	; aluminium ; mill finish
14	; aluminium ; polished finish
15	; aluminium ; polished and lacquered finish
16	; aluminium ; clear anodised
17	; aluminium ; colour anodised
18	; aluminium ; hardcoat anodic finish
19	; stainless steel grade ? ; mill finish
20	; stainless steel grade ? ; polished finish
21	; brass
22	; brass ; polished finish
23	; brass ; polished finish lacquered finish
24	; bronze ; polished finish
25	; nickel ; polished finish
26	; cast iron
27	; ?

SECOND DIVISION

4	framed cat ladders
1	; welded connections
2	; bolted connections
3	; tap screwed connections
4	; bolted and riveted connections
1	; In nr. ?

THIRD DIVISION

5	extra over metalwork for forming opening portions
6	[mesh] (SM.xv(e)15.1)
1	expanded steel mesh to BS 405 [GS17.03]
2	wire mesh [GS17.03]
3	insect gauze [GS17.32(m)]
1	; welding [GS17.30 for fixing wire mesh]
2	; tying
3	; stapling

1	stringers
2	rungs

FOURTH DIVISION

3	rods
4	angles
5	tees
6	channels
7	?
1	; ? x ?
2	; ? diameter
3	; ? x ? x ?
1	; ? long
2	; ? girth

1	overall size ? x ?	nr
1	; ironmongery comprising ? [give details]	
1	mesh	m2
2	gauze	m2
	For nos 1 to 2 above	
1	; galvanised	
2	; brass	
3	; plastic covered fibre-glass	
1	; ? x ? square hole interwoven	
2	; ? x ? oblong hole interwoven	
3	; ? x ? mesh per 10 square millimeters [insect mesh]	
4	; ref. ? [for mesh to BS 405]	
1	; in irregular shape, measured square	

1	[sections]	m
1	bars	
2	flats	
3	rods	
4	angles	
5	tees	
6	channels	
7	?	
1	; ? x ? *(In Nr. ?) *Note : Insert for rungs and stringers	
2	; ? diameter *(In Nr. ?) *Note : Insert for rungs and stringers	
3	; ? x ? x ? *(In Nr. ?) *Note : Insert for rungs and stringers	
1	; curved	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		3	fixing brackets		1	[sections]	nr
					1	bars	
					2	flats	
					3	rods	
					4	angles	
					5	tees	
					6	channels	
					7	?	
					1	; ? x ?	
					2	; ? diameter	
					3	; ? x ? x ?	
					1	; ? long	
					2	; ? girth	
5	framed wall mounted handrails	1	standards		1	[sections]	m
6	framed floor mounted handrails	2	balusters		1	bars	
		3	core rails		2	flats	
	For nos 5 to 6 above	4	handrails		3	rods	
	1 ; welded connections				4	angles	
	2 ; brazed connections [GS17.19]				5	tees	
	3 ; bolted connections				6	channels	
	4 ; tap screwed connections				7	?	
	1 ; to single staircase				1	; ? x ? *(In Nr. ?) *Note	
	2 ; to nr. ? staircases					: Insert for standards,	
	3 ; to ?					balusters, core rails and	
						handrails	
					2	; ? diameter *(In Nr. ?)	
						*Note : Insert for	
						standards, balusters, core	
						rails and handrails	
					3	; ? x ? x ? *(In Nr. ?)	
						*Note : Insert for	
						standards, balusters, core	
						rails and handrails	
					1	; ? x ? x ? flange	
						plate	
					2	; ? diameter flange	
						plate	
					3	; plugging and	
						screwing	
7	framed balustrades (SM.xv(e)2.4)	1	top rails		1	[sections]	m
8	framed railings (SM.xv(e)2.5)	2	bottom rails		1	bars	
		3	balusters		2	flats	
	For nos 7 to 8 above	4	core rails		3	rods	
	1 ; welded connections	5	handrails		4	angles	
	2 ; bolted connections				5	tees	
	3 ; tap screwed connections				6	channels	
	1 ; to single staircase				7	?	
	2 ; to nr. ? staircases				1	; ? x ? *(In Nr. ?) *Note	
	3 ; to ?					: Insert for top rails,	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

				bottom rails, balusters, core rails and handrails	
			2	; ? diameter *(In Nr. ?) *Note : Insert for top rails, bottom rails, balusters, core rails and handrails	
			3	; ? x ? x ? *(In Nr. ?) *Note : Insert for top rails, bottom rails, balusters, core rails and handrails	

9	mat frames	1	framing	1	overall size ? x ? nr
	1 ; welded connections		1 ; ? x ?		
	2 ; bolted connections		2 ; ? x ? x ?		
	3 ; tap screwed connections		1 bars		
			2 flats		
			3 rods		
			4 angles		
			5 tees		
			6 channels		
			7 ?		
			1 ; ? x ? x ? fixing lugs with fanged end at ? centres		

10	framed tubular handrails	1	handrails	1	tubing ; ? nominal bore *(In Nr. ?) *Note : Insert for standards and balusters m
11	framed tubular balustrades	2	standards		
		3	balusters		
	For nos 10 to 11 above				
	1 ; welded joints				
	2 ; tap screwed joints				
	3 ; screwed and socketed joints				
	1 ; to ? [give location]				
		4	extra over metalwork for forming opening portions	1	overall size ? x ? nr 1 ; ironmongery comprising ? [give details]

12	gratings and frames	1	gratings to floor channels and the like	1	? thick ; ? wide m 1 ; weighing approximately ? kg/m
			1 ; in ? lengths		
			2 ; ? x ? slots at ? centres		
			3 ; ref. ?		
		2	frames to gratings to floor channels and the like	1	[sections] m 1 bars 2 angles 3 tees 4 channels 5 ? x ? 6 ? x ? x ? 1 ; fixing by ? bolts at ? centres 2 ; fixing by screwing

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3 ; plugging
4 ; casting in

			3 gratings to openings, ventilators and the like	1 [sizes]	nr
			1 ; ? x ? x ? angle frames	1 ? x ?	
			2 ; ? diameter rods at ? centres	2 ? diameter	
				1 ; plastic covered fibre glass mosquito gauge	
				2 ; ? [details of mesh to be stated]	
6	FENCING AND GATES (SM.XV(F))	1	fencing	1 ? high	m
			1 ; erected on	1 ; setting out to a curve but straight between posts	
			2 ; ?	2 ; to ground sloping exceeding 15 degrees from the horizontal	
			1 existing paving		
			2 support walls		
			3 ?		
		1	[chain link materials]		
			1 galvanised steel wire to BS 4102 [GS24.34]		
			2 plastic coated galvanised steel wire to BS 4102 grade A [GS24.34]		
			3 plastic coated steel wire to BS 4102 grade B [GS24.34]		
			4 ?		
			1 ; netting to BS EN 10223-2 / BS EN 10223-4 / BS EN 10223-5 / BS EN 10223-6 [GS24.35]		
			2 ; netting as ? [state manufacturer and type]		
			3 ; chain link mesh		
			4 ; 3.55 diameter wire and 75 mesh		
			5 ; ? diameter wire and ? mesh		
			6 ; ? diameter straining wire		
			7 ; ? diameter selvedge wire		
			8 ; ? diameter barbed wire ; ? strands		
			9 ; straining tight		
			10 ; fixing with steel strips		
			11 ; ?		
			1 ; with and including ? x ? x ? high ? [state material of the posts] posts at ? centres		
			2 ; including all fittings, fixing screws and bolts		
			3 ; as drawing nr. ?		
		2	extra over for [end posts, angle posts, etc.]	1 [sizes, height and depth]	nr
			1 end posts	1 ? x ? x ? high above ground	
			2 angle posts	2 ? diameter x ? high above ground	
			3 integral gate posts	1 ; ? depth below ground	
			4 straining posts	2 ; ? [details of struts and backstays stated]	
			5 ?	1 ; setting in concrete bases (measured	
			1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised		

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated separately)
- 3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed 2 ; ?
- 4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised
- 5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated
- 6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed
- 7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised
- 8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated
- 9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed
- 10 ; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised
- 11 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated
- 12 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed
- 13 ; ?
 - 1 square hollow sections
 - 2 rectangular hollow sections
 - 3 tubular sections
 - 4 channels
 - 5 angles
 - 6 ?
 - 7 ; including all fittings, fixing screws and bolts

-
- 3 [independent gate posts](SM.xv(f)4) 1 [sizes, height and depth] nr
 - 1 hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised 1 ? x ? x ? high above ground
 - 2 hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated 2 ? diameter x ? high above ground
 - 3 hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed 1 ; ? depth below ground
 - 4 hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised 1 ; ? x ? x ? thick base plate ; bolted with ? nr. ? bolts
 - 2 ; setting in concrete bases (measured separately)

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 5 hot-rolled steel to BS EN 10025 ;
grade S355JR ; coating of zinc,
electroplated
- 6 hot-rolled steel to BS EN 10025 ;
grade S355JR ; coating of zinc,
sprayed
- 7 hot-finished steel to BS EN 10210 ;
grade S275 ; galvanised
- 8 hot-finished steel to BS EN 10210 ;
grade S275 ; coating of zinc,
electroplated
- 9 hot-finished steel to BS EN 10210 ;
grade S275 ; coating of zinc,
sprayed
- 10 hot-finished steel to BS EN 10210 ;
grade S355JR ; galvanised
- 11 hot-finished steel to BS EN 10210 ;
grade S355JR ; coating of zinc,
electroplated
- 12 hot-finished steel to BS EN 10210 ;
grade S355JR ; coating of zinc,
sprayed
- 1 gate posts
- 2 strut posts
- 3 ?
 - 1 ; square hollow sections
 - 2 ; rectangular hollow
sections
 - 3 ; tubular sections
 - 4 ; ?

<p>2 gates</p> <p>1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised</p> <p>2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated</p> <p>3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed</p> <p>4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised</p> <p>5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated</p> <p>6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed</p> <p>7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised</p> <p>8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated</p>	<p>1 single leaf</p> <p>2 double leaves</p> <p>For nos 1 to 2 above</p> <p>1 ; ? x ? x ? angle framing</p> <p>2 ; ? diameter tubular framing</p> <p>3 ; ? x ? x ? square hollow section framing</p> <p>4 ; ? x ? x ? rectangular hollow section framing</p> <p>1 ; ? nr. ? x ? panels infill with high tensile steel fabric ; spot welding</p> <p>2 ; ? diameter bars at ? centres</p> <p>3 ; 75 x 25 oblong hole mesh ; BS ? ; ? diameter wire ; spot welding</p> <p>4 ; ?</p> <p>5 ; including gate stops, gate catches and gate stays</p> <p>6 ; as drawing nr. ?</p>	<p>1 gate size ? x ? high overall nr</p> <p>2 ? nr</p>
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FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			1 ; maintaining over a period of ? months	
			2 ; maintaining over a period of ?	
			1 ; clearing away and making good all works distrubed	
			2 ; obtaining permission/licences, payment of related rates, fees and charges	
		2	taking over existing ? and repairing as necessary [state type of building]	
		1	? [fully described details - including kind, quality and thickness of material, finishes and surface treatments]	
		2	; adapting ? [state details]	
		3	; as drawing nr. ?	
		1	; maintaining over a period of ? months	
		2	; maintaining over a period of ?	
		1	; clearing away and making good all works distrubed	
<hr/>				
8	SUNDRIES (SM.XV(H))	1	gratings and frames	1 ? thick x ? wide m
			1 gratings to floor channels	
			2 gratings to surface water channels	
			For nos 1 to 2 above	
			1 ; cast iron	
			2 ; ?	
			1 ; in ? lengths	
			2 ; ? x ? slots at ? centres	
			3 ; ref. ?	
			4 ; ?	
<hr/>				
		3	frames to gratings for	1 [sections] m
		1	floor channels	1 bars
		2	surface water channels	2 flats
		1	; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised	3 angles
		2	; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated	4 tees
		3	; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed	5 channels
		4	; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised	1 ? x ?
		5	; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated	2 ? x ? x ?
				3 ; ? x ? x ? lugs at ? centres
				1 ; fixing by ? bolts
				2 ; screwing and plugging
				3 ; casting in

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 6 ; hot-rolled steel to BS EN
10025 ; grade S355JR ; coating
of zinc, sprayed
- 7 ; hot-finished steel to BS EN
10210 ; grade S275 ; galvanised
- 8 ; hot-finished steel to BS EN
10210 ; grade S275 ; coating of
zinc, electroplated
- 9 ; hot-finished steel to BS EN
10210 ; grade S275 ; coating of
zinc, sprayed
- 10 ; hot-finished steel to BS EN
10210 ; grade S355JR ;
galvanised
- 11 ; hot-finished steel to BS EN
10210 ; grade S355JR ; coating
of zinc, electroplated
- 12 ; hot-finished steel to BS EN
10210 ; grade S355JR ; coating
of zinc, sprayed
- 13 ; cast iron
- 14 ; ?

-
- 4 gratings or grilles to openings,
ventilators and the like
- 1 ; cast iron
- 2 ; hot-rolled steel to BS EN 10025 ;
grade S275 ; galvanised
- 3 ; hot-rolled steel to BS EN 10025 ;
grade S275 ; coating of zinc,
electroplated
- 4 ; hot-rolled steel to BS EN 10025 ;
grade S275 ; coating of zinc,
sprayed
- 5 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; galvanised
- 6 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; coating of zinc,
electroplated
- 7 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; coating of zinc,
sprayed
- 8 ; hot-finished steel to BS EN 10210
; grade S275 ; galvanised
- 9 ; hot-finished steel to BS EN 10210
; grade S275 ; coating of zinc,
electroplated
- 10 ; hot-finished steel to BS EN 10210
; grade S275 ; coating of zinc,
sprayed
- 11 ; hot-finished steel to BS EN 10210
; grade S355JR ; galvanised
- 12 ; hot-finished steel to BS EN 10210
- 1 ? x ? nr
- 2 ? diameter nr
- For nos 1 to 2 above
1 ; ref. ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- grade S355JR ; coating of zinc,
electroplated
- 6 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; coating of zinc,
sprayed
- 7 ; hot-finished steel to BS EN 10210
; grade S275 ; galvanised
- 8 ; hot-finished steel to BS EN 10210
; grade S275 ; coating of zinc,
electroplated
- 9 ; hot-finished steel to BS EN 10210
; grade S275 ; coating of zinc,
sprayed
- 10 ; hot-finished steel to BS EN 10210
; grade S355JR ; galvanised
- 11 ; hot-finished steel to BS EN 10210
; grade S355JR ; coating of zinc,
electroplated
- 12 ; hot-finished steel to BS EN 10210
; grade S355JR ; coating of zinc,
sprayed
- 13 ; aluminium ; mill finish
- 14 ; aluminium ; polished finish
- 15 ; aluminium ; polished and laquered
finish
- 16 ; aluminium ; clear anodised
- 17 ; aluminium ; colour anodised
- 18 ; aluminium ; hardcoat anodic finish
- 19 ; stainless steel grade ? ; mill
finish
- 20 ; stainless steel grade ? ; polished
finish
- 21 ; ? [state brand names for
proprietary items]
- 1 ; skirtings
- 2 ; duct skirtings
- 3 ; rails
- 4 ; duct rails
- 5 ; linings
- 6 ; channels
- 7 ; ?

-
- 4 pressed sections [surrounds] 1 ? x ? overall nr
- 5 folded sections [surrounds] 1 ? girth ? times bent
- 6 extruded sections [surrounds] 2 ? x ?
- 3 ; standard section as drawing
nr. ?
- For nos 4 to 6 above
- 1 ; hot-rolled steel to BS EN 10025 ;
grade S275 ; galvanised 4 ; non-standard section as
drawing nr. ?
- 2 ; hot-rolled steel to BS EN 10025 ;
grade S275 ; coating of zinc,
electroplated 5 ; ref. ? [state catalogue no.
for proprietary items]
- 3 ; hot-rolled steel to BS EN 10025 ; 1 ; plugging and screwing
- 2 ; fixing with screws

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- grade S275 ; coating of zinc, sprayed
- 4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised
- 5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated
- 6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed
- 7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised
- 8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated
- 9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed
- 10 ; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised
- 11 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated
- 12 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed
- 13 ; aluminium ; mill finish
- 14 ; aluminium ; polished finish
- 15 ; aluminium ; clear anodised
- 16 ; aluminium ; colour anodised
- 17 ; aluminium ; hardcoat anodic finish
- 18 ; stainless steel grade ? ; mill finish
- 19 ; stainless steel grade ? ; polished finish
- 20 ; ? [state brand names for proprietary items]
 - 1 ; window surrounds
 - 2 ; door surrounds

5	slotted steel angles [GS17.05]	1	angle framing ; bolts, nuts and washers	1	? x ? x ?	m
	1 ; self-finished					
	2 ; ? ref. ?					
	1 ; framed and bolted connections	2	rubber shoes	1	to end of ? x ? x ? angle	nr
6	hinged covers and frames	1	covers and frames	1	? x ?	nr
	1 to water tank	1	; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised	2	? x ? clear opening	nr
	2 to ?	2	; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated			
		3	; hot-rolled steel to BS EN 10025 ;			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- grade S275 ; coating of zinc, sprayed
- 4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised
- 5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated
- 6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed
- 7 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised
- 8 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated
- 9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed
- 10 ; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised
- 11 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated
- 12 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed
- 13 ; stainless steel grade ? ; mill finish
- 14 ; ?
 - 1 ; ? thick sheet covers
 - 2 ; ? thick base plates
 - 3 ; ? x ? x ? angle frames
 - 1 ; ? x ? lock plate and ? padlock
 - 2 ; including all fittings, fixing screws and bolts
 - 3 ; sealing cover in grease
 - 4 ; as drawing nr. ?

7	step irons	1	step irons	1	general purpose pattern	nr
		1	; stainless steel grade ? [for water tanks]	1	; 100 tail	
		2	; ?	2	; ? tail	
				1	; casting into concrete	
				2	; ?	
8	tactile indicators	1	warning / stop tactiles	1	floors	m2
	1 ; stainless steel	1	; ? diameter x ? thick studs	2	bands	m
	2 ; grade ?	2	; ? nrs. studs per ? x ? standard module	1	; ? wide	
	3 ; ? finish			3	? x ? [size stated]	nr
	4 ; ? shaped type	2	directional / go tactiles			
	5 ; ? fixed by ? on ?	1	; ? long strips x ? wide x ? thick			
	6 ; in accordance with the					

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
	manufacturer's instructions	studs 2 ; ? nrs. studs per ? x ? standard module	
		3 turning / positional tactiles 1 ; ? diameter x ? thick studs 2 ; ? nrs. studs per ? x ? standard module	
9 RAISED ACCESS FLOORS	1 designing, supplying and fixing raised access floor system 1 ; ? [manufacturer and specific product] 2 ; ? supporting system and frames 3 ; including pedestals, bearing pads, fixing trims and all necessary accessories to complete installation 4 ; all in accordance with the manufacturer's instructions 1 ; as drawing nr. ?	1 floors 1 ; ? high cavity 2 ; ? patterned [details stated] 2 skirtings 3 perimeter edge trims For nos 2 to 3 above 1 ; ? [state materials] 2 ; fixing with ? [state method of fixing]	1 ? thick ; ? x ? panels m2 1 ? x ? high m 2 ? x ? x ? m For nos 1 to 2 above 1 ; ref. ?
		4 ramps (SM.xv(i)3) 1 ; rising from ? to ? high 1 ; ?	1 ? thick ; ? x ? panels nr 1 ; ramp size ? x ? overall
		5 extra over ? thick panels for ? panels [state type of special panels e.g. electrical and data panels, air grilles, diffusers, perforated panels and other special panels] 1 to floors 2 to ramps	1 ? x ? nr 1 ; ref. ?
10 PROFILED SHEET ROOF COVERINGS AND WALL CLADDINGS [GS12.72 - 12.88]	1 galvanised steel corrugated sheets [GS12.72] 2 profiled steel sheets [GS12.73] 3 profiled aluminium sheets [GS12.84] 4 ? For nos 1 to 4 above 1 ; ? side laps [GS12.78] 2 ; side laps of one and a half corrugations [GS12.78] 3 ; ? end laps [GS12.78] 4 ; ? 1 ; fixing with galvanised steel 2 ; fixing with electro-plated steel 3 ; ?	1 to roofs 2 to walls 3 to soffits 4 ? For nos 1 to 4 above 1 ; ? degree pitch 1 ; fixing at 300 centres to purlins spaced at ? centres 2 ; fixing at 300 centres to sheeting rails spaced at ? centres 3 ; fixing at 300 centres to framing spaced at ? centres 4 ; ? 1 ; through underlinings	1 ? thick m2 1 ; on timber 2 ; on metal 3 ; ? 1 ; curved ; ? radius

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 4 hook bolts and nuts, drive screws, large washers, self-tapping screws, roofing bolts, nuts and clips, roofing screws and sheeting clips
- 5 ; bedding laps with an approved lap sealant
- 6 ; ?
- 1 ; ? [state extent of the work]
- 2 ; ? high above ground
- 3 ; as drawing nr. ?

- 5 extra over ? for [roof coverings or wall claddings]
- 1 translucent sheets
- 2 sheets with soaker flanges
- 3 roof light units
- 4 sheets with louvre blades
- 5 ventilators
- 6 junctions
- 7 ?

- 1 [sizes] nr
- 1 ? x ?
- 2 ? x ? x ?
- 1 ; ? [give details of construction]
- 2 ; ref. ?

- 6 accessories [GS12.74, 12.85]
- 1 ; fixing at 300 centres
- 2 ; ?
- 1 ; on timber
- 2 ; on metal
- 3 ; ?

- 1 [accessories] m
- 1 abutments
- 2 eaves
- 3 verges
- 4 ridges
- 5 hips
- 6 vertical angles
- 7 valleys
- 8 expansion joints
- 9 barge boards
- 10 skirtings
- 11 flashings
- 12 aprons and cills
- 13 gutters and linings
- 14 jambs
- 15 filler pieces
- 16 ?
- 1 ; ? x ?
- 2 ; ? x ? x ?
- 1 ; raking
- 2 ; curved ; ? radius
- 2 sleeves nr
- 3 flashings nr

- For nos 2 to 3 above
- 1 ; to holes for pipes
- 2 ; to holes for ?
- 1 ; ? x ?

- 7 cutting

- 1 raking m
- 2 curved m

- 8 firestops
- 1 ; ? [state materials and method of fixing]
- 1 ; ? hour fire-resistance rating

- 1 ? x ? m

11 PARTITIONS

1 [fixed and demountable partitions]

1 partitions

1 ? high m

FIRST DIVISION

SECOND DIVISION

- 1 designing, supplying and fixing
- 2 supplying and fixing
 - 1 fixed partitions
 - 2 demountable partitions
 - 1 ; ? [manufacturer and specific product reference]
 - 2 ; ? frames [state materials and details of frames]
 - 3 ; ? skirtings [state materials and details of skirtings]
 - 4 ; sealant, vapour barriers, isolating membranes, moisture resistant treatment and lining
 - 5 ; all necessities fitting, fixing accessories, screws, bolts and painting
 - 6 ; assembling and jointing all in strict accordance with the manufacturer's instructions
 - 7 ; as drawing nr. ?
 - 8 ; externally

THIRD DIVISION

- 1 ; ? thick overall
- 2 ; ? thick ? coverings [give kind, quality and materials of boards lining]
- 3 on one side
- 4 on both sides
 - 1 ; ? factory applied finish [msd where not at Contractor's discretion]
 - 2 ; ? site applied finish [msd where not at Contractor's discretion]
 - 1 ; fully glazed
 - 2 ; semi-glazed
 - 3 ; ? high glazing ? above ground [for semi-glazed partitions]
 - 4 ; ? hour fire resistance rating
 - 5 ; ? decibel reducing rating
 - 6 ; ?

FOURTH DIVISION

- 1 ; with sloping cills
- 2 ; with sloping heads
- 3 ; with sloping cills and heads
 - 1 ; open framing above ceiling ; ? girth [state height or girth]
 - 2 ; unfinished partitioning above ceiling ; ? girth [state height or girth]
 - 1 ; curved
 - 2 ; ref. ?

-
- 2 ? trims [state materials]
 - 1 ; as cover piece to edges
 - 2 ; as panel joints
 - 3 ; ?
 - 1 ; ? [state method of fixing]

-
- 1 ? x ? x ? m
 - 1 ; ?

