Heritage Impact Assessment

For the

Revitalization of the Lady Ho Tung Welfare Centre into
Lady Ho Tung Welfare Centre Eco-Learn Institute

For

SIK SIK YUEN LADY HO TUNG WELFARE CENTRE
ECO-LEARN INSTITUTE LIMITED
嗇色園何東夫人醫局生態研習中心有限公司

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CONTENT

LIST OF FIGURES

1.0 INTRODUCTION 6
1.1 Background 6
1.2 Site Particulars 7
1.3 Definition and Abbreviation of Terms 7
1.4 Methodology and Structure of the Report 8

2.0 UNDERSTANDING THE SITE 8
2.1 Location and Area of the Study 9
2.2 Setting and Context 10
2.3 Current Status 11
2.4 Limitations 11

3.0 HISTORY AND DEVELOPMENT 11
3.1 Historic Place 11
3.2 Understanding of the Site 14
3.3 Sir Robert Ho Tung and Lady Ho Tung 22
3.4 Architectural Description 28
3.5 Future Development 39

4.0 STATEMENT OF SIGNIFICANCE 43
4.1 Historic significance 43
4.2 Architectural significance 43
4.3 Social significance 43

5.0 CHARACTER DEFINING ELEMENTS (CDEs) 45
5.1 Selection Criteria 45
5.2 Level of Significance – Defining of Terms 45
5.3 List of Character Defining Elements 46

6.0 OPPORTUNITIES AND LIMITATIONS 80
6.1 Project Description 80
6.2 Statutory Requirements 80
6.3 User's Requirements 83
6.4 Condition of Fabrics 86

7.0 REVITALIZATION PROPOSAL 97
7.1 Project Objective 97
7.2 Proposed Layout and Setting 98
7.3 Major Demolition Works 102

8.0 CONSERVATION PRINCIPLES AND GUIDELINES 103
8.1 Conservation Standards and Principles 103
8.2 Conservation Policies and Guidelines 105

9.0 ASSESSMENT 111
9.1 Potential Impact and Mitigation Measure 111
9.2 Impact Assessment 113
9.3 Interpretation 152
9.4 Guided Tour 154

10.0 MANAGEMENT AND IMPLEMENTATION 156
10.1 Maintenance Plan 156
10.2 Management Proposal 157
10.3 Future Development 157
10.4 Documentation 158
10.5 Implementation of this Heritage Impact Assessment 158

BIBLIOGRAPHY

APPENDIX I **DRAWINGS**

LIST OF FIGURES

Fig 1. Location Map (Source: Lands Department from the website of The GeoInfo Map: http://www2.map.gov.hk/) Edited by Hannah LIU 9

Fig 2. Grading Boundary Plan. (Source: The Geographic Information System on Hong Kong Heritage, 2012) 10

Fig 3. Map of Xin'an in 1688 (Source: 新界簡史,劉潤和, pp.5, 1994) 13

Fig 4. A page of《新安縣志》'Xin An Xian Zhi' shows the original Chinese name of Kwu Tung Village (古洞村). (Source: Page 80, Volume II of《新安縣志》'Xin An Xian Zhi' published in 1819) Edited by Hannah Liu 15

Fig 5. The map of Hong Kong in 1819. (Source:新界簡史, Joint Publishing (H.K.) Co. Ltd., 劉潤和, published in 1999.) Edited by Hannah Liu 17

Fig 6. Preliminary List of the Baker Collection in New Territories Genealogies in the British Library (Source: Journal of the Hong Kong Branch of the Royal Asiatic Society, Vol. 16 (1976), pp. 297-301, H.G.H. Nelson) 19

Fig 7. Location of the Built Heritage around the LHTWC (Source: Google Map, 2016) Edited by Hannah Liu 20

Fig 8. Ho Tung family. Sir Rebert Ho Tung was standing in the middle and his two wives Lady Clara Cheaung Lin-kok (left) and Lady Margaret Mak Sau Ying (right) were sitting in the front. Exact year of photo taken is not known. (Source: http://hk.apple.nextmedia.com/news/art/20150508/19140126, Apple Daily) 22

Fig 9. The structures/area related to Ho Tung Family in Kwu Tung area. (Source: Town Planning Board,2016, Edited by Hannah Liu) 23

Fig 10. The ceramic photograph of Sir Robert Ho Tung and Lady Ho Tung in Lady Ho Tung Welfare Centre. (Photo taken by Betty Tay, 2016) 24

Fig 11. The photo of the Ho Tung Bridge taken in 2014. (Source: http://lausoldier.blogspot.hk/2014/01/blog-post.html) 26

Fig 12. The old photo of Kam Tsin Village Ho Tung School in 1960s. (Source: Kam Tsin Village Ho Tung School) 27

Fig 13. The Lady Ho Tung Hall built in 1974 in Kam Tsin Village Ho Tung School. (Source: http://lausoldier.blogspot.hk/2014/01/blog-post.html) 27

Fig 14. The existing site plan of LHTWC. Edited by Hannah Liu. 28

Fig 15. Existing layout plan of the LHTWC (Edited by Hannah Liu) 29

Fig 16. The map of the medical facilities in Hong Kong in the year of 1939. The Lady Ho Tung Welfare Centre in Kwu Tung marked as the government hospital in the map. (Source: Medical and Sanitary Report for the year of 1939，Hong Kong Journals Online (HKJO)) Edited by Hannah Liu 32

Fig 17. The aerial photo of Lady Ho Tung Welfare Centre in 1945. Source: Survey and Map Office. 34

Fig 18. The aerial photo of Lady Ho Tung Welfare Centre in 1956. The setting and context were almost the same as in 1945. Source: Survey and Map Office. Edited by Hannah Liu 34

Fig 19. The aerial photo of Lady Ho Tung Welfare Centre in 1961. The additional latrine could be found at the rear side of the Main Block (circled in red). Source: Survey and Map Office. Edited by Hannah Liu 35

Fig 20. The existing layout plan of Lady Ho Tung Welfare Centre. The part of the later-added fiberboard partition wall is retained in-situ (highlighted in red). According to the old memo, the additional 32m^2 ward should be the area highlighted in yellow. Edited by Hannah Liu 35

Fig 21. The existing photo of Lady Ho Tung Welfare Centre in 2016. The part of the later-added fiberboard partition wall is retained in-situ (highlighted in red). Edited by Hannah Liu 36

Fig 22. Source: Wah Kiu Yat Po 華僑日報, 14th Sept 1974 36

Fig 23. The aerial photo of Lady Ho Tung Welfare Centre in 1985. The longitudinal block was on the rear side of the Main Block next to the latrine (circled in red). Source: Survey and Map Office. Edited by Hannah Liu 37

Fig 24. The aerial photo of Lady Ho Tung Welfare Centre in 1995. The longitudinal block was still on the rear side of the Main Block (circled in red). Source: Survey and Map Office. Edited by Hannah Liu 37

Fig 25. The aerial photo of Lady Ho Tung Welfare Centre in 1996. The longitudinal block was replaced by the new disable toilet. (circled in red). Source: Survey and Map Office. Edited by Hannah Liu 38

Fig 26. The later-added metal shelter at external waiting area of Lady Ho Tung Welfare Centre today. Photo taken by Betty Tay in 2014 38

Fig 27. North East New Territories New Territories Areas. (Source: North East New Territories New Development Agreas Planning and Engineering Study, Planning Department, July 2013, Edited by Hannah Liu) 39

Fig 28. Land potentially suitable for agricultural rehabilitation in Kwu Tung South. (Source: North East New Territories New Development Areas Planning and Engineering Study, Planning Department, July 2013, Edited by Hannah Liu) 40

Fig 29. Northern Link and Kwu Tung Station – a major regional line formed by linking the Kam Sheung Road Station on the West Rail Line to a new station at Kwu Tung on the Lok Ma Chau Spur Line. (Source: Transport Development Strategy 2014, Transport and Housing Bureau) 42

Fig 30. The plan shows the load bearing brick walls and concrete columns of the Main Block. The load bearing brick walls are highlighted in red. The concrete columns are highlighted in yellow. Edited by Hannah Liu. 87

Fig 31. The timber trusses are sited on the brick wall above the horizontal concrete beams at south. 87

Fig 32. The horizontal concrete beam spanning between the concrete columns 87

Fig 33. Roof measured plan of the Main Block. The timber trusses were supported by horizontal

concrete beams spanning between concrete columns at south and load bearing brick walls at north. The brick wall is coloured in purple and the timber trusses are coloured in blue. Edited by Hannah Liu. 88

Fig 34. Sections of the roof trusses structure. For location, see the roof measured plan. The load bearing brick walls are coloured in purple. Edited by Hannah Liu. 88

Fig 35. The concrete tank was supported directly on top of the brick partition highlighted in green. Edited by Hannah Liu. 89

Fig 36. The plan shows the load bearing brick walls of the Bungalow. The load bearing brick walls are highlighted in red. Edited by Hannah Liu. 90

Fig 37. Roof measured plan of the Bungalow. The load bearing brick walls are coloured in purple. Edited by Hannah Liu. 91

Fig 38. Sections of the roof trusses structure. For location, see the roof measured plan. The load bearing walls are coloured in purple. Edited by Hannah Liu. 91

Fig 39. The proposed site plan. Edited by Hannah Liu. 99

Fig 40. The proposed layout plan for existing buildings. Edited by Hannah Liu. 100

Fig 41. Major demolition works to the historic buildings. Edited by Hannah Liu 102

Fig 42. The plan of the areas opened for public in business hours. The area coloured in yellow are Ecological Discovery Area. The area coloured in orange are Heritage Interpretation Area. The area coloured in green are Agricultural Microcosm Area and other open area. Edited by Hannah Liu. 155

Fig 43. The plan of the main route of guided tour for interpretation. Edited by Hannah Liu. 156

LIST OF TABLES

Table 1. Table of site particulars 7

Table 2. Table of the population in New Territories in 1898 14

Table 3. Table of the population of different ethnicities in Sheung Shui in 1898 16

Table 4. Table of the population of Kwu Tung, Kam Tsin and Ho Sheung Heung in 1898 17

Table 5. Table of the built heritage around the LHTWC 20

Table 6. Table of the structures / area related to Ho Tung Family in Kwu Tung Area 23

Table 7. Table of the nine organizations benefited from the late Lady Ho Tung 25

Table 8. Table of the cases dealt from 1934 to 1939 at the LHTWC 31

Table 9. Table of the repair works issued in 1948 33

Table 10. Table of the level of significance and its description 45

Table 11. Table of the measured sizes of the truss members 89

Table 12. Table of the proposed function for the LHTWC 101

Table 13. Table of the description for the proposed function. 101

Table 14. Table of the level of significance and its description 111

Table 15. Table of impact level and its description 112

Table 16. Table of the interpretation in different area of the LHTWC 153

1.0 INTRODUCTION

1.1 Background

The Advisory Committee on Revitalization of Historic Buildings (Advisory Committee) has completed assessment of the proposals submitted for revitalizing the 4 historic buildings under Batch IV of the Revitalizing Historic Buildings through Partnership Scheme (Revitalization Scheme). The Secretary for Development has accepted the Advisory Committee's recommendation and given the approval-in-principle to the selected non-profit-making organizations in 16 June 2015.

The selected organization for the Lady Ho Tung Welfare Centre (LHTWC) is the Sik Sik Yuen Lady Ho Tung Welfare Centre Eco-Learn Institute Limited. The LHTWC and its site will be revitalized into a heritage interpretation-cum-local ecology discovery centre to showcase the history and memory of the historic buildings and the contribution of Sir Robert Ho Tung family; it also provides a series of Bioblitz training programmes to enhance the public awareness of the importance of ecology conservation and the concept of sustainable development.

Covering an area of 3,550 square meters, the site is located on a low-lying area at No.38 Kwu Tung Road. A slope is situated on the western side as the main access road of the site. The LHTWC is surrounded by trees in a lawn. It situated in the site comprises of the Main Block and the Bungalow, which all are single-storey buildings connected by a covered walkway. The Chinese Eclectic style LHTWC with Arts and Crafts features served mainly as a maternity centre and also as a sanatorium for Indian soldiers from 1934 to 1973. In 1948, part of the centre has been used to provide a specialized hospital ward for sick members of the Police Force stationed in the New Territories. It served as a welfare centre providing medical treatment and health education activities until 2005. Both the Main Block and Bungalow were confirmed as Grade 2 Historic Buildings in December 2009. The Grading Boundary Plan is shown in **Section 2.1**.

The proposed works would allow the site to be converted from welfare centre into an eco-learn institute managed by Sik Sik Yuen. The detailed scope of works could be found in **Section 7.0**.

1.2 Site Particulars

Property Name	Lady Ho Tung Welfare Centre
Address of the studied site	No.38 Kwu Tung Road, Sheung Shui, New Territories
AAB Grading	Grade 2 (Definition: Buildings of special merit; effort should be made to selectively preserve[1])
Year of Grading	2009
Year of Construction	1933
Site Area	approx. 3,550m^2
Construction Floor Area	427m^2
Land Status	Government
Original Use	Welfare Centre

Table 1. Table of site particulars

1.3 Definition and Abbreviation of Terms

The Site or ***the Historic Building*** refers to the Lady Ho Tung Welfare Centre.

The following definitions have been abstracted from the ***Australia ICOMOS for Conservation of Places of Cultural Significance (the Burra Charter)*** as follows:

Cultural significance: aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Fabric: all the physical materials of the place, including components, fixtures, contents, and objects.

Conservation: all the processes of looking after a place so as to retain its cultural significance.

Setting: the area around a place, which may include the visual catchment.

Interpretation: all the ways of presenting the cultural significance of a place.

Maintenance: the continuous protective care of the fabric and setting of a place, and is to be distinguished from repair. Repair involves restoration or reconstruction.

Preservation: maintaining the fabric of a place in its existing state and retarding deterioration.

[1] *Definition of Grading from Antiquities and Monuments Office,* http://www.amo.gov.hk/en/built2.php

Adaptation: modifying a place to suit the existing use or a proposed use.

1.4 Methodology and Structure of the Report

The HIA report is prepared in accordance with Devb Technical Circular (Works) No.6/2009 and the Guidelines for built heritage Impact Assessment (BHIA) (as of 16 May 2008) (hereinafter referred to as the "*Guidelines*"). According to the Circular, all public works projects involving historic built heritages and sites are required to undergo Heritage Impact Assessment (HIA). The HIA shall contain:-

- Baseline Study;
- Methodology;
- Impact Assessment;
- Mitigation Measures; and
- Conservation Proposal and/or Conservation Management Plan (only for projects involving large scale conversion works/alteration works/addition works/demolition works within historic buildings/sites in the "heritage sites" list).

The Heritage Impact Assessment (HIA) report composes of two parts, Part A is the Baseline Study. Part B is the Impact Assessment Study. It is prepared based on the Conservation Guidelines drawn by Antiquities and Monuments Office in the Resource Kit for the LHTWC under the Revitalization Scheme, the Guidance Note to HIA Submission for the Revitalization Scheme, Technical Circular (Works) No. 06/2009 of Development Bureau, preliminary site inspections and desktop research.

International charters and standards are followed in this study report:-

- James Semple Kerr, *The Conservation Plan: A guide to the Preparation of Conservation Plans for Places of European Cultural Significance,* Australian ICOMOS, 2013;
- *Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance,* Australia ICOMOS Incorporated, 2013;
- Neville Agnew and Martha Demas edited*, Principles for the Conservation of Heritage Sites in China,* ICOMOS China, 2015.

PART A : BASELINE STUDY

2.0 UNDERSTANDING THE SITE

2.1 Location and Area of the Study

The area of Kwu Tung is located at the urban fringe of Sheung Shui in Northern part of the New Territories, which divided into two parts by the Fanling Highway. The Ki Lun Shan (麒麟山) and Tai Shek Mo (大石磨) sit on its southern and northern side respectively.

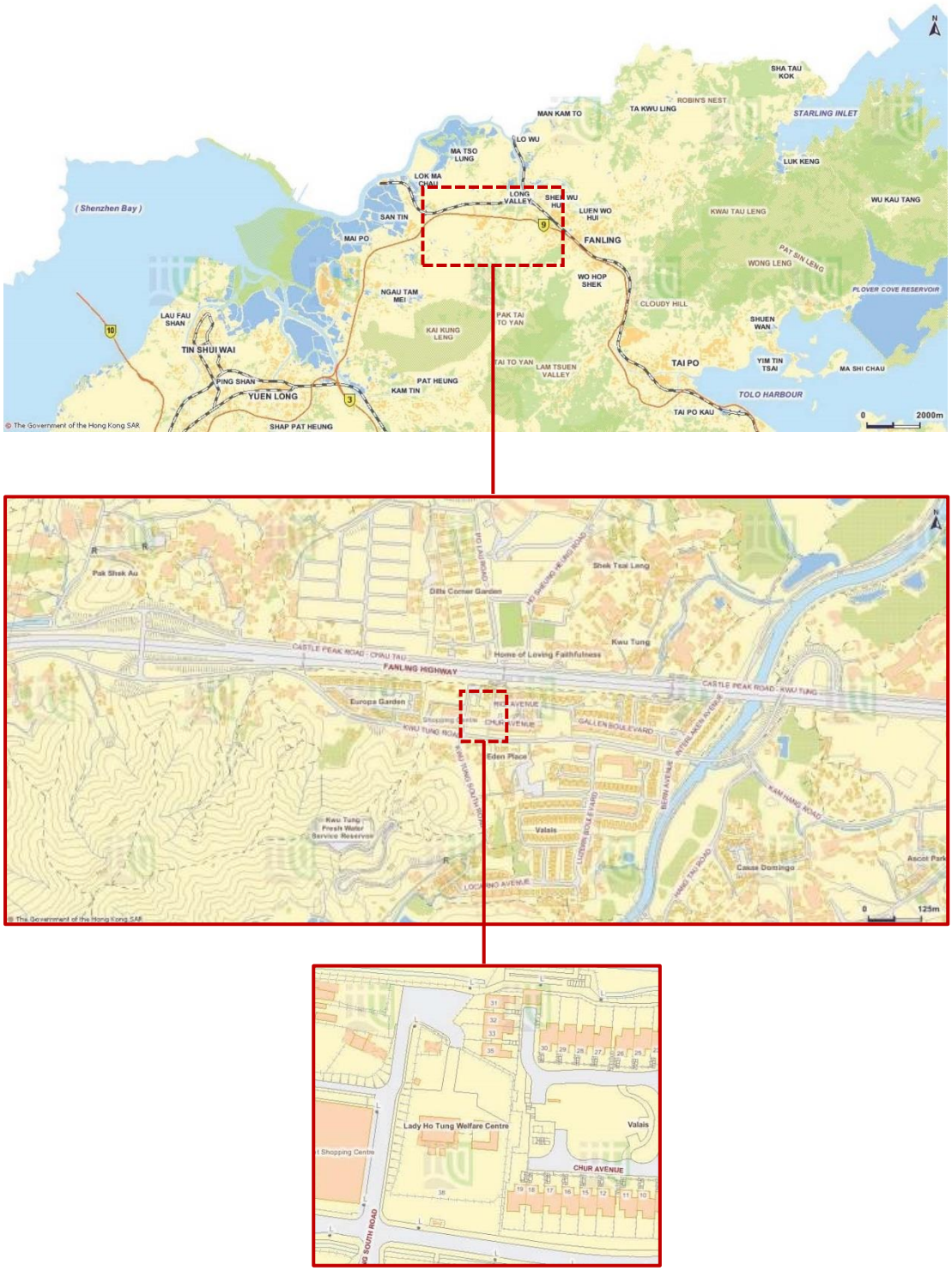

Fig 1. Location Map (Source: Lands Department from the website of The GeoInfo Map: http://www2.map.gov.hk/) Edited by Hannah LIU

The Study Area is the Lady Ho Tung Welfare Centre, No.38 Kwu Tung Road, Sheung Shui, New Territories.

The following map shows the grading boundry of the building.

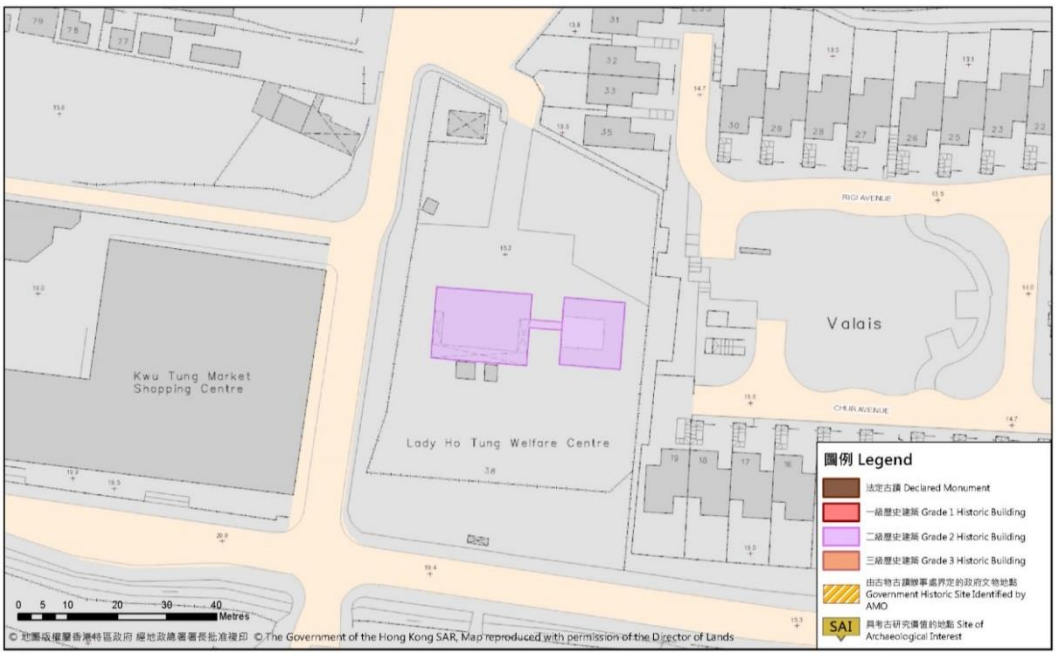

Fig 2. Grading Boundary Plan. (Source: The Geographic Information System on Hong Kong Heritage, 2012)

The LHTWC is a building complex situated in Kwu Tung (古洞), which was constructed with the donations from Ho Tung Family. It provided medical services for residents in the nearby areas over 70 years. Although the renovation works only take place in the site of the LHTWC, the heritage impact assessment will also cover the surrounding places including Kam Tsin Tsuen (金錢村), Kwu Tung and Ho Sheung Heung (河上鄉) that it once served.

2.2 Setting and Context

The subject site of the assessment is located in the Kwu Tung area near Sheung Shui, at the junction of Kwu Tung Road and Kwu Tung South Road. It is bordered on the east by Valais, a low-rise residential development. Kwu Tung Market is on the opposite side of Kwu Tung South Road. The surroundings are villages, low-rise residential developments and rural areas.

The LHTWC situates here consist of the Main Block and the Bungalow. The two parts are linked by a covered corridor and surrounded by trees and grass lawn.

2.3 Current Status

The LHTWC has been left vacant since 2005.

2.4 Limitations

Desktop research was undertaken in the preparation of this Heritage Impact Assessment Report. The extensive use of previous reports, publications, maps and archival documents was accepted as an efficient way of producing a document with updated information. The sources of these references are presented in the Bibliography.

The identification of impact is based on the Architect's preliminary design proposal. This may be subject to change due to design refinement.

3.0 HISTORY AND DEVELOPMENT

3.1 Historic Place

3.1.1 Overview of New Territories

Before the year of Peking Convention signed by Britain in 1898, the name 'New Territories' did not exist on the territory of China. It existed as a part of Chinese administrative region in Southern China, which was successively placed under the governance of the counties of Panyu (番禺縣), Poklo (博羅縣), Bao'an (寶安縣), Dongguan (東莞縣) and finally Xin'an (新安縣) in Ming Dynasty (明朝). Official record of Hong Kong as part of Chinese empire could be dated back to 2,200 years ago, during the Qing Dynasty and since then human activity increased in the area. People did not settle in large numbers until the 12th Century during Song Dynasty (宋朝) (960-1279AD). In the Song Dynasty due to wars and famines, many immigrants moved from north and had acquired lands and built villages on the vast tracts of land which later known as the 'New Territories'. It was occupied by two groups of peoples. The larger group comprises the Cantonese speakers, usually called 'Punti'. Some of the Punti lineages can trace nearly a thousand years residence in the area, while perhaps the majorities were established before the start of Qing Dynasty. The other group, the 'Hakkas', who moved into the New Territories after coastal evacuation in 1669, occupied a large number of less fertile land in high geographical position.

The New Territories comprises an estimated 376 square miles of hill and plain situated on the mainland of China and a number of offshore islands. It is sufficient to say that in 1898 it was primarily an agricultural district consisting of a few broad valleys and many pockets of farm land among the hills or at their foot with a few market towns here and there.

There were Five Great Clans - the Tangs (鄧氏), the Haus (侯氏), the Pangs (彭氏), the Lius (廖氏) and the Mans (文氏) as the dominant settler families in the New Territories. The Five Great Clans represented the earliest major settlement here and occupied the majority of first-class land in the area mainly for double-cropped paddy rice farming. The possession of good quality land was the only ways perhaps in which a lineage could accumulate wealth and rise to power. The Five Great Clans possessed large quantity of high quality lands and showed their influential wealth and power over the New Territories in the old days. In 1899, the five families were united to oppose the arrival of British when they took control of the New Territories, and became the prominent figures of indigenous inhabitants in Hong Kong. (Baker, H. D. R. "*The Five Great Clans of the New Territories*", 1966[2])

3.1.2 Overview of Sheung Shui

Sheung Shui, which formerly known as ‘Sheung Yue’ (recorded in the book ‘北區風物志’ published in 1994), due to the Sheung Yue River (or Beas River 雙魚河) situates at the northern side. The history of Sheung Shui was much longer than New Territories.

