

From Valley to Plain II:

Architectural rehabilitation for integrated, co-creative eco-living experience in Tin Sum Village, Kuk Po



Architectural Study Report on Kuk Po Settlements

2-4-2025

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1. Introduction of Kuk Po

1.1 Geography

Kuk Po situates in the heart of a valley that opens to Starling Inlet in the northwest (Fig. 1.1 & 1.2); its settlements scatter over the seaside plain, and strips of flatland within the valley. The original rugged coastline of Kuk Po was dammed off around 300 years ago to create a vast piece of farmland. Kuk Po has a variegated array of natural landscapes such as woodland, shrubland, mangrove, marshland and an ecologically important stream (EIS) which is home to many endemic species of dragonflies and freshwater fishes. Villages that were established along the river with fengshui woods, terraced fields and vistas of the sea demonstrate the symbiotic relationship of human and nature¹.

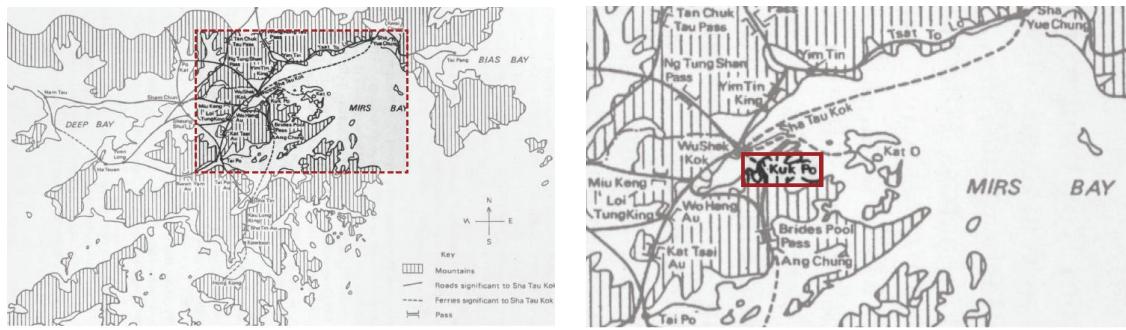


Fig. 1.1- *Eastern Peace- Map to Sha Tau Kok*, Patrick Hase, 1993

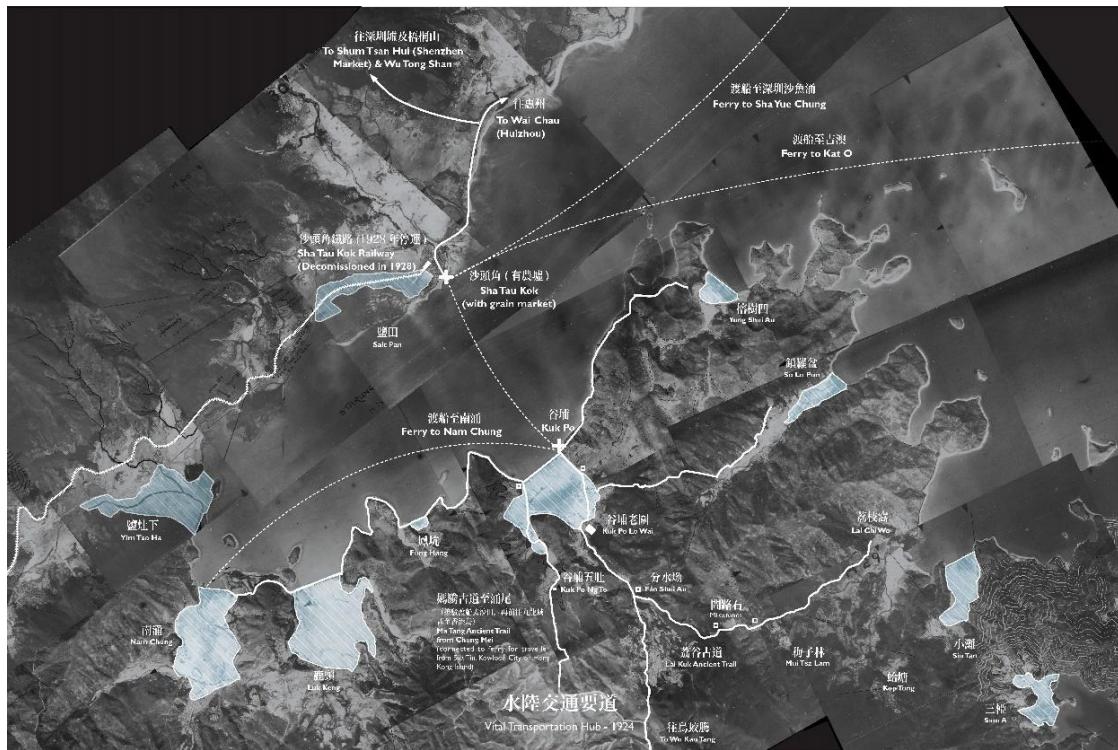


Fig. 1.2- *Vital transportation hub in 1924*

¹ *Multidisciplinary Exhibition on Kuk Po (2023). [Human Landscape]. CUHK Ng To Education Research Base, Hong Kong. 5 February 2023 - (ongoing).*

1.2 General History of Kuk Po and The Hamlets

Following the revocation of the Great Evacuation in late 17th century, the families moved to Kuk Po from various parts of Jiangxi, Fujian and Guangdong provinces². There are several villages in Kuk Po with the walled village of Lo Wai being the oldest. Most of the villagers are Hakkas including the families of Yeung (楊), Sung (宋), Cheng (鄭), Lee (李), Yau (邱), Ho (何) and Ng (吳) (fig. 1.3). With the benefits of higher yields from agro-reclamation in mid-19th century, the population of Kuk Po had maintained a steady population of around 500 villagers for decades. Yet the exodus of villagers from 1960s onwards has left much of the village in ruins, gradually taken over by nature. Such migration pattern is typical and representative of that of the whole Sha Tau Kok area. In recent years, returning villagers have been working closely with universities and NGOs to explore ways to regenerate Kuk Po's architectural and ecological heritage³ (fig. 1.4).

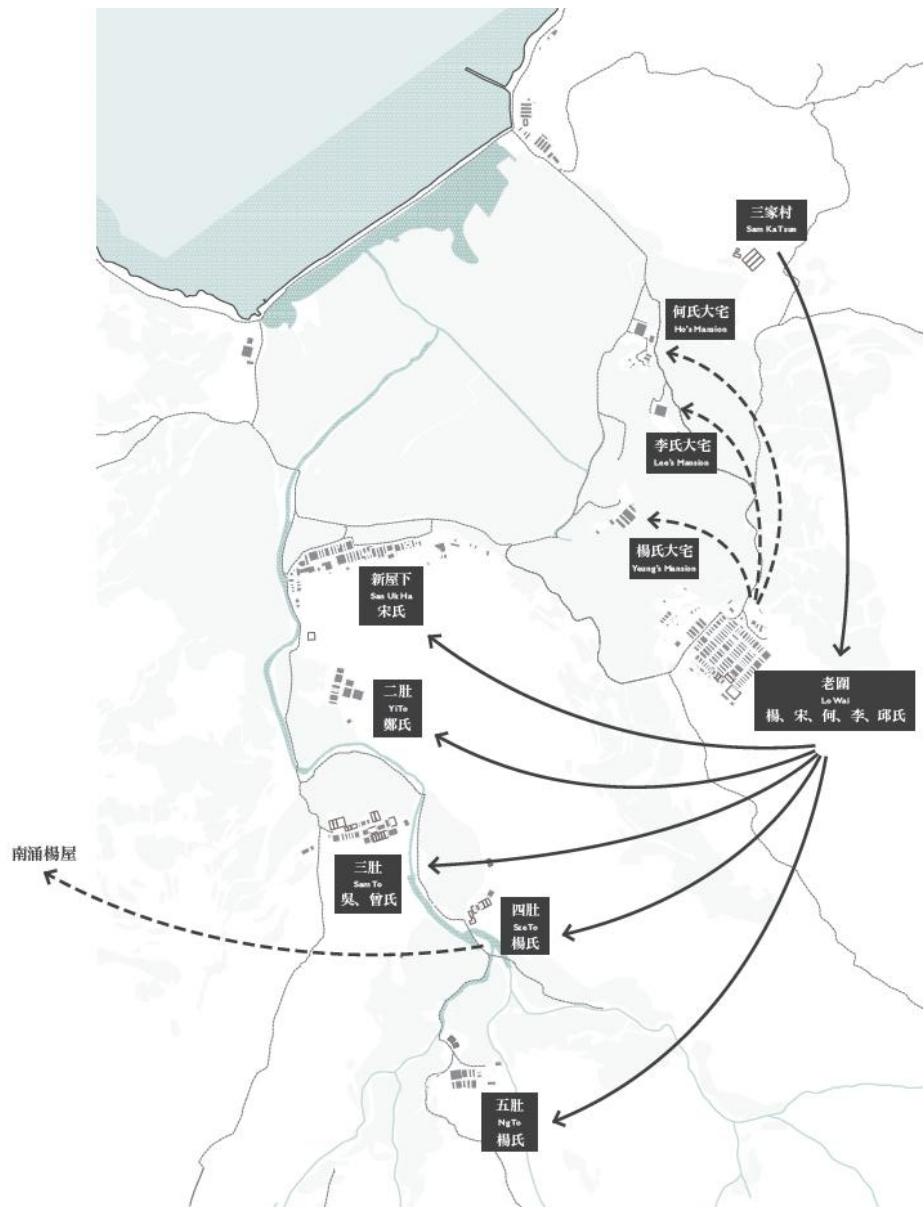


Fig. 1.3- The transformation and timeline of Kuk Po

² Multidisciplinary Exhibition on Kuk Po (2023). [Transformation of Kuk Po]. CUHK Ng To Education Research Base, Hong Kong. 5 February 2023 - (ongoing).

³ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.5.

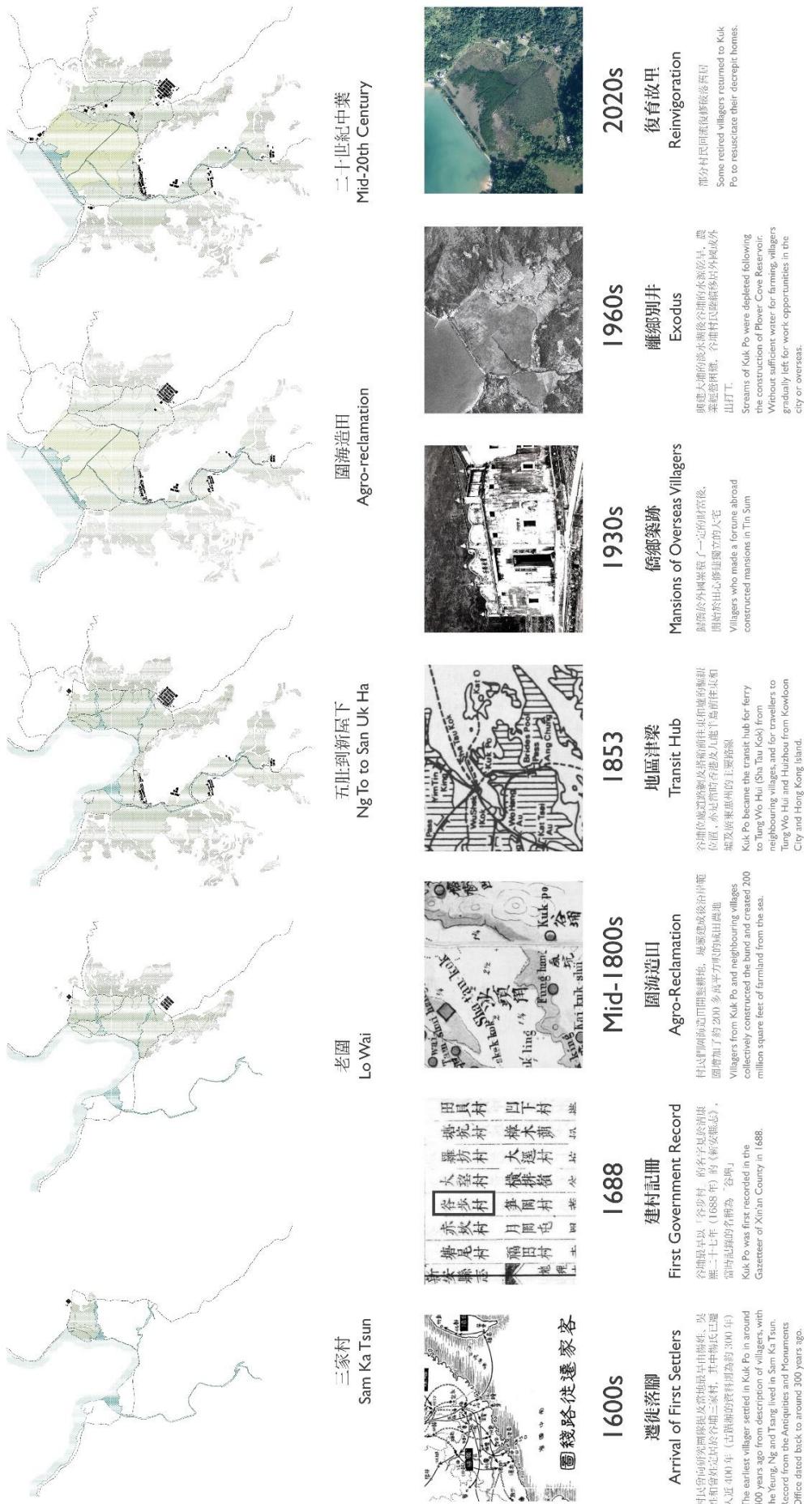


Fig. 1.4- The relationship of clans and settlements in Kuk Po

1.3 Landscape and Configuration

Kuk Po has a rich variety of natural landscapes from valley to plain that were mostly formed due to past agricultural activities (fig. 1.5). An architectural model of the whole Kuk Po was made to visualise the landscape and configuration which is a design tool to communicate with villagers (fig. 1.11).

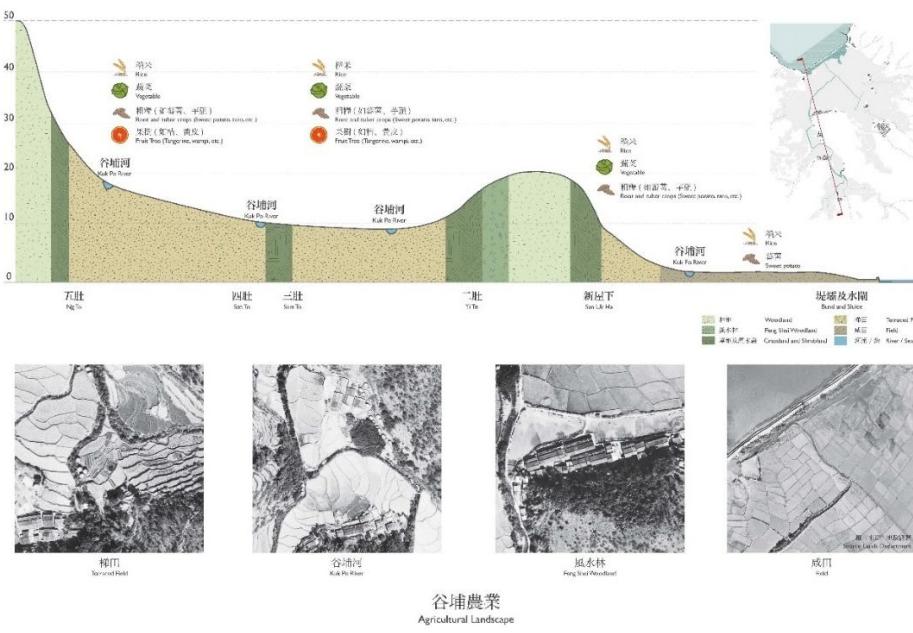


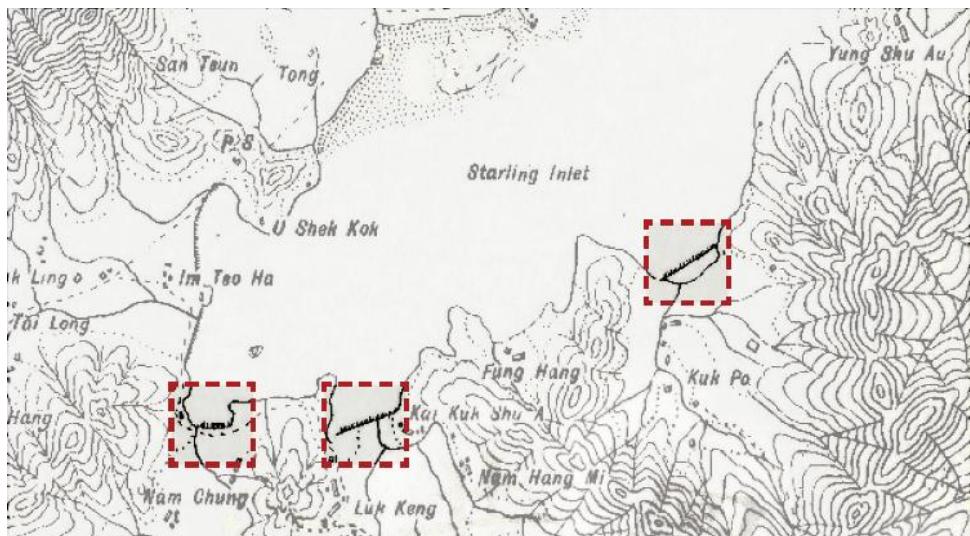
Fig. 1.5- *The agricultural landscape of Kuk Po*

The seafront of Kuk Po features an open flatland of wetland, marshes and estuarian ponds with mosaic patches of reeds and mangroves⁴. It was formed 200 years ago when the Kuk Po villagers constructed a dyke with sluice (fig. 1.8) to drain out seawater in the bay and converted over two million square feet of salt marsh into farmland (fig. 1.6). This agro-reclamation technique and culture is a common feature of villages around Sha Tau Kok (fig. 1.7).