-
- 3 extra over ? thick partitions for

-
- 1 [openings] nr
 - 1 openings
 - 2 doors ; ? [give details]
 - 3 windows in ? lights
 - 4 hatches ; ? [give details]
 - 5 glazed panels in ? lights
 - 6 access panels ; ? [give details]
 - 7 ; ?
 - 1 ; overall size ? x ?
 - 2 ; overall size ? diameter
 - 1 ; ? rhick ? glass
 - 2 ; fixing glass with ? [state method of fixing glass]
 - 3 ; ? nr. cut or formed holes in ? thick ? glass
 - 4 ; ironmongery comprising ? [state detail ironmongery - to doors, hatches and access panels]

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		4	fixing for heavy fittings [only for fixed partitions] 1 ; including all brackets, additional supports and fixing accessories 2 ; ?	1 sinks 2 cupboards 3 ?	nr nr nr
				For nos 1 to 3 above 1 ; approximately ? kg each	
2	[toilet cubicle partitions and office partitions] 1 designing, supplying and fixing 2 supplying and fixing 1 toilet cubicle partitions 2 office partitions 1 ; ? [manufacturer and specific product reference] 2 ; ? [give kind and quality of materials] 3 ; all necessary fittings, fixing accessories, screws, bolts and painting 4 ; assembling and jointing all in strict accordance with the manufacturer's instructions 5 ; as drawing nr. ?	1	partitions ; ? thick overall with smooth edges 1 ; ? framing [give size and material] 2 ; ? thick board linings [give thickness and material] 3 on one side 4 on both sides 1 ; ? [give details of finishes or veneers]	1 [sizes] 2 [sizes]	nr sets
				For nos 1 to 2 above 1 ? x ? high 2 ? x ? on plan ; ? high 1 ; ? nr. cubicles 2 ; ? nr. doors ; ? x ? 3 ; ? nr. longitudinal panels ; ? x ? high 4 ; ? nr. glazed partitions ; ? x ? high 5 ; ? nr. windows ; ? x ? 6 ; ? thick ? glass 1 ; fixing glass with ? [state method of fixing glass] 2 ; complete with ironmongery comprising ? [state details] for each door 3 ; ? integral metalwork 4 ; ? ducting [for office partition] 5 ; ?	
		2	fittings 1 shelves 2 trays 3 ?	1 [sizes] 1 ? x ? wide 2 ? x ? x ? high	nr
		3	? trims [state materials] 1 ; fixed at junctions of cubicles 2 ; fixed at junctions with adjoining walls 3 ?	1 ? x ? x ?	m
12	SUSPENDED CEILINGS 1 ; externally	1	ceiling	1 fixing to concrete soffits 1 ; suspension depth not exceeding 1.50m 2 ; suspension depth 1.50 - 3.00m	m2
		2	tilled or panelled ceilings metal strip ceilings		
			For nos 1 to 2 above 1 ; ? x ? x ? tiles		

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	2 ; ? x ? x ? planks		3 ; ? insulation [state type and details if it is an integral part of the ceiling]	3 ; suspension depth ? - ? [in further stage of 1.50m]
	3 ; ? thick boards		4 ; ? vapour barriers [state type and details if it is an integral part of the ceiling]	4 ; 3.50 - 5.00m above floor level
	4 ; ? x ? aluminium strips		1 ; laid to pattern as drawing nr. ?	5 ; 5.00 - 6.50m above floor level
	5 ; ? x ? x ? strips		2 ; ?	6 ; 6.50 - 8.00m above floor level
	6 ; ? [either specify name ; type ; range ; finish ; edges, etc. or to comply with a performance specification]			7 ; ? - ?m above floor level
	7 ; fully complying with the particular specification ?			1 ; curved ; ? [state details]
	8 ; ?			
	1 ; laid in and including metal support framing comprising	2 upstands and bulkheads		1 fixing vertically m
	2 exposed grid of galvanised steel T-section framing [option available on grid system]			1 ; not exceeding 600 high
	3 exposed grid of anodised aluminium T-section framing [option available on grid system]			2 ; 600 - 900 high
	4 exposed grid of galvanised steel Z-section framing	3 extra over ? [tiled ceiling or strip ceilings] for		3 ; ? - ? high [in further stage of 300]
	5 exposed grid of anodised aluminium Z-section framing			
	6 exposed grid of ?	4 cavity fire barriers ; ? [state materials and details]	1 ? overall thick m	
	7 concealed grid of galvanised steel T-section framing	1 ; plain	1 ; not exceeding 300 high	
	8 concealed grid of anodised aluminium T-section framing	2 ; obstructed by services	2 ; 300 - 600 high	
	9 concealed grid of galvanised steel Z-section framing	3 ; ?	3 ; 600 - 900 high	
	10 concealed grid of anodised aluminium Z-section framing		4 ; ? - ? high	
	11 concealed grid of ?	5 collar to sleeve passing through fire barriers [measure where integral with fire barriers] ; ? [state materials]	1 ? diameter ; ? long nr	
	12 ?	1 ; for pipes		
	1 ; metal hangers, brackets, ties, clips and fasteners, etc.	2 ; for trunking		
	2 ; ? [state suspension system]			
	3 ; incorporating integral ? [state types and details of integral fittings]	6 ? [fittings]	1 ? x ? nr	
			2 ? x ? x ? nr	
13 WINDOWS AND GLAZED DOORS	1 designing, supplying and fixing [windows, doors]	1 windows	1 ? x ? overall nr	
	1 windows	2 composite windows	1 ; in nr. ? individual units [only required for composite windows and casement doors]	
	2 windows and doors	3 glazed screens	2 ; ? fixed lights	
	3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised [GS15.02]	4 glazed doors	3 ; ? side hung opening lights	
	4 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated [GS15.02]	5 composite windows and doors	4 ; ? top hung opening lights	
			5 ; ? bottom hung opening lights	
			6 ; ? vertically centre hung	

FIRST DIVISION

SECOND DIVISION

- 5 ; hot-rolled steel to BS EN 10025 ;
grade S275 ; coating of zinc,
sprayed [GS15.02]
- 6 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; galvanised [GS15.02]
- 7 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; coating of zinc,
electroplated [GS15.02]
- 8 ; hot-rolled steel to BS EN 10025 ;
grade S355JR ; coating of zinc,
sprayed [GS15.02]
- 9 ; hot-finished steel to BS EN 10210
; grade S275 ; galvanised [GS15.02]
- 10 ; hot-finished steel to BS EN 10210
; grade S275 ; coating of zinc,
electroplated [GS15.02]
- 11 ; hot-finished steel to BS EN 10210
; grade S275 ; coating of zinc,
sprayed [GS15.02]
- 12 ; hot-finished steel to BS EN 10210
; grade S355JR ; galvanised
[GS15.02]
- 13 ; hot-finished steel to BS EN 10210
; grade S355JR ; coating of zinc,
electroplated [GS15.02]
- 14 ; hot-finished steel to BS EN 10210
; grade S355JR ; coating of zinc,
sprayed [GS15.02]
- 15 ; hot-finished steel to BS EN
10210-1 ; grade S275J0H ; galvanised
[for hollow section only - GS15.02]
- 16 ; hot-finished steel to BS EN
10210-1 ; grade S275J0H ; coating of
zinc, electroplated [for hollow
section only - GS15.02]
- 17 ; hot-finished steel to BS EN
10210-1 ; grade S275J0H ; coating of
zinc, sprayed [for hollow section
only - GS15.02]
- 18 ; hot-finished steel to BS EN
10210-1 ; grade S275J2H ; galvanised
[for hollow section only - GS15.02]
- 19 ; hot-finished steel to BS EN
10210-1 ; grade S275J2H ; coating of
zinc, electroplated [for hollow
section only - GS15.02]
- 20 ; hot-finished steel to BS EN
10210-1 ; grade S275J2H ; coating of
zinc, sprayed [for hollow section
only - GS15.02]
- 21 ; hot-finished steel to BS EN
10210-1 ; grade S355J0H ; galvanised
[for hollow section only - GS15.02]
- 22 ; hot-finished steel to BS EN

THIRD DIVISION

- 6 wind load testing
- 1 ; window units
- 2 ; composite window units
- 3 ; glazed doors
- 4 ; glazed screens
- 1 ; providing samples [GS17.35]

FOURTH DIVISION

- opening lights [GS17.32]
- 7 ; ? horizontally centre hung
opening lights
- 8 ; ? sliding opening lights
- 9 ; ? projecting opening lights
- 10 ; ?
- 1 ; side hung [glazed doors]
- 2 ; sliding
- 3 ; one side hung door
- 4 ; pair side hung doors
- 5 ; ? side hung doors
- 6 ; ?
- 1 ; ? coupling mullions
[composite windows and
casement doors]
- 2 ; ? coupling transoms
[composite windows
casement doors]
- 3 ; including
ironmongery comprising
? [fully described]
- 4 ; as drawing nr. ?
- 5 ; ?

1 ? x ? overall nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 10210-1 ; grade S355J0H ; coating of zinc, electroplated [for hollow section only - GS15.02]
- 23 ; hot-finished steel to BS EN 10210-1 ; grade S355J0H ; coating of zinc, sprayed [for hollow section only - GS15.02]
- 24 ; hot-finished steel to BS EN 10210-1 ; grade S355J2H ; galvanised [for hollow section only - GS15.02]
- 25 ; hot-finished steel to BS EN 10210-1 ; grade S355J2H ; coating of zinc, electroplated [for hollow section only - GS15.02]
- 26 ; hot-finished steel to BS EN 10210-1 ; grade S355J2H ; coating of zinc, sprayed [for hollow section only - GS15.02]
- 27 ; steel to the code of practice for the structural use of steel ; galvanised [for cold formed open sections only - GS15.04]
- 28 ; steel to the code of practice for the structural use of steel ; coating of zinc, electroplated [for cold formed open sections only - GS15.04]
- 29 ; steel to the code of practice for the structural use of steel ; coating of zinc, sprayed [for cold formed open sections only - GS15.04]
- 30 ; steel to BS EN 10219 ; galvanised [for cold formed hollow sections only - GS15.05 & 17.32]
- 31 ; steel to BS EN 10219 ; coating of zinc, electroplated [for cold formed hollow sections only - GS15.05 & 17.32]
- 32 ; steel to BS EN 10219 ; coating of zinc, sprayed [for cold formed hollow sections only - GS15.05 & 17.32]
- 33 ; aluminium ; clear anodised [GS17.33]
- 34 ; aluminium ; colour anodised
- 35 ; aluminium ; hardcoat anodic finish
- 36 ; aluminium ; organic coating finish ; painted PVDF finish
- 37 ; ?
- 1 ; glazed with ? thick ? glass [describe] in panes
- 2 ; all necessary framing, water bars, fittings, fixing lugs, brackets, bolts and ironmongery

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		3 ; rubber weatherstrip [weatherstrip only where specified]			
		4 ; PVC weatherstrip			
		5 ; nylon weatherstrip			
		6 ; suitable for internal glazing [only if specifically required otherwise GS is adequate]			
		7 ; suitable for external glazing			
		1 ; assembling, jointing, cutting and pinning lugs			
		2 ; painting backs of frames with one coat of bituminous paint before fixing [GS17.33(p) - aluminium only]			
		3 ; ?			
		4 ; bedding in mortar			
		5 ; bedding frames in water-proof cement mortar [GS17.36(g) and (h)]			
		6 ; as drawing nr. ?			

	2	remote control window opening gear	1	units to operate	1 ? opening lights nr
		1 ; hand operated [GS17.33(l)]			1 ; ?m overall vertical length of shaft
		2 ; shaft and level system			2 ; ?m overall vertical length of cable
		3 ; conduit and cable system			
		1 ; bronze or diecast zinc alloy bevel gear boxes, adjustable arms, keyed shaft			

14	SHOP FRONTS	1 designing, supplying and fixing shop fronts	1	shop fronts comprising [msd in m]	1 ? high m
	1 ; externally			1 ? x ? x ? framing at ? centres	2 ? (average) high m
		2 supplying and fixing shop fronts		2 ; ? thick ? glass panels	
				3 ; ? thick (minimum) ? glass panels	For nos 1 to 2 above
		For nos 1 to 2 above		[Guidance note : for	1 ; with sloping heads
		1 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised [GS15.02]		Contractor-designed items, Project Officers to add "(minimum)" in	2 ; with sloping cills
		2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated [GS15.02]		Particular Specifications and tender drawings]	3 ; with sloping heads and cills
		3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed [GS15.02]		4 ; ? cill boards [give sizes and thickness]	1 ; curved ; ? radius
		4 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised [GS15.02]		5 ; ? fascia panels ; ? high [give thickness and material]	2 ; curved in segment
		5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated [GS15.02]		6 ; ?	1 ; ref. ?
		6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed [GS15.02]			2 ; type ?

			2	shop fronts comprising [msd in nr.]	1 ? x ? high nr
				1 ? framing [give sizes]	2 ? x ? (average) high nr
				2 ; ? glass panels [give sizes, thickness, material and nr.]	For nos 1 to 2 above
				3 ; ? glass panels [give sizes,	1 ; with sloping heads

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FOURTH DIVISION

7	; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised [GS15.02]	minimum thickness, material and nr.] [Guidance note : for	2	; with sloping cills		
8	; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated [GS15.02]	Contractor-designed items, Project Officers to add "(minimum)" in Particular Specifications and tender drawings]	3	; with sloping heads and cills		
9	; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed [GS15.02]	4	; ? cill boards [give sizes and thickness]	1	; curved ; ? radius	
10	; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised [GS15.02]	5	; ? fascia panels [give sizes, thickness and nr.]	2	; curved in segment	
11	; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated [GS15.02]	6	; ?	1	; ref. ?	
12	; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed [GS15.02]	-----	-----	2	; type ?	
13	; hot-finished steel to BS EN 10210-1 ; grade S275J0H ; galvanised [for hollow section only - GS15.02]	3	? trims [state materials]	1	? x ? x ?	m
14	; hot-finished steel to BS EN 10210-1 ; grade S275J0H ; coating of zinc, electroplated [for hollow section only - GS15.02]	1	; to edges and joints	-----	-----	-----
15	; hot-finished steel to BS EN 10210-1 ; grade S275J0H ; coating of zinc, sprayed [for hollow section only - GS15.02]	4	extra over ? x ? high shop fronts for (SM.XV(o)5)	1	[items - shop fronts msd in nr.	nr
16	; hot-finished steel to BS EN 10210-1 ; grade S275J2H ; galvanised [for hollow section only - GS15.02]	5	extra over ? high shop fronts for (SM.XV(o)6)	1	door openings with door ; ? [state details of doors and ironmongery, etc.]	
17	; hot-finished steel to BS EN 10210-1 ; grade S275J2H ; coating of zinc, electroplated [for hollow section only - GS15.02]			2	? openings with ? [state details of additional integral components]	
18	; hot-finished steel to BS EN 10210-1 ; grade S275J2H ; coating of zinc, sprayed [for hollow section only - GS15.02]			1	; ? x ? high	
19	; hot-finished steel to BS EN 10210-1 ; grade S355J0H ; galvanised [for hollow section only - GS15.02]			2	; ? diameter	
20	; hot-finished steel to BS EN 10210-1 ; grade S355J0H ; coating of zinc, electroplated [for hollow section only - GS15.02]			3	; ref. ?	
21	; hot-finished steel to BS EN 10210-1 ; grade S355J2H ; galvanised [for hollow section only - GS15.02]			4	; type ?	
22	; hot-finished steel to BS EN 10210-1 ; grade S355J2H ; galvanised [for hollow section only - GS15.02]			2	[items - shop fronts msd in linear]	m
23	; hot-finished steel to BS EN			1	angles	
				2	intersections	
				3	ends	
				4	abutments	
				5	mullions	
				6	?	
				1	; ?	
				2	; ? x ?	
				3	; ref. ?	
				4	; type ?	

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- 10210-1 ; grade S355J2H ; coating of zinc, electroplated [for hollow section only - GS15.02]
- 24 ; hot-finished steel to BS EN 10210-1 ; grade S355J2H ; coating of zinc, sprayed [for hollow section only - GS15.02]
- 25 ; steel to the code of practice for the structural use of steel ; galvanised [for cold formed open sections only - GS15.04]
- 26 ; steel to the code of practice for the structural use of steel ; coating of zinc, electroplated [for cold formed open sections only - GS15.04]
- 27 ; steel to the code of practice for the structural use of steel ; coating of zinc, sprayed [for cold formed open sections only - GS15.04]
- 28 ; steel to BS EN 10219 ; galvanised [for cold formed hollow sections only - GS15.05 & 17.32]
- 29 ; steel to BS EN 10219 ; coating of zinc, electroplated [for cold formed hollow sections only - GS15.05 & 17.32]
- 30 ; steel to BS EN 10219 ; coating of zinc, sprayed [for cold formed hollow sections only - GS15.05 & 17.32]
- 31 ; aluminium ; mill finish
- 32 ; aluminium ; polished finish
- 33 ; aluminium ; clear anodised [GS17.33]
- 34 ; aluminium ; colour anodised
- 35 ; aluminium ; organic coating ; painted PVDF finish
- 36 ; stainless steel grade ? ; mill finish
- 37 ; stainless steel grade ? ; polished finish
- 38 ; ?
- 1 ; ? [manufacturer and specific product reference]
- 2 ; all necessary coping, flashing, glazing beads, fixing, ironmongery, gasket and sealant, painting, connections and provision of anchorages
- 3 ; all angles, intersections, ends, abutments, etc. [for shop fronts msd in nr.]
- 4 ; assembling, jointing, cutting

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SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
	and pinning lugs 5 ; as outlined on drawing nr. ? and Particular Specification ?		
15 CURTAIN WALLING [GS16.00 - 16.84] (SM.XV(Q))	1 designing, supplying and fixing curtain walling system 1 ; stainless steel ; grade ? ; polished finish 2 ; aluminium ; polished finish 3 ; aluminium ; clear anodised 4 ; aluminium ; colour anodised 5 ; aluminium ; organic coating ; painted PVDF finish 6 ; comprising framing, glazing, coping, sill, closure panel, flashing, fittings, insulation and fire resistance material 7 ; all necessary fixings, gasket and sealant, connections and provision of anchorages 8 ; ? 1 ; assembling, jointing, cutting and pinning lugs 2 ; ? 1 ; as outlined on drawing nr. ? and Particular Specification ? 2 ; ?	1 glazing panels and framing system including associated infill panels 2 extra over ? [state type of glass] glazing panels and framing system for	1 flat m2 2 sloping m2 3 curved ; ? radius m2 For nos 1 to 3 above 1 ; clear tempered glass 2 ; tinted tempered glass 3 ; ? glass 4 ; type ? 1 [opening lights, doors] nr 1 opening lights 2 doors 3 doors for fire service inlet and the like 4 ? 1 ; size ? x ? high 2 ; overall size ? x ? high 3 ; ? 1 ; top hung 2 ; side hung 3 ; single leaf 4 ; double leaves 5 ; glazing with ? glass ; ? [state type of glass and method of fixing] 6 ; ? finishes [state materials and finishes] 7 ; ? frames and ironmongery comprising ? [state details of frames and ironmongery]
		3 ? pelmet [state materials]	1 approximate ? girth in section nr
		4 ? lightweight canopy complete with roof decking and side cladding [state materials] 1 ; ?m overall height above floor level 2 ; as outlined on drawing nr. ? 3 ; ?	1 approximate overall size ? x ? on plan nr

FIRST DIVISION

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		5	? railing [state materials] 1 ; including all necessary supports 2 ? 1 ; as outlined on drawing nr. ? 2 ?	1	[sections] 1 rolled hollow sections 2 ? 1 ; ? diameter 1 ; approximately ? high to top of parapet	m
		6	? cat ladders [state materials and width]	1	approximate ? high to roof	nr
2	sundries	1	provision of samples	1	material samples and prototypes	item
				2	mock-up sample tests ; preparing and executing by an Accredited Laboratory to General Specification for Building clause 16.72	item
		2	SUPPLY ONLY replacement standby materials [GS16.28 - if only specifically required]	1	glazing system 1 ; type ? ; ? [various sizes to suit maintenance requirements GS16.28 (i)] 2 ; ?	m2
3	testing	1	[tests] 1 laboratory test 2 field test 3 ?	1	laboratory tests on mock-ups 1 ; as General Specification for Building clause 16.73 2 ; re-test as required to achieve satisfactory results	item
				2	field test on actual building 1 ; as General Specification for Building clause 16.74 2 ; re-test as required to achieve satisfactory results	item
				3	structural silicone test 1 ; as General Specification for Building clause 16.75 2 ; re-test as required to achieve satisfactory results	item
				4	proof load tests for Spider fixing 1 ; as General Specification for Building Clause 16.18 2 ; re-test as required to achieve satisfactory results	item
				5	manufacturer's tests of sealant 1 ; substrates adhesion tests	item

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				[GS16.76 (ii)]	
				2 ; substrates compatibility tests [GS16.76 (iii)]	
				6 laboratory tests on stone	item
				1 ; as General Specification for Building clause 16.77	
				7 acoustic test	item
				8 testing of finishes	item
				For nos 7 to 8 above	
				1 ; as of Particular Specification clause ?	
				2 ; re-test as required to achieve satisfactory results	
<hr/>					
16 FURNITURE, FITTINGS, SHELVING, RACKS, PLAYGROUND EQUIPMENT, ETC. (SM.XV(Q))	1 designing, supplying and fixing furniture, fittings, shelving, racks and the like	1 cupboards	1 [sizes]		nr
	2 supplying and fixing furniture, fittings, shelving, racks and the like	2 cabinets	1 ? x ? x ? high overall		
	3 designing, supplying and fixing external furniture and equipment	3 shelves	2 ? diameter x ? high overall		
	4 supplying and fixing external furniture and equipment	4 racks	1 ; ? nr. cupboard doors ; ? [state sizes, thickness and construction]		
	For nos 1 to 4 above	5 tables	2 ; ? nr. drawers ; ? [state sizes and construction]		
	1 ; ? [state product name]	6 sitting benches	3 ; ? nr. glass panels ; ? [state sizes and materials]		
	2 ; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised	7 litter bins	4 ; ironmongery comprising ? [give details]		
	3 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated	8 ?	5 ; fixed to floors		
	4 ; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed	For nos 1 to 8 above	6 ; fixed to walls		
	5 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised	1 ; ? framing [for non-proprietary items only]	7 ; ?		
	6 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated	2 ; ? thick ? *coverings / tops / worktops / fronts, backs, sides and divisions / shelves / ? [for non-proprietary items only - state material if different from parent type] [*Select as appropriate]	1 ; type ?		
	7 ; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed		2 ; L-shaped		
	8 ; hot-finished steel to BS EN 10210 ; grade S275 ; galvanised		3 ; ref. ?		
	9 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, electroplated		4 ; ?		
	10 ; hot-finished steel to BS EN 10210 ; grade S275 ; coating of zinc, sprayed				

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	11 ; hot-finished steel to BS EN 10210 ; grade S355JR ; galvanised			
	12 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, electroplated			
	13 ; hot-finished steel to BS EN 10210 ; grade S355JR ; coating of zinc, sprayed			
	14 ; aluminium ; mill finish			
	15 ; aluminium ; polished finish			
	16 ; aluminium ; clear anodised			
	17 ; stainless steel grade ? ; ? finish			
	18 ; ?			
	1 ; ? finishes and surface treatment			
	2 in manufacture			
	3 on site			
	4 off site			
	1 ; including framing, fittings, fixing bolts, screws and ironmongery			
	2 ; pointing around edges with silicone sealant			
	3 ; all necessary painting and coating			
	4 ; all in accordance with the manufacturer's instructions			
	5 ; as drawing nr. ?			
	6 ; ?			
<hr/>				
5	designing, supplying and fixing sign boards and signage	1	[sign boards and signage]	1 ? x ? nr
		1	directional signs	2 ? diameter nr
6	supplying and fixing sign boards and signage	2	parking signs	
		3	message signs	For nos 1 to 2 above
		4	exit signs	1 ; ? nr. ? high *painted / engraved / silkscreened / cut out / letters / Chinese characters / numerals / symbols / ? / etc.
		5	escape route signs	2 ; ?
For nos 5 to 6 above		6	identification signs	1 ; fixed to walls
1	; hot-rolled steel to BS EN 10025 ; grade S275 ; galvanised	7	?	2 ; fixed to steel posts
2	; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, electroplated	1	; comprising ? [give details of boards]	1 ; type ?
3	; hot-rolled steel to BS EN 10025 ; grade S275 ; coating of zinc, sprayed	2	; ? supporting frames or stands [give material and details]	2 ; ref. ?
4	; hot-rolled steel to BS EN 10025 ; grade S355JR ; galvanised	3	; ?	
5	; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, electroplated	1	; ? thick *aluminium / clear Perspex / ? / plates [*Select as appropriate]	
6	; hot-rolled steel to BS EN 10025 ; grade S355JR ; coating of zinc, sprayed	2	; reflectorized	
7	; hot-finished steel to BS EN 10210			

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FOURTH DIVISION

; grade S275 ; galvanised
 8 ; hot-finished steel to BS EN 10210
 ; grade S275 ; coating of zinc,
 electroplated
 9 ; hot-finished steel to BS EN 10210
 ; grade S275 ; coating of zinc,
 sprayed
 10 ; hot-finished steel to BS EN 10210
 ; grade S355JR ; galvanised
 11 ; hot-finished steel to BS EN 10210
 ; grade S355JR ; coating of zinc,
 electroplated
 12 ; hot-finished steel to BS EN 10210
 ; grade S355JR ; coating of zinc,
 sprayed
 13 ; aluminium ; mill finish
 14 ; aluminium ; polished finish
 15 ; aluminium ; clear anodised
 16 ; aluminium ; colour anodised
 17 ; aluminium ; hardcoat anodic finish
 18 ; aluminium ; ? finish
 19 ; stainless steel grade ? ; ? finish
 1 ; ? [state product names]
 2 ; all necessary fixing screws,
 bolts, etc.
 3 ; as drawing br. ?
 4 ; ?

