

SUSTAINABILITY REPORT 2016

GREEN DEVELOPMENT FOR SMART CITY











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Fee	Feedback		





Welcome to the latest annual Sustainability Report of Architectural Services Department (ArchSD), "Green Development for Smart City". The report illustrates our sustainability initiatives, on-going programmes, and achievements during the year 2015.

Hong Kong, with its unique metropolitan environment, is positioning itself towards a "Green and Smart City" where advanced technology and construction activities are integrated to boost economic, social and environmental developments. ArchSD will continue to explore promising and sustainable features for our projects. Among the public facilities we completed in 2015 the Trade and Industry Tower in Kai Tak is an example where we have experimented a number of smart building designs including automatic sensors for building services controls, solar

chimney, energy efficiency systems and automatic refuse collection system. We are very much honoured to receive the many design and quality building awards in year 2015.

After serving for decades in Hong Kong, ArchSD has accumulated substantial first-hand experience and hard-earned knowledge. Such precious yet intangible asset is essential in enhancing efficiency and effectiveness. We have established a Knowledge Management Policy as commitment to knowledge sharing with our staff, business partners and stakeholders, and continuous devotion to service excellence. ArchSD was awarded the Top Winner of Hong Kong's Most Admired Knowledge Enterprise (MAKE) Award 2015, and Winner of the Global Independent Operating Unit MAKE Award 2015 and Asian MAKE Award 2015. We will continue to align our sustainable development with best international practice.

I sincerely wish that with continuous collaboration from the industry to meet new challenges, we could further improve our environment, beautify and green our city together as society advances. I appreciate the contribution of all colleagues and the support from our stakeholders. Your comment through completing the Feedback Form will be valuable for our continuous improvement. Thank you.

LEUNG Koon-kee, JP Director of Architectural Services



Reporting Objectives

Architectural Services Department (ArchSD) of the Government of the Hong Kong Special Administrative Region has produced 18 annual environmental and sustainability reports in total. The Sustainability Report 2016, Green Development for Smart City, is our 13 annual sustainability report, which presents our initiatives and performance on economic, environmental and social aspects in 2015.

This report provides an opportunity not only to demonstrate our achievement last year, but also to ensure you of our commitment to serving better in the future with continuous efforts and improvement in sustainability.

Reporting Scope

The Sustainability Report 2016 ("the Report") highlights ArchSD's key sustainability initiatives and achievement from 1 January 2015 to 31 December 2015. The Report covers the sustainability performance and initiatives of our six functional branches and two Central Management Divisions. Data in the Report are presented as absolute figures as of 31 December 2015 (unless otherwise stated) to the best of our knowledge. Financial data are reported for the financial year ended 31 March 2016. All monetary values are in Hong Kong Dollars.

Reporting Principles

[G4-18]

The Report has been prepared in accordance with the Core option of the "<u>Sustainability</u> <u>Reporting Guidelines G4</u>", published by the Global Reporting Initiative (GRI), as well as the Environmental Protection Department's "<u>A Guide to Environmental Reporting for Controlling Officers</u>".

The GRI Content Index correlates GRI indicators with associated sections in the Report. An independent third-party assurance was conducted to verify the materiality, credibility and reliability of the Report and ensure its attainments to the Core option of GRI G4 Sustainability Reporting Guidelines. We also went through the GRI G4 "Materiality Disclosures Service" to ensure General Standard Disclosures G4-17 to G4-27are reported and can be easily found by readers.

Note to Reader

The Report is published online in web-based interactive html version, PDF version and text-only versions. The Report is available in English, Traditional Chinese and Simplified Chinese. The interface has been prepared in accordance with the Level AA of the <u>W3C Web Content Accessibility Guidelines 2.0</u>. In addition, the Report can also be viewed by tablet computers. Key features of the Report are highlighted as follows:



AAA On-screen font size setting provides more comfortable reading options for various users;



Picture enlargement function presents larger and clear photo images, graphics and charts to readers;



Text-only version allows readers using assistive tools for web browsing;



Search function facilitates readers to locate any specific interested sections or information efficiently;



"My Report" function enables readers to temporarily store any selected section(s) for consolidation and printing;



"Data Summary" section furnishes readers with a quick review of our performance on various key indicators; and



"Glossary" section provides definitions of the technical terms using in or relevant to the Report.



Roles and Organisational Structure

Architectural Services Department (ArchSD) performs three core functions in relation to Government-owned and Government-funded facilities in the following programme areas:

- Monitoring and advisory services to provide effective professional and technical advice to the Government and quasi-government organisations and to oversee subvented, joint-venture and entrusted projects;
- Facilities upkeep to provide efficient and cost-effective professional and project management services for the maintenance and refurbishment of buildings and facilities; and
- Facilities development to provide efficient, cost-effective and timely architectural and associated professional and project management services for the design and construction of buildings and related facilities.

ArchSD Role in the Government of HKSAR



Organisational Structure



Funding and Mode of Operation

Our Departmental core activities is funded by the Capital Works Reserve Fund which is approved, monitored and reviewed by the <u>Legislative Council (LegCo)</u>.

During 2015, we have created a total of 9,876 jobs by awarding works contracts and consultancies in relation to both new capital and minor works projects. We commenced 17 new capital works projects and a substantial amount of minor works projects during the year.

Departmental Expenditure

[G4-17]

In the financial year 2016-17, we recorded an overall increase of around 1.6%¹ as comparing with the previous financial year in 2015-16. Expenditure breakdown of our department and by different programme areas² for the financial year 2015-16 are provided below. Details of our financial information and key performance can be found in the ArchSD Controlling Officer's Report of the 2016-17 Estimates of the Government of the HKSAR, which is available online at <u>www.budget.gov.hk</u>.

[1] The estimated Departmental Expenditure 2016-17 is HK\$1,976.0 million, there was around 1.6% increase as comparing with the actual Departmental Expenditure 2015-16 of HK\$1,944.6 million.

[2] There are three programme areas of ArchSD's services: Monitoring and advisory services, Facilities upkeep and Facilities development.

Departmental Expenditure Breakdown by Subhead



Departmental Expenditure Breakdown by Programmes



Monitoring and advisory services Facilities upkeep Facilities development

Key Facts

Founded on: 11 April 1986

Staff Establishment: 1,814

Headquarters: Queensway Government Offices, 66 Queensway, Hong Kong

Other Offices:

- APB Centre, Hunghom, Kowloon
- Murray Road Multi-Storey Carpark Building, 2 Murray Road, Central, Hong Kong

Total Office Area: 25,277.7 m²

Scale of Services:

- Number of Subvented / Entrusted Projects Reviewed: 769
- Number of Facilities Development Projects Completed: 33
- Building Floor Area of Properties Maintained: 31,525,000 m²
- Government Spending on Building Projects: HK\$ 9,057 million
- Value of New Works under Development: HK\$ 142 billion

ArchSD Sustainability Report 2016 - Recognition and Awards



Recognition and Awards

ArchSD strives for excellence in delivering our architectural services. We always equip our staff to keep abreast of the latest requirements and trends related to the development and upkeep of buildings and facilities. During the year, we are glad that our efforts have been recognised by various professional bodies, institutions and award organisers.

Hong Kong Institute of Architects (HKIA) Annual Awards

The HKIA Annual Awards recognise outstanding architectures designed by local architects. During the year, we are pleased to receive a number of honours from the Awards including:

- "The Renovation Works of the Court of Final Appeal" HKIA Medal of the Year of Hong Kong Special Architectural Award – Heritage and Adaptive Reuse
- "Po Leung Kuk Stanley Ho Sau Nan Primary School" HKIA Merit Award of Hong Kong – Community Building
- "Hong Kong East Community Green Station" President's Prize
 Special Architectural Award - Urban Design



Renovation Works of the Court of Final Appeal



Po Leung Kuk Stanley Ho Sau Nan Primary School



Hong Kong East Community Green Station

Structural Excellence Award

Organised by the Hong Kong Institution of Engineers (Joint Structural Division), the Structural Excellence Award aims to promote excellence in structural engineering demonstrated through the design and construction of buildings and structures. During the year, our projects received three recognition from the Award.

- "Hong Kong Velodrome"
 Grand Award (Non-Residential)
- "PMQ" Grand Award (Heritage)
- "A Station for the New Terminal Doppler Weather Radar at Tai Lam Chung" Commendation Merit Award (Infrastructures/ Footbridges)



Hong Kong Velodrome



PMQ

World Architecture Festival (WAF) Awards

WAF Awards is the world's largest awards scheme for the global architecture community to learn and share experience. In the WAF this year, our project "**Community Green Station at Shatin**" was Highly Commended by the judging panel.



Community Green Station at Shatin

Building Surveyor Awards 2015

Introduced by the Building Surveying Division of the Hong Kong Institute of Surveyors (BSD HKIS), the Building Surveyor Awards aim to provide recognition to preeminent projects with substantial contribution by Building Surveyors of the public and private sectors. Our achievements are as follows:

- "Refurbishment of External Walls at Water Supplies Department Hong Kong and Islands Regional Building"
 Marit Maintenance & Depair Warks
 - Merit Maintenance & Repair Works
- "Refurbishment of Tai Mei Tuk Public Toilet" Merit - Maintenance & Repair Works
- "Revitalisation of Woodside Residence into Bio-diversity Education Centre" Merit – Major A&A and Renovation Works
- "Temporary Building for the Energizing Kowloon East Office" Merit – New Building Works



Energizing Kowloon East Office

Design for Asia Awards 2015

The Design for Asia Awards is the annual flagship programme of the Hong Kong Design Centre to celebrate design excellence and acknowledge outstanding designs with Asian perspectives. During the year, we are honoured to receive the Grand Award for our project "PMQ".

Hong Kong Institute of Planners Awards 2015

Organised annually by the Hong Kong Institute of Planners, the awards are bestowed to building or planning projects in recognition of their outstanding achievements in town planning. Two of our projects are recognised for the good application of the principles and practice of town planning.

- "Energizing Kowloon East Tsui Ping River Garden" Merit Award
- "PMQ" Jurors' Special Award

2015 Cityscape Awards for Emerging Markets

The Cityscape Awards for Emerging Markets aims to recognise excellent projects in real estate development and architecture. Our "Ko Shan Theatre New Wing" was the winner of *Community, Culture & Tourism Project Award – Built and Sustainability Project Award – Built*.



Ko Shan Theatre New Wing

Most Admired Knowledge Enterprise (MAKE) Award

The MAKE Award recognises companies and organisations that have a strong commitment to knowledge management. This year, ArchSD is honoured to be the top winner of the Hong Kong MAKE Award 2015, winner of the Global Independent Operating Unit (IOU) MAKE Award 2015 and winner of the Asian MAKE Award 2015.



Presentation Ceremony of the Hong Kong MAKE Award 2015



Recognition by MAKE Award

Civil Service Outstanding Service Award Scheme 2015

Since 1999, the Civil Service Outstanding Service Award Scheme has been held by the Civil Service Bureau biennially, aiming to recognise excellent service provided by government departments and teams. This year, we were awarded two Inter-departmental Awards, recognising our collaborative effort with other government departments.

- "Transformation of the Former Police Married Quarters Site on Hollywood Road into a Creative Industries Landmark" Silver Prize in Partnership Award
- "Construction Project of Ko Shan Theatre New Wing" Bronze Prize in Partnership Award

Hong Kong BIM Awards 2015

Hong Kong BIM Awards 2015 recognises outstanding project teams that deployed Building Information Modelling (BIM) in building projects. We have won two awards for the use of BIM in our building projects.

- "Landscape Information Modelling in Hoi Shum Park, Industrial Park at Tsun Yip Street and Hong Kong Flower Show 2015"
 Winner of Hong Kong BIM Awards 2015
- "Heritage Information Modelling The Story of the Victoria Peak Fire Station" Winner of Hong Kong BIM Awards 2015



Heritage Information Modelling - The Story of the Victoria Peak Fire Station

The "Heritage Information Modelling – The Story of the Victoria Peak Fire Station" also won the building SMART Hong Kong International BIM Award 2015.

Design & Health International Academy Awards 2015

The Design & Health International Academy Awards is an advocacy programme recognising professional excellence in the research and practice of designing healthy environments. We are honoured to receive a number of recognition for the following architectural projects:

- "Hong Kong Velodrome"
 Highly Commended Sustainable Urban and Built Environment
- "North Lantau Hospital Phase 1" Highly Commended – International Health Project (over 40,000 m²)



North Lantau Hospital Phase I

Hong Kong Flower Show 2015

Organised by the Leisure and Cultural Services Department, the Hong Kong Flower Show 2015 was held in March at Victoria Park. This year the theme flower was "Oncidium" and the theme was "When Blossoms Dance". Our landscape design won the Grand Award for Outstanding Exhibit –"Displays Section (Local)" in the flower show.



ArchSD flower display in the Hong Kong Flower Show

2015 SCMP & Chivas 18 Architecture and Design Awards

Jointly launched by SCMP and Chivas 18, the 2015 SCMP & Chivas 18 Architecture and Design Awards aim to enhance public awareness of the industry, as well as to recognise the efforts of outstanding architects. Our architectural project **"Ko Shan Theatre New Wing"** received the recognition "Community Architect of the Year (Hong Kong)".

MIPIM Asia Awards 2015

The MIPIM Asia Awards aim to recognise the property industry's best innovation and achievement. During the year, our **"Tin Shui Wai Sports Centre and Community Hall"** received the Bronze award (Best Innovative Green Building).



Tin Shui Wai Sports Centre and Community Hall

Architizer A+ Awards

With a mission to nurture the appreciation of meaningful architecture in the world and champion its potential for a positive impact on everyday life, the Architizer A+Awards is organised by Architizer.com, the largest online community of architects. Our **"Wo Hop Shek Crematorium"** is voted as the "Popular Choice Winner" in the category "Government & Municipal Buildings".



Wo Hop Shek Crematorium

2014/15 RIBA/GAI Architectural Ironmongery Specification Awards

Organised by the Build of Architectural Ironmongers (GAI) with the support of the Royal Institute of British Architects (RIBA), the Awards are given out bi-annually to recognise design excellence in architectural ironmongery specification projects. We are honoured to have our project "**Hong Kong Velodrome**" recognised as one of the winners of the Award (Category – International).



