Tai Fu Tai Mansion

Tai Fu Tai N	Mansion							
	Scene		English Script	Chinese Script				
	/Time			·				
1. W	1. Walkthrough of Tai Fu Tai Mansion (00:02 – 01:00)							
21	00:02 - 01:00							
2. Ro	oof Constr	uction of Traditional Vernacular Lingr	nan Architecture					
	01:00 - 03:55		This animation is going to illustrate the roof structural system and roof tiling system of the main hall of Tai Fu Tai Mansion. It embodies one of the common typologies of pitched roof construction in Lingnan area.	本影片將介紹大夫第正廳的屋頂結構和 瓦頂鋪砌。這屋頂體現了嶺南地區其中 一種常見的金字屋頂建造方式。				
		The state of the s	The roof of Tai Fu Tai Mansion is composed of a main ridge/Gable ridge pan and roll tiles, Batten, and purlins.	大夫第的正廳屋頂由正脊、垂脊、板瓦 及筒瓦、椽條和垂脊組成。				
			The roof is supported on a composite structure of 'stacked-beam-and-strut system' and 'purlin-and load-bearing-wall system'.	屋頂下方由結合了「疊架式結構」及「直標式結構」的混合式結構所承托。				
			The traditional technique of tenon and mortise is crucial to the stacked-beam-and-strut system.	傳統榫卯結構技術對於疊架式結構是非常重要的。				
			The stacked-beams-and-struts system will be introduced first as follows.	以下先介紹疊架式結構。				
			When the wall is constructed to a certain height, lay the first beam of the stacked beams-and-struts system.	當牆身砌至某個高度,放上疊架第一條 橫樑。				
			Continue to construct the wall.	然後繼續砌牆。				
			Install a carved timber element on the first beam.	將木雕構件安裝在第一條橫樑上。				

Tai Fu Tai Mansion	Install a "Guazhu" on the first beam.	將瓜柱安裝在第一條橫樑上。
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	Install the second beam. Insert one end of the beam into the first "Guazhu" and	 安裝第二條橫樑。將橫樑的尾端插入第 一條瓜柱,
	insert another end onto the carved timber element below.	並將另一端固定在下方的木雕構件上。
	Install the second carved timber element on the second beam.	將第二件木雕構件安裝在第二條橫樑 上。
	Install the second Guazhu on the second beam.	安裝第二條瓜柱在第二條橫樑上。
	Install the third beam. Put two Tuofeng on the second and third beams respectively.	安裝第三條橫樑。將兩件駝峰安裝在第 二和第三條橫樑上。
	The following steps demonstrate how to install the roof purlins. Firstly, lay the ridge purlin on the two walls and rest on the Tuofeng.	接下來的步驟是安裝檁條。 首先,於兩幅牆上安裝脊檁,並以駝峰 承托。
	Lay the evenly purlins.	放置檐檩。
	Distribute the rest of the purlins evenly between the ridge purlin and the eave purlins.	於脊檩和檐檩之間平均放置其他檩條。
	Finally, install the decorative timber elements around the stacked beams-and-struts system. The stacked beam-and-struts system is completed.	最後,在疊架四周安裝裝飾性的木構 件。疊架式結構便完成。
	The purlins-and-load-bearing-wall system will be introduced as follows.	以下將介紹直檩式結構。
	For the purlins-and-load bearing wall system, first install ridge purlin, and then other purlin, then finally install the rest of the purlins in between evenly with the support of load bearing walls.	直標式結構中,先落脊檁,然後檐檁, 最後將其他檁條平均置於脊檁 及檐檁之間,以承重牆承托。