7 designing, supplying and fixing playground equipment 1 ; ? [state product names] 1 ; ? finishes and surface treatment 2 in manufacture 3 on site 4 off site 1 ; including framing, fittings, fixing bolts, screws and ironmongery 2 ; all necessary painting and coating 3 ; all in accordance with the manufacturer's instructions 4 ; as drawing nr. ? 5 ; ?	1 table tennis tables 2 basketball stands 3 basketball backboards 4 ?	1 [sizes] <table border="0" style="margin-left: 20px;"> <tr> <td>1</td> <td>? x ? x ? high overall</td> <td>nr</td> </tr> <tr> <td>2</td> <td>? diameter x ? high overall</td> <td></td> </tr> <tr> <td>3</td> <td>?</td> <td></td> </tr> <tr> <td>1</td> <td>; fixed to floors</td> <td></td> </tr> <tr> <td>2</td> <td>; fixed to walls</td> <td></td> </tr> <tr> <td>1</td> <td>; type ?</td> <td></td> </tr> <tr> <td>2</td> <td>; ref. ?</td> <td></td> </tr> <tr> <td>3</td> <td>; ?</td> <td></td> </tr> </table>	1	? x ? x ? high overall	nr	2	? diameter x ? high overall		3	?		1	; fixed to floors		2	; fixed to walls		1	; type ?		2	; ref. ?		3	; ?	
1	? x ? x ? high overall	nr																								
2	? diameter x ? high overall																									
3	?																									
1	; fixed to floors																									
2	; fixed to walls																									
1	; type ?																									
2	; ref. ?																									
3	; ?																									

*** END OF REPORT ***

SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

SANITARY - SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		BS 5255:1989 [DI GS C1.1.2]	2	ogee section gutters	2	? x ?	m
	2	plastic eaves gutters and fittings ; BS EN 1329-1:2000 [DI GS C1.1.2]		1 ; fixed to walls and columns		1 ; straight	
				2 ; ?		2 ; curved	
	3	plastic eaves gutters and fittings ; BS 4514:2001 [DI GS C1.1.2]					
	4	cast iron eaves gutters and fittings ; BS 416-1:1990 [DI GS C1.1.1]	2	extra over gutters for	1	[fittings]	nr
	5	?				1 ? angles	
	1	; push-fit joints with rubber or neoprene seals				2 ? stopped ends	
	2	; bolted joints with jointing compound				3 ? outlets	
	3	; ?				4 ? stopped end outlets	
		1 ; fixing with screwed brackets [DI GS B1.3.4]				5 ?	
		2 ; fixing with pipe brackets [DI GS B1.5.1, B1.5.2]					
		3 ; ?					
4	[SANITARY AND LAVATORY FITTINGS]	1	collecting from Government Logistics Department and FIXING ONLY [Supplied by Employer]	1	vitreous china wash basins	1	[basins] nr
	1	sanitary fittings				1 560 x 405	
	2	sanitary and lavatory fittings				2 ? x ?	
		1 ; internally				3 ?	
		2 ; in plant room				1 ; taps	
		3 ; externally				2 ; waste fittings, plug and chain	
						3 ; traps	
						4 ; centre bracket and hangers ; painting	
						5 ; ?	
				2	fireclay sinks	1	[sinks] nr
						1 610 x 455 x 255	
						2 ? x ? x ?	
						3 ?	
						1 ; taps	
						2 ; waste fittings, plug and chain	
						3 ; traps	
						4 ; cantilever brackets ; painting	
						5 ; ?	
				3	vitreous enamelled steel baths	1	1700 x 700 x 380 nr
						1 ; taps	
						2 ; waste fittings, plug and chain	
						3 ; traps	
						4 ; ?	

SANITARY - SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

4	glazed ceramic shower tray	1	? x ?	nr
		1	; waste fittings	
		2	; traps	
		3	; ?	

5	W.C. suites	1	[W.C. suites]	nr
		1	vitreous china W.C. pans ; European ; horizontal outlets	
		1	; ? litres plastic high level cisterns and fittings ; traps ; plastic W.C. seats and covers	
		2	; ? litres vitreous china low level cisterns and fittings ; traps ; plastic W.C. seats and covers	

6	urinals	1	vitreous china urinal bowls	nr
		1	; concealed hangers ; spreaders ; outlet gratings ; waste fittings	
		2	vitreous china divisions ; concealed hangers	nr
		3	cisterns ; syphons ; brackets ; petcocks	nr
		1	; ? litres	

7	shower suites	1	chromium plated shower fittings	nr
		1	; type "?"	
		2	; ?	
		1	; exposed riser pipes	
		2	; concealed riser pipes	
		3	; ?	

8	macerators	1	? x ? x ?	nr

9	ancillaries	1	[fittings]	nr
		1	chromium plated waste fittings	
		2	chromium plated combined waste and overflow fittings	
		3	?	
		1	; plug, chain and stay	
		1	; ? diameter	
		2	[taps] [Guidance note : For taps not to be fixed by the Plumbing	

SANITARY - SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

Installation Specialist only.] nr
 1 chromium plated pillar taps
 2 chromium plated bib taps
 1 ; screw down
 2 ; self closing
 3 ; ?
 1 ; hot ; ? diameter
 2 ; cold ; ? diameter

3 [traps] nr
 1 plastic bottle traps
 2 brass "P" traps
 1 ; "P" trap
 2 ; "S" trap
 1 ; ? diameter

 10 toilet fittings

1 [toilet roll holders] nr
 1 chromium plated toilet roll holders
 2 enamelled lockable toilet roll holders
 3 ?

2 chromium plated towel rails nr
 1 ; locking pattern
 2 ; ?
 1 ; ? diameter
 1 ; ? long
 2 ; ?

3 chromium plated [fittings] nr
 1 tumbler and toothbrush holders
 2 washing cream dispensers
 3 shelf brackets
 4 shelf guard rails
 5 robe hooks
 6 ?
 1 ; 125 wide
 2 ; 535 x 125
 1 ; single
 2 ; double

 11 cisterns and tanks

1 [cisterns, tanks] nr
 1 cisterns
 2 tanks
 3 ?

 1 ; galvanised steel
 2 ? x ? x ?
 1 ; capacity ? litres
 2 ; ?

2 covers and frames nr

SANITARY - SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 ; bedding and haunching frame in cement mortar [PI GS Bl.9.3]
- 2 ; sealing covers in grease
- 3 ? x ? clear opening [PI GS Bl.9.3]
- 1 ; weighing approximately
 - 1 ? kg [for seawater tanks]
 - 2 ? kg [for potable water tanks]
 - 3 ?
- 4 ?

2	supplying and fixing	1	[basins]	1	[basins] [GS19.08.01]	nr
	1 ; ? fittings		1 vitreous china wash basins		1 560 x 405	
	2 ; ? [state brand names for proprietary products]		2 vitreous china wash basins as ?		2 635 x 455	
			3 vitreous china wash basins ref. ?		3 ? x ?	

- 4 ?
 - 1 ; back skirting
 - 2 ; pedestal
 - 3 ; self rimming
 - 4 ; ?
- 1 ; ref. ?
- 2 ; ?
 - 1 ; ? [associated brackets, taps, waste fittings, plugs and chains and traps can be included to avoid separate items elsewhere]
 - 2 ; ?

- 2 [brackets] [GS19.22] nr
 - 1 painted concealed brackets
 - 2 enamelled brackets
 - 3 enamelled legs and brackets
 - 4 chromium plated legs and brackets
 - 5 ?
 - 1 ; ref. ?
 - 2 ; ?

2	[sinks]	1	? x ? x ?	nr
	1 fireclay sinks		1 ; ? [associated brackets, taps, waste fittings, plugs and chains and traps can be included to avoid separate items elsewhere]	
	2 fireclay sinks as ?			
	3 fireclay sinks ref. ?			
	4 ? <ul style="list-style-type: none"> 1 ; bucket grating 2 ; hardwood rim 3 ; ? 		2 ; ?	

- 3 [baths]
 - 1 vitreous enamelled steel baths
 - 2 vitreous enamelled steel baths as ?
 - 3 vitreous enamelled steel baths ref.

SANITARY - SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- ?
 - 4 ?
 - 1 ; side panel
 - 2 ; slip resistant pad
 - 3 ; chromium plated hand grips
 - 4 ; ?

4	W.C. suites	1	[W.C. pans] [GS19.81]	nr
		1	vitreous china W.C. pans as ? ref. ? ; European ; pedestal type	
		2	vitreous china W.C. pans as ? ref. ? ; European ; wall hung type	
		3	vitreous china W.C. pans as ? ref. ? ; Asiatic ; squatting treads	
		4	? <ul style="list-style-type: none"> 1 ; horizontal outlets 2 ; vertical outlets 3 ; horizontal turned outlets 4 ; ? [associated cisterns, brackets, W.C. seats, inlets, connectors, traps, etc. can be included to avoid separate items elsewhere] 	
		2	[cisterns]	nr
		1	plastic cisterns and fittings	
		2	vitreous china cisterns and fittings	
		3	? <ul style="list-style-type: none"> 1 as ? ref. ? 2 ref. ? 3 ; low level 4 ; high level 5 ; close coupled <ul style="list-style-type: none"> 1 ; ? litres 2 ; valveless syphonic fittings 3 ; overflow 4 ; brackets 5 ; plastic flush pipes 6 ; ? 	
		3	plastic W.C. seats	nr
		1	with cover	
		2	; black	
		3	; white	
		4	; ? <ul style="list-style-type: none"> 1 ; gap front 	

SANITARY - SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 ; ?

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
5	urinals		1 vitreous china wall type urinal bowls as ? ref. ? nr 1 ; concealed hangers ; spreaders ; outlet gratings ; waste fittings 2 [urinal stalls, slabs] nr 1 vitreous china urinal stalls as ? ref. ? 2 vitreous china urinal slabs as ? ref. ? 3 ; L-shaped on plan 4 ; in single range 5 ; in range of ? 6 ; ? 1 ; spreaders ; outlet gratings ; waste fittings 1 ; ? long x ? high 2 ; ? girth x ? high 3 vitreous china divisions as ? ref. ? ; ? x ? ; concealed hangers nr 4 [automatic flushing cisterns] nr 1 plastic automatic flushing cisterns ; syphons ; chromium plated petcocks as ? ref. ? [GS19.82] 2 vitreous china automatic flushing cisterns ; syphons ; chromium plated petcocks as ? ref. ? [GS19.82] 1 ; ? litres 2 ; ? 5 [flush pipes] nr 1 chromium plated flush pipes [GS19.82] 2 plastic flush pipes 3 ? 1 ; exposed 2 ; concealed 1 ; to suit single urinal 2 ; to suit range of ? urinals 6 enamelled fireclay raised floor treads ; ? wide x ? high m 1 ; black vitreous non-slip tiles

SANITARY - SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

6	[shower suites]	1	shower suites as ? ref. ?	nr
	1		chromium plated shower fittings	
		1	; swivel heads [GS19.76]	
		2	; swivel heads with adjustable spray	
		3	; fixed heads	
		4	; detachable heads	
		1	; hot and cold mixer taps	
		2	; cold taps	
		3	; self closing cold taps	
		1	; exposed riser pipes	
		2	; concealed riser pipes	
		3	; flexible riser pipes	

7	[stainless steel sinks]	1	? x ?	nr
	1		stainless steel sinks ; satin finish	
	2		stainless steel sinks as ? ref. ? [GS19.79]	
	3		stainless steel sinks ref. ?	
	1		; single bowl	
	2		; double bowl	
	3		; single drainer	
	4		; double drainer	
	5		; back skirting	
	6		; ?	
	1		; overflow	
	2		; plug, chain and stay	
	3		; brackets	
	4		; screwing to timber	
	5		; ?	

8	ancillaries	1	[waste fittings]	nr
		1	plastic waste fittings	
		2	chromium plated waste fittings	
		3	chromium plated pop up waste fittings	
		4	?	
		1	as ? ref. ?	
		2	ref. ?	
		1	; plug and chain	
		2	; 32 diameter	
		3	; 38 diameter	
		4	; ?	
		2	[taps]	
			[Guidance note : For taps not to be supplied and fixed by the Plumbing Installation Specialist only.]	nr
		1	plastic	
		2	chromium plated	

SANITARY - SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 3 pillar taps
- 4 high necked pillar taps
- 5 bib taps
- 6 mixer taps
- 7 ?
- 1 as ? ref. ?
- 2 ref. ?
 - 1 ; screw down
 - 2 ; self closing
 - 3 ; 13 diameter
 - 4 ; 20 diameter
 - 5 ; ?

- 3 [traps] [GS19.86] nr
- 1 plastic bottle traps
- 2 chromium plated bottle traps
- 3 plastic traps
- 4 copper traps
- 5 cast iron traps
- 6 plastic bath traps with combined flexible overflow
- 7 ?
- 1 as ? ref. ?
- 2 ref. ?
 - 1 ; "P" trap ; ? seal
 - 2 ; "S" trap ; ? seal
 - 3 ; 32 diameter
 - 4 ; 38 diameter
 - 5 ; 50 diameter
 - 6 ; 75 diameter
 - 7 ; 100 diameter
 - 8 ; 150 diameter
 - 9 ; ? diameter

 9 toilet fittings

- 1 [toilet roll holders & dishes] nr
 - 1 chromium plated toilet roll holders
 - 2 enamelled toilet roll holders
 - 3 enamelled soap dishes
 - 4 ?
 - 1 as ? ref. ?
 - 2 ref. ?
 - 2 [fittings] nr
 - 1 chromium plated tumbler and toothpaste holders
 - 2 chromium plated washing cream dispensers
 - 3 ?
 - 1 as ? ref. ?
 - 2 ref. ?
-

SANITARY - SANITARY FITTINGS AND ABOVE GROUND DRAINAGE SYSTEMS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			10 cisterns and cylinders	1 ? x ? x ?	nr	
			1 [cisterns, cylinders]	2 ? diameter x ? high	nr	
			1 cisterns and covers [PI GS B1.9.1 - B1.9.3]			
			2 cylinders	For nos 1 to 2 above		
			1 ; galvanised steel	1 ; capacity ? litres		
			2 ; GRP	2 ; hand holes		
			3 ; ?	3 ; side entry immersion heater		
				4 ; top entry immersion heater		
				5 ; standard connections		
				6 ; ?		
<hr/>						
			11 boilers & cylinders	1 ? x ? x ?	nr	
			1 [boilers, cylinders]	2 ? diameter x ?	nr	
			1 boilers	3 ; hot face temperature ? degrees	nr	
			2 cisterns	4 ; ?	nr	
			3 cylinders			
			4 calorifiers			
			5 ?			
<hr/>						
5	SUNDRIES - INTERNALLY, IN PLANT ROOM AND EXTERNALLY (SM.XVII(I))	1	the following items in respect of the whole of Sanitary Fittings and Above Ground Drainage Systems	1	allow for	
				1	marking the positions of holes, mortices, chases and the like in the structure	item
				2	testing and commissioning of the complete Sanitary Fittings and Above Ground Drainage Systems ; remedying any defects ; re-testing as necessary ; all in accordance with General Specification for Plumbing Installation, General Specification for Drainage Installation, Particular Specification, Testing and Commissioning Procedure for Plumbing Installation, Testing and Commissioning procedure for Drainage Installation	item
				3	providing ? copies of as-built drawings of all installations	item
				1	; marking on pipe sizes, valve positions, draw off points, pressure valve positions and settings and any other relevant information [cross check with provisions in "Preliminaries"]	
				4	supplying and fixing pipes sleeves and packing for pipes	item
				1	passing through walls or floors in accordance with General Specification for	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- Plumbing Installation clause B1.6.1 and General Specification for Drainage Installation clause B1.6.1
- 2 passing through fire rated walls or floors in accordance with General Specification for Plumbing Installation clause B1.6.2 and General Specification for Drainage Installation clause B1.6.2
- 3 passing through external basement walls in accordance with General Specification for Plumbing Installation clauses B1.6.3 and B1.6.4 and General Specification for Drainage Installation clauses B1.6.3 and B1.6.4
- 4 passing through flat roofs in accordance with General Specification for Plumbing Installation clause B1.6.5 and General Specification for Drainage Installation clause B1.6.5
- 5 supplying and fixing fire stopping or fire collars ; as ? [state brand names for proprietary products] item
 - 1 for plastic pipes passing through fire rated walls and floors
 - 1 to achieve ? hour fire resistance rating
 - 2 ?

 2 temporary operation [if specifically required]

- 1 temporarily operating installations
 - 1 ; providing a suitably qualified engineer in attendance
 - 2 ; ?
 - 1 ; ? special insurance cover
 - 2 ; ?

- 1 [installation] item
 - 1 hot water installation
 - 2 ? installation
 - 1 ; operating period of ? days duration
 - 1 ; for purpose of drying out lagging
 - 2 ; for purpose of operational instruction for the Employer's staff
 - 3 ; ?

 *** END OF REPORT ***

STEAM BOILER SYSTEM

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:

1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	DESIGN, SUPPLY AND INSTALL STEAM BOILER SYSTEM	1	[pipework] (SM.xvii(d)2)	1	pipework and fittings	1	? diameter	m
1	; internally	1	black mild steel pipes ; BS EN 10216-1:2013 and BS EN 10217-1:2002+A1:2005 ; cast steel (class 2000) fittings ; BS EN 10242:1995 and BS 143:2000 [For steam supply pipe, up to and including 50 diameter]	1	; laid in			
2	; in plant room	2	black mild steel pipes and fittings ; BS EN 10216-1:2002 and BS EN 10217-1:2002+A1:2005 [For steam supply pipe above 50 and up to and including 150 diameter]	2	; embedded in			
3	; externally	3	black mild steel pipes ; BS EN 10255:2004 heavy grade ; malleable iron fittings ; BS EN 10242:1995 and BS 143:2000 [For condensate return pipe]	3	; suspended from			
		4	copper pipes ; BS EN 1057:2006+A1:2010 ; Table X ; non-dezincifiable compression type fittings ; BS EN 1254-4:1998 [Hot and cold water ; up to and including 65 diameter]	4	; fixed to			
		5	copper pipes ; BS EN 1057:2006+A1:2010 ; flanged fittings ; Table X [Hot water supply ; above 65 and up to and including 150 diameter]	5	; laid on	1	ducts	
		6	copper pipes and fittings ; BS EN 1057:2006+A1:2010 ; Table X and BS EN 1254-2:1998 [Cold water supply ; up to and including 65 diameter]	6	ducts	2	trenches	
		7	copper pipes ; BS EN 1057:2006+A1:2010 ; Table X ;	7	chases	3	chases	
				2	extra over pipework for	4	in-situ concrete or screeds	
						5	soffits	
						6	walls and columns	
						7	floors	
						1	[fittings]	nr
						1	? bends	
						2	? elbows	
						3	? branches	
						4	? reducers	
						5	? tees	
						6	? reducing bends	
						7	? reducing tees	
						8	? caps	
						9	? flanged ends	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	compression type fittings ; BS EN 1254-1,2,4,5:1998 [Cold water supply ; above 65 diameter]			
8	steel pipes ; BS EN 10255:2004 heavy grade ; galvanised ; malleable iron fittings ; BS EN 143 and 1256:2000, BS EN 10242:1995 [Compressed air ; up to and including 50 diameter]			
9	steel pipes ; BS EN 10255:2004 heavy grade ; galvanised ; galvanised flanged fittings ; BS EN 143 and 1256:2000, BS EN 10242:1995 [Compressed air ; 65 diameter and above]			
1	; screwed joints [steel pipes]			
2	; flanged joints [copper pipes and steel pipes]			

2	[ancillaries] (SM.xvii(d)7)	1	[valves] (SM.xvii(d)7.1)	1 ? diameter nr
1	bronze valves	1	gate valves	2 to suit ? diameter pipes nr
2	cast iron valves	2	globe valves	
3	cast steel valves	3	check valves	
4	malleable iron valves	4	butterfly valves	
5	cast iron strainers	5	pressure reducing valves ; spring-loaded relay operated type ; with steam separators	
6	gunmetal automatic air vents ; non-ferrous floats and guides ; non-corrodible valves and seats	6	safety and relief valves	
7	gunmetal automatic air vents ; stainless steel floats and guides ; non-corrodible valves and seats	7	drain valves	
8	brass automatic air vents ; non-ferrous floats and guides ; non-corrodible valves and seats	8	gate valves ; parallel slide	
9	brass automatic air vents ; stainless steel floats and guides ; non-corrodible valves and seats	-----		
10	steam traps	2	[strainers] (SM.xvii(d)7.4)	1 ? diameter nr
		1	strainers	
		1	; Y type ; operating temperature 250 degrees Celsius	

		3	[air vents]	1 ? diameter nr
		1	automatic air vents ; complete with integral lock-shield valves ; and air release pipe	2 to suit ? diameter pipes nr

		4	[steam traps] (SM.xvii(d)7.5)	1 ? diameter nr
		1	steam trap assemblies	
		1	; ball float type	

3	[instrumentation] (SM.xvii(d)16)	1	[temperature gauges]	1 to suit ? diameter pipes nr
1	temperature gauges ; insertion type ; stainless steel pockets ; scales	1	temperature gauges ; suitable for 1.5 times working pressure	
2	sight glasses, double window type ; toughed glass, SG iron body			

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3	pressure gauges ; dials calibrated	2	[sight glasses] 1 sight glasses	1	suitable for 200 degrees Celsius operating temperature	nr

		3	[pressure gauges] 1 pressure gauges ; 1 BS EN 837-1:1998 2 ISO 4126-1:2013	1	to suit ? diameter pipes	nr

4	[pipework insulation] (SM.xvii(g)2) 1 rigid glass or mineral fibre preformed section ; ISO 12241:2008, BS 5970:2012 and BS 5422:2009, Class 0 ; sealed at all joints by vapour barrier and self adhesive foil tape	1	? thick ; fixing externally to pipework and fittings	1	? diameter	m

		2	extra over ? thick fixing externally to pipework for	1	[fittings] 1 ? bends 2 ? elbows 3 ? branches 4 ? reducers 5 ? tees 6 ? reducing bends 7 ? reducing tees 8 ? caps 9 ? flanged ends	nr

5	[ancillaries insulation] (SM.xvii(g)5) 1 rigid glass or mineral fibre preformed section ; ISO 12241:2008, BS 5970:2012 and BS 5422:2009, Class 0	1	? thick ; to valves (SM.xvii(g)5.1)	1	[valves] 1 ? gate valves 2 ? globe valves 3 ? check valves 4 ? butterfly valves 5 ? pressure reducing valves 6 ? safety and relief valves 7 ? drain valves	nr

		2	? thick ; to strainers (SM.xvii(g)5.2)	1	[strainers] 1 ? strainers	nr

		3	? thick ; to air vents	1	[air vents] 1 ? air vents	nr

		4	? thick ; to steam trap assemblies (SM.xvii(g)5.3)	1	[steam traps] 1 ? steam trap assemblies	nr

6	protective coverings and finishings [to pipework] (SM.xvii(h)2) 1 ; hammered aluminium sheeting	1	0.8 thick ; fixing to ? thick insulation for	1	? diameter pipes	m

		2	extra over 0.8 thick protective coverings and finishings to ? thick	1	[fittings] 1 ? bends	nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
		insulation for	2 ? elbows 3 ? branches 4 ? reducers 5 ? tees 6 ? reducing bends 7 ? reducing tees 8 ? caps 9 ? flanged ends
7	protective coverings and finishings [to pipework ancillaries] (SM.xvii(h)5) 1 ; hammered aluminium split boxes and lids ; easy removal	1 0.8 thick ; fixing to ? thick insulation for	1 [valves] nr 1 ? gate valves 2 ? globe valves 3 ? check valves 4 ? butterfly valves 5 ? pressure reducing valves 6 ? safety and relief valves 7 ? drain valves 2 [strainers] nr 1 ? strainers 3 [air vents] nr 1 ? air vents 4 [steam traps] nr 1 ? steam trap assemblies
8	mild steel tanks ; all pipework, accessories and associated services in connection (SM.xvii(b)7)	1 condensate/feed tank ; anti-corrosion painted internally and externally	1 ? litres nr
9	water break cistern ; galvanised steel ; BS 417-2:1987 ; ion exchange resin filtering packaged equipment ; supports, accessories and connections	1 water break cistern ; supports at high level	1 ? litres nr
10	chemical dosing and water sampling ; comprising chemical injection pump, mixing tank, timer controls, pipework and ancillaries; water sampling closed cylinder and jacket, stainless steel coil, valved inlet and drain line	1 chemical dosing and water sampling ; corrosion inhibitor and field-test kit	1 for steam boiler (ref. ?) item
11	steam boilers ; BS 2790:1992 ; genuine 3-pass wet back, combustion chamber ; automatic burner ; factory assembled components and control panels (control panels measured separately) (SM.xvii(b)5)	1 steam boilers ; radiant heat type 1 ; diesel oil fired 2 ; gas fired 3 ; dual fuel	1 steam evaporating capacity ? kg/hr at ? degrees Celsius ; operating pressure ? kPa (ref. ?) nr

SBS - STEAM BOILER SYSTEM

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 ; boiler accessories ;
instrumentation ; insulations and
controls ; designed footings ;
associated services and connection
1 ; complete as in Section ? of
the Steam Boiler Installation
General Specification