Hong Kong Velodrome

ArchSD Sustainability Report 2016 - Management Approach - Strategy and Management



Strategy and Management

ArchSD performs three core functions in relation to Government-owned and Government-funded facilities in the following programme areas:



Our Vision, Mission and Values



Quality, Environmental, Health and Safety Policy

Through stipulating a Quality, Environmental, Health and Safety Policy, we strive to drive sustainability through our operations. When offering our clients a comprehensive range of multi-disciplinary services for public buildings and facilities, we are committed to:

- Fulfilling the agreed requirements of our clients to the highest professional standards;
- Delivering our services in an environmentally responsible manner by implementing conservation of energy, preventing pollution and reducing the consumption of natural resources;
- Managing our health and safety risks to ensure a safe and healthy environment for our staff, our contractors and other people who may be affected by our work;
- Complying with all relevant legislations and other requirements, and wherever practicable, to achieve standards beyond those that are legally required;
- Providing adequate resources and training for all staff and provide appropriate training for persons working for or on behalf of ArchSD, for continually improving our quality, environmental, health and safety performance and effectiveness; and
- Promoting ArchSD's principles of quality, environmental sustainability, health and safety to our partners in work, the construction industry and the general public.

Governance

Being a department under the Hong Kong SAR Government, we adhere to the highest practices and policies stipulated by the Civil Service Bureau as part of our internal governance measure.

To achieve service excellence and improve operational performance continually, we have followed international standards and incorporated industry best practices where applicable to strengthen our governance approach and operations. Our Integrated Management System (IMS) has been established and implemented in accordance with international standards including ISO 9001 on service quality management, ISO 14001 on environmental management and OHSAS 18001 on occupational, health and safety management. We have further expanded our IMS to cover ISO 50001 Energy Management System for APB Centre since 2014. In line with our Vision, Mission and Values, and Quality, Environmental, Health and Safety Policy, the IMS also enables us to achieve continuous operational improvement and deliver quality service.

Apart from the IMS, we follow the safety-associated guidelines developed by the Development Bureau (DEVB) to ensure our safety-associated provisions such as site safety training, pay for safety, and safety model workers award scheme, are properly addressed in our works contracts. In terms of employment relationship, we are fully compliant with the Employment Ordinance and are committed to protecting the rights of employees and offering a range of benefits to support their development. A Labour Relations Officer would be appointed for large-scale construction project to help solve the disputes between contractors and workers at early stage.

ArchSD Sustainability Report 2016 - Management Approach - Strategy and Management

Our Senior Staff Forum, chaired by the Director, is responsible for overseeing the management and operation strategies of ArchSD. The Forum takes care of the development of our sustainability strategies, policies and goals as well as reviews our sustainability performance as part of our IMS at least once a year.



Members of the Senior Staff Forum:



- 1. Mr. K.K. LEUNG, Justice of the Peace, Director of Architectural Services
- 2. Mr. Stephen TANG, Bronze Bauhinia Star, Justice of the Peace, Deputy Director of Architectural Services
- 3. Mr. Benny CHAN, Assistant Director (Architectural)
- 4. Mr. S.K. HO, Justice of the Peace, Assistant Director (Building Services)
- 5. Mr. C.K. HUI, Assistant Director (Property Services)
- 6. Ms. Sheron LI, Justice of the Peace, Assistant Director (Quantity Surveying)
- 7. Mr. K.T. LEUNG, Justice of the Peace, Assistant Director (Structural Engineering)
- 8. Mr. Frank WONG, Project Director/1
- 9. Mrs. Sylvia LAM, Justice of the Peace, Project Director/2
- 10. Mrs. Alice YU, Project Director/3
- 11. Ms. Doreen KWAN, Departmental Secretary

Internally, a number of steering committees also play important roles to ensure the governance of respective areas and smooth operation of the Department.

Governmance Structure



Risk Management

We carefully monitor risks associated with our operations by conducting risk assessments at both the Department and project sites. We evaluate all potential impacts and take necessary actions to prevent or mitigate risks as far as practicable.

At the Departmental level, we adopt a "Plan-Do-Check-Act" mechanism under our IMS to identify and manage potential risks on quality, environment, health and safety in relation to our services and operations.

Regarding individual projects, we strictly follow guideline issued by the DEVB including Technical Circular (Works) No. 6/2005 on "Implementation of Systematic Risk Management in Public Works Projects". We start to manage potential risks in the whole project lifecycle from the project inception to the completion of its construction. In addition, project teams conduct integrated management workshops with various stakeholders during the course of project delivery to assist us in assessing risks and formulating effective controls.

To ensure integrity in the workplace, we require all staff to uphold a high level of ethical standards and professional integrity by strictly adhering to the principles stated in the Prevention of Bribery Ordinance. Potential bribery or corruption cases shall be reported to the Senior Staff Forum and the Independent Commission Against Corruption for further investigation. During the reporting period, there was no such case reported.

Involvement in External Associations and Committees

Apart from performing the official duties, our senior staff members are actively participated in a number of professional bodies and committees to provide statutory, professional and technical advice to support local initiatives in relation to developing and executing public policies on building design and architectural issues. For instance, our senior staff members are involved in:

- Council of the Lord Wilson Heritage Trust to administer the operation of the Trust;
- Committee on Planning & Land Development to consider and review policies on planning and land development issues;
- Property Strategy Group to consider and decide all matters related to the optimisation of site utilisation;
- Accommodation Strategy Group to examine and approve minor building works applications;
- Steering Committee on Greening, Landscape and Tree Management to set strategic direction on greening, landscape and tree management policies and oversee the implementation of the policies; and
- Green Labelling Committee, the Industry Standards Committee and the Policy and Research Committee under the Hong Kong Green Building Council Limited to drive green building development.



Departmental Annual Plans (DAP)

We prepared a Annual Plan for our yearly objectives and targets and have obtained remarkable achievements.

Our DAP 2015/16 was established to focus on a number of key areas for improvement. These focus areas together with the significant achievements during the reporting year are listed as follows.

Focus Area in Annual Plan 2015/16	Achievement Highlights
1. Enhancing knowledge management development	 Established the Knowledge Management Policy Published 15 Design Guides and 8 Annexes on buildings and designs Launched a Wiki Library Introduced ArchSD YouTube Channel Organised a knowledge café Arranged 59 training sessions under the ArchSD Academy, with 28 of them involving external stakeholders either as speakers or audience Received five award trophies in the Most Admired Knowledge Enterprise (MAKE) Awards 2015
2. Enhancing staff training and development programme	 Conducted a study tour to Macao and Zhuhai for 38 officers
3. Enhancing Staff Resources & Planning System(SRPS)	 Streamlined SRPS codes Upgraded SRPS into a paperless system with enriched features
4. Strengthening support to colleagues on the project InForMation(InForM) system, annual Capital Works Resource Allocation Exercise (CW RAE),	 Launched a Community of Practice for the InForM system, annual CW RAE, and CWRF Estimates exercises Enhanced features for viewing site progress

ArchSD Sustainability Report 2016 - Management Approach - Departmental Annual Plans

and Capital Works Reserve Fund(CWRF) Estimates exercise	photos, facility names and addresses
5. Providing management support on further alignment of general architectural standards for various building types and refinement of works procedures in project administration	 Developed the General Architectural References for Healthcare Facilities & Hospitals Continued to update the internal operational Instructions and procedures
6. Providing architectural advisory services to Bureaux/Departments (B/Ds) related to planning and land matters and cases on the Pilot Scheme for Arbitration promulgated in 2014 Policy Address to increase land supply for housing and other uses	 Provided about 340 advices and two desk top studies to B/Ds Offered advices on two potential cases and one expert report for Lands Department
7. Enhancing project teams' input in drafting the discussion paper for submission to the Public Works Sub-committee (PWSC) under the Finance Committee of the Legislative Council and compiling the related documents	 Launched a Community of Practice for preparing PWSC submissions

ArchSD Sustainability Report 2016 - Management Approach - Knowledge Management



Knowledge Management

After years of accumulating first-hand experience and hard-earned knowledge, ArchSD regards Knowledge Management (KM) as one core business strategy, to effectively take on challenges of the succession of senior directorate staff, continuous development to meet rising clients' expectation, increased project complexity by performing the project manager role, and enriching value for industry partners. In addition to cultivating an organisational culture to respect, value and share knowledge and skills, we have placed great efforts to enhance guidance and tools over the years to support knowledge exchange among staff members as well as with external partners.

ArchSD Knowledge Management Policy and Governance

The KM Policy was formally released in 2015 to demonstrate our commitment to be a learning organisation that drives for continuous improvement in relation to capturing, sharing, pursuing and using knowledge to deliver high-quality professional services.

Accordingly, ArchSD has established its governance structure to oversee the implementation of the KM Policy, which includes representatives from various levels of management as well as from different functional units.



** People: People are project officers who have hands-on experience and stand ready to offer advice on a particular building type or subject. They can be located in various Communities of Practice (CoPs).

Overview of KM Development

Over the past decade, ArchSD has completed a number of major initiatives to enable significant development in its knowledge management. In view of the emerging smart trend, we extended our KM platform in the past year with additional digital interface and personal device accessibility, like WhatsApp, YouTube Channel, with an aim of engaging more stakeholders in our endeavour towards knowledge excellence.



ArchSD Strives to become a continuous learning organization.....

ArchSD Design Guides Wiki Library is now available in K-Bank!



Wiki library for design guides

ArchSD Sustainability Report 2016 - Management Approach - Knowledge Management



During the year, we have utilised the use of ArchSD Academy and the Theme-based Communities of Practice to support idea exchange and experience sharing among staff.

ArchSD Academy

The ArchSD Academy continues to provide systematic and regular training on topics of project design and project management to equip staff with necessary skill sets and understanding for project delivery.



As of December 2015, about 130 sharing sessions have been organised, achieving an attendance of over 9,500 participants.

Theme-based Communities of Practice

These new communities provide informative platforms under specific themes for staff to find useful knowledge, such as key project data, relevant papers, references, websites and lists of experienced staff.



A total of 14 theme-based Communities of Practice were launched for all staff in 2015 to promote collaboration and sharing of good practices.

To encourage all-around knowledge and experience sharing, we continued to organise a variety of training sessions and workshops, and participated in external awards competition.



Gamification Workshop



Story Telling Workshop on Water Leakage Incidents



Recognition by MAKE Awards



Symposium on Columbarium and Crematorium Design and Green Burial

ArchSD Sustainability Report 2016 - Management Approach - BIM Adoption Roadmap



BIM Adoption Roadmap

Building Information Modelling (BIM) technology, as a process of generating digital visual representation of building data, offers an innovative way to enhance communications between different parties involved in various stages of a building lifecycle. With BIM technology and its data packed models, building designers will be able to make more informed decisions to carry out innovative and sustainable designs.

Following the guidance from the Development Bureau (DEVB), we have developed ArchSD's BIM Adoption Roadmap, covering a period of five years from 2014/15 to 2018/19. We have investigated some projects in different works stages for trial if the progress of these works would be deemed satisfactory, with the aim of evaluating the performance of BIM and promoting the wider use of BIM.

To prepare for the adoption of BIM at ArchSD, we place a great emphasis on awareness and skills training. In order to address the initial challenges, such as lack of special technical competence and dedicated BIM personnel, we have drawn detailed annual goals to implement BIM in a step-by-step process. In 2015-16, ArchSD made noticeable progress on the following areas:

- Continued the engagement of BIM consultants to assist in adopting BIM for in-house projects, while lessons learned were reported in ArchSD Academy sessions and Knowledge Management Hub;
- Continued to explore the effective use of BIM in different stages of project delivery by the Branch BIM Working Groups;
- Promoted an increasing use of BIM technology, where applicable, for solving issues arising during project delivery;
- Consolidated experience gained on BIM model developed in retrofitting project of 1/F office of APB as a starting trial for future reference on possible BIM applications on asset management;
- Formulated and achieved 'hands on training' target for Professionals and Technical Grade officers; and
- Formed a non-dedicated BIM Group for incremental BIM adoption.
In 2015, we were grateful to receive two recognitions for the use of BIM in our building projects. With the accumulation of BIM-related technical competence, we expect that the scope and extent of BIM trial projects would be increased.



Read a <a>[ext transcript of this video]



Main Focus Areas

Our stakeholders play a critical role in our sustainability journey. To this end, we have identified a [G4-25] number of stakeholder groups that would have direct and/or indirect repercussions on ArchSD's operation and sustainability development.

In addition to our existing engagement channels for different stakeholder groups such as [G4-18] conducting Client Satisfaction Survey for client, we have carried out an independent engagement exercise to understand views and concerns of our stakeholders. We have conducted interviews with representatives from our key stakeholder groups, including professional and technical staff, contractor, client, facility user and allied professional body. By listening to their particular interests and concerns on our sustainability initiatives and performance, the engagement exercise helps us define the content and shape the boundaries of this Report.

With due consideration of stakeholders' views and ArchSD's major activities and impacts, the following areas were identified as the Material Aspects to form the main focus of the Report.

[G4-19]

[G4-20]

[G4-21]





Engagement Approach

We value every opportunity in engaging our stakeholders to listen to their ideas, views and comments. Their feedback is essential to our continuous improvement in operational approaches and our successes in sustainaiblity performance. We acknowledge their contribution through various channels, including surveys, face-to-face meetings, public events, electronic platforms, etc. Our key stakeholder groups and their respective engagement approaches are summarised below.

[G4-24] [G4-26]



Stakeholder Interview

We conducted six independent interviews with individuals representing the key stakeholder groups of staff, contractor, client, user and professional body to better understand their concerns and obtain feedback for the continuous improvement of the department's sustainability initiatives and performance.

Comment from Staff



Mr. WONG Muk-wai Chief Technical Officer (Arch.)

As a chief technical officer, I am responsible for overseeing the staff establishment for Technical Officers (Arch.) across different divisions of ArchSD, as well as supervising staff training and recruitment activities. In recent years, some initiatives implemented by ArchSD are particularly meaningful in terms of promoting sustainable development. The reuse of construction and demolition (C&D) materials to build new site office, use of hybrid and electric cars, further application of the "No Frills Design" and "Age-friendly Design" principles in designing building projects are some examples.

Our Department offers various formal and informal channels that facilitate staff communication and idea exchange. The competitions organised under the Staff Motivation Schemes have been effective in promoting creativity and enhancing staff morale. Overall, the working culture at ArchSD is enjoyable in a way that colleagues share a "can-do attitude" and work cooperatively to deal with challenges positively.