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	Lay battens on purlins.	於標條上放置椽條。
	Fix battens on purlins with bamboo nails.	利用竹釘把椽條在檩條上釘牢。
	After all the battens are laid, then form gable ridges.	安裝好所有椽條後,先鋪砌垂脊。
	Lay two layers of pan tiles with the convex side facing up to cover half the width of the gable wall edge.	在山牆頂部邊沿大概二分一位置鋪砌兩 層凸面向上的板瓦
	Then, lay the second row of pan tiles with the concave side facing up in double layers. Lay a row of roll tiles with lime mortar over the first and second row of pan tiles.	然後以雙層凹面向上的形式鋪砌第二行 板瓦。 在兩行凹凸板瓦之間鋪上灰漿和筒瓦。
	Render the roll tiles with lime mortar.	在筒瓦上鋪上灰漿。
	Add a top coat of Wu-yin on the gable ridge. When the lime mortar is half-set.	當灰漿呈半乾狀態,在垂脊上鋪一烏煙
	Traditionally, "Wu-yin" is scraped off from ashes at chimneys of rural houses. Nowadays, the traditional "Wu-yin" is replaced by ashes at chimneys of steam ships or mineral paint. It is mainly for decoration, but it is also water-resistant.	傳統而言,烏煙從農屋的煙囪刮出。現在,傳統烏煙由輪船煙囪的灰燼或礦物 額料取代。烏煙主要用作裝飾用途,不 過亦有跣水功能。
	Lay several pieces of pan tiles in a vertical row from the ridge purlin. Repeat the step to form two layers.	在脊標位置垂直鋪砌數塊板瓦。重覆以 鋪砌兩層。
	Lay roll tiles with lime mortar over two rows of pan tiles.	在兩行板瓦之間鋪上灰漿和筒瓦。
	To form the shape of the main ridge, lay two layers of pan tiles and a layer of roll tiles with lime mortar above the ridge purlin horizontally.	在脊檩上面横向鋪上兩層板瓦、一層筒 瓦和灰漿作正脊雛形。

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	Repeat the above steps.	重覆以上步驟。
	Render the main ridge with lime mortar.	為正脊批上灰漿。
	Repeat the steps to form the main ridge.	重覆以上步驟製作正脊。
	Add a top coat of Wu-yin on the lime mortar.	在灰漿上加上烏煙。
	After forming the main ridge, lay a "double-pan and single-roll" roof.	批好正脊後開始鋪砌「單筒雙瓦」屋頂。
	Lay a row of pan tiles from the eaves to the main ridge to form the first layer.	從屋簷到正脊鋪上一行板瓦作第一層。
	Use lime mortar to fix the tiles near the eaves.	利用灰砂漿固定近簷的瓦片
	The overlapping of the pan tiles usually follows the ratio of 7:3, which means covering 70% and exposing 30% of the surface area of the pan tile for better weather protection.	每片板瓦的覆蓋比例需跟隨疊七留三法 則 (即重疊七成,外露三成),以達至較 好的擋水效能。
	Repeat to form the second layer. Lay a row of roll tiles with lime mortar over two rows of pan tiles.	重覆以鋪砌第二層。在兩行板瓦之間鋪上灰漿和筒瓦。
	Render the roll tiles with lime mortar.	在筒瓦上鋪上灰漿。

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		Add a top coat of "Wu-yin" on the lime mortar.	在灰漿上加上烏煙。
		Finally, decorate the main ridge and gable ridge.	最後,裝飾正脊和垂脊。
3 Traditiona	l Chinese Wall Construction		
03:55 - 05:24	Tennese wan construction	There are two common types of brick. Red brick is shown on the left and grey brick is shown on the right.	常見的磚分兩種,左邊的是紅磚右邊的是青磚。
		The key difference is that at the end of the firing process, water is added to the top of the kiln to drive away the air inside, creating a low-oxygen environment.	差異關鍵在於燒製過程的尾聲時,會於 磚窰頂部加水 來驅走窰內的空氣,形成一個低氧的環 境。
		Such environment will enable an incomplete oxidation of the iron in the clay and become iron III oxide (Fe3O4) to form grey brick.	這樣的環境會使粘土中的鐵不完全氧化, 成為四氧化三鐵 (Fe3O4)而呈現出青色,形成青磚。
		Three common types of brick bond adopted by traditional architecture in Hong Kong will be introduced as follows.	以下會介紹三種在香港傳統建築常見的砌磚方法。
		Firstly, let's learn the terminology for brick construction: when the brick is placed along the depth of the building, it is called a header.	首先認識砌磚的術語:磚塊按著建築進 深方向而砌的會叫作「丁磚」。
		When the brick is placed along the elevation of the building, it is called a stretcher.	磚塊按著建築立面方向而砌的會叫作 「順磚」。
		Red bricks are adopted to build a wall with a pattern of alternate header course and stretcher course.	採用紅磚以一行丁磚和一行順磚交替的 作法築砌牆身。