3 DESIGN, SUPPLY AND INSTALL STEAM BOILER SYSTEM - ELECTRICITY SUPPLY ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 [final circuits] (SM.xviii(g)2) 1 multi-core armoured cables ; installed in outdoor underground G.I. pipes with draw wires ; all cabling facilities ; watertight protection 2 PVC cables ; run in concealed conduits with draw wires	1 from isolators (isolators measured separately) 2 from fused spur units (fused spur units measured separately)	1 ? x ? mm2 1 ; to steam boiler (ref. ?) 2 ; to steam boiler control panel (ref. ?) 3 ; to ion exchange resin filtering packaged equipment (ref. ?) 4 ; to chemical injection pump (ref. ?)	nr
4 DESIGN, SUPPLY AND INSTALL STEAM BOILER SYSTEM - CONTROL ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 [central equipment] (SM.xix(b)1) 1 control panel ; 2 thick galvanised steel sheet construction ; vermin proof ; IP 54 enclosures ; ergonomically designed	1 steam boiler control panel 1 ; wall-mounted type 2 ; floor-mounted type	1 located in plant room (ref. ?)	nr
	2 [final circuit] (SM.xviii(g)2) 1 control and monitoring circuits 1 ; approved cables 1 ; complete with cable trays, cable trunkings, conduits and fittings	1 from steam boiler control panel (ref. ?)	1 to steam boiler (ref. ?) 2 to ion exchange resin filtering packaged equipment (ref. ?) 3 to chemical injection pump (ref. ?)	nr nr nr
5 DESIGN, SUPPLY AND INSTALL STEAM BOILER SYSTEM - SUNDRIES ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY	1 the following items in respect of the whole Steam Boiler System	1 allow for	1 marking the positions of holes, mortices, chases and the like in the structure (SM.xvii(i)3) 2 inspection, testing and commissioning of the complete Steam Boiler System (SM.xvii(i)4) 1 ; all as described in the Particular Specification and Part D of the General Specification for Mechanical Installations 3 inspection, attendance, operation and maintenance during Maintenance Period 1 ; all as described in the Particular Specification, Sections E1 and E3 of the	item item item

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

General Specification for
Mechanical Installations

- 4 providing all necessary item
 - 1 power and water, diesel, gas and fuels in connection with testing, commissioning and maintenance (SM.xvii(i)5)

- 5 particular requirements on inspection and testing as described in Section C1.6 of the General Specification for Mechanical Installations item

- 6 providing item
 - 1 installation drawings ; all as described in the Particular Specification and Section A4.2 of the General Specification for Mechanical Installations
 - 2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Mechanical Installations
 - 3 Operation and Maintenance (O&M) Manuals and User Manuals ; all as described in the Particular Specification and Section A4.4 of the General Specification for Mechanical Installations

- 7 training of users and operation and maintenance agents as described in the Particular Specification, Section E1 and E2 of the General Specification for Mechanical Installations item

- 8 providing sample boards as described in Section A3.7 of the General Specification for Mechanical Installations item

- 9 supplying [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

described

- 10 supplying and fixing [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described
- 11 supplying and fixing fire stopping to walls and floors item
- 12 providing metal labels/plates as described in Section B2.1 of the General Specification for Mechanical Installations item
 - 1 for greating and oiling points
 - 2 for items of equipment requiring spare parts

*** END OF REPORT ***

STONE WORKS

STONE - STONE WORKS

FIRST DIVISION

1 STONE CONSTRUCTION [GS10.01]

SECOND DIVISION

1 [granite rubble work]
 1 ? granite ; random rubble work [GS10.12]
 2 ? granite ; squared uncoursed rubble work [GS10.13]
 3 ? granite ; squared rubble work [GS10.14]
 4 ? granite ; squared coursed rubble work [GS10.15 & GS10.16]
 5 ?
 1 ; brought upto courses ? maximum high [GS10.14] (SM.xi(a).2)
 2 ; brought upto courses average ? high (SM.xi(a).2)
 3 ; courses varying from 150 to 250 high [GS10.10(c)]
 4 ; courses ? maximum to ? minimum high [in regularly diminishing courses] (SM.xi(a).2)
 5 ; ?
 1 ; dry joints [GS10.11]
 2 ; cement mortar joints [GS10.11]
 3 ; roughly squared surface finish
 4 ; hammer dressed surface finish
 5 ; finely squared dressed surface finish
 6 ; ? surface finish
 7 ; flush pointing
 8 ; weathered pointing
 9 ; recessed pointing
 10 ; ?

THIRD DIVISION

1 [walling] (SM.xi(a).2)
 1 walling
 2 walling built against concrete or brickwork [GS10.23]
 3 ?
 1 ; projecting bonding stones
 2 ; flushing up solid at back with mortar

 2 extra over walling for

 3 [pitching to slopes, beds and sides of watercourses, etc.] (SM.xi(a).5, SM.xi(a).6)
 1 in beds and sides of watercourses
 2 in pitching to banks or slopes
 3 ?
 1 ; ? minimum thickness of stones
 2 ; ?
 1 ; on and including ? thick gravel bed
 2 ; ?

 4 cutting, toothing and bonding new walls to (SM.xi(a).4)
 1 existing ? thick ? wall each alternative course
 2 ?
 1 ; extra material
 2 ; ?

 5 preparing existing ? wall for raising (SM.xi(a).4)
 1 ?

 6 [copings, curbs and others] (SM.xi(a).7, SM.xi(a).8, SM.xi(a).9)
 1 plinth cappings
 2 cills
 3 mullions
 4 transomes
 5 cornices and string courses
 6 copings
 7 curbs, fenders and the like

FOURTH DIVISION

1 ? thick m2
 1 ; ?
 1 ; faced one side
 2 ; faced both sides
 3 ; curved ; all cutting ; templates
 4 ; ?

 1 attached columns m
 2 attached piers m
 3 ? m
 For nos 1 to 3 above
 1 ; ? wide x ? projection
 2 ; ?

 1 sloping works at ? degrees from horizontal m2
 1 ; curved
 2 ; ?

 1 ? thick m

 1 ? x ? m
 1 ; sunk
 2 ; twice sunk
 3 ; weathered
 4 ; twice weathered
 5 ; sunk weathered
 6 ; ?
 1 ; splayed
 2 ; twice splayed

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

8	architraves	3	; moulded	
9	?	4	; twice moulded	
1	; fixing with	5	; throated	
2	copper	6	; twice throated	
3	bronze	7	; straight	
4	stainless steel	8	; curved ; all cutting ; templates	
5	fixing cramps	9	; ?	
6	dowels			
7	?			
	1 ; ? x ? ; ? long			
	2 ; ? x ? ; ? girth			
	3 ; ? diameter ; ? long			
	4 ; ? diameter ; ? girth			
	5 ; at ? centres			
<hr/>				
7	steps (SM.xi(a).10, SM.xi(a).11)	1	[steps - insert N in trigger]	m
		1	straight	
		2	curved	
			1 ; ? x ?	
			2 ; ?	
		2	extra over ? [straight or curved] steps for fair ends	nr
<hr/>				
8	[bollards, seats and others]	1	[sizes]	nr
1	bollards (SM.xi(a).12)	1	? x ? x ?	
2	seats (SM.xi(a).13)	2	? diameter x ?	
3	?	3	?	
		1	; sunk	
		2	; twice sunk	
		3	; weathered	
		4	; twice weathered	
		5	; sunk weathered	
		6	; ?	
		1	; splayed	
		2	; twice splayed	
		3	; moulded	
		4	; twice moulded	
		5	; ?	
<hr/>				
9	arches (SM.xi(a).15)	1	? x ? overall	nr
10	moon gates (SM.xi(a).16)	2	? x ? x ? overall	nr
<hr/>				
For nos 9 to 10 above		For nos 1 to 2 above		
1	; semi circular in ? course	1	; to ? thick stone wall	
2	; ? course width	2	; to ? thick ? wall	
3	; templates and centering	1	; bonding to walls with ? [state method]	
4	; ?			
	1 ; as drawing nr. ?			

STONE - STONE WORKS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2 weep holes and weep pipes

1 plastic weep pipes
2 ? weep pipes [state material]

1 ? diameter x ? long nr
1 ; through ? thick walls

2 STONE FACINGS TO STRUCTURAL BACKGROUNDS
1 ; internally
2 ; externally

1 cast stone
2 marble
3 granite
4 ?

For nos 1 to 4 above
1 ; China origin
2 ; ? origin
3 ; ? x ? x ?
4 ; ? thick [thickness varies according to GS18.111]
5 ; ? [manufacturer's reference]
6 ; ? colour
7 ; ?
8 ; polished finish
9 ; flamed finish
10 ; honed finish
11 ; ? finish

1 ; bedding and jointing in semi dry mix of cement and sand (1:4) bedding [GS18.126 option for wall slabs]
2 ; bedding and jointing in cement and sand (1:3) bedding [GS18.125 option for floor slabs]
3 ; fixing with plaster dabs, copper cramps and copper hooks [GS18.126 - marble wall slabs]
4 ; fixing with ? x ? copper wall ties ? girth [GS18.126, GS10.06 and GS10.23 - stone wall slabs for heights greater than 1.2m above floor level]
5 ; fixing with continuous kerf clips in sawn grooves bedded in silicone sealant at two opposite edges of each piece of slab ; tested ; General Specification for Building section 16 Annex V [GS18.126, GS16.14 and GS16.15 - stone wall slabs for heights greater than 1.2m above floor level]
6 ; fixing with adhesive
7 ; loose laying on ?
8 ; fixing to ? with ? floor system [GS18.164 - raised accessed floor]
9 ; fixing to counter top framing with ? [state method]

1 [surfaces]
1 walls and columns
2 floors
3 ceilings including sides and soffits of beams
4 soffits of staircases
5 cills, copings, horizontal louvres, horizontal sunbreakers and the like
6 vertical fins, vertical sunbreakers and the like
7 all surfaces of fitments and the like
8 ?

1 generally m2
2 level, to falls, to falls and crossfalls and to slopes not exceeding 15 degrees from horizontal [floor only] m2
3 to slopes exceeding 15 degrees from horizontal [floor only] m2
4 flewing [soffits of staircases only] m2

For nos 1 to 4 above
1 ; on ? bedding [give thickness of bedding]
2 ; to pattern as drawing nr. ?
3 ; 3.50 - 5.00m above floor level
4 ; 5.00 - 6.50m above floor level
5 ; ? - ?m above floor level
1 ; curved

2 [treads, sills and risers]
1 treads
2 sills
3 risers

1 ? wide m
2 ? high m

For nos 1 to 2 above
1 ; undercut [riser only]
2 ; ? edges
3 ; ?
1 ; on ? bedding [give thickness of bedding]
1 ; straight
2 ; curved

3 [strings and aprons]
1 strings
2 aprons

1 ? girth on face m
1 ; ? high
2 ; ? average high
3 ; ? wide
1 ; on ? bedding [give thickness of bedding]
2 ; curved
3 ; ?

4 [skirtings and kerbs]
1 skirtings
2 kerbs

1 ? high m
2 ? wide x ? high m

For nos 1 to 2 above
1 ; raking

STONE - STONE WORKS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 to the stated thickness
[GS18.118, GS18.122,
GS18.125 - thickness varies]
- 2 ; ? additive [additive to
bedding only where
specified]
- 3 ; pointing in ?
- 4 ; plain cement
- 5 ; coloured cement
- 6 ; ?

- 2 ; following profile of treads
and risers
- 3 ; ?
- 1 ; on ? bedding [give
thickness of bedding]
- 1 ; curved

5 linings to channels

- 1 ? wide x ? deep m
- 2 ? wide x ? (average) deep m

- For nos 1 to 2 above
- 1 ; horizontal
- 2 ; to falls
- 1 ; on ? bedding [give
thickness of bedding]
- 1 ; curved

- 6 [bands in walls or in floors]
(SM.xi(b).13, SM.xi(b).14)
- 1 decorative bands in walls
- 2 projecting bands in walls
- 3 recessed bands in walls
- 4 decorative bands in floors
- 5 projecting bands in floors
- 6 recessed bands in floors
- 1 ; ? [describe decorative bands]

- 1 ? wide m
- 2 ? wide x ? deep [for recessed
bands] m
- 3 ? wide x ? projection [for
projecting bands] m
- For nos 1 to 3 above
- 1 ; ? [state material if
different from background]
- 2 ; as drawing nr. ?
- 1 ; on ? bedding [give
thickness of bedding]
- 1 ; curved

- 7 [panels in walls or in floors]
(SM.xi(b).15, SM.xi(b).16)
- 1 decorative panels in walls
- 2 projecting panels in walls
- 3 recessed panels in walls
- 4 decorative panels in floors
- 5 projecting panels in floors
- 6 recessed panels in floors
- 1 ; ? [describe decorative panels]

- 1 ? x ? nr
- 2 ? x ? overall nr
- For nos 1 to 2 above
- 1 ; ? [stage material if
different from background]
- 2 ; as drawing nr. ?
- 1 ; on ? bedding [give
thickness of bedding]

8 corner pieces (SM.xi(b).18)

- 1 [size] nr
- 1 ? x ?
- 2 ? x ? x ?
- 1 ; ? [manufacturer's
reference]
- 1 ; on ? bedding [give
thickness of bedding]

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

9 [counter tops, seats and shelves] 1 ? wide m
 (SM.xi(b).20, SM.xi(b).21, SM.xi(b).22) 2 ? x ? nr
 1 counter tops 3 ? x ? x ? overall nr
 2 seats
 3 shelves

For nos 1 to 3 above
 1 ; as drawing nr. ?
 1 ; on ? bedding [give
 thickness of bedding]
 2 ; ?

10 [fascias, skirtings, splashbacks, etc] 1 ? x ? high m
 (SM.xi(b).23, SM.xi(b).24, SM.xi(b).25) 1 ; as drawing nr. ?
 1 fascias 1 ; on ? bedding [give
 thickness of bedding]
 2 skirtings 2 ; curved
 3 splashbacks
 1 ; to counters
 2 ; to shelves
 3 ; to ?

11 bathroom and toilet vanitory slabs 1 ? x ? overall nr
 (SM.xi(b).26) 2 ? x ? x ? high overall nr

For nos 1 to 2 above
 1 ; in one piece
 1 ; ? edges
 2 ; ? profiled edges
 3 ; ? high upstands
 4 ; ? wide aprons
 5 ; ?
 1 ; cutting openings for
 one basin and tap
 2 ; cutting openings for
 ? basins and taps
 3 ; on ? bedding [give
 thickness of bedding]

12 [carved, engraved or raised letterings, 1 [size] nr
 symbols and the like] (SM.xi(b).28) 1 ? x ? overall
 1 carved 2 ? high
 2 engraved 3 ? diameter
 3 raised 4 ?
 4 ? 1 ; as drawing nr. ?
 1 English letters 2 ; ?
 2 Chinese characters
 3 numerals
 4 symbols
 5 ?

13 extra over ? [state work in which they 1 ? wide m
 occur] (SM.xi(b).19) 2 ? x ? nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

<p>1 for special units ; ? [describe in details]</p> <p>2 for access units ; ? [describe in details]</p> <p>3 for isolated special units ; ? [describe in details]</p>	<p>For nos 1 to 2 above</p> <p>1 ; ? [state manufacturer's reference]</p> <p>1 ; joints to line with adjoining work</p> <p>2 ; ?</p>
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5 accessories (SM.xi(b).27)

<p>1 [separating membranes]</p> <p>1 polythene vapour barrier</p> <p>2 ? sheet membrane</p> <p>3 ?</p> <p>1 ; lapped at joints, measured net - allow for laps</p>	<p>1 ? thick</p> <p>1 ; laid under screed</p> <p>2 ; ?</p> <p>1 ; horizontal</p> <p>2 ; vertical</p> <p>3 ; sloping</p>	<p>m2</p>
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<p>2 movement joints</p> <p>1 ; filling with polyethylene foam joint filler</p> <p>2 ; filling with epoxy grouting</p> <p>3 ; filling with hot bitumen</p> <p>4 ; filling with compressible joint filler material</p> <p>5 ; filling with ?</p> <p>1 ; pointing with ? x ? mastic sealant</p> <p>2 ; pointing with ? x ? approved sealant</p> <p>3 ; pointing with ? x ? proprietary colour epoxy sealant</p> <p>4 ; pointing with ?</p> <p>1 ; on and including backing rod</p>	<p>1 ? wide x ? deep</p> <p>1 ; horizontal</p> <p>2 ; vertical</p> <p>3 ; sloping</p> <p>1 ; curved</p> <p>2 ; ?</p>	<p>m</p>
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<p>3 [dividing and cover strips]</p> <p>1 ? plastic [GS18.87 - state colour required]</p> <p>2 brass</p> <p>3 stainless steel</p> <p>4 ?</p> <p>1 dividing strips</p> <p>2 cover strips</p> <p>3 ; bedding in screed</p> <p>4 ; ? [state method of fixing]</p> <p>1 ; stepped to profile of treads and risers</p> <p>2 ; ?</p>	<p>1 3 x 50</p> <p>2 ? x ?</p> <p>3 ? x ? x ?</p> <p>For nos 1 to 3 above</p> <p>1 ; curved</p> <p>2 ; ?</p>	<p>m</p> <p>m</p> <p>m</p>
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*** END OF REPORT ***

LOW VOLTAGE CUBICLE SWITCHBOARDS INSTALLATION

SWBI - LOW VOLTAGE CUBICLE SWITCHBOARDS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:

1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

<p>2 DESIGN, SUPPLY AND INSTALL LOW VOLTAGE CUBICLE SWITCHBOARDS INSTALLATION 1 ; in plant room</p>	<p>1 Low Voltage Cubicle Switchboard (ref. ?) ; complete with all interconnecting, control and ancillary wirings 1 ; as detailed in Section C11 of Electrical General Specification comprising :</p>	<p>1 air circuit breakers (ACBs) ; type-tested to IEC 60947-2:2013 ; horizontally withdrawable type (SM.xviii(b)1) 1 ; triple-pole with switched neutral 2 ; triple-pole with bolted neutral 1 ; complete with built-in overload protection, closing and tripping facilities of IDMT characteristics (IDMT relays measured separately) ; interlocking provisions ; contacts ; safety shutters, racking gears with indicators and padlocks ; identification labels 2 moulded case circuit breakers (MCCBs) ; type-tested to IEC 60947-2:2013 ; IP30 minimum (SM.xviii(b)1) 1 ; four pole 2 ; triple-pole 3 ; double-pole 1 ; complete with overcurrent and earth fault protection ; padlocking facilities and keys 2 ; withdrawal type ; complete with overcurrent and earth fault protection ; padlocking facilities and keys 3 ; plug-in type ; complete with overcurrent and earth fault protection ; padlocking facilities and keys</p>	<p>1 ? A ; breaking capacity ? kA nr</p>
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SWBI - LOW VOLTAGE CUBICLE SWITCHBOARDS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

3	fuseswitches ; totally enclosed, quick-make and quick-break type ; complying Electricity (Wiring) Regulations (SM.xviii(b)1)	1	? A ; utilization categories of ?	nr
4	switchfuses ; complying Electricity (Wiring) Regulations (SM.xviii(b)1)			

For nos 3 to 4 above

- 1 ; SPN
- 2 ; TPN
- 3 ; DP
- 4 ; four-pole
 - 1 ; complete with air-break type contacts ; interlocking provisions ; padlocking facilities

5	IDMT relays ; IEC 60255-1:2009, IEC 60255-21-1:1988, IEC 60255-21-2:1988 and IEC 60255-26:2013 (SM.xviii(b)1)	1	overcurrent protection relays	nr
		2	earth fault relays	nr
	1 ; electromechanical, draw-out-case type ; flush mounted			

6	meters (SM.xviii(b)1)	1	check meters	nr
		2	power factor meters	nr
		3	ammeters	nr
		4	voltmeters	nr
		5	digital multifunction power meter ; IEC 61557-12:2007	nr
		6	digital power analyzer ; IEC 61557-12:2007, IEC 61000-4-2:2008, IEC 61000-4-3:2008, IEC 61000-4-4:2007, IEC 61000-4-5:2009, IEC 61000-3-2:2004/Corr1:2009, IEC 61000-4-6:2009 and IEC 61000-4-8:2009	nr

For nos 1 to 6 above

- 1 ; complete with selector switches
- 2 ; microprocessor based

7	current transformers ; IEC 61869-2:2012 (SM.xviii(b)1)	1	? A/ ? A	nr
	1 ; for ammeters ; accuracy Class "3"			
	2 ; for digital multi-function power meters			
	3 ; for protection			
	4 ; for watt-hour meters ; accuracy			

SWBI - LOW VOLTAGE CUBICLE SWITCHBOARDS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

Class "1"

8	HRC fuses ; carrier (SM.xviii(b)1)	1	? A	nr
9	links ; neutral (SM.xviii(b)1)	1	approved type	nr
10	lamps (SM.xviii(b)1) 1 ; ? V DC 1 ; built-in transformers	1	indicating lamps	nr
11	copper busbars ; hard drawn high conductivity ; electro-tinned 1 ; triple pole and full neutral 1 ; enclosed inside low voltage cubicle switchboard	1	? A	item
12	anti-condensation heaters and thermostats in low voltage cubicle switchboards	1	approved type	item
13	copper earth bars of ample size 1 ; fixings, connections 1 ; all necessary earthing and bonding accessories			
14	switchboard ; multi-cubicle, indoor type 1 ; IEC 61439-1:2011 and IEC 61439-2:2011 ; minimum 2 thick sheet steel construction ; IP31 to IEC 60529:2013/Corr2:2015 ; complete with metering, housing and cabling compartments, C.T. chambers ; mounting brackets ; cabling facilities and supports, space provisions ; insulators ; information name plates ; warning labels ; schematic wiring and operation diagrams	1	overall size ?m long x ?m wide x ?m high 1 ; suitable for cable entry from bottom 2 ; suitable for cable entry from top	nr
15	ancillary equipment	1	hydraulic operated handling truck for handling air circuit breakers 1 ; all necessary accessories	item
		2	operating handles 1 ; jigs and the like for fixing and removing the detachable panels and normal charging,	item

SWBI - LOW VOLTAGE CUBICLE SWITCHBOARDS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			closing, opening, racking in and out operation of all circuit breakers 1 ; complete with brass hooks and fixing boards		
			3 portable earthing equipment set for each main incoming air circuit breaker	item	
			4 rubber mats ; IEC 61111:2009 ; 10 thick 1 ; placed on floors in front of and at the rear of low voltage cubicle switchboards 1 ; length to suit the low voltage cubicle switchboards	item	
			5 complete set of fuses for each rating of fuses in all fuseswitches and switchfuses 1 ; fixing wooden board	item	
			6 battery charger and batteries set ; solid state secondary d.c. power supply unit 1 ; sealed type nickel-metal-hydride battery ; voltmeter ; ammeter ; battery test facilities ; internal wiring 2 ; ventilated type nicket-metal-hydride battery ; voltmeter ; ammeter ; battery test facilities ; internal wiring 1 ; ? V D.C.	item	
<hr/>					
	2	the following facilities for items supplied and fixed by the supply company	1 Supply Company's cables between current transformers and meters	1 providing approved cabling facilities for installing the cables	item
<hr/>					
			2 Supply Company's metering equipment	1 providing insulating panels for mounting the meters 1 ; suitable fuses to protect the voltage coil circuits 1 ; fuses and fuseholders	item
<hr/>					
	3	power factor improvement system	1 power factor correction equipment (SM.xviii(b)1)	1 ? kVAR 1 ; ? stages control	nr

SWBI - LOW VOLTAGE CUBICLE SWITCHBOARDS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 ; capacitor bank ; switching facilities ; capacitor modules ; fuses, control relays, contactor switches, ammeters, etc. ; other necessary control accessories
- 1 ; housing, fixings, earthing and bonding ; internal wiring
 - 1 ; cubicle mounted
 - 2 ; external mounted

-
- 2 fuseswitches ; complying Electricity (Wiring) Regulations (SM.xviii(b)1) 1 ? A nr
 - 3 switchfuses ; complying Electricity (Wiring) Regulations (SM.xviii(b)1)

For nos 2 to 3 above

- 1 ; SPN
- 2 ; TPN
- 3 ; DP

- 4 moulded case circuit breakers (MCCBs) (SM.xviii(b)1)
 - 1 ; ? pole ; breaking capacity not less than ? kA
 - 1 ; handle lock attachment
 - 1 ; complete with padlock and three keys

-
- 3 LOW VOLTAGE CUBICLE SWITCHBOARDS INSTALLATION SUNDRIES
 - 1 ; in plant room

- 1 the following items are in respect of the whole Low Voltage Cubicle Switchboards Installation

- 1 allow for

- 1 marking the positions of holes, mortices, chases and the like in the structure (SM.xviii(j)1) item
- 2 inspection, testing and commissioning of the complete Low Voltage Cubicle Switchboards Installation and each distribution circuit before and after connection of power supply (SM.xviii(j)2) item
 - 1 ; all as described in the Particular Specification and Section C11.17 and Part D of the General Specification for Electrical Installation
- 3 inspection, attendance, operation and maintenance of the complete Low Voltage Cubicle Switchboards Installation during Maintenance Period item
 - 1 ; all as described in the Particular Specification,