Fig. 1.6- *Kuk Po Tin Sum in 1962 (photo provided by Mr. Ho Sui Ting)*

⁴ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.16.



於1904年由英國地形測量局製作的《Colony of Hong Kong, New Territory, Kowloon Extension agreement dated 9th June 1898 (Sheet no. 1)》(局部),可見南涌、鹿頸及谷涌的海灣岬角前都被標上疑似堤壩的建構物(紅框標示)

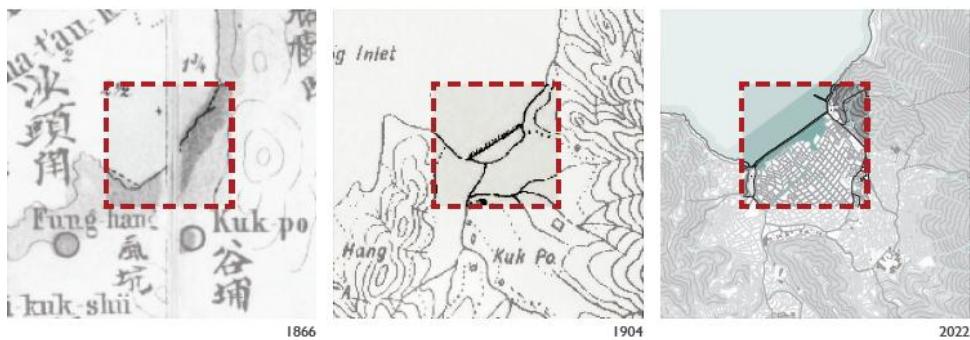


Fig. 1.7- Agro-reclamation in villages around Sha Tau Kok

The hamlets of Kuk Po are nestled in the valley, the villagers of each hamlet used the surrounding hillside as terraced fields to grow crops. Feng shui woods are also presented at the back of each hamlet which is a typical Hakka landscape. As villagers gradually left Kuk Po from 1960s onwards, the abandoned farmlands gave way to secondary succession. Mountain terraced fields became shrublands, while coastal farmlands were taken over by mangroves and reeds, forming wetland habitats for diverse species like egrets and mudskippers⁵.

Kuk Po is crisscrossed by a river from south to north along which various hamlets root in and thrive. Kuk Po River is an “Ecologically Important Stream” (EIS) that boasts high water quality and showcases diverse natural landscapes like waterfalls, pools, marshes and mangroves (fig. 1.8). Villagers utilize these water resources for daily needs and cultivate terraced fields. This harmonious relationship with water and agriculture shapes the cultural landscape of Kuk Po⁶.

The architectural configuration of Kuk Po responds to the natural landscape and reflects the history of the village. There are three types of settlements including a walled village, the five hamlets and three mansions at Tin Sum. At the two sides of the bund in Ham Tong are Kai Choi School and the watchtower (fig. 1.9 & 1.10).

⁵ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.17.

⁶ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.18-19.



Valley



Plain



Marsh



Water channel & path



Dyke



Sluice



River



Bridge



Stone embankment



River platform

Fig. 1.8- Landscape and human landscape



Fig. 1.9- *Aerial photo of Kuk Po in 1963*

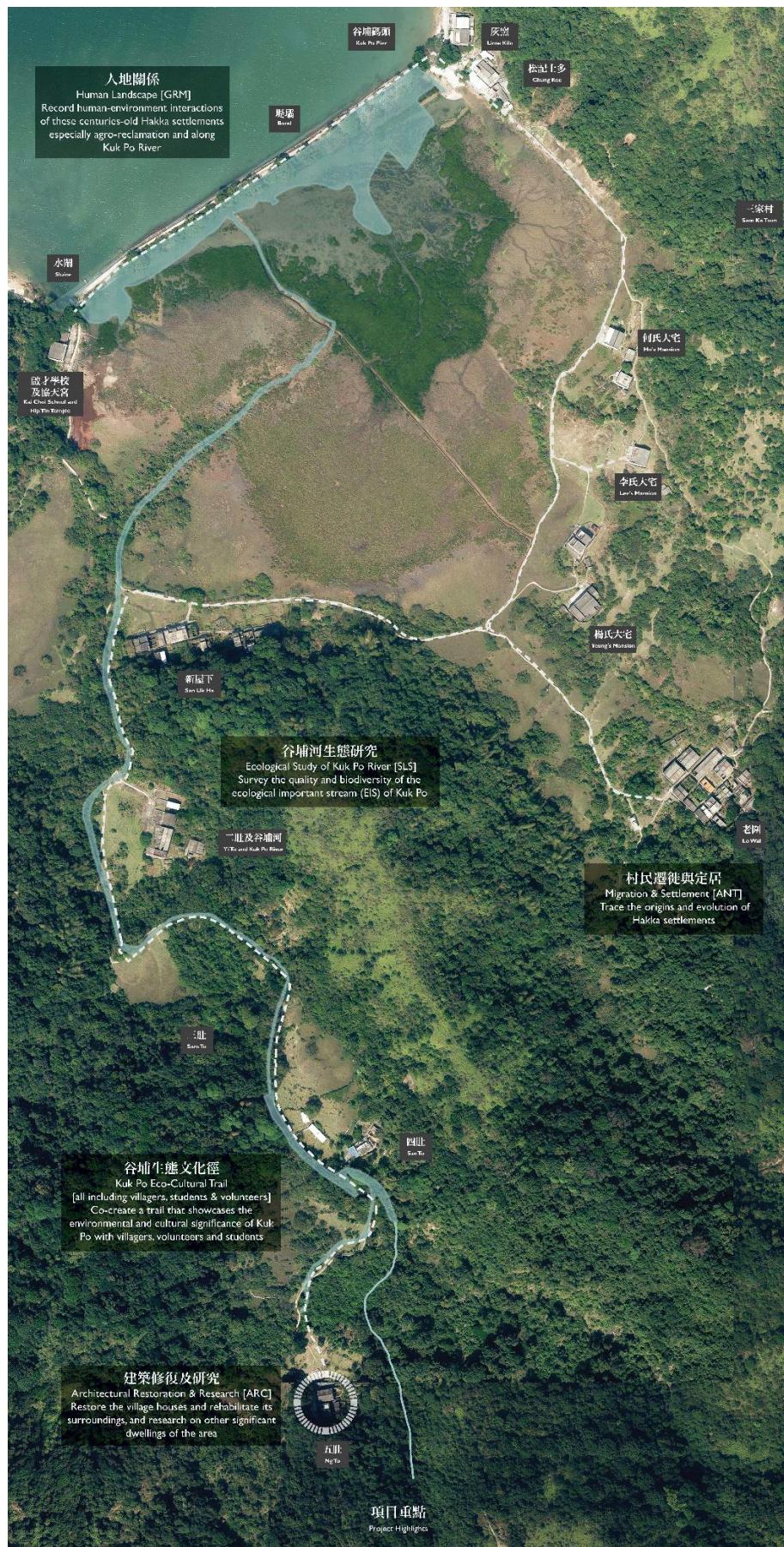


Fig. 1.10- Aerial photo of Kuk Po today



Fig. 1.11- *Kuk Po model and interactive workshop with villagers*

1.4 Overview of Settlement Types

Type 1: Walled-village (bracketed in yellow in Fig. 1.12)

Like the early Hakka villages in other parts of New Territories, Lo Wai has encircling walls around the village to defend themselves against pirates. Most of the village houses are one-storey buildings, arranged in rows, traversed by a central axis road.

Type 2: Hamlets (bracketed in red in Fig. 1.12)

When the population increased, the clans spilled out from Lo Wai to various parts of the valley to form hamlets at San Uk Ha (新屋下), Yi To (二肚), Sam To (三肚), Sze To (四肚) and Ng To (五肚)⁷.

Type 3: Hybrid-styled Mansions and Buildings (bracketed in blue in Fig. 1.12)

Tin Sum was established in early 20th century. The hybrid-styled mansions of the Ho, Lee and Yeung families in Tin Sum were completed in the 1930s with the oversea remittance from USA, same as that for Kai Choi School⁸.

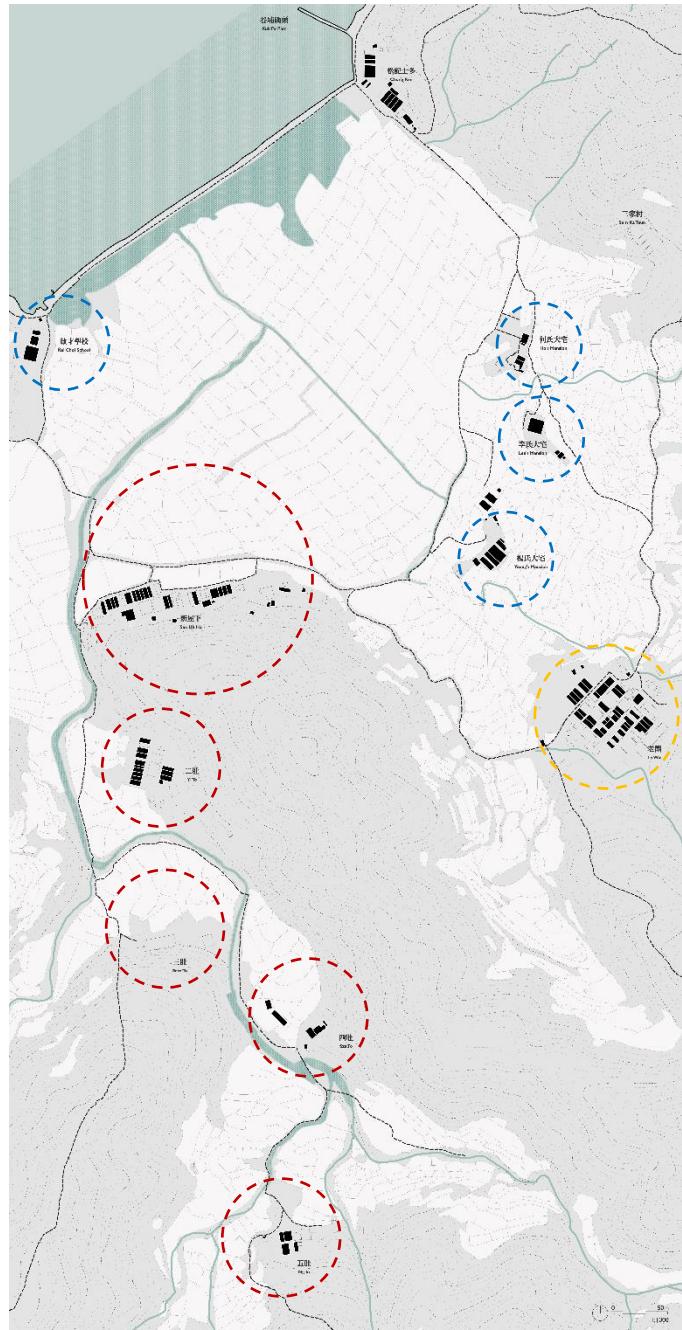


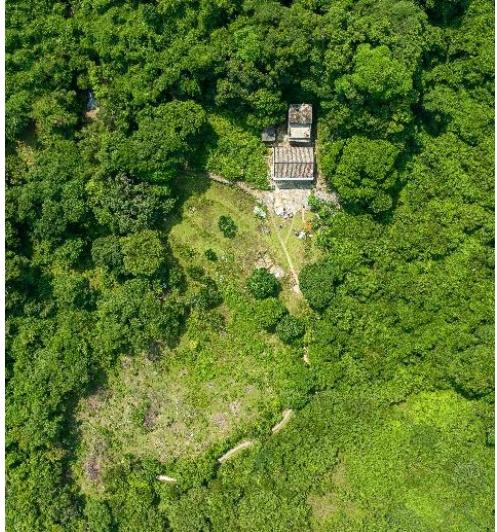
Fig. 1.12- Plan of Kuk Po

⁷ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.5.

⁸ Multidisciplinary Exhibition on Kuk Po (2023). [Architectural Research & Restoration]. CUHK Ng To Education Research Base, Hong Kong. 5 February 2023 - (ongoing).

1.5 Scope of This Study

This study covers the spectrum of architectural types at different scale in Kuk Po, including settlements, walled-village houses, school building, mansions and historic architectural features.

For settlements:	Ng To (the main scope of the restoration project)	
	Lo Wai (overall configuration and ancestral halls of the early clans)	
For school building:	Kai Choi School (Grade III historic building in Hong Kong)	

For mansions:	Ho's Mansion at Tin Sum	
	Lee's Mansion at Tin Sum	
	Yeung's Mansion at Tin Sum	
For historic architectural features:	Lan Kwai Tang Fong	

2. The Study of Ng To and Restoration of Ng To Yeung's Mansion

2.1 The Configuration of Ng To

Ng To is a small basin deep in the valley of Kuk Po. It has a typical layout of a Hakka village, with a clear arrangement of "mountain, forest, houses, pond, and fields" (fig. 2.2). At the entrance of Sze To, Villagers pay homage to Earth God, seeking favourable weather and agricultural blessings. This hamlet features a natural barrier of fengshui wood, waterfall and several streams, and is hence dubbed as "valley within a valley." The restored Ng To Yeung's Mansion has a front yard where villagers used to sun-dry crops and hold festivities. Villagers once grew trees and other crops on the terraced fields along the hillside (fig. 2.1). Nature has reclaimed the hills as villagers left and abandoned the orchards and fields⁹.