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		Red bricks are adopted to build a wall with a pattern of alternate header and stretcher along the same course.	採用紅磚以每行丁磚和順磚交替的作法築砌牆身。
		Grey bricks are adopted to build a wall with a pattern of multiple courses of stretchers, usually five or seven or nine, to one course of headers.	採用青磚以多順一丁的作法築砌牆身, 通常為五順一丁、七順一丁或九順一 丁。
		Grey brick is commonly found at traditional Chinese architecture.	青磚常見於傳統中式建築
		In Southern China, it is common to build cavity wall so as in Tai Fu Tai Mansion.	南方多築空心牆,大夫第亦不例外。
		The following demonstration takes the wall adjacent to the main entrance of Tai Fu Tai Mansion as an example to show the construction sequence.	以下展示以大夫第正門旁邊的立面為例呈現建築步驟。
		First, lay twenty courses of grey bricks stretchers at the inner layer.	首先,空心磚牆內層砌二十行順砌青 磚。
		Lay three courses of granite blocks at the outer layer as the base.	在空心牆外層砌三行麻石作為牆基。
		Lay a course of headers over the inner and outer layers as the tie.	在內外層上鋪砌一行丁磚作為連結。
		A void is formed between the inner layer of brickwork and the outer layer of granite blocks joined by wallties.	由一行丁磚連結的內層磚牆和外層麻石之間形成了空心的部分
		It allows good insulation of heat and noise.	這帶來良好的隔熱和隔聲功能。

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		The wall behind the three courses of rectangular granite blocks is constructed with grey bricks.	三層矩形花崗石塊背後的牆身由青磚築砌。		
		Lay eleven courses of grey brick stretchers. Lay a course of grey brick headers.	內外層分別鋪砌十一行順砌青磚,於上 方鋪砌一行丁砌青磚連接內外層。		
		Lay thirteen courses of stretchers on the inner and outer layers respectively. Lay a course of headers to tie the two layers.	內外層分別鋪砌十三行順砌青磚,再鋪 砌一行丁砌青磚連接內外層。		
		Finally, lay ten courses of grey brick stretchers on top of the inner and outer layers respectively.	最後,分別在內外層鋪砌十行順砌青 磚。		
		The brick walls at Tai Fu Tai Mansion reflects a rather random brick construction. For example, the number of stretcher courses applied to the walls on both sides of the main entrance is different.	大夫第牆身的砌法比較隨意,例如正下兩旁牆身的順砌磚層數目是不同的。		
		It is believed that as Tai Fu Tai Mansion is a vernacular architecture, the building standard could be rather random.	相信由於大夫第是民間建築,建造規格也相對隨意。		
4. Lingnan Guangfu decorative lime plaster moulding					
05:24 - 06:48		The production of decorative lime plaster moulding will be introduced as follows.	以下將會介紹製作灰塑的工序。		
33.40		Prepare materials including limestone powder, glutinous rice flour, red sugar, salt, dry straw, Yukou Paper (paper made of bamboo), and mineral pigments to produce straw-base lime mortar, paper-base lime mortar, and colored lime mortar.	準備石灰粉、糯米粉、糖、鹽、稻草、 玉扣紙和礦物顏料等材料製作草筋灰、 紙筋灰和色灰。		

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	Straw-base lime mortar: Limestone powder medium- sized sand, dry straw, water, red sugar	草筋灰:石灰粉、中等粗細的砂粒、乾稻草、清水、紅糖
	Paper-base lime mortar: Limestone powder, glutinous rice flour, Yukou paper, water, red sugar	紙筋灰:石灰粉、糯米粉、玉扣紙、清 水、紅糖
	Color lime mortar: Mixing paper-base lime mortar with pigment. (Traditionally, mineral paint and Wu-yin were used)	色灰:紙筋灰與顏料混合(傳統使用礦 物質顏料,亦會使用烏煙)
	Design and sketch	構思設計、勾畫草圖
	The master needs to choose the theme, location, form, and size of the plaster moulding based on the requirement of the house owner and the specific condition of the building.	工匠需要在現場根據業主的要求和具體 建築的情況選定灰塑的題材、位置、形 態和大小。
	The master pins nails on the wall according to the sketch design.	工匠根據構圖在牆上打釘。
	Bend and wind the copper wire around the nails to form the skeleton.	以銅線纏繞短釘以製作造型骨架。
	After forming the skeleton, apply straw-base lime mortar over the skeleton for several layers.	骨架完成後,於骨架上包上數層草筋 灰。
	The thickness of each application of mortar layers should not exceed 3cm.	每次包灰厚度不能超過3釐米。
	Repeat the steps of applying mortar, drying, and compacting until the preliminary form is moulded.	重複上灰、待乾和壓實的步驟,直至完 成灰塑的雛形。
	The paper-base lime can only be applied when the semi-finished moulding has been dried one to two days.	完成草筋灰批底後需要等待一至兩天讓其自然乾,然後才可鋪上紙筋灰。