Looking ahead, I suggest that ArchSD can consider working with other departments on sustainability initiatives more proactively to enhance its sustainability performance. For example, ArchSD can use more water-consuming appliances which obtained the water efficiency label issued by WSD.

Our Response



We treasure comments and feedback from staff on our management and daily operation. In recent years, many of the practical and successful initiatives were originated from our staff. Their sound knowledge of well-established practice and first hand experience to render our operation sustainable and effective. It also creates a favourable working environment for team spirit.

Comment from Staff



Ms LEUNG Hoi Sim, Isa Project Building Services Inspector of ArchSD

As the Project Building Services Inspector for the development of Choi Hung Girls' Home/School, I am responsible for inspecting the building services work and monitoring the overall progress to ensure that all works conform to our specifications and contractual requirements. Over the years, I appreciate that ArchSD has put great efforts to promote green building design. For instance, the site office of the Choi Hung Girls' Home project has adopted various sustainable features to enhance energy efficiency and environmental quality, such as the use of skylight and natural lighting reduces the energy consumption during daytime. Other green features of the Project such as solar hot water system and photovoltaic panels were also introduced to encourage the use of renewable energy. It is always our departmental goal to show the industry by examples and demonstrate the benefits of green building to the society at large.

Cumulating extensive experience and expertise, ArchSD is keen on promoting the concept of knowledge management. As an on-going initiative, our top management has established ArchSD Academy to offer training courses and seminars regularly to share industry best practices with all staff. A KM Portal has also been developed to facilitate easy access to the information and utilise the resources to foster our professional development.

Our Response



We are delighted to know that our effort to promote green building is highly recognised by our staff. We will continue to share our experience and knowhow amongst our staff and to incorporate green knowledge into new projects wherever applicable. It is our commitment to promote knowledge management as the tool for staff development so that our extensive and hard-learned experience and expertise could be shared amongst our staff.

Comment from Contractor



Mr. Bill KO Senior Project Manager of China State Construction Engineering (Hong Kong) Ltd.

We are proud to collaborate with ArchSD in some of the latest development of government facilities in Hong Kong, including the Fire Services Training School in Pak Shing Kok and the Hong Kong Children's Hospital in Kai Tak. ArchSD has provided us with clear guidance and detailed requirements on the environmental and safety aspects of these projects. Before project commencement, ArchSD has invited us to attend a workshop with the aim to foster communication among different stakeholders. ArchSD also offers a number of incentive schemes to encourage us in improving our site performance, such as the "Pay for Safety and Environment Scheme" and "Green Contractor Award". The latter was the driving force for us to incorporate a number of new environmental initiatives in the development site of Fire Services Training School, including rainwater harvesting system and solar powered water heaters. The success in implementing these initiatives have won us Silver award in the "Green Contractor Award". We look forward to future collaboration with ArchSD and their support in the research and development of new construction technologies.

Our Response



Contractor is one of our important partners along our sustainability journey. We work closely with our contractors to pursue excellence in environmental and safety aspects during the construction of our projects. We will continue to maintain close relationship with them and introduce innovative yet practical measures to improve site sustainability.

Comment from User



Mr MK CHAN Senior Property Manager of Government Property Agency

Serving to meet the operational needs of bureaux and departments for joint-user general purpose offices and guarters, to manage government buildings under its purview efficiently and cost-effectively as well as to optimise the utilisation of government sites and properties, the Government Property Agency (GPA) has long established amicable working relationship with ArchSD in collaboratively developing and maintaining government properties. For every new property development project, ArchSD always makes thorough consideration of users' needs and the feasibility of incorporating suitable environmental design whenever possible at all stages of the property development. The newly completed Trade and Industry (TI) Tower at Kai Tak is one of the latest buildings for government offices designed and built by ArchSD, adopting a number of green features to enhance the greening and energy efficiency of the building. For instance, ArchSD has made use of the building facade to build vertical greening for aesthetic and energy saving purposes and installed photovoltaic panels on the roof to maximise the use of renewable energy. For existing government properties, ArchSD has assisted GPA in identifying potential areas to incorporate green elements during facilities upkeep, such as retrofitting aged facilities with new and environment-friendly alternatives.

ArchSD promotes green building design proactively in all new development projects, while at the same time, strives to enhance green building features in existing properties as far as practicable. ArchSD is decisive and innovative to maximise all aspects to achieve building sustainability. We look forward to working hand in hand with ArchSD to introduce more sustainable elements in future government property development and upkeep projects.

Our Response



We always put strong emphasis on the needs of our clients and users, as well as the incorporation of sustainable design in property development and upkeep projects where applicable. We will continue to communicate with stakeholders in all new development and upkeep projects to best suit their needs and promote building sustainability.

Comment from the Industry



Mr Justin LI Assistant Director -Environmental & Sustainability – Construction Industry Council

Construction Industry Council (CIC) strives to promote good practices in the construction industry in relation to environmental protection, sustainable construction and other areas conducive to improving construction standards. To promote sustainability in built environment, one of our initiatives is the development of the Construction Industry Council Zero Carbon Building (ZCB), which is Hong Kong's first zero carbon building. ZCB not only serves as a platform for the construction industry to share knowledge and expertise in low/zero carbon building design and technologies, but also helps raise community awareness of low carbon living through its education, exhibition and information hub functions.

Similar to CIC, ArchSD has long been playing a key role in promoting the adoption of green building practices and standards in Hong Kong. The design and construction of some new government buildings have fully integrated green building elements, and are certified under the Building Environmental Assessment Method (BEAM) Plus. Such projects exemplify how to put green building design into practice for the construction industry.

To promote building sustainability in the long run, I would like to suggest ArchSD to further expand its influence on the supply chain, for example by requiring the contractors to use certified green building materials, and adopt latest green building technologies where applicable.

Our Response



We are pleased to know that our efforts to promote green building are highly appreciated by CIC. We will continue to strive for environmental excellence and introduce innovative green measures in our projects as far as practicable. We will continue to explore the feasibility of incorporating more environmental requirements into project tenders to promote sustainability in the supply chain.

Comment from Client



Mr YIU Men Yeung Assistant Divisional Officer of Fire Services Department

We worked with ArchSD for the development of Tseung Kwan O Fire Services Training School (FSTS). The FSTS not only serves as a training school for firemen and ambulancemen, but also acts as an engagement channel with the public. Owing to our distinct nature of firefighting services, we had frequent meetings and discussions with ArchSD during the design and development stages to ensure suitable facilities and simulators are in place to suit our operational needs.

We highly appreciate the professional and technical advice provided by ArchSD throughout the process. For example, the Compartment Fire Behaviour Training Block requires burning of wooden planks to create real fire and smoke scenario for the training. ArchSD recommended us to install a scrubber to filter the soot and particulates before discharging the smoke so as to minimise air pollution. Apart from environmental initiatives, ArchSD also took into account of the dual purposes of the FSTS during the design stage. ArchSD had thorough consideration on the design and location of the visitor route, which includes a museum and an education skywalk, to enable the public to view our fire training venues and facilities without disrupting our daily operations. We are impressed by the whole-hearted support and timely response of ArchSD to cater for our specific needs and expectation. I believe ArchSD would continue to deliver quality services to its clients and uphold service excellence.

Our Response



We understand that different clients have specific needs and requirements. It is therefore our common goal to understand the needs of our clients hence to provide tailor-made solutions to meet their operational requirements. With our long established expertise, we will continue to serve our clients professionally and promote sustainable development. ArchSD Sustainability Report 2016 - Resources Utilisation and Conservation - Sustainable Building Design



Sustainable Building Design

In Hong Kong, buildings account for over 90% of electricity consumption and about 60% of total carbon emissions of the city. Over the years, we are committed to promoting sustainable building design and introducing smart features in our development projects to enhance energy efficiency and conserve resources.

In 2014, the Government published "The Sustainable Building Design Considerations Guidelines" to provide a comprehensive guide for our designers to practise green and sustainable building design to improve our built environment. The Guidelines outline most of the important design considerations of passive design in architecture and active design as well as provide useful references on sustainable construction materials and methods. A standard Particular Specification (PS) has also been developed for the design of our temporary site office to further promote the use of green materials.

Features of Sustainable Building Design

Passive Design in Architecture

Passive design in architecture is an approach to building design that uses the building architecture to minimise energy consumption and improve thermal comfort. At the early stages of the development projects, we consider and adopt suitable measures in planning, disposition, orientation, building form and material selection to optimise interaction with the local microclimate. Our passive design in architecture strategies include:

- Mitigating heat island effect or elevated temperature
- Air ventilation around buildings
- Daylighting
- Natural ventilation
- Passive cooling
- Reducing heat gain through building envelope

Active Design

Active design is an approach using the electrical and mechanical systems, such as heating, ventilation and air conditioning (HVAC) systems and lighting systems, to create and maintain comfortable conditions. These installations will influence the energy use, greenhouse gases emissions, water use, thermal comfort and other sustainability outcomes of buildings. Active design is adopted to improve the following aspects in buildings:

- Energy efficiency
- Energy conservation
- Water conservation
- Indoor environmental quality

Construction and Materials

Apart from passive and active design, the use of sustainable construction methods and materials also plays an important role in sustainable buildings. Common sustainable construction methods include prefabrication, pollution control during construction and adoption of 3R principles (i.e. Reduce, Reuse and Recycle). In addition, we use sustainable materials such as recycled materials and timber from well-managed sources.



Fire Services Training School at Pak Shing Kok

There is a need to construct a new Fire Services Training School to strengthen the Fire Services Department's operational capabilities to cater for the development of the community. In view of this, the Redevelopment of Fire Services Training School (FSTS) at Pak Shing Kok, Tseung Kwan O was commenced in 2012. The works was carried out smoothly and completed in late 2015.



Entrance of the Fire Services Training School

To better equip trainees with fire-fighting and rescue techniques to achieve high efficiency in operations, there are outdoor and indoor simulation facilities in the newly-built FSTS for various complex and large-scale emergency scenarios for fire-fighting and rescue training and practices. The simulators mainly cover seven types of emergency incidents related to buildings, transport, marine and water, gas, aircraft, hazardous materials and structural collapse.





Earth Tube

enters the buildings, thus reducing the energy required to heat up or cool down the buildings. Taking the advantage of the geographical location of the site, a solar hot water system, a photovoltaic system and a wind turbine system have been installed for environmental benefits.



Wind Turbines on Rooftop

Regarding greening, a green promenade, extensive prairie-style planting and re-vegetated slope are in place to maximise the greening to create a pleasant and relaxing environment for the trainees. Another green feature is a rainwater harvesting system for irrigating the large coverage of green area. A high volume underground water storage tank is built to accumulate the deposition of rainwater for reuse on-site.

In addition, the FSTS equips with various energy efficient and smart features with automatic controls in the following installations:

- high efficient water-cooled chiller with heat recovery function;
- variable refrigerant volume air conditioning system;
- automatic demand control of chilled water circulation system;
- automatic demand control of supply air;
- demand control of fresh air supply with carbon dioxide sensors;
- heat wheels/heat recovery fresh air pre-conditioners for heat energy reclaim of exhaust air;

- energy efficient fluorescent tubes with electronic ballast and lighting control by occupancy sensors and daylight sensors;
- light-emitting diode (LED) type exit signs; automatic on/off switching of lighting and ventilation fan inside the lift; and
- building energy management system for large installations.



West Kowloon Law Courts Building

The West Kowloon Law Courts Building (WKLCB) is built to reprovision and co-locate the existing Tsuen Wan Magistrates' Courts, Small Claims Tribunal, Coroner's Court and Obscene Articles Tribunal, which are originally located in different buildings. With a total net operational floor area of about 16,500 square metres, WKLCB provides sufficient spaces to accommodate necessary facilities to support court operation.

Photovoltaic panels are installed on the building roof to utilise the renewable solar energy. The building also makes use of daylight and achieves high thermal performance of building envelope by adopting double glazing as well as both vertical and horizontal sunshades. With this high performance façade system, the energy efficiency of air conditioning can be optimised. On greening, a special vertical greening on building façades and lush landscaping on ground floor helps maximise the greening for the surrounding.



Overall view of WKLCB from Tonkin Street West

In addition, the building equips with various smart features with automatic controls in the following installments:

- chilled water circulation system;
- condenser tube cleaning equipment;
- control of supply air;
- ventilation fans in carpark;
- service-on-demand control for escalators;
- automatic on/off switching of lighting and ventilation fan inside the lifts; and
- computerised lighting control system with occupancy sensors and daylight sensors

ArchSD Sustainability Report 2016 - Resources Utilisation and Conservation - Sustainable Building Design



Site Office of the Choi Hung Girls' Home

The Site Office of the Choi Hung Girls' Home has adopted passive design to significantly reduce energy consumption for ventilation and air conditioning. We have also explored every opportunity to incorporate green elements during the construction stages. For example, we utilised various reused materials including structural steel, timber panels, bamboo, grille, concrete blocks, aluminium panels, tempered glass, etc. to build the site office to further reduce the use of virgin materials.



Reused structural steels to erect the framing of site office



Bamboo screen to shield radiant heat

To create a pleasant working environment for site officers, we put a lot of potted plants around the office to introduce green elements at the workplace. Furthermore, the use of skylight and natural lighting reduces the energy consumption during daytime.



Porous wall to facilitate ventilation



Maximising the use of daylight



A comfortable environment was built by using various recycled and reused materials



Courtyard with potted plants

ArchSD Sustainability Report 2016 - Resources Utilisation and Conservation - Greening and Landscaping



Greening and Landscaping

Committed to optimising the greenery coverage in the city, ArchSD continues to improve its greening and landscaping initiatives in the course of managing the development and upkeep of government building and facilities for government departments as well as quasi-government organisations on subvented projects. We take every opportunity to include roof greening and vertical greening consideration to enhance the green elements in different buildings and facilities whenever practicable.

In 2015, we completed a number of projects with greening elements for different government bureaux/departments and related organisations, including Correctional Services Department, Fire Services Department, Government Logistics Department, and Leisure and Cultural Services Department, etc. These include:

- 5 projects with green roofs on new buildings;
- 10 projects with retrofitted green roofs on existing buildings;
- 8 projects with vertical greening on new buildings;
- 1 project with retrofitted vertical greening on existing building.