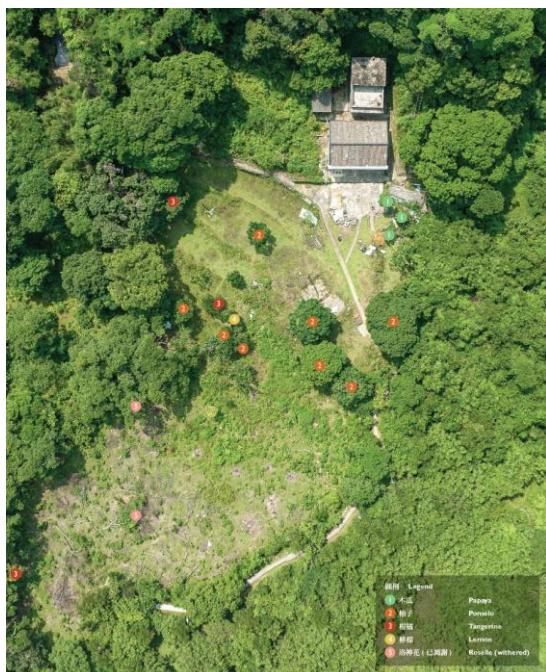


Fig. 2.1- Aerial photo of Ng To

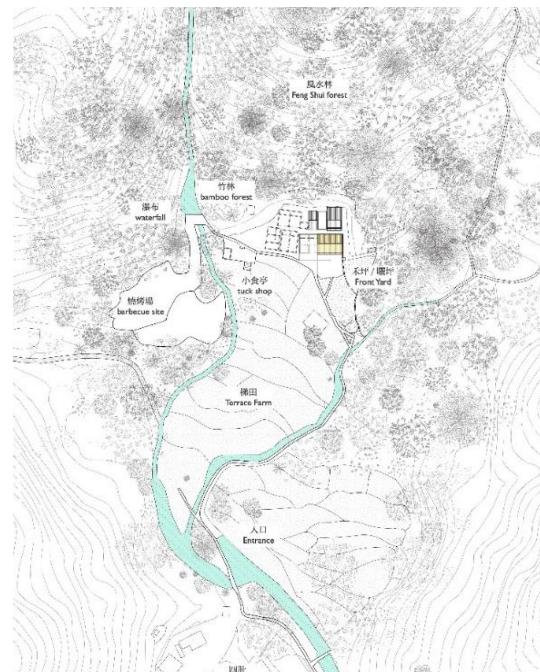


Fig. 2.2- Plan of Ng To

2.2 The Transformation of Ng To Yeung's Mansion

Deducing from the aerial photo taken in 1963, the main mansion of Ng To has a single roof with three courtyards, it was reconstructed in the late 1960s by a Yeung couple who had worked in the UK (fig. 2.3 & 2.4). The two-storey mansion consists of three bays, integrating traditional Hakka and modern architectural styles and materials. Nature has reclaimed the hills and houses as the Yeungs migrated to the UK and abandoned the houses and fields in the late 1990s.

In 2000s, the family rented the mansion to a cousin who then ran a private Hakka cuisine eatery there. However, there are little visitors due to the remote location of Ng To, they relocated the store to the Watchtower near Kuk Po pier years later and named it "Chung Kee Store", which is operating in weekends currently.

⁹ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.20-21.

The restored mansion in Ng To is now serving as the CUHK Education Research Base and a venue for returning villagers to gather and revitalize the traditions that had long been cherished¹⁰.



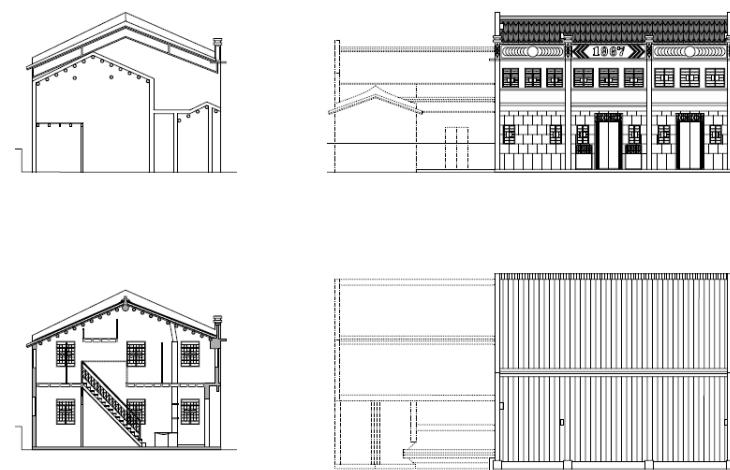
Fig. 2.3- Transformation of Ng To Yeung's Mansion from 1963 - 2022

¹⁰ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.20.



五肚楊屋 (1967 年以前)

Ng To Yeung's House (Pre-1967)



五肚楊屋

Ng To Yeung's House

Fig. 2.4- *Architectural record of the transformation of Ng To Yeung's Mansion from 1963-2021*

2.3 Architectural Features of Ng To Yeung's Mansion

The left bay is one smaller unit (No. 41) while the middle and the right bay combined to form a larger unit (No. 43). The main doors for the two units are located at the middle bay and left bay. Each unit has separate staircases connecting the ground floors and the upper floors. The interior space of the ground floor in each unit can be defined as a front living and cooking space (fig. 2.10) and smaller rooms at the rear, while the upper floors were subdivided into small rooms by timber partitions (fig. 2.9).

It is very likely the building was constructed of concrete masonry commonly found in the rural area in that era. The flooring and cocklofts of upper floors was built by timber planking rested on rectangular joists (fig. 2.6).

Concrete screed was laid on top of timber planking particularly at No. 41. The common Chinese-styled pitched roof was laid with pan tiles of two different sizes, locally known as 'Hakka roofing', sit on timber battens and purlins (fig. 2.7).

The building was decorated in a few loci. On top of the front façade is a parapet wall that spans the whole width of the elevation. Along the parapet wall are framed panels separated by short columns with simple ornamental cap and motifs in low relief. Number 1967, the construction year of the building, was inscribed on the middle panel, while the panels atop the two side bays feature low relief of circular patterns (fig. 2.5)¹¹.



Fig. 2.5- Parapet wall of Ng To Yeung's Mansion



Fig. 2.6- Timber planking of cockloft and staircase rail



Fig. 2.7- Timber battens and purlins with skylight roofing



Fig. 2.8- Villagers growing seasonal crops



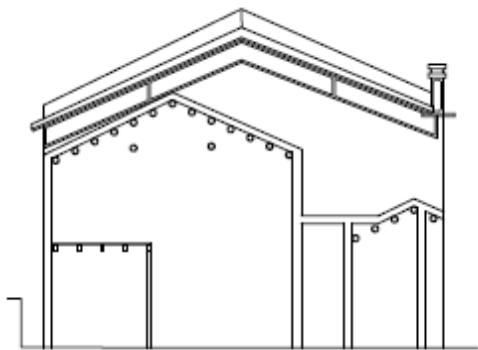
Fig. 2.9- Timber partitions in 1/F



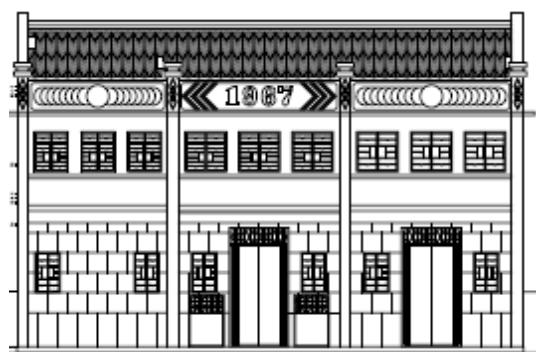
Fig. 2.10- Plastered brick stoves in the right bay

¹¹ School of Architecture, CUHK (2022). Restoration Report and Repair Works of House 41 and 43 at Kuk Po, Ng To, P.1-2.

Side elevation



Front elevation



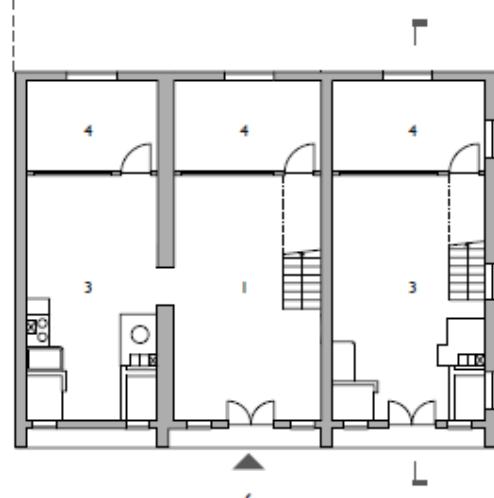
Section



1/F Plan



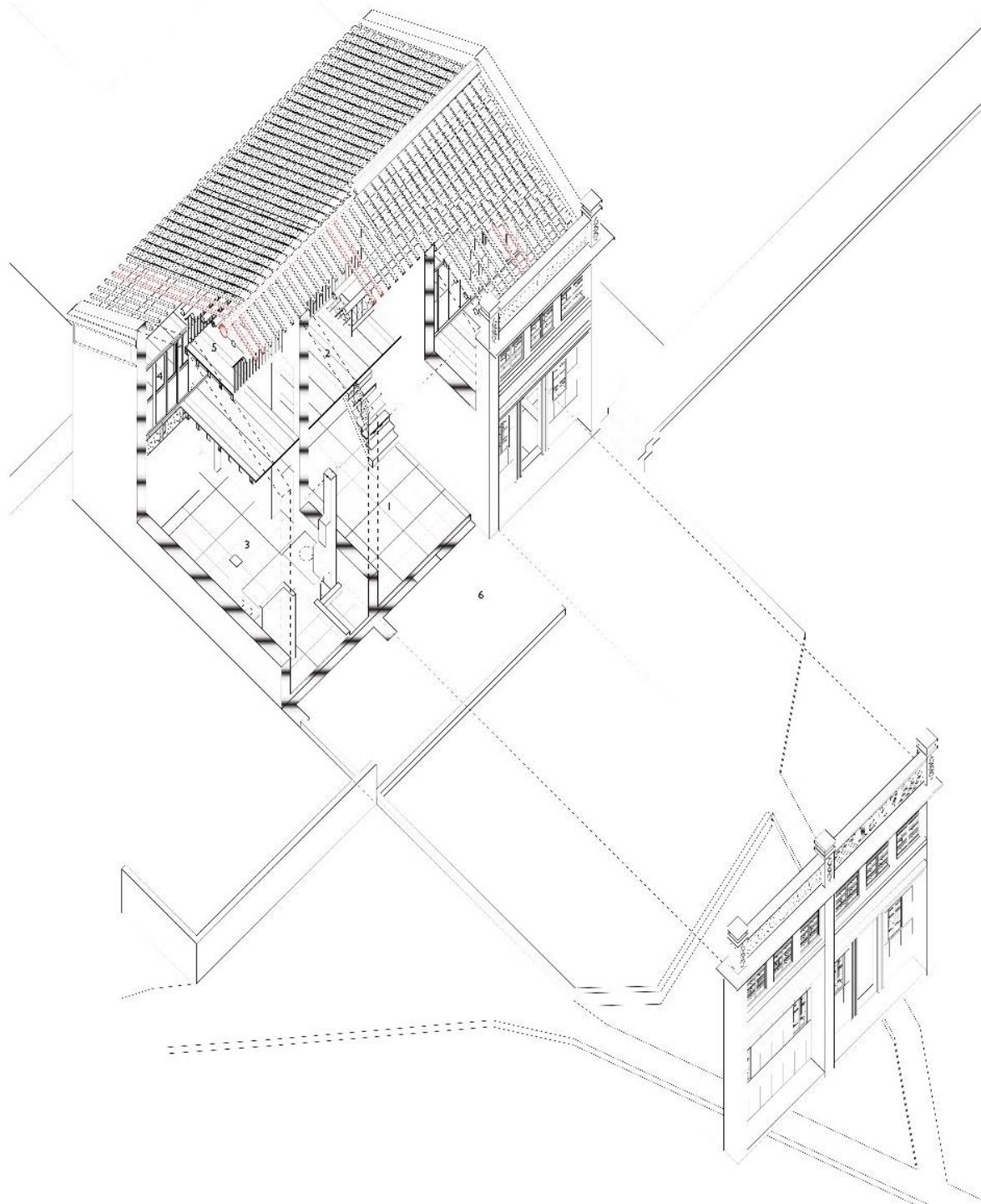
G/F Plan



圖例 Legend

1 正廳	Main Hall	4 寢室	Bedroom
2 內廳	Inner Living Room	5 閣樓	Attic
3 廚房	Kitchen	6 禾坪 / 脊坪	Front Yard

Fig. 2.11- Plan, Section and Elevation of Ng To Yeung's Mansion



圖例 Legend

1. 大堂	Main Hall
2. 内厅	Inner Living Room
3. 厨房	Kitchen
4. 卧室	Bedroom
5. 浴室	Bathroom
6. 前院	Front Yard

2 m

五壯楊屋
Ng To Yeung's House

Fig. 2.12- Exploded axonometric of Ng To Yeung's Mansion

2.4 Restoration Works

Yeung's Mansion in Ng To was being restored by CUHK with the Countryside Conservation Funding Scheme by Countryside Conservation Office. The scope of this restoration project is mainly to lay salvaged and new roof tiles to the roof; replace defective structures like timber battens and purlins at the roof, timber joists at cocklofts; making good existing features like timber stairs, timber main doors and steel windows; and installing new electrical sockets and conduits¹² (fig. 2.13).



屋頂修復
Roof restoration
22 Mar 2022



窗戶修復
Window ironmongery restoration
31 Mar 2022



重鋪屋瓦
Roofing
9 Apr 2022



更換橫樑地板
Replacing roof purlins and flooring
27 Apr 2022



上樑儀式
Ridge beam raising
9 May 2022



外牆清潔及重漆
Façade cleaning and recolouring
9 Jul 2022

Fig. 2.13- Scope of restoration works

¹² School of Architecture, CUHK (2022). Restoration Report and Repair Works of House 41 and 43 at Kuk Po, Ng To, P.3.

A few kinds of timber were commonly found in Chinese vernacular architectures. They were used to construct the structural frames, joists and planking of cockloft, purlins and battens at roof, as well as lattice doors and windows. The choice for different timber species, to certain extent, reflects the resource that the family could afford.

1. Chinese fir, Cunninghamia lanceolata, 杉木 (softwood)
2. Kapur, Dryobalanops spp., 山樟 (hardwood)
3. Teak, Tectona grandis, 柚木 (hardwood)
4. Balau, Shorea spp., 梢木 (hardwood)

Round Chinese fir purlins were used at the roofs of No. 41 and 43 (fig. 2.14 & 2.15). Despite being softwood, its presence is extremely common in local Chinese-styled pitched roofs. The reason may be because of its easy availability, therefore, relatively lower price.



Fig. 2.14- Before restoring the roof



Fig. 2.15- Restoration of roof purlins with Chinese fir

Rectangular Kapur joists used at the cockloft of No. 41 and 43 (fig. 2.16 & 2.17). The use of Kapur, an imported hardwood, reveals that the family was wealthy enough to afford better materials for their new house¹³.



Fig. 2.16- Before restoring the joists of cockloft



Fig. 2.17- Restoration of cockloft joists with Kapur

¹³ School of Architecture, CUHK (2022). Restoration Report and Repair Works of House 41 and 43 at Kuk Po, Ng To, P.5, Annex 3-3.

Existing rectangular timber joists were finished with popular enamel paint. However, it is not the best choice for conserving historical timbers. A protective finish coating designed for wood surfaces is used on new timbers to provide a very breathable film natural moisture in the wood to escape. Before the application of this finish coating, existing finishes have to be completely stripped off to reveal the original wood surfaces. It is a labour intensive and time-consuming process (fig. 2.18). Therefore, subject to the available funding, it is decided to apply this finished coating on new joists only¹⁴.

1	10:00am	Apply paint remover. Testing area: 400 x 400mm	
		Allow an hour for the remover to breakdown the paint.	
2	11:00am - 11:20am	Strip off existing paint finishes by a scraper	
3	11:30am - 11:40am	Apply 3 layers of finish coating for wood surface	

Fig. 2.18- *Trial record of applying protective finish coating to wood surfaces*

¹⁴ School of Architecture, CUHK (2022). Restoration Report and Repair Works of House 41 and 43 at Kuk Po, Ng To, P.5, Annex 4-2.

Termite control was installed (fig. 2.19), and water tightness test was carried out (fig. 2.20) after all repair works are completed¹⁵.



1) Filled baits into stations 2) Putting 2 plastic strip at the back of station 3) Tightening station onto purlins

Fig. 2.19- *Installation of termite control*



Spraying water onto roof surface at front bay



Spraying water onto roof surface at back bay



Interior side during the water test- no seepage is found



Interior side during the water test- no seepage is found

Fig. 2.20- *Record of water tightness test*

¹⁵ School of Architecture, CUHK (2022). Restoration Report and Repair Works of House 41 and 43 at Kuk Po, Ng To, Annex 3-8, Annex 3-9.