[2] *Baker, H. D. R., "The Five Great Clans of the New Territories." Journal of the Hong Kong Branch of the Royal Asiatic Society 6: 25 – 48, 1966. The author is a graduate student at the University of London who conducted research in the New Territories in 1963-65.*

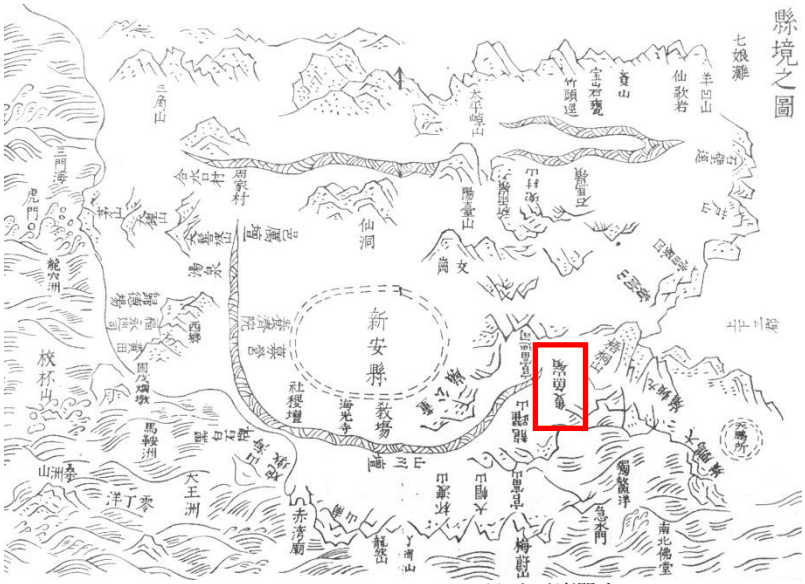

Fig 3. Map of Xin'an in 1688 (Source: 新界簡史,劉潤和, pp.5, 1994)

Following the Tangs, the Haus is the second large clan settled in Hong Kong. The Haus' ancient ancestor had moved from the north to Sheung Shui in the Southern Song Dynasty since 900 years ago. The Haus' genealogy records (侯氏族譜編纂委員會, 1985) that Hau Ng Long (侯五郎) is the common ancestor of the whole Hau clan in the New Territories. He moved down from Panyu in the Song Dynasty. Hau Cheuk Fung (侯卓峰), the 11th generation ancestor of Haus, found Ho Sheung Heung as a place with rich water supply and spacious farmlands. He built the first Haus' village in Ho Sheung Heung in 600 years ago during Ming Dynasty. The lineage later split into three branch-villages at Yin Kong, Kam Tsin and Ping Kong. Another Haus' lineage, Hau Mei Fung (侯味峰), their descendants also settled in Kam Tsin and Ping Kong. The Haus built their traditional farming villages with ancestor halls, temples, study halls, security village walls and watchtowers. The Haus occupied the majority of surrounding fertile plains, cultivated paddy rice, gradually accumulated their wealth and became the most influential clan.

The Liu clan immigrated to Hong Kong later than Haus from Fujian Province during the Yuen Dynasty (元朝) in the 14th century. The clan later built their village, Sheung Shui Wai (上水圍), at the eastern side of Long Valley (塱原) across Shek Sheung River (石上河) where had been previously occupied by Kans (簡族). The acquisition of the Sheung Shui land enabled the Lius to expand as one undivided lineage still living together in one village cluster. Most of the villages were on the upriver area. As a result, the place was gradually renamed as 'Sheung Shui'. Though they came later than Haus, the

Lius rose quickly after coastal evacuation and their power and wealth accumulated, became the major competitor for resources of Haus in the area.

When J.H.S. Lockhart[3] toured the whole of the area on a fact-finding mission in 1898 prior to the British assumption of control, he set the population at 100,320 persons. This estimate might have been a fairly accurate one, as it was based on personal observation of all the villages and towns. The figure is only of use if it is first subjected to some pruning, for Lockhart included whole areas which were not in the end leased to British. From the breakdown of the figures which he gives it is possible to calculate that some 16,310 of his total did not come under the British lease when it was finally settled, giving an amended population figure for the New Territories in 1898 of 84,010, as in the below table.[4]

		Lockhart's figs.		Amended figs.	
No.	**Division**	**Villages**	**Population**	**Villages**	**Population**
1	Shat'au (Sha Tau)[5]	4	5,000	-	-
2	Sham Chun	26	14,080	15	5,100
3	Shat'au Kok (Sha Tau Kok)	55	8,600	39	6,270
4	Ün-Long (Yuen Long)	59	23,020	59	23,020
5	Sheung Ü (Sheung Shui)	182	20,870	182	20,870
6	Kau Lung (Kowloon)	54	15,030	54	15,030
7	Islands	43	13,720	43	13,720
Total		423	100,320	392	84,010

Table 2. Table of the population in New Territories in 1898

3.2 Understanding of the Site

3.2.1 Origins of Kwu Tung

In the recent days, the word 'Tung' has two meanings. One refers to the village near the river, for example, the Tai Tung (大洞) of Shap Sze Heung (十四鄉), Nam Shan Tung (南山洞) of Sai Kung (西貢), Loi Tung (萊洞) of Fanling (粉嶺), Sha Lo Tung (沙螺洞) and Tung Tze (洞梓)of Tai Po (大埔) and, of course, our site Kwu Tung in Sheung Shui. The other meaning of the

[3] *Sir James Haldane Stewart Lockhart (25 May 1858 – 26 February 1937), was a British colonial official in Hong Kong and China for more than 40 years. He also was a Sinologist who made pioneering translations.*

[4] *A Chinese Lineage Village: Sheung Shui, pp.3-4, Hugh D.R. Baker, Stanford University Press, 1968*

[5] *It is estimated that the population of the new territory including the Sham Chun and Shat'au Kok divisions and allowing 5,000 for that portion of the Shat'au division, which will most probably be included in the new area, amounts in round figures to one hundred thousand (100,000).*

'Tung' is the natural cave in the mountain or the cave by the wave erosion, such as Cheung Po Tsai Cave (張保仔洞) in Cheung Chau (長洲).

Kwu Tung (written Chinese 古洞) literally means 'old cave' in the Cantonese language. 'Tung' (洞 or 峒) also indicates that it was the habitat of ancient native Cantonese people.[6] These inhabitants were later replaced by Punti, Hakka, and a small number of Teochew people, and the newcomers became the indigenous inhabitants of Hong Kong.

As early as in the Song Dynasty, the 'Tung' was recorded in the book of 'Gui Hai Yu Heng Zhi' 《桂海虞衡志》:

「…因其疆域，參唐制，分析其種落，大者為州，小者為縣，又小者為洞。」

The book 'Xin An Xian Zhi'《新安縣志》recorded the name of '古洞村', which regards as the earliest record of Kwu Tung.

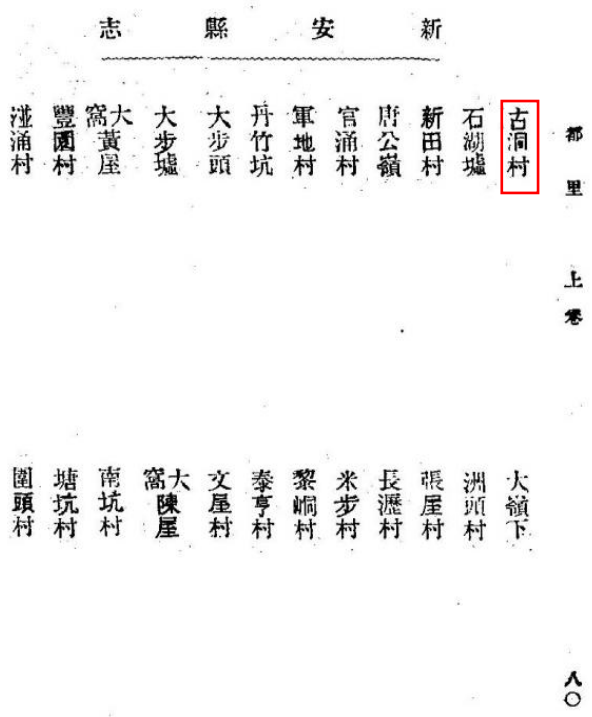

Fig 4. A page of《新安縣志》'Xin An Xian Zhi' shows the original Chinese name of Kwu Tung Village (古洞村). (Source: Page 80, Volume II of《新安縣志》'Xin An Xian Zhi' published in 1819) Edited by Hannah Liu

[6] *Maurice Freedman, A Report on Social Research in the New Territories of Hong Kong, 1963, Pp. 208*

Based on the Lockhart's Report 1898[7], the early British also reported on the New Territories speak of *tung*, 'cave', a term which in some contexts may be translated as a valley.[8]

> *「…the Kowloon deputy, like his colleagues, had a lock-up for detaining persons pending trial and there was also one each for the local divisions of the district, or tung 洞 several of which were within the present boundaries of the New Territory.*
>
> *… Together with the headman of the village and the local gentry they formed a local tribunal which dealt summarily with all minor matter in the tung 洞 and heung 鄉 into which the district was divided.[9]」*

However, Maurice Freedman, a professor of social anthropology at the London School of Economics, who did the research on the villages of New Territories in 1963[10], found no information about the groupings going under the names of 'Tung' as described in Lockhart's Report for further study. Thus, some specialists believed that the 'Tung' might be come from the local dialect from the indigent.[11]

The Lockhart's Report 1898 recorded the population of the two ethnicities in Sheung Shui area (see the tables below). It shows that there were 182 villages in the year 1898 with about 20,870 inhabitants, including 60 villages of Punti and 122 villages of Hakka. The report also listed the population and the main ethnicity of each village in Sheung Shui. Compared with the adjacent villages, Kwu Tung had much fewer populations than Kam Tsin and Ho Sheung Heung with inadequate development.

No.	Division	Ethnicities	Villages	Population	Total Population in each Division
1	Sheung Ü (Sheung Shui)	Punti	60	10,210	20,870
		Hakka	122	10,660	
Total			182		

Table 3. Table of the population of different ethnicities in Sheung Shui in 1898

[7] *Report by Mr. Stewart Lockhart on the Extension of the Colony of Hong Kong, 8 Oct 1898*

[8] *The Pattern of Life in the New Territories in 1898, Journal of the Royal Asiatic Society Hong Kong Branch of the Royal Asiatic Society, Vol. 2 (1962), J.W. Hayes*

[9] *The Councils of the 'Tung' may not have existed in the remoter and more sparsely populated areas. On Lamma (南丫島) for instance the village elders appear to have administered summary justice individually and not in unison.*

[10] *Maurice Freedman, A Report on Social Research in the New Territories of Hong Kong, 1963*

[11] *歷史的新界,吳倫霓霞, the essay was published in 變遷中的新界, edited by 鄭宇碩, pp.18-19,1983*

No.	Name of the Village	Ethnicities	Population
1	Ku Tung (Kwu Tung)	Punti	50
2	Kam Chin (Kam Tsin)	Punti	240
3	Ho Shan Heung (Ho Sheung Heung)	Punti	250
Total			540

Table 4. Table of the population of Kwu Tung, Kam Tsin and Ho Sheung Heung in 1898

As a result, the area of Kwu Tung became a special geotechnical location in Sheung Shui. The surrounding lands of Kwu Tung were occupied by each clan depended on their social power. The occupation leaded to the spatial segregation of Kwu Tung by adjacent recognized indigenous villages, including Kam Tsin Tsuen, Ho Sheung Heung, Hang Tau Village (坑頭村) and Fung Kong Village (鳳崗村), etc. Kwu Tung became a rarely known large-scale non-indigenous village.

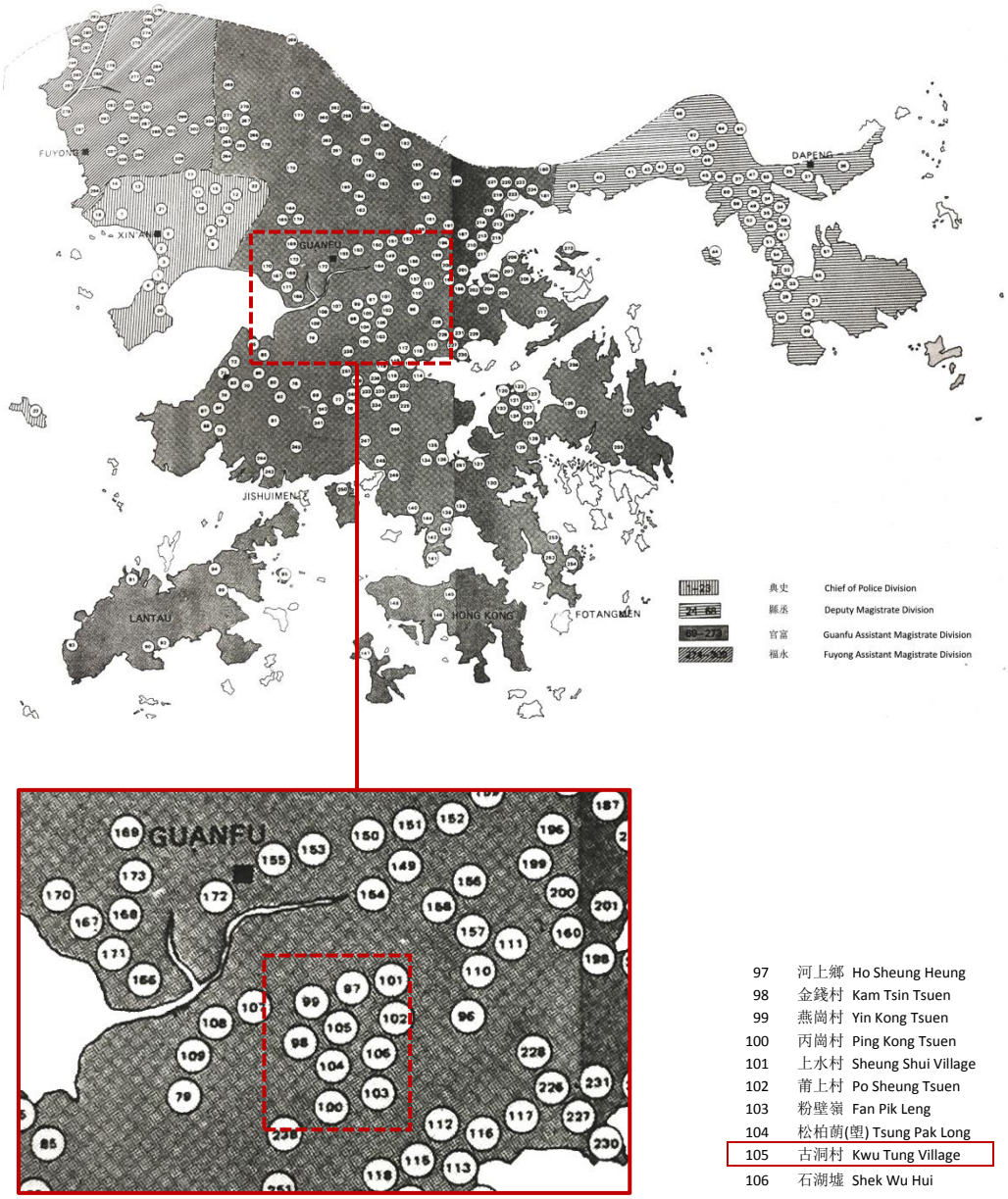

Fig 5. The map of Hong Kong in 1819. (Source:新界簡史, Joint Publishing (H.K.) Co. Ltd., 劉

潤和, published in 1999.) Edited by Hannah Liu

3.2.2 Landscape of Kwu Tung

Located at the urban fringe of Sheung Shui in Northern part of the New Territories, the land of Kwu Tung is relatively plain compared to the rest of hilly Hong Kong with the sediment of Sheung Yue River and creeks nearby. It divided into two parts by the Fanling Highway, which known as Kwu Tung North and Kwu Tung South. Kwu Tung situated between two mountains, the Ki Lun Shan on the southern side and Tai Shek Mo on the northern side respectively.

Within the area of Ki Lun Shan in Kwu Tung, there is a small reservoir for agricultural use. A historical and cultural cycle track network is also via here with linkages to the major activity nodes in the surrounding, such as Kam Tin Pat Heung (錦田八鄉), Long Valley, Ho Sheung Heung and other historical place.

It represents a typical example of indigenous settlement in the New Territories, for centuries cultivated by tenant farming communities, and is facing number of difficulties in long-term sustainability.

3.2.3 Early Indigenous Settlement of Kwu Tung

Before the Second War World, there was no larger-scale settlement in the area of Kwu Tung, due to the low level of economic and cultural activities of the society.

Kwu Tung was traditionally belongs to different indigenous settlements. Therefore the development history of Kwu Tung is closely associated with the indigenous settlement culture and their history.

It recorded in the book '*Journal of the Hong Kong Branch of the Royal Asiatic Society*[12]' that the main families in Kwu Tung area included the Haus and the Lius among the Five Great Clans, as well as some minor clans, e.g. the Leis (李氏).

[12] *Journal of the Hong Kong Branch of the Royal Asiatic Society, published by Royal Asiatic Society Of Great Britain And Ireland. Hong Kong Branch, Vol. 16 (1976)*

19.	Nga Tsin Wai (p. 123) 衙前圍	Ng 吳
20.	Sheung Shui (p. 206) 上水	Liu 廖
21.	Liu Pok (p. 205) 料壆	Fung 馮
22.	Nga Tsin Wai (p. 123) 衙前圍 [N.B. this is another copy of the last ⅓rd of No. 19.]	Ng 吳
23.	Ho Sheung Heung (p. 205) 河上鄉	Hau 侯
24.	Chuk Yuen (p. 123) 竹園	Lam 林
25.	Ha Tsuen (p. 164) 厦村	Tang 鄧
26.	Kam Tin (p. 172) 錦田	Tang 鄧
27.	Lung Yeuk Tau (p. 209) 龍躍頭	Tang 鄧
75.	Ha Wo Hang (p. 216) 下禾坑	Lei 李
75.*	[Duplicate]	
76.	Kwu Tung (p. 205) 古洞 moved from Sham Chun area.	Lei 李
77.	Sha Lo Tung Lo Wei (p. 198) 沙螺洞老圍	Lei 李
78.	Lin O (Map ref. 070854)	Lei 李
79.	Ha Tsuen (p. 164) 厦竹	Tang 鄧
80.	Kat Hing Wai (p. 172) 吉慶圍	Tang 鄧
81.	Kat O Au Pui Tong (p. 221) 吉澳四背塘	Lam 林
82.	Sheung Tsuen (p. 171) 上村	Tse 謝
83.	Nai Wai (p. 162) 泥圍	To 陶

Fig 6. Preliminary List of the Baker Collection in New Territories Genealogies in the British Library (Source: Journal of the Hong Kong Branch of the Royal Asiatic Society, Vol. 16 (1976), pp. 297-301, H.G.H. Nelson)

The immigrants were mainly from Shenzhen(深圳), Dongguan (東莞), Huizhou (惠州), Chaozhou (潮州) and Hailufeng (海陸豐). Conflicts among clans were frequent in the past for competing resources such as lands and water.

3.2.4 Built Heritage in the Context

The LHTWC as well as other historic buildings / structures in the surroundings are identified and recorded by the AMO as graded historic buildings. A table and site map below shows the allocation and the graded year of the graded historic buildings in the area.

Fig 7. Location of the Built Heritage around the LHTWC (Source: Google Map, 2016) Edited by Hannah Liu

No.	Historic Building	Grading	Grading Year
1	Lady Ho Tung Welfare Centre 何東夫人醫局	Grade 2	2009
2	Manor House 將軍府	Grade 3	2010
3	Yan Wah Lo 仁華盧	Grade 3	2011
4	Yeung Yuen 楊園	Grade 3	2010
5	Enchi Lodge 恩慈之家	Grade 2	2010
6	Earth God Shrine of Kam Tsin 金錢村土地神壇	Grade 2	2010
7	Hau Mei Fung Ancestral Hall 味峰侯公祠	Grade 1	2010
8	Hau Chung Fuk Tong Communal Hall 侯宗福堂神廳	Grade 2	2009
9	Sin Wai Nunnery 仙慧庵	Grade 3	2010
10	Hung Shing Temple and Pai Fung Temple 洪聖古廟和排峰古廟	Grade 3	2010

Table 5. Table of the built heritage around the LHTWC

3.3 Sir Robert Ho Tung and Lady Ho Tung

3.3.1 Introduction of Sir Robert Ho Tung and Lady Ho Tung

Sir Robert Ho Tung 何東爵士(1862-1956) was an influential Hong Kong businessman and philanthropist in British Hong Kong. He also known as “the grand old man of Hong Kong” and believed to be the richest man in Hong Kong at his age of 35. He was knighted in 1915 and 1955.

Margaret Mak Sau Ying 麥秀英 (1865-1944), who also known as Lady Ho Tung, was born on 18th May 1865. In 1881 she was married to Sir Robert Ho Tung, who remained childless. Since that, Margaret agreed to offer “equal wife" status (an innovative marriage arrangement which was unheard of in the past) to her maternal cousin, Lady Clara Cheung Lin-kok 張蓮覺 aka 張靜容 (1875-1938), which finally gave birth to three sons and seven daughters to Ho Tung.

Sir Robert Ho Tung and Mak Sau Ying became Christians late in life and make a great contribution to the society. Both of them interred at the Hong Kong Cemetery.

Fig 8. Ho Tung family. Sir Rebert Ho Tung was standing in the middle and his two wives Lady Clara Cheaung Lin-kok (left) and Lady Margaret Mak Sau Ying (right) were sitting in the front. Exact year of photo taken is not known. (Source: http://hk.apple.nextmedia.com/news/art/20150508/19140126, Apple Daily)

3.3.2 Brief Contribution of Lady Ho Tung

Traditionally woman was confined to the family. Lady Ho Tung not only took the roles as wife and mother in taking care of her husband and children, but also made great contribution to the local society through promoting farming and sericulture.

In the early of 20th Century, a number of socialites gathered together and spent their holiday at the area of Kwu Tung. Sir Robert Ho Tung and Lady Ho Tung, who were known for their many benefactions, also acquired a lot of the land here. He donated the land and grant for the development of agriculture, medical treatment and education in Kwu Tung.

Fig 9. The structures/area related to Ho Tung Family in Kwu Tung area. (Source: Town Planning Board,2016, Edited by Hannah Liu)

No.	The Structures/area named after Ho Tung / Lady Ho Tung	Original Use	Current Use
1	Lady Ho Tung Welfare Centre	Welfare Centre	Vacant Proposed Eco-learn Institute
2	Tung Ying Hok Pok	Educational Farm	Demolished and redeveloped to Valais (Residence)
3	Ho Tung Bridge	Bridge	Bridge
4	Kam Tsin Village Ho Tung School	School	School

Table 6. Table of the structures / area related to Ho Tung Family in Kwu Tung Area

<u>Lady Ho Tung Welfare Centre</u>

In early days, it was lack of medical facility in New Territories. Lady Ho Tung donated her golden wedding gift from Ho Tung, an amount of $100,000, to

the government for construction of a welfare centre in Kwu Tung area, which was called Ho Tung Dispensary.[13] It was named after Lady Ho Tung, and later known as the Lady Ho Tung Welfare Centre (LHTWC). The establishment of the LHTWC not only benefited the residents in the surrounding, but also provided the medical treatment for the sick Police Force who stationed in New Territories.

The two ceramic photographs of late Lady Ho Tung and Sir Robert Ho Tung were fixed on the two sides of entrance to the Treatment Room of Lady Ho Tung Welfare Centre in 1957.[14]

Fig 10. The ceramic photograph of Sir Robert Ho Tung and Lady Ho Tung in Lady Ho Tung Welfare Centre. (Photo taken by Betty Tay, 2016)

With suffering the effects of the war, Lady Ho Tung suffered a relapse and died on the 7th February 1944. She and Ho Tung became Christians late in life and both of them were interred at the Hong Kong Cemetery.

Lady Ho Tung spent all her life to boost the agriculture and medical services in the New Territories. She also left generous heritage to the social welfare organizations even after her death. She devoted herself in the charity and became a great woman with a world-wide reputation. According to her will witnessed by Sir Kwan Cho-yiu 關祖堯[15], there were nine organizations as the beneficiaries from Lady Ho Tung. On top of ranking was the LHTWC, which obtained $5,000 for future development.[16]

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[13] *Sir Robert Ho Tung Looks Back 50 Years, Hong Kong Daily Press, 3rd Dec 1931.*

[14] *Ho Tung Dispensary - Additions, Alterations and Repairs. Hong Kong Record Office, HKRS156-1-1683, Memo of Medical Services dated 22nd Jan 1957.*

[15] *Sir Kwan Cho-yiu, CBE, JP (Chinese: 關祖堯; 10 July 1907 - 7 December 1971) was a prominent Hong Kong politician and public figure in the 1960s. He was the Senior Chinese Unofficial Member of the Legislative Council and Executive Council of Hong Kong and the founding chairman of the Council of the Chinese University of Hong Kong.*

[16] *pp. 325, 香港大老-何東, 鄭宏泰, 黃紹倫著, 三聯書店 (香港)有限公司出版, 2007.*

The following nine organizations were benefited from the late Lady Ho Tung:-

Social Welfare Organizations	Acquisition
Lady Ho Tung Welfare Centre 何東麥夫人醫局	$5,000
Welfare League of Hong Kong 同人會	$3,000
Little Sister of the Poor 九龍安老院	$1,000
Home for the Aged 九龍老人院	$1,000
Bok Oi Hospital 新界元朗博愛醫院	$1,000
Alice Memorial Affiliated Hospital 香港雅麗氏醫院	$500
St. John Ambulance 香港聖約翰救傷隊	$500
The Blind Home 香港盲人院	$500
Hong Kong Women's Guild & Ministering Children's League 香港慈善會	$200

Table 7. Table of the nine organizations benefited from the late Lady Ho Tung

Tung Ying Hok Pok

In the turn of the century (late 19th century to early 20th century), Ho Tung, bought a land in Sheung Shui. Until the Kowloon-Canton Railway was opened to public in 1910, Lady Ho Tung decided to make it as a farm for the family to go for weekends or outings. It was known as the Tung Ying Hok Pok (東英學圃) (also known as Sheung Shui Ho Tung Garden 上水何東花園) where a building complex with some characteristics of Chinese farm buildings. Peanuts, piggery, fish, lychee, rice, fruit trees, sugar cane, tobacco, tea, silkworms had been grown in the farm and experts in growing silkworm from Shunde (順德) County in China had been employed by Lady Ho Tung. In 1924, the farm represented Hong Kong to participate in the British Empire Exhibition in Wembley for presentation of the Chinese sericulture. The farm and its owner Lady Ho Tung gained a wide appreciation as it was successful to promote the development of the agriculture in New Territories by introducing modern farming technology to the local farmers.