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	The texture of the paper-base lime mortar is fine which can adhere the straw-base lime mortar and the colored lime mortar. The thickness of each application of layers should not exceed 2cm.	紙筋灰質地細膩,用以黏合草筋灰和色灰,每次鋪加厚度不可超過2釐米。
	Bamboo sticks can be used to assist shaping where necessary.	必要時可以竹籤輔助造型。
	Mix the pigment and the paper-base lime mortar to form colored lime mortar. Lay the colored lime mortar on the outermost layer of the plaster moulding.	把顏料與紙筋灰混合成為色灰,鋪在灰 塑最外層。
	Laying colored lime mortar is the last step to fine-tune the form of the plaster moulding, which also forms the base of the coloring in the next step.	鋪色灰是對灰塑造型作出最後修飾,並 成為之後上色的基礎。
	Traditional mineral paint must be applied immediately after the previous procedure of laying colored lime mortar.	必須緊接鋪色灰的工序進行上彩
	It is because the wet-colored lime mortar would allow better absorption of the paint so that the bright color can be maintained.	因為濕潤的色灰可讓顏料滲入灰塑,使 顏色保持鮮艷。
	After painting the plaster moulding, outline the shape and lines of the plaster moulding with black paint.	上彩後還要用黑色顏料勾劃灰塑輪廓和線條。
	To allow the paint to be fully absorbed by the paper- base lime mortar, the plaster moulding should be cured under a suitable humidity for a certain period.	為使顏料完全被紙筋灰吸收,需要讓灰塑在合適的濕度下包裹養護一段時間。

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5. Main entrar	ice door		
06:48		The headroom of the entrance building is around	大夫第門屋樓底高約 6.7 米,正門高約
08:53		6.7m, the main door is around 3.5m high and 1.6m wide.	3.5 米、闊約 1.6 米。
		The height of the main door is almost twice the height of other doors in the mansion.	正門高度約為大宅其他門口的兩倍之多。
		How did the residents open the locked main entrance door? How special is the locking mechanism of the main door?	昔日居民如何打開鎖上的正門呢? 正門的鎖頭機關有何特別?
		Let's explore together now!	現在一起探索一下!
		Let's look at the components at the front of the main door.	先看看正門正面的部件。
		The flickering circular components are cylindrical door handles.	正在閃爍的部件是圓柱形把手。
		The T-shape component is the keyhole.	T- 型部件是鎖眼。
		Let's look at the components at the rear of the main door.	然後看看正門背面的部件。
		The main entrance has a dual security system.	正門有兩重保安裝置。
		The first is vertical timber posts and the second is timber latches with a locking system.	第一重為直木櫳,第二重為門關插。
		Four vertical timber posts can be fixed at the rear of the door to form a barrier.	四條垂直木柱能夠固定在門後形成屏障。
		Above the lintel at the rear of the main door, there is a timber beam with four circular holes.	門後過樑上方有一條開了四個圓洞的木樑。
		At the threshold there are four square holes.	 門檻有四個方形凹洞。

	The two ends of the vertical posts are circular and	
	square in shape	為了牢牢地固定直柱,柱的兩端分別是
	so that the posts can be fixed firmly.	圓形和方形的。
	To open the door, the timber posts have to be removed first.	若要打開正門,首先要移走木柱。
	Lift the timber posts.	提起木柱。
	Tilt and remove the timber posts.	傾斜並取出木柱。
	Like many traditional Chinese architecture, there is a	如同許多傳統中式建築,大夫第正門背
	pair of timber handles and a pair of timber latches at the back of the main	面有一對木把手
	door of Tai Fu Tai Mansion.	和一對稱為「門關插」的木橫閂。
	The latches are operated with the handles and the	
	locking mechanism.	「門關插」配合把手和上鎖裝置運作,住 戶能夠利用鑰匙從外面開門進入。
	The residents outside can use a key to open the door.	
	The flickering components are the gears that connect	正在閃爍的部件是連結前面圓柱形把手
	to the cylindrical door handles at the front.	的齒輪。
	Above the gears are the timber latches.	齒輪的上方就是木橫閂。
	The metal component of the locking mechanism can	 把手側面可見金屬機關部件。
	be seen at the lateral side of the handles.	
	The flickering components are the door handles.	而閃動的位置是 把手。
	The steps to unlock the door will be shown as follows.	現在會展示解鎖的步驟。