The types of buildings/facilities cover community green stations, police stations, fire stations, schools, swimming pool complex and public toilets.

Redevelopment of Disciplined Services Quarters in Fu Tei, Tuen Mun

To alleviate the shortfall of departmental quarters (DQ) for disciplined services staff, the redevelopment of Disciplined Services Quarters in Fu Tei, Tuen Mun was completed in September 2015. The new quarters consist of a 21-storey building with an area of around 3,390 square metres including ancillary facilities.

To infuse green features during the development, the DQ provides landscaping and vertical greening for environmental and amenity benefits. A rainwater recycling system is also in place for irrigating the greenery.



Green coverage around the DQ



Greening on different levels



Trees and vertical greening

Construction of Trade and Industry Tower in Kai Tak Development Area

The Trade and Industry Tower (TI Tower) in Kai Tak is a prominent green building project, which comprises 3 major components: an office tower, a community hall and a grand stair. The 22-storey office tower accommodates 9 government bureaux and departments, with a total net operational floor area of around 33,000 square metres.

The building design of TI Tower promotes site coverage of greenery by featuring an extensive green roof and vertical greening, accomplishing a total greenery ratio that is above 40%. The office tower showcases a special vertical green belt on the building façades in form of a "Green Ribbon", which comprises a series of vertical terraces extending up to the office tower and the roof garden.



View of roof garden in the office tower



Greening on the roof of the community hall



Vertical greening on building façades

Redevelopment of Fire Services Training School

The new Fire Services Training School (FSTS) is located at Pak Shing Kok, Tseung Kwan O, occupying 160,000 square meters for administration offices, training complex, incident simulators, education centre and ancillary facilities.

To promote positive interactions and provide social spaces within a controlled and disciplined environment, non-training functional spaces are arranged along a green promenade, underlining a spatial continuum of academic and activity hotspots while emphasising the iconic presence of the institute. As the institute is surrounded by natural vegetated slopes at the urban fringe, prairie-style planting is adopted to echo with the surrounding natural landscape character.



Green Promenade



Prairie-style planting integrates the institute with the surrounding



Grass Outdoor Physical Training Ground and re-vegetated slope

Redevelopment of Victoria Park Swimming Pool Complex

The design concept of Victoria Park Swimming Pool Complex features a number of project specific green designs, in particular the thematic planting of flowering tree species including Bauhinia x blakeana (Hong Kong Orchid Tree) which enhances the amenity value around the site and neighbourhood. The concept of a curvilinear building footprint, with due consideration to the location of existing trees for minimising tree transplanting and felling, helps preserve most of the existing trees on site. Tree protection zones were set up by erecting hoarding to minimise disturbance to preserved trees during the construction stage.

Landscape treatment on ground level focuses on tree planting, whereas flowering groundcovers, shrubs and overhanging creeping plants are introduced to various above ground levels of the building. The overall landscape design helps the complex to merge with the park environment and provides a pleasant view for the neighbouring towers.



The building design helps preserve existing tree



Landscaped roof and planting

ArchSD Sustainability Report 2016 - Resources Utilisation and Conservation - Heritage Conservation



Heritage Conservation

Cultural heritage forms part of everyone's collective memories tied with a city. We therefore pay special attention to the preservation of archaeological and built heritage associated with our projects. We aim to protect, conserve and revitalise appropriate historical and heritage sites and buildings for the benefit and enjoyment of present and future generations. To this end, we identify, protect and promote materials which are important to our culture and history.

Over the years, we have been working closely with the Antiquities and Monument Office (AMO) under the Leisure and Cultural Services Department to undertake heritage and conservation projects. Relevant projects completed in recent years include:

- Transformation of the Former Police Married Quarters Site on Hollywood Road into a Creative Industries Landmark;
- Relocation of the Court of Final Appeal to No. 8 Jackson Road; and
- Conversion of Yau Ma Tei Theatre and Red Brick Building into a Xiqu Activity Centre.

Relocation of the Court of Final Appeal to No. 8 Jackson Road

The building on No. 8 Jackson Road was used as the Supreme Court of Hong Kong when it first opened in 1912. It was later occupied as the Legislative Council Chamber during 1985 to 2011. When the Legislative Council was planned to move to Tamar, it was suggested that this significant, historical building can be revitalised and converted back into law courts to become the Court of Final Appeal (CFA). The conversion project was completed in 2015 with the opening ceremony held on 25 September 2015.

The building was designed by two English architects Sir Aston Webb and Edward Ingress Bell, who were the Crown Agents' chosen architects. The design of the building presents a mix of elements of orthodox design of the time, as well as local features such as the Chinese style pitched roofs. The building itself is of high aesthetic value, and is therefore worth to be protected and conserved with due care.





Exterior of the Court of Final Appeal

Interior of the Court of Final Appeal

Since the exterior of No. 8 Jackson Road is a declared monument and the building is accorded with Grade 1 historic building status, steps are taken in order to minimise the impact on or alteration to the original building.



Repair and restoration works to the exterior of the building

ArchSD Sustainability Report 2016 - Resources Utilisation and Conservation - Heritage Conservation

The following building features with heritage value were conserved:

- the entire building façade;
- the original decorative mouldings at ceiling;
- the original timber teakwood flooring that is in good condition;
- the former double height Ante-Chamber of the Legislative Council and its features including the supporting brackets, mouldings and metal railings;
- the verandah on 1/F;
- the features at the basement including the granite arches, skylights and vent openings;
- the features with heritage value in the former Chamber of the Legislative Council including the granite columns, ceiling mouldings and timber wall panels; and
- the remains of the "Bridge of Sighs", which was the former passage from the defendant's area to the Courtrooms of the former Supreme Court.





The Bridge of Sighs conserved with newly added glasswalls

The remains of the "Bridge of Sighs" exposed after removal of plaster

In the design and planning stages, we applied environmental principles as far as practicable. Various forms of energy efficient design and features were adopted, which include direct sea-water cooling air-conditioning system with high efficiency water-cooled chiller; automatic demand control of chilled water circulation system; demand control of fresh air supply with carbon dioxide sensors; and fan coil units with brushless direct current motors.

The CFA building will provide a total net operational floor area of about 3,070 m2. The premises will mainly use for accommodating facilities such as courtrooms, chambers for Judges, facilities for lawyers, offices for the Development Division of the Judiciary Administration, a custody area for defendants, a library for Judges and judiciary staff of the CFA, etc.

The CFA building is a building of great cultural value and is part of the community. As such, it is planned to open as much as possible the building to the public, without affecting the Court's operations. Regular guided visits to the CFA building are organised by the Judiciary in order to enhance members of the public's knowledge on the history and operations of the Judiciary, and their understanding on the history and the architectural heritage of the building.



The Exhibition Gallery located on the first floor, on Replica of Themis, the Goddess of Justice, in the the Statue Square side of the building



Architectural Heritage Gallery

ArchSD Sustainability Report 2016 - Resources Utilisation and Conservation - In-house Green Management



In-house Green Management

Apart from incorporating environmental considerations into our projects, we also implement in-house green initiatives to manage our waste, water and energy issues. These initiatives not only help improve the environmental performance in our workplace, but also promote a green culture at ArchSD.

Energy Conservation

ArchSD has maintained an integrated management system certified to ISO 14001 Environmental Management System, ISO 9001 Quality Management System and OHSAS 18001 Occupational, Health and Safety Management System. In 2014, we also implemented an ISO 50001 certified Energy Management System (EnMS) for our APB Centre with an aim to strengthen our energy management. Building on the successful experience of this trial, we have conducted a feasibility study and developed a roadmap for the implementation of EnMS to the whole department.

As an on-going practice, we also participate in the Hong Kong Green Organisation Certification (HKGOC) scheme to keep track of our performance in terms of energy conservation. In 2015, we were granted "Class of Excellence" of Energywise Certificate from the scheme in recognition of our achievement.

ArchSD Sustainability Report 2016 - Resources Utilisation and Conservation - In-house Green Management



Class of Excellence" of Energywi\$e Certificate

To further reduce our energy consumption, we installed LED light tube during the ceiling replacement works at 33/F Queensway Government Office (QGO) and conducted rewiring works for the lighting zone at 31/F and six other office floors in QGO in 2015 for better light zoning to save energy.

Conducting Carbon Audits

As part of government's effort to mitigate climate change, all existing government buildings are encouraged to carry out carbon audit regularly to monitor the effectiveness of carbon reduction measures. Since 2010, we have been conducting annual carbon audits and identify room for improvement for our offices in the QGO and APB centre.

The carbon footprints of QGO and APB Centre over the past four years are as follows.

ArchSD Sustainability Report 2016 - Resources Utilisation and Conservation - In-house Green Management

Carbon Emissions in the Queensway Government Office



	FY2011-12	FY2012-13	FY2013-14	FY2014-15
Direct Emissions (Tonnes of CO ₂ -e)	28.66	24.05	14.90	18.92
Energy Indirect Emissions (Tonnes of CO ₂ -e) ^[1]	2,372.86	2,385.64	2,277.59	2344.73
Other Indirect Emissions (Tonnes of CO_2 -e) ^[2]	142.94	119.25	39.02	34.72
Total (Tonnes of CO ₂ -e) ^[2]	2,544.46	2,528.94	2,331.51	2398.37

[1] Territory-wide default emission factor was used for the calculation of emissions.

[2] The figures in FY 2011-12, FY 2012-13, FY 2013-14 and FY 2014-15 are calculated by using the actual paper consumption (A4&A3) and waste paper collected for recycling.

Carbon Emissions in APB Centre



	2012	2013	2014	2015
Direct Emissions (Tonnes of CO_2 -e)	325.14	732.33	886.29	619.08
Energy Indirect Emissions (Tonnes of CO ₂ -e) ^[3]	1,833.11	1785.41	1756.58	1802.93
Other Indirect Emissions (Tonnes of CO ₂ -e)	13.93	42.04	8.68	6.72
Total (Tonnes of CO ₂ -e)	2,172.17	2559.77	2651.55	2,428.72

[3] Territory-wide default emission factor was used for the calculation of emissions.

Indoor Air Quality Management

Indoor air quality (IAQ) has direct health impacts to building occupants. To safeguard the health of our staff, we strictly follow relevant guidelines published by the Environmental Protection Department to maintain good IAQ levels in our workplace. To keep track of our performance, we also engage accredited bodies in conducting IAQ measurements on the parameters specified in EPD's guidelines.

Indoor 室内空	Air Quality Certificate (Good Class) 氣質素檢定證書(良好級)
Valid period	14 January 2016 to 13 January 2017
I hereby certify that the ind	oor air quality of the following location(s) has fully compi
with the Good Class of the I	ndoor Air Quality Objectives.
本人認明下列地點的空內空口	我買素完全符合「良好級」型片空就買素指標 -
Name of building	APB Centre
證明時名稱	建築小心
Address	9 Sung Ting Street, Hunghom, Kowloon
光址	九回近後回千回 9 명
Certified location(s)	Office Ansas of Whole Building
已接至地站:	소재人習習の公正記解
Approved HKIAS IAQ Signa	dory
香港巡问處核準室內空氣質2	武容習人員
Name 杜名 IAQ Certificate Issuing Body	KWAN Wai-ming
Signature 중쟁 : Date of issue	
查發目期 Certificate No. 證書编號	14 Jaouary 2010 4072027201601(2015)
(This cartificate is issued based on th	e results of the HRAS endorsed inspection report ns. <u>ASD/AQU-PD55</u>
(ULICE UNITE III IIII) III IIIIIIIIIIIIIIIIIIIIII	IMMN/5-IMM <u>ASD/AQU-PD55</u> (H/R-21/3/8/913)

"Class of Good" of IAQ Certificate for APB Centre

Water Conservation

As an on-going initiative, we monitor potable water and flushing water consumption at our offices. To reduce water consumption, we have adopted various water saving devices including sensor taps, dual flush cisterns and devices with water efficiency labels under Water Efficiency Labelling Scheme in APB Centre. To enable our staff acquainted with water saving measures, we have developed and incorporated water saving tips and guidelines into the Department's General Circular "Measures of Green Housekeeping".

Waste Management

In response to government's policy on waste reduction at source, we offer collection facilities for a wide range of items including waste paper, aluminium cans, plastics bottles, used CDs or DVDs, used rechargeable cells, used printer toner cartridges in our office premises. We also worked proactively with our IT equipment suppliers to facilitate the reuse and recycling of computers in offices. During the year, we successfully recycled 10,821 kg of waste paper and received the "Class of Excellence" Wastewi\$e Certificate of HKGOC in recognition of our effort.



"Class of Excellence" of Wastewi\$e Certificate

Promotion of Green Culture

We provide training for staff members to enhance their environmental awareness and knowledge in specific green aspects. Up to December 2015, 184 staff members of ArchSD have obtained the BEAM Pro qualification.

A team of Green Wardens (previously known as energy warden) with members from various branches and divisions has been appointed since 2006 to assist in implementing and monitoring the environmental programmes of ArchSD. Currently, we have around 70 nos. of Green Wardens in the team to safeguard our green measures.

ArchSD Sustainability Report 2016 - Clients and Business Partners - Project Quality Management



Project Quality Management

To provide multi-disciplinary technical services for public buildings and facilities, ArchSD strives to develop long-term and collaborative relationship with our industry partners, user departments, and the general public.

Client Satisfaction

We are committed to delivering a high level of quality services and professionalism throughout our operations and project management for clients.

To better gauge our performance against clients' expectation, a Client Satisfaction Survey is conducted annually to invite clients' feedback. In the reporting year, we conducted over 18 surveys on projects that are under planning or newly completed, including Satisfied Level on Overall Performance and Enhancement on the Communication with Clients.

Satisfied Level on Overall Performance

100% of the completed projects achieved Satisfied Level or above on overall performance

75.81% of the completed projects achieved Total Satisfied Level or Very Satisfied Level on overall performance

Enhancement on the Communication with Clients

100% achieved the target – replying the clients within 2 months after the survey on the progress of the observations raised

100% achieved the target – informing the clients within 1 month after the final completion of the follow-up actions (two in 2015)

Building Sustainability

To tackle the challenge of climate change, the Government has formulated corresponding policies for Hong Kong, including improving building environmental performance. In line with such policies and in an effort to better meet clients' expectation, ArchSD has strived to adopt best practices in building sustainability and set examples for the industry.