As recorded in the Hong Kong Year Book 《香港年鑑》published in February 1949 by Wah Kiu Yat Po 《華僑日報》, the Tung Ying Hok Pok was a famous farming garden in New Territories.

「…新界地大物博，所以有許多廣大的園林，雖然本是私人的，有時也公開給大家玩玩，第一個聞名是大埔的「康樂園」，這裡是李福林將軍的別業，雖然純粹農園色彩，但遊覽的人也很多。第二個聞名的是上水何東爵士的「東英學圃」，

每屆農品展覽會舉行，它都有豐富的出品。第三個「半春園」，在大埔古松山，是「永利威酒莊」的主人黃筱煒先生的別業，半農園、半花園、半寺園、半別墅，調和起來，頗堪流連賞玩。第四個是元朗橫洲（Wang Chau）蔡氏的「娛苑」，這是半別墅半農園的地方，建立已經二十多年了…」

Ho Tung Bridge

Not far from the Tung Ying Hok Pok, there is a bridge named after Ho Tung crosses the Sheung Yue River. Few of the records of its history can be independently traced. However, it said that the Ho Tung Bridge was built in the same period of Tung Ying Hok Pok, which aimed to improve the infrastructure in the surrounding.

Fig 11. The photo of the Ho Tung Bridge taken in 2014. (Source: http://lausoldier.blogspot.hk/2014/01/blog-post.html)

Kam Tsin Village Ho Tung School

The Kam Tsin Village Ho Tung School (金錢村何東學校)was formerly known as *Chongfu* School (宗福學校) in an ancestral hall which established in 1902. Due to the growing number of students, the school had to be relocated for the expansion. Sir Robert Ho Tung made a generous donation to the school and finally completed in 1955. As a token of appreciation, the school renamed as Kam Tsin Village Ho Tung School.

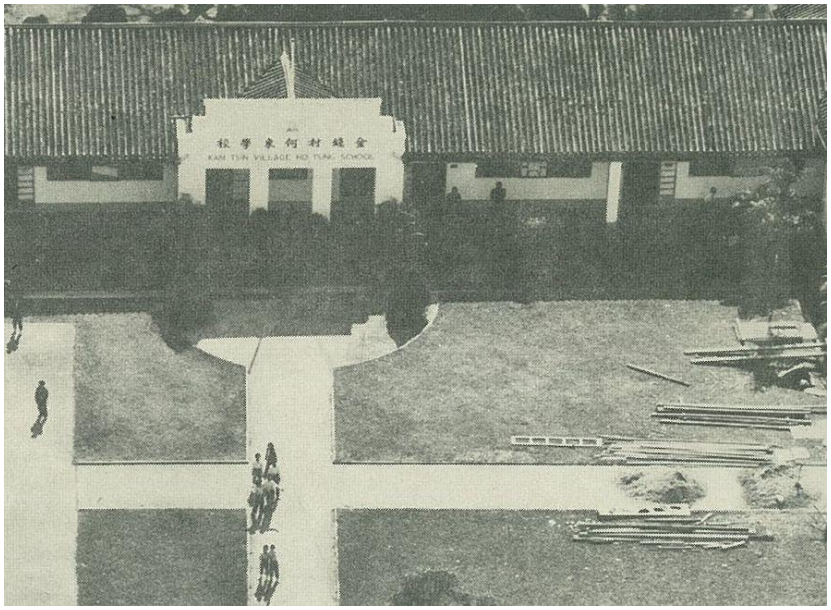


Fig 12. The old photo of Kam Tsin Village Ho Tung School in 1960s. (Source: Kam Tsin Village Ho Tung School)

Ho Shai Lai, the son of Ho Tung, built a Lady Ho Tung Hall (何爵紳夫人麥秀英堂) in the Kam Tsin Village Ho Tung School to memorize her mother in 1974.

Fig 13. The Lady Ho Tung Hall built in 1974 in Kam Tsin Village Ho Tung School. (Source: http://lausoldier.blogspot.hk/2014/01/blog-post.html)

There are some buildings also named after Lady Ho Tung in other place of Hong Kong for memorizing the great woman, such as Lady Ho Tung Hall in the University of Hong Kong, Lady Ho Tung Hall in the Chinese University of Hong Kong and Tung Ying Building in Tsim Sha Tsui.

3.4 Architectural Description

3.4.1 Construction of Lady Ho Tung Welfare Centre

The LHTWC situates in the site comprises of the Main Block and the Bungalow, which all are Chinese Eclectic style with Arts and Crafts features buildings connected by a covered walkway. Both buildings are symmetrically planned and built by bricks mainly with timber roof structure.

The Main Block is a single storey building with main front entrance leads to a waiting hall. The two side doors of waiting hall lead to the colonnaded verandah, which is connected via the covered walkway to the Bungalow. Three doors from the treatment room and one door from the interview room also lead to the colonnaded verandah, integrating the inside and the outside. In addition, watchman room has its individual access.

The Bungalow is a single storey building with separate accesses from the courtyard and the lawn to staff quarters, Garage and ancillary facilities.

Fig 14. The existing site plan of LHTWC. Edited by Hannah Liu.

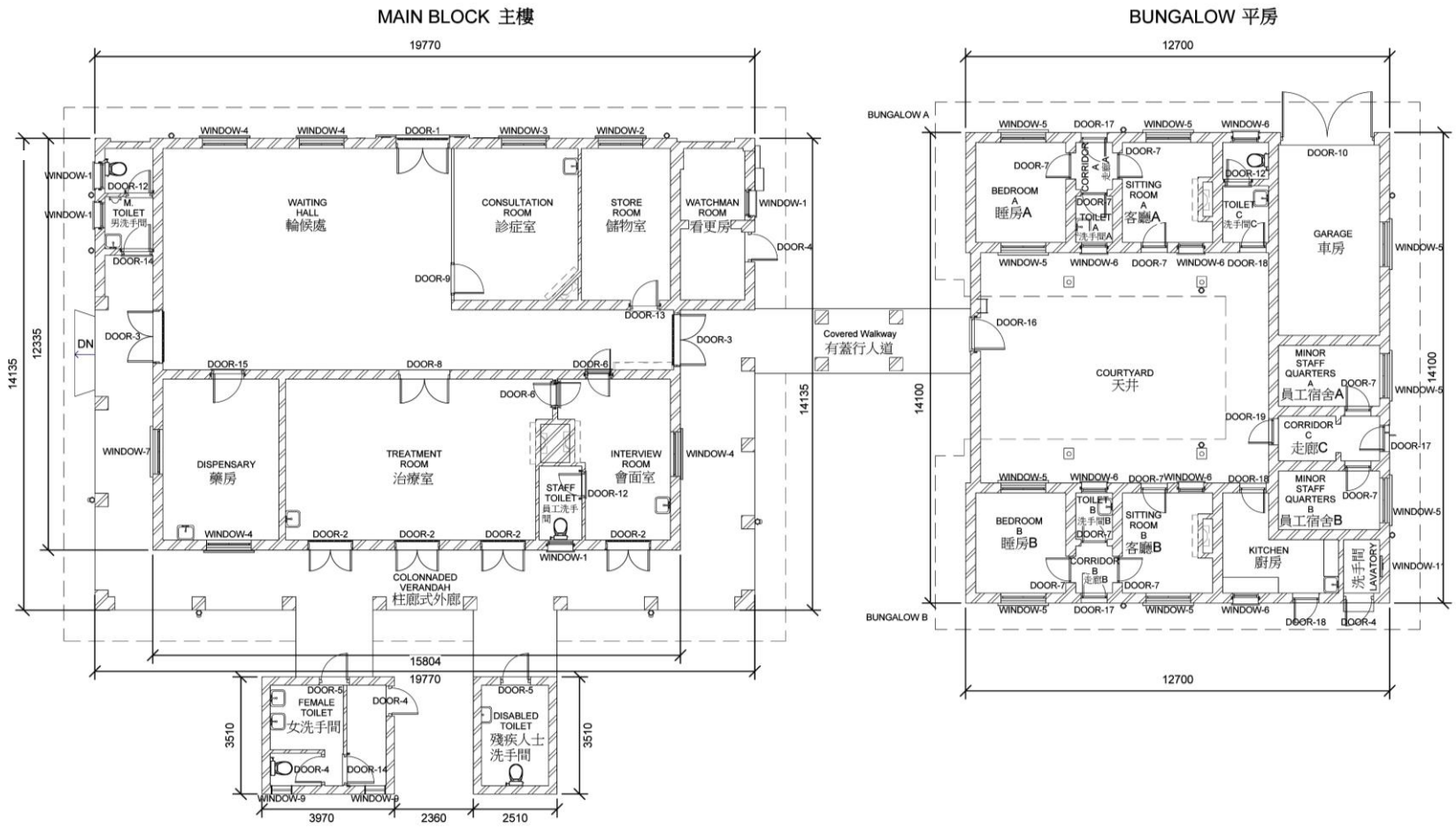


Fig 15. Existing layout plan of the LHTWC (Edited by Hannah Liu)

3.4.2 Architectural Features

The LHTWC is in a mixed architectural style combining Western Arts and Crafts features with local vernacular features such as the Chinese tiled roofs and curling end ridges. Such a style may be called Chinese Eclectic style.. Features include the rendered and painted walls and plinth, "cottage" type doors and windows, red-brick and quarry tile trim to windows and chimney stacks, and prominent rainwater pipes with swan's neck bends connected to the gutter outlets.

3.4.3 Evolution of Lady Ho Tung Welfare Centre

Sir Robert Ho Tung and Lady Ho Tung, who celebrated their Golden Wedding, held a reception at the Peninsula Hotel in the afternoon on 2th Dec 1931. To commemorate the occasion, Sir Robert Ho Tung announced that he would contribute a further $200,000 to charity, half of which was to be applied to the building of a children's welfare centre in the New Territories and the other half to provide education for poor girls in the Eastern District (Wan Chai).[17]

Lady Ho Tung donated the land of Kwu Tung to the government, which not far away from the Tung Ying Hok Pok, as well as the $100,000 grant to construct the children's welfare centre. The *Report on New Territories for the year 1931* also recorded this matter by T. Megarry, the District Officer of North.

> *'The District is exceedingly grateful to Sir Robert Ho Tung and Lady Ho Tung for their recent provision of land and money to establish and endow an up-to-date Children's Hospital and Welfare Centre in the heart of the District near Fanling.'*[18]

The follow-up works were carried out on schedule in the following year. A contract was let to Messrs Blackmore & Blackburn Ltd. for $51,544.66 on 15th Dec 1932. The project was official recorded as 'Lady Ho Tung Infant Welfare Centre', which consisted of a Clinic building containing a Waiting Room, Examination Room, Doctors Room, Dispensary, and Clerks' Office. Adjoining the Clinic was a small block providing quarters for a

[17] *Sir Robert Ho Tung Looks Back 50 Years, Hong Kong Daily Press, 3rd Dec 1931.*
[18] *Report on the New Territories for the Year of 1931, Department of District Office, North, issued on 29th Feb 1932*

Nurse-Midwife, Dresser-Dispenser, Coolie, and motor driver together with a garage for the ambulance.[19]

The construction of the Lady Ho Tung Infant Welfare Centre boosted the medical service condition in the surrounding area, in particular benefit the newborn, since there was few infants clinic in the New Territories.[20]

With the work proceeded satisfactorily during the year, the construction was completed by November 1933. On 14th May 1934, it opened a business to the public and officially named as 'Lady Ho Tung Welfare Centre'. The staffs consisted of one fully-qualified nurse-midwife, one midwife, an amah and a coolie. Lady Ho Tung also supplied a watchman for security. A daily visit was made by one of the District Medical Officers before he started his round with the Travelling Dispensary (流動藥房隊).

The following are the cases dealt with during the year from 1934 to 1939 at the LHTWC[21]:-

Cases	**1934**	**1935**	**1936**	**1937**	**1938**	**1939**
New Cases	1,323	3,067	3599	3,903	4,503	5,200
Old Cases	2,101	4,029	2,488	2,427	4,760	6,352
Maternity Cases	33	139	120	152	196	282
Babies Washed	425	537	-	-	-	-
Vaccinations	-	406	799	1,062	2,371	2,507
Malaria Cases	-	-	340	232	-	918
Anti-cholera Inoculations	-	-	-	-	-	936
Surgical Dressings	-	-	-	-	-	9,400

Table 8. Table of the cases dealt from 1934 to 1939 at the LHTWC

In the second year of the operation, the number of the Midwife in the LHTWC increased to two[22] and it started to provide protective vaccination to the infants. There were about 406 infants took the vaccine in the year. The treatments for the Malarias were offered in 1936 with a number of 340 cases have been received. It should be pointed out that the LHTWC started to provide Anti-cholera inoculations to the public and surgical dressing

[19] *Report of the Director of Public Works for the Year of 1932, pp.45, paragraph 190.*
[20] *In the year of 1931, only some vacant government houses at Kam Tin (錦田) and a temporary station at Fanling were reused for the purpose of children welfare centre.*
[21] *Medical and Sanitary Report for the Year of 1934 to 1939，Hong Kong Journals Online (HKJO)*
[22] *Medical and Sanitary Report for the Year of 1935, pp.104, paragraph 495，Hong Kong Journals Online (HKJO)*

services to the patients in 1939. With such improvement of the healthcare, the residents in the area of Kwu Tung, Kam Tsin Tsuen, Ho Sheung Heung and the other surrounding area benefited a lot from the LHTWC.

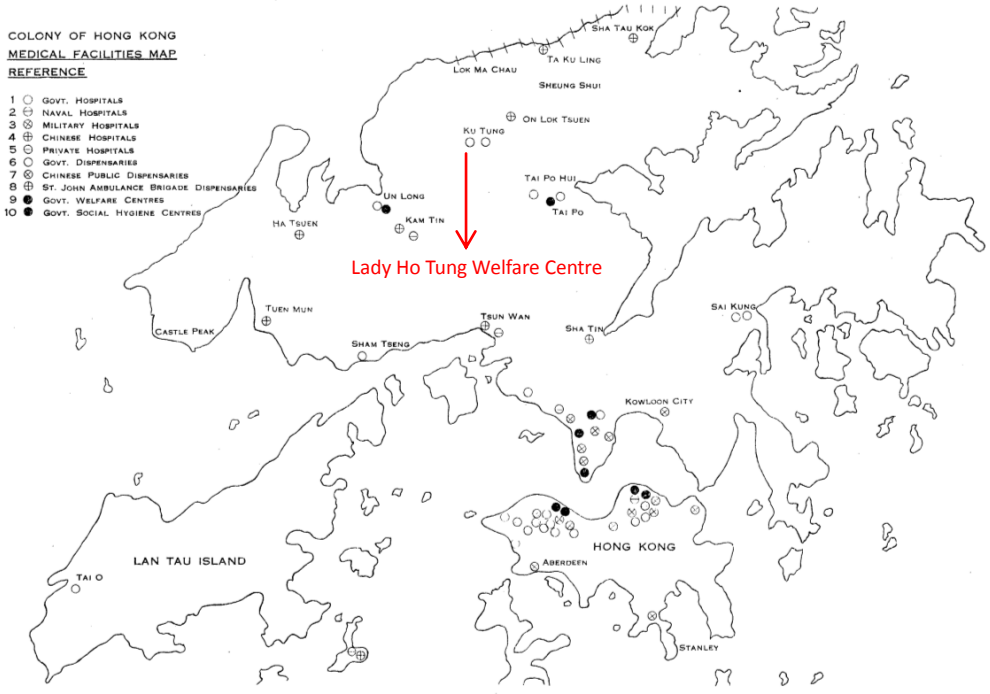


Fig 16. The map of the medical facilities in Hong Kong in the year of 1939. The Lady Ho Tung Welfare Centre in Kwu Tung marked as the government hospital in the map. (Source: Medical and Sanitary Report for the year of 1939，Hong Kong Journals Online (HKJO)) Edited by Hannah Liu

After the World War II, the director of the Medical Services noted that the LHTWC was badly in need of repairs and proposed to carry out maintenance works to the building in 1948. The sum of $5,000 that left by the deceased Lady Ho Tung were devoted towards the cost of the necessary repairs.[23]

Except the above mentioned repair works, the Medical Services also raised to partitioned the entrance hall in order to hospitalize the sick of the members of the Police Force and provide available treatment. As a result of the additional ward, it had been agreed to erect a latrine at the rear side of the Main Block.

As the scope of works had been expanded, the authority is required to expend the sum of approximately $13,000. The sum of $5,000 left by late Lady Ho Tung will be used to help defray the cost of the proposed repairs and alternations.

[23] *Ho Tung Dispensary - Additions, Alterations and Repairs. Hong Kong Record Office, HKRS156-1-1683, Memo of Medical Services dated 12th Janurary 1948.*

Finally, a schedule of repairs and alterations[24] was issued on 3rd April 1948 by the Medical Services, which included:-

Nature of Repairs	Estimates Cost
1. General repairs including whitewashing etc.;	$4,500-$5,000
2. External decoration and some minor repairs;	$4,500
3. Partitioning the entrance hall in order to provide a ward for members of Police Force Stationed in New Territories;	$1,500
4. Erection of an additional latrine required as the result of 3.	$2,000
	Total Estimated Cost=$13,000

Table 9. Table of the repair works issued in 1948

After two months, on the day of 7th June, the government approved the certain alterations to the LHTWC.[25] Despite the actual commencement date cannot be traced due to the limited record, we can also capture the information from the old aerial photos.

[24] *Ho Tung Dispensary - Additions, Alterations and Repairs. Hong Kong Record Office, HKRS156-1-1683, Memo of Medical Services dated 3rd April 1948.*
[25] *Ho Tung Dispensary - Additions, Alterations and Repairs. Hong Kong Record Office, HKRS156-1-1683, Memo of Medical Services dated 7th June 1948.*

a. Additional of External Latrine (Est. 1957 to 1961)

The earliest aerial photo of the LHTWC could be found was taken in 1945, from which we could identify the original layout of the building and the site. A covered corridor connected the Main Block and the Bungalow as at today. However, there were fewer trees and more fields around the building. The setting and context were retained as it was in 1956 and one of the additional latrines was not existed in the aerial photo until 1961. It can be concluded that one of the additional latrine was constructed between 1957 and 1961.

Fig 17. The aerial photo of Lady Ho Tung Welfare Centre in 1945. Source: Survey and Map Office.

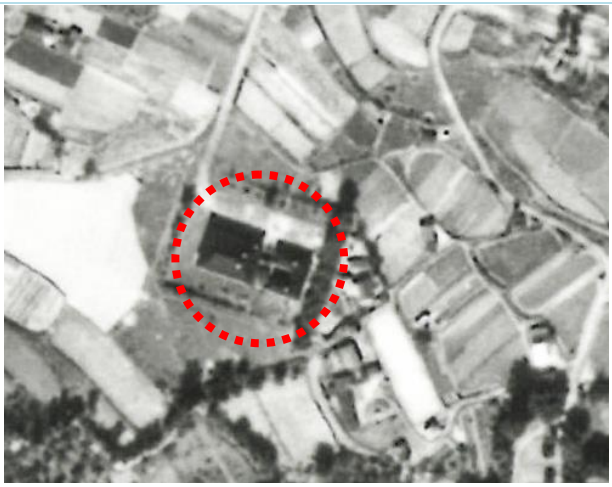


Fig 18. The aerial photo of Lady Ho Tung Welfare Centre in 1956. The setting and context were almost the same as in 1945. Source: Survey and Map Office. Edited by Hannah Liu

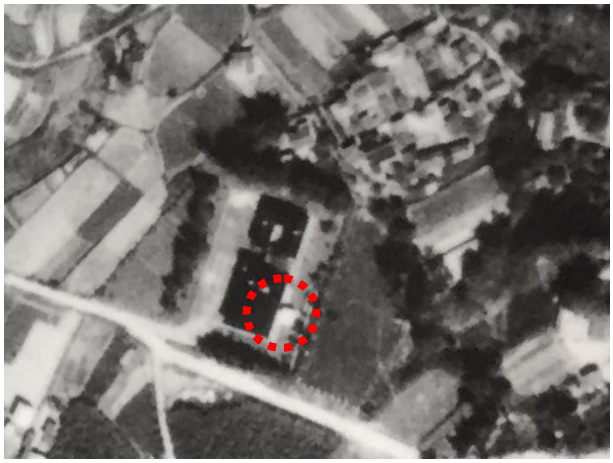


Fig 19. The aerial photo of Lady Ho Tung Welfare Centre in 1961. The additional latrine could be found at the rear side of the Main Block (circled in red). Source: Survey and Map Office. Edited by Hannah Liu

b. Addition of Fiberboard Partition Wall (Est. 1948)

A 6-foot high wall was added to partition a ward of 22' x 15'6" (approx. 32m^2). The partition (37'6" x 6') was made of fiberboard and included two hardwood doors completed with locks.[26]

Today, the partition wall is still retained *in-situ*.

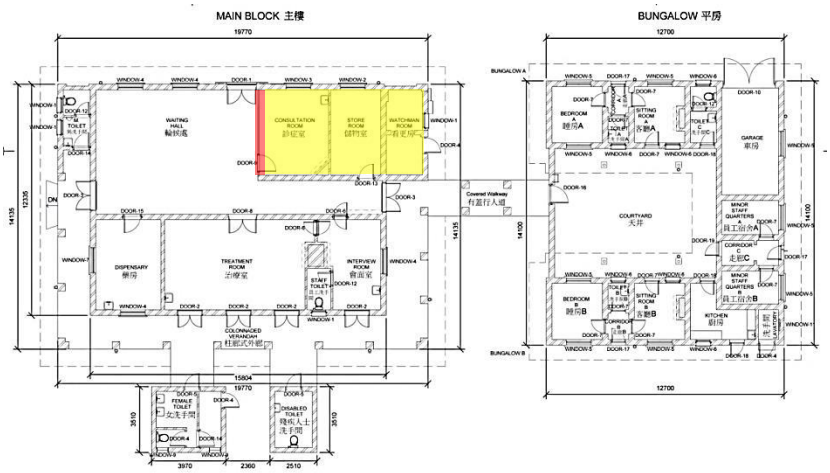


Fig 20. The existing layout plan of Lady Ho Tung Welfare Centre. The part of the later-added fiberboard partition wall is retained in-situ (highlighted in red). According to the old memo, the additional 32m^2 ward should be the area highlighted in yellow. Edited by Hannah Liu

[26] *Ho Tung Dispensary - Additions, Alterations and Repairs. Hong Kong Record Office, HKRS156-1-1683, Memo of Medical Services dated 16th March 1948.*

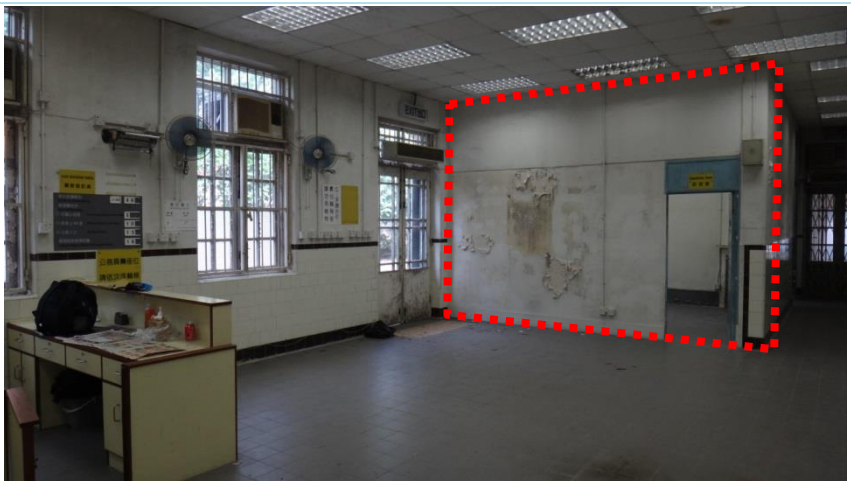


Fig 21. The existing photo of Lady Ho Tung Welfare Centre in 2016. The part of the later-added fiberboard partition wall is retained in-situ (highlighted in red). Edited by Hannah Liu

From 1934 to 1973, the LHTWC was mainly served as for maternity and infant centre, and also a sanatorium for Indian soldiers. After 1973, the LHTWC became a welfare centre to provide medical services for residents in the nearby villages.