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

Section E1 and E3 of the
General Specification for
Electrical Installation

- 4 providing all necessary (SM.xviii(j)3) item
 - 1 power and water, diesel, gas and fuels in connection with testing, inspection and commissioning and maintenance
- 5 providing item
 - 1 installation drawings ; all as described in the Particular Specification and Section A4.2 of the General Specification for Electrical Installation (SM.xviii(j)5)
 - 2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Electrical Installation (SM.xviii(j)7)
 - 3 Operation and Maintenance (O&M) Manuals and User Manuals ; all as described in the Particular Specification and Section A4.4 of the General Specification for Electrical Installation (SM.xviii(j)11)
- 6 providing training to Employer's staff as described in the Particular Specification, Section E1 and E2 of the General Specification for Electrical Installation item
- 7 providing sample boards ; all as described in the Particular Specification and Section A3.7 of the General Specification for Electrical Installation item
- 8 providing item
 - 1 mock-ups
 - 2 prototypes
 - 3 mock-ups and prototypes (SM.xviii(j)8)
- 9 supplying [sleeves] item
 - 1 conduit sleeves
 - 2 cable sleeves
 - 1 (sleeves fixing by others)

SWBI - LOW VOLTAGE CUBICLE SWITCHBOARDS INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

and filling holes so
formed in walls, floors
and ceilings with approved
packing materials as
described

- 10 supplying and fixing [sleeves] item
- 1 conduit sleeves
- 2 cable sleeves
 - 1 through walls, floors and
ceilings including filling
holes so formed with
approved packing materials
as described
- 11 supplying and fixing fire stopping
to walls and floors (SM.xviii-j17) item

*** END OF REPORT ***

SWIMMING POOL WATER TREATMENT INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:
 1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	WATER CIRCULATION AND FILTRATION SYSTEM	1	[pipework] (SM.xvii(d)2)	1	pipework and fittings	1	? diameter	m
	1 ; internally		1 UPVC pipes and fittings ; ISO 3127:1994, ISO 1452-1:2009 to ISO 1452-5:2009		1 ; laid in			
	2 ; in plant room		2 UPVC pipes and fittings ; DIN 8061:2009/DIN 8062:2009		2 ; embedded in			
	3 ; externally		3 UPVC pipes and fittings ; BS EN ISO 1452-1:2009 to BS EN ISO 1452-2:2009, BS EN ISO 1452-3:2010, BS EN ISO 1452-4:2009 and BS EN ISO 1452-5:2009		3 ; suspended from			
			4 copper pipes and fittings ; BS EN 1057:2006+A1:2010		4 ; fixed to			
			5 galvanised mild steel pipes and fittings ; medium grade ; BS EN 10255:2004 ; UPVC lined internally		5 ; laid on			
			6 ductile iron pipes and fittings ; BS EN 545:2010 ; cement lined internally		1 ducts			
			7 polyethylene pipes and fittings ; medium density ; BS EN 12201-1:2011 to BS EN 12201-3:2011+A1:2012, BS EN 12201-4:2012, BS EN 12201-5:2011, ISO 4427-1:2007/Corr1:2008 and ISO 4427-2:2007/Amd1:2014		2 trenches			
			8 polyethylene pipes and fittings ; high density ; ISO 4427-1:2007/Corr1:2008 and ISO 4427-2:2007/Amd1:2014		3 chases			
			9 ABS pipes and fittings ; ISO 161:1996 and ISO 727-1:2002		4 in-situ concrete or screeds			
			10 stainless steel pipes and fittings ; BS 6362:1990 or BS EN 10312:2002 ; material grade 316		5 soffits			
			11 stainless steel pipes and fittings ;		6 walls and columns			
					7 floors			
				2	extra over pipework for	1	[fittings]	nr
							1 ? bends	
							2 ? elbows	
							3 ? branches	
							4 ? reducers	
							5 ? tees	
							6 ? reducing bends	
							7 ? reducing tees	
							8 ? caps	
							9 ? flanged ends	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- BS EN 10312:2002 ; material grade 316
- 1 ; solvent welded joints [UPVC, ABS pipes]
 - 2 ; welded joints [ductile iron pipes]
 - 3 ; screwed joints [ductile iron, stainless steel, lined galvanised steel pipes]
 - 4 ; flanged joints [UPVC, copper, lined galvanised steel pipes]
 - 5 ; capillary joints [copper pipes]
 - 6 ; electrofusion socket joints [polyethylene pipes]
 - 7 ; compression joints [stainless steel pipes]
 - 8 ; argon welded joints [stainless steel pipes]

2	[ancillaries] (SM.xvii(d)7)	1	[valves] (SM.xvii(d)7.1)	1	? diameter	nr
1	bronze valves	1	gate valves	2	to suit ? diameter pipes	nr
2	cast iron valves	2	globe valves			
3	PVC valves	3	check valves			
4	ductile iron valves	4	butterfly valves			
5	stainless steel valves	5	ball float valves			
6	flow meters ; flow sensors ; integral signal converter/transmitter ; digital display unit ; direct reading	6	motorized control valves and solenoid valves			
7	gunmetal strainers	7	isolating valves			
8	bronze strainers	8	regulating valves			
9	cast iron strainers	9	double regulating valves			
10	brass automatic air vents	10	drain valves			
11	gunmetal automatic air vents	2	[flow meters] (SM.xvii(d)7.2)	1	to suit ? diameter pipes	nr
1	; non-ferrous floats and guides [automatic air vents]	1	flow meters			
2	; stainless steel floats and guides [automatic air vents]	1	; electromagnetic and ultrasonic			
1	; non-corrodible valves and seats	3	[strainers] (SM.xvii(d)7.4)	1	? diameter	nr
		1	strainers			
		1	; double type			
		2	; bucket type			
		4	[air vent]	1	to suit ? diameter pipes	nr
		1	automatic air vents ; complete with integral lock-shield valves and air release pipe			
3	[pool fittings]	1	[inlet fittings]	1	to suit ? diameter pipes	nr
1	inlet fittings	1	adjustment type ; minimum 25			

SWIM - SWIMMING POOL WATER TREATMENT INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2	hydro spa jets ; complete with socket end or threads		diameter orifice		
3	gutter drains	2	[hydro spa jets]		
4	main drain gratings	1	adjustment type ; capable to be deflected at 15 degrees at any direction to the horizontal axis		
5	vacuum fittings				
6	overflow drains				
7	channel outlets				
8	skimmers				
9	Safety vacuum release system (SVRS) ; BS EN 13451-3:2011+A2:2014 ; all as described in Section B1.12.10 of the General Specification for Swimming Pool Water Treatment Installation	3	[gutter drains]	1	to suit ? gutter channel nr
		1	gutter dome scum drain ; designed gratings		
1	; ABS [for inlet fittings, hydro spa jets/gutter drains/main drain gratings/vacuum fittings/channel outlets]	4	[main drain gratings]	1	to suit maximum velocity of 0.3 m/s nr
		1	squared type ; grating covers ; installed on concrete sump pit ; twin drain outlets		
2	; chrome plated cast bronze [for inlet fittings/gutter drains/main drain gratings/vacuum fittings]	5	[vacuum fittings]	1	to suit ? diameter pipes nr
		1	body and plug ; connection for flexible vacuum hose ; adaptor with 38 FIP for pipe connection		
3	; PVC [for channel outlets]	6	[overflow drains]		
4	; rugged ABS ; 5 thick [for skimmers]	1	in form of skimmer box ; streamlined ABS grating with thread for UPVC overflow drain pipes connection		
		7	[channel outlets]		
		1	50 diameter connection ; ? x ? gratings		
		8	[skimmers]		
		1	moulded type		
		9	[Safety vacuum release system]	1	to suit application requirement item
		1	safety vacuum release system		
4	[instrumentation] (SM.xvii(d)16)	1	[thermometers]	1	to suit ? diameter pipes nr
		1	thermometers ; mercury-in-glass type		
1	thermometers	2	[pressure gauges]		
2	pressure gauges	1	pressure gauges		
3	energy meters	3	[energy meters]		
4	water level controllers	1	energy meters		
		4	[water level controllers]	1	mercury float type nr
		1	water level controllers ; all necessary accessories		

SWIM - SWIMMING POOL WATER TREATMENT INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	5	[water tanks] (SM.xvii(b)7) 1 fibre-glass water tanks 1 ; complete with valves, drains, vents, overflows, covers, supports, accessories and connections	1	water tanks 1 ; stainless steel internal and external cat ladders	1	? litres capacity	nr	
	6	water pump sets ; direct driven by electric motors ; type-tested ; complete with *cast iron / stainless steel Grade 316 / bronze split casings ; stuffing boxes ; drain piping and all accessories [*select as appropriate] (SM.xvii(b)9) 1 ; centrifugal type ; volute casing 2 ; end suction type 3 ; vertical centrifugal type	1	main circulation pump sets 2 cooling water pump sets 3 water equipment pump sets 4 sewage sump pumps 5 bore well pumps ; multi-stage	1	water flow rate ? l/s ; differential static pressure ? kPa (ref. ?)	nr	
	7	sand filters ; electrically welded shell ; supported nozzles, balance tank, stainless steel nozzle plates and filtering media supports, internal distribution and draw-off trough (SM.xvii(b)10) 1 ; flanged inlets and outlets, wash-in, drains and air connections, manholes, necessary filtering media, filter supporting feet and all necessary accessories	1	sand filters ; air scoured sand pressure type ; low to medium filtering rate	1	capacity ? l/hr (ref. ?)	nr	
3	DESIGN, SUPPLY AND INSTALL COMPRESSED AIR SUPPLY AND BACKWASHING SYSTEM ; IN PLANT ROOM	1	air compressors ; delivery air pressure gauges ; oil pressure gauges ; suction filter and silencer ; air-oil separator ; oil heater and ancillary control accessories (SM.xvii(b)10) 1 ; acoustic enclosure ; pipeworks and fittings, valves, switches, controls and interlocks ; control panels (control panels easured separately) and supports ; all necessary accessories, wirings and conduits	1	air compressors, air-cooled rotary air type, pressure lubrication, direct couple motor	1	duty compressors	nr
					2	standby compressors	nr	
						For nos 1 to 2 above 1 ; air flow rate 50 m/h per unit filter area		
4	DESIGN, SUPPLY AND INSTALL OZONE GENERATION SYSTEM ; IN PLANT ROOM	1	reaction tanks ; *electrically welded mild steel / stainless steel Grade 316 (low carbon) [*select as appropriate] 1 ; complete with automatic air vents, drains, valves, flow meters, maintenance platform, supports, accessories and connection	1	reaction tanks	1	? litres	nr

SWIM - SWIMMING POOL WATER TREATMENT INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

2	water pump sets ; direct driven by electric motors ; suitable type (SM.xvii(b)9)	1	booster pump sets for ozone generation system	1	water flow rate ? m3/hr ; differential static pressure ? kPa (ref. ?)	nr		
3	carbon filter tanks ; *electrically welded mild steel / stainless steel Grade 316 (low carbon) [*select as appropriate] (SM.xvii(b)10) 1 ; supported nozzles, nozzle plates and filtering media supports, internal distribution and draw-off trough, flanged inlets and outlets, wash-in, drain and air connections, manholes, necessary filtering media, maintenance platform, supports and all necessary accessories	1	carbon filter tanks	1	? litres	nr		
4	ozonator ; full vacuum unit ; duty and standby air dryers ; ozone generators ; high tension transformers, control panels (control panels measured separately) 1 ; associated pipings, wirings and control ; all necessary accessories ; safety devices	1	ozonators ; compact construction cabinet ; lockable doors	1	? g/hr (ref. ?)	nr		
5	mixing equipment ; comprising mixers, mixing chambers, ozone eductors, booster pumps, manometers, piping, valves, pressure gauges and all necessary accessories	1	mixing equipment for mixing and dissolving ozone into water stream	1	to suit system pressure	nr		
6	ozone destroyers ; activated carbon filling, thermal or heated catalytic destructor, exhaust vent pipes and all necessary accessories (SM.xvii(b)10)	1	ozone destroyers ; maintaining ? months operation at design flow	1	design flow ?	nr		
7	ORP analyzers ; sensors, liquid crystal display ; all necessary accessories and signals transmission facilities	1	ORP analyzers	1	to suit system	nr		
5	ULTRA VIOLET DISINFECTION SYSTEM ; IN PLANT ROOM	1	ultra violet disinfection system ; self-contained UV chambers, hydraulically factory tested unit, temperature sensors, UV intensity monitor, stainless steel cover end plate 1 ; all pipework and connection,	1	ultra violet disinfection system ; UV wavelength cover spectrum 220 nm to 400 nm	1	to suit design swimming pool water turnover rate	item

SWIM - SWIMMING POOL WATER TREATMENT INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

automatic cleaning device, control
and monitoring provisions ;
necessary accessories

6	CHEMICAL TREATMENT ; IN PLANT ROOM	1	chemical treatment ; chemical metering pump sets ; chemical tanks ; outlets, pipings, valves, overflows, level indication, level electrodes ; warning notice and instructions 1 ; all necessary accessories and connections ; adequate protective clothing and items for handling chemicals	1	chemical treatment of pool water	1	by aluminium sulphate (alum) dosing	item
						2	by hydrochloric acid (HCL) dosing	item
7	MIXED OXIDANT DISINFECTION SYSTEM ; IN PLANT ROOM	1	mixed oxidant disinfection system ; electrolytic cell mixed oxidant generators (ref ?) 1 ; twin tower softeners, brine generator tanks, oxidant tanks, pressure switches, solenoid valves, pressure regulators, associated pipings, wirings, control panels (control panels measured separately) ; automated control and diagnostics facilities ; conduits and all necessary accessories	1	mixed oxidant disinfection system ; hydrogen gas detection facilities, blowers, filters, gas detectors, air vents and extraction fans	1	to suit designed application	item
8	UNDERWATER LIGHTING INSTALLATION ; INTERNALLY AND EXTERNALLY	1	final circuits (SM.xviii(g)2) 1 ; PVC cables 1 ; including all necessary cabling and conduit facilities ; watertight power supply system	1	from distribution board ref. ? 1 ; ? core cables ; ? mm2	1	lighting points	nr
		2	luminaires (SM.xviii(h)1) 1 ; cast bronze submersible light fittings ; IP 68, BS EN 60529:1992+A2:2013 ; 12V/24V lamp bulbs ; control gears and ballasts ; isolation transformers housed in metal enclosure 2 ; LED light fittings 1 ; connections to submersible PVC cables and watertight conduit ; earthing and bonding 1 ; provision of all necessary component parts, neoprene gaskets and necessary fixings	1	submersible light fittings ; water proof and vandal proof type ; suitable for operation at the required water depth ; all necessary accessories	1	? nr. x ? W (ref. ?)	nr
				2	LED light fittings ; water proof and vandal proof type ; all necessary accessories			
				For nos 1 to 2 above				
				1	fixing to walls and columns ; tilting upward 10 degrees to vertical			
				2	colour lens or fittings, cast tempered glass, convex and heat resistance, demountable in water			
				1	recessed mounted			

SWIM - SWIMMING POOL WATER TREATMENT INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	3	timer switches ; ON/OFF control operation ; all necessary cabling and conduit facilities	1	timer switches ; with overriding facilities	1	timer switches ; 24-hour programmed	nr
9	1	[final circuits] (SM.xviii(g)2) 1 multi-core armoured cables ; installed in outdoor underground G.I. pipes with draw wires 2 PVC cables ; run in concealed conduits with draw wires	1	from isolators (isolators measured separately) 2 from fused spur units (fused spur unit measured separately)	1	? x ? mm2 1 ; to water circulation and filtration system pumps (ref. ?) 2 ; to air compressors (ref. ?) 3 ; to ozone booster pumps (ref. ?) 4 ; to ozonators (ref. ?) 5 ; to mixing equipment (ref. ?) 6 ; to ozone destroyers (ref. ?) 7 ; to ORP analyzers (ref. ?) 8 ; to ultra violet disinfection plant 9 ; to chemical treatment plant 10 ; to mixed oxidant generators (ref. ?) 11 ; to water circulation and filtration system pump control panel (ref. ?) 12 ; to compressed air and backwashing system control panel (ref. ?) 13 ; to ozone booster pump control panel (ref. ?) 14 ; to ozonator control panel (ref. ?) 15 ; to chemical treatment control panel (ref. ?) 16 ; to mixed oxidant disinfection system control panel (ref. ?) 17 ; to safety vacuum release system (ref. ?)	nr
10	1	[central equipment] (SM.xix(b)1) 1 control panels ; stainless steel construction ; vermin proof ; IP 54 enclosures	1	control panels ; located in ? room 1 ; flameproof and explosion proof	1	water circulation and filtration system pump control panel (ref. ?) 2 compressed air and backwashing system control panel (ref. ?) 3 ozone booster pump control panel (ref. ?) 4 ozonator control panel (ref. ?) 5 chemical treatment control panel (ref. ?) 6 mixed oxidant disinfection system control panel (ref. ?) 7 safety vacuum release system (ref. ?)	nr nr nr nr nr nr nr

SWIM - SWIMMING POOL WATER TREATMENT INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 2 levels of control (SM.xviii(g)2)
 1 ; Level 1 - manual control
 2 ; Level 2 - centralized control
 3 ; Level 3 - computer assisted centralized control

- 1 Level 1, manual start and stop and control for equipment, pumps, valves and devices, local control panels (local control panels measured separately) ; 1.6 thick stainless steel fault indication panels
 1 ; all electrical interlocks, buzzer alarm, visual indication, silencing switches, approved cables and conduit facilities

- 1 Level 1 item
 2 Level 2 item
 3 Level 3 item

- 2 Level 2, manual control in Level 1 and automatic control system (ACS) for equipment, pumps, valves and devices, local control panels (local control panels measured separately)
 1 ; 1.6 thick stainless steel supervisory panels ; all electrical interlocks ; visual and audible indication, gas leakage detection, electronic programmable logic controller, real time clock, backup battery, approved cable and conduit facilities

- 1 Level 1 control item
 2 Level 2 control item
 3 Level 3 control item

- 3 Level 3, computer operated Level 2 controls and automatic control system (ACS), supervisory control panel carried out by personal computer, LCD screen
 1 ; keyboard and printer, central interface, on-screen graphics provision, all cables and conduit facilities

- 11 SWIMMING POOL WATER TREATMENT INSTALLATION - SUNDRIES ; INTERNALLY, IN PLANT ROOM AND EXTERNALLY

- 1 the following items in respect of the whole Swimming Pool Water Treatment Installation

- 1 allow for

- 1 marking the positions of holes, mortices, chases and the like in the structure (SM.xvii(i)3) item
 2 off-site and on-site inspection, testing and commissioning of the complete Swimming Pool Water Treatment Installation (SM.xvii(i)4) item
 1 ; type-test certificates ; all as described in the Particular Specification and Part D of the General Specification for Swimming Pool Water Treatment Installation
 3 providing all electricity, main

SWIM - SWIMMING POOL WATER TREATMENT INSTALLATION

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- water and other fuels
(SM.xvii(i)5) item
- 1 in connection with preliminary runs, full adjustments, testing, commissioning and maintenance
- 4 inspection, attendance, operation and maintenance of the complete Swimming Pool Water Treatment Installation during maintenance period item
- 1 ; all as described in the Particular Specification, Section E1 and E3 of the General Specification for Swimming Pool Water Treatment Installation
- 5 providing item
- 1 installation drawings ; all as described in the Particular Specification and Section A4.2 of the General Specification for Swimming Pool Water Treatment Installation
- 2 as-built drawings ; all as described in the Particular Specification and Section A4.3 of the General Specification for Swimming Pool Water Treatment Installation
- 3 Operation and Maintenance (O&M) Manuals and Users Manuals in prescribed time ; all as described in the Particular Specification and Section A4.4 of the General Specification for Swimming Pool Water Treatment Installation
- 6 providing training to Employer's staff as described in the Particular Specification and Section E1 and E2 of the General Specification for Swimming Pool Water Treatment Installation item
- 7 providing sample boards ; all as described in the Particular Specification and Section A3.7 of the General Specification for Swimming Pool Water Treatment Installation (SM.xvii(i)10) item

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 8 supplying [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described

- 9 supplying and fixing [sleeves] item
 - 1 pipe sleeves
 - 2 conduit sleeves
 - 3 cable sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described

- 10 supplying and fixing fire stopping to walls and floors item

*** END OF REPORT ***

UNDERPINNING

UPIN - UNDERPINNING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 UNDERPINNING (SM.VI(B))

1 underpinning (SM.vi(b))
 1 ; brick walls
 2 ; concrete walls
 3 ; reinforced concrete walls
 4 ; reinforced concrete basement walls
 5 ; ?
 1 ; on grid line ? of drawing nr.
 ?
 2 ; to ? elevation of ? room [give
 locations]
 3 ; ? long [state length to be
 underpinned]
 4 ; ?
 1 ; ?m deep below base of
 existing foundation
 2 ; maximum ?m lengths in one
 operation
 3 ; ?

1 temporary supports (SM.vi(b).2)

 2 excavating (SM.vi(b).3)
 1 preliminary trenches
 2 trenches below level of base of
 existing foundation
 3 trenches below basement level
 4 ?
 1 from one side only
 2 from both sides
 1 ; commencing at natural
 ground level
 2 ; commencing at site
 formation level
 3 ; commencing at reduced
 level
 4 ; commencing at ?m below
 natural ground level
 5 ; commencing at ?m below
 ground floor slab level
 6 ; commencing at basement
 level
 7 ; ?

1 to work to be underpinned item
 1 [give details of supports
 where practicable]

3 extra over excavation and disposal at
 any depth
 1 for breaking up and removing
 (SM.vi(a).4.1 - 4.5)
 2 ?

1 [depth] m3
 1 not exceeding 1.50m deep
 2 1.50 - 3.00m deep
 3 3.00 - 4.50m deep
 4 4.50 - 6.00m deep
 5 ?m deep
 1 ; PROVISIONAL
 2 ; ?

 1 [materials met with in excavation] m3
 1 brickwork
 2 blockwork
 3 stone masonry walls
 4 slab foundations
 5 unreinforced concrete
 6 reinforced concrete

 2 [surface pavings] m2
 1 surface concrete ? thick
 2 concrete pavings ? thick
 1 ; with hardcore under
 2 ; ?

4 excavated material

1 backfilling to excavation m3
 1 ; depositing
 2 ; depositing in ? layers
 3 ; ?
 1 ; compacting
 2 ; ?

5 surplus excavated material

1 [disposal] m3
 1 removing from site
 2 depositing on site in

permanent spoil heaps
 3 spreading on site
 4 depositing to dump area
 provided by Employer
 5 to a tip provided by
 Contractor
 6 ?
 1 ; average ?m from
 excavation
 2 ; ? [details and location
 of dumping area]

6	[concrete]	1	[foundations, etc]	m3
1	concrete	1	foundations	
2	reinforced concrete	2	ground beams	
3	?	3	filling behind walls	
1	; sulphate resisting	4	?	
2	; rapid hardening	2	blinding	m3
3	; no-fines	1	under foundations and beams	
4	; ? % recycled aggregates	2	under ?	
5	; grade ?/?	1	; ? thick	
1	; moderate exposed [deemed to moderate where not specified]	3	walls	m3
2	; severe exposure	1	; ? thick	
3	; water repellent containing an approved water-reducing admixture [GS6.42]			
4	; placing by pumping			
5	; ?			

7	[reinforcement]	1	? diameter	kg
1	plain steel reinforcing bars	1	; 12.00 - 15.00m long	
2	ribbed steel reinforcing bars	2	; ?	
3	; epoxy coated	1	; specially bent to curve	
4	; ?	2	; ?	
1	; general reinforcement			
2	; links, stirrups and binders			
3	; indented bars			
4	?			
1	; PROVISIONAL			
2	; ?			

8	fabric reinforcement ; BS 4483	1	in concrete	m2
1	; square mesh	2	in tension strips ? wide	m
2	; ?			
1	; ref. A142 ; weighing 2.22 kg/m2	For nos 1 to 2 above		
2	; ref. A193 ; weighing 3.02 kg/m2	1	; specially bent to curve	
3	; ref. A252 ; weighing 3.95	2	; ?	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

			kg/m2		
	4		; ?		
		1	; 200 minimum side and end laps		
		2	; measured net - allow for laps		
		3	; ?		

9	[formwork]			1	[surfaces msd square] m2
	1	sawn formwork		1	foundations, pile caps, ground beams and the like
	2	sawn formwork left in		2	walls
	3	?		3	?
		1	; vertical surfaces		1 ; curved
		2	; flat surfaces		
		3	; sloping surfaces		
				2	[surfaces msd linear] m
				1	foundations, pile caps, ground beams and the like
				2	?
				1	; not exceeding 300 wide
				2	; ?
				1	; curved

10	[brickwork]			1	[walls] m2
	1	common bricks [GS9.02]		1	walls
	2	engineering bricks [GS9.04]		2	hollow walls
	3	loadbearing bricks [GS9.04]		3	?
	4	concrete bricks [GS9.06]		1	; circular on plan ; cutting and templates
	5	?		2	; ?
		1	; LD units [GS9.04 - only for engineering & loadbearing bricks]		1 ; half brick walls ; ? thick
		2	; HD units [GS9.04 - only for engineering & loadbearing bricks]		2 ; one brick walls ; ? thick
		3	; crushing strength not less than ? Mpa		3 ; one and a half brick walls ; ? thick
		4	; ?		4 ; reduced brickwork ; ? thick
		1	; cement mortar (1:3) [GS9.22]		5 ; ? thick ; cutting [where not multiples of half brick thick]
		2	; cement/lime mortar (1:1:6) [GS9.22]		6 ; ? thick inner skin ; ? thick outer skin ; ? thick cavity ; wall ties at 900 centres horizontally and 320 centres vertically staggered
		3	; cement/lime mortar (1:2:9) [GS9.22]		
		4	; ?		7 ; ?