2.5 Revitalization and Return of Villagers

The restored mansion provides a base for multi-disciplinary field studies, site-based surveys and in-depth experiential learning (fig. 2.21 & 2.22). They showcase Kuk Po's rich eco-cultural heritage through multi-disciplinary research in architecture, anthropology, life sciences and geography¹⁶ (fig. 2.25). The mansion attracts hikers and students from different age groups and nationality as it is a pioneer restored historic mansion in Kuk Po.

Villagers return on weekends regularly to gather and revitalize the traditions that had long been cherished, such as cooking Hakka dishes and growing local crops (fig. 2.24). The project aims to revitalize the village by uncovering its local value and training villagers to become docents, sharing the stories of Kuk Po with students and the public (fig. 2.23).



Fig. 2.21- *Opening ceremony*



Fig. 2.22- *Experiential learning for students*



Fig. 2.23- *Discussion with villagers*



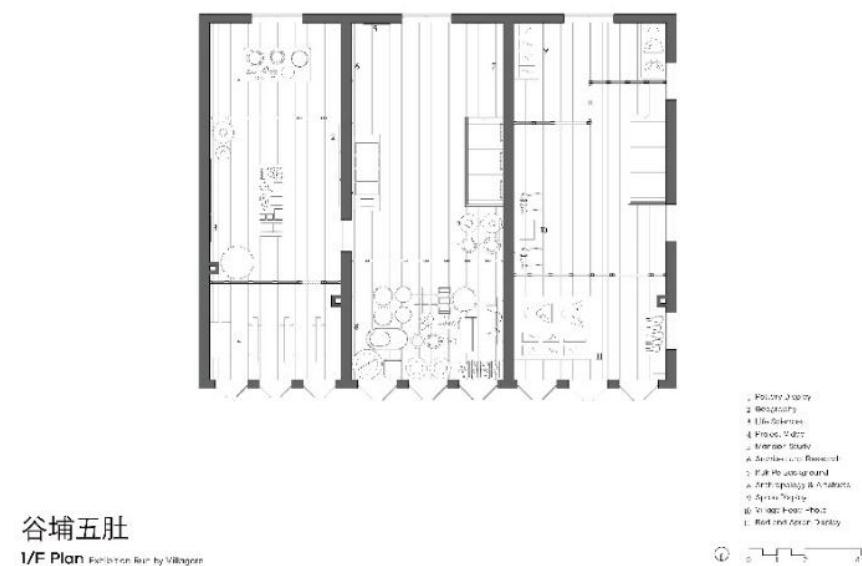
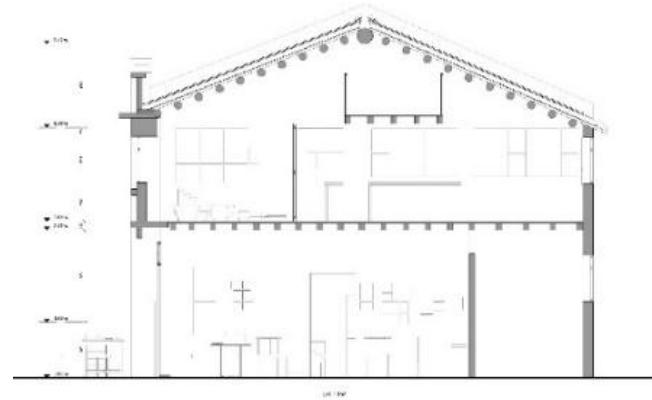
Fig. 2.24- *Gathering with villagers*



Fig. 2.25- *Architectural research displayed in Ng To*

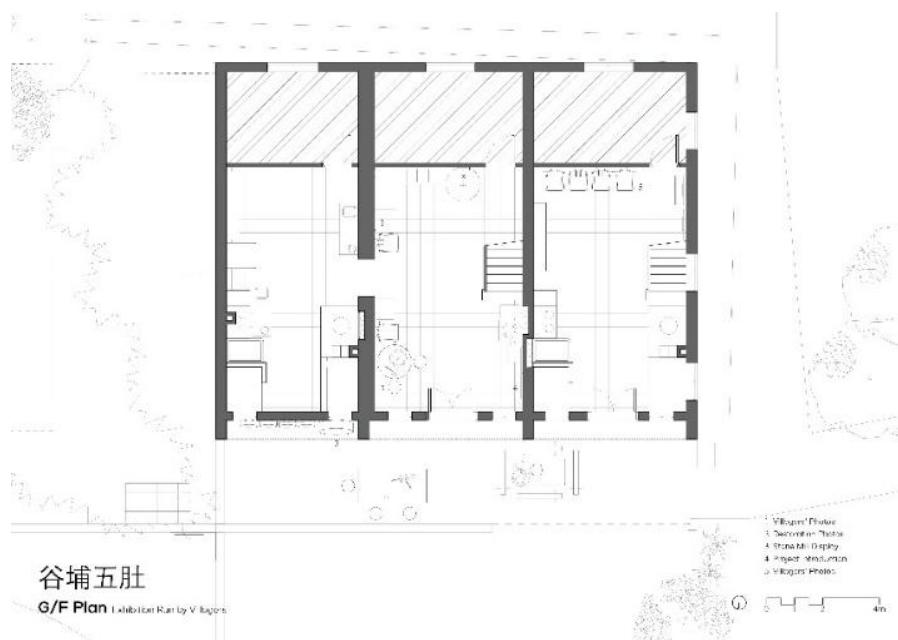


¹⁶ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.21.



谷埔五肚

1/F Plan | Exhibition Plan by Villagers



谷埔五肚

G/F Plan | Exhibition Plan by Villagers

Fig. 2.26- Plans and section of Ng To Yeung's House after restoration

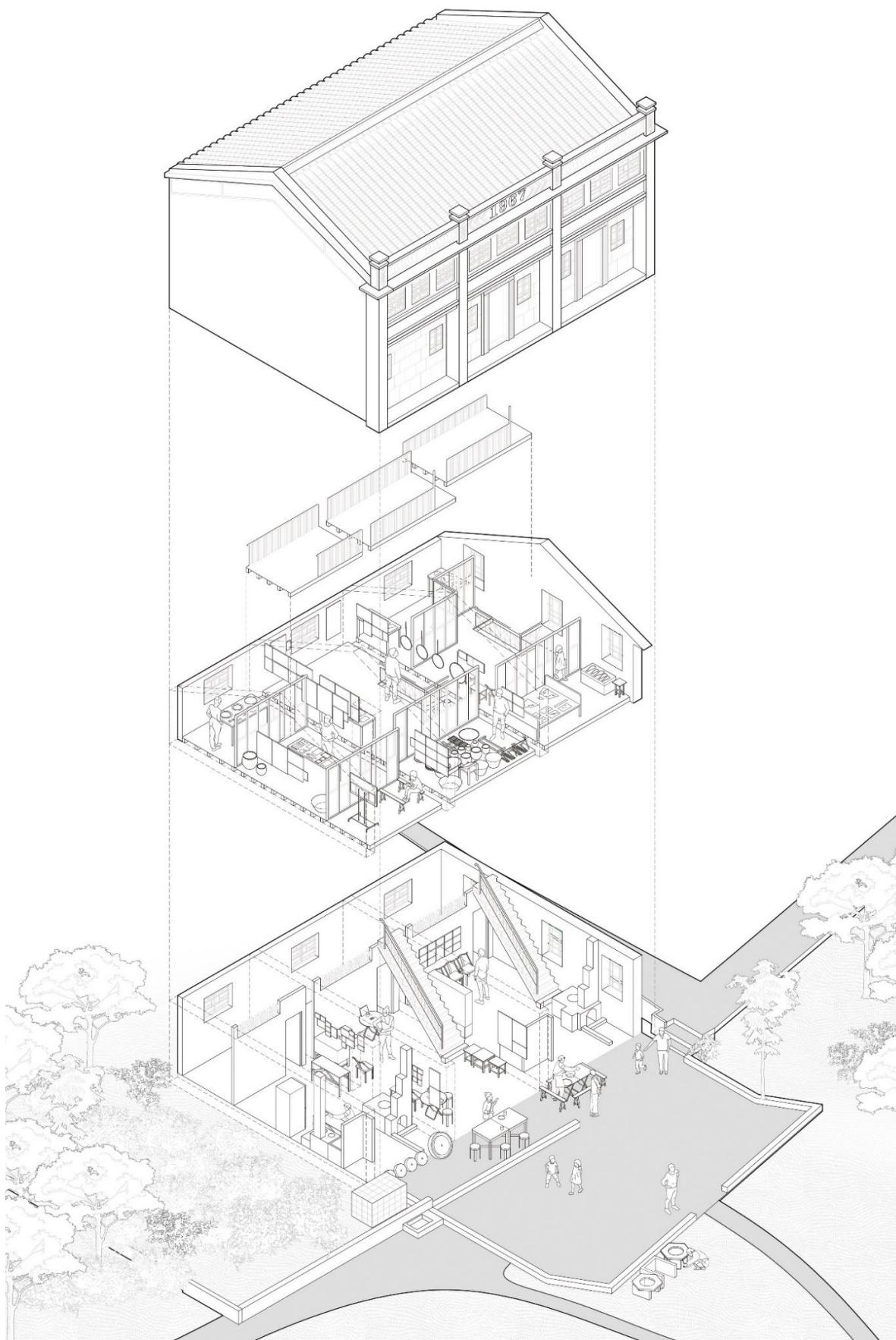


Fig. 2.27- Revitalised Ng To Yeung's Mansion

3. The Study of Lo Wai

3.1 Historical Background

Lo Wai is the oldest existing settlement in Kuk Po. After "The Great Clearance" was lifted during the reign of Emperor Kangxi in Qing Dynasty, Hakkas started to move into Kuk Po and established a walled village here.

3.2 The Configuration of Lo Wai

Lo Wai exhibits the typical layout of a Hakka village of "mountain, woodland, house, pond and field". The walled village comprises seven rows of houses with a fengshui wood at the back (fig. 3.1 & 3.2). Entrances are at the eastern and western ends, the words 「東來紫氣」 is written on East Gate (fig. 3.4), while "Tai Wong Ye" shrine with a giant Bayan tree are seated at the back near the western gate (fig. 3.3), imploring favourable weather and agricultural blessings. A lane runs north to south in the middle of the village and most sections of the encircling walls had crumbled or covered by vegetation¹⁷.

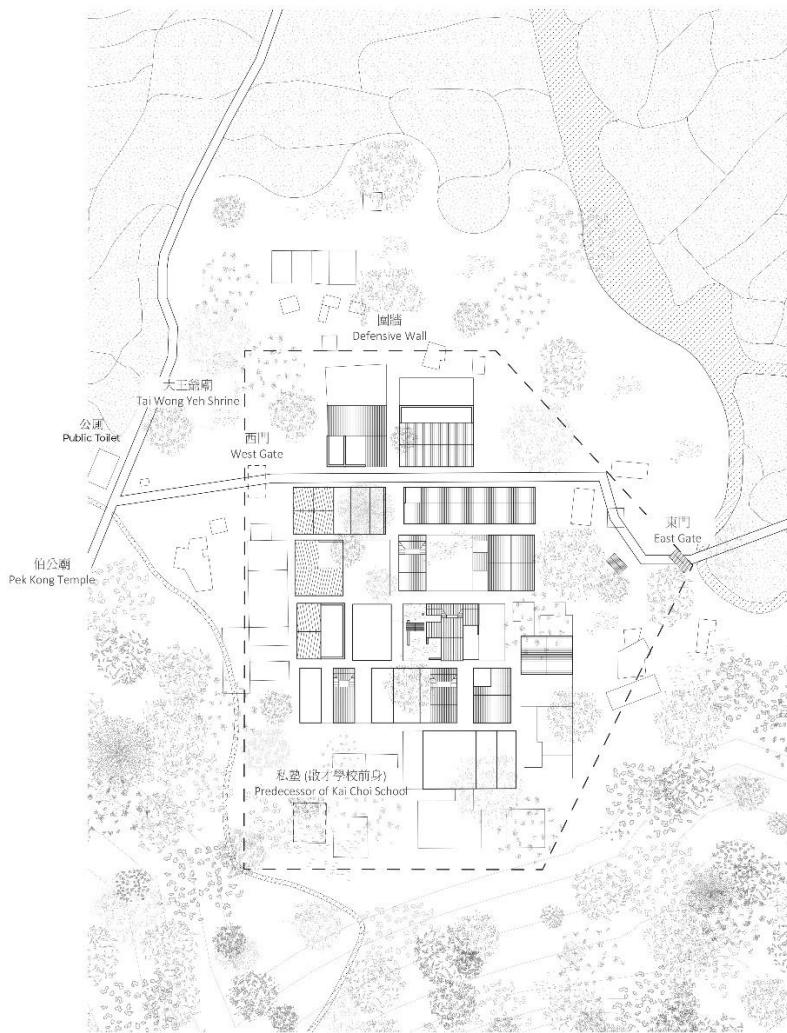


Fig. 3.1- Plan of Lo Wai

¹⁷ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.14.

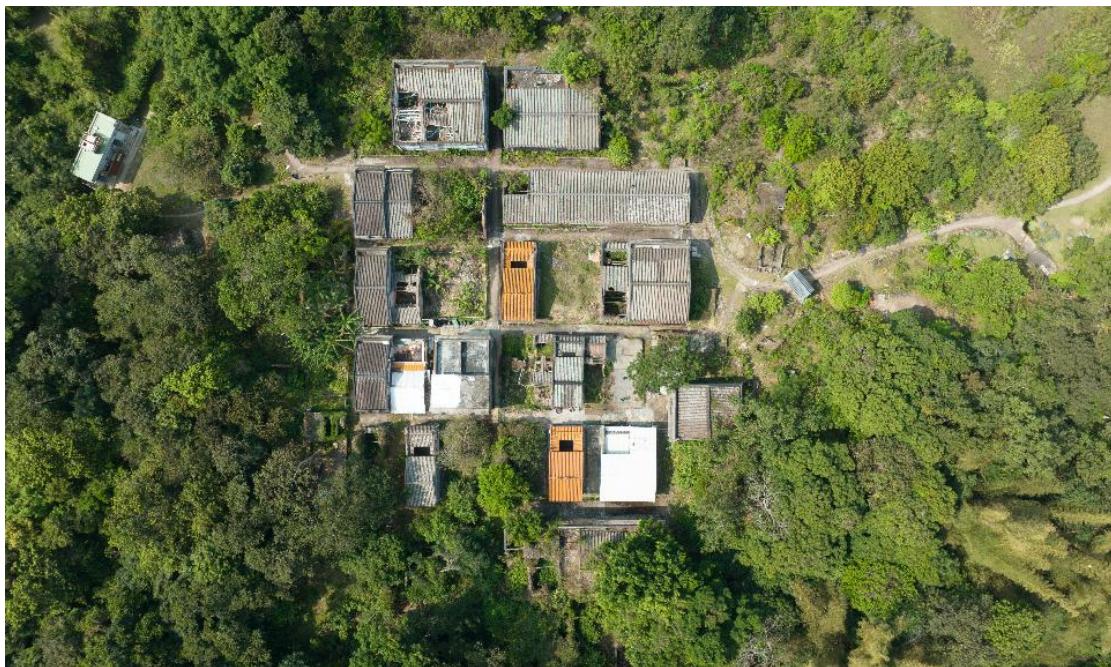


Fig. 3.2- Aerial photo of Lo Wai



Fig. 3.3- "Tai Wong Ye" shrine with remains of the encircling wall at the back



Fig. 3.4- East Gate

The construction materials of houses in different eras vary; these are testimonies to the change of time and livelihood of villagers. Earlier houses were built with stones and earth (fig. 3.5). Lime, blue bricks and red bricks appeared later (fig. 3.6). Window sizes, window glass patterns and so on tell about circumstances of the village¹⁸.



Fig. 3.5- Houses built with stone, mud brick and earth



Fig. 3.6- Houses built with blue bricks

¹⁸ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.15.

3.3 Ancestral Halls in Lo Wai

Traditionally Hakka extended families lived and worked together. Each clan would have its own ancestral hall in the village. Ancestral halls of the Yeung, Sung, Ho, and Lee clans are preserved in Lo Wai (fig. 3.7-3.9). Each of the ancestral hall has a pair of couplets on the two sides of the entrance, representing the motto of their clans¹⁹. Clanspeople gather at their own halls to perform ancestral worship rituals²⁰. Ancestral hall of the Ho clan is documented as an exemplar of ancestral halls in Lo Wai.