BEAM Assessment on Buildings

Since 1996, ArchSD has implemented the Hong Kong Building Environmental Assessment Method (also known as BEAM). Developed as a voluntary scheme, BEAM specifies sustainability criteria ranging from planning, design, construction, commissioning, to management, operation and maintenance of buildings. When a building is confirmed meeting certain pre-defined performance criteria after independent verification, associated credits are awarded and an overall performance grade is then determined.

By the end of 2015, we had successfully obtained the BEAM and BEAM Plus certifications for 42 buildings and BEAM Plus Interior certifications for 1 office.

Rating	BEAM Certification* (Version 1/96R, 2/96 & 2/96R)	BEAM Certification* (Version 4/03 & 4/04)	BEAM Plus (New Building) Certification	BEAM Plus (Interior) Certification
Excellent	11	-	-	-
Very Good	2	-	-	-
Platinum	-	18	1	1
Gold	-	9	1	-
Total	13	27	2	1

Certified Buildings under the BEAM by the End of 2015

* Reference to specific versions of the BEAM scheme:

- Version 1/96R An Environmental Assessment Method for New Air-conditioned Office Premises. 1999;
- Version 2/96 An Environmental Assessment Method for Existing Air-conditioned Office Premises. 1996;
- Version 2/96R An Environmental Assessment Method for Existing Air-conditioned Office Premises. 1999;
- Version 4/03 Pilot Versions for New Buildings; and
- Version 4/04 Building Environmental Assessment Method for New Buildings. 2004.

Recognition to Contractors

Our contractors play a crucial role in implementing sustainable measures on building sites. To provide professional guidance and share past experience, ArchSD has developed a knowledge bank consisting of guidance notes, lessons learnt, briefing notes, safety audit results and other relevant documents, which can be used to assist the contractors in adopting industry best practices.

To review site performance on a regular basis, we carry out routine site safety inspections. Our Departmental Safety & Environmental Advisory Unit also conducts inspections with regard to specific site safety topics or issues.

In the reporting year, we completed a total of 185 site inspections on selected site safety topics or issues, including:

Site cleanliness and mosquito control (53 nos. of inspection);



Working at height (27 nos. of inspection);



Electrical safety (57 nos. of inspection);



Safe lifting (24 nos. of inspection); and



Fire safety (24 nos. of inspection).

For those contractors, subcontractors and site personnel that have demonstrated excellent performance in environmental and social aspects, ArchSD would offer formal recognition through two award schemes, namely the Considerate Contractors Site Awards and the Green Contractor Award.

Considerate Contractors Site Awards

The Considerate Contractors Site Awards scheme has been organised by the Development Bureau (DEVB) (since 1995) and co-organised by the Construction Industry Council (since 2011). Successful award candidates, in the category of Repair Maintenance, Alteration and Addition (RMAA) Works Contracts, or New Works Contracts, must demonstrate good site safety and environmental performance, in addition to a considerate attitude. The scheme is further divided into different award categories, such as the Considerate Contractors Site Awards, the Outstanding Environmental Management and Performance Awards, Model Worker Awards, and Model Subcontractor Award.

The 22nd Considerate Contractors Site Award Scheme Award Presentation Ceremony was held on 27 May 2016, commending a number of "considerate" sites from both the public works and the non-public works. Our contractors received the great honour of winning seven awards in total, including:

	Achievements		
Contracts	Considerate Contractors Site Award	Outstanding Environmental Management & Performance Award	
RMAA Works Category			
Term Contract for Ground Investigation and Laboratory Testing (Contract No. TC C516) Contractor: Gammon Construction Limited	Gold		
Term Contract for the Maintenance of Slopes [Hong Kong Island and Outlying Islands (South)] (Contract No. TC B928) Contractor: Chun Wo Construction & Engineering Co., Ltd.	Merit		
Term Contract for the Alterations, Additions, Maintenance & Repair of Building & Lands & Other Properties [Tai Po, North District and Outlying Islands	Merit		

(North)] (Contract No. TC B952) Contractor: Sun Fook Kong Construction Limited		
New Works Category		
Design and Construction of Centre of Excellence in Paediatrics (Contract No. SS A501) Contractor: China State - Shui On Joint Venture	Merit	Bronze
Design and Construction of Yau Ma Tei Police Station (Contract No. SS B503) Contractor: Hip Hing Engineering Company Limited	Merit	
Construction of a School for Social Development for Girls at Choi Hing Road (Contract No. SS C506) Contractor: Fook Lee Construction Company Limited	Merit	Merit
Construction of Two Special Schools at Sung On Street (Contract No. SS C513) Contractor: Chevalier (Construction) Company Limited	Merit	Merit



ArchSD Representatives Congratulated its Contractors Receiving the Honours at the Considerate Contractors Site Awards Presentation Ceremony

Green Contractor Award

ArchSD places a great emphasis on environmental performance excellence on its construction sites. We encourage contractors to apply environmental conscious measures to their works as far as possible to minimise their impact to the environment yet achieving a high level of quality. In this regard, we have been organising annual Green Contractor Award scheme since 2001, providing commendation to our contractors for their best practices on energy saving, water conservation, waste reduction, emissions mitigation, and environmental management, etc. in implementing our contracts.

In 2015, our Green Contractor Award was presented to the following four contractors, which were under construction during the year and with contract sums exceeding \$30 million.

Gold Award				
Hip Hing Engineering Company Limited				
 Contract No. SSB503 Design and Construction of Yau Ma Tei Police Station 				
Silver Award				
Gammon Construction Limited				
 Contract No. SST333 Redevelopment of Victoria Park Swimming Pool Complex 				
Bronze Award				
Leighton - Able Joint Venture				
 Contract No. SSA502 Design and Construction of Tin Shui Wai Hospital 				
Term Contract Award				
Wan Chung Construction Company Limited				
 Contract No. TCB929 Term Contract for the Maintenance of Slopes for which the Architectural Services Department (Property Services Branch) is Responsible for the Hong Kong Special Administrative Region [Designated Contract Area: Kowloon and Lantau Island] 				

Green Measures on Site

To address a range of environmental concerns or issues relating to site operation, our contractors have applied various measures on ArchSD's project sites. Highlights of the environmental practices applicable to site operation during the reporting period are depicted below.


Energy

Energy-saving lights





Energy-saving Hand Tools⁴

Rechargeable LED Lights¹

Renewable energy



Solar Lights for Road Works and Mosquito Trap¹



Smart sensors



Photo Sensors to Control Hoarding Lights³

Energy management



ISO 50001 Certification on Energy Management System⁴

Materials

Reuse of rainwater



Rainwater Recycle System for Cooling of Site Office Roof¹

Wastewater treatment



Wastewater Treatment and Water Sampling for $\ensuremath{\mathsf{Testing}}^2$

Upcycling of used materials



Lockers and other Facilities Obtained from Demolition Works were Reused as Decoration and Notice \mbox{Boards}^3

Saving of construction materials



Using Metal Formwork in Constructing Lift Shaft and Use Pre-cast Units to Reduce the Consumption in Temporary Works¹

Air

Dust suppression



Adopting Canvas / Tarpaulin Sheet to Prevent Dust Emission⁴

Noise abatement



Use of Hydraulic Crusher with Acoustic Mat to Reduce Noise²

Use of clean fuel



Use of Biodiesel¹

People

Green site



Green $\ensuremath{\mathsf{Wall}}^1$ and Hoarding Enhancement with $\ensuremath{\mathsf{Bamboo}}^3$

e-Solutions



Adopting Mobile Safety Checklist Application and i-Documents to Reduce Paper \mbox{Use}^2

Staff engagement



Regular Briefing to Enhance Staff Recognition²

Protecting community interest



Designate Traffic Controllers to Minimise Nuisance to Park Users² and Carried Out Rectification Works Upon the Request of Neighbourhood³

- 1. Hip Hing
- 2. Gammon
- 3. Leighton-Able
- 4. Wan Chung

ArchSD Sustainability Report 2016 - Clients and Business Partners - Social Participation and Engagement



Social Participation and Engagement

Providing professional public services, ArchSD is dedicated to sharing our industrial knowledge and technical expertise with peers and the community for the betterment of the society.

Professional Events

Green and sustainable building technology is one of the main focus areas at ArchSD. Through various public events or activities, we communicate latest information and demonstrate newest technologies on sustainable building to the industry and general public. In October 2015, ArchSD participated in the tenth edition of Eco Expo Asia, jointly organised by the Hong Kong Trade Development Council (HKTDC) and Messe Frankfurt (HK) Ltd., and co-organised by the Environment Bureau to exhibit our sustainable building achievement to both the trade and the public.



ArchSD Exhibition at Eco-expo 2015 Attracted Great Attention from Visitors

Comprising exhibitions, workshop, seminar, guided tour and competition, InnoCarnival is the highlight event of the annual mega programme "InnoTech Month" organised by the Innovation and Technology Commission (ITC). ArchSD placed an exhibition at the InnoCarnival 2015 and exchanged its sustainable design approach with many visitors from 31 October to 8 November at the Hong Kong Science Park.

ArchSD Sustainability Report 2016 - Clients and Business Partners - Social Participation and Engagement



Display Booth at InnoCarnival 2015

Community Events

As a tradition, ArchSD has participated in the annual Hong Kong Flower Show (Flower Show) organised by the Leisure and Cultural Services Department as one of the major exhibitors in 2015. Attracting 590,000 visitors, the 2015 Flower Show set the theme as "When Blossoms Dance" and was held between 20 and 29 March. There were over 200 organisations from 18 countries participated in this annual popular event.

This year, ArchSD brought its landscape design named "Archi • Motion" to the visitors. The landscape design integrated exotic flowers, landscape structure and floral art displays, which were highlighted with the theme flower of "Oncidium", to offer a dynamic visual effect. This display won the Grand Award for Outstanding Exhibit, in category "Displays Section (Local).



Archi • Motion – ArchSD's Landscape Display at 2015 Flower Show

Servicing the Community

The Department encourages staff's participation in volunteer services for the community through different activities. Our Volunteer Service Team has served a total of 1,233 hours in 2015 to support 21 community activities.

Staff Volunteer Service

	2015	2014	2013	2012	2011
Total number of hours of staff volunteer service	1,233	1,284	1,574	1,927	1,666
Number of active Volunteer Service Team members Note 1	18	19	23	27	24
Number of staff received Commendation for voluntary service ^{Note 2}	15	12	18	19	18
Number of Volunteers	44	39	47	54	53
Number of Voluntary Projects Completed	21	28	45	47	52

Note 1 - Active Volunteer Service Team member is defined as team member contributes more than 20 hours on volunteer service.

Note 2 - Staff who receives commendation for volunteer service is defined as team member contributes more than 30 hours on volunteer service.

Highlights of Voluntary Events in 2015





Tung Wah Group Voluntary Service Kick Off Ceremony

Mid-Autumn Festival Celebration for the Disabled



Painting Programme for the Elderly



Gifts for the Elderly



Community Support

ArchSD strives to incorporate features to address community needs in its new building and facilities development. In line with the Government's policy in reducing municipal solid waste and conserving resources, ArchSD has joint hands with Environmental Protection Department is developing Community Green Stations (CGS) at 18 districts to promote environmental education and help collect different types of recyclables.

During the year, two CGS commenced its operations at Shatin and Hong Kong East respectively. ArchSD has incorporated sustainable and green building elements at the design and construction stages of the CGS by introducing greening on site, using container modules and various types of green construction materials. These attractive and purpose-built green facilities enable more residents to take part in waste reduction and recycling activities. With the multi-purpose rooms and other ancillary facilities available, the CGS also supports exhibitions, seminars, workshops and other kinds of educational activities.



Community Green Station at Shatin





Community Green Station at Hong Kong East

The construction works of seven other CGS are carried out progressively in areas of Kwun Tong, Yuen Long, Sham Shui Po, Tuen Mun, Kwai Tsing, Islands and Tai Po and the remaining 14 CGS are still under the planning stage.



Staff Development

ArchSD understands that the strength of the department lies with people. Therefore, it is always the department's priority to invest in staff. By offering a comprehensive range of training and development programmes which are aligned with departmental business goals and staff development needs, we strive to develop a versatile and professional team for service excellence. Such programmes cover topics related to Leadership & Management Skills, Professional & Vocational Training and Career Development.

During the year, we organised 374 training courses that account for a total of 35,020 training hours, i.e. an average of 19.3 training hours per staff member.

Training Type	No. of Trainees	No. of Training Hours
Leadership & Management Skills	39	1,729
Professional & Vocational Training	5,459	27,386
Career Development	1,463	5,905
Total	6,961	35,020

Staff Training Hours





Staff Engagement

Staff Welfare

As a socially responsible employer, we strive to improve our staff welfare as far as practical. We have implemented a variety of benefits for staff and leave policies to ensure all staff can enjoy their services at ArchSD.

To tie in with the family-friendly employment practices, we have launched the "Breastfeeding Friendly Workplace Policy in ArchSD" this year to improve the wellbeing of our female staff. We fully understand the needs and benefits of breastfeeding to both our staff and their new-born family members. In view of this, we have established 4 lactation rooms in our office to provide a convenient and comfortable environment for our staff in need. We have also implemented strict access control for the lactation rooms to safeguard our staff's privacy and security.



Lactation Room at QGO

Staff Recreational Activities

We always encourage our staff to participate in recreational activities to build team spirit and boost staff morale. This year, our staff took part in variety of sports and recreational activities organised by ourselves or by external organisations. Some highlights during the year are presented below:

ArchSD team participated in HKIA Sports and Family Day 2015 with different architectural practices, governmental departments and professional institutes.



Participants shared the joyful moment

ArchSD Dragon Boat Race Team attended a series of intensive trainings to compete in the Shatin Dragon Boat Race 2015. Competing against some of the local best teams and from around the world, we have proudly won the third place in the race.



ArchSD Dragon Boat Race Team 2015

This year, we have also arranged local recreational trips to different attractions in Hong Kong. We have visited the Sha Tau Kok Farm in connecting the nature with our families and friends. We have also had a unique visit to the Lo Pan Temple, which worships the greatest architect and engineer in Chinese history in Hong Kong. Our staff and their family members had spent some quality time together in these trips.