11	closing cavities of hollow walls			1	[close cavities] m

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

<p>1 ; with ? brick</p>	<p>1 at ends ? wide 2 at ? 1 set on edge 2 ?</p>
<hr/>	
<p>12 cutting, tothing and bonding ends of</p>	<p>1 wall to existing ? wall each alternate course m 1 ; extra material 1 ; ? thick common brickwork 2 ; ? thick engineering brickwork 3 ; ? thick loadbearing brickwork 4 ; ? thick concrete brickwork 5 ; ?</p>
<hr/>	
<p>13 [brick and block reinforcement] 1 expanded metal reinforcement 2 mild steel rod reinforcement 3 ? 1 ; galvanised 2 ; bituminous coated 3 ; ? 1 ; weighing not less than 1.6 kg/m2 2 ; in walls 3 ; ?</p>	<p>1 [size] m 1 ? wide 2 ? diameter 3 ?</p>
<hr/>	
<p>14 steel bonding rods 1 ; bituminous coated 2 ; ? 1 ; cutting and pinning one end to concrete 2 ; shot firing one end to concrete 3 ; ? 1 ; building one end into joint of brickwork 2 ; ?</p>	<p>1 6 diameter x 350 long [for bonding ends of walls to conc] nr</p>
<hr/>	
<p>15 steel bonding ties ; galvanised ; fanged at both ends 1 ; casting one end into concrete 2 ; cutting and pinning one end into concrete 3 ; shot firing one end to concrete 4 ; ? 1 ; building one end into joint of brickwork</p>	<p>1 3 x 20 x 350 long [for bonding ends of walls to conc] nr</p>

		2 ; ?		

16	expanded metal bonding ties		1 ? wide x ? long [GS9.11 for widths/lengths reqd]	nr
	1 ; galvanised			
	2 ; bituminous coated			
	3 ; ?			
	1 ; weighing not less than 1.6 kg/m2			
	2 ; cutting and pinning one end to concrete			
	3 ; shot firing one end to concrete			
	4 ; ?			
	1 ; building one end into joint of brickwork			
	2 ; ?			

17	mastic asphalt to BS 6925 type T1097 [GS11.03 - lime stone aggregate]		1 ? thick [G.S.12.64]	m2
	1 ; damp-proofing and tanking		1 one coat coverings	
	2 ; ?		2 two coat coverings	
			3 three coat coverings	
			1 ; felt isolating membrane [G.S.12.54,12.62]	
			2 ; expanded metal lathing reinforcement [G.S.12.59]	
			3 ; on concrete	
			4 ; on brickwork or blockwork	
			5 ; vertical	
			6 ; horizontal	
			7 ; sloping	
			8 ; to soffits	
			9 ; ?	
			1 ; in thickness of walls	
			2 ; executing overhand	
			3 ; executing in confined situations	
			4 ; executing in sections	
			5 ; curved	
			6 ; ?	
			2 cutting back	m
			1 ; jointing new to old asphalt	
			2 ; ?	
			3 internal angle fillets [G.S.11.10 - damp proofing, G.S.12.65 - Roofing]	m
			1 ; in two coats	
			2 ; ?	

UPIN - UNDERPINNING

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 ; executing overhand
- 2 ; executing in confined situations
- 3 ; executing in sections
- 4 ; ?
 - 1 ; curved
 - 2 ; ?

-
- 18 cutting away projections of foundations (SM.vi(b).5)
 - 1 [foundations] m
 - 1 concrete foundations
 - 2 reinforced concrete foundations including cutting reinforcement
 - 3 ?
 - 1 maximum width of ? and ? deep

-
- 2 UNDERPINNING FROM INSIDE EXISTING BUILDING
 - 1 underpinning (SM.vi(b))
 - 1 ; brick walls
 - 2 ; concrete walls
 - 3 ; reinforced concrete walls
 - 4 ; reinforced concrete basement walls
 - 5 ; ?
 - 1 ; on grid line ? of drawing nr. ?
 - 2 ; to ? elevation of ? room [give locations]
 - 3 ; ? long [state length to be underpinned]
 - 4 ; ?
 - 1 ; ?m deep below base of existing foundation
 - 2 ; maximum ?m lengths in one operation
 - 3 ; ?
 - 1 temporary supports (SM.vi(b).2)
 - 1 to work to be underpinned item
 - 1 [give details of supports where practicable]
-
- 2 excavating (SM.vi(b).3)
 - 1 [depth] m3
 - 1 preliminary trenches
 - 1 not exceeding 1.50m deep
 - 2 1.50 - 3.00m deep
 - 3 3.00 - 4.50m deep
 - 4 4.50 - 6.00m deep
 - 5 ?m deep
 - 1 ; PROVISIONAL
 - 2 ; ?
 - 2 trenches below level of base of existing foundation
 - 3 trenches below basement level
 - 4 ?
 - 1 from one side only
 - 2 from both sides
 - 1 ; commencing at natural ground level
 - 2 ; commencing at site formation level
 - 3 ; commencing at reduced level
 - 4 ; commencing at ?m below natural ground level
 - 5 ; commencing at ?m below ground floor slab level
 - 6 ; commencing at basement level
 - 7 ; ?

-
- 3 extra over excavation and disposal at any depth
 - 1 [materials met with in excavation] m3
 - 1 brickwork
 - 2 blockwork
 - 3 stone masonry walls
 - 4 slab foundations
 - 5 unreinforced concrete
 - 6 reinforced concrete
 - 1 for breaking up and removing (SM.vi(a).4.1 - 4.5)
 - 2 ?

2 [surface pavings] m2
 1 surface concrete ? thick
 2 concrete pavings ? thick
 1 ; with hardcore under
 2 ; ?

 4 excavated material 1 backfilling to excavation m3
 1 ; depositing
 2 ; depositing in ? layers
 3 ; ?
 1 ; compacting
 2 ; ?

 5 surplus excavated material 1 [disposal] m3
 1 removing from site
 2 depositing on site in
 permanent spoil heaps
 3 spreading on site
 4 depositing to dump area
 provided by Employer
 5 to a tip provided by
 Contractor
 6 ?
 1 ; average ?m from
 excavation
 2 ; ? [details and location
 of dumping area]

 6 [concrete] 1 [foundations, etc] m3
 1 concrete 1 foundations
 2 reinforced concrete 2 ground beams
 3 ? 3 filling behind walls
 4 ?
 2 blinding m3
 1 under foundations and beams
 2 under ?
 1 ; ? thick
 3 walls m3
 1 ; ? thick

 7 [reinforcement] 1 ? diameter kg
 1 plain steel reinforcing bars 1 ; 12.00 - 15.00m long

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	2	ribbed steel reinforcing bars		2	; ?	
	3	; epoxy coated		1	; specially bent to curve	
	4	; ?		2	; ?	
	1	; general reinforcement				
	2	; links, stirrups and binders				
	3	; indented bars				
	4	?				
		1	; PROVISIONAL			
		2	; ?			

8		fabric reinforcement ; BS 4483		1	in concrete	m2
	1	; square mesh		2	in tension strips ? wide	m
	2	; ?				
		1	; ref. A142 ; weighing 2.22 kg/m2		For nos 1 to 2 above	
		2	; ref. A193 ; weighing 3.02 kg/m2		1	; specially bent to curve
		3	; ref. A252 ; weighing 3.95 kg/m2		2	; ?
		4	; ?			
		1	; 200 minimum side and end laps			
		2	; measured net - allow for laps			
		3	; ?			

9		[formwork]		1	[surfaces msd square]	m2
	1	sawn formwork		1	foundations, pile caps, ground beams and the like	
	2	sawn formwork left in		2	walls	
	3	?		3	?	
		1	; vertical surfaces		1	; curved
		2	; flat surfaces			
		3	; sloping surfaces			
				2	[surfaces msd linear]	m
				1	foundations, pile caps, ground beams and the like	
				2	?	
				1	; not exceeding 100 wide	
				2	; 100 - 200 wide	
				3	; 200 - 300 wide	
				4	; ?	
				1	; curved	

10		[brickwork]		1	[walls]	m2
	1	common bricks [GS9.02]		1	walls	
	2	engineering bricks [GS9.04]		2	hollow walls	
	3	loadbearing bricks [GS9.04]		3	?	
	4	concrete bricks [GS9.06]		1	; circular on plan ; cutting and templates	
	5	?		2	; ?	
		1	; LD units [GS9.04 - only for engineering & loadbearing		1	; half brick walls ; ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	bricks]		thick
	2 ; HD units [GS9.04 - only for engineering & loadbearing bricks]		2 ; one brick walls ; ? thick
	3 ; crushing strength not less than ? Mpa		3 ; one and a half brick walls ; ? thick
	4 ; ?		4 ; reduced brickwork ; ? thick
	1 ; cement mortar (1:3) [GS9.22]		5 ; ? thick ; cutting [where not multiples of half brick thick]
	2 ; cement/lime mortar (1:1:6) [GS9.22]		6 ; ? thick inner skin ; ? thick outer skin ; ? thick cavity ; wall ties at 900 centres horizontally and 320 centres vertically staggered
	3 ; cement/lime mortar (1:2:9) [GS9.22]		
	4 ; ?		7 ; ?

11	closing cavities of hollow walls	1	[close cavities] m
	1 ; with ? brick	1	at ends ? wide
		2	at ?
		1	set on edge
		2	?

12	cutting, toothing and bonding ends of	1	wall to existing ? wall each alternate course m
		1	; extra material
		1	; ? thick common brickwork
		2	; ? thick engineering brickwork
		3	; ? thick loadbearing brickwork
		4	; ? thick concrete brickwork
		5	; ?

13	[brick and block reinforcement]	1	[size] m
	1 expanded metal reinforcement	1	? wide
	2 mild steel rod reinforcement	2	? diameter
	3 ?	3	?
	1 ; galvanised		
	2 ; bituminous coated		
	3 ; ?		
	1 ; weighing not less than 1.6 kg/m2		
	2 ; in walls		
	3 ; ?		

14	steel bonding rods	1	6 diameter x 350 long [for bonding

	1 ; bituminous coated		ends of walls to conc]	nr
	2 ; ?			
	1 ; cutting and pinning one end to concrete			
	2 ; shot firing one end to concrete			
	3 ; ?			
	1 ; building one end into joint of brickwork			
	2 ; ?			

15	steel bonding ties ; galvanised ; fanged at both ends	1	3 x 20 x 350 long [for bonding ends of walls to conc]	nr
	1 ; casting one end into concrete			
	2 ; cutting and pinning one end into concrete			
	3 ; shot firing one end to concrete			
	4 ; ?			
	1 ; building one end into joint of brickwork			
	2 ; ?			

16	expanded metal bonding ties	1	? wide x ? long [GS9.11 for widths/lengths reqd]	nr
	1 ; galvanised			
	2 ; bituminous coated			
	3 ; ?			
	1 ; weighing not less than 1.6 kg/m2			
	2 ; cutting and pinning one end to concrete			
	3 ; shot firing one end to concrete			
	4 ; ?			
	1 ; building one end into joint of brickwork			
	2 ; ?			

17	mastic asphalt to BS 6925 type T1097 [GS11.03 - lime stone aggregate]	1	? thick [G.S.12.64]	m2
	1 ; damp-proofing and tanking	1	one coat coverings	
	2 ; ?	2	two coat coverings	
		3	three coat coverings	
		1	; felt isolating membrane [G.S.12.54,12.62]	
		2	; expanded metal lathing reinforcement [G.S.12.59]	
		3	; on concrete	
		4	; on brickwork or blockwork	
		5	; vertical	
		6	; horizontal	
		7	; sloping	

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 8 ; to soffits
- 9 ; ?
- 1 ; in thickness of walls
- 2 ; executing overhand
- 3 ; executing in confined situations
- 4 ; executing in sections
- 5 ; curved
- 6 ; ?

- 2 cutting back m
 - 1 ; jointing new to old asphalt
 - 2 ; ?
- 3 internal angle fillets [G.S.11.10 - damp proofing, G.S.12.65 - Roofing] m
 - 1 ; in two coats
 - 2 ; ?
 - 1 ; executing overhand
 - 2 ; executing in confined situations
 - 3 ; executing in sections
 - 4 ; ?
 - 1 ; curved
 - 2 ; ?

-
- 18 cutting away projections of foundations (SM.vi(b).5) 1 [foundations] m
 - 1 concrete foundations
 - 2 reinforced concrete foundations including cutting reinforcement
 - 3 ?
 - 1 maximum width of ? and ? deep
-

*** END OF REPORT ***

UNINTERRUPTIBLE POWER SUPPLY SYSTEM

UPSS - UNINTERRUPTIBLE POWER SUPPLY SYSTEM

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 NOTE:

1 PQS should check the Contractor's design responsibility for the following B.Q. items and add / delete the word "design" in the First / Second Division below where appropriate. Make sure that the contractor-designed items are included in Clause 23 of the Conditions of Contract in the Preliminaries, and prior approval has been obtained from an officer at D2 level or above if the concerned items are not covered by the blanket approval as described in the guidance note for the abovementioned Clause 23.

2	UNINTERRUPTIBLE POWER SUPPLY SYSTEM	1	Design, supply and install Uninterruptible Power Supply (UPS) System and associated equipment and accessories ; as described in the Particular Specification and drawing nr. ?	1	UPS system 1 ; minimum prime power rating ? kVA comprising :	1	UPS module 1 ; inverter, rectifier, batteries, battery chargers, by-pass transfer switches, etc. 1 ; all associated interconnecting wiring and control equipment	item
	1 ; internally							
	2 ; in plant room					2	mimic diagram boards	nr
	3 ; externally					3	visual alarms 1 ; fixing to control panels in ? location	nr
						4	control circuits 1 ; approved cables ; conduits and fitting 1 ; from UPS equipment to visual alarm points	nr
		2	Design, supply and install Uninterruptible Power Supply (UPS) System and associated equipment and accessories	1	equipment and accessories 1 ; minimum prime power rating ? kVA 1 ; mounted to walls and columns 2 ; mounted to modules 3 ; mounted to racks 4 ; supported to floors	1	rectifiers/battery chargers	nr
						2	static bypass switches	nr
						3	display and control units	nr
						4	UPS supporting frames	nr
						5	battery racks	nr
						6	load synchronization modules	nr
						7	inverters	nr
						For nos 6 to 7 above		
						1	; 100 kVA	
						2	; 200 kVA	
						3	; 300 kVA	

UPSS - UNINTERRUPTIBLE POWER SUPPLY SYSTEM

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

4 ; ? kVA

8 storage batteries ; complete with string circuit breakers nr
 1 ; 100 kVA
 2 ; 200 kVA
 3 ; 300 kVA
 4 ; ? kVA
 1 ; with 30 minutes duration

3 600/1000 fire resistant, cross-linked polyethylene (XLPE) insulated multi-core sheathed with armour copper cables ; low emission of smoke and corrosive gases when affected by fire ; operating temperature not exceeding 90 degrees Celsius to Category F2 / Category F30 / Category F60 / Category F120 / Category as required complying with the FSD requirement of BS 7846:2015 ; fire performance to BS 6387:2013 ; BS 8491:2008 / BS EN 50200:2015 ; BS EN 60332-1-2:2004/Amd 1:2015 / BS EN 60332-3-24:2009 ; BS EN 61034-2:2005/Amd 1:2013 ; BS EN 60754-1:2014 / BS EN 60754-2:2014
 1 ; sheathed
 1 ; with armour
 1 ; solid copper conductors
 2 ; stranded copper conductors

4 500V (light duty grade) mineral insulated cables ; to IEC 60702-1:2002/Amd 1:2015 and IEC 60702-2:2002/Amd 1:2015
 5 700V (heavy duty grade) mineral insulated cables ; to IEC 60702-1:2002/Amd 1:2015 and IEC 60702-2:2002/Amd 1:2015

For nos 4 to 5 above
 1 ; copper sheathed
 1 ; copper conductors

1 power cables (SM.xviii(f)1)
 1 ; laid in trenches
 2 ; laid in open ducts
 3 ; laid on arm or hangers
 4 ; drawn into underground pipe ducts
 5 ; laid or drawn into trunkings
 6 ; fixed to walls and columns
 7 ; fixed to cable trays or cable ladders or other surfaces

2 [accessories]
 1 straight-through joints ; joint boxes (SM.xviii(f)2)
 2 tee-joints ; joint boxes (SM.xviii(f)2)
 3 termination glands (SM.xviii(f)4)
 4 adaptable boxes for cable termination (SM.xviii(f)5)

1 ? mm2 ; ? core cables m
 1 ? mm2 ; ? core cables nr
 2 ? x ? x ? deep nr

3 UNINTERRUPTIBLE POWER SUPPLY SYSTEM SUNDRIES
 1 ; internally, in plant room and externally

1 The following items are in respect of the supply and installation of the whole Uninterruptible Power Supply System

1 allow for

1 marking the positions of holes, mortices, chases and the like in the structure (SM.xviii(j)1) item
 2 testing the complete Uninterruptible Power Supply System ; all as described in the Particular Specification (SM.xviii(j)2) item

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 3 inspection, operation and maintenance of the complete Uninterruptible Power Supply System during Maintenance Period
1 ; all as described in the Particular Specification item
- 4 providing all necessary (SM.xviii(j)3)
1 power and water,
1 diesel and fuels in connection with inspection, testing and commissioning, and maintenance item
- 5 providing item
1 installation drawings (SM.xviii(j)5)
2 as-built drawings (SM.xviii(j)7)
3 Operation and Maintenance (O&M) Manuals and User Manuals
1 ; all as described in the Particular Specification
- 6 providing tuition of Employer's staff for a period of (SM.xviii(j)10) item
1 ? weeks
2 ? months
1 ; all as described in the Particular Specification
- 7 providing item
1 mock-ups
2 prototypes
3 mock-ups and prototypes
4 sample boards
1 ; all as described in the Particular Specification
- 8 supplying [sleeves] item
1 conduit sleeves
2 cable sleeves
1 (sleeves fixing by others) and filling holes so formed in walls, floors and ceilings with approved packing materials as described
- 9 supplying and fixing [sleeves] item

UPSS - UNINTERRUPTIBLE POWER SUPPLY SYSTEM

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 conduit sleeves
- 2 cable sleeves
 - 1 through walls, floors and ceilings including filling holes so formed with approved packing materials as described

- 10 supplying and fixing fire stopping to walls and floors
(SM.xviii(j)17)

item

*** END OF REPORT ***

WOOD WORKS

WOOD - WOOD WORKS

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

1 STRUCTURAL TIMBER

1 [structural timber] (SM.xiii(a))
 1 sawn softwood [GS13.05]
 2 softwood [GS13.05]
 3 sawn hardwood [GS13.06]
 4 hardwood [GS13.06]
 5 ?
 1 ; ? [state preservative treatments]

1 [members]
 1 floor joists
 2 roof joists
 3 ceiling joists
 4 floor beams
 5 roof beams
 6 ceiling beams
 7 plates
 8 purlins
 9 rafters
 10 hip rafters
 11 valley rafters
 12 ridge boards
 13 posts
 14 struts
 15 ?
 1 ; fixing with adhesive [GS13.29]
 2 ; fixing with explosive cartridge fixings [GS13.27]
 3 ; plugging [GS13.28, 13.39]
 4 ; ?

1 ? x ? m
 1 ; ?m in one length [length over 5.00m in one continuous length to be stated]
 2 ; ?

2 nogging
 3 herringbone strutting
 4 solid strutting

1 ? x ? m
 2 ? thick m
 For nos 1 to 2 above
 1 ; between ? deep
 1 partition studs
 2 joists

2 carpentry metal work

1 galvanised steel
 2 stainless steel
 3 ?
 For nos 1 to 3 above
 1 joist hangers
 2 cleats
 3 sprockets
 4 pins
 5 ?
 1 ; built into brickwork or blockwork
 2 ; bolted with ? bolts to concrete
 1 ; fixing with explosive cartridge fixings [GS13.27]
 2 ; ?

1 ? x ? x ? nr
 2 ? diameter x ? long nr

2 FLOORING

1 [timber]
 1 hardwood
 2 teak

1 block flooring [GS13.09, 13.50]
 2 parquet flooring [GS13.09, 13.51]
 3 parquet flooring in preformed panels

1 ? thick [GS13.09, 13.10] m2
 1 ; ? x ? blocks [GS13.09, 13.10}

FIRST DIVISION

SECOND DIVISION

3 ?

THIRD DIVISION

For nos 1 to 3 above

- 1 ; butt joints
- 2 ; tongued and grooved joints
- 3 ; ?
- 1 ; herringbone pattern [GS13.50]
- 2 ; basket pattern [GS13.50]
- 3 ; ? pattern
- 4 ; bedding in cold bitumen/rubber emulsion adhesive [GS13.50, 13.51]
- 5 ; secret nailing [GS13.47]
- 6 ; ?
- 1 ; traversing
- 2 ; finishing for ? polishing [GS13.50, 13.51]
- 3 ; ?

FOURTH DIVISION

- 1 ; in ? x ? preformed panels [parquet flooring in preformed panels]
- 2 extra over ? thick [GS13.50] m
- 1 block flooring
- 2 parquet flooring
- 1 for straight two block borders
- 2 for straight ? block borders
- 3 ? thick x ? wide nosings m
- 1 ; tongued to flooring
- 4 ? x ? nr
- 1 access traps
- 2 mat wells
- 1 ; in ? thick block flooring
- 2 ; in ? thick parquet flooring

-
- 4 strip flooring (SM.xiii(c).4) m2
 - 1 ; butt joints
 - 2 ; rebated joints
 - 3 ; tongued and grooved joints
 - 4 ; cross-tongued joints
 - 5 ; cross-tongued joints, ? tongues [type of metal to be stated]
 - 6 ; ? nr
 - 1 ; face nailing [GS13.47]
 - 2 ; secret nailing [GS13.47]
 - 3 ; on ? [state backing and/or moisture resisting membrane]
 - 4 ; on and including ? x ? sawn hardwood battens at ? centres both ways
 - 5 ; on and including ? batten system ref. ? [for proprietary system]
 - 1 ; traversing
 - 2 ; finishing for ? polishing
 - 3 ; ?
 - 1 ? thick [GS13.08] m2
 - 1 ; ? wide boards
 - 2 ? thick x ? wide nosings m
 - 1 ; tongued to flooring
 - 3 ? x ? nr
 - 1 access traps
 - 2 mat wells
 - 1 ; in ? thick strip flooring

2 accessories

- 1 [accessories]
- 1 plastic [GS18.87]
- 2 brass
- 3 stainless steel
- 4 ?
- 1 dividing strips
- 2 cover strips

- 1 3 x 50 m
- 2 ? x ? m
- For nos 1 to 2 above
- 1 ; curved
- 2 ; setting between finishes

FIRST DIVISION	SECOND DIVISION	THIRD DIVISION	FOURTH DIVISION
		1 ; ? [state colour for plastic GS18.87]	
		2 movement joints 1 ; ? [give details]	1 ? x ? deep 1 ; curved 2 ; setting between finishes 3 ; sealing with ? including backing rods
3 RAISED ACCESS FLOORS	1 designing, supplying and fixing raised access floor system 1 ; ? [manufacturer and specific product] 1 ; ? supporting system and frames 2 ; including pedestals, bearing pads, fixings, trims and all necessary accessories to complete installation 3 ; all in accordance with the manufacturer's instructions 1 ; as drawing nr. ?	1 floors 1 ; ? high cavity 2 ; ? patterned [details stated] 2 skirtings 3 perimeter edge trims For nos 2 to 3 above 1 ; ? [state materials] 2 ; fixing with ? [state method of fixing]	1 ? thick ; ? x ? panels 1 ? x ? high 2 ? x ? x ? For nos 1 to 2 above 1 ; ref. ?
		4 ramps (SM.xiii(d).2) 1 ; rising from ? to ? high 1 ; ?	1 ? thick ; ? x ? panels 1 ; ramp size ? x ? overall
		5 extra over ? thick panels for ? panels [state type of special panels] 1 to floors 2 to ramps	1 ? x ? 1 ; ref. ?
4 DOORS, HATCHES, VENTILATORS AND THE LIKE AND FRAMES AND LININGS	1 [timber] 1 softwood [GS13.05] 2 hardwood [GS13.06] 3 teak [GS13.07] 4 ? 2 [plywood, blockboard] 1 plywood, Grade 1 veneer [GS13.12, 13.29] 2 plywood, Grade 2 veneer [GS13.12, 13.29] 3 marine plywood [GS13.13] 4 blockboard [GS13.14] 5 ? 1 ; teak veneered one side [on plywood or blockboard] 2 ; teak veneered both sides [on plywood or blockboard]	1 [framed, ledged and braced doors] 1 ledged doors [GS13.53] 2 ledged and braced doors [GS13.54] 3 framed, ledged and braced doors [GS13.55] 1 ; folding 2 ; swinging 3 ; sliding 4 ; sliding and folding 1 ; shaped heads 2 ; ? 3 ; as drawing nr. ?	1 ? x ? high ; ? thick boarding ; ? wide boards 2 ? x ? high ; ? thick boarding ; ? wide boards For nos 1 to 2 above 1 ; butt joints 2 ; tongued and grooved joints 3 ; tongued and grooved joints, V jointed one side [GS13.53] 1 ; ? x ? ledges [GS13.53] 2 ; ? x ? top ledges [GS13.53] 3 ; ? x ? middle ledges [GS13.53] 4 ; ? x ? middle and bottom ledges [GS13.53] 5 ; ? x ? bottom ledges

FIRST DIVISION

SECOND DIVISION

- 3 ; faced one side with laminated plastic ; class *HG/VG ? thick ; type *I/II adhesive bonded [on plywood or blockboard (*Select as appropriate)]
- 4 ; faced both sides with laminated plastic ; class *HG/VG ? thick ; type *I/II adhesive bonded [on plywood or blockboard (*Select as appropriate)]

THIRD DIVISION

FOURTH DIVISION

- [GS13.53]
- 6 ; ? x ? stiles [GS13.55]
- 7 ; ? x ? diminishing stiles
- 8 ; ? x ? stiles and top rails [GS13.55]
- 9 ; ? x ? top rails [GS13.55]
- 10 ; ? x ? middle rails [GS13.55]
- 11 ; ? x ? middle and bottom rails [GS13.55]
- 12 ; ? x ? bottom rails [GS13.55]
- 13 ; ? x ? braces [GS13.55]
- 14 ; ?
- 1 ; ? rebated stiles
- 2 ; ? rounded stiles
- 3 ; ? meeting stiles
- 4 ; ? x ? beads
- 5 ; ? x ? mouldings
- 6 ; ?