First, insert the key into the keyhole. Lifting the key

will raise the metal component

首先把鑰匙放入匙眼,提起鑰匙的同時 也會升起背面的金屬機關部件。

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		of the locking mechanism at the back at the same time.	
		Then, rotate the cylindrical door handles which connect the gears at the back to drive the latches laterally. The same process applies to the other side.	然後,轉動連結齒輪的圓形把手以帶動 背面的横閂横向移動。 開另一邊的鎖也是用同一個方法。
		Let's have a look together what is happening at the back.	讓我們同時看看背面的情況。
		Insert the key into the keyhole.	把鑰匙插入匙眼。
		Lifting the key will raise the metal component of the locking mechanism at the back at the same time.	提起鑰匙的同時也會升起背面的金屬機關部件。
		The timber latches are moved by turning gearwheel	把手和齒輪同時轉動,帶動橫閂作橫向 移動。
		Now the door is fully unlocked	大門的解鎖過程完成。
		This dual security system reveals the wisdom of our ancestors •	看見一個環環相扣的解鎖過程,不得不 佩服古人的智慧。
6. sc	reen door	T	T
	08:53 - 11:12	At the main building of Tai Fu Tai Mansion, screen doors can be found at the two side chambers of the courtyard, and the side rooms of the entrance building and main hall.	大夫第主建築天井兩旁的廂房、前廳和正廳兩旁的房間均可找到隔扇。
		Screen doors can also be found at the room at the northwest corner on the first floor and the room opposite to the kitchen at the adjacent ancillary block.	一樓西北角落的房間和廚房對面的房間均有隔扇。

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	Taking the screen doors at the two side chambers of the courtyard as an example, each side chamber has four sets of screen doors.	以天井兩旁廂房的隔扇為例,各有四組 隔扇。
	There are rich pierced wood carvings of auspicious patterns at the middle panel.	隔心有通透而且豐富的木雕吉祥圖案。
	At the top and bottom panels, there are painted relief wood carvings of the "four gentlemen" motifs, i.e. plum blossom, orchid, chrysanthemum, and bamboo.	上方及裙板則有以「四君子」梅、蘭、 菊、竹為題材的彩色木雕圖案。
	The "four gentlemen" motifs embody the messages of noble and not following the crowd blindly.	「四君子」象徵高潔、不隨波逐流。
	The upper portion of the screen door called stripes. The middle panel is a crafted lattice.	隔扇的上部稱為隔心,隔心為通透的木 雕。
	Together with carvings which carry auspicious meanings, the pierced design allows natural lighting and cross ventilation	配上具有吉祥寓意的雕花,通透的設計 有利採光和通風。
	The lattices of the four sets of screen doors at the side chambers adopted different decorative patterns which carry different themes. One of them includes symbolic Bough of Magnolia, Pomegranate (offspring), Buddha's hand (fortune), Badger (joy) and Vase (peace).	厢房四組隔扇有四款隔心圖案,其中一款的主要圖案為玉樹、石榴、 佛手果、獾和花瓶,分別象徵玉樹臨 風、多子、多福、快樂和平安。
	The other set includes Peach (longevity), Bat (blessing), Grapes (offspring), Buddha's hand (blessing), which mainly symbolize 'three abundances': Abundant good fortune and blessings, longevity, and offspring.	另一款的主要圖案為壽桃、倒轉的蝙蝠、葡萄和佛手柑, 主要寓意三多:多福、多壽及多子。
	There is a sliding wooden panel at the back of the lattice.	隔心背後設有可以上下拉趟的木板。

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There is a small widget below the lattice.	隔心下方有一木部件。
The wooden widget can be rotated 180 degrees in both directions.	這個木部件可以 180 度左右轉動。
The sliding wooden panel at the back can be lifted-up and rested on the wooden widget to prevent from bright light and adverse weather.	背面的木板可推高以遮擋強光和風雨
So how can we open and close the screen doors?	那麼,隔扇是如何開關呢?
There is a latch on top of the left door frame of every pair of screen door.	每組門左門框頂部有一個門門。
Let's have a look of the door latch in details.	讓我們把這門閂分拆開來看清楚。
The latch is formed by a horizontal piece and a vertical piece.	門閂由水平和垂直的木構件組成。
The horizontal piece mainly fixes the vertical piece on the door frame.	横向木構件主要固定垂直木構件在門框 上。
The horizontal piece forms a track to facilitate the vertical piece to slide horizontally.	横向木構件是讓垂直木構件左右橫滑動 的軌道。
Slide the vertical latch to unlock and open the screen door. There are slots at the door frame on top and at the bottom to prevent the door from swinging outwards.	把垂直構件移動便可以解鎖,把隔扇打開。 隔扇的門框分別於上下方都設有凹位, 以防隔扇門外翻。
7. Timber facia board	

Tai Fu Tai Mansion

Tai La Tai Mansion	
11:13	
-	馬子 竹 蜀 鷹 鵯 Swallows Bamboo Chrysanthemum 匿agle Bear
12:15	