上水古洞人口增
醫局服務漸縮減
鄉事會呈當局請恢復各醫療

（特訊）人口繁密之上水區屬古洞村，政府原在該處設有何東醫局，除每日有醫生派駐應診服務外，並設有產房接生及母嬰健康檢查等服務，詎料在港府加強醫務衞生工作之際，當局於去年五月起將該醫局產房接生工作停止後，於本年初復將該局母嬰健康檢查服務停止，目前祇留有護士替病患者換藥打針，每星期只有三天（一，三，五）始有一名醫生到局診症，似此種情形，該局之醫療服務無異在「半癱瘓狀態」。當地居民對此，認爲醫務當局對古洞及鄰近村落鄉民實有忽視照顧之嫌，區盼當局儘速恢復派駐醫生駐局診病，尤望加強改善該局一切醫療設備及服務。

上水區鄉事會爲此，於昨分函鄉議局，理民府及當局，將情陳訴，促請儘速將何東醫局一切醫務工作恢復，以利地方鄉民。（木）

Fig 22. Source: Wah Kiu Yat Po 華僑日報, 14th Sept 1974

c. The Unknown Longitudinal Block (Est. 1980s)

When it came to 1980s, a longitudinal block could be found situated beside the additional latrine. Its usage, appearance and volume cannot be traced due to limited record on this structure.

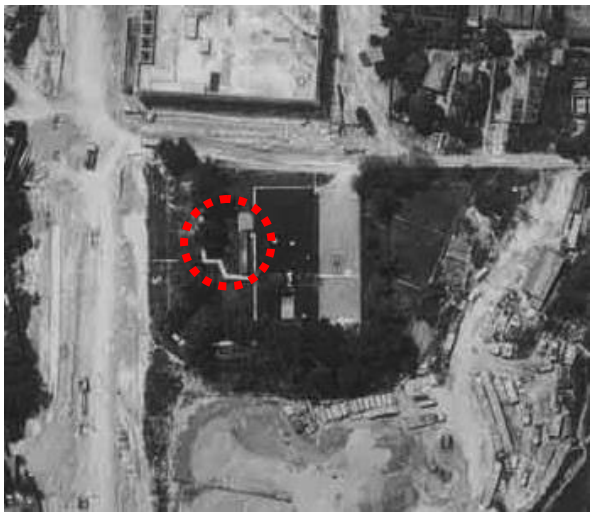


Fig 23. The aerial photo of Lady Ho Tung Welfare Centre in 1985. The longitudinal block was on the rear side of the Main Block next to the latrine (circled in red). Source: Survey and Map Office. Edited by Hannah Liu

d. The Additional Disable Toilet (1995-1996)

In 1980s, mandatory requirements for barrier free access of persons with disabilities were first imposed on various kinds of buildings under Building Ordinance (Cap.123). As a result, between 1995 to 1996, a new disable toilet was built at the place where the unknown longitudinal block situated. The longitudinal block was demolished.

Fig 24. The aerial photo of Lady Ho Tung Welfare Centre in 1995. The longitudinal block was still on the rear side of the Main Block (circled in red). Source: Survey and Map Office. Edited by Hannah Liu

Fig 25. The aerial photo of Lady Ho Tung Welfare Centre in 1996. The longitudinal block was replaced by the new disable toilet. (circled in red). Source: Survey and Map Office. Edited by Hannah Liu

e. The Additional Steel Shelter (2000)

A metal shelter was erected at the entrance of the site by Architectural Services Department in 2000[27], providing a covered place for the patients who were queuing for doctor consultation.

Fig 26. The later-added metal shelter at external waiting area of Lady Ho Tung Welfare Centre today. Photo taken by Betty Tay in 2014

The LHTWC closed business in 2005 due to its poor condition of the roof and took over by the Department of Health (DH) from Hospital Authority after closed. It has been vacant and out of repair for a long time. To conclude, the LHTWC retained its authenticity with some minor alteration during the past 80 years. On the other hand, the landsacpe has been changed a lot, from an open space to a forest land.

[27] *Ho Tung Dispensary –Proposed Steel Shelter for External Area. Hong Kong Record Office, HKRS819-21-1844 and HKRS819-21-1845, 2000.*

3.5 Future Development

Kwu Tung plot was divided into two parts by the Fanling Highway in the new town planning, the Kwu Tung North, which incorporated into the North East New Territories New Development Areas (NENT NDAs)[28]; and the rest part, which includes our site, named Kwu Tung South.

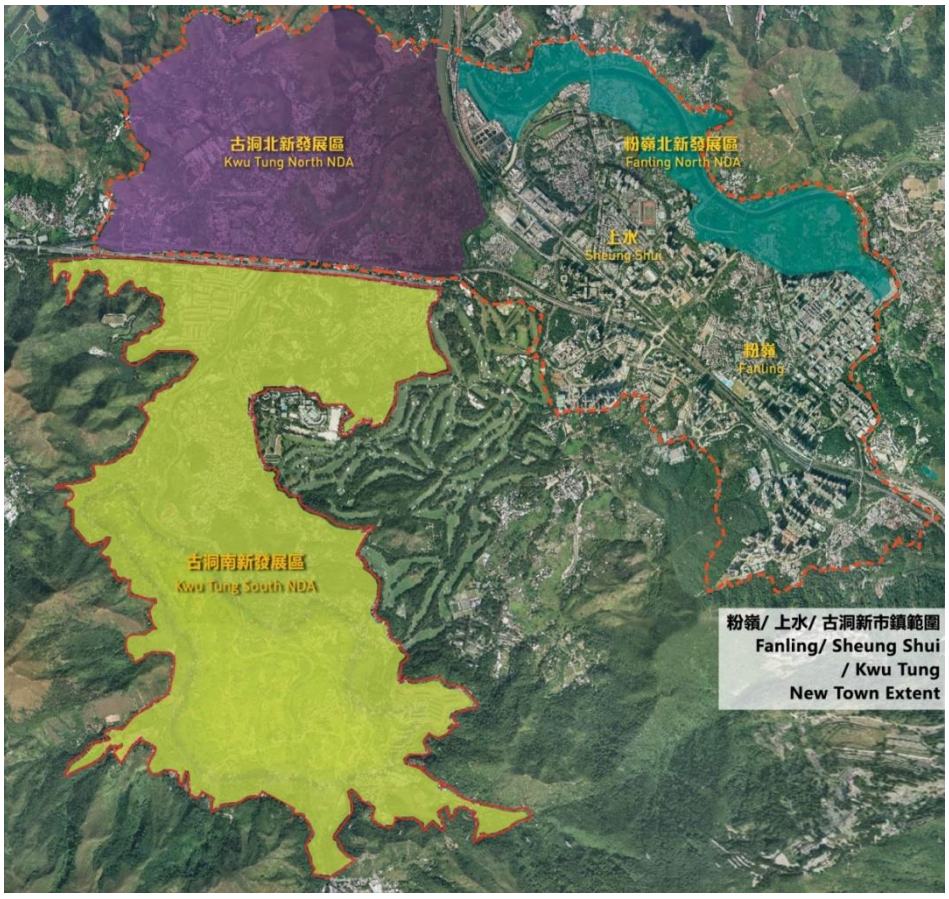


Fig 27. North East New Territories New Territories Areas. (Source: North East New Territories New Development Agreas Planning and Engineering Study, Planning Department, July 2013, Edited by Hannah Liu)

Kwu Tung North

The Lands Department has announced the resumption of a 25,000 square-metre site in Kwu Tong North to construct a residential care complex for the elderly department.

The Kwu Tung North area, covering about 447 hectares, is bounded by Shek Sheung River (石上河) in the east, Castle Peak Road (青山公路) and Fanling Highway in the south, Tit Hang (鐵坑) in the west and Tai Shek Mo in the north.

[28] *The Planning and Development Study on North East New Territories commissioned in 1998 had identified areas in Kwu Tung North (KTN), Fanling North (FLN) and Ping Che/Ta Kwu Ling (PC/TKL) to be suitable for New Development Areas (NDAs). The NENT NDAs Study was substantially completed in end 2013.*

To make way for works and future developments proposed under Kwu Tong North New Development Area, which is an important medium to long-term source of housing and land supply, existing private elderly home facilities at Dills Corner Garden (石仔嶺花園) south of the future Kwu Tung Station and the town centre planned under the development area have to be cleared.

The government has made arrangements for a purpose-built complex of residential care homes for the elderly to be built at a site near Dills Corner Garden to rehouse residents affected by the clearance.

It is unavoidable that some existing farmers would be affected by the NDAs development. Under the prevailing policy, the affected farmers could purchase or rent farmland at suitable locations to continue farming. In the vicinity of NDAs, about 160 hectares of land have been surveyed and found potentially suitable for agricultural rehabilitation including a major cluster (about 34 hectares) zoned "Agriculture" at Kwu Tung South. The government will assist the affected farmers to re-establish their farming practices.

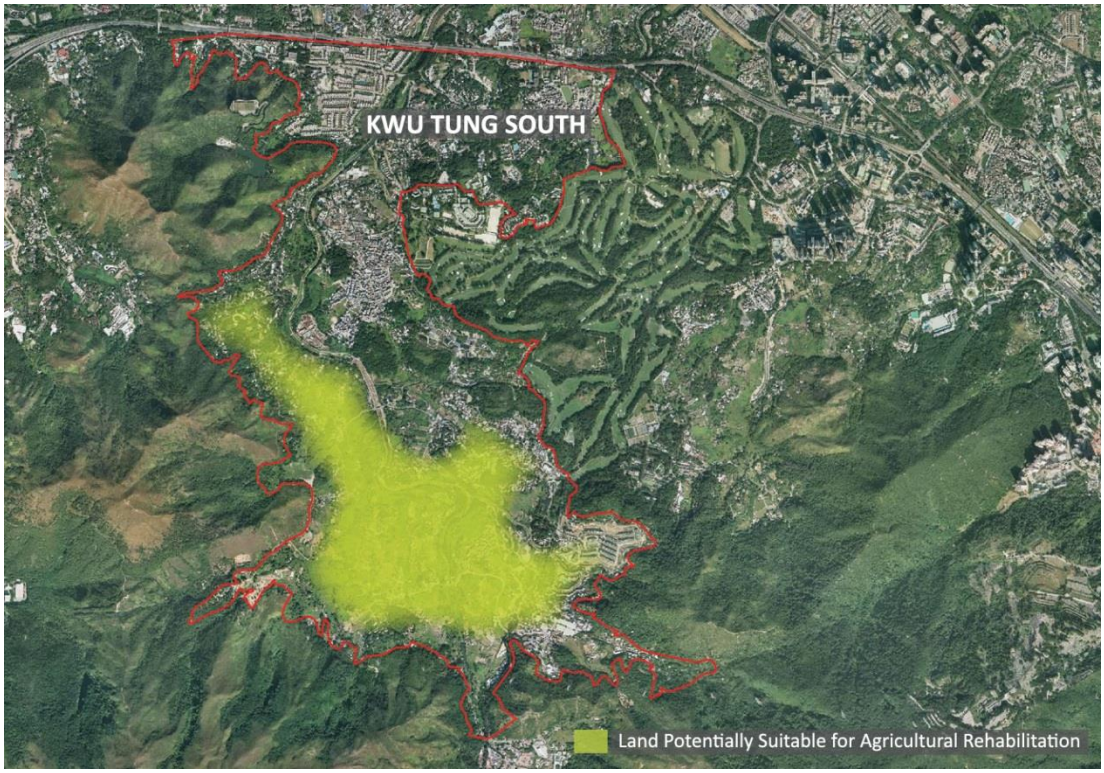


Fig 28. Land potentially suitable for agricultural rehabilitation in Kwu Tung South. (Source: North East New Territories New Development Areas Planning and Engineering Study, Planning Department, July 2013, Edited by Hannah Liu)

Kwu Tung South

The Kwu Tung South area, covering about 525 hectares of land, is bounded by the Hong Kong Golf Club in the east, the Fanling Highway in the north, Ki Lun Shan in the west and Lam Tsuen Country Park (林村郊野公園) in the south. It is mainly rural in character with flat agricultural land intermixed with recognized villages.

The Kwu Tung South Outline Zoning Plan No. S/NE-KTS/14 was last approved by the Chief Executive in Council in January 2014. However, in order to reflect the latest land use proposals in the Kwu Tung South area, the approved Kwu Tung South OZP has been referred to the Town Planning Board for amendment on 26 August 2016.

In the meanwhile, the Planning Department has commissioned the Planning and Engineering Study for Kwu Tung South – Feasibility Study to explore the possibility of converting rural/agricultural land mainly used for industrial purpose or deserted in Kwu Tung South into housing land. The Study is in progress and targeted for completion in 2017.

Transport Network

The Northern Link (北環線) will be a railway line between the Kam Sheung Road Station (錦上路站) on the existing West Rail Line (西鐵線) and a new station at Kwu Tung on the proposed Lok Ma Chau Spur Line (落馬洲支線). The Northern Link will have a route length of about 10.7 km, and provide shuttle service between the two terminal stations (i.e. Kam Sheung Road Station and Kwu Tung Station). Passengers will be able to interchange at the Kam Sheung Road Station with the East West Corridor (東西走廊)[29], and at the Kwu Tung Station with the Lok Ma Chau Spur Line.

The Northern Link will connect the East Rail Line and the West Rail Line, forming a loop in the northern New Territories. This will allow residents in the New Territories to have more route choices without straining the road network.

[29] *The East West Corridor is a Hong Kong MTR railway link that is part of the Sha Tin to Central Link project. It will link up the West Rail Line and Ma On Shan Line through the Shatin-Central Link (Hung Hom to Tai Wai section).*

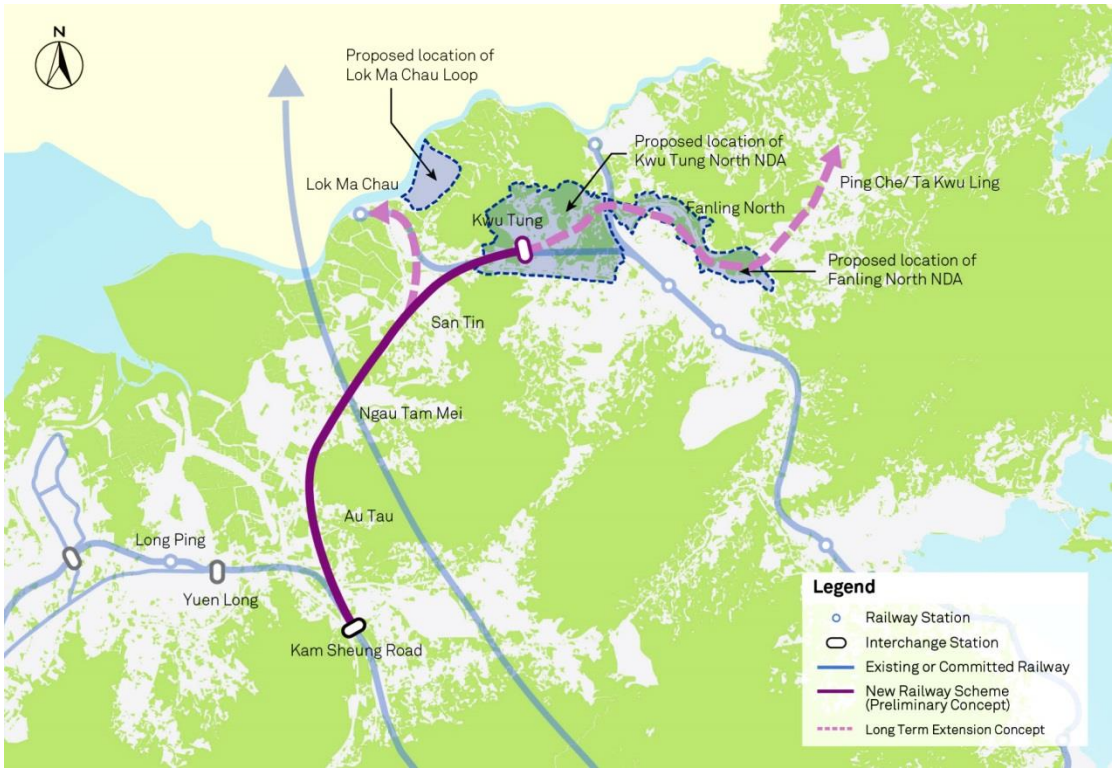


Fig 29. Northern Link and Kwu Tung Station – a major regional line formed by linking the Kam Sheung Road Station on the West Rail Line to a new station at Kwu Tung on the Lok Ma Chau Spur Line. (Source: Transport Development Strategy 2014, Transport and Housing Bureau)

Apart from the advantages to the local residents, the public participation and accessibility to the area will be facilitated once the Kwu Tung Station and the Northern Link have been completed.

4.0 STATEMENT OF SIGNIFICANCE

4.1 Historic significance

Construction work on LHTWC took place from 1932 to 1933. The centre was officially opened in 1934. It was named after Lady Ho Tung, whose original name was Mak Sau-ying, the first wife of Sir Robert Ho Tung (1862-1955). Thus, there is a name board with the inscription “Lady Ho Tung Welfare Centre” over the entrance of the welfare centre.

It was one of the first rural clinics established in the New Territories and served the residents of the entire district. From 1934 to 1973, it served mainly as a maternity centre, and also as a sanatorium for Indian soldiers. In 1948, an entrance hall was partitioned off in order to provide a specialized hospital ward for sick members of the Police Force stationed in the New Territories. It had been a welfare centre providing medical treatment and health education activities until 2005.

4.2 Architectural significance

The LHTWC comprises two single-storey buildings in a mixed architectural style combining Western Arts and Crafts features with local vernacular features such as the Chinese tiled roofs and curling end ridges. Such a style may be called Chinese Eclectic style with. Features include the rendered and painted walls and plinth, “cottage” type doors and windows, red-brick and quarry tile trim to windows and chimney stacks, and prominent rainwater pipes with swan’s neck bends connected to the gutter outlets. Both buildings are symmetrically planned. The Main Block has a colonnaded verandah and the Bungalow annex has an enclosed courtyard.

The buildings in Chinese Eclectic style with Arts and Crafts features are quite rare in Hong Kong and these particular buildings not only have historical value but also built heritage value. They are well maintained and fortunately do not appear to have undergone alterations thereby retaining their authenticity.

4.3 Social significance

The LHTWC has served as a maternity centre, and also as a sanatorium for Indian soldiers and a specialized hospital ward for sick members of the Police Force. It has been a welfare centre providing medical treatment and health education activities under the management of the Shek Wu Hui Jockey Club Clinic. LHTWC provided medical services for residents in the nearby areas, such as Kam Tsin Tsuen, Kwu Tung

and Ho Sheung Heung. A number of elderly patients had used the clinic's services for a long time and some of them were born in LHTWC.

Apart from the LHTWC, the Tung Ying Hok Pok in the vicinity (now demolished), the Ho Tung Bridge at Sheung Yue River and the Kam Tsin Village Ho Tung School and its Lady Ho Tung Hall in Kam Tsin Village are all donated by Ho Tung Family, which reflect Sir Robert Ho Tung family's influence and contribution to the Kwu Tung community.

5.0 CHARACTER DEFINING ELEMENTS (CDEs)

5.1 Selection Criteria

CDEs is used to depict the materials, forms, locations, spatial configurations, uses and cultural associations or meanings that contribute to the heritage value of a historic place, which must be retained to preserve its heritage value[30]. The selection of the CDEs is based on the cultural significance of the Block derived from the previous chapter.

5.2 Level of Significance – Defining of Terms[31]

Five levels of significance have been used to describe the elements individually with descriptions listed below:-

Levels of Significance	Description
High	Elements which make a major contribution to the overall significance of the place. Spaces, elements, or fabric originally of substantial intrinsic quality, and exhibit high degree of intactness and quality, though minor alterations or degradation may be evident
Moderate	Elements which make a moderate contribution to the overall significance of the place. Spaces, elements, or fabric originally of some intrinsic quality, and may have undergone minor alteration or degradation.
Low	Elements which make a minor contribution to the overall significance of the place. Spaces, elements, or fabric originally of some quality, and may have undergone extensive alteration or adaptation to the extent that only isolated remnants survive.
Neutral	Elements which are of little consequence in terms or understanding or appreciating the site and its developments, without being actually intrusive.
Intrusive	Elements which are visually intrusive or which obscure the understanding of significant elements of the site, and may be identified for removal.

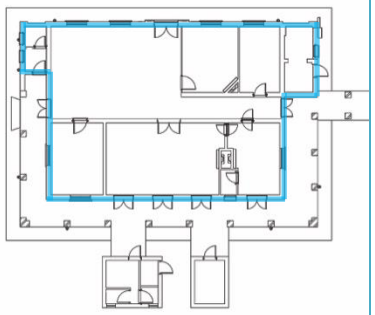
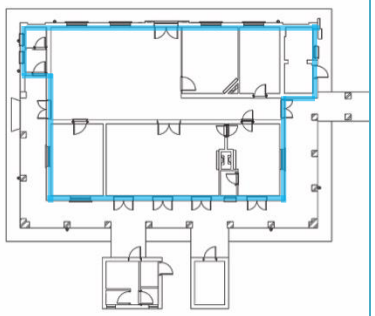
Table 10. Table of the level of significance and its description

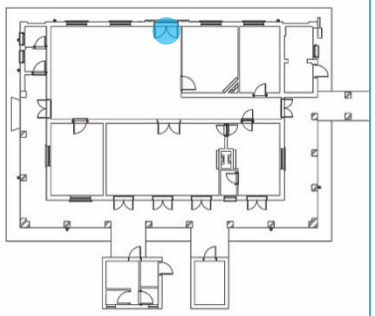
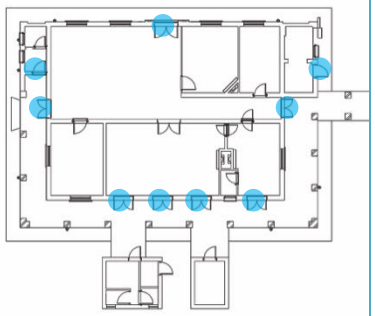
[30] *Definition extracted from Standards and Guidelines for the Conservation Historic Places in Canada, Park Canada, 2010.*

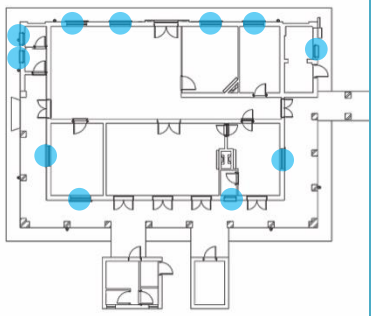
[31] *The definition of terms is developed based on James Semple Kerr, The Conservation Plan: A guide to the Preparation of Conservation Plans for Places of European Cultural Significance, Australian ICOMOS, 2013*

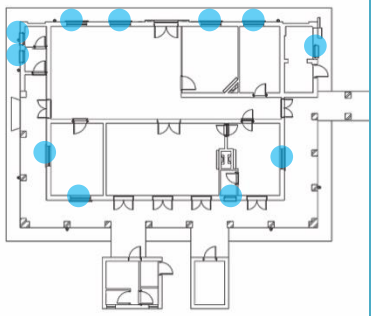
5.3 List of Character Defining Elements

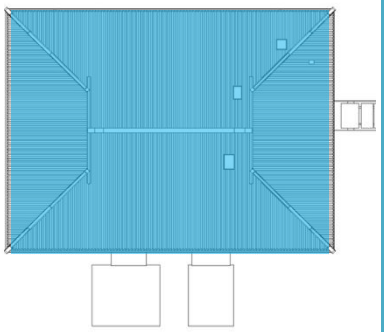
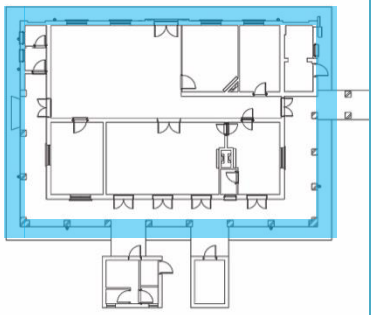
A. Main Block (Exterior)

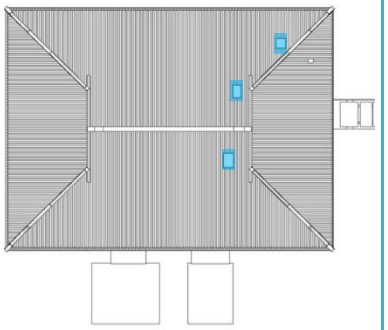
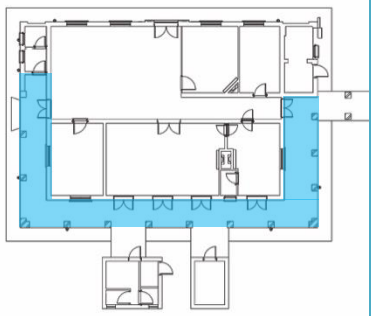
No.	CDE	Level of Significance	Photo	Location
A-01	Building Façade	High		 G/F Plan
A-02	External rendered and painted external walls	Moderate		 G/F Plan

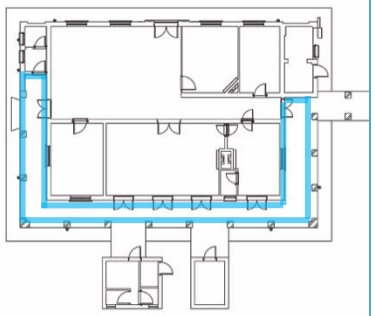
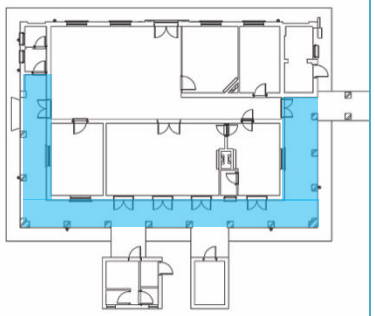
No.	CDE	Level of Significance	Photo	Location
A-03	Stone doorcase and threshold of the main entrance, including the inscriptions ”LADY HO TUNG WELFARE CENTRE” and 「何東麥夫人醫局」on the lintel	High		 G/F Plan
A-04	Main entrance door, external doors to the verandah, including door panels with grid pattern, door frames, fanlight, horizontal pivoted windows, original glazing scheme of obscure and clear glass, and original ironmongeries	High	 	 G/F Plan