Our staff and their families having fun in the Sha Tau Kok Farm



A visit to the only Lo Pan Temple in Hong Kong

Staff Motivation Scheme

We have conducted the Staff Motivation Scheme since 1993, which aims to achieve productivity gain and improve performance and service quality of our staff through different activities. The Scheme also helps building a sense of belonging among our staff members.

In the year under review, we organised the following activities as part of the Staff Motivation Scheme:

Design Idea Competition for Departmental Display at Hong Kong Flower Show 2016 The Hong Kong Flower Show is one of the greatest annual botanical shows in Hong Kong. This year, we once again invite our staff members to contribute creative ideas in designing our display area. We also focus on creating synergies among our winning participants in finalising the design.



Champion – 雲彩繞彩雲

 Competition on Graphic Logo Design for Building Services Installations under BSB Knowledge Hub

We have invited BSB staff to draw out creative and imaginative ideas on graphic logo design for each of the 14 building services installations under our Knowledge Management Bank. Through the competition, we encourage staff to contribute to the continuous improvement in performance and service quality.



Entries of the design competition

Design Competition on 'Interesting Scene on Site'

We invited site supervisory staff for new works and those from PSB to submit a photo of an "interesting scene" in order to promote staff awareness and interest to site activities and environment. The winners were awarded cash coupons as an encouragement.

Buildability and Constructability Competition

SEB staff have participated actively in the competition, which aimed to promote research and study on the buildability and constructability aspects of building design, and to collect innovative ideas and concepts within our organisation so as to improve construction productivity and achieve lower construction cost.



Champion – The Park

Design of banner for external group activities of ArchSD
 This competition aimed to create a signature for our ArchSD teams to use in different external activities. We are proud to have stimulated our staff's creativity and attracted some innovative design in this competition.



Champion - 打氣 · Inflatable

Design of ArchSD floor directories in lift lobbies and door / room plates
 The competition aimed to enhance the wayfinding in our department as well as to create a
 branding for ArchSD. We collected innovative ideas and concepts within our organisation that
 reflect our image and features.

ArchSD Sustainability Report 2016 - Objectives and Targets



To improve our sustainability performance continuously, we have established a number of sustainability objectives and targets to review our performances each year. In 2015, we achieved most of our targets regarding environmental, social and project quality issues. Details of our achievements during the year and the targets for 2016 are tabulated below.

On Environmental issues

Long Term Objectives	Targets for 2015 Achievements Targ Complia		Target Compliances	Targets for 2016
Reduce water consumption	All water taps in new projects shall be Grade 2 or above under the Voluntary Water Efficiency Labelling Scheme (WELS) of Water Supplies Department (WSD) unless there are genuine operational or technical needs for not doing so (such as water taps for cleansing, clinical and laboratory use)	All water taps in the 9 new projects are Grade 2 or above under WELS of WSD except due to genuine operational or technical needs	Complied	Water taps in 100% of new projects to be Grade 2 or above; 50% of these projects to be Grade 1 under the Voluntary Water Efficiency Labelling Scheme (WELS) of WSD unless there are genuine operational or technical needs for not doing so (such as water taps for cleansing, clinical and laboratory use)
	In not less than 80% of new projects, either rainwater/ grey water recycling system should be installed	100% (8 out of 8) of projects installed rainwater/ grey water recycling system	Complied	2015 targets to be maintained in 2016
Reduce energy consumption	To achieve OTTV standard of not more than 23 W/m ² for 100% of all new projects with air	100% (7 out of 7) projects with OTTV less than 23 W/m ² , and 86% (6 out of 7) projects with	Complied	To achieve OTTV standard of not more than 23 W/m ² for 100% of all new projects

Long Term Objectives	Targets for 2015	Achievements	Target Compliances	Targets for 2016
	conditioning installations, and 70% of these projects to achieve an even lower OTTV of not more than 18 W/m ²	OTTV less than 18 W/m ²		with air conditioning installations, and 75% of these projects to achieve an even lower OTTV of not more than 18 W/m ²
Promote a healthy and sustainable development	80% of the new in-house and outsourced projects with Capital Project Estimate (CPE) / Approved Project Estimate (APE) greater than \$30 millions shall use pulverised-fly ash (PFA) concrete	100% (11 out of 11) of the new projects have used PFA concrete	Complied	2015 targets to be maintained in 2016
Reduce the consumption of natural resources	To reduce the use of timber by using alternative structural solutions such as metal hoarding, system formwork, metal formwork, metal formwork, semi-precast flooring system, precast roofing, dry walls and other structural means such as steel structural section, left-in formwork, etc.	0.112 m ³ /\$millions timber saved	Complied	2015 targets to be maintained in 2016
Comply with all relevant environmental legislation	To maintain a database to collect and analyse information regarding contractors' environmental regulatory performance	In 2015, there was no environmental legislation conviction per 100,000 man hours in ArchSD sites against 0.250 no. of convictions per 100,000 man hours in all Hong Kong sites	Complied	2015 targets to be maintained in 2016

ArchSD Sustainability Report 2016 - Objectives and Targets

Long Term Objectives	Targets for 2015	Achievements	Target Compliances	Targets for 2016
Increase environmental awareness	To record and monitor general technical advice on environmental protection measures in line with Arch SD environmental policy	1,685 nos of environmental advice given as at 31/12/2015	Complied	2015 targets to be maintained in 2016
Improve green housekeeping management	To reduce A4 paper consumption by 7.5% as compared with the base year 2005	Actual consumption of A4 paper in 2015 was 18,169 reams. With data normalised, there were 43% and 5.3% saving when compared with 2005 and 2014 respectively	Complied	2015 targets to be maintained in 2016
	To reduce electricity consumption (exclude A/C system) by 6% at QGO as compared with the base year 2012	Actual consumption up to Q4 of 2015 was 1,076,384 kWh. With data normalised [1], the consumption was 944,137 kWh. There was 14.5% and 5.9% saving when compared with 2012 and 2014 respectively	Complied	To reduce electricity consumption (exclude A/C system) by 1% at QGO as compared with the base year 2013
	To reduce electricity consumption by 6% at APB as compared with the base year 2012	Actual consumption up to Q4 of 2015 was 2,575,605 kWh. With data normalised [1], the consumption was 2,293,336 kWh. There was 12.4% saving and 1.6% increase when compared with 2012 and 2014 respectively	Complied	To reduce electricity consumption by 1% at APB as compared with the base year 2013

[1] The electricity consumption was normalised with the consideration of number of server rooms and number of staff.

On Project Quality issues

Long Term Objectives	Targets for 2015	ets for 2015 Achievements		Targets for 2016
Improve the quality of our services and project delivery	To commence not less than 90% of new Public Works Programme (PWP) projects scheduled in 2015 in accordance with the commencement dates committed in the 2014 Resource Allocation Exercise (RAE)	100% (14 out of 14) of new projects (excluding B- projects and purchase items and those which are delayed due to external factors beyond ArchSD's Control) commenced works in 2015	Complied	To commence not less than 90% of new PWP projects scheduled in 2016 in accordance with the commencement dates committed in the 2015 RAE
	To monitor the expenditure on Capital Works Programme (CWP) projects within ArchSD's purview against the original estimates, ensuring that the under- spending does not exceed 5% of the corresponding provisions in the Printed Estimates	The Original Estimate was \$11,424.2 millions. As at 31/12/2015, the Revised Estimate was \$12,224.1 millions which represented a forecasted overspending of \$799.9 millions (7.0%) when compared to the Original Estimate	Complied	2015 targets to be maintained in 2016
	To ensure 100% of capital and minor works projects to be completed within the agreed time scale (in the Quarter of the year calendar)	100% (33 projects) have been completed within the approved time scale in the scheduled quarter of 2015	Complied	2015 targets to be maintained in 2016
	100% of projects to have certificate of completion issued within one month after the certified date of substantial completion	100% (12 out of 12) of completion certificates were issued within one month after the certified date of substantial completion	Complied	2015 targets to be maintained in 2016
	90% of projects to complete outstanding works and defects rectification and issue maintenance	100% (9 out of 9 projects) of maintenance certificates were issued within the	Complied	2015 targets to be maintained in 2016

Long Term Objectives	Targets for 2015	Achievements	Target Compliances	Targets for 2016
	certificate within 6 months from the expiry of the maintenance period, excluding those which are delayed due to external factors beyond ArchSD's control	6-month tolerance		
	100% of the completed projects to achieve Satisfied Level or above on the overall performance in Client Satisfaction Survey	100% (18 out of 18 projects) of the projects have achieved Satisfied Level or above on the overall performance	Complied	2015 targets to be maintained in 2016
	To update and review not less than 2 nos. of Equipment Schedule/ Proforma Specification for building service installations	"Proforma Particular Specification for Plumbing Installation," "Proforma Particular Specification for Drainage Installation" and "Tender Equipment Schedule for BS Installation" (totally 3 nos.) were revised and promulgated	Complied	2015 targets to be maintained in 2016

On Social issues

Long Term Objectives	Targets for 2015	Achievements	Target Compliances	Targets for 2016
Minimising accident rate for ArchSD staff	Accident rate for ArchSD staff should be not more than 2 occupational injuries per 1,000 staff per year	There were 4 reportable accidents of ArchSD staff in 2015, equivalent to an accident rate of 2.21 reportable accidents per 1,000 staff The office occupational health & safety (OHS) environment is considered satisfactory after review. We have taken preventive	Not complied	2015 targets to be maintained in 2016
		34		

Long Term Objectives	Targets for 2015	Achievements	Target Compliances	Targets for 2016
		 measures to enhance staff's safety awareness, including: displaying OHS posters at prominent locations in our office premises; and conducting an in-house talk on Occupational Health for office workers. 		
Minimising the accident rate in ArchSD contracts	Accident rate in ArchSD contracts should be less than 0.6 reportable accident per 100,000 man-hours worked	0.33 reportable accidents per 100,000 man-hours worked	Complied	2015 targets to be maintained in 2016
Promoting the awareness on safety and health amongst construction workers	At least 40% of ArchSD contracts would participate in the ArchSD Site Safety Model Worker Award Scheme	Up to 31/12/2015, 78% of ArchSD contracts participated in Safety Model Worker Award Scheme	Complied	At least 45% of ArchSD contracts would participate in the ArchSD Site Safety Model Worker Award Scheme
Promoting the awareness on safety and health amongst contractors	At least 50% of ArchSD eligible new works contracts and 35% of eligible maintenance term contracts would participate in Development Bureau Considerate Contractors Site Award Scheme	92% (11 out of 12) of eligible ArchSD new works contracts and 94% (16 out of 17) of eligible maintenance term contracts participated in CCSAS 2015	Complied	2015 targets to be maintained in 2016

Long Term Objectives	Targets for 2015	Achievements	Target Compliances	Targets for 2016
	(CCSAS)			
Enhancing the occupational safety and health within the workplace	Safety walk for workplaces would be conducted at least quarterly	Safety walk at workplaces for Q4 of 2015 has been conducted	Complied	2015 targets to be maintained in 2016
Strengthening health and safety knowledge for project staff with external training	At least 12 external safety training courses on latest safety technology, current safety legislation, accident investigation, etc. should be arranged for project and office staff per year	16 external training courses were conducted and attended by 514 professional/technical/site staff	Complied	2015 targets to be maintained in 2016
Upkeeping safety and health awareness of professional, technical and site supervisory staff, consultants and contractors with in-house briefing	At least 4 in-house workshops on safety and health should be organised	4 in-house workshops / seminars were conducted	Complied	2015 targets to be maintained in 2016



Environmental Performance

	Units	2015	2014	2013	2012	2011
Electricity consumed (QGO and APB Centre) [1]	kWh/m ²	217	219	218	234	234
CO ₂ emission equivalent to electricity consumption (QGO and APB Centre) [2]	Tonnes CO ₂ -e	3,840	3,817	3,808	3,967	3,967
Energy saved due to energy efficient installations [3]	GWh	5.16	0.79 [5]	6.90	9.58 [4]	17.26 [4]
Equivalent monetary savings [6]	HK\$ million	6.19	0.95 [5]	6.90	9.58	17.26
Avoided CO ₂ emissions [3]	Kilo Tonnes CO ₂ -e	3.61	0.55 [5]	4.83	6.71	12.08

Resources Usage - Energy

[1] Offices in QGO and APB Centre represent a majority of total ArchSD office space. Total ArchSD office area is assumed to be 25,277.7 m² (11,166.9 m² for APB and 14,110.8 m² for QGO 31/F& 33/F-41/F). The percentage of electricity consumption of the whole premises for ArchSD office at APB & QGO is assumed to be 100% and 20% respectively.

[2] Territory wide default GHG emission factors (0.7) were used based on the <u>Guidelines to Account for and</u> <u>Report on Greenhouse Gas Emissions and Removals for buildings (Commercial, Residential or Institutional</u> <u>Purpose) in Hong Kong</u> issued by the Environmental Protection Department, HKSAR in February 2010.

[3] The data obtained from 2007 onwards take Building Energy Code (BEC) 2007 as the baseline. Energy efficient features refer to air-conditioning installations, lighting installations, hot water installations, lift & escalator installations, building energy management system and renewable energy technologies. ArchSD staff advises which project will be completed for the concerned year and then the energy template to be completed by the corresponding project officer. Total energy saved due to energy efficient installations can be summed up.

ArchSD Sustainability Report 2016 - Data Summary

- [4] In 2010, 2 large-scale completed projects including a Government Departmental Headquarters and a Hospital Extension Block contributed to the major increase. In 2011, the Tamer Development Project was completed and contributed to most of the energy saving. In 2012, the New CAD Headquarters and North Lantau Hospital Phase 1 contributed to most of the energy saving.
- [5] The nature of the completed projects (i.e. parks, open spaces, promenade, aqua privies, radar station, etc.) in 2014 did not warrant significant energy saving in term of BS installations.
- [6] The electricity tariff is assumed to be HK\$ 1.2 per kWh and HK\$ 1.0 per kWh from 2014 onward and before 2014 respectively.

	Units	2015	2014	2013	2012	2011
Fuel consumption by ArchSD's pool cars	Litre	13,071	12,800	13,142	13,998	13,263
GHG emission equivalent to fuel consumption by ArchSD pool cars [7]	Tonnes CO ₂ -e	35.4	34.7	35.6	37.9	35.9

Resource Usage - Fuel

[7] GHG emission factors for mobile combustion are based on the <u>Guidelines to Account for and Report on</u> <u>Greenhouse Gas Emissions and Removals for buildings (Commercial, Residential or Institutional Purpose) in</u> <u>Hong Kong</u> issued by the Environmental Protection Department, HKSAR in February 2010.