-
- 2 panelled doors and frames
- 1 ; folding
- 2 ; swinging
- 3 ; sliding
- 4 ; sliding & folding
- 5 ; shaped heads
- 6 ; in one panel
- 7 ; in ? panels [number to be stated]
- 8 ; ? shaped panels
- 9 ; ? arrangement
- 10 ; ?
- 1 ; one panel
- 2 ; both panels
- 3 ; ? panels [number to be stated]
- 4 ; open for glass
- 5 ; open for louvres
- 6 ; in ? panels [number to be stated]
- 7 ; other panel
- 8 ; ? panels [number to be stated]
- 9 ; ? x ? door frames
- 10 (ironmongery measured separately)
- 1 ; raised
- 2 ; raised, moulded and mitred
- 3 ; one side
- 4 ; both sides
- 5 ; with mouldings on solid one side
- 6 ; with mouldings on solid both sides
- 1 size ? x ? x ? thick sets
- 1 ; ? thick panels [GS13.56]
- 2 ; ? x ? stiles [GS13.56]
- 3 ; ? x ? diminishing stiles
- 4 ; ? x ? stiles and top rails [GS13.56]
- 5 ; ? x ? stiles and top rails and muntins [GS13.53]
- 6 ; ? x ? top rails [GS13.56]
- 7 ; ? x ? muntins [GS13.56]
- 8 ; ?
- 1 ; ? x ? middle rails [GS13.56]
- 2 ; ? x ? intermediate rails [GS13.56]
- 3 ; ? x ? middle and bottom rails [GS13.56]
- 4 ; ? x ? intermediate and bottom rails [GS13.55]
- 5 ; ? x ? bottom rails [GS13.56]
- 6 ; ?
- 1 ; ? rebated stiles
- 2 ; ? rounded stiles
- 3 ; ? meeting stiles
- 4 ; ? x ? beads
- 5 ; ? x ? mouldings
- 6 ; ? nr. ? x ? glazed panels with ? thick ? glass
- 7 ; ? nr. ? x ? louvred

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

7 ; as drawing nr. ?

panels with ? x ? x ?
thick horizontal
louvre blades at ?
centres ; ? [state
construction of
louvred panels]

3	flush doors and frames [GS13.57]	1	door size ? x ? x ? thick	sets
1	; single leaf	2	?	sets
2	; double leaves			
3	; folding [GS13.57]		For nos 1 to 2 above	
4	; swinging [GS13.57]	1	; ? rebated stiles	
5	; sliding	2	; ? rounded stiles	
6	; sliding and folding	3	; ? meeting stiles	
7	; shaped heads	4	; ? x ? beads	
8	; hollow core [GS13.57]	5	; ? x ? mouldings	
9	; solid core [GS13.57]	1	? nr. ? x ? high glazed panels with ? thick ? glass	
10	; ? x ? door frames	2	? nr. ? x ? high teak louvred panels with ? x ? x ? thick horizontal louve blades	
11	; ?	1	at ? centres	
1	; faced one side with [GS13.57]	1	; hardwood lipping to all edges of opening	
2	; faced both sides with [GS13.57]	2	; teak lipping to all edges of opening	
3	; faced other side with [GS13.57]			
4	standard hardboard [GS13.57]			
5	Grade 1 veneer bonded plywood [GS13.57]			
6	Grade 2 veneer bonded plywood [GS13.57]			
7	teak veneered Grade 1 veneer bonded plywood [GS13.57]			
8	teak veneered Grade 2 veneer bonded plywood [GS13.57]			
9	laminated plastic class *HG/VG ? thick ; type *I/II adhesive bonded to Grade 1 veneer bonded plywood [GS13.57 (*Select as appropriate)]			
10	laminated plastic class *HG/VG ? thick ; type *I/II adhesive bonded to Grade 2 veneer bonded plywood [GS13.57 (*Select as appropriate)]			
11	; ?			
12	(ironmongery measured separately)			
1	; hardwood lipping to all edges [GS13.57]			
2	; teak lipping to all edges [GS13.57]			

4 [plywood or blockboard service hatches, 1 door size ? x ? x ? thick with ? x

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	duct access doors, panels, trap doors and frames]		? hardwood door frames	nr
	1 service hatches and frames		2 door size ? x ? (extreme) x ? thick [irregular shape] with ? x ?	
	2 duct access doors and frames		hardwood door frames	nr
	3 panels and frames			
	4 trap doors and frames		For nos 1 to 2 above	
	5 ?		1 ; ? x ? hardwood edgings	
	1 ; single leaf		2 ; ?	
	2 ; double leaves		1 ; ? rebated stiles	
	3 ; in irregular shapes		2 ; ? rounded stiles	
	4 ; ?		3 ; ? meeting stiles	

5	[casements, skylights, lanterns]	1	size ? x ? x ? thick	nr
	1 casements and frames	2	extreme size ? x ? x ? thick [irregular shape]	nr
	2 skylights and frames			
	3 skylights in lanterns and frames		For nos 1 to 2 above	
	4 lantern sides and frames	1	; in ? panes	
	5 bull-eye casements and frames		1 ; ? x ? frames	
	6 ?		2 ; ? x ? edgings	
	1 ; in irregular shapes		3 ; ? x ? transoms	
	2 ; in one pane		4 ; ? x ? mullions	
	3 ; divided into panes		5 ; ? x ? beads	
	4 ; shaped panes		6 ; ?	
	5 ; ? arrangement		1 ; ? rebated stiles	
	6 ; as drawing nr. ?		2 ; ? rounded stiles	
	7 ; ?		3 ; ? meeting stiles	
		3	? thick x ? diameter [bull-eye casement]	nr

6	louvres and frames	1	? x ? x ? thick	nr
	1 infilling with	1	; ? x ? frames	
	2 ? x ? horizontal	2	; ? x ? edgings	
	3 ? x ? vertical			
	1 louvres with one labour			
	2 louvres with ? labours			
	3 slats with one labour			
	4 slats with ? labours			
	1 at ? centres			

7	[trims and architraves]	1	? x ?	m
	1 trims	1	; curved	
	2 architraves	2	; ?	
	3 ?			
	1 ; fixing with brass screws [GS13.25, 13.42]			
	2 ; fixing with stainless steel screws [GS13.25, 13.42]			
	3 ; fixing with alloy screws [GS13.25, 13.42]			

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			4 ; fixing with brass screws and cups [GS13.25, 13.42]	
			5 ; fixing with stainless steel screws and cups [GS13.25, 13.42]	
			1 ; plugging [GS13.28, 13.40]	
			2 ; ?	

3	[fire rated doors]	1	fire rated doors and frames	1 door size ? x ? x ? thick sets
	1 designing, supplying and fixing proprietary fire rated doors (ironmongery measured separately)	1	; single leaf	1 ; ? rebated stiles
	1 ; ? [manufacturer and specified product reference]	2	; double leaves	2 ; ? rounded stiles
		3	; folding	3 ; ? meeting stiles
		4	; swinging	4 ; ?
		5	; sliding	1 ; ? nr. ? x ? high glass panels in ? thick ? glass [state type of glass]
		6	; sliding and folding	
4	[timber]	7	; shaped heads	
	1 hardwood [GS13.06]	8	; solid core [GS13.57]	
	2 teak [GS13.07]	9	; ? hour fire resistance rating [GS13.61]	
	3 ?	10	; ?	
		1	; ? x ?	
		2	door frames	
		3	door linings	
		4	; associated packings, grounds, smoke seals and intumescent strips	
		5	; fixing cramps, dowels and other accessories	
		1	; faced one side with [GS13.57]	
		2	; faced both sides with [GS13.57]	
		3	; faced other side with [GS13.57]	
		4	hardboard [GS13.57]	
		5	Grade 1 veneer bonded plywood [GS13.57]	
		6	Grade 2 veneer bonded plywood [GS13.57]	
		7	teak veneered Grade 1 veneer bonded plywood [GS13.57]	
		8	teak veneered Grade 2 veneer bonded plywood [GS13.57]	
		9	laminated plastic class *HG/VG ? thick ; type *I/II adhesive bonded to Grade 1 veneer bonded plywood [GS13.57 (*Select as appropriate)]	
		10	laminated plastic class *HG/VG ? thick ; type *I/II adhesive bonded to Grade 2 veneer bonded plywood [GS13.57 (*Select as	

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		appropriate)]	
		11 ; hardwood lipping to all edges [GS13.57]	
		12 ; teak lipping to all edges [GS13.57]	
		13 ; tested to BS 476 [GS13.61]	
		14 ; ?	

5 LININGS AND CLADDINGS	1 [timbers]	1 to	1 ? thick m2
1 ; internally	1 sawn softwood [GS13.05]	1 walls	1 ; tapered boards ; ? laps [GS13.11 - weather boarding]
2 ; externally	2 softwood [GS13.05]	2 ceilings and sides and soffits of beams	2 ; ? thick ? backing [state material for laminated plastic sheeting]
	3 sawn hardwood [GS13.06]	3 roofs	3 ; ?
	4 hardwood [GS13.06]	4 fittings	1 ; tongued angles
	5 ?	5 ?	2 ; chamfers
	1 ; boarding	1 ; in ? x ? panels	3 ; rebates
	2 ; weather boarding [GS13.11]	2 ; ?	4 ; grooves
	1 ; sanded	3 ; ? high from floor [over 3.50m height to be stated in 1.50m stages]	5 ; ?
	2 ; unsanded	1 ; fixing with screws [GS13.25, 13.42]	
	3 ; veneered ; type ?	2 ; fixing with adhesive [GS13.29]	
	4 ; melamine-faced	3 ; fixing with explosive cartridge fixings [GS13.27]	
	5 ; high moisture resistant	4 ; fixing with ? bolts at ? centres both ways	
	6 ; polyurethane based with zero formaldehyde emission	5 ; plugging [GS13.28, 13.40]	
	7 ; ?	6 ; pelleting	
	2 [boarding]	7 ; ?	
	1 plywood ; Grade 1 veneer bonded [GS13.12]		
	2 plywood ; Grade 2 veneer bonded [GS13.12]		
	3 marine plywood [GS13.13]		
	4 blockboard ; Grade 2 veneer bonded [GS13.14]		
	5 hardboard ; HB *H/E/L/A/S [GS13.15 (*Select as appropriate)]		
	6 hardboard ; *MBL/MBH.H/E/L/A/S [GS13.15 (*Select as appropriate)]		
	7 medium density fibreboard [GS13.17.1]		
	8 ?		
	1 ; sanded		
	2 ; unsanded		
	3 ; veneered ; grade ? [GS13.12]		
	4 ; melamine-faced		
	5 ; high moisture resistant		
	6 ; polyurethane based with zero formaldehyde emission		
	7 ; ?		
	3 [laminated plastic sheeting]		
	1 laminated plastic ? thick ; class HG ; type *I/II adhesive bonded [GS13.21 (*Select as appropriate)]		

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- 2 laminated plastic ? thick ; class VG
; type *I/II adhesive bonded
[GS13.21 (*Select as appropriate)]
3 ?

4 fabric lining

- 1 ? thick ? [state material of fabric lining]
1 ; ? thick ? foam rubber
2 ; ? thick ? backing
1 ; in ? x ? panels
2 ; ?
3 ; ? high from floor [over 3.50m height to be stated in 1.50m stages]
1 ; fixing with screws
[GS13.25, 13.42]
2 ; fixing with adhesive
[GS13.29]
3 ; fixing with explosive cartridge fixings [GS13.27]
4 ; ? [state other methods of fixing]

1 ? thick (overall)

m2

6 PROFILED SHEET ROOF COVERINGS AND WALL CLADDINGS

- 1 fibre cement profiled sheets
2 plastic profiled sheets [GS12.92]
3 bitumen and fibre profiled sheets
4 thermoplastic sheet coverings
5 thermoplastic sheet claddings
6 glass reinforced plastic cladding [GS12.89]

For nos 1 to 6 above
1 : ? side laps
2 : side laps of one and a half corrugation
3 : ? end laps
4 : ?
1 ; fixing with screws
2 ; fixing with ? bolts at ? centres both ways
3 ; fixing with ? [give method]
4 ; plugging
5 ; bedding laps with an approved sealant
6 ; ?
1 ; ? [state extent of the work]
2 ; ? high above ground
3 ; as drawing nr. ?

- 1 to
1 roofs
2 walls
3 soffits
4 ; ?
1 ; ? degrees pitch
1 ; fixing at 300 centres to purlins spaced at ? centres
2 ; fixing at 300 centres to sheeting rails spaced at ? centres
3 ; fixing at 300 centres to framing rails spaced at ? centres
4 ; through underlinings
5 ; ?

- 1 ? thick
1 ; on timber
2 ; on metal
3 ; ?
1 ; curved ; ? radius

m2

- 2 extra over ? for [roof coverings or wall claddings]
1 translucent sheets
2 sheets with soaker flanges
3 roof light units
4 sheets with louvre blades
5 ventilators
6 junctions
7 ?
1 ; ? [state manufacturer and specific product reference]

- 1 [sizes]
1 ? x ?
2 ? x ? x ?
1 ; ? [give details of construction]
2 ; ref. ?

nr

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- 1 ; depth of suspension
not exceeding 1.50m
2 ; depth of suspension
1.50 - 3.00m
3 ; ? [in further stage
of 1.50m]

2	acoustic tiles	1	fixing to wood supports (measured separately) with ? [give method of fixing]	1	generally	m2
	1 ; organic fibre insulating board ; ? x ? x ? thick [GS13.22]					
	2 ; mineral fibre insulating board ; ? x ? x ? thick [GS13.22]					
	3 ; multi-purpose, dimensionally stable building board ; ? x ? x ? thick [GS13.22]					
	4 ; ?					
	1 ; plain surfaces					
	2 ; perforated surfaces					
	3 ; fissured surfaces					
3	? [ceiling tiles or panels]					
	1 ; ? [give sizes and manufacturer's reference]					
	1 ; ? hour resistance rating					
	2 ; ? decibel reduction rating					

8	INSULATION, PROOFING WORKS AND FIRE STOPS	1	to plain areas	1	? thick	m2
	1 acoustic linings	2	across ? [members] at ? centres	1	; ? laps [insulating quilt only]	
	2 insulation linings	3	between ? [members] at ? centres	2	; ?	
	3 proofing linings	4	to structural steel framing	1	; over 5m in one length ; ? [state length]	
	4 fire stops			2	; in ? x ? panels	
	For nos 1 to 4 above		For nos 1 to 4 above	3	; ? high from floor [over 3.50m, height to be stated in 1.50m stages]	
	1 ; insulation board [GS13.16]		1 ; horizontal [include slope <=45 degrees from the horizon]	4	; ?	
	2 ; glass fibre insulation board [GS13.19]		2 ; vertical [include slope >45 degrees from the horizon]			
	3 ; glass fibre insulation quilt [GS13.18]		3 ; to soffits			
	4 ; expanded polystyrene boards to BS ?		1 ; fixing with screws [GS13.25, 13.42]			
	5 ; woodwool loose fill		2 ; fixing with adhesive [GS13.29]			
	6 ; mineral fibre loose fill		3 ; fixing with explosive cartridge fixings [GS13.27]			
	7 ; plastics loose fill		4 ; fixing with ? bolts at ? centres both ways			
	8 ; beads loose fill		5 ; plugging [GS13.28, 13.40]			
	9 ; ? [state manufacturer and proprietary products]		6 ; ?			
	1 ; ? hour fire rating [for proprietary product]					
	2 ; ? decibel reduction rating [for proprietary product]					

9 UNFRAMED TRIMS

1 [timber]

1 [skirtings, architraves, picture rails,

1 ? x ?

m

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	1	sawn softwood [GS13.05]		dado or chair rails, cornices, cappings, etc.]		1	; comprising ? [state number and size of member for built-up work]	
	2	softwood [GS13.05]		1	skirtings		1	; ? x ? sawn hardwood grounds
	3	sawn hardwood [GS13.06]		2	architraves		2	; ? x ? thick ? backings [state material]
	4	hardwood [GS13.06]		3	picture rails		3	; ? x ? sawn hardwood bracketing at ? centres
	5	teak [GS13.07]		4	dado rails		4	; with services within [only for built-up work]
	6	?		5	chair rails		1	; tongued on
	2	[plywood, blockboard]		6	cornices		2	; housed
	1	plywood ; Grade 1 veneer bonded [GS13.12, 13.29]		7	cappings		3	; curved
	2	plywood ; Grade 2 veneer bonded [GS13.12, 13.29]		8	built-up skirtings			
	3	marine plywood [GS13.13]		9	built-up cornices			
	4	blockboard [GS13.14]		10	?			
	5	?		1	; fixing with brass screws [GS13.25, 13.42]			
	1	; teak veneered one side [on plywood or blockboard]		2	; fixing with stainless steel screws [GS13.25, 13.42]			
	2	; teak veneered both sides [on plywood or blockboard]		3	; fixing with alloy screws [GS13.25, 13.42]			
	3	; faced one side with laminated plastic ; class *HG/VG ? thick ; type *I/II adhesive bonded [on plywood or blockboard (*Select as appropriate)]		4	; fixing with brass screws and cups [GS13.25, 13.42]			
	4	; faced both sides with laminated plastic ; class *HG/VG ? thick ; type *I/II adhesive bonded [on plywood or blockboard (*Select as appropriate)]		5	; fixing with stainless steel screws and cups [GS13.25, 13.42]			
				6	; fixing with explosive cartridge fixings [GS13.27]			
				7	; fixings with ? bolts at ? centres			
				8	; pelleting [GS13.42]			
				9	; plugging [GS13.28, 13.40]			
				10	; ?			
10	PARTITIONS		1	partitions		1	? high	m
		1	[fixed and demountable partitions]	1	; ? thick overall		1	; with sloping cills
		1	designing, supplying and fixing	2	; ? thick ? coverings [give kind and quality of materials]		2	; with sloping heads
		2	supplying and fixing	3	on one side		3	; with sloping cills and heads
		1	fixed partitions	4	on both sides		1	; open framing above ceiling ; ? girth [state height or girth]
		2	demountable partitions	5	; ? factory applied finish [msd where not at Contractor's discretion]		2	; unfinished framing above ceiling ; ? girth [state height or girth]
		1	; ? [manufacturer and specific product reference]	6	; ? site applied finish [msd where not at Contractor's discretion]		1	; curved
		2	; all framing, insulation, sealants, vapour barriers, isolating membranes, moisture resistant treatment and lining	1	; fully glazed		2	; ref. ?
		3	; all necessary fittings, fixing accessories, screws, bolts and painting	2	; semi-glazed			
		4	; assembling and jointing all in strict accordance with the manufacturer's instructions	3	; ? high glazing ? above ground [for semi-glazed partitions]			
		5	; as drawing nr. ?	4	; ?			
		6	; externally	1	; ? hour of fire rating			
				2	; ? decibel reducing rating			
				2	? trims [state materials]		1	? x ? x ?
				1	as cover piece to edges		1	; ?
				2	as panel joints			

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3 ?
1 ; fixing with ?

3	extra over ? thick partitions for	1	[openings]	nr
			1 openings	
			2 doors ; ? [give details]	
			3 windows in ? lights	
			4 hatches ; ? [give details]	
			5 glazed panels in ? lights	
			6 access panels ; ? [give details]	
			7 ; ?	
			1 ; overall sizes ? x ?	
			2 ; overall sizes ? diameter	
			1 ; ? thick ? glass	
			2 ; fixing glass with ? [state method of fixing glass]	
			3 ; ? nr. cut or formed holes in ? thick ? glass	
			4 ; ironmongery comprising ? [state detailed ironmongery - to doors, hatches and access panels]	

4	fixing for heavy fittings [only for fixed partitions] 1 ; including all brackets, additional supports and fixing accessories	1	[fittings]	nr
			1 sinks	
			2 cupboards	
			3 ?	
			1 ; approximately ? kg each	

2	[toilet cubicle partitions, office partitions] 1 designing, supplying and fixing 2 supplying and fixing 1 toilet cubicle partitions 2 demountable office partitions 1 ; ? [manufacturer and specific product reference] 2 ; all framing, insulation, sealants, vapour barriers, isolating membranes, moisture resistant treatment and lining 3 ; all necessary fittings, fixing accessories, screws, bolts and painting 4 ; assembling and jointing all in strict accordance	1	partitions ; ? thick overall with smooth edges 1 ; ? framing [give size and material] 2 ; ? thick ? board lining [give thickness and material] 3 on one side 4 on both sides 1 ; ? [give details of finishes or veneers]	1	[sizes]	nr
				2	[sizes]	sets
					For nos 1 to 2 above	
				1	? x ? high	
				2	? x ? on plan ; ? high	
				1	; ? nr. cubicles	
				2	; ? nr. doors ; ? x ?	
				3	; ? nr. longitudinal panels ; ? x ?	
				4	; ? nr. glazed panels ; ? x ?	
				5	; ? nr. windows ; ? x ?	
				6	; ? thick ? glass	
				1	; fixing glass with ? [state method of fixing glass]	
				2	; complete with	

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with the manufacturer's
instructions
5 ; as drawing nr. ?

ironmongery comprising
? [state details] for
each door
3 ; ? integral metalwork
4 ; ? ducting [for
office partition]
5 ; ?