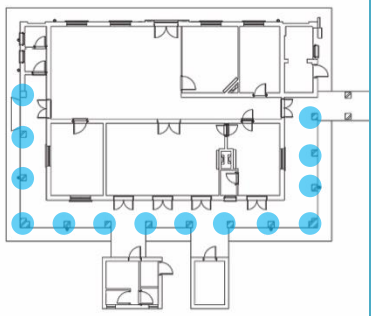
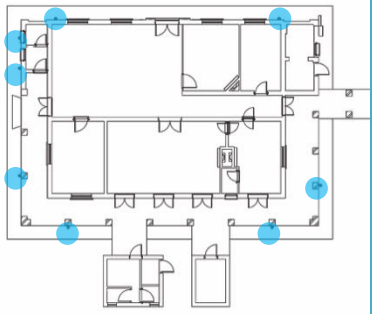
No.	CDE	Level of Significance	Photo	Location
A-05	Timber casement windows and horizontal pivoted windows on top, including original glazing scheme of obscure and clear glass, original ironmongeries and window frames	High	 	 G/F Plan

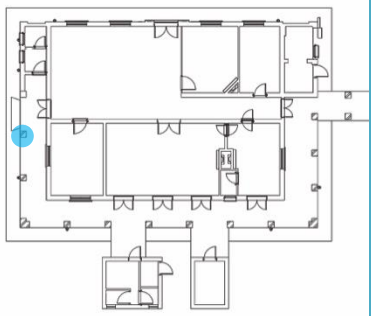
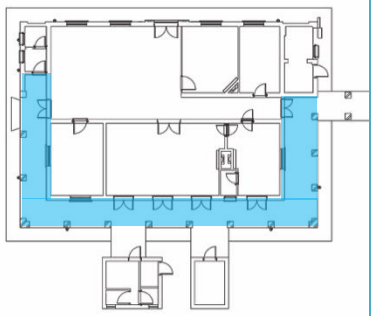
No.	CDE	Level of Significance	Photo	Location
A-06	Brick window head and sill with quarry tiles finish painted in red with white brick lines	High	 	 G/F Plan

No.	CDE	Level of Significance	Photo	Location
A-07	Chinese style roof with hip and gable roof structure, including curled-up ends of roof ridges, circular decorative moulding on pediment and double layered pan and roll tiles	High	 	 Roof Plan
A-08	Over-hanging roof eaves with suspended timber battened ceiling	High		 G/F Plan

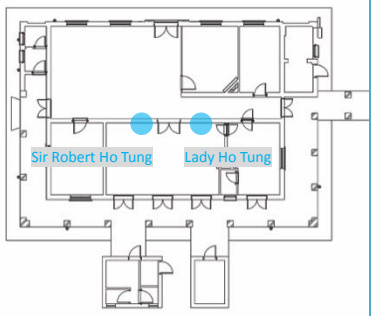
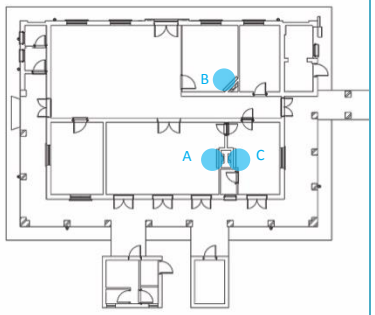
No.	CDE	Level of Significance	Photo	Location
A-09	Chimney stacks with ornamental band painted in red and white brick lines	High		 Roof Plan
A-10	Colonnaded verandah, including square concrete columns and granite edge stones to paving	High	 	 G/F Plan

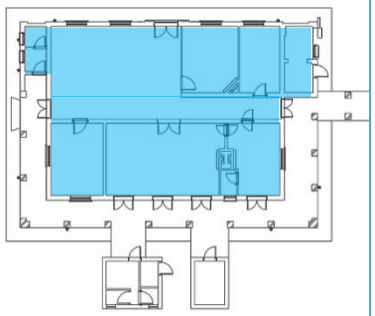
No.	CDE	Level of Significance	Photo	Location
A-11	External moulded cornices at ceilings	High		 G/F Plan
A-12	Timber suspended ceiling along the colonnaded verandah	Moderate		 G/F Plan

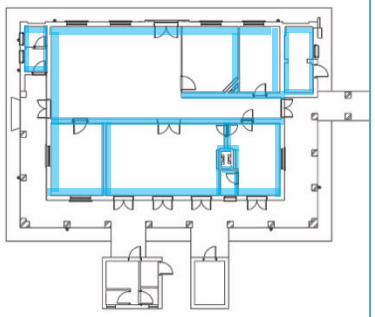
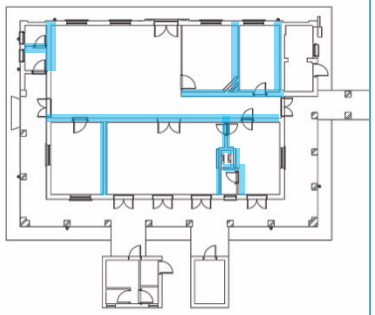
No.	CDE	Level of Significance	Photo	Location
A-13	Cow's horn cleats mounted on the verandah columns	High		 G/F Plan
A-14	Cast iron rainwater pipes and eave gutters at the elevations	High		 G/F Plan

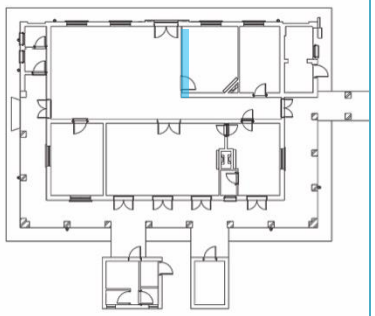
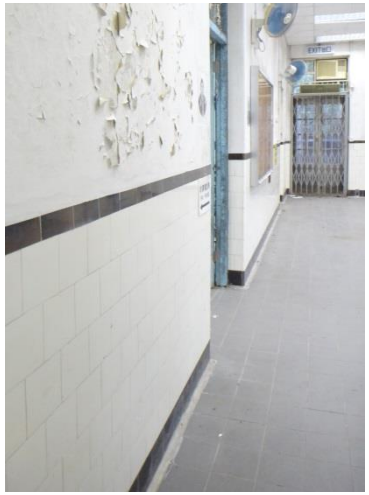
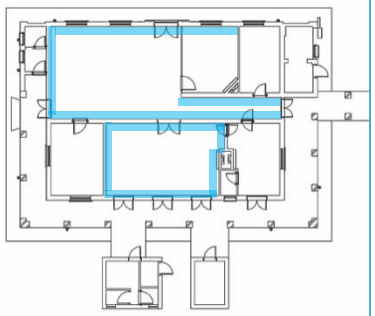
No.	CDE	Level of Significance	Photo	Location
A-15	Original wooden arrow-shape directional signs with the inscriptions “往登記處”, “TO REGISTRATION OFFICE”, “往換藥室” and “TO DRESSING ROOM”	High		 G/F Plan
A-16	Floor tiles at the colonnaded verandah	Low		 G/F Plan

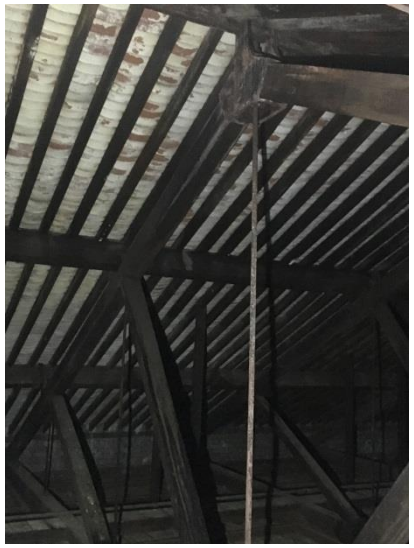
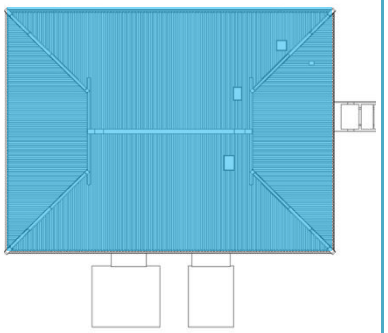
B. Main Block (Interior)

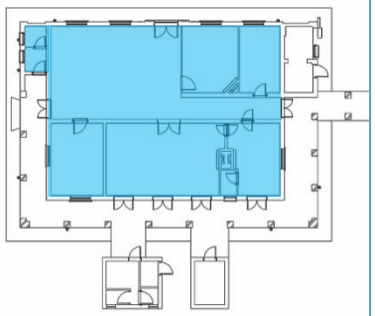
No.	CDE	Level of Significance	Photo	Location
B-01	Ceramic photographs of Sir Robert Ho Tung and Lady Ho Tung on either side of the door to the Treatment Room	High	 	 G/F Plan
B-02	Fireplaces (3 nos.) in the Consultation Room, Treatment Room and Interview Room, including tiling, surrounds, grates, hearths, and mantel shelf	High	 Fireplace A in the Treatment Room	 G/F Plan

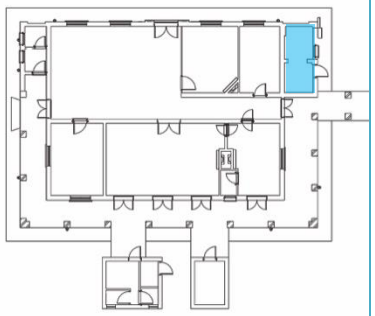
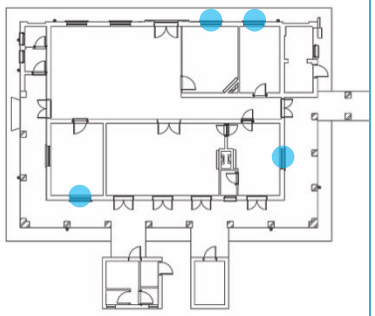
No.	CDE	Level of Significance	Photo	Location
			 Fireplace B in the Consultation Room  Fireplace C in the Interview Room	
B-03	Internal floor finishes	Low		 G/F Plan

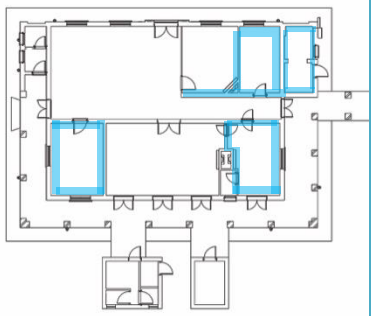
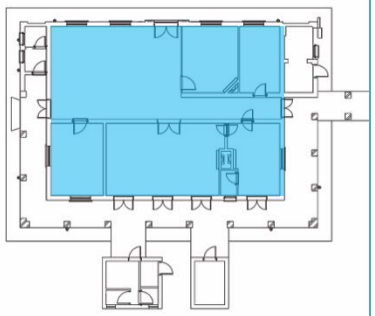
No.	CDE	Level of Significance	Photo	Location
B-04	Internal painted plaster finishes	Low	 	 G/F Plan
B-05	Internal brick walls	Moderate		 G/F Plan

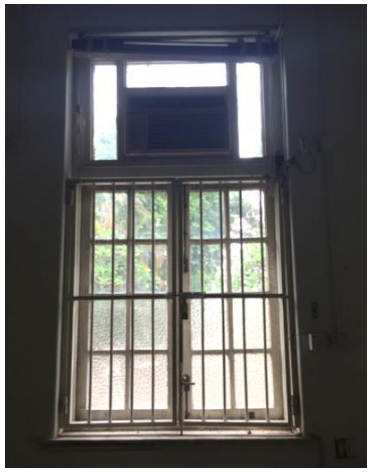
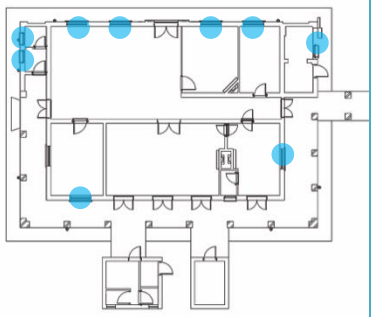
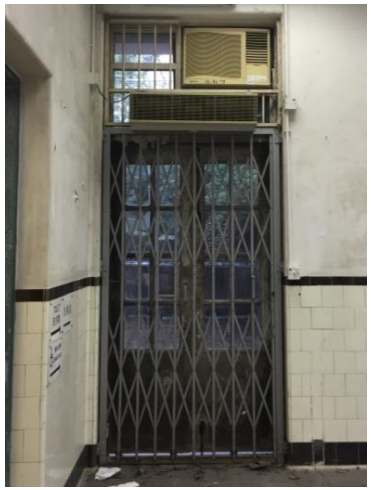
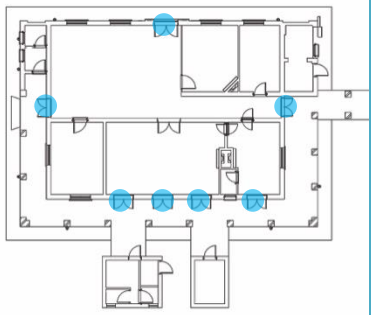
No.	CDE	Level of Significance	Photo	Location
B-06	Fiberboard partition	Low		 G/F Plan
B-07	Original glazed dado wall tiles and window sill tills in the corridor, Waiting Room and Treatment Room	High		 G/F Plan

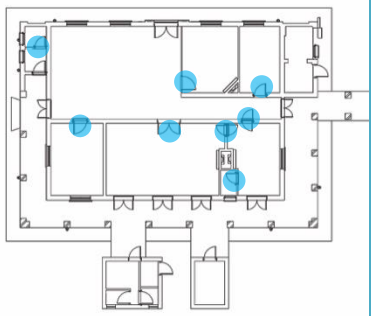
No.	CDE	Level of Significance	Photo	Location
B-08	Timber roof structure including roof trusses, ties and rafters etc.	High	 	 Roof Plan

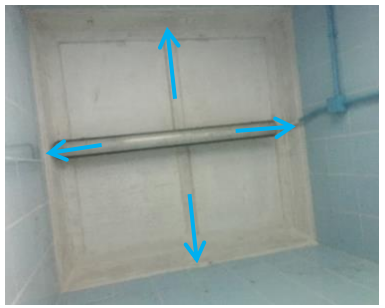
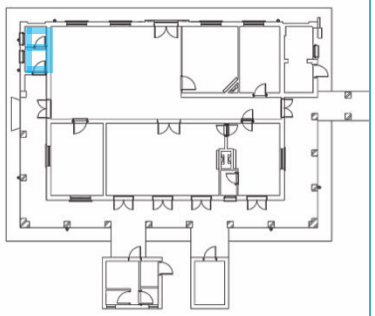
No.	CDE	Level of Significance	Photo	Location
B-09	Timber suspended ceilings in the building	High	 	 G/F Plan

No.	CDE	Level of Significance	Photo	Location
B-10	Timber fence holder, terrazzo floor finishes and the granite threshold in the Watchman Room	High	 	 G/F Plan
B-11	Internal wooden window sills with mouldings	High		 G/F Plan

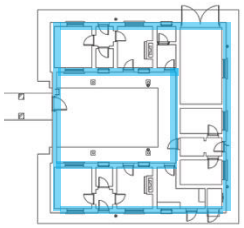
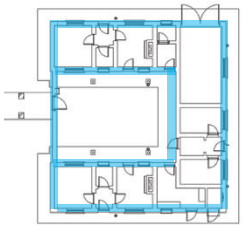
No.	CDE	Level of Significance	Photo	Location
B-12	Original cement skirting	High		 G/F Plan
B-13	Mineral fiber suspended ceilings	Intrusive		 G/F Plan

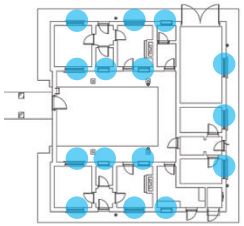
No.	CDE	Level of Significance	Photo	Location
B-14	Burglar bars / metal grilles at windows or fanlights	Intrusive		 G/F Plan
B-15	Bostwick gates	Intrusive		 G/F Plan

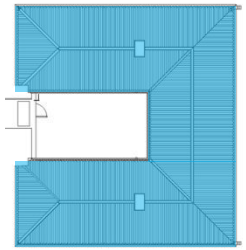
No.	CDE	Level of Significance	Photo	Location
B-16	Internal timber doors (including insects screens and ironmongeries)	Moderate	 	 G/F Plan

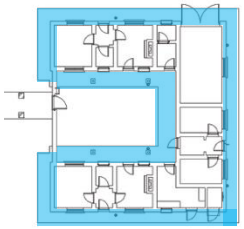
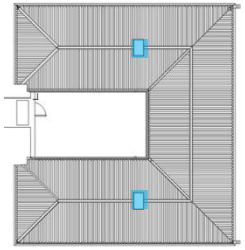
No.	CDE	Level of Significance	Photo	Location
B-17	Internal moulded cornices at ceilings	High	 	 G/F Plan

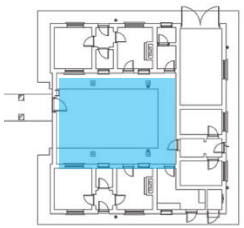
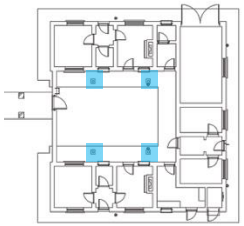
C. Bungalow (Exterior)

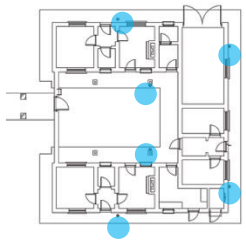
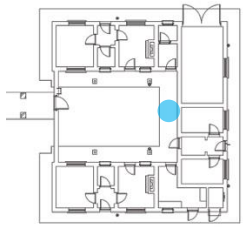
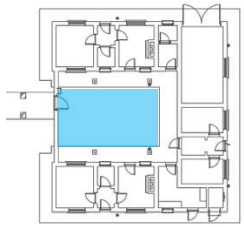
No.	CDE	Level of Significance	Photo	Location
C-01	Building Façade	High		 G/F Plan
C-02	External rendered and painted finishes	Moderate		 G/F Plan

No.	CDE	Level of Significance	Photo	Location
C-03	Timber battened doors to the Garage and all original external timber doors, including door panels with grid pattern, door frames, fanlights, original glazing scheme of obscure and clear glass, granite thresholds and original ironmongeries and timber door bars	High	  	 G/F Plan
C-04	Timber casement windows including original glazing scheme of obscure and clear glass, ironmongeries and window frames	High		 G/F Plan

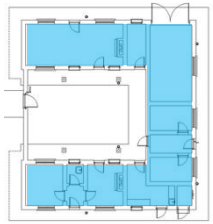
No.	CDE	Level of Significance	Photo	Location
C-05	Brick window sills with quarry tile finish painted in red with white brick lines	High		 G/F Plan
C-06	Chinese pitched roof with double layered pan and roll tiles and rendered ridges	High		 Roof Plan

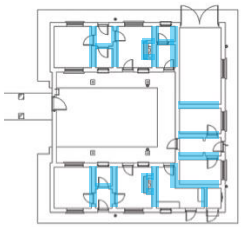
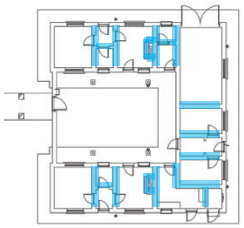
No.	CDE	Level of Significance	Photo	Location
C-07	Over-hanging roof eaves	High		 G/F Plan
C-08	Chimney stacks with ornamental band painted in red and white brick lines	High		 Roof Plan

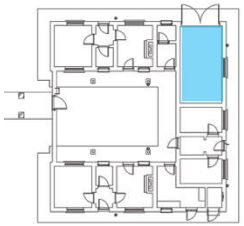
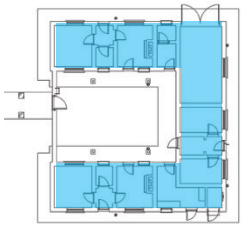
No.	CDE	Level of Significance	Photo	Location
C-09	Open courtyard	High		 G/F Plan
C-10	Cast iron columns with concrete plinths supporting the roof eaves	High		 G/F Plan

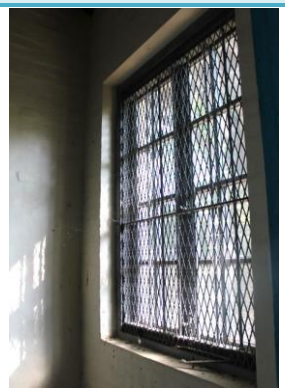
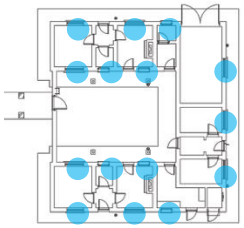
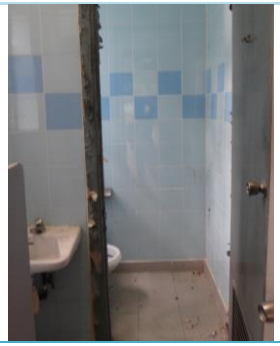
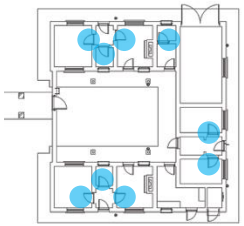
No.	CDE	Level of Significance	Photo	Location
C-11	Cast iron rainwater pipes and eave gutters	High	 	 G/F Plan
C-12	Wall lamp	High		 G/F Plan
C-13	Floor tiles at the open courtyard	Low		 G/F Plan

D. Bungalow (Interior)

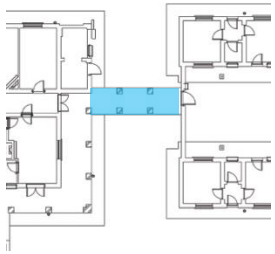
No.	CDE	Level of Significance	Photo	Location
D-01	Fireplaces (2 nos.), including tiling, surrounds, grates, hearths, and mantel shelf	High	 Fireplace D in the Sitting Room A  Fireplace E in the Sitting Room B	 G/F Plan
D-02	Internal floor finishes	Low		 G/F Plan

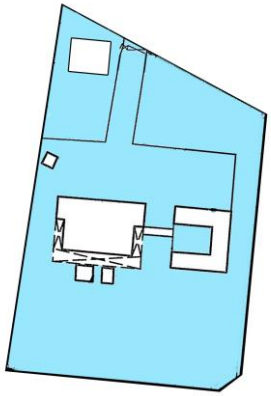
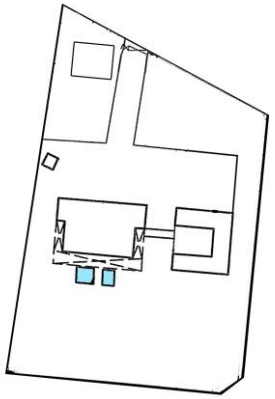
No.	CDE	Level of Significance	Photo	Location
D-03	Internal painted plaster finishes	Low	 	 G/F Plan
D-04	Internal brick walls	Moderate		 G/F Plan

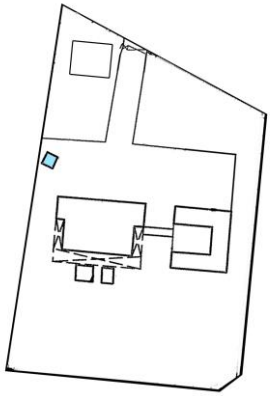
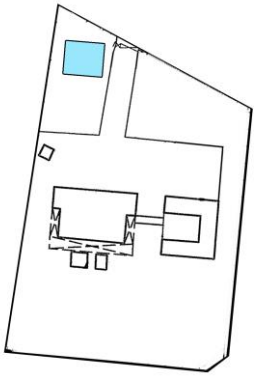
No.	CDE	Level of Significance	Photo	Location
D-05	Internal space of the Garage	High		 G/F Plan
D-06	Timber roof structure including rafters, tie beams, purlins, etc.	High		 G/F Plan

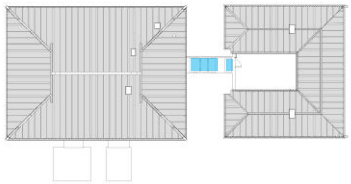
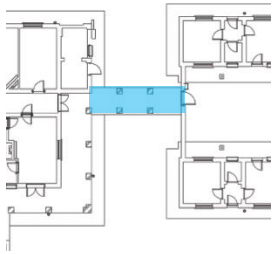
No.	CDE	Level of Significance	Photo	Location
D-07	Burglar bars / metal grilles to windows and fanlight	Intrusive		 G/F Plan
D-08	Internal timber doors	Moderate		 G/F Plan

E. External Area

No.	CDE	Level of Significance	Photo	Location
E-01	Covered walkway including brick square columns and granite edge stones to paving	High	 	 G/F Plan

No.	CDE	Level of Significance	Photo	Location
E-02	Open Space	Moderate		 Site Plan
E-03	Existing toilet blocks	Intrusive		 Site Plan

No.	CDE	Level of Significance	Photo	Location
E-04	Refuse collection chamber	Low		 Site Plan
E-05	Steel shelter	Low		 Site Plan

No.	CDE	Level of Significance	Photo	Location
E-06	Water tank above the covered walkway	Intrusive		 R/F Plan
E-07	Floor tiles at covered walkway	Low		 G/F Plan

6.0 OPPORTUNITIES AND LIMITATIONS

6.1 Project Description

The revitalization proposal is to renovate the LHTWC into "Lady Ho Tung Welfare Centre Eco-Learn Institute", a unique local ecology discovery centre which will provide a series of training programmes and activities with the theme of “Rural Bioblitz Experience” for the school sector and local community so as to enhance public awareness of the importance of biodiversity, ecology preservation as well as sustainable development.