Resource Usage - Office Materials

	Units	2015	2014	2013	2012	2011
A4 paper consumption	Reams	18,169	18,485	18,346	18,330	19,240
A3 paper consumption	Reams	1,171	1,118	1,053	934	953
Envelop consumption	No.	42,883	44,084	43,294	53,818	54,541

Waste Management in Programme Areas of Facilities Development and Upkeeping

	Units	2015	2014	2013	2012	2011	
Construction & demolition materials							
C&D waste disposed of to landfills	Tonnes	46,822	37,593	24,125	46,261	66,541	
C&D materials disposed of to public fill areas	Tonnes	693,029	604,238	644,728	556,560	681,987	

	Units	2015	2014	2013	2012	2011	
Recyclable waste collected at APB Centre							
Waste paper	kg	15,932	19,522	19,335	19,375	23,450	
Aluminium	No.	1,631	4,918	5,900	8,407	11,000	
Plastic bottles	No.	3,013	2,975	3,385	3,690	4,748	

Environmental Convictions of Contractors

	Units	2015	2014	2013	2012	2011
Convictions per 100,000 man-hours	ArchSD sites (HK sites)	0 [8] (0.25)	0.35 (0.275)	0.15 (0.618)	0.336 (0.606)	0.159 (0.499)
Monetary value of significant fines	HK\$	0 [8]	227,000	18,500	61,000	51,000

[8] In 2015, most of the on-site projects were in the final stages of the construction, hence environmental impacts to the neighbourhood were manageable and contented.

Environmental Expenditure

	Units	2015	2014	2013	2012	2011
Resources devoted to environmental works	HK\$ million	639.3	761.6	892.16	1,101.09	1,117.78
Percentage of annual expenditure	%	7.3%	10.9%	12.12	11.7%	9.1%

Social Performance

Staff

	Units	2015	2014	2013	2012	2011
Staff establishment (As at fiscal year-end)	No.	1,814	1,810	1,795	1,792	1,781

Staff Establishment Breakdown

By Post		
Directorate	%	2

ArchSD Sustainability Report 2016 - Data Summary

Professional	%	24					
General Staff	%	21					
Site Staff	%	31					
Technical	%	22					
By Employment Type							
Full-time	%	100					
By Employment Contract							
Permanent (male)	%	66					
Permanent (female)	%	28					
Contract (male)	%	4					
Contract (female)	%	2					
By Age (31.3.2016)							
Age under 30	%	7.8					
Age 30-49	%	45.6					
Age 50 or above	%	46.6					
By Ethnicity							
Local	%	100					
Non-local	%	0					
By Gender	By Gender						
Male	%	70					
Female	%	30					

Staff Training

	Units	2015	2014	2013	2012	2011
No. of training courses (including internal and external seminars/ workshops/ training courses/ visits)	No.	374	287	270	240	205
Numbers of trainees	No.	6,961	6,619	6,674	4,902	4,784

Training Hours Breakdown [9]

Type of Staff	Total Training Hours Received (hours)	Training Hours Per Staff (hours)
Directorate Staff	1,607	45

ArchSD Sustainability Report 2016 - Data Summary

Type of Staff	Total Training Hours Received (hours)	Training Hours Per Staff (hours)
Professional Grade Staff	17,535	40
Technical, Site Supervisory and General Grade Staff	15,878	12
Total	35,020	97

[9] As there is no distinct requirement regarding receiving training in terms of gender, we do not report the data broken down by gender.

Anti-corruption Training

Type of Staff	Number of Staff Participated Anti-corruption Training	Percentage of Staff Participated Anti-corruption Training
Directorate Staff	2	6%
Professional Grade Staff	103	24%
Technical, Site Supervisory and General Grade Staff	147	11%

Staff Turnover

	Male	Female
Age under 30	0.2%(3)	0.2%(3)
Age 30-50	1.7%(30)	0.3%(5)
Age 51-55	0.2%(3)	0.1%(2)
Age 56-60	2.4%(43)	0.4%(8)

New Employee Hires

	Male	Female
Age under 30	2.4%(42)	0.7%(12)
Age 30-50	1.8%(32)	1.0%(17)
Age 51-55	0%(0)	0%(0)
Age 56-60	0%(0)	0%(0)

Staff Injury

						2011
Staff injury N cases [10]	No.	4	4	1	4	7
Staff sick D leave granted for staff injury	Days	50	174	7	119.5	109

	Units	2015	2014	2013	2012	2011
cases						

[10] The definition of staff injury cases is the reported cases of occupational injuries, under Employee's Compensation Ordinance, resulting in death or incapacity for work over 3 days.

Contractor's Accident Rate

	Units	2015	2014	2013	2012	2011
No. of fatalities [11] (ArchSD)	No.	0	1 (Male:1, Female:0)	0	4 (Male:4, Female:0)	2 (Male:2, Female:0)
Fatal accident rate [11] (ArchSD)	per 100,000 man-hours	0	0.004	0	0.013	0.005
Fatal accident rate [12] (HK Construction Industry)	per 100,000 man-hours	0.006	0.007	0.008	0.009	0.010
No. of non-fatal accidents (ArchSD)[11]	No.	95	80	68	130	195
Non-fatal accident rate [11] (ArchSD)	per 100,000 man-hours	0.33	0.31	0.27	0.43	0.51
Non-fatal accident rate [12] (HK Construction Industry)	per 100,000 man-hours	1.08	1.16	1.13	1.22	1.37

[11] Data of 2015 and the previous years was extracted from PWP Construction Accident Statistics [G4-22] System of DEVB as at 8 June 2016.

[12] The accident rate of the HK Construction Industry is based on the published statistics of the Labour Department and using a conversion of 1.67 accidents per 100,000 man-hours equivalent to 60 accidents per 1,000 workers per year.



Scope and Objective

Hong Kong Quality Assurance Agency ('HKQAA') was commissioned by the Architectural Services Department (hereinafter referred to as "ArchSD") of the Government of the Hong Kong Special Administrative Region to provide independent assurance of the ArchSD Sustainability Report 2016 ('the Report') which was prepared in accordance with the Core option of the G4 Sustainability Reporting Guidelines issued by the Global Reporting Initiative (GRI). The Report states ArchSD's major activities and achievements on sustainable development from 1st January 2015 to 31st December 2015. Besides, the financial data are reported for the financial year ended 31 March 2016.

Assurance Methodology

The assurance process was undertaken with reference to the International Standard on Assurance Engagement 3000 ('ISAE 3000') – "Assurance Engagement Other Than Audits or Reviews of Historical Financial Information". In addition, reliability of the selected sustainability information and data were verified following the process consisted of:

- Identification and classification of statements, figures, charts and data sets to be verified
- Verification of selected representative samples of data and information consolidated in the Report, reviewing relevant documentation, interviewing responsible personnel with accountability for preparing the Report
- Cross-checking the raw data and evidence of the selected samples that support the reporting content in order to reduce the risk of error or omission to an acceptably low level

Independence

HKQAA was not involved in collecting and calculating the reporting data, or in the development of the Report. HKQAA's activities are independent from ArchSD.

Conclusion

Base on the outcome of the verification process, HKQAA confirmed that the Report was prepared based on the Core options of the GRI's G4 Sustainability Reporting Guidelines. The information presented in the Report provided a material and complete representation of the performance of ArchSD in the context of sustainable development. The verification team confirmed that the Report was prepared based on factual statements and that the data contained within the Report are accurate. It is a fair and honest representation of initiatives, targets, progress and performance on ArchSD's sustainable development achievements. ArchSD Sustainability Report 2016 - Report Verification

June

Jorine Tam Director, Corporate Business August 2016





Materiality Disclosures The Architectural Services Department

Aug 2016 ervic S

The report is 'In Accordance' with the GRI G4 Guidelines - Core option. The General Standard Disclosures and material Specific Standard Disclosures are presented below with either linkage to the reported section(s) or direct answer.

General Standard Disclosures					
General Standard Disclosures	Cross-reference/Comments	External Assurance			
Strategy and Analysis					
G4-1 Statement from the most senior decision-maker of the organisation	Message from the Director	\checkmark			
Organisational Profile					
G4-3 Name of the organisation	About Us	\checkmark			
G4-4 Primary brands, products and services	<u>About Us</u>	\checkmark			
G4-5 Location of organisation's headquarters	About Us	\checkmark			
G4-6 Number of countries where the organisation operates	Hong Kong only	\checkmark			
G4-7 Nature of ownership and legal form	Part of the Hong Kong SAR Government	\checkmark			
G4-8 Markets served	Strategy and Management	\checkmark			
G4-9 Scale of the organisation	<u>About Us</u> Data Summary	\checkmark			
G4-10 Number of Employees	Data Summary	\checkmark			
G4-11 Percentage of employees covered by collective bargaining agreements	None. There is no collective bargaining legislation exists in Hong Kong but we have maintained various staff engagement channels such as the Departmental Consultative Committee, Joint Staff Consultation Group, Staff Motivation	\checkmark			

General Standard Disclosures						
General Standard Disclosures	Cross-reference/Comments	External Assurance				
	Scheme, Web Forum, Staff Relation Units and other staff associations.					
G4-12 Organisation's supply chain	Project Quality Management	\checkmark				
G4-13 Significant changes during the reporting period regarding size, structure, ownership or organisation's supply chain	No significant change	\checkmark				
G4-14 Explanation of whether and how the precautionary approach or principle is addressed by the organisation	Strategy and Management	\checkmark				
G4-15 Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organisation subscribes or endorses	About This Report Strategy and Management	~				
G4-16 Memberships in associations and/or national/international advocacy organisations	Strategy and Management	\checkmark				
Identified Material Aspects and	Boundary					
G4-17 Entities included in the organisation's consolidated financial statements or equivalent documents	<u>About Us</u>	✓ <u>Report</u> <u>Verification</u>				
G4-18 Process for defining report content and the aspect boundaries	About This Report Main Focus Areas	✓ <u>Report</u> <u>Verification</u>				
G4-19 Material aspects identified in the process for defining report content	<u>Main Focus Areas</u>	✓ <u>Report</u> <u>Verification</u>				
G4-20 Aspect boundary within the organisation for each material aspect	Main Focus Areas	✓ <u>Report</u> <u>Verification</u>				
G4-21 Aspect boundary outside the organisation for each material aspect	Main Focus Areas	✓ <u>Report</u> <u>Verification</u>				
G4-22 Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement	Data Summary	✓ <u>Report</u> <u>Verification</u>				
G4-23 Significant changes from previous reporting periods in the scope and boundary	No significant change	✓ <u>Report</u> <u>Verification</u>				
General Standard Disclosures						
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General Standard Disclosures	External Assurance					
Stakeholder Engagement						
G4-24 List of stakeholder groups engaged by the organisation	Main Focus Areas Engagement Approach	✓ <u>Report</u> <u>Verification</u>				
G4-25 Basis for identification and selection of stakeholders with whom to engage	Main Focus Areas	✓ <u>Report</u> <u>Verification</u>				
G4-26 Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	Engagement Approach We have regular engagement with members of each group: (i) annual appraisals for staff; (ii) quarterly performance reports for consultants and contractors; and (iii) Client Satisfaction Survey for clients.	✓ <u>Report</u> <u>Verification</u>				
G4-27 Key topics and concerns that have been raised through stakeholder engagement, and how the organisation has responded to those key topics and concerns, including through its reporting	Engagement Approach	✓ <u>Report</u> <u>Verification</u>				
Report Profile						
G4-28 Reporting period	About This Report	\checkmark				
G4-29 Date of most recent previous report	ArchSD Sustainability Report 2015 was published in September 2015.	\checkmark				
G4-30 Reporting cycle	About This Report	\checkmark				
G4-31 Contact point for questions regarding the report or its contents	<u>Feedback</u>	\checkmark				
G4-32 GRI Content Index, the 'in accordance' option the organisation has chosen and the reference to the External Assurance Report if any	<u>GRI Content Index</u>	\checkmark				
G4-33 Policy and current practice with regard to seeking external assurance for the report	About This Report Report Verification	\checkmark				
Governance						
G4-34 Governance structure of the organisation	About Us Strategy and Management	\checkmark				
Ethics and Integrity						
G4-56 Organisation's values, principles, standards and norms of behaviour	Strategy and Management	\checkmark				

Specific Standard Disclosures					
Material Aspects	DMA and Indicators	Cross- reference/Comments	External Assurance		
Procurement Practices	DMA	Project Quality Management	\checkmark		
Procurement Practices	G4 EC9 Proportion of spending on local suppliers at significant locations of operation	In 2015, all our purchases were from local suppliers (defined as companies registered in Hong Kong).	\checkmark		
Energy	DMA	<u>Sustainable Building</u> <u>Design</u> <u>In-house Green</u> <u>Management</u> <u>Objectives and Targets</u>	\checkmark		
Energy	G4-EN3 Energy consumption within the organisation	<u>Data Summary</u>	\checkmark		
Energy	G4-EN6 Reduction of energy consumption	<u>Data Summary</u>	\checkmark		
Emissions	DMA	In-house Green Management Objectives and Targets	\checkmark		
Emissions	G4-EN15 Direct greenhouse gas (GHG) emission (Scope 1)	<u>In-house Green</u> <u>Management</u>	\checkmark		
Emissions	G4-EN16 Energy indirect GHG emissions (Scope 2)	In-house Green Management	\checkmark		
Emissions	G4-EN17 Other indirect GHG emissions (Scope 3)	In-house Green Management	\checkmark		
Emissions	G4-EN19 Reduction of GHG emissions	Data Summary	\checkmark		
Effluents and Waste	DMA	In-house Green Management Objectives and Targets	\checkmark		
Effluents and Waste	G4-EN23 Total weight of waste by type and disposal method	Data Summary	\checkmark		
Compliance	DMA	Strategy and Management	\checkmark		
Compliance	G4-EN29 Monetary value of significant fines and total number of non-monetary	Data Summary	\checkmark		