Fig. 3.7- Ancestral hall of the Ho clan



Fig. 3.8- Ancestral hall of the Lee clan



Fig. 3.9- Ancestral hall of the Yeung clan

¹⁹ Department of Anthropology, CUHK (2022). Anthropological Research Report on Kuk Po, P.17.

²⁰ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.15.

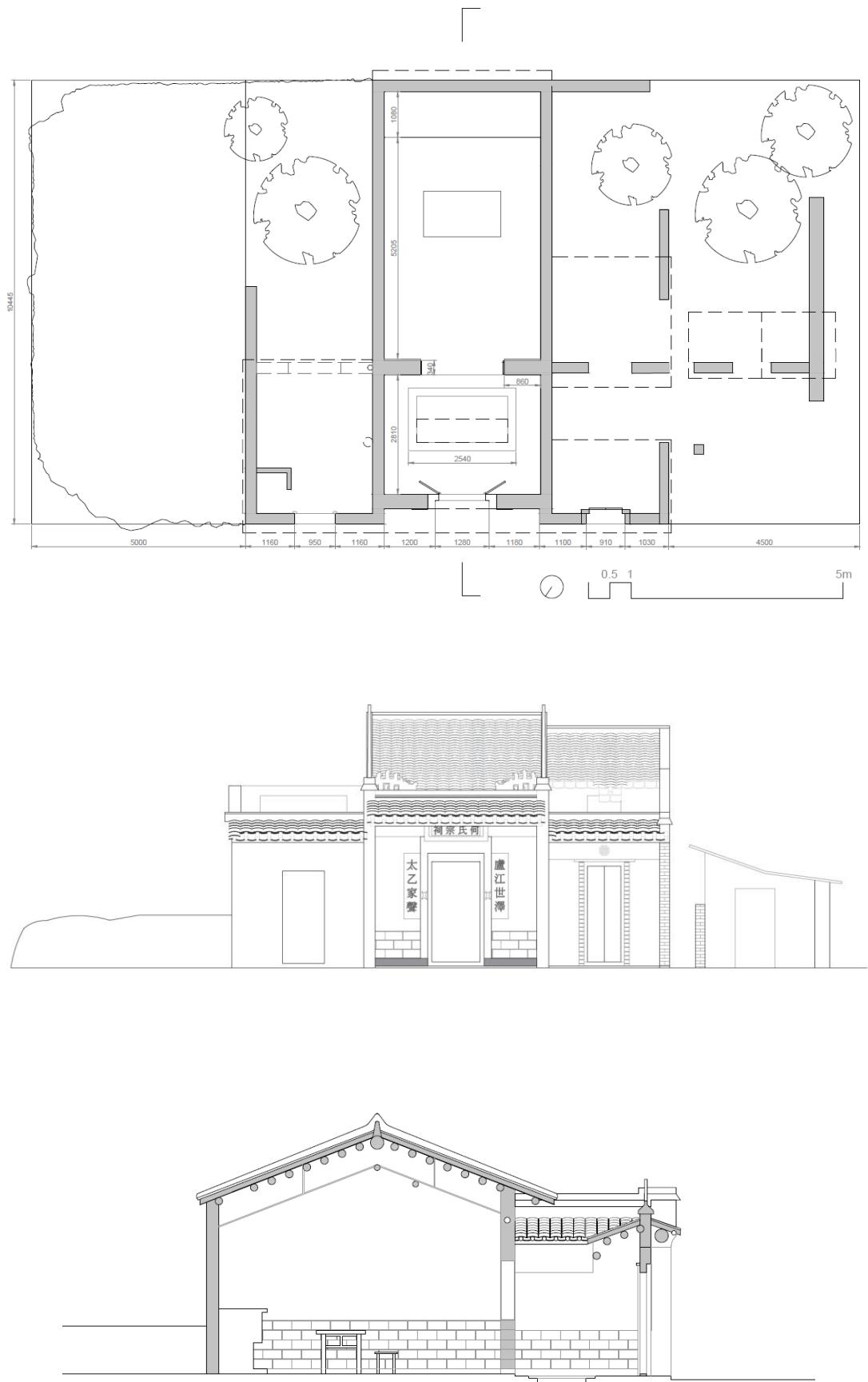


Fig. 3.10- Elevation, plan and section of the ancestral hall of the Ho clan

4. The Study of Kai Choi School

4.1 Historical Background

Kai Choi School was established in 1932 (fig. 4.1 & 4.2), serving as Kuk Po's cultural and educational centre. Over 70% of the funds for establishing Kai Choi School was donated by migrated villagers residing in New York, USA. An annex classroom was added in 1963 (fig. 4.3). The school had over 120 students at its peak with students from neighbouring villages as well. It ceased operations in 1993 due to insufficient enrolment. The main building of the school has been recognized as a Grade III Historical Building²¹.



Fig. 4.1- Aerial photo of Kai Choi School in 1963



Fig. 4.2- Kai Choi School today

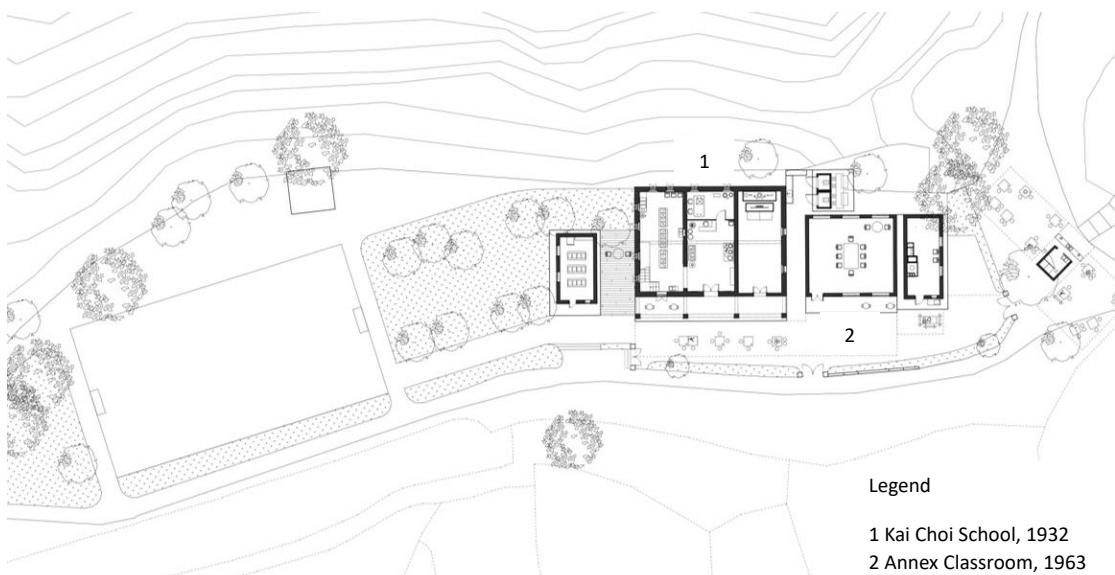


Fig. 4.3- Plan of Kai Choi School

4.2 Architectural Features of Kai Choi School

The two-storey building is a Western-influenced architecture, featuring an arched porch and hybrid of Chinese and European styles. It was constructed by the same builder of the prominent mansions of Ho, Lee, and Yeung families in Tin Sum.

²¹ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.6.

The front façade of the building has an open verandah on the ground floor and a balcony on the upper floor both colonnaded with arched openings and square columns (fig. 4.4). Vase-shaped green ceramic balustrades are fencing the balcony. It is constructed of green bricks, stone rubbles and cement with its wall and columns to support its pitched roofs of timber rafters, purlins and ceramic tiles. A parapet above the flat-roofed balcony has the name of the school plastered in the middle.

The school occupies the left and middle bay, with an arched opening on the ground floor (fig. 4.8). Staff room and staff dormitory are located on the ground floor of the middle bay, while the rest of the space are classrooms (fig. 4.5 & 4.7). There are stairs on the left bay connecting to the upper floor²².

The right bay is a double-height space, serves as Hip Tin Temple where villagers pay homage to Kwan Ti (關帝) (fig. 4.6 & 4.9). It is a rare example of school-temple integration in Hong Kong. A name board is above the door entrance, with a couplet on both sides, emphasizing loyalty and brotherhood between the community. Its altar at the far end of the wall houses a tablet of the deity with an offering table in its front.



Fig. 4.4- *Balcony with arched openings*



Fig. 4.5- *1/F interior of classroom*



Fig. 4.6- *Entrance of Hip Tin Temple*



Fig. 4.7- *CUHK exhibition in G/F classroom*

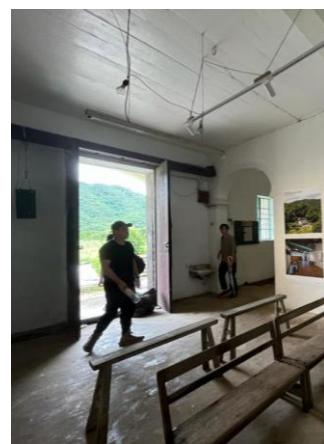


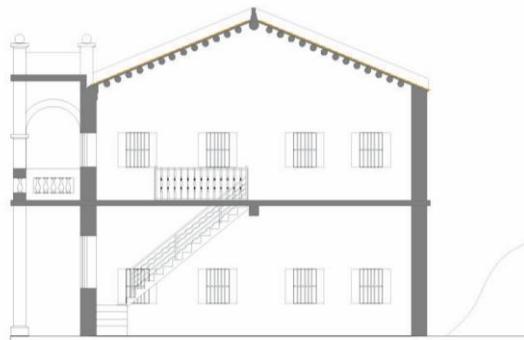
Fig. 4.8- *G/F classrooms connected with an arched opening*



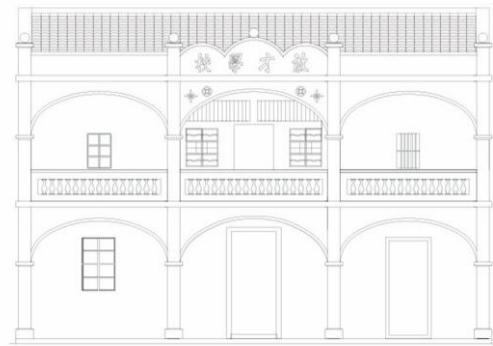
Fig. 4.9- *Interior of Hip Tin Temple*

²² Antiquities Advisory Board (2010). Historic Building Appraisal Number 1105, Kai Choi School and Hip Tin Temple, Kuk Po, Luk Keng, P.1-2. Available at: https://www.aab.gov.hk/filemanager/aab/common/historicbuilding/en/1105_Appraisal_En.pdf (Accessed: 15 Jun 2023)

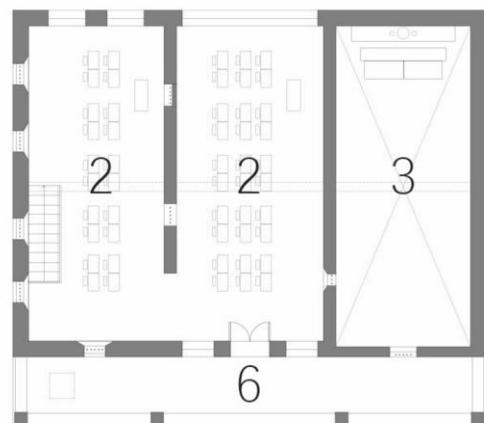
Section



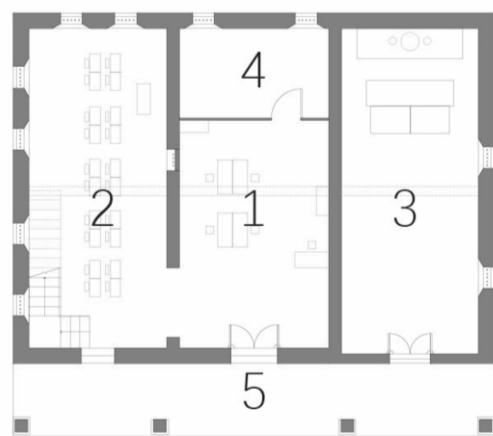
Elevation



1/F Plan



G/F Plan



Legend

- 1 Staff room
- 2 Classroom
- 3 Hip Tin Temple
- 4 Staff dorm
- 5 Verandah
- 6 Balcony

Fig. 4.10- *Elevation, section and plan of Kai Choi School*

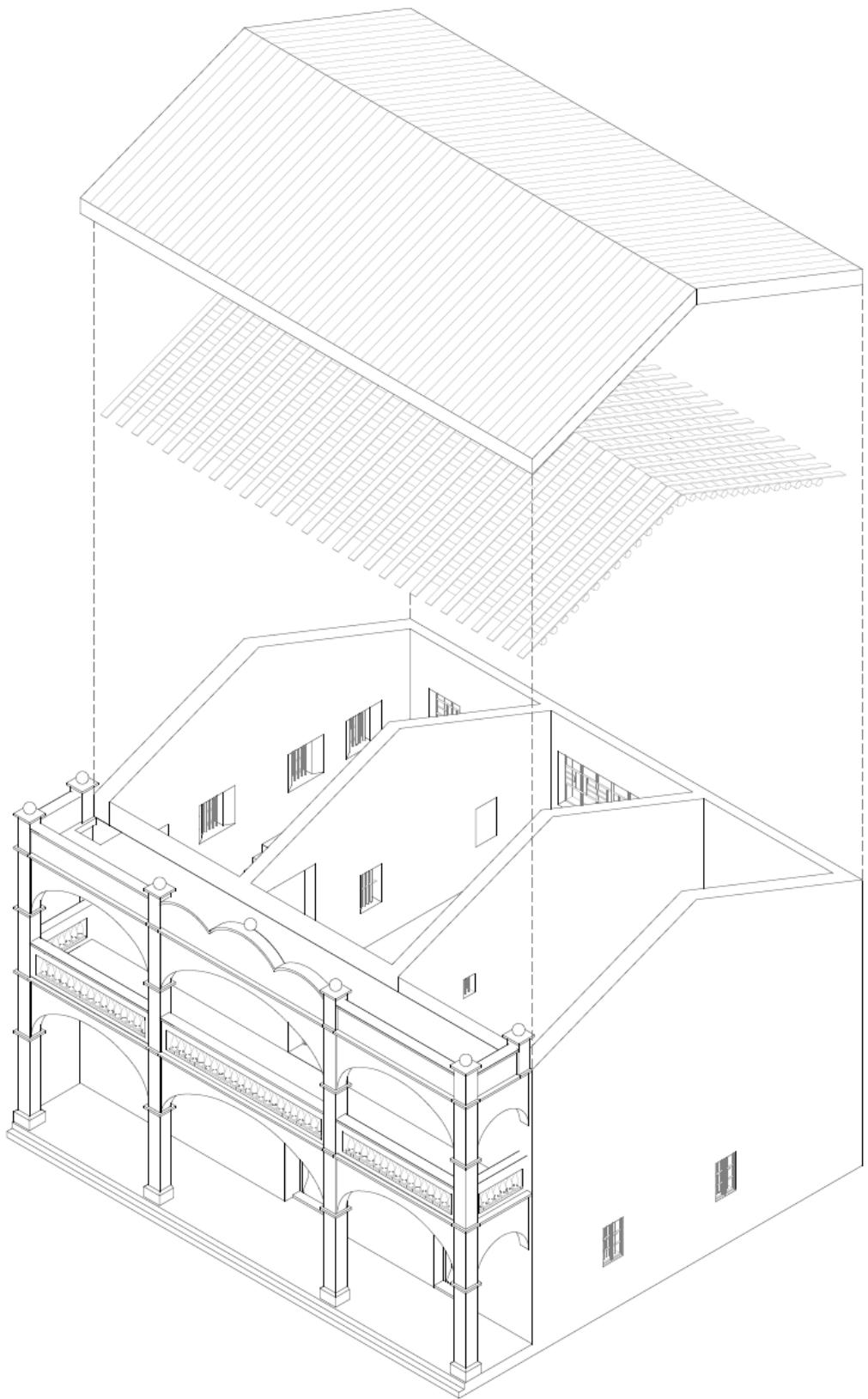


Fig. 4.11- *Exploded isometric drawing of Kai Choi School*

5. The Study of Mansions at Tin Sum

5.1 The Formation of Tin Sum: Agro-reclamation

Facing the challenge of limited flat, arable land, Kuk Po villagers grasped the technique of reclaiming land from the sea around 200 years ago. They converted over two million square feet of salt marsh into farmland by constructing a dyke to drain out seawater in the bay and prevent seawater from flooding into the village (fig. 5.1-5.2). This innovative engineering work greatly increased agricultural production for a growing population. It was one of the very first reclamation projects in Hong Kong history²³.