The scope of works includes restoration and renovation of the existing building blocks to incorporate ecology discovery centre, multi-purpose room, heritage interpretation area, customer service centre, covered walkway and back of house facilities, and constructing a new building containing toilets, electrical and mechanical plant rooms. An “Agriculture Microcosm Area” will be set up to grow crops which had previously been grown in the former Tung Ying Hok Pok so as to memorize Lady Ho Tung’s support in agriculture development in the New Territories.

In order to bring out the historical significance of the building and to reflect Sir Robert Ho Tung family‘s influence and contribution in the Kwu Tung community, the project will also display the history of the buildings and Sir Robert Ho Tung family. All photo records and information of the revitalization process will be presented to the public for interpretation.

6.2 Statutory Requirements

6.2.1 Planning and Land Requirements

The site is located on Government land.

According to the Town Planning Board and the latest OZP S/NE-KTS/14 gazetted on 17th January 2014, the site is zoned as “Government, Institution or Community” (“G/IC”) use.

Our proposed uses in Lady Ho Tung Welfare Centre Eco-Learn Institute include briefing and training on biodiversity, ecology and environmental education, farmer market. The uses of ‘Exhibition or Convention Hall’, ‘Field

Study/ Education/ Visitor Centre', 'School' and 'Market' are always permitted ("Column 1" uses) within the "G/IC" zone. Section 16 planning application to the Town Planning Board (TPB) for our proposed uses is therefore not required.

Land resumption and clearance are not required.

6.2.2 Compliance with the Building Ordinance

- Mean of Escape
  Existing Means of Escape (MOE) provisions of the Bungalow do not comply with the current statutory requirements, including substandard width of exit doors. Alteration of some existing door openings deviating from the current MOE requirements is necessary for serving as exit doors.

- Fire Resisting Construction
  Existing fire resisting construction of the timber roof members in both Main Block and Bungalow do not comply with the current statutory requirements. Fire protection coating shall be applied to the timber roof members to compensate the fire safety constrains.

  Due to the existing male toilet in the Main Block will be changed use to meter room, the fire-rated door is needed to replace the existing door to compensate the fire safety constrains.

- Means of Access for Firefighting and Rescue
  The present exit road of the LHTWC is 4500mm width, which could be used as the Emergency Vehicular Access (EVA).

- Barrier Free Access and Facilities
  Existing disabled ramp at the rear of the Main Block to be demolished.

  Inappreciable level difference is found between internal and external spaces. Minor adjustment of external floor level instead of addition of new accessible ramp will be carried out. Design approach shall be incorporated with landscape design.

  Some of the existing timber doors in Bungalow are less than the current BFA

requirements. The door openings of these doors shall be enlarged to comply with the current statutory requirements.

- Provision of Sanitary Fitments
  The present sanitary fitments provision is inadequate for the new use.

  As the existing disabled toilet and female toilet would be demolished and the other toilets in the buildings would be changed use, new toilets, including accessible toilets, shall be provided to comply with the statutory requirements.

- Drainage Installation Requirements
  The existing underground utilities both within and in the vicinity of the site have been checked. Existing drainage in the site is not connected to government sewer. Investigation will be conducted for drainage connection to the Government sewer or connection to existing sewage treatment plant at Kwu Tung Market to suit the future use of the premises at design stage.

6.2.3 Compliance with the Fire Services Requirements

- Fire Services Installation
  The existing fire services installation and equipment are as follows:-

  - Some portable type fire extinguishers are positioned at rooms of Main Block and surrounding covered walkway. No other fire services installation was provided;
  - 4 nos. of water type with capacity of 9 Lit and fire rating of 13A fire extinguishers positioned at different rooms of Main Block and 1 no. at the covered walkway outside Main Block. All of them are expired on 25 Nov 2013.
  - No fire services installation was found in the Bungalow.

  The following major fire services installations and equipment are not provided within the buildings:-

  - Wet fire protection system (i.e. fire hydrant / hose reel and sprinkler system)
  - Manual and automatic fire alarm system\emergency light units and exit

sign

Additional fire service installation for the new use, including sprinkler system, new hose reel system, emergency back-up power supply and etc, shall be installed to meet current requirement, subject to approval and consideration of exemption or modification by the authority.

6.2.4 Compliance with Licensing Requirements

The proposed use of LHTWC falls within the definition of a 'school' under the Education Ordinance (Cap. 279). Thus, obtaining a license from the Permanent Secretary for Education under the Education Bureau (EDB) is required. Further checking and review will be conducted on the proposed uses of the buildings and application to any other necessary license will be made prior to operation of the Centre.

6.2.5 Compliance with Tree Preservation Principles

Old and Valuable Tree (OVT) in the OVT Register maintained by the Leisure and Cultural Services Department (LCSD) is not present within the site. The tree survey has been carried out in Oct 2016 to verify their health conditions that will be affected by the renovation works and within the site area. Two nos. of existing trees in unhealthy condition and the trees obstructed on the construction of new annex block would be felled. New trees shall be planted in the open space as compensation. Upon verification, we shall seek written consent from District Lands Officer or appropriate authority as the existing trees will be interfered.

6.3 User's Requirements

The Sik Sik Yuen Lady Ho Tung Welfare Centre Eco-Learn Institute Limited has proposed to convert the LHTWC to provide the following eco-learn institute faculties:-

6.3.1 Customer service center

1 no. of customer service center in the Main Block for enquiry.

6.3.2 Store room

1 no. of store room in the Main Block and 3 nos. in Bungalow for storage of

cleansing and sanitary, archives and appliance equipment.

6.3.3 Staff room, Office and Pantry

2 nos. of offices in the Bungalow as the general office of the eco-learn institute. 1 no. of pantry and 1 no. of staff room for staffs' rest.

6.3.4 Reception / guard house

1 no. of reception / guard house in the Bungalow for brief introduction and security.

6.3.5 Multi-function room

1 no. of multi-function room in the Main Block will be used to display the story and historical photos of the LHTWC and Sir Robert Ho Tung in normal times, and for other use if required. Standard installations for the power and communications are required.

6.3.6 Time gallery

The U shape colonnaded verandah of the Main Block will be used as a time gallery for exhibition of the background, history of the LHTWC and its associates, the influence and contribution of Sir Robert Ho Tung family, and the key CDEs of the LHTWC. Display panels installations are required.

6.3.7 Ecological display room

3 nos. of ecological display rooms in the Main Block as ecological discovery area by different ways, which including:-

- Audio visual education: a virtual guided tour would be organized in inclement weather. Standard installations for the powers, movable projector, display panel and curved screen are required.
- Ecologist's room: Display of ecologist's equipment as well as the photos, specimen and documents of the special species in Hong Kong. Standard installations for the powers, portable furniture are required.
- Laboratory: 1 no. of laboratory room / show room in the Main Block for organizing simple test-tube experiment and microscopic observation. Standard installations for powers and water supply, addition of a table for placing the microscopes, display panels are required. The floor shall be non-slip design and the existing benches

will be reused.

6.3.8 Exhibition area 1 and 2

2 exhibition areas in the Bungalow will display the key CDEs of the LHTWC and the history, story and photos of the LHTWC respectively. Standard installations for the powers, display panels and light touching electronic display screen are required.

6.3.9 Toilets / disable Toilet

The male toilet, female toilet and disable Toilet with adequate sanitary fittings to comply with the statutory requirements are required in the New Annex Block.

6.3.10 Refuse storage and material recovery chambers (RSMRC)

1 no. of RSMRC in the Bungalow for storage of the refuse and recycling materials. The design to comply with the current statutory requirements.

6.3.11 Meter Room

1 no. of meter room in the Main Block dedicated to electrical equipment.

6.3.12 Ventilation

Windows that allow natural ventilation and VRV air conditioning in all rooms. Air conditioning unit with cooling and heating function is allowed.

6.3.13 Power supply

Power sockets to be provided in all rooms. Stand-alone emergency power generator is not required.

6.3.14 Access facilities

Proper access such as ramp for the disable and goods delivery to the buildings. Existing access road can serve as emergency vehicular access.

6.3.15 Water supply and drainage

Potable water supply and drainage system without backflow or leakage.

6.3.16 Other water tanks, electrical and mechanical plant rooms

Construct a new simple block to house the new water tanks, electrical and mechanical plant rooms for adaptive reuse of the historic buildings.

6.3.17 Outdoor landscape design

Provide an outdoor agriculture microcosm area including Eco-Pond, Paddy Field, Silkworm Breeding Area, Vegetable Field, *Fengshui* Forest, Herb Garden and Agricultural Ecology Trails for public to experience the ecological environment so as to enhance the awareness of ecology preservation and sustainable development.

6.3.18 Well

Provide a well in the outdoor agriculture microcosm area for demonstration of the traditional way of drawing water.

6.4 Condition of Fabrics

6.4.1 Description

- Main Block

The building appeared in the form of beam/wall-column frame building with timber roof as roofing system. The overall dimensions of the building were approximately 19.8m long and 14.3m wide. The floor height was 4.0m with pitch roof height of 3.3m above ground floor ceiling level.

The external perimeter brick walls were 460mm thick which acted as load bearing wall for gravity load as well as cross wall for lateral wind resistance along longitudinal and transverse directions.

The internal cross wall thicknesses were in the ranges from 150 mm thick to 360 mm thick which acted as cross wall in providing horizontal support to external brick walls under lateral wind load along longitudinal and transverse direction.

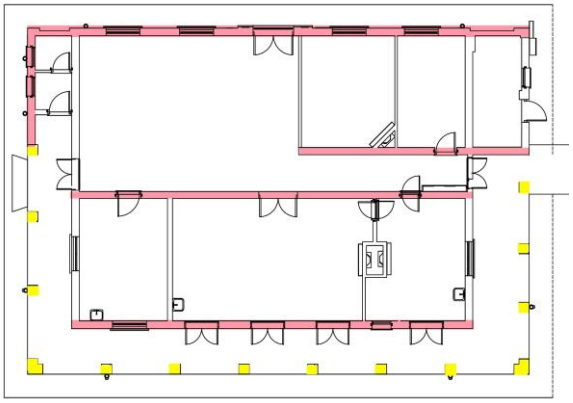


Fig 30. The plan shows the load bearing brick walls and concrete columns of the Main Block. The load bearing brick walls are highlighted in red. The concrete columns are highlighted in yellow. Edited by Hannah Liu.

There were 14 concrete vertical columns of 400m x 400mm with 4.0m height. It was measured and found that the timber trusses did not sit on these concrete columns. It was observed that the timber trusses are supported by horizontal concrete beams spanning between these concrete columns at south and sited on the brick walls above these beams. However, the timber trusses are supported by the load bearing brick walls directly at north.

Fig 31. The timber trusses are sited on the brick wall above the horizontal concrete beams at south.

Fig 32. The horizontal concrete beam spanning between the concrete columns

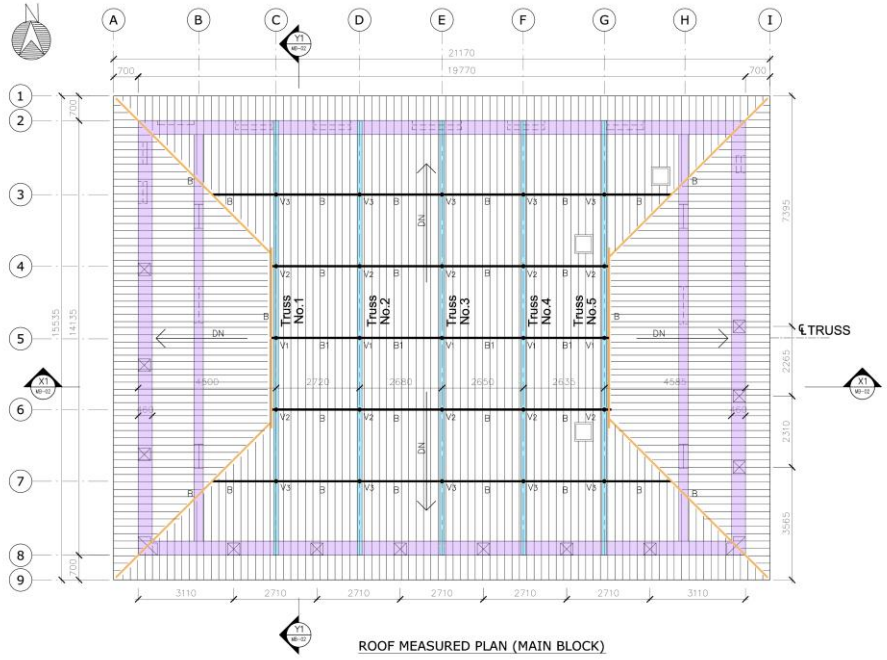


Fig 33. Roof measured plan of the Main Block. The timber trusses were supported by horizontal concrete beams spanning between concrete columns at south and load bearing brick walls at north. The brick wall is coloured in purple and the timber trusses are coloured in blue. Edited by Hannah Liu.

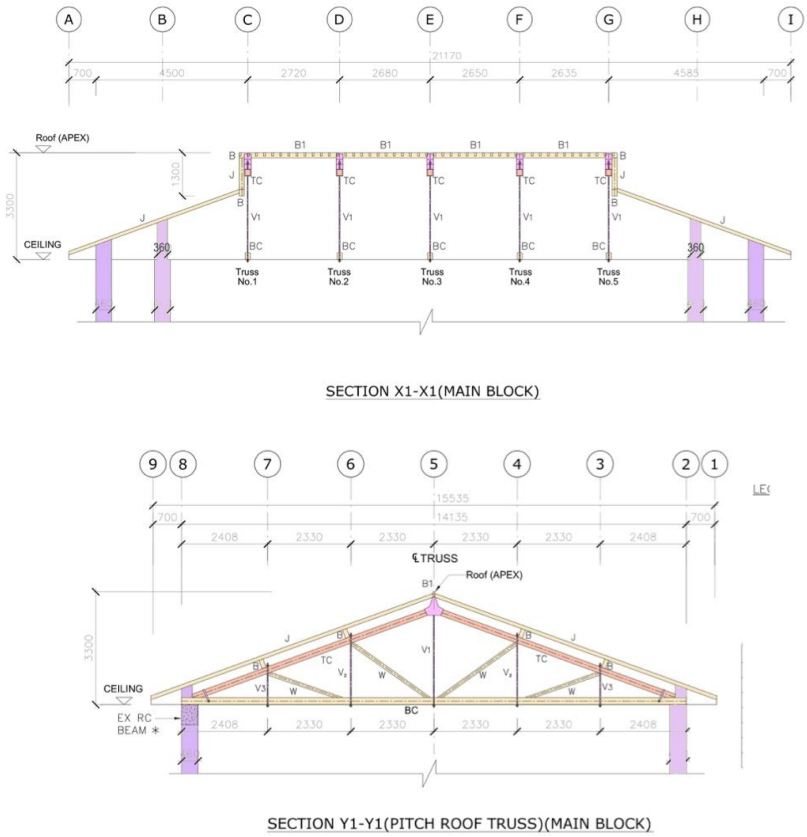


Fig 34. Sections of the roof trusses structure. For location, see the roof measured plan. The load bearing brick walls are coloured in purple. Edited by Hannah Liu.

The pitch roof was at upward angle of about 23° (longitude) and 22° (latitude).

The roofing tiles were supported by timber rafters (55mm x 100 mm spaced at 245 mm) which in turn were supported by roof timber purlins. The roof timber purlins transferred the roof imposed loads onto the timber trusses (3m height and 5 numbers spaced at approximately about 2.6m ~ 2.7m). The pitched truss was with a span of about 14.135m between the heel locations (supports) with 6 panel segments of about 2.3m in length and the middle peak location is of 3.0 m height. The measured sizes of the truss members were shown in the following table.

Element Items	Structural Materials	Sectional Shapes	Member Sizes
Top Chord	Timber	Rectangular Shape	150mmW x 175mmD
Bottom Chord	Timber	Rectangular Shape	150mmW x 200mmD
Vertical Web	Steel Rod	Circular Solid Bar	30Ømm (Centre) 22Ømm (Middle) 20Ømm (End)
Diagonal Web	Timber	Rectangular Shape	150mmW x 100mmD

*W=width, D=depth

Table 11. Table of the measured sizes of the truss members

The ground floor slab is concrete slab-on-grade.

A concrete tank of size about 1.5m(width) x 1.5m(length) x 1.5m(height) was installed at the ceiling level which was supported directly on top of the brick partition walls below the ceiling.

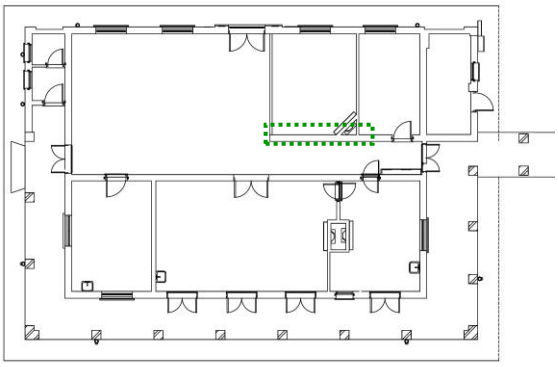


Fig 35. The concrete tank was supported directly on top of the brick partition highlighted in green. Edited by Hannah Liu.

There were 3 brick chimneys located on the eastern side of the pitched roof.

Although no record foundation plan was available for review, the prevailing foundation design for this type of light weight structure is concrete pad footing under the load bearing brick wall and brick cross walls at ground floor level.

- Bungalow

  The external perimeter brick walls were 400mm thick and the external brick walls at the open courtyard were 260mm thick which acted as load bearing wall for gravity load as well as cross wall for lateral wind resistance in longitudinal and transverse directions.

  The pitched roof is at an upward angle of 23° along the U-shaped roof.

  The internal brick partition wall thicknesses were in the ranges from 150mm to 290mm thick which acted as cross wall in providing horizontal support to external brick walls under lateral wind load along longitudinal and transverse direction.

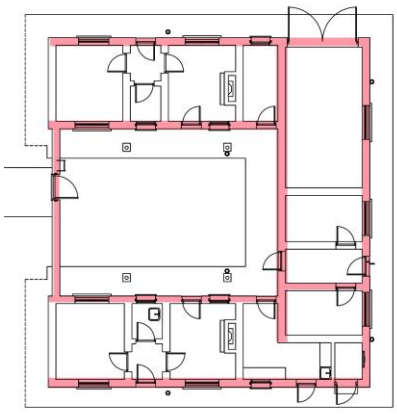


Fig 36. The plan shows the load bearing brick walls of the Bungalow. The load bearing brick walls are highlighted in red. Edited by Hannah Liu.

There were 4 metal pipe posts (110mm diameter) supporting the timber purlin (100mm (W) x 170mm (D)) along the end of roof timber rafters (55mm x 100mm spaced at 245mm) in the internal open courtyard area. The roof timber rafters were anchored into the perimeter supporting load bearing brick walls. The supports of these pitched roof timber rafters were tied with timber rafters at 735 mm centre interval (i.e. one horizontal tie

rafter at every third pitched roof rafter).

The roofing tiles were supported by roof timber rafters (55mm x 100mm spaced at 245mm) which in turn were supported by external and internal load bearing brick walls.

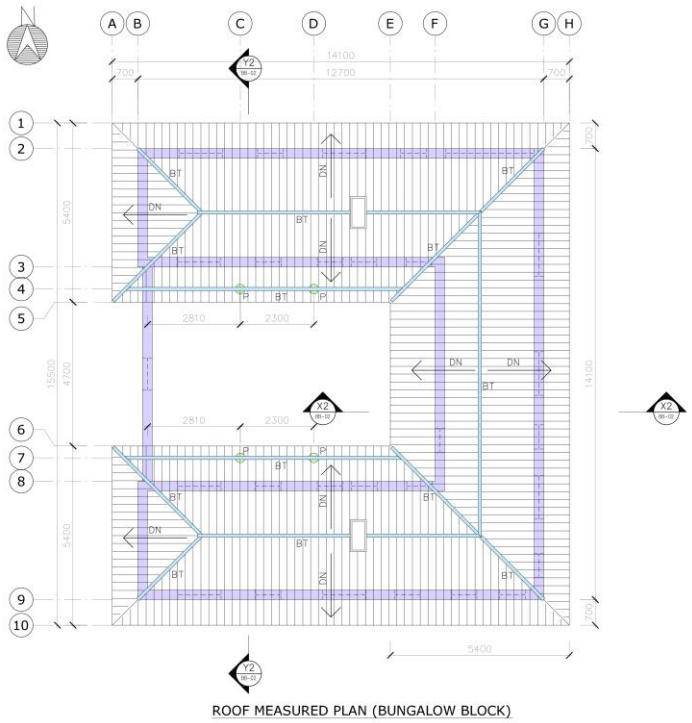


Fig 37. Roof measured plan of the Bungalow. The load bearing brick walls are coloured in purple. Edited by Hannah Liu.

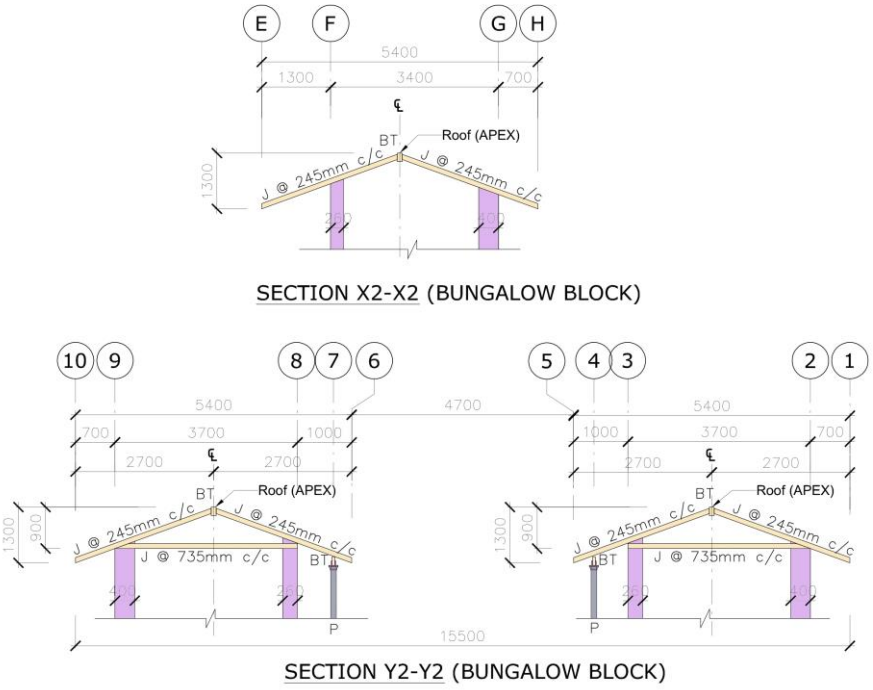


Fig 38. Sections of the roof trusses structure. For location, see the roof measured plan. The load bearing walls are coloured in purple. Edited by Hannah Liu.

There were 2 brick chimneys located on the north and south side of the pitched roofs.

The ground floor slab is concrete slab-on-grade.

Although no record foundation plan was available for review, the prevailing foundation design for this type of light weight structure is concrete pad footing under the load bearing brick wall and brick cross walls at ground floor level.

- Covered Walkway

  The covered structure was a one-storey brick column / reinforced concrete beam / concrete slab open-frame with a reinforced concrete flat roof.

  The flat roof was constructed with reinforced concrete slab.

  The wind load resistance elements were by way of slab/column frame and beam/column frame along longitude and latitude directions.

  The ground floor slab appeared to be built of concrete slab-on-grade.

  Although no record foundation plan was available for review, the prevailing foundation design for this type of light weight structure was concrete pad footing under the brick columns.

6.4.2 Structural Appraisal

Since there is no record structural plan and foundation plan available for inspection. The appraisal was based on the observation in visual inspection. All visible defects or deteriorated areas such as cracks, spalling, etc. were recorded. Since only roof tile replacement are proposed in the revitalization works on the block, no additional loading would be added on the existing building. Further investigation by opening-up or laboratory testing would be carried out when significant loading are proposed added on existing structure.

- Main Block

In general, the concrete columns, concrete beams between the concrete columns, brick loading bearing walls and brick cross walls appeared in good conditions. No immediate repair of these structure elements is needed. The timber roof trusses system (roof timber rafters, timber purlins, steel tension rods and steel connection parts) was found in fair conditions with appeared structural defects in a few areas as listed below. Structural element is considered in fair condition when there is no immediate danger of failure of the structure elements; the repairing works are suggested to be conduct after reduce the roof loading (remove the roof tile system) to maintain the structural in safe condition as designed in original design, hence the observed structural defects should be investigated and rectified as soon as practically possible for maintaining the structure in structural safe condition as designed in original design.

a. Some localized leakages were found underneath the tile-timber pitched roof which would have ill effect to the timber truss members. The leakage area was in the centre portion of the apex of the all timber trusses. The wet and dry condition will cause the deterioration of structural timbers. The deterioration of timber would impair the structural integrity of trusses and reduce the structural capacity to support the intended roof dead and imposed load. Further investigation on this aspect is needed after opening up the roof tile system.

b. Some localized timber rafter deterioration found and repair works had been carried out with improper details. It appeared that these repair works were intended to provide vertical timber post support for those defective roof timber rafters along top of trusses no. 1 and 5. However these timber posts were sitting on the bottom chord of trusses at inclined angles. This vertical offset alignment would cause eccentric twisting effect to the bottom chord of the timber trusses which had not been designed for. Rectification works including the removal of these improper repair works should be carried out as soon as practically possible.

c. Mild corrosion (estimation of corrosion was in the order of section reduction in 10% to 20% ranges) had been found in all steel tension member and steel connection joint between timber members (top

chord, bottom chord and diagonal strut) and steel member (tension rods between top and bottom timber chords). Reduction in steel section would reduce the structural capacity of the steel section in the original design for supporting the intended dead & imposed loads. Structural repair works to the corroded steel members should be carried out for structural safety.

Waterproofing membrane had been applied to the roofs, which are deviated from the traditional Chinese roof design and should be removed.