Specific Standard Disclosures						
Material Aspects	DMA and Indicators	Cross- reference/Comments	External Assurance			
	sanctions for non-compliance with environmental laws and regulations					
Supplier Environmental Assessment	DMA	Project Quality Management	\checkmark			
Supplier Environmental Assessment	G4-EN32 Percentage of new suppliers that were screened using environmental criteria	ArchSD only appoints contractors and suppliers from lists of relevant categories, which are maintained by the Government of HKSAR. The listed contractors and suppliers have to fulfill certain requirements, which are mainly related to the establishment of their companies, set out by the administrators of these lists. Contractors and suppliers are also required to achieve ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 certifications in order to be included in these lists.				
Employment	DMA	Staff Development Staff Engagement	\checkmark			
Employment	G4-LA1 Total number and rates of new employee hires and employee turnover by age group, gender and region	<u>Data Summary</u>	\checkmark			
Occupational Health and Safety	DMA	Project Quality Management Objectives and Targets	\checkmark			
Occupational Health and Safety	G4-LA6 Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of	Data Summary	\checkmark			

Specific Standard Disclosures						
Material Aspects	DMA and Indicators	Cross- reference/Comments	External Assurance			
	work-related fatalities, by region and by gender					
Training and Education	DMA	Staff Development	\checkmark			
Training and Education	G4-LA9 Average hours of training per year per employee by gender, and by employee category	<u>Data Summary</u>	\checkmark			
Training and Education	G4-LA11 Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	All staff receive regular performance appraisal.	\checkmark			
Non-discrimination	DMA	Strategy and Management	\checkmark			
Non-discrimination	G4-HR3 Total number of incidents of discrimination and corrective actions taken	No incident of discrimination was reported in 2015.	\checkmark			
Anti-corruption	DMA	Strategy and Management	\checkmark			
Anti-corruption	G4-SO4 Communication and training on anti-corruption policies and procedures	<u>Data Summary</u>	✓			
Anti-corruption	G4-SO5 Confirmed incidents of corruption and actions taken	<u>Strategy and</u> <u>Management</u>	\checkmark			
Grievance Mechanisms of Impacts on Society	DMA	Project Quality Management	\checkmark			
Grievance Mechanisms of Impacts on Society	G4-SO11 Number of grievance about impacts on society filed, addressed, and resolved through formal grievance	The number of public and media complaints filed, addressed, and resolved in 2015 was 274.	\checkmark			

Specific Standard Disclosures					
Material Aspects	DMA and Indicators	Cross- reference/Comments	External Assurance		
	mechanisms				
Product and Service Labelling	DMA	Project Quality Management	\checkmark		
Product and Service Labelling	G4-PR5 Results of surveys measuring customer satisfaction	Project Quality Management Objectives and Targets	\checkmark		

ArchSD Sustainability Report 2016 - Glossary



Building Energy Codes (BEC)	Building Energy Codes is a suite of guidance that covers five aspects of installation practices, including lighting, air conditioning, electrical and lift & escalator installations. It stipulates the minimum energy performance standards (MEPS) of these installations practices.
Building Environmental Assessment Method (BEAM)	Quote from BEAM Society, "A means by which to benchmark and improve performance in the planning, design, construction, commissioning, operation and management of buildings." BEAM Plus is a comprehensive environmental assessment scheme recognised by the Hong Kong Green Building Council (HKGBC). Issued in 2012, BEAM Plus Version 1.2 for New Buildings and Existing Buildings is an enhanced from the earlier version in providing Passive Design as an alternative method for assessment."
Carbon Audit	A systematic and scientific approach to account for the greenhouse gas emissions arising from the operations of the buildings.
Carbon Footprint	The carbon footprint is the measurement of all greenhouse gases an individual produces in daily lives through burning fossil fuels for electricity, heating, transportation, etc, usually in the unit of tonnes (or kg) of carbon dioxide equivalent.
Community Green Station	A Community Green Station is operated by non-profit-making organisations to provide support for the community in the collection of low economic value recyclables such as electrical appliances, compact fluorescent lamps, fluorescent tubes, glass bottles and rechargeable batteries. With a view to promoting green living at the community level, the collected items will be delivered to qualified recyclers for proper treatment and turning waste into resources.
Considerate Contractors Site Award	It is an award to promote a considerate attitude and good site safety, health and environmental practices for both Public Works and non-Public Works sites.
Designated Projects	Designated projects are projects or proposals that may have an adverse impact on the environment. They are covered by the Environmental Impact Assessment Ordinance in which they are categorised into two schedules: Schedule 2 and 3. (Details please refer to <u>A Guide to the Environmental Impact Assessment Ordinance</u> .)
Earth Tube	Earth Tubes are a passive design in architecture that enable the transfer of ground source energy to heat or cool ventilation air. They are standard concrete tubes that run underground and precondition the temperature of incoming air before it enters the building, thus reducing the energy required to heat or cool the building.

Energy Audit	An Energy Audit is an examination of an energy consuming equipment/system to ensure that energy is being used efficiently. It is an effective energy management tool. By identifying and implementing the means to achieve energy efficiency and conservation, not only can energy savings be achieved, but also equipment/system services life can be extended. All these mean savings in money.
Environmental Impact Assessment (EIA)	A process to assess the potential environmental impacts and environmental benefits (in quantitative and qualitative terms) of a project in the early planning stages as well as identify any alternatives or mitigation measures.
Environmental Impact Assessment Ordinance (EIAO)	An Ordinance to assess the impact on the environment of certain projects and proposals, for protecting the environment and for incidental matters through the application of the EIA process and the environmental permit system.
Extranet	The ArchSD Extranet is a private secured web portal with restricted access to enhance communication and information exchange with external users such as consultants and contractors, and to streamline contract management of works projects undertaken by the Department.
Global Reporting Initiative (GRI)	A multi-stakeholder-governed institution which provides a framework for sustainability reporting, which is commonly used all over the world. This framework sets out the principles and indicators that entities can use to measure and report their economic, social and environmental performance. GRI launched its fourth generation of Sustainability Reporting Guidelines (G4) in May 2013. G4 emphasises on report materiality that encourages reporting organisations to provide only information that is critical to their business and stakeholders.
Green Building Awards (GBA)	Jointly organised by the Hong Kong Green Building Council and the Professional Green Building Council, GBA is a biennial industry award which aims to provide recognition to building-related projects with excellent performance and contributions in sustainability and the built environment. It also encourages the industry to transform the mainstream market towards wider adoption of sustainable planning, design, construction, management, operation, maintenance, renovation and decommissioning of buildings.
Green Contractor Award	Green Contractor Award is organised by ArchSD every year to appraise contractors that have excellent performance in construction sites through demonstrating their environmental and social conscious commitments with the implementation of effective green measures.
Greenhouse Gases	Greenhouse gases refer to those which are able to absorb and hold heat in the atmosphere, either occurring naturally (e.g. carbon dioxide, methane, ozone and water vapour) or exclusively resulting from human activities (e.g. hydroflurocarbons).
Grey Water	Grey water is the wastewater generated from domestic activities such as hand washing and cloth laundering. It is suitable for reuse as landscape irrigation or even toilet flushing.
Hong Kong Energy Efficiency Registration Scheme for Buildings	This scheme was launched by the Electrical & Mechanical Services Department for promoting the application of Building Energy Codes since October 1998. It provides an official platform for interested parties to register their buildings which comply with BECs.
Important Tree	Important Trees are trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria: trees of 100 years old or above; trees of cultural, historical or memorable significance e.g. Fung Shui tree, tree as landmark of monastery or heritage monument, and trees in memory of an important person or event;

	trees of precious or rare species; trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or trees with trunk diameter equal or exceeding 1.0 m (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.
ISO 50001 Energy Management System	ISO 50001 is an international standard first published by International Organization for Standardization (ISO) on 15 June 2011, which specifies requirements for the establishment of an energy management system. Adopting ISO 50001 Energy Management System enables organisations to improve their energy performance, which generally includes energy use, energy efficiency and energy consumption, in a systematic approach. Similar to other well-known ISO standards such as ISO 9001 and ISO 14001, ISO 50001 is also based on the PLAN-DO-CHECK-ACT approach to assist organisations in achieving continual improvement.
Knowledge Management (KM) Portal	KM portal is to manage the knowledge life cycle from generation, harvesting, formation of practice wisdom and sharing to publishing, monitoring and renewal. The whole process is manifested in the operational regime under a 3-tier system, i.e. the ArchSD Knowledge Bank (K-Bank), branches/divisions KM hubs and knowledge community workspace.
Leadership in Energy and Environmental Design (LEED)	The Leadership in Energy and Environmental Design (LEED) Green Building Rating System, developed by the U.S. Green Building Council (USGBC), provides a suite of standards for environmentally sustainable construction.
Microclimate Study	Microclimate study acts as an environmental performance factor of the site providing environmental characteristic of the site for the purpose of creating a sustainable environment which provides the greater comfort for the development.
Overall Thermal Transfer Value (OTTV)	A measure of the energy transferred through the envelope of a building and has a direct correlation with energy consumption.
Preliminary Environmental Review (PER)	It is a study that determines the current environmental conditions of the project site through inspecting the potential environmental impacts associated with the project and recommending corresponding mitigation measures. All Government Projects are required to carry out PER at the early stage of the projects (Feasibility Study Stage).
Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP)	It was formerly known as <u>Practice Note for Authorized Persons and</u> <u>Registered Structural Engineers (PNAP)</u> . Since 1974, the Building Authority has issued practice notes to authorised persons, registered structural engineers and registered geotechnical engineers from time to time to promulgate how the Authority applies and enforces the provisions of the Buildings Ordinance (BO) and its subsidiary regulations as well as other administrative and advisory matters in the administration of the BO.
Program on Source Separation of Commercial and Industrial Waste	It has been launched by EPD since 2007. It aims to encourage the property management sector to undertake initiative to set up and implement suitable mechanism to separate and recover waste within commercial & industrial (C&I) premises. This will facilitate the tenants / occupants to practice waste separation and recycling in workplace with ease.
Post Occupancy Evaluation (POE)	Post Occupancy Evaluation is a management tool tailor-made to evaluate the performance, assess the effectiveness of sophisticated building services systems after client occupancy, and to address clients' concerns on the functional requirements and energy consumption of their

	recently completed building projects.
Quality Building Awards (QBA)	QBA is jointly launched by nine professional organisations in Hong Kong at biennial intervals to present public recognition to buildings of outstanding quality that have demonstrated excellent teamwork. The Award aims to promote a collective commitment by the building industry to maintain the highest standards of professionalism and competitiveness.
Register of Old and Valuable Trees	The Leisure and Cultural Services Department, Agriculture, Fisheries and Conservation Department and Housing Department have identified some 500 Old and Valuable Trees on unleased Government land within built-up areas or tourist attractive spots in village areas to provide priority protection.
Smart City	A Smart City is a city which capitalises on new technologies and developments to enhance its systems, operations and service delivery. Smart Cities share one thing in common, the application of information and communications to connect and integrate the systems and services of the city. The goal for Smart Cities is to improve city management and residents' quality of life through the efficient use of resources and service delivery whilst at the same time reducing environmental footprint.
Stakeholder	It refers to individuals, groups or organisations which experience directly or indirectly the actions and policies implemented by an organisation.
Sustainable Development	Sustainable development is the development approach which meets the desires of the present and preserves the environment and natural resource for the future generations.
Testing and Commissioning (T&C)	Testing and Commissioning (T&C) is generally regarded as testing of equipment and systems separately, in order to ensure that they are safe and meet the design requirements.
Resource Allocation Exercise (RAE)	It is a practice to schedule activities and assign available resources in an economic way, so that predetermined constraints of resource availability and/or project time are not exceeded. Each HKSAR Government Department has to earmark an amount of Recurrent/Capital spending in October that to be included in the budget of the following year.
Universal Accessibility	The concept of Universal Design forms the backbone of Universal Accessibility. It is a design approach to a universally accessible standard in which all products, environments and communications will allow for the widest spectrum of our community regardless of diversity, age and ability.
U-value	The rate of heat flow through a material. It is measured as the amount of heat flow through 1m ² of the material for every degree difference in temperature each second.
Valuable Tree	Refers to the "valuable trees" in the Register of Old and Valuable Trees which are distinguished in the following categories: Trees of large size; Trees of precious or rare species; Trees of particularly old age (e.g. aged 100 or above); Trees of cultural, historical or memorable significance; and Trees of outstanding form.
Vertical Greening	Vertical greening is the application of a vegetative cover to a wall/vertical structure. It serves as the thermal insulation to building to moderate temperature and relative humidity to the site. It also helps in filtrating dust pollution, reducing noise pollution and enhancing the biological diversity of the building and its surroundings.

ArchSD Sustainability Report 2016 - Feedback



Sustainability Report 2016

Thank you for reading our report. Your comments and suggestions for our continuous improvement are invaluable. Please take a few minutes to complete this form and send it back to us.

1. How strongly do you agree with the following statements about the report?

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Additional comments
Most relevant issues are covered.	0	0	0	0	0	Enter comments
Content is balanced and reliable.	\bigcirc	0	\bigcirc	0	0	Enter comments
Content is clear and easy to understand.	\bigcirc	0	\bigcirc	0	\bigcirc	Enter comments
Structure and layout are rational and easy to use.	0	0	0	0	0	Enter comments

2. How would you rate the overall report?

Excellent	Good	Adequate	Marginal	Poor	Additional comments
0	0	0	0	0	Enter comments

3. In accordance with the report, how would you rate our sustainability performance?

Excellent	Good	Adequate	Marginal	Poor	Additional comments
0	0	0	0	0	Enter comments

4. What information would you like to see in future reports?

Enter comments

5. Other comments:

Enter comments

6. Which of the following best describes you?

- □ Client of ArchSD
- □ Government Department
- □ Consultant / Contractor / Supplier / Construction Industry
- □ Architect / Engineer / Landscape Architect / Surveyor
- □ Non-governmental Organisation
- □ Academic / Education Sector
- □ Staff of ArchSD
- □ General Public
- □ Other Enter comments

If you would like to receive future reports / information from us, please provide your contacts:

Your Name:

Your Organisation:

Your Telephone:

Your Email address:

Submit Reset

Thank you and we appreciate your feedback.

You may also print this page and fax to: +852 2596 0361 or contact our Integrated Management Unit by email to <u>imu@archsd.gov.hk</u>.

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