Fig. 5.1- *Lo Wai and Tin Sum in late 1960s (photo provided by Mr. Ho Sui Ting)*



Fig. 5.2- *Tin Sum/Ham Tong and Sha Tau Kok today*

5.2 Common Architectural Features of The Hybrid-styled Mansions

The hybrid-styled mansions of the Ho, Lee and Yeung families in Tin Sum (fig. 4.3) were completed in the 1930s with the oversea remittance from the US (same as that for Kai Choi School). These dwellings bear witness to the migration pattern of the entire Sha Tau Kok area, and demonstrate the mix of vernacular construction techniques, Western eclecticism and modern building materials²⁴.

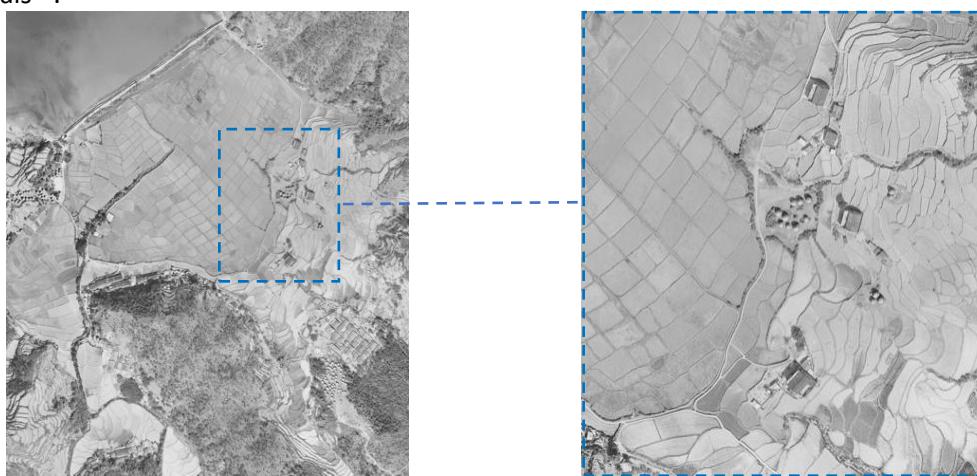


Fig. 4.3- *Aerial photo of Tin Sum showing Ho's Mansion (top), Lee's Mansion (middle), Yeung's Mansion (bottom) in 1963*

²³ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.9.

²⁴ *Multidisciplinary Exhibition on Kuk Po* (2023). [Architectural Research & Restoration]. CUHK Ng To Education Research Base, Hong Kong. 5 February 2023 - (ongoing).

The three studied hybrid-mansions: Yeung's, Lee's and Ho's Mansion have a similar layout with two storeys and three bays. The main central beam of the ceiling are painted in red, symbolising good fortune. The common Chinese-styled pitched roof was laid with pan tiles of two different sizes, locally known as 'Hakka roofing', sitting on timber battens and purlins (fig. 4.4).

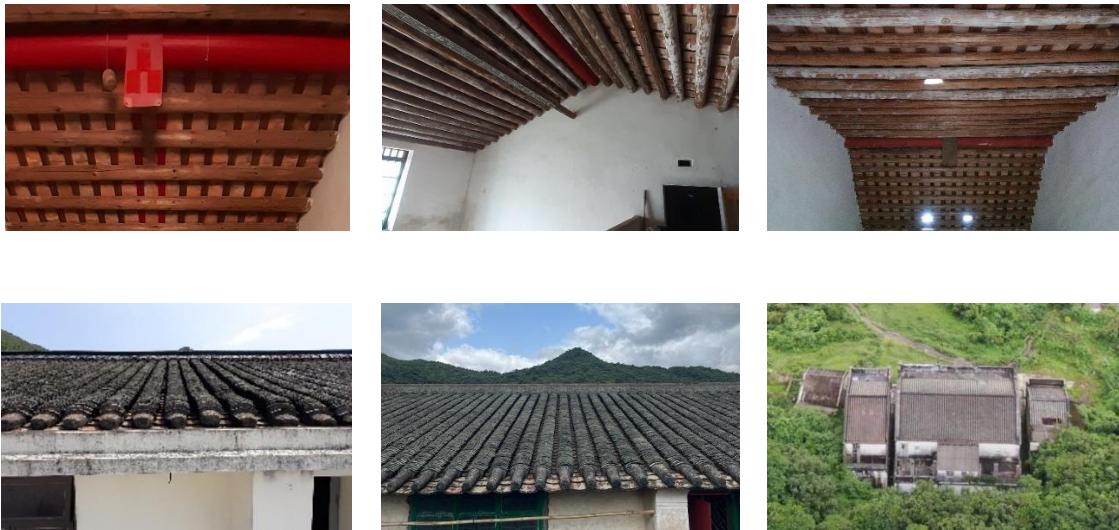


Fig. 4.4- Central beam and 'Hakka roofing' of Ho, Lee, Yeung's Mansion

5.3 Ho's Mansion at Tin Sum

5.3.1 Historical Background

The Ho family moved to Kuk Po in mid-18th century. In early 20th century, some of the family members went to USA to make a living there. They sent funds back in 1930s to build a mansion in Tin Sum²⁵ (fig. 4.5). The Hos moved out of Kuk Po in the 1960s which left the mansion to deteriorate. It was refurbished in 2013 with the money of Mr. Ho Sui Ting²⁶ (fig. 4.6), who pays regular visits to Kuk Po and his mansion on both weekdays and weekends.



Fig. 4.5- Ho's Mansion in 1962



Fig. 4.6- Ho's Mansion today

²⁵ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.10.

²⁶ Ho, Shui Ting. (2022). Interviewed by Wong Wai Hung. 9 July, Hong Kong.

5.3.2 Architectural Features of Ho's Mansion

Ho's Mansion is a two-storey three-bay building with a gable roof structure of Chinese tiles. The parapet above the recessed façade features the Chinese inscriptions "Lan Kwai Tang Fong" -- meaning "may orchid and osmanthus flourish and perfume" as a blessing to descendants of the family for prosperity and prestige (fig. 4.7).

The original horizontal railed shutter was taken down during the innovation works in recent years. Yet the holes for locking the shutter and carved patterns of the door plinth stone remain (fig. 4.10). The twin stoves in the kitchen are large enough to fit two big cast iron woks together (fig. 4.11). Firewood and dry grass are stored by the side. The cistern is placed opposite the stoves²⁷.

5.3.3 Ancillary Features: Farmshed

There is a small farmshed behind the mansion that was used to store firewood and keep pigs (fig. 4.9). It was being refurbished and transformed into a private display room when the main mansion was being restored in 2013. Mr. Ho collected an amazing array of farming tools, furniture and other household items from the family. They are arranged and displayed, offering a good glimpse of life in the olden days (fig. 4.12). The room will only be opened upon arrangement with Mr. Ho.



Fig. 4.7- Parapet wall of Ho's Mansion



Fig. 4.8- Main hall and family motto



Fig. 4.9- Farmshed turned into display room



Fig. 4.10- Holes remained of the original shutter



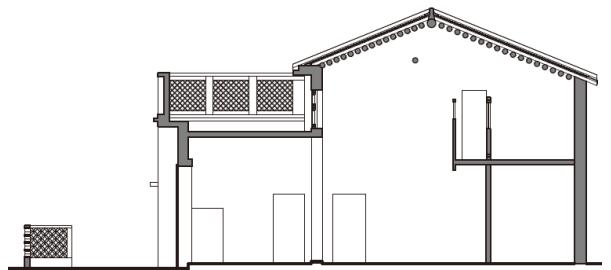
Fig. 4.11- Brick stoves and chimney



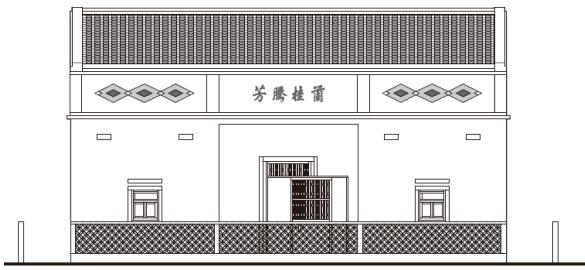
Fig. 4.12- Mr Ho's private collection

²⁷ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.11.

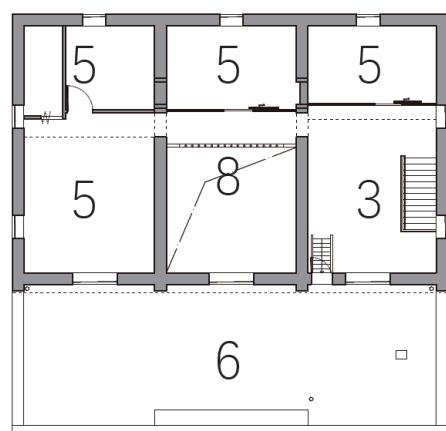
Section



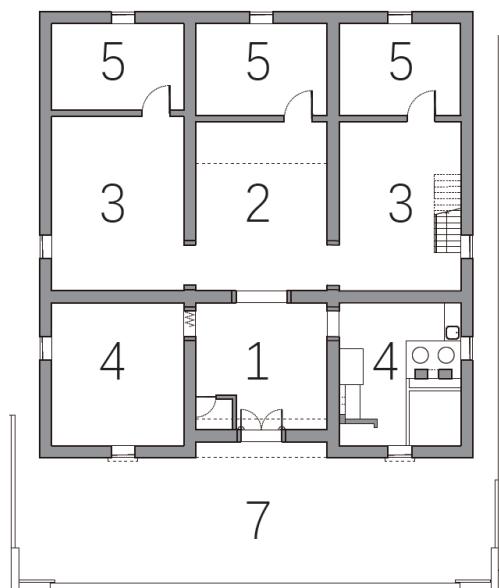
Elevation



1/F Plan



G/F Plan



Legend

- 1 Front Chamber
- 2 Main Hall
- 3 Inner Living Room
- 4 Kitchen
- 5 Bedroom
- 6 Sundeck
- 7 Front Yard
- 8 House Motto

Fig. 4.13- *Plan, section and elevation of Ho's Mansion*



Fig. 4.14- *Exploded axonometric of Ho's Mansion*

5.4 Lee's Mansion at Tin Sum

5.4.1 Historical Background

The Lee family was originally from Lo Wai of Kuk Po. In the 1930s, some of the family members went to work in the USA and remit their savings to their family in Kuk Po to build a stand-alone mansion in Tin Sum (fig. 5.4.1).



Fig. 5.4.1- *Lee's Mansion and its surrounding landscape in 2022*

5.4.2 The Configuration of Lee's premises at Tin Sum

Lee family's 90-plus-year-old historic hybrid mansion locates at Tin Sum village, with its ancillary cowshed, farmshed, chicken coop and adjacent farmlands, comprising one of the village's largest and most authentic residential compounds. From the aerial photo in 1963 (fig. 5.4.2), there were an abundance of paddy fields behind the compound and the vast piece of rice fields in front. Plenty of haystack were also seen in front of the mansion which were used for cooking and heating in the house.

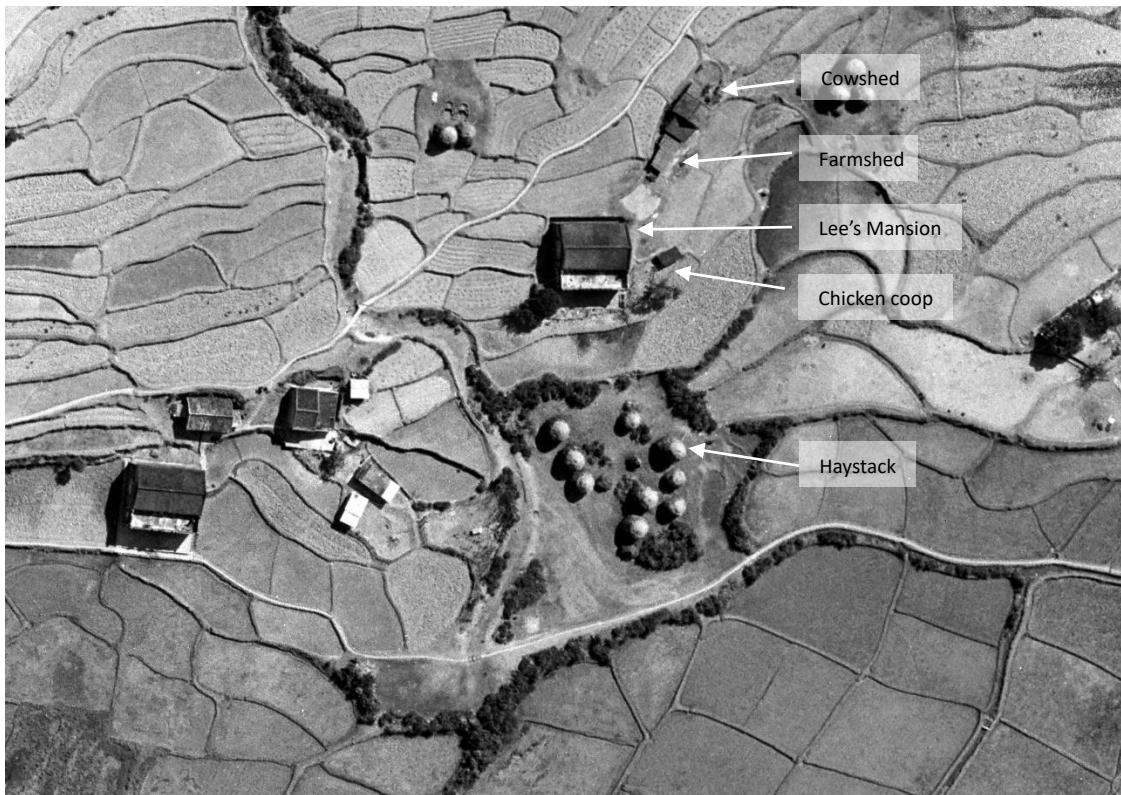


Fig. 5.4.2- Aerial photo of Lee family's compound in 1963

5.4.3 Architectural Features of Lee's Mansion

The two-storey Lee's Mansion comprises three bays with a traditional Hakka gable roof design of Chinese tiles. It is one of the eclectic styled mansions at Tin Sum, with an interior Hakka layout and a Western styled parapet wall; the walls are likely to be traditional stone-earth walls while the flat roof at the front of the house is built with reinforced-concrete, the modern material and building technique conveys the wealth of the family, and shows that the mansion is comparatively new to other houses in Kuk Po. The parapet (女兒牆) above the facade features ornamental, cloud-shaped decorations. It was also observed the ornamental shape reflects the shape of the mountains behind, it could have a fengshui implication behind this design.

The ground floor serves as kitchen, living area and bedrooms, while the first floor is used for granaries, storage, and bedrooms. The walls of the rooms at the rear of ground floor are constructed with blue bricks, the bricklaying created a cross-shaped hole for better ventilation and illumination. There is a sundeck on the first floor for sun-drying crops (fig. 5.4.3 & fig. 5.4.4).

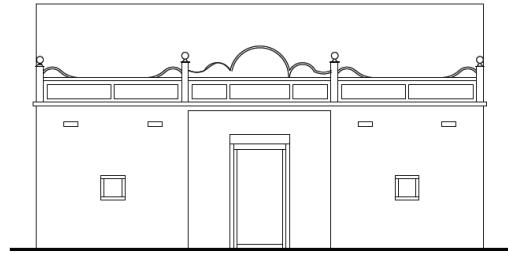
A large house plaque on the balustrade of the first floor, facing the main hall, carries the character of “longevity” (壽) with a couplet of the family motto manifestly emphasizes tolerance and harmony in managing family affairs, and diligence and frugality to success and entrepreneurship. The roof features a main beam that is painted in red, and a “descendants beam” with the inscription “countless descendants” and vibrant floral motifs, symbolizing the family's prosperity and abundance (fig. 5.4.5)²⁸.