No cracks were observed on the surface of ground floor finishes and it appeared that no differential settlement had occurred between footings under load bearing brick walls and brick cross walls.

- Bungalow

  No excessive vertical settlement and misalignment of the external and internal brick load bearing walls was observed. In general, the structural timber rafters, timber ties, steel vertical posts and brick loading bearing walls, appeared in good conditions but routine maintenance and monitoring of these structural elements were necessary.

  Visual inspection revealed that there were few minor cracks on the brick walls located at western wall facing the covered walkway. A few localized leakages were found on roof defective timber rafters underneath the roof located at the junction between the pitched roofs (north/south and east/west-grid line (E) & (5) and (6)) at the ridge line towards the internal court yard. Repair or replacement of these defective timber rafters was needed.

  Waterproofing membrane had been applied to the roofs, which are deviated from the traditional Chinese roof design and should be removed.

  No cracks were observed on the surface of ground floor finishes and it appeared that no differential settlement had occurred between footings under load bearing brick walls and brick cross walls.

- Covered Walkway

  In general, the brick bearing columns, roof slabs/beams of this one storey

open beam/column frame structure appeared in good conditions but routine maintenance and monitoring of these structural elements were necessary.

There were four numbers of GRP (Glassfibre Reinforced Polyester) tanks installed on the roof of the link covered walkway structure with steel beam/post frame support. These GRP tanks appeared to be misaligned with the supporting steel channel frames. There was mild corrosion on steel supporting members at the flat roof level.

There are two cracks on the connection joint between covered walkway and the short load bearing brick wall. The angle of the cracks are about 45° . It is believed that the cracks are due to the addition load form the GRP tanks on the flat roof of the covered walkway.

No cracks were observed on the surface of ground floor finishes and it appeared that no differential settlement had occurred between footings under brick columns.

6.4.3 Loading Assessment

The Main Block and the Bungalow were known to be built in 1933. It was believed that the design would have followed the prevailing design code of London County Council (LCC) By-Laws 1915 and the amendments between 1915 and 1932 period.

The steel shelter structure was known to be built in 2000 and it was believed that the design would have followed the prevailing design code of Hong Kong Building (Construction) Regulations- 1990.

- Main Block

  For the ground floor on grade slab, in accordance with LCC By-Law 1915, the design imposed live load for floor loading to be used wholly for the purpose of Hospitals was 84 lb/sq ft, equivalent to 4.02 kPa. As the ground floor is slab on-grade, the loading capacity of the ground floor including the finishes and tiles is estimated to be 5.8 kPa.

  For imposed roof live load, in accordance with LCC By-Law 1915, the design

imposed live load for inclined upward at a greater angle than 20° degree, 28lb/sq ft, equivalent to 1.3 kPa. It is noted that the use of 28 lb/sq ft (1.3kPa) for imposed roof live load deemed to include wind pressure. Taking into account of the age of the building, the estimated loading capacity of the roof would be 0.75 kPa.

- Bungalow

  For the ground floor on grade slab, in accordance with LCC By-Law 1915, the design imposed live load for floor loading to be used wholly for the purpose of human habitation was 70 lb/sq ft, equivalent to 3.4 kPa. As the ground floor appeared to be slab on-grade, the loading capacity of the ground floor including the finishes and tile is estimated to be 5.2 kPa.

  The design imposed load for exhibition purpose is 5kPa according to *Code of Practice for Dead and Imposed Loads 2011*. It is believed that the loading capacity of on-grade slab is sufficient to the new design imposed load.

  For imposed live load on roof, in accordance with LCC By-Law 1915, the design imposed load for inclined upward at a greater angle than 20 degree, 28lb/sq ft, equivalent to 1.3 kPa. It is noted that that the use of 28 lb/sq ft (1.3kPa) for imposed live load deemed to include wind pressure. Taking into account of the age of the building, the estimated loading capacity of the roof would be 0.75 kPa.

- Covered Walkway

  For the ground floor on grade slab, in accordance with LCC By-Law 1915, the design imposed load for floor loading to be used wholly for the purpose of human habitation was 70 lb/sq ft, equivalent to 3.4 kPa. As the ground floor appeared to be slab on-grade, the loading capacity of the ground floor including the finishes and tile is estimated to be 5.2 kPa.

  For imposed live load on roof, in accordance with LCC By-Law 1915, the design imposed load for flat roof was 56 lb/sq ft, equivalent to 2.7 kPa. Taking into account of the age of the building, the estimated loading capacity of the roof would be 2.0 kPa.

  The design imposed load for exhibition purpose is 5kPa according to *Code of Practice for Dead and Imposed Loads 2011*. It is believed that the loading

capacity of on-grade slab is sufficient to the new design imposed load.

6.4.4 Recommendation

As no record drawings for the Main Block and Bungalow are available, more comprehensive and site investigation to the structural members and appropriate *in-situ* and laboratory tests shall be carried out to confirm the as-built and current conditions of the structural members and performance of the buildings.

For the Main Block and Bungalow, the building performance in a few areas of the buildings, in particular deteriorations of timber members of timber pitched roofs and the corrosion occurred in steel elements shall be re-checked and remedied.

For the covered walkway, there are two major cracks on the short load bearing brick wall. The water tank on the covered walkway will be removed. Load would be reduced on the short brick wall. The cracks are suggested to be repaired by repair mortar. Also, the cracks' length and width should be kept monitoring.

6.4.5 Conclusion

Based on the visual inspection of 2 building blocks, the overall conditions are good except the part of roof timber truss at Main Block and the defective timber rafters at Bungalow. Remedial works to the observed structural defects as described in **Section 6.4.2** are recommended.

7.0 REVITALIZATION PROPOSAL

7.1 Project Objective

The conservation process of making a possible compatible use for the LHTWC adopted the following guiding conservation principles in developing the appropriate treatments and level of intervention for character defining elements and other historic building fabrics with reference to international charters and other relevant conservation standards, compatible with and distinguishable from the original fabric of the historic place.

7.2 Proposed Layout and Setting

The LHTWC and its site will be revitalized into a heritage interpretation-cum-local ecology discovery centre to showcase the history and memory of the historic buildings and the contribution of Sir Robert Ho Tung family; it also provides a series of training programmes and activities with the theme of “Rural Bioblitz Experience” for the school sector and local community. The full set drawings are shown in **Appendix I**.

Fig 39. The proposed site plan. Edited by Hannah Liu.

Fig 40. The proposed layout plan for existing buildings. Edited by Hannah Liu.

Location	Function
Main Block	Customer Services Area
	Heritage Interpretation Area
	Ecology Discovery Area
	Others
Bungalow	Heritage Interpretation Area
	Staff Room and Office
	Others
Proposed New Annex Block	Reception
	Others
Outdoor Area	Agriculture Microcosm Area
	Open Area

Table 12. Table of the proposed function for the LHTWC

Function	Description
Customer Services Area	• Providing free booklets or electronic guiding devices to let the public know more about the historical values and the revitalization process of the building;
Heritage Interpretation Area	• Setting up of a time gallery at the colonnaded verandah for displaying the Sir Robert Ho Tung family's influence and contribution; • Setting up of exhibition areas for displaying the architectural features of the buildings, the history and photo records and the revitalization process of the buildings;
Ecology Discovery Area	• Providing audio video of the different biological species to the public; Organizing a virtual guided tour in inclement weather; • Setting up of an ecologists room for educational use to display the ecological equipment, photo records, specimen and reference books; • Organizing or demonstrating simple biological experiment in a laboratory room;
Agriculture Microcosm Area	• Setting up of training programme in outdoor farming areas for public to experience the traditional farming, know more about the biodiversity, ecology and sustainable development as well as the agricultural contribution of Lady Ho Tung.

Table 13. Table of the description for the proposed function.

7.3 Major Demolition Works

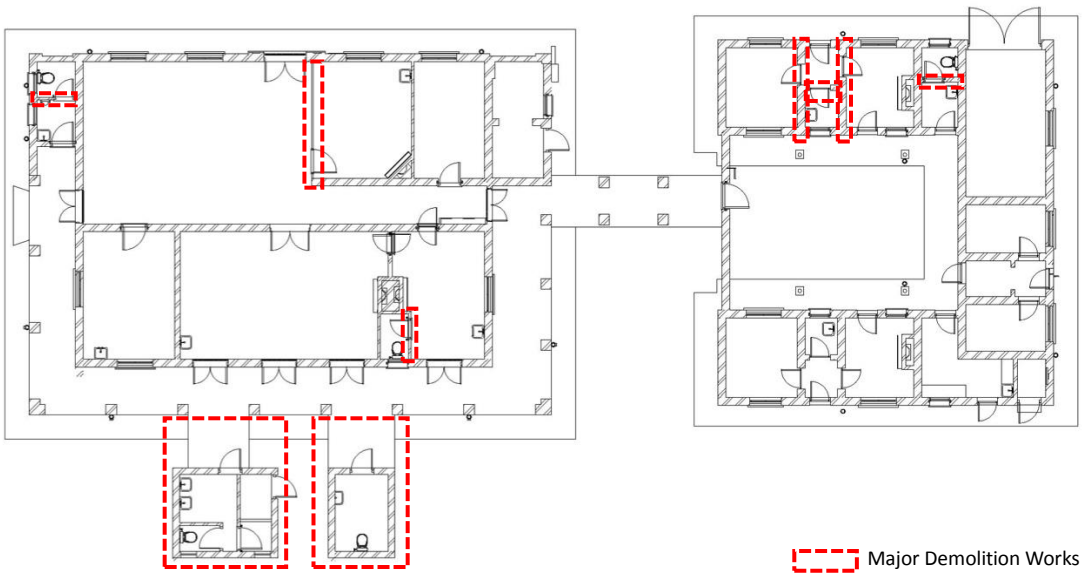


Fig 41. Major demolition works to the historic buildings. Edited by Hannah Liu

8.0 CONSERVATION PRINCIPLES AND GUIDELINES

8.1 Conservation Standards and Principles

8.1.1 Conservation Standards

The following international standards and local reference were adopted in developing the appropriate treatments and level of intervention for the CDEs and other historic building fabrics:-

- Venice Charter (1964) – ICOMOS International Charter for the Conservation and Restoration of Monuments and Sites, UNESCO
- Burra Charter (2013) – The Australia ICOMOS Charter for Places of Cultural Significances
- China Principles (2015) – Principles for the Conservation of Heritage Sites in China

8.1.2 Conservation Principles

The conservation process of making a possible compatible use for the LHTWC adopted the following guiding conservation principles in developing the appropriate treatments and level of intervention for character defining elements and other historic building fabrics with reference to international charters and other relevant conservation standards.

- Conserve Heritage Value

  Respect its changes over time and its various uses that represent particular periods. Thus, it is not necessary to return its state to the original period when the building or the site was firstly erected. Only remove, and/or replace the physical fabric that has substantially altered the overall intactness of the buildings and the character defining elements.

  Restore any deformed, collapsed, or misplaced components, and later additions considered of no significance or intrusive should be removed.

- Retain Authenticity and Integrity

Respect the original character or architectural style of the building fabric and retain its traditional building materials or construction system as much as possible.

Recognize each historic place as a physical record of its time, place and use.

Do not create a false sense of historical development by adding elements from other historic places or by combining features of the same property that never co-existed.

- Minimum Intervention
  Keep any treatment or intervention to building fabric to the minimum and respect the heritage value when undertaking an intervention.

  Use the gentlest means possible for any intervention.

  Make any intervention physically and visually compatible and identifiable upon close inspection, and document any intervention for future reference.

- Repair rather than Replace
  Repair rather than replace character-defining elements.

  Only when such elements are too severely deteriorated to repair, and with sufficient physical evidence, replace them with new elements that match the forms, materials and detailing of the same elements.

  Where there is no sufficient evidence, make the form, material and detailing of the new elements compatible with the character of the historic place.

- Reversibility
  Make any intervention or adaptation to the building fabric reversible, without causing any damage to the existing structure when such intervention is to be removed in future.

  Any new additions should be reversible and should not affect the essential form and integrity of the historic place, or that the building fabric should not be impaired if the new work is to be removed in the future.

- Integrating old and new
  When adding new construction to heritage buildings, the proposed new works and developments should be sympathetic to the heritage place in terms of its compatible proportion, form, design and materials. Make the new works physically and visually compatible with and distinguishable from the original fabric of the historic place.

8.2 Conservation Policies and Guidelines

8.2.1 General

- Policy 01
  Conservation principles and international practices should be adopted and applied in the overall stage of conservation progress. All the policies should be review by heritage management team for every year.

8.2.2 New use of LHTWC

- Policy 02
  The new use of LHTWC should be compatible with its original use.

  Conservation guidelines
  The proposed use should involve minimum change to significant historic fabric and use to retain the historic significance of the place. The proposed conversion of the LHTWC into a unique local ecology discovery centre with outdoor agriculture microcosm area is considered compatible with the original purpose of the heritage building and significance of the context, as once a farmland also set up by Lady Ho Tung nearby.

- Policy 03
  The allowable imposed loading of the existing building should be taken into account when considering the new use.

  Conservation guidelines
  The new use should be compatible with LHTWC which was built in 1933 and structural design of which pre-dated the London County Council (LCC) – 1915. As estimated after structural investigation, the loading capacity of the on-grade slab (including the finishes) and pitched roof of the Main Block is 5.8kPa and 0.75 kPa; the loading capacity of the on-grade slab (including the

finishes) and pitched roof of the Bungalow is 5.2kPa and 0.75 kPa; the loading capacity of the on-grade slab (including the finishes) and flat roof of the Covered Walkway is 5.2kPa and 2.0 kPa. The new use and addition of the building services installation on the roof or roof structure should be compatible in terms of loading requirement so as to keep necessary structural alteration to a minimum.

8.2.3 Setting and Landscape

- Policy 04

  Unsympathetic modern additions should be removed, and replaced if necessary with styles, materials and finishes appropriate to the building.

  Conservation guideline

  The refuse collection chamber, female toilet, disable toilet and steel shelter added at a later stage should be demolished.

- Policy 05

  Any new structure to be built should be compatible but distinguishable from the building.

  Conservation guideline

  The design of the new structure should be discernible form the original historic fabric and should not confuse the visitors from appreciating the heritage site. The overall mass of the new structure should be compatible to the LHTWC.

8.2.4 Conserve Heritage Value

- Policy 06

  Restore any deformed, collapsed, or misplaced components, and later additions considered intrusive should also be removed.

  Conservation guideline

  The later-added mineral fibre suspended ceiling should be removed to reveal the original timber suspended ceiling. Door and window openings should be retained as far as possible.

8.2.5 Preservation of Built Fabric

- Policy 07

  All conservation works should be carried out with the principle of repair rather than replacement. Where replacement is necessary, it should be carried out on a like-for-like basis as far as practicable in terms of design and material.

  Conservation guideline

  The repair works to be carried out should match the original material, colour and texture. In case the architectural element is beyond repair where replacement is necessary, the replacement should follow the original construction method, material, colour and texture as much as possible.

- Policy 08

  All conservation works should involve minimal change to significant building fabrics and the existing structure of the buildings.

  Conservation guideline

  CDEs and the other existing structure of the buildings should be kept intact as much as possible to preserve the historic fabric, only carried out the works which are necessary. Determine the appropriate works and action base on the level of significance. External redecoration is restricted to colors that are compatible with the age and character of the buildings and the paint system is to be reversible.

8.2.6 Addition and Alteration

- Policy 09

  A full photographic and cartographic survey should be carried out prior to any renovation works to LHTWC.

  Conservation guideline

  The photographic and cartographic survey should be carried by experienced surveyors / conservationists by making reference with the requirements from AMO. A set of record shall be kept by the operator, CHO and AMO.

- Policy 10

Any addition and alteration works necessarily to be carried out at the exterior of LHTWC should be kept to a minimum and at less conspicuous location.

Conservation guideline

New services pipelines should be incorporated with landscape design to minimize the physical and visual impact and the style of the enclosures for the building services provisions should be compatible with but distinguishable from the existing building fabric. Any exposed pipelines should be laid in a neat and tidy manner. The new addition, which is essentially required for the on-going service of the heritage building e.g. water pump and tank, should be accommodated in the new annex block.

In order to comply with the current statutory requirements under the Code of Practice - Fire Safety in Buildings 2011, some of the existing doors at Bungalow will be widen. The location of the widening of existing doors at Bungalow will be at the open courtyard which is less prominent.

- Policy 11

  Any addition and alteration works necessarily to be carried out at the interior of the LHTWC should be kept to a minimum. Major alterations and additions should be confined to the areas of lesser significance.

  Conservation guideline

  In order to suit the new use, addition and alteration works as well as upgrading works for meeting current statutory requirements will be necessary. Those works to the interior of the LHTWC shall be kept to a minimum as far as practicable, subject to the approval of AMO.

8.2.7 Interpretation

- Policy 12

  Interpretation should be provided for the education and promotion of the cultural significance of LHTWC to the public.

  Conservation guideline

  Topics for interpretation can include (but not limit to) the history and the architecture of the LHTWC, contributions of Sir Robert Ho Tung Family,

development of Kwu Tung area, architectural significance of the building e.g. Western roof trusses with Chinese tiles as well as the revitalization process. In consideration of conservation principle and condensation and A/C consumption, the original timber ceiling in Main Block will be repaired and retained. Thurs, it is recommended to provide an interpretation corner to interpret the roof structure that blocked by the timber suspended ceiling. The interpretation will be in form of scaled model and photos. On the other hand, the proposed Exhibition Area 1 & 2 in the Bungalow should be designed and used as a "Heritage Interpretation Area" with display of historical documents, information, objects and artefacts etc., for interpreting the cultural heritage of the LHTWC.

8.2.8 Management and Maintenance

- Policy 13

  A maintenance and management plan should be drawn up to ensure that the heritage site is well kept in good condition.

  Conservation guideline

  The maintenance and management plan will provide framework and information describing how LHTWC should be managed and maintained, including an indication of who should be responsible for the works, maintenance schedule, tracking methods and should also give guidance on appropriate techniques, materials to be used in preserving CDEs and other specific features of the site. The plan shall be reviewed annually by building management professionals, conservationists and professionals with thorough understanding of managing a historic building to ensure the execution of a proper maintenance programme.

8.2.9 Documentation

- Policy 14

  The documentation produced for the purpose of obtaining statutory approvals, procurement and construction (including method statements, contractor-designed elements and manufacturers' data sheets), should be held indefinitely together with this Heritage Impact Assessment and photographic and cartographic surveys, as a record of the changes to the

building and the policy considerations related to these changes.

- Policy 15

  Any CDEs that may be found at later stage shall be recorded in the table of significance and the impacts, if any, recorded in the impact assessment table with mitigation measures which agreed with AMO.

  Conservation guideline

  Record any conservation, new and maintenance works. All documentation should be properly kept and archived by operator, maintenance agent and AMO.

9.0 ASSESSMENT

9.1 Potential Impact and Mitigation Measure

9.1.1 Definition of Terms[32]

Five levels of significance have been used to describe the elements individually with description listed below:-

Levels of Significance	Description
High	Elements which make a major contribution to the overall significance of the place. Spaces, elements, or fabric originally of substantial intrinsic quality, and exhibit high degree of intactness and quality, though minor alterations or degradation may be evident
Moderate	Elements which make a moderate contribution to the overall significance of the place. Spaces, elements, or fabric originally of some intrinsic quality, and may have undergone minor alteration or degradation.
Low	Elements which make a minor contribution to the overall significance of the place. Spaces, elements, or fabric originally of some quality, and may have undergone extensive alteration or adaptation to the extent that only isolated remnants survive.
Neutral	Elements which are of little consequence in terms or understanding or appreciating the site and its developments, without being actually intrusive.
Intrusive	Elements which are visually intrusive or which obscure the understanding of significant elements of the site, and may be identified for removal.

Table 14. Table of the level of significance and its description

[32] *Definition of Terms is developed based on James Kerr, Conservation Plan: A Guideline to the Preparation of Conservation Plans for Places of European Cultural Significance, Australian ICOMOS, 2013*

Five levels of impact have been used to evaluate the impact based on the type and extent of the effects concluded in the Heritage Impact Assessment:-

Impact Level	Description
Beneficial Impact	The impact is beneficial if the project will enhance the preservation of the heritage site.
Acceptable Impact	The assessment indicates that there will be no significant effects on the heritage site.
Acceptable Impact with Mitigation Measures	There will be some adverse effects, but these can be eliminated, reduced or offset to a large extent by specific measures, such as conducting a follow-up conservation measure for the affected heritage site before commencement of work in order to avoid any inappropriate and unnecessary intervention to the historical building.
Unacceptable Impact	The adverse effects are considered to be too excessive and are unable to be mitigated practically.
Undetermined Impact	The adverse effects are likely to be significant, but the extent to which they may occur or may be mitigated cannot be determined from the study. Further detailed study will be required for the specific effects in question.

Table 15. Table of impact level and its description

9.2 Impact Assessment

G. General

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
G-01	Convert the buildings and its site into a heritage interpretation-cum-local ecology discovery centre with outdoor agriculture microcosm area.	N.A.	N.A.	Beneficial Impact	Photographic and cartographic survey of the buildings and its site shall be carried out before the commencement of works. Interpretation strategy shall be properly formulated and present the historic development and changes of the buildings and site to enhance and reinforce the understanding of the cultural significances of the historic place.

S. Site

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
S-01	Dismantle the water tank with associated pipes and the supporting plinths on top of the covered walkway.	Covered walkway	High	Beneficial Impact	Condition survey should be carried out to investigate the waterproofing of the roof, reinstate / repair waterproof layer after the removal of water tanks.. The covered walkway should be repaired and repainted to match existing. The covered walkway should not be enclosed in any way.
S-02	Demolish the later-added female toilet and disable toilet and the disabled ramp to the rear annex of the Main Block including the paving, barrier free ramp and metal railings.	Open space	Moderate	Beneficial Impact	Such improvement works is considered beneficial as the original site context can be revealed.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
S-03	Demolish the later-added steel shelter and replace by a new Annex Block to accommodate the building services rooms and toilets.	Open space	Moderate	Acceptable Impact with Mitigation Measures	Such new additions should be kept away from the historic buildings. It should not impose visual impact to the building. The appearance of the new block shall be compatible design, in material, colour and texture for the finishes. It should be discernible form the original historic fabric and be understated in character. The height of the new block should not exceed the eaves line of the historic buildings. The overall mass of the new structure shall be compatible to the historic buildings. Addition of steel frame timber trellis to the east facade is considered beneficial as a sense of direction to the historic buildings is provided.
S-04	Demolish the later-added refuse collection chamber in front of the historic buildings.	Open space	Moderate	Beneficial Impact	Such improvement works is considered beneficial as the original site context can be revealed.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
S-05	Convert open space into an outdoor agriculture microcosm area including Eco-Pond, Paddy Field, Silkworm Breeding Area, Vegetable Field, *Fengshui* Forest, Herb Garden and Agricultural Ecology Trails for public to experience the ecological environment.	Open space	Moderate	Acceptable Impact with Mitigation Measures	Such conversion work is considered beneficial as the open space will be utilized as an ecological site with designed landscaping for educational use. Such landscape shall be of compatible design and minimize the visual impact to the historic buildings.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
S-06	Addition of a well to the rear side of the historic buildings for demonstration the traditional way of drawing water.	Open space	Moderate	Acceptable Impact with Mitigation Measures	Geotechnical investigation should be carried out to check the condition of the geology, advice from geotechnical engineer and structural engineer will be sought to ensure that the foundation and the structure of the historic buildings will not be adversely affected by the proposed work. Such new additions should be kept away from the historic buildings. It should not impose visual impact to the building and physically affect the structural integrity of the building. The design of the well should also be distinguishable from the historic fabric and should not create a false sense of historic development.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
S-07	Addition of air conditioning outdoor machines to the side of Bungalow.	Open space	Moderate	Acceptable Impact with Mitigation Measures	Such new additions should be placed at a less prominent location and kept away from the historic buildings. It should not impose visual impact to the building. New AC pipelines will be grouped together and enter the building through the modified louvre window at Bungalow. Screening shall be provided for the outdoor units to minimize the visual impact. Design of the screening should be compatible but distinguishable to the historic fabric.
S-08	Replace the existing peripheral fencing with new fencing.	N.A.	Neutral	Acceptable Impact	Such new fencing shall be of compatible design, in term of environmental friendly material, colour and texture, and in such a way that public viewing the historic buildings from outside will not be blocked.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
S-09	Addition of hard landscape paving including timber decking in the open space.	Open space	Moderate	Beneficial Impact	Such new additions shall be of compatible design, in term of suitable material, colour and texture. They should be discernible form the original historic fabric and be understated in character.
S-10	The unhealthy and interferential trees will be felled.	Trees	Neutral	Acceptable Impact	The removal shall be carried out with adequate guidance from tree specialist. New trees shall be planted in the open space as compensation. The new compensatory trees shall keep away from the existing buildings.
S-11	Addition of underground rainwater recycling system at the rear of the Main Block.	N.A.	Neutral	Acceptable Impact	The rainwater recycling system will be placed underground and at a distance from the historic buildings to minimize the impact to the buildings.