		2 [fittings]	1 [sizes]	nr
		1 shelves	1 ? x ? wide	
		2 trays	2 ? x ? x ? high	
		3 ?		
		3 ? trims [state materials]	1 ? x ? x ?	m
		1 ; fixed at junctions of cubicles		
		2 ; fixed at junctions with adjoining constructions		
11 SLIDING AND FOLDING PARTITIONS	1 [timber]	1 partitions in ? panels [number to be stated]	1 size ? x ? x ? (overall) thick	nr
	1 sawn softwood [GS13.05]	1 ; shaped heads	2 size ? x ? x ? (overall) thick	sets
	2 softwood [GS13.05]	2 ; hollow core	For nos 1 to 2 above	
	3 sawn hardwood [GS13.06]	3 ; solid core	1 ; ? rebated stiles	
	4 hardwood [GS13.06]	4 ; ? arrangement	2 ; ? rounded stiles	
	5 teak [GS13.07]	1 ; faced one side with	3 ; ? meeting stiles	
	6 ?	2 ; faced other side with	4 ; ? x ? beads	
		3 ; faced both sides with	5 ; ? x ? mouldings	
		4 hardboard [GS13.15]		
		5 Grade 1 veneer bonded plywood	3 extra over ? for forming openings	nr
		6 Grade 2 veneer bonded plywood	1 ? x ? for glass	
		7 teak veneered Grade 1 veneer bonded plywood	2 ? x ? for hardwood louvres	
		8 teak veneered Grade 2 veneer bonded plywood	3 ? x ? for teak louvres	
		9 laminated plastic class *HG/VG ? thick ; type *I/II adhesive bonded to Grade 1 veneer bonded plywood [*Select as appropriate]	1 ; ? x ? horizontal	
		10 laminated plastic class *HG/VG ? thick ; type *I/II adhesive bonded to Grade 2 veneer bonded plywood [*Select as appropriate]	2 ; ? x ? vertical	
		11 ; ? x ? hardwood lipping to all edges	3 louvres	
		12 ; ? x ? teak lipping to all edges	4 slats	
		13 ; ?	5 at ? centres	
			1 ; hardwood lipping to all edges of opening	
			2 ; teak lipping to all edges of opening	
		2 [partition frams, partition linings]	1 ? x ?	nr
		1 partition frames	1 ; rebated head and jambs	

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			2	built-up partition frames		2	; hollowed jambs	
			3	partition linings		1	; to suit sliding and folding partition ? x ? high overall	
			4	built-up partition linings				
			1	; fixing with explosive cartridge fixings [GS13.27]		1	; ? x ? sawn hardwood grounds	
			2	; fixing with ? bolts		2	; ? x ? sawn hardwood backings	
			1	; pelleting [GS13.42]				
			2	; plugging [GS13.28, 13.40]		3	; ?	
			3	; ?				
			3	[trims and architraves]		1	? x ?	m
			1	trims		1	; curved	
			2	architraves				
			3	?				
			1	; fixing with brass screws [GS13.25, 13.42]				
			2	; fixing with stainless steel screws [GS13.25, 13.42]				
			3	; fixing with alloy screws [GS13.25, 13.42]				
			4	; fixing with brass screws and cups [GS13.25, 13.42]				
			5	; fixing with stainless steel screws and cups [GS13.25, 13.42]				
			6	; fixing with ? bolts				
			1	; plugging [GS13.28, 13.40]				
			2	; ?				
12	FURNITURE, FITTINGS, SHELVING AND RACKS [ADD PLAYGROUND EQUIPMENT IF THEY ARE INCLUDED]	1	designing, supplying and fixing	1	consisting of [for cupboards, benches, counters, wardrobes, vanity units, tables and bookcases]	1	[sizes]	nr
		2	supplying and fixing			1	? x ? x ? high	
		3	collecting from ? and fixing only			2	? diameter x ? high	
			For nos 1 to 3 above			1	; ? nr. doors, ? [state thickness, sizes, materials and construction]	
		1	cupboards		1	? thick *Grade 1 veneer bonded / Grade 2 veneer bonded / marine / plywood / blockboard / ? / fronts, backs, sides or divisions ; covered with ? thick *PVC sheet / acrylic sheet / laminated plastic / ; class HG / class VG / type *I/II adhesive bonded ; ? [*Select as appropriate]	2	; ? nr. drawers, ? [state sizes, materials and construction]
		2	kitchen cupboards		2	; ? x ? x ? thick *Grade 1 veneer bonded / Grade 2 veneer bonded / marine / plywood / blockboard / ? / tops [*Select as appropriate]	3	; ? nr. keyboard trays, ? [state thickness, sizes, materials and construction]
		3	kitchen wall cupboards		3	; ? x ? *hardwood / teak / ? / frames / edgings / battens / stiffeners / ? [*Select as appropriate]	4	; ? nr. glass panels, ? [state sizes, and materials]
		4	work benches		4	; ?	5	; ironmongery comprising ? [give full details]
		5	tables				1	; type ?
		6	counters				2	; ref. ?
		7	vanity units				3	; ? shaped on plan
		8	wardrobes				4	; as drawing nr. ?
		9	bookcases				5	; ?
		10	pin boards					
		11	notice boards					
		12	chalk boards					
		13	sinks and draining boards					
		14	shelving					
		15	racks					
		16	?					
		1	; ? [manufacturer and specific product reference]					
		2	; ? finishes and surfaces					

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	treatment			
3	in manufacturer	2	consisting of [for pin boards, notice boards, chalk boards, etc.]	1 [sizes] nr
4	off site			1 ? x ? high
1	; fixing to ? [state background]	1	? thick *Grade 1 veneer bonded / Grade 2 veneer bonded / marine / plywood / blockboard / ? / backs [*Select as appropriate]	1 ; ironmongery comprising ? [give full details]
2	; all necessary fixing screws, bolts, ironmongery and fittings, silicone sealant pointing and all painting [revise to suit]	2	; ? x ? *hardwood / teak / ? / frames / edgings / battens / stiffeners / chalk rails / ? [*Select as appropriate]	1 ; type ?
3	; fixed in accordance with the manufacturer's instructions	3	; ? thick ? *pin boards / chalk boards / notice boards / ? [state material (*Select as appropriate)]	2 ; ref. ?
4	; as drawing nr. ?	4	; ?	3 ; ? shaped on plan
				4 ; as drawing nr. ?
				5 ; ?
		3	consisting of [for sinks and draining boards]	1 [sizes] nr
				1 ? x ? wide
		1	? thick *Grade 1 veneer bonded / Grade 2 veneer bonded / marine / plywood / blockboard / ? / tops ; covered with ? thick *PVC sheet / acrylic sheet / laminated plastic / ; class HG / class VG / type *I/II adhesive bonded / ? [*Select as appropriate]	1 ; ? nr. openings for sinks and taps
		2	; ?	2 ; ironmongery comprising ? [give full details]
				1 ; type ?
				2 ; ref. ?
				3 ; ? shaped on plan
				4 ; as drawing nr. ?
				5 ; ?
		4	consisting of [for shelves and racks]	1 [sizes] nr
				1 ? x ? x ? high
		1	? thick *Grade 1 veneer bonded / Grade 2 veneer bonded / marine / plywood / blockboard / ? / fronts, backs, sides or divisions ; covered with ? thick *PVC sheet / acrylic sheet / laminated plastic / ; class HG / class VG / type *I/II adhesive bonded / ? [*Select as appropriate]	1 ; ? nr. doors, ? [state thickness, sizes, materials and construction]
		2	; ? x ? x ? thick *Grade 1 veneer bonded / Grade 2 veneer bonded / marine / plywood / blockboard / ? / tops [*Select as appropriate]	2 ; ? nr. glass panels, ? [state thickness, sizes, materials and construction]
		3	; ? x ? *hardwood / teak / ? / frames / edgings / battens / stiffeners / ? [*Select as appropriate]	3 ; ironmongery comprising ? [give full details]
		4	; ?	1 ; type ?
				2 ; ref. ?
				3 ; ? shaped on plan
				4 ; as drawing nr. ?
				5 ; ?
4	designing, supplying and fixing	1	? [state type of playground equipment]	1 overall size ? x ? x ? nr
5	supplying and fixing	1	; consisting of ?	2 ? nr
6	collecting from ? and fixing only	2	; ?	
		1	; complete with ? [state metal	For nos 1 to 2 above

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

For nos 4 to 6 above
 1 playground equipment
 2 sign boards and signage
 3 ?
 1 ; ? [manufacturer and specific product reference]
 2 ; ? finishes and surface treatment
 3 in manufacture
 4 off site
 1 ; fixing to ? [state background]
 2 ; all necessary fixing screws, bolts, ironmongery and fittings, silicone sealant pointing and all painting [revise to suit]
 3 ; fixed in accordance with the manufacturer's instructions
 4 ; as drawing nr. ?

fittings]
 2 ; ? nr. ? thick ? glass panels [state glass type]

1 ; ironmongery comprising ? [give full details]
 1 ; type ?
 2 ; ref. ?

2 sign boards
 3 signage

1 [sizes] nr
 1 ? x ?
 2 ? x ? x ?

For nos 2 to 3 above
 1 ; consisting of
 1 ? x ? *hardwood / teak / beech / ? / frames / edgings / ? / [*Select as appropriate]
 2 ; ? thick *Grade 1 veneer bonded / Grade 2 veneer bonded / marine / plywood / blockboard / ? / fronts / backs / sides / ? [*Select as appropriate]
 3 ; ? thick *acrylic / perspex / ? / front panels / ? [*Select as appropriate]
 4 ; ?

1 ; ? nr. ? high *cut out / silkscreened / painted / ? / Chinese characters / letters / numerals / symbols / ? [*Select as appropriate]
 2 ; ironmongery comprising ? [give full details]
 1 ; type ?
 2 ; ref. ?
 3 ; ?

13 STAIRS, HANDRAILS AND BALUSTRADES

1 staircases
 1 ; straight
 2 ; dot-legged
 3 ; open newel
 4 ; geometrical, rectangular on plan
 5 ; geometrical, circular on plan
 6 ; ?
 1 ; in ? nr. flights
 2 ; ? nr. intermediate landings
 3 ; softwood
 4 ; hardwood
 5 ; teak
 1 ; including all necessary fixing screws, bolts and fittings and all painting
 2 ; as drawing nr. ?

1 stairs
 1 ; supporting framework comprising ? [describe materials and construction]
 2 ; facings comprising ? [state materials and details]

1 ? x ? x ? high overall nr
 1 ; comprising ? nr. risers, ? nr. treads, ? nr. winders
 2 ; ?

2 handrails
 3 balustrades

1 ? x ? rails m
 2 ? diameter rails m
 3 comprising ? x ? rails ? average high [for balustrades] m
 4 comprising ? diameter rails ? average high [for balustrades] m

For nos 1 to 4 above
 1 ; ? labours [state nr.]
 2 ; curved
 3 ; ?
 1 ; fixed to ? brackets at ? centres
 2 ; hollowed for and screwed to ? x ? metal core (measured separately)
 3 ; ? x ? balusters at ? centres

2 facing to ? stairs [state construction ; 1 ? thick

1 ? x ? x ? high overall nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

for stair construction other than
timber]
1 ; as drawing nr. ?

1 *softwood / hardwood / teak / Grade
1 veneer bonded / Grade 2 veneer
bonded / marine plywood / blockboard
/ ? / finished exposed surface with
? thick *teak veneer facing / to
treads / risers / winders / ?
[*Select as appropriate]
2 ; ?
1 ; face nailing
2 ; secret nailing
3 ; traversing
4 ; finishing for polishing
5 ; ?

1 ; comprising ? nr. risers, ?
nr. treads, ? nr. winders
2 ; ?

14 MINOR BUILDINGS AND STRUCTURES

1 minor building mainly of timber
construction (SM.xiii(1).1)
2 ? structure mainly of timber
construction

For nos 1 to 2 above

1 ? [give description of the major
materials and components]
1 ; obtaining permission /
licences, payment of rates, fees
and charges related thereto
1 ; as drawing nr. ?

1 providing and erecting
2 taking over existing and repairing as
necessary

For nos 1 to 2 above

1 ; maintaining over a period of ?
months
2 ; maintaining over a period of ?
weeks
3 ; maintaining over a period of ?
4 ; ?

1 ? x ? x ? high overall item
2 ? item

For nos 1 to 2 above

1 ; adapting ? [give details]
2 ; ?
1 ; ? finishing and surface
treatment applied on site
2 ; ? finishing and surface
treatment applied off site
1 ; clearing away and
making good all works
disturbed
2 ; ?

*** END OF REPORT ***

WATERPROOFING

WP - WATERPROOFING

FIRST DIVISION

1 ASPHALT

SECOND DIVISION

- 1 mastic asphalt ; to BS 6925 type T1097 [GS11.03 - lime stone aggregate for damp-proofing]
 - 2 mastic asphalt ; to BS 6925 type R988 manufactured with asphaltic cement specified under Table 1 column B (100 % Bitumen) [GS12.50 - 12.71 for roofing]
 - 3 mastic asphalt ; to BS 6925 type R988 manufactured with asphaltic cement specified under Table 1 column T25 (75 % Bitumen and 25 % Lake asphalt) [GS12.50 - 12.71 for roofing]
- For nos 1 to 3 above
- 1 ; tanking and damp-proofing
 - 2 ; roof coverings

THIRD DIVISION

- 1 ? coat coverings [GS11.10 - damp-proofing, GS12.64 - roofing]
 - 2 ?
- For nos 1 to 2 above
- 1 ; felt isolating membrane [GS12.54, 12.62]
 - 2 ; expanded metal lathing reinforcement [GS12.59]
 - 3 ; ?
- 1 ; on concrete
 - 2 ; on brickwork or blockwork
 - 3 ; on timber
 - 4 ; on metal
 - 5 ; on screeds
 - 6 ; on ?

FOURTH DIVISION

- 1 ? thick [GS12.64] m2
 - 1 ; horizontal
 - 2 ; sloping
 - 3 ; on soffits
 - 4 ; vertical
 - 5 ; curved
 - 6 ; executing overhand
 - 7 ; executing overhand in confined situations
 - 8 ; ?
 - 1 ; executing in sections
 - 2 ; ?
- 2 dressing to outlet pipes nr
 - 3 dishing to gullies nr
- For nos 2 to 3 above
- 1 ; executing in sections
 - 2 ; ?
- 4 coat collar ? high around pipes, railing standards and the like nr
 - 1 ; expanded metal lathing reinforcement
 - 1 ; executing in sections
 - 2 ; ?

-
- 3 internal angle fillets [GS11.10 - damp proofing, GS12.65 - roofing]
- 1 in two coats [GS11.10 - damp-proofing, GS12.65 - roofing] m
 - 1 ; curved
 - 1 ; executing in sections
 - 2 ; ?

-
- 4 cutting back existing and jointing new
- 1 ? thick m

-
- 5 two coat [skirtings, fascias, aprons, gutters, channels, curbs]
 - 6 three coat [skirtings, fascias, aprons, gutters, channels, curbs - over 300 high]
- 1 ? thick ; not exceeding 300 girth m
 - 2 ? thick ; ? girth [exc. 300 girth - GS12.64 13 thick ; 20 thick over 300 high] m

- For nos 5 to 6 above
- 1 skirtings
 - 2 fascias or drips
 - 3 aprons
 - 4 linings to channels
 - 5 linings to gutters
 - 6 linings to valley gutters
 - 7 coverings to curbs
 - 8 ?
 - 1 ; felt isolating membrane
- For nos 1 to 2 above
- 1 ; angle fillet at bottom
 - 2 ; fair edge at bottom
 - 3 ; drip at bottom
 - 4 ; ?
 - 1 ; arris at top
 - 2 ; fair edge at top
 - 3 ; turn in at top [GS12.66]
 - 4 ; ?
 - 1 ; horizontal
 - 2 ; sloping

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

	2	; expanded metal lathing reinforcement [GS12.63 - where over 300 high]		3	; stepped		
		1 ; on concrete		4	; curved		
		2 ; on screeds		5	; executing in sections		
		3 ; on brickwork or blockwork		6	; ?		
		4 ; on timber	3	outlets to gutters		nr	
		5 ; on metal	4	outlets to channels		nr	
		6 ; on ?					
<hr/>							
	7	one coat linings [cesspools, sumps]	1	? thick ; ? x ? x ? deep		nr	
	8	two coat linings [cesspools, sumps]	2	? thick ; ? diameter x ? deep		nr	
	9	three coat linings [cesspools, sumps]					
	For nos 7 to 9 above			For nos 1 to 2 above			
	1	to cesspools		1	; executing in sections		
	2	to sumps		2	; ?		
	3	to ?					
		1 ; felt isolating membrane					
		2 ; expanded metal lathing reinforcement					
		3 ; ?					
		1 ; on concrete					
		2 ; on brickwork or blockwork					
		3 ; on timber					
		4 ; on metal					
		5 ; on ?					
<hr/>							
	10	solar protection [GS12.57, 12.58, 12.71] (SM.x(a).19)	1	granite chippings in size ? at a rate of ? ; bedding in bitumen compound ; application rate at ? [GS12.57, 12.71]		m2	
			2	white stone chippings in size ? at a rate of ? ; bedding in bitumen compound ; application rate at ? [GS12.71]		m2	
			3	reflective paint ; two coats application [GS12.58, 12.71]		m2	
				For nos 1 to 3 above			
				1	; executing in sections		
				2	; ?		
<hr/>							
	4	testing (SM.x(a).21)	1	non-destructive test of waterproofing system	1	[types] item	
				1	; preparing	1	infrared thermography scanning [GS12.117]
				2	; executed by an independent specialist contractor	2	; ?
				3	; ?		

WP - WATERPROOFING

FIRST DIVISION

2 LIQUID MEMBRANE WATERPROOFING

SECOND DIVISION

- 1 liquid applied waterproofing material
Type BI [GS12.100 Type BI]
- 2 liquid applied waterproofing material
Type BII [GS12.100 Type BII]
- 3 liquid applied elastomeric waterproofing
membrane [GS11.04.02]
- 4 ?

For nos 1 to 4 above

- 1 ; designing by, obtaining from and
fixing by a specialist contractor
- 2 ; laying in accordance with the
manufacturer's instructions
- 3 ; ?
 - 1 ; tanking and damp-proofing
 - 2 ; roof coverings

THIRD DIVISION

- 1 ? coats
 - 1 ; on concrete
 - 2 ; on timber
 - 3 ; on metal
 - 4 ; ?

FOURTH DIVISION

- 1 ? thick m2
 - 1 ; horizontal
 - 2 ; sloping
 - 3 ; on soffits
 - 4 ; vertical
 - 5 ; curved
 - 6 ; executing overhand
 - 7 ; executing overhand in
confined situations
 - 8 ; ?
 - 1 ; executing in sections
 - 2 ; ?

- 2 dressing to outlet pipes nr
- 3 dishing to gullies nr

For nos 2 to 3 above

- 1 ; executing in sections
- 2 ; ?

- 4 ? coat collar ? high around pipes,
railing standards and the like nr
 - 1 ; expanded metal lathing
reinforcement
 - 1 ; executing in sections
 - 2 ; ?

-
- 2 ? coat [skirtings, fascias, aprons,
gutters, channels, curbs, etc]
 - 1 skirtings
 - 2 fascias
 - 3 aprons
 - 4 linings to channels
 - 5 linings to gutters
 - 6 linings to valley gutters
 - 7 coverings to curbs
 - 8 ?
 - 1 ; on concrete
 - 2 ; on screeds
 - 3 ; on brickwork or blockwork
 - 4 ; on timber
 - 5 ; on metal
 - 6 ; ?

- 1 ? thick ; not exceeding 300 girth m
- 2 ? thick ; ? girth [exc. 300 girth] m

For nos 1 to 2 above

- 1 ; horizontal
- 2 ; sloping
- 3 ; stepped
- 4 ; curved
- 5 ; raking
 - 1 ; executing in sections
 - 2 ; ?

- 3 outlets to gutters nr
- 4 outlets to channels nr

-
- 3 ? coat [cesspools, sumps]
 - 1 linings to cesspools
 - 2 linings to sumps
 - 1 ; on concrete
 - 2 ; on screeds
 - 3 ; on brickwork or blockwork
 - 4 ; on timber
 - 5 ; on metal

- 1 ? x ? x ? deep nr
- 2 ? diameter x ? deep nr

For nos 1 to 2 above

- 1 ?
 - 1 ; executing in sections
 - 2 ; ?

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

		9	linings to cesspools	1	? x ? x ? deep	nr
		10	linings to sumps	2	? diameter x ? deep	nr
		For nos 9 to 10 above		For nos 1 to 2 above		
		1	; on concrete	1	; executing in sections	
		2	; on timber	2	; ?	
		3	; on metal			
		4	; ?			
2	bituminous emulsion roofing	1	on felt ; existing	1	[surfaces]	m2
	1 ; wash coat, priming coat			1	horizontal	
	1 ; filling cracks with compound consisting of approved bitumen emulsion and sand (1:3 by volume)			2	sloping	
	2 ; ?			3	on soffits	
	3 ; one coat of approved cover coating at the rate of 0.2 litre/m2 [GS12.33]			4	vertical	
	4 ; two coats of approved bitumen emulsion at the rate of 0.7 litre/m2 per coat			5	curved	
	5 ; ?			6	; executing overhand	
	1 ; finishing surfaces with sand dressing [GS12.35]			7	; executing overhand in confined situations	
	2 two coats of approved protective coating at the rate of 0.11 litre/m2 per coat			8	; ?	
	3 two coats of approved coloured finish at the rate of 0.16 litre/m2 per coat			1	; executing in sections	
	4 one coat of cement, approved bitumen emulsion and sand compound ? thick [specify 3 or 5 thick] (1:8:32 by volume)			2	; ?	
	5 ?					
3	testing (SM.x(a).21)	1	non-destructive test of roofing system	1	[types]	item
		1	; preparing	1	infrared thermography scanning [GS12.117]	
		2	; executed by an independent specialist contractor	2	; ?	
		3	; ?			
4	SHEET MEMBRANE WATERPROOFING	1	? coat sheet coverings	1	[surfaces]	m2
	1 proprietary sheet waterproofing material Type AI [GS12.100 Type AI]	2	? thick	1	horizontal	
	2 proprietary sheet waterproofing material Type AII [GS12.100 Type AII]	3	? kg/m2	2	sloping	
	3 proprietary sheet membrane ; GS11.04.01	4	?	3	vertical	
				4	curved	

FIRST DIVISION

SECOND DIVISION

- 4 ?
- For nos 1 to 4 above
- 1 ; designing by, obtaining from and fixing by a specialist contractor approved by the manufacturers / agent [GS 12.99]
- 2 ; laying in accordance with the manufacturer's instructions
- 3 ; ?
- 1 ; flexible sheet tanking and damp-proofing
- 2 ; flexible sheet roof covering

THIRD DIVISION

- For nos 1 to 4 above
- 1 ; on concrete
- 2 ; on timber
- 3 ; on metal
- 4 ; ?

- 5 [turnups, skirtings, etc]
- 1 aprons and turn-downs
- 2 skirtings and turn-ups
- 3 ?
- 1 ; at eaves
- 2 ; at verges
- 3 ; at abutments
- 4 ; ?
- 1 ; on concrete
- 2 ; on screeds
- 3 ; on timber
- 4 ; on metal
- 5 ; ?

FOURTH DIVISION

- 2 cutting back and jointing new to existing m
- 1 ; preparing surfaces to receive new

- 1 ? average exposed face height m
- 2 ? average exposed height m
- 3 ? average exposed depth m
- For nos 1 to 3 above
- 1 ; horizontal
- 2 ; sloping
- 3 ; vertical
- 4 ; curved
- 5 ; raking

- 1 ? average exposed face m
- 1 ; curved

- 1 ? x ? x ? deep nr
- 2 ? diameter x ? deep nr

- 1 [outlets, etc] nr
- 1 to outlet pipes
- 2 to gullies
- 3 around pipes or railing standards and the like
- 4 ?

- 1 granite chippings in size ? at a rate of ? ; bedding in bitumen compound ; application rate at ? m2
- 2 white stone chippings in size ? at

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

				a rate of ? ; bedding in bitumen compound ; application rate at ?	m2
				3 reflective paint ; ? coat application [GS12.110 - to non accessible roofs]	m2
<hr/>					
	5 testing (SM.x(d).15)		1 non-destructive test of waterproofing system	1 [types]	item
			1 ; preparing	1 infrared thermography scanning [GS12.117]	
			2 ; executed by an independent specialist contractor	2 ; ?	
			3 ; ?		
<hr/>					
5 BITUMEN FELT BUILT-UP ROOFING [GS12.08 - 2.24]	1 single layer felt roofing	1 roof coverings	1 [surfaces]		m2
	2 two layers felt roofing	1 ; on concrete	1 horizontal		
	3 three layers felt roofing	2 ; on screeds	2 sloping		
	4 ?	3 ; on timber	3 vertical		
		4 ; on metal	4 curved		
	For nos 1 to 4 above	5 ; ?			
	1 ; polythene vapour barrier			2 cutting back and jointing new to existing	m
	2 ; paper under lay			1 ; preparing surfaces to receive new	
	3 ; ?				
	1 ; first layer of felt [GS12.08]				
	2 ; first two layers of felt				
	3 ; ?				
	1 ; top layer of approved mineral surfaced felt, including bonding compound in accordance with manufacturer's recommendations [GS12.08, 12.16]	2 [turnups, skirtings, etc]	1 ? average exposed face height		m
	2 ; top layer of approved fine granual surfaced felt, including bonding compound in accordance with manufacturer's recommendations [GS12.16]	1 aprons and turn-downs	2 ? average exposed height		m
	3 ; ?	2 skirtings and turn-ups	3 ? average exposed depth		m
		3 ?			
		1 ; at eaves			
		2 ; at verges		For nos 1 to 3 above	
		3 ; at abutments		1 ; horizontal	
		4 ; ?		2 ; sloping	
		1 ; on concrete		3 ; vertical	
		2 ; on screeds		4 ; curved	
		3 ; on timber		5 ; raking	
		4 ; on metal			
		5 ; ?			
<hr/>					
		3 [gutters, etc]	1 ? average exposed face		m
		1 linings to gutters	1 ; curved		
		2 dishings to channels			
		3 coverings to curbs			
		4 ?			
		1 ; on concrete			
		2 ; on timber			
		3 ; on metal			
		4 ; ?			
<hr/>					
		4 [cesspools, sumps]	1 ? x ? x ? deep		nr

FIRST DIVISION

SECOND DIVISION

THIRD DIVISION

FOURTH DIVISION

- 1 linings to cesspools
- 2 linings to sumps
 - 1 ; on concrete
 - 2 ; on timber
 - 3 ; on metal
 - 4 ; ?

- 2 ? diameter x ? deep nr

- 5 cutting, fitting and dressing
 - 1 ; forming collars around
 - 2 ; ?

- 1 [outlets] nr
 - 1 to outlet pipes
 - 2 to gullies
 - 3 around pipes or railing standards and the like
 - 4 ?

- 6 solar protection (SM.x(c).13)

- 1 granite chippings in size ? at a rate of ? ; bedding in bitumen compound ; application rate ? m2
- 2 white stone chippings in size ? at a rate of ? ; bedding in bitumen compound ? application rate at ? m2
- 3 reflective paint ; ? coat application m2

- 7 aluminium edge trim
 - 1 ; fixing with screws [GS12.22]
 - 2 ; fixing with plugs and screws
 - 3 ; fixing with self tapping screws
 - 4 ; ?

- 1 ? x ? x ? [state size of trim] m
 - 1 ; on concrete
 - 2 ; on screeds
 - 3 ; on timber
 - 4 ; on metal
 - 5 ; ?

- 5 testing (SM.x(c).15)

- 1 non-destructive test of waterproofing system
 - 1 ; preparing
 - 2 ; executed by an independent specialist contractor
 - 3 ; ?

- 1 [types] item
 - 1 infrared thermography scanning [GS12.117]
 - 2 ; ?

*** END OF REPORT ***