²⁸ School of Architecture, CUHK (2023). Kuk Po Tour Kit, P.12-13.

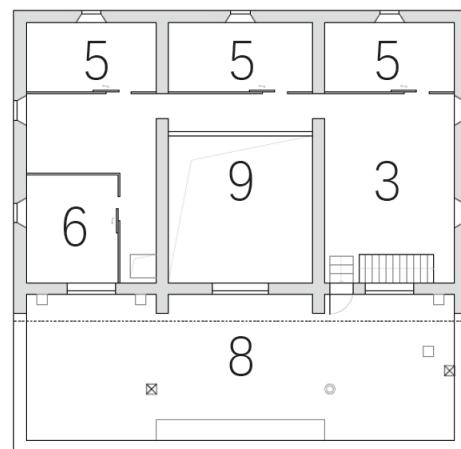
Section



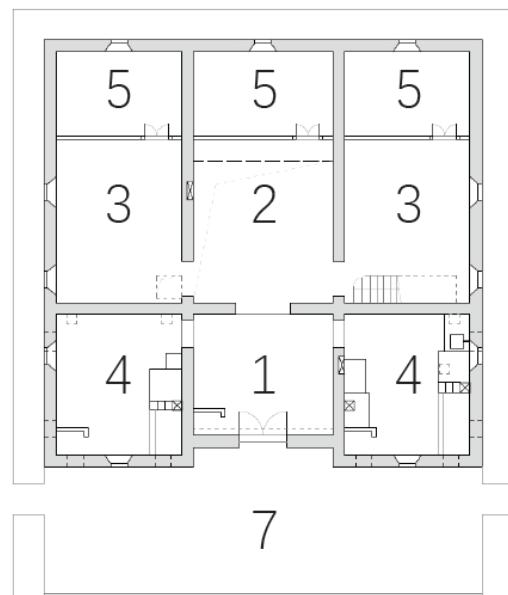
Elevation



1/F Plan



G/F Plan



Legend

- 1 Front Chamber
- 2 Main Hall
- 3 Inner Living Room
- 4 Kitchen
- 5 Bedroom
- 6 Grain Store
- 7 Front Yard
- 8 Sundeck
- 9 House Motto

Fig. 5.4.3- Plan, section and elevation of Lee's Mansion

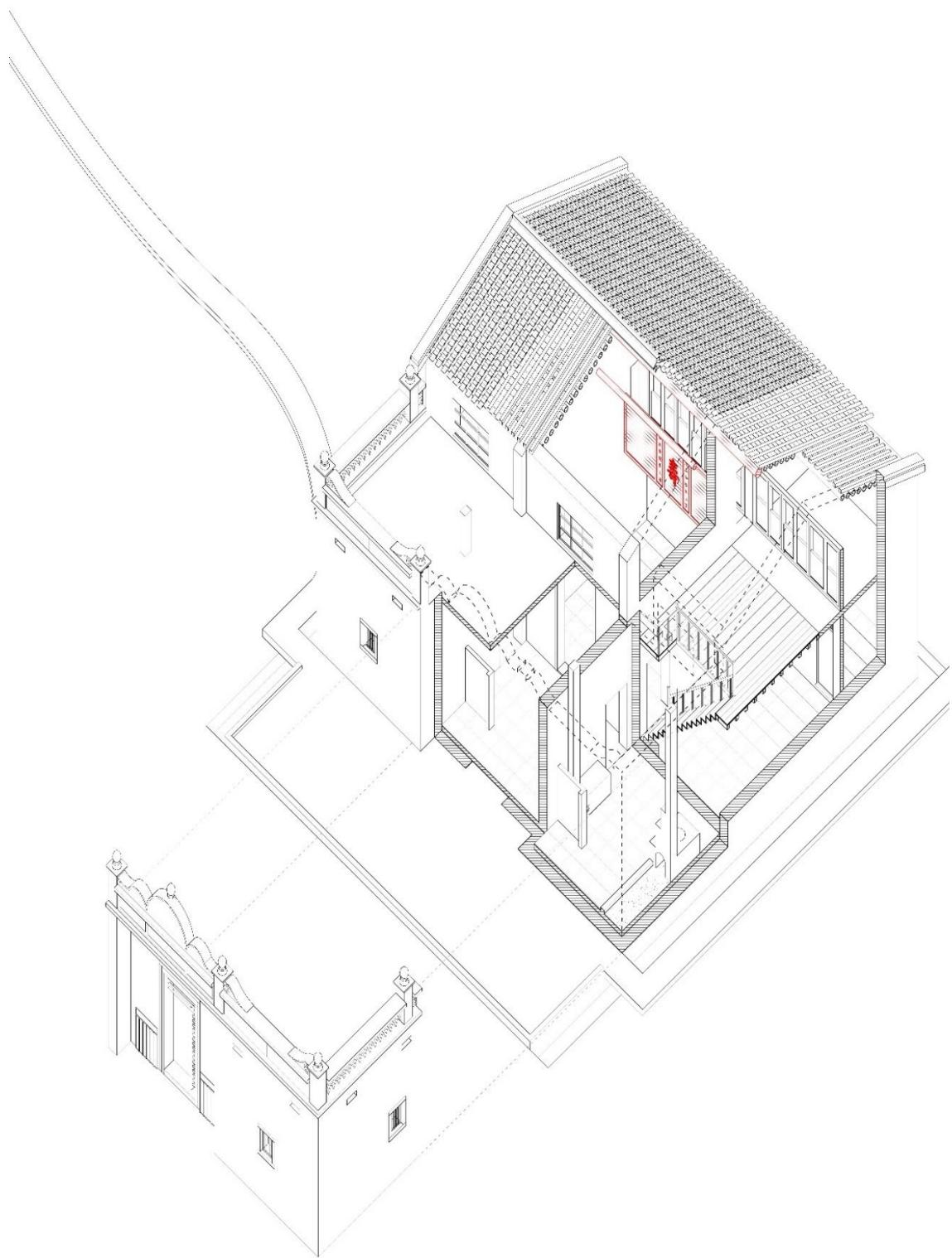


Fig. 5.4.4- *Exploded axonometric of Lee's Mansion*



客家瓦頂
Hakka tiled roof

金字頂先以「疊七留三」的方式鋪上板瓦，再於板瓦間疊大量的小青瓦，這種屋頂常見於客家村屋。
The pitched roof is covered with flat tiles and blue tiles, which were commonly used in Hakka vernacular houses.



阳台
Balcony

金字頂前方有混凝土露天阳台，可見大宅混合現代技術和材料，曾用於曬穀物。
The sundeck in front of the pitched roof was for sun-drying crops. It was constructed with reinforced concrete, which is a modern technique and material.



子孫樑
Descendants Beam

主樑下有客家祠堂常見的彩色「子孫樑」，其上有「百子千孫」囍字及花團錦簇畫案，寓意家族繁衍昌盛。
The "descendants beam" with the inscription "countless descendants" and vibrant floral motifs symbolizes the family's prosperity and abundance.



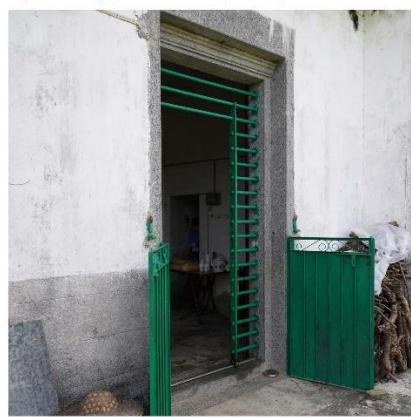
屋匾 (家訓)
House plaque (family motto)

正龕有「壽」字屋匾及家訓對聯，喻意處理家事要包容及協調，而創業的版門則為勤勞及節儉。
A large plaque with the character of "longevity" and a couplet of the family motto emphasizes tolerance and harmony in managing family affairs, and diligence and frugality to successful entrepreneurship.



木梯
Timber stairs

接近地下的兩級以水泥做成，防止木材觸碰水而發霉。
原裝木梯一根釘子也沒有用，後期維修時才加上。
The bottom two steps are made of cement, preventing the timber from water. The original staircase did not use any nails, they were only added during later repairment.



木門和趟櫺
Timber door & shutter

大門外設有鐵趟櫺防盜，外層的牛閂防止動物進入屋內。
The horizontal railed shutter at the entrance was used to prevent thieves and pirates and the outer waist-height gate was to prevent animals from getting in.

Fig. 5.4.5- Architectural features of Lee's Mansion

5.4.4 Restoration Works of Lee's Mansion

Lee's Mansion at Tin Sum was being restored according to its original appearance and the ancillary farmshed was being redesigned and reinterpreted into a pavilion for hosting workshops. The design and restoration were done by CUHK with the Countryside Conservation Funding Scheme by Countryside Conservation Office. The scope of the restoration of Lee's Mansion is mainly to lay salvaged and new roof tiles to the roof; replace defective timber battens and purlins at the roof; applying waterproof coating and termite control to the timber structure; making good existing features like timber stairs, timber doors and steel windows; installing new electrical sockets and light fittings; and installing anti-mosquito nets to all openings (fig. 5.4.6).



開工拜神儀式
Commencement ceremony



屋頂復修
Roof restoration



重鋪瓦片(板瓦和小清瓦)
Roofing (flat tiles & blue tiles)



重做瓦頭和上油
Remake Lime end-stopper



子孫樑上彩
Repaint Descendants Beam



木門維修
Repair timber door

Fig. 5.4.6- Scope of Lee's Mansion restoration works

Condition survey was conducted to inspect existing timber roof structure, inspecting the cracks and whether if there are any termites (fig. 5.4.7). Results showed that most of the round purlins were in good condition, 10 purlins and all battens were replaced. The original timber structure uses Chinese fir 杉木, so it was also used for the newly replaced purlins and battens (fig. 5.4.8). A protective finish coating designed for wood surfaces is used on all timber structure, preserving the wood character protecting timber against fungus, mould and is water resistant.

The exterior façade was washed with high pressure water jet, some of the original paint traces can be observed. New paint code was matched with the traces (fig. 5.4.9) and mock up trials were conducted to test out the water to paint ratio (fig. 5.4.10).

One of the significant features of the house is the 'Descendants Beam' which was aged and decolourised (fig. 5.4.11). The craftsman carefully inspects the original traces and repaint it in-situ accordingly, showcasing the art of restoring paint (fig. 5.4.12).



Fig. 5.4.7- Condition survey



Fig. 5.4.8- New fir purlins

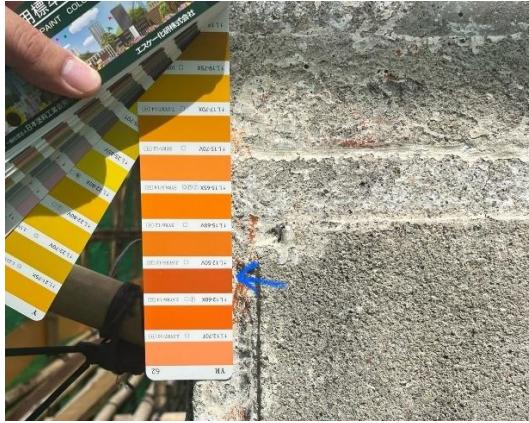


Fig. 5.4.9- Matching paint code



Fig. 5.4.10- Mock up of wall paint



Fig. 5.4.11- Descendants Beam before restoration



Fig. 5.4.12- Repainting Descendants Beam

5.4.5 Reinterpretation of Lee's Farmshed

The farmshed has 4 cubicles separated by concrete columns and concrete planks (fig. 5.4.16 & 5.4.17), according to Mr. Lee, they have kept a pig in each cubicle. As they no longer keep pigs since 1970s, the farmshed is being reinterpreted and redesigned as a pavilion for storing farming tools and hosting eco-living workshops.

The original structure and materials are dilapidated and not up to modern safety standards, so the structure must be reinvented. The original footprint of the farmshed is being preserved as a principle for the new design (fig. 5.4.17). A new timber frame structure is made according to the original footprint, new metal roof and waist height walls have been installed to provide for basic needs. Sustainable measures are also tested out in the new pavilion, like using solar-powered lights, eco-toilet and rainwater collection system (fig. 5.4.18).



Fig. 5.4.13- Lee's farmshed before restoration



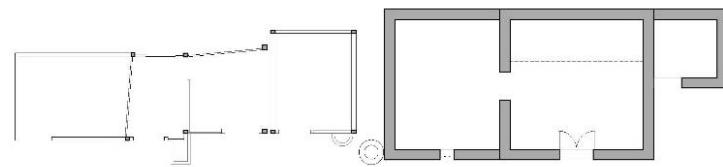
Fig. 5.4.14- Lee's farmshed during restoration



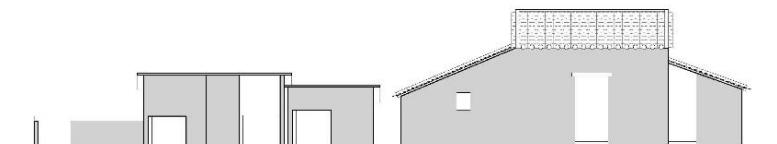
Fig. 5.4.15- Site clearance



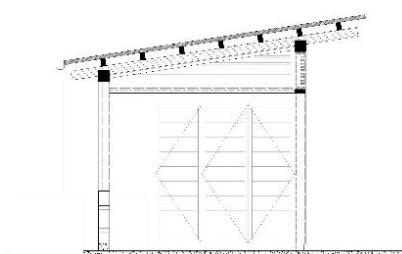
Fig. 5.4.16- Original structure of Lee's farmshed



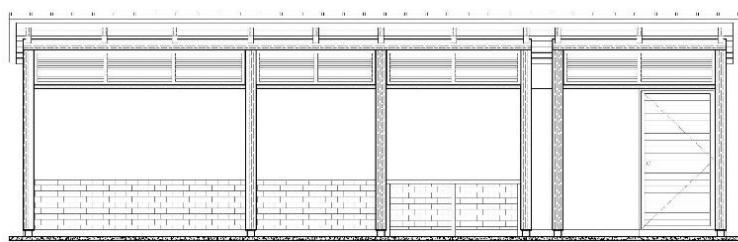
1963 Plan (farmshed and cowshed)



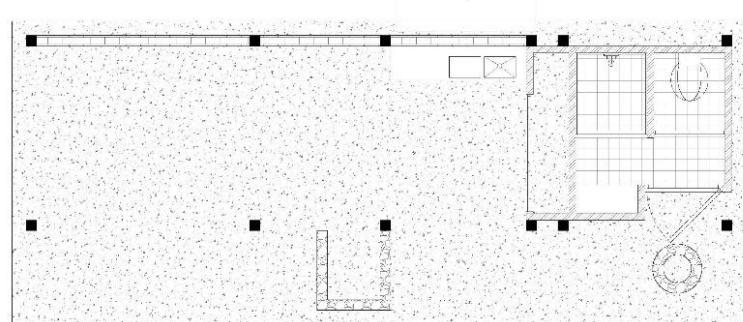
1963 Elevation (farmshed and cowshed)



New Section



New Elevation



New Plan

Fig. 5.4.17- Plan, section and elevation of Lee's farmshed

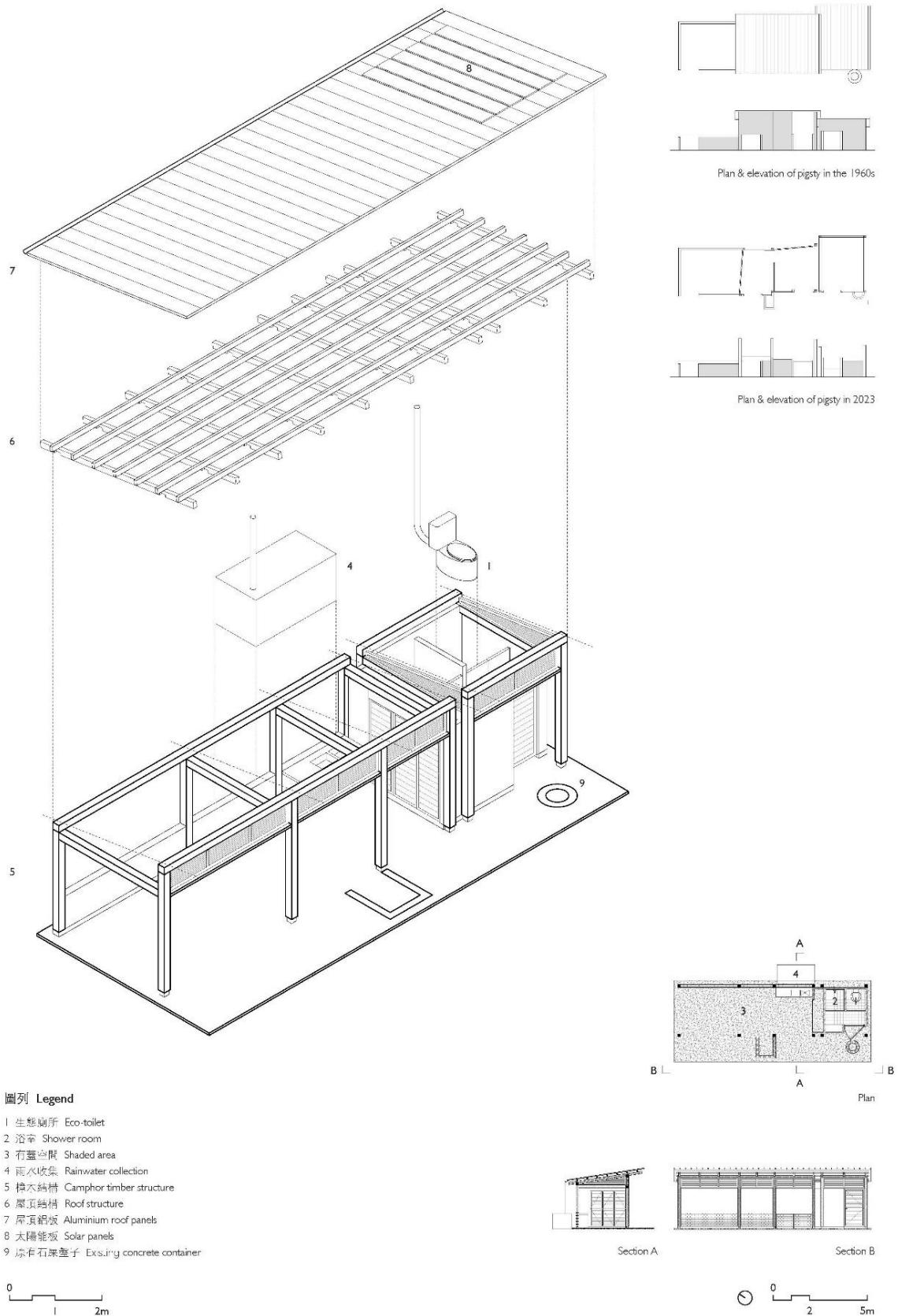


Fig. 5.4.18- Isometric of the restored farmshed

5.4.6 Return of Villagers and Regeneration of Landscape

Members of Lee family spanning four generations have returned to Kuk Po and rehhabited in the mansion in recent years to tend the agricultural landscape of the mansion (fig. 5.4.4 & 5.4.7). They hope to make good use of the mansion and its surrounding farmland for sustainable growing practices and eco-cultural educational activities to explore new opportunities for rural conservation and eco-living.

The funded project also tested out ecological gardening, using natural methods to enhance farming efficiency and soil health. With selective local plant species, the project team and villagers co-create an ecocultural and living experience workshop, educating the public on sustainable lifestyle.



Fig. 5.4.13- Recultivating surrounding farmlands



Fig. 5.4.14- Mrs. Lee introducing crops



Fig. 5.4.15- Ecocultural Experience workshop



Fig. 5.4.16- Participants making banana cake with local plants

5.5 Yeung's Mansion at Tin Sum

5.5.1 Historical Background

The Yeung family was originally from Lo Wai of Kuk Po, later moved to Sze To and Ng To. The houses can no longer fit the growing numbers of the family, so one of the family purchased land in Tin Sum and built a stand-alone mansion with the oversea remittance from the USA. Yeung's Mansion was constructed in 1937, following the form and layout of Kai Choi School. Two more houses and a farm shed were built in 1968 next to the main mansion²⁹ (fig. 5.5.1-5.5.2).



Fig. 5.5.1- *Yeung's Mansion, the two other houses and the farmshed*

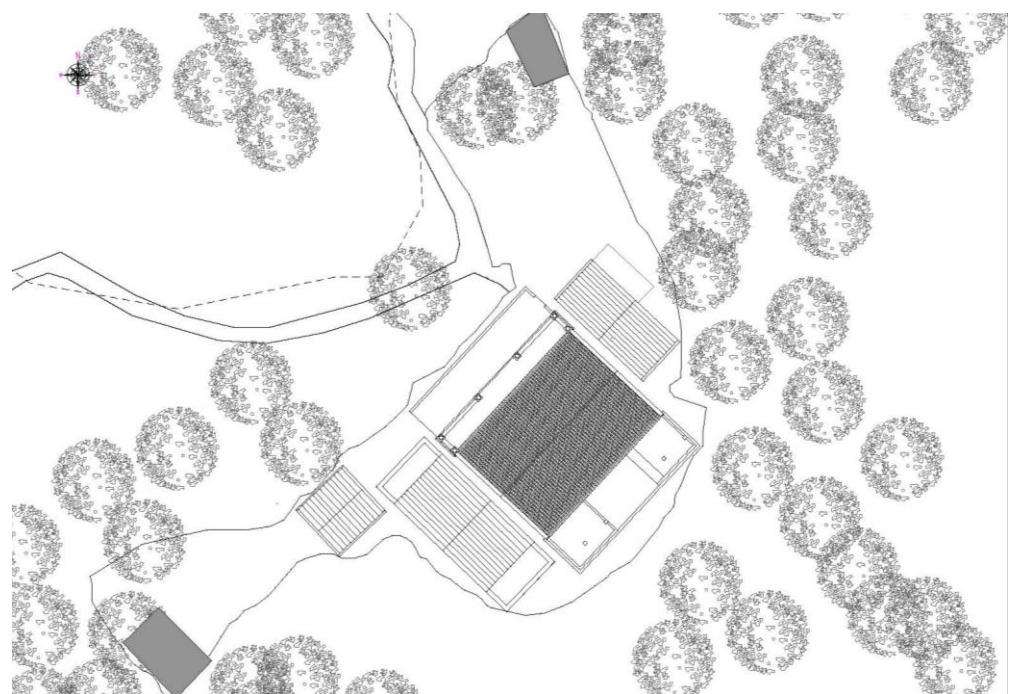


Fig. 5.5.2- *Plan of Yeung's Mansion, the two other houses and the farmshed*

²⁹ Yeung's Family (2022). Historical Overview on Tin Sum Yeung's Mansion, P.1.

5.5.2 Architectural Features of Yeung's Mansion

Yeung's Mansion is a two-storey three-bay building with a gable roof structure of Chinese tiles. The main doors are located at the right bay and middle bay. The ground floor of the three bays is interconnected, with staircases on the side bays connected to the first floor. There is a balcony on the first floor with concrete balustrades, following the form of Kai Choi School (fig. 5.5.4). The parapet above the flat-roofed balcony has ornamental carving, separated by short columns (fig. 5.5.3).

The interior space of the ground floor in each unit can be defined as a front living and cooking space (fig. 5.5.6) and smaller rooms at the rear. The walls of the rooms are recessed from the ceiling with decorative steel bars, brightening the rooms and for better ventilation (fig. 5.5.7). The upper floors were subdivided into small rooms by timber partitions (fig. 5.5.8). The flooring and cocklofts of upper floors was built by timber planking rested on circular joists (fig. 5.5.5).



Fig. 5.5.3- Parapet wall and balcony of Yeung's Mansion



Fig. 5.5.4- Balcony is similar to that of Kai Choi School



Fig. 5.5.5- Timber plank flooring rested on circular joists of 1/F



Fig. 5.5.6- Brick stoves and shower area



Fig. 5.5.7- Main hall



Fig. 5.5.8- Timber partitions on 1/F

5.5.3 The Other Two Houses, Farm Shed and The Landscape

On both sides of the three-bay mansion, single-bay houses and a farmshed were built for various purposes (fig. 5.5.9-5.5.11), such as storing firewood, raising pigs, housing cows, and serving as toilets. In 1968, each uncle had their own family and children, so the adjacent houses were used as separate households.

There used to be a vast expanse of paddy fields in front of the Yeung's mansion. However, they have now transformed into wetlands and mangroves once the Yeungs migrated to the UK and abandoned the fields.



Fig. 5.5.9- Single-bay house with a farmshed on the right-hand side of main mansion



Fig. 5.5.10- Single-bay house on the left-hand side of main mansion



Fig. 5.5.11- Farmshed on the left-hand side of main mansion

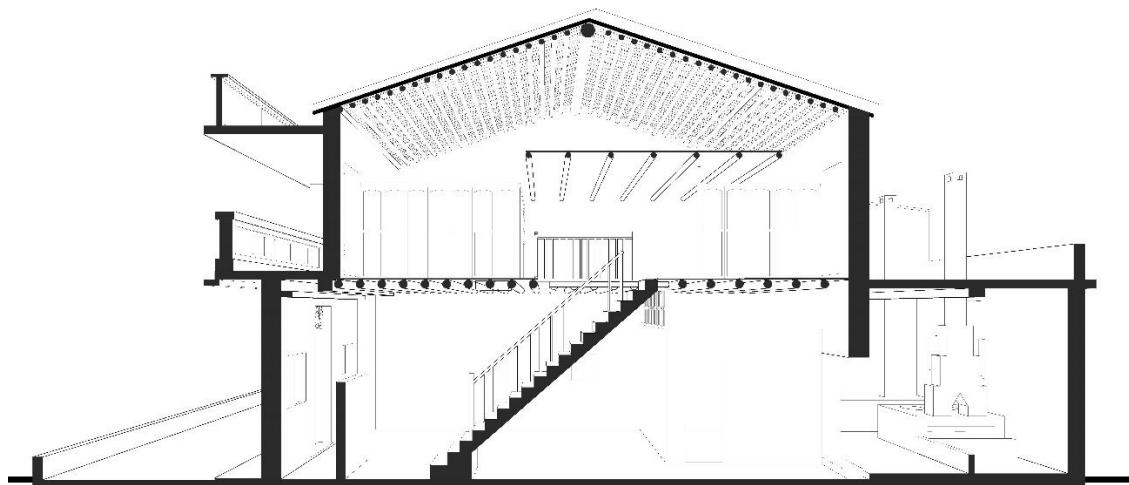


Fig. 5.5.12- Sectional perspective of Yeung's Mansion

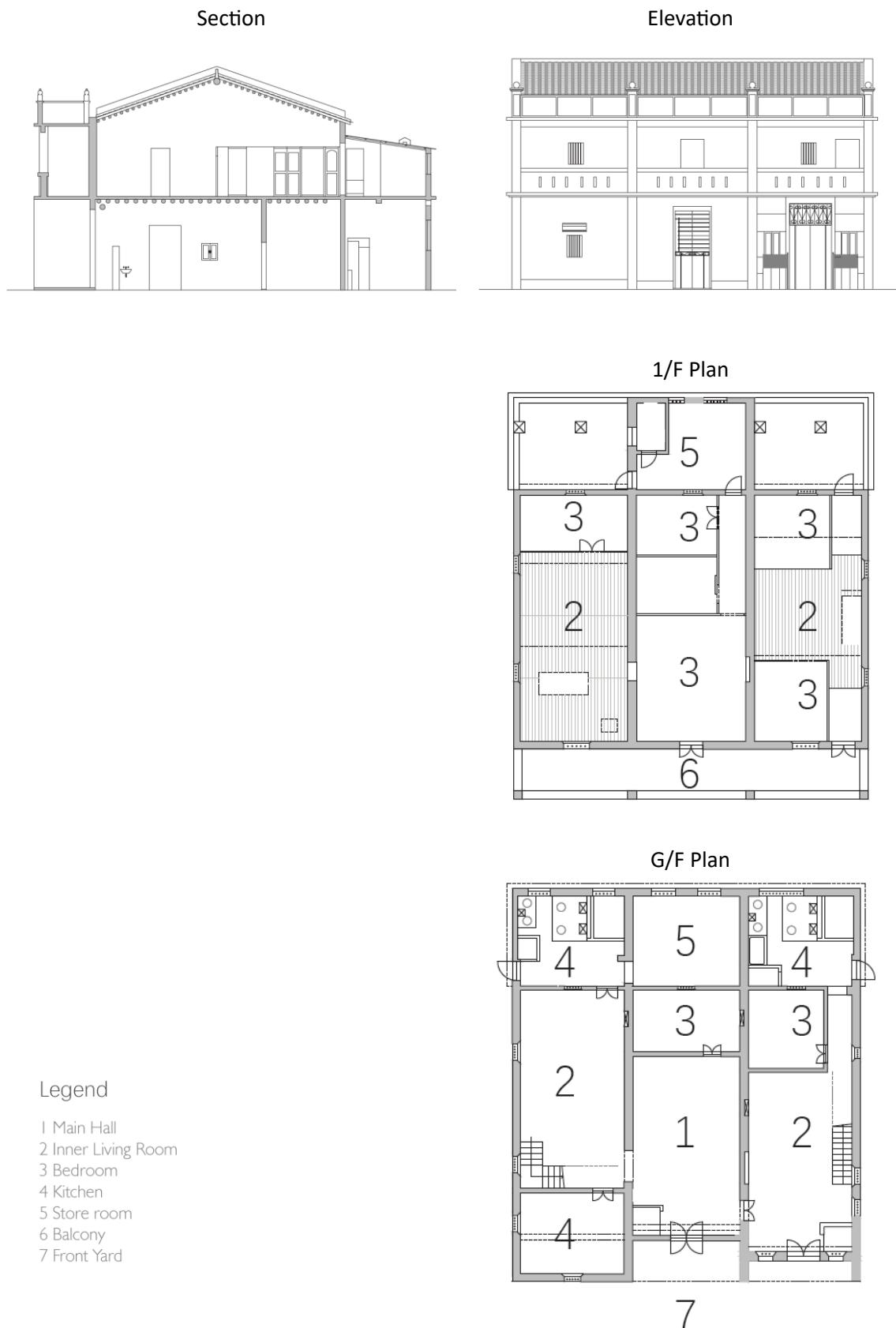


Fig. 5.5.13- Plan, section and elevation of Yeung's Mansion

6. Historic Architectural Features: Lan Kwai Tang Fong

Houses with the Chinese inscriptions "Lan Kwai Tang Fong" (蘭桂騰芳) (May orchid and osmanthus flourish and perfume) on the facades are found in Tin Sum, San Uk Ha and Sam To as a blessing to descendants of the families for prosperity and prestige³⁰.



田心
Tin Sum

Fig. 6.1- *Lan Kwai Tang Fong* found in Tin Sum Ho's Mansion

³⁰ *Multidisciplinary Exhibition on Kuk Po* (2023). [Lan Kwai Tang Fong]. CUHK Ng To Education Research Base, Hong Kong. 5 February 2023 - (ongoing).

6.1 Construction and Materials

The four-letter words “Lan Kwai Tang Fong” are likely to be carved out of stone from Chinese Mainland in the 20th century as there were no local stone carving factories, reflecting the economic status of the household. The ones found in the mansions in Tin Sum, San Uk Ha and Yi To are constructed on the middle part of the parapet wall (fig. 6.1-6.3), while the one found in Sam To is engraved and painted on a whole piece of stone (fig. 6.4).



新屋下
San Uk Ha

Fig. 6.2- *Lan Kwai Tang Fong* found in San Uk Ha



新屋下
San Uk Ha

Fig. 6.3- *Lan Kwai Tang Fong* found in San Uk Ha

三財
Sam To

Fig. 6.4- *Lan Kwai Tang Fong* found in Sam To

7. Conclusion

To conclude the architectural report on Kuk Po, the village has a rich historical, cultural and ecological context, contributing to the morphology of landscapes and architecture for over 300 years. As a Hakka village with high integrity in Hong Kong, it deserves to be further studied by different organisations through persistent engagement with villagers and the public, exploring methods on rural village conservation and revitalisation.

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