A. Main Block (Exterior)

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-01	Repair external walls, including spalling plaster, cracks and deteriorated finishes.	Building façade	High	Beneficial Impact	The walls shall be repaired with materials matching original without adverse impact on the historic fabrics.
		External rendered and painted finishes	Moderate		
A-02	Clean the stone doorcase and threshold of the main entrance and preserved *in-situ*, including the inscriptions "LADY HO TUNG WELFARE CENTRE" and Chinese characters "何東麥夫人醫局" on the lintel.	Stone doorcase and threshold of the main entrance, including the inscriptions on the lintel.	High	Beneficial Impact	The stone doorcase and threshold of the main entrance, including the inscriptions on the lintel should be preserved *in-situ* and should be fully protected during the course of any works. Granite surfaces should not be painted or treated with any coating system. They should be cleaned with bristle or nylon brushes and clean water. No corrosive cleaning chemical is allowed.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-03	Restore and repair the door openings with timber doors, original ironmongeries, horizontal pivoted windows above, fanlight and insects screen.	Main entrance door, external doors to the verandah, including door panels with grid pattern, door frames, fanlight, horizontal pivoted windows, original glazing scheme of obscure and clear glass, and original ironmongeries	High	Beneficial Impact	All existing doors and door openings on external walls and along the axis of the building will be preserved *in-situ.* The original glazing scheme of obscure and clear glass should be retained. The later-added window-type air-conditioning units with supports and burglar bars should be removed and the window openings above the doors should be restored to horizontal pivoted windows of design which follows those original pivoted windows that have been retained on the elevations. Remove the Bostwick gates as they hinder public appreciation to the original timber doors. The original doors and ironmongeries should be overhauled and repaired to match existing. The design of the new ironmongery installations should be compatible with the historic doors and match with the historic ambience.
		Internal timber doors (including insects screens and ironmongeries)	Moderate		
		Burglar bars / metal grilles at fanlights	Intrusive		
		Bostwick gates	Intrusive		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-04	Restore and repair the window openings with timber casement windows and horizontal pivoted windows on top.	Timber casement windows and horizontal pivoted windows on top, including original glazing scheme of obscure and clear glass, original ironmongeries and window frames	High	Beneficial Impact	The later-added window-type air-conditioning units with supports and burglar bars should be removed and the window openings should be restored to horizontal pivoted windows can be opened fully. The original glazing scheme of obscure and clear glass should be retained. The original windows and ironmongeries should be overhauled and repaired as far as possible to match existing. In case the original ironmongeries are beyond repair where replacement is necessary, the replacement should be compatible with the historic doors and match with the historic ambience.
		Burglar bars / metal grilles at windows	Intrusive		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-05	Repair and repaint the brick window heads and sills with painted quarry tile finishes and internal wooden window sills	Brick window head and sill with quarry tiles finish painted in red with white brick lines	High	Beneficial Impact	The original window head, window sills and mouldings should be retained and repainted in same colour scheme.
		Internal wooden window sills with mouldings	High		
A-06	Repair and restore the Chinese styled hip and gable roof, including pan and roll tiles roofing, curled-up ends of roof ridges and circular decorative moulding on pediment.	Chinese style roof with hip and gable roof structure, including curled-up ends of roof ridges and circular decorative moulding on pediment	High	Beneficial Impact	Re-roof the Chinese pan-and-roll tiles to match existing. The re-roofing details should be submitted to AMO for approval. The existing ridges should be propped, preserved *in-situ* and repainted to match existing during the re-roofing details. Remove any vegetation, leaves, twigs and debris.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-07	Restore and repaint the over-hanging roof eaves with suspended timber battened ceiling.	Over-hanging roof eaves with suspended timber battened ceiling	High	Beneficial Impact	Condition survey should be carried out to investigate the condition of existing roof eaves. Repaint the roof eaves to match existing. Replace any rot or damaged suspended timber battened ceiling with the same material, size and design of the existing timber battened ceiling. Remove any vegetation, leaves, twigs and debris. .
A-08	Repair the chimney stacks and preserve *in-situ*.	Chimney stacks with ornamental band painted in red and white brick lines	High	Beneficial Impact	Photographic and cartographic survey shall be carried out to document the existing ornamental chimney stacks before the commencement of works. The original chimney stacks should be repainted in same colour scheme.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-09	Restore the colonnaded verandah including the square concrete column and granite edge stones to paving and convert it as heritage interpretation area.	Colonnaded verandah, including square concrete columns and granite edge stones to paving	High	Beneficial Impact	The existing colonnaded verandah should not be enclosed. Re-painting works would be carried out if necessary. The type of new paint should match existing and be approved by AMO as appropriate. The granite edge stones should be preserved *in-situ* and cleaned. Repaving works to paving of verandah would be carried out if necessary. The design and materials of the new paving should be submitted to AMO for approval. Addition of free standing display panels in the colonnaded verandah for interpretation. The display panels should be compatible with the historic buildings and should not impose visual impact to the historic buildings.
A-10	Repair and repaint the external moulded cornices at the ceilings.	External moulded cornices at and ceilings	High	Beneficial Impact	The moulded cornices should be repaired and repaint to match existing.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-11	Replace and restore the timber suspended ceiling along the open colonnaded verandah.	Timber suspended ceiling along the colonnaded verandah	Moderate	Beneficial Impact	Replace the timber suspended ceiling with new grid system and new timber panels to match existing. The materials should be submitted to AMO for approval. Moulded cornices should be preserve *in-situ*. The new timber suspended ceiling should follow the original fixing method and coating finishes, and should be treated with preservative solution. The new grid system and timber panels should match with existing design, size, pattern and material and approved by the AMO. The timber suspended ceiling will be treated with preservative solution.
A-12	Repair and repaint the cow's horn cleats mounted on the verandah columns.	Cow's horn cleats mounted on the verandah columns	High	Beneficial Impact	The cow's horn cleats should be re-fixed as necessary and preserve *in-situ*.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-13	Modification of one existing rainwater pipe at rear façade for connection to new underground rainwater recycling system. Repair and restore other cast iron rainwater pipes and eave gutters.	Cast iron rainwater pipes and eave gutters at the elevations	High	Acceptable Impact with Mitigation Measures	Repair and restore the function of the cast iron rainwater pipes with swan's neck bends and eave gutters for discharging rainwater. Repaint the cast iron rainwater pipes and eave gutters to match existing and preserve *in-situ*. The existing rainwater pipe which chosen for modification for connection to underground rainwater recycling system will be located at the less prominent location of the rear façade of the Main Block. The existing rainwater pipe will be re-used as far as possible. In case the pipework and parts are beyond repair where replacement is necessary, the replacement should follow the original installation method, material and design. The alteration work will be of compatible design in terms of suitable material, colour and texture.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-14	Restore the original wooden directional signs in arrow shape including the inscriptions.	Wooden arrow-shape directional signs with the inscriptions “往登記處”, “TO REGISTRATION OFFICE”, “往換藥室” and “TO DRESSING ROOM”	High	Beneficial Impact	Preservative treatment, repair and repaint the directional signs with same colour and calligraphy.
A-15	Disconnect and remove the existing redundant cables, old wrings, conduits, disused electrical appliances and meter boxes.	Building facade	High	Beneficial Impact	Such removal works is considered beneficial as the original building appearance could be revealed. Disconnect and remove redundant cables, old wirings, conduits, disused electrical appliances, and meter boxes. Damage to wall surfaces should be made good to match existing.
		External rendered paint finishes	Moderate		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-16	Introduction of building services routing to the historic buildings.	Building facade	High	Beneficial Impact	All the new pipes and ducts of all kinds of building services installation should be grouped together when entering the building to minimize the number of openings to the historic buildings. Existing openings should be utilized as far as possible instead of creating new holes. The new pipes and ducts of building services installation, such as drainage, electrical plumbing, fire services should be grouped together when entering the building from underground to minimize the visual impact and the number of openings to the historic buildings. New AC pipelines will be grouped together at less prominent area and enter the building through the modified louvre window at Bungalow.
		External rendered paint finishes	Moderate		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
A-17	Replace the timber door at existing Male Toilet with fire-rated door to compensate the fire safety constrains.	External doors including door frames and original ironmongeries	High	Acceptable with Mitigation Measures	The original timber door and ironmongeries will be salvaged and stored for future interpretation. The original door opening should not be altered. The design of the new fire-rated door should be compatible with the historic buildings.

B. Main Block (Interior)

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
B-01	Protective measure to the ceramic photographs of Sir Robert Ho Tung and Lady Ho Tung on either side of the door to Treatment Room.	Ceramic photographs of Sir Robert Ho Tung and Lady Ho Tung at either side of the door to the Treatment Room	High	Beneficial Impact	The existing ceramic photographs should be preserved *in-situ* and protected by glazing for public appreciation. Such protection should not cause adverse impact on the ceramic photographs. The details of protection works should be submitted to AMO for approval.
B-02	Retain and restore the existing fireplaces *in-situ*.	Fireplaces (3 nos.) in the Consultation Room, Treatment Room and Interview Room, including tiling, surrounds, grates, hearths, and mantel shelf	High	Beneficial Impact	The fireplaces should be protected during the course of work and be restored as appropriate. Remove the later-added hooks attached to the mantelpiece of the Treatment Room fireplace and restore the surround to match existing. The fireplaces should not be covered and should be exposed for public appreciation.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
B-03	Addition of display panel in front of the existing glazed wall tiles in the Waiting Hall and Treatment Room.	Original glazed wall tiles in the Waiting Room and Treatment Room	Moderate	Acceptable Impact with Mitigation Measures	The original glazed wall tiles should be retained and should not be disturbed. No anchors or fixings should be made to the existing glazed wall tiles. Limited fixings / pre-installed fixings to the internal painted and rendered wall are allowed. The display panel shall be in compatible design to the historic ambience of the historic buildings. The fixing method of the display panel should be agreed with the AMO.
		Internal painted plaster finishes	Low		
		Internal brick walls	Moderate		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
B-04	Repair and restore the timber rafters, timber purlins and timber trusses.	Timber roof structure	High	Acceptable Impact with Mitigation Measures	Rectification works including the removal of later added temporary timber supports and repair works should be carried out. Defective timber rafters, timber purlins and timber trusses should be repaired to match with the original design and finishes coating. All timber members will be treated with preservative solution. Only limited ducting and piping will be installed to the roof structure subject to the advice of the RSE to minimize additional loading impose on roof and avoid alteration to the roof structure in the treatment. Fixing to the roof structure will be in a reversible manner. Remove 1 no. of existing water tank on the existing roof structure.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
B-05	Replace and restore the existing timber suspended ceiling due to deterioration.	Timber suspended ceilings	High	Acceptable Impact with Mitigation Measures	Condition survey should be carried out to investigate the condition of existing structures. Photographic survey shall be carried out to document the existing suspended frame after the removal of timber panels. The mineral fiber suspended ceiling will be removed to expose the timber suspended ceiling. The suspended timber ceiling should not be removed as it helps minimize condensation and A/C consumption. Replace all dilapidated timber panel and suspended frame to match existing. Reuse salvaged original timber frame of the timber suspended ceiling as far as possible. Limited openings for building services installation are allowed. The openings should be well organized without causing damage to the timber suspended ceilings. The location and design should be subject to AMO's approval. Existing catwalk shall be repaired for future maintenance / inspection of roof void and building services installations. The timber suspended ceiling will be treated with preservative solution.
		Mineral fiber suspended ceiling	Intrusive		
		Internal moulded cornice at ceiling	High		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
B-06	Repair and restore the timber fence holder, terrazzo floor finishes and the granite threshold in the Watchman Room.	Timber fence holder, terrazzo floor finishes and the granite threshold	High	Beneficial Impact	The timber fence holder and terrazzo floor finishes should be preserved *in-situ*. Repair and repaint the fence holder and clean the terrazzo floor finishes and granite threshold by non-corrosive detergent.
B-07	Repair and repaint the cement skirting and internal walls.	Internal painted plaster finishes	Low	Beneficial Impact	Repair and repaint the cement skirting to match existing. Repair any damage sections, including spalling plaster, cracks and deteriorated finishes of the internal walls using materials matching existing.
		Original cement skirting	High		
B-08	Replacement of existing floor finishes (except terrazzo floor finishes at watchman room) to suit new use.	Internal floor finishes	Low	Acceptable Impact with Mitigation Measures	Photographic survey shall be carried out to document the existing floor finishes. The design of the new floor finishes shall be uniform and compatible to the historic ambience of the historic buildings. Disturbance to historic fabrics shall be minimized. The new floor drains will be installed at less prominent area.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
B-09	Demolish the later-added fiberboard partition wall of the Consultation Room.	Fiberboard partition	Low	Beneficial Impact	Such improvement works is considered beneficial as the original spatial layout is revealed. Photographic survey shall be carried out to document the existing fiberboard partition wall. The original timber door of the fiberboard partition wall should be salvaged and stored for future use and interpretation.
		Internal timber doors (including insects screens and ironmongeries)	Moderate		
B-10	Dismantle the suspended ceilings of mineral fiber ceiling tiles.	Mineral fiber suspended ceiling	Intrusive	Beneficial Impact	Such improvement works is considered beneficial as the original timber roof ceiling is revealed. Photographic survey shall be carried out to document the suspended ceilings of mineral fiber ceiling tiles. Make good disturbed surface to match exisitng to historic fabrics shall be minimized.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
B-11	Demolish 2 nos. of partition wall in the Interview Room and Male Toilet for adaptive reuse.	Internal timber doors	Moderate	Acceptable Impact with Mitigation Measures	Photographic and cartographic survey shall be carried out to document the existing structure before removal of the partition wall. Make good distorted surfaces to match existing. The existing timber doors will be salvaged and stored for future interpretation.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
B-12	Introduction of new building services routing including addition of steel frame for air conditioning units and associated pipe works.	Timber suspended ceilings	High	Acceptable Impact with Mitigation Measures	Such improvement work is considered beneficial as more welcoming indoor area is provided for public to appreciate the historic buildings. Fresh air intake units will be installed on an additional steel frame above the timber suspended ceiling which will be supported by the load bearing brick walls with minimum intervention to avoid additional loading to roof structure (refer to Drawing No. F-01, F-02 and F-03 in Appendix I). AC ducts and sprinklers system will be surface mounted on the existing roof structure in a reversible manner. Any internal service ductworks and machinery will be placed at inconspicuous locations. Make use of the existing louvre on the suspended ceiling for air exchange. Disturbance to the brick walls of the historic buildings should be avoided as far as practicable for the installation of the new steel frame. Details of the new steel frame should be subject to AMO's approval.
		Internal painted plaster finishes	Low		
		Internal brick walls	Moderate		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
B-13	Repair and repaint the internal moulded cornices at the ceilings.	Internal moulded cornices at and ceilings	High	Beneficial Impact	The moulded cornices should be repaired and repaint to match existing.

C. Bungalow (Exterior)

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
C-01	Repair external walls, including spalling plaster, cracks and deteriorated finishes.	Building Façade	High	Beneficial Impact	The walls shall be repaired with materials matching original without adverse impact on the historic fabrics.
		External rendered and painted finishes	Moderate		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
C-02	Increase the width of the door openings (5 nos.) to the courtyard to comply with the current statutory requirements.	Timber battened doors to the Garage and all original external timber doors, including door panels with grid pattern, door frames, fanlights, original glazing scheme of obscure and clear glass, granite thresholds and original ironmongeries and timber door bars	High	Acceptable Impact with Mitigation Measures	The location of the widening of existing doors at Bungalow will be at the open courtyard, which is less prominent. The original glazing scheme of obscure and clear glass should be retained. The original doors and ironmongeries should be overhauled and repaired to match existing. The design of the new ironmongery installations should be compatible with the historic doors and match with the historic ambience. The granite threshold should be preserved *in-situ* and be cleaned. Remove the burglar bars and metal grills installed behind the fanlights. The design of new doors should match with existing in terms of the materials, colour and texture.
		Burglar bars / metal grilles at fanlights	Intrusive		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
C-03	Restore and repair the window openings with timber casement windows.	Timber casement windows including original glazing scheme of obscure and clear glass, ironmongeries and window frames.	High	Beneficial Impact	Remove the burglar bars and metal grills installed behind the casement windows. The original glazing scheme of obscure and clear glass should be retained. The original windows and ironmongeries should be overhauled and repaired to match existing.
C-04	Repair and repaint the brick window head and sill with painted quarry tile finishes.	Brick window sills with quarry tile finish painted in red with white brick lines	High	Beneficial Impact	The original window sills and heads should be retained and repainted in same colour scheme.
C-05	Repair and restore the Chinese styled hip roof, including pan and roll tiles roofing.	Chinese pitched roof	High	Beneficial Impact	Condition survey should be carried out to investigate the condition of existing roof tiles. Re-roof the Chinese pan-and-roll tiles to match existing. The details of re-roofing works should be submitted to AMO for approval. Those existing ridges should be preserved *in-situ* and repainted to match existing. Remove any vegetation, leaves, twigs and debris.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
C-06	Restore and repaint the over-hanging roof eaves.	Over-hanging roof eaves	High	Beneficial Impact	Condition survey should be carried out to investigate the condition of existing roof eaves. Replace and repaint any rot or damaged timber to match existing. Repair and replace any rotten fascia boards to match existing. Remove any vegetation, leaves, twigs and debris.
C-07	Repair the chimney stacks and preserve *in-situ*.	Chimney stacks with ornamental band painted in red and white brick lines	High	Beneficial Impact	Photographic and cartographic survey shall be carried out to document the existing ornamental chimney stacks before the commencement of works. The original chimney stacks should be repainted in same colour scheme.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
C-08	Retain the open courtyard and repair the cast iron columns with concrete plinth supporting the roof eaves.	Open courtyard	High	Beneficial Impact	Structural survey should be carried out to investigate the condition of cast iron columns and concrete plinth. Scrape off, repair and repaint the cast iron columns and concrete plinth by appropriate approaches to match existing. No additional structure will be constructed at the existing open courtyard. The existing cast iron pipework will be retained and repaired. In case the cast iron columns are beyond repair where replacement is necessary, the replacement should follow the original installation method, material and design.
		Cast iron columns with concrete plinths supporting the roof eaves	High		
C-09	Repair the wall lamp in the courtyard to functional state.	Wall lamp	High	Beneficial Impact	Such repair works is considered beneficial and acceptable provided that the works is minimal and carried out by experienced workmen under the guidance of conservationists.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
C-10	Addition of louvre to existing windows for fresh air inlet.	Timber casement windows and horizontal pivoted windows on top, including original glazing scheme of obscure and clear glass, original ironmongeries and window frames	High	Acceptable Impact with Mitigation Measures	The location of the modification of existing windows for fresh air intake will be at the east side of the façade which is less prominent. The size and location of the existing window openings should not be altered. Original timber casement windows will be salvaged and stored for future use or interpretation. The pipes and ducts of the fresh air inlets shall be well-organized along the external wall and painted in similar colour to existing wall finishes. The new louvre should be of compatible design, in terms of suitable material, coulor and texture and made at less prominent location to minimize visual impact to building facade.
C-11	Minor adjustment of external floor level at open courtyard to comply with the current BFA requirements.	Floor tiles at open courtyard	Low	Acceptable with Mitigation Measures	The new floor tiles should be of compatible design to the historic buildings, in terms of suitable material, coulor and texture.

D. Bungalow (Interior)

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
D-01	Retain and restore the existing fireplaces *in-situ*.	Fireplaces (2 nos.), including tiling, surrounds, grates, hearths, and mantel shelf	High	Beneficial Impact	The fireplaces should be protected during the course of work and be restored as appropriate. Remove the later-added hooks attached to the mantelpiece of the Treatment Room fireplace and restore the surround to match existing. The fireplaces should not be covered and should be exposed for public appreciation.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
D-02	Repair and restore the timber rafters, timber purlins and timber trusses.	Timber roof structure	High	Acceptable Impact with Mitigation Measures	The defective timber rafters and timber purlins should be repaired to match with the original design and finishes coating. Only limited ducting and piping will be installed to the roof structure subject to the advice of the RSE to minimize additional loading impose on roof and avoid alteration to the roof structure in the treatment. Fixing to the roof structure will be in a reversible manner. No addition and alteration should be made to the original roof structure. The original roof structure should be exposed for interpretation. The timber suspended ceiling will be treated with preservative solution.
D-03	Repair and repaint the internal walls.	Internal painted plaster finishes	Low	Beneficial Impact	Repair any damage sections, including spalling plaster, cracks and deteriorated finishes of the internal walls using materials matching existing.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
D-04	Demolish 3 nos. of partition walls between the Bedroom A and Sitting Room A, and 1 no. in the Toilet C.	Internal painted plaster finishes	Low	Acceptable Impact with Mitigation Measures	Photographic and cartographic survey shall be carried out to document the existing structure before removal of the partition wall. Disturbance to the adjoining historic fabrics shall be minimized.
		Internal brick walls	Moderate		
D-05	Restore the stone table, shelves, draining board and sink in the Kitchen	N.A.	N.A.	Beneficial Impact	Remove dirt and stains on the existing stone table, shelves, draining board and sink and preserve them *in-situ*.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
D-06	Addition of internal building services and associated pipe works.	Internal painted plaster finishes	Low	Acceptable Impact with Mitigation Measures	Such improvement work is considered beneficial as more welcoming indoor area is provided for public to appreciate the historic buildings. New AC pipelines will be grouped together and enter the building through the modified louvre window at Bungalow and passing through internal walls to minimize the number of openings and visual impact to the historic buildings. Any internal service ductworks and machinery will be placed at inconspicuous locations. AC ducts and ventilation fans for Bungalow will be surface mounted on the internal wall. Disturbance to historic fabrics shall be minimized.

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
D-07	Addition of display panel in the Garage, bedroom and sitting room.	Internal space of Garage	High	Acceptable with Mitigation Measures	The original brick wall in the Garage should be repaired and repainted to match existing. No anchors or fixings should be made to the existing brick wall. Limited fixings / pre-installed fixings to the internal brick wall are allowed. The display panel shall be in compatible design to the historic ambience of the historic buildings. The fixing method of the display panel should be agreed with the AMO.
		Internal brick walls	Moderate		
		Internal painted plaster finishes	Low		

No.	Assessment Items	Affected CDEs / fabric	Level of Significance	Impact Level after Mitigation Measures	Treatment / Mitigation Measures
D-08	Introduction of new building services routing including addition of steel frame for air conditioning units and associated pipe works.	Timber roof structure including rafters, tie beams, battens and etc.	High	Acceptable with Mitigation Measures	Such improvement work is considered beneficial as more welcoming indoor area is provided for public to appreciate the historic buildings. Fresh air intake units will be installed on an additional steel frame supported by the load bearing brick walls with minimum intervention to avoid additional loading to roof structure (refer to Drawing No. F-01, F-02 and F-03 in Appendix I). Any internal service ductworks and machinery will be placed at inconspicuous locations. Disturbance to the brick walls of the historic buildings should be avoided as far as practicable for the installation of the new steel frame. Details of the new steel frame should be subject to AMO's approval.
		Internal brick walls	Moderate		

9.3 Interpretation

The Lady Ho Tung Welfare Centre Eco-learn Institute emphasizes the inherent historical value and significance of the LHTWC. One of the focus of interpretation of the LHTWC shall be its linkage to the agricultural contributions and activities once took place in the Kwu Tung area by Lady Ho Tung:-

- The Tung Ying Hok Pok near the LHTWC was opened to public as a farm for the family to go for weekends or outings by Lady Ho Tung in 1910. It was successful to promote the agricultural development by introducing modern farming technology to locals.

- In 1924, Lady Ho Tung was employed some experts in growing silkworm to develop the Chinese sericulture in Hong Kong.

- The LHTWC, which donated by Lady Ho Tung, was completed in 1933 and opened to public in 1934, which improve the medical services condition in New Territories.

- The LHTWC served as a maternity centre as well as a sanatorium for Indian soldiers from 1934 to 1973.

- The LHTWC became a welfare centre until 2005.

The conceptual framework of the interpretation is proposed to tie in with the different uses of the building as follows:

Location	Interpretation	Presentation
Heritage Interpretation Area	• Providing free guided tours or electronic guiding devices to let the public know more about the historical values and the revitalization process of the building; • Short videos will be played at the reception area and customer service room to introduce the history of the building; • Interpretation of architectural features of the historic buildings; • QR Code will be provided on the display panels for public to get more information; • Organizing thermic exhibition / lecture to introduce the historical and cultural values of the LHTWC and the contribution of Sir Robert Ho Tung Family to the community at the vicinity; • Display the scaled model and photos of existing roof structure in the exhibition area for interpretation of roof construction to visitors.	• Guiding map • Display panels • Historic photographs • Leaflet • Lecture • Audio visual installations • Scaled model / photos of roof structure
Ecology Discovery Area	• Displaying specimen, photo records and other documents for public to acquire more knowledge of biodiversity and ecology; • Short video will be played at the Ecological Display Room for visitors to learn more about the nature; • Virtual guided tour will be organized in inclement weather for public to experience the biological diversity.	• Exhibits • Audio visual installations • Display panels
Customer Services Area	• Displaying old photos for the interpretation of the surrounding context of the LHTWC in the past.	• Historic photographs
Agriculture Microcosm Area	• Organizing training programmes and activities in “Rural Bioblitz Experience” to school sector and local community to enhance public awareness of the importance of biodiversity, ecology preservation as well as sustainable development; • Operating learning courses related to sericulture and farming technology that once Tung Ying Hok Pok nearby.	• Training programme • Learning course

Table 16. Table of the interpretation in different area of the LHTWC

9.4 Guided Tour

9.4.1 Tour Topics

The guided tour aims to convey the following topics to the public:

- The relationship between Kwu Tung area and Sir Robert Ho Tung Family
- The colonial heritage in Kwu Tung area
- The history of the medical services in New Territories
- The history of Kwu Tung area
- The biodiversity of Kwu Tung area
- The architectural significance of the LHTWC
- The revitalization progress of the LHTWC

The above topics will be brought out through the personal experience of the tour participants in architectural features of the LHTWC. Interpretation through the explanation of the tour guide, display of the contribution of Sir Robert Ho Tung Family will be incorporated.

9.4.2 Route of Guided Tour

The proposed guided tour will be provided to the individual as well as the school or other groups. Online reservation and on-site registration are both available for the public.

The following area will be opened for public guided tour during the business hour:-

Main Block
- Time Gallery (U shape colonnaded verandah)
- Ecological Display Room 1
- Ecological Display Room 2&3 (Closed during the lecture and class)

Bungalow
- Open courtyard
- Exhibition area 1 & 2

Open Space
- Agricultural Microcosm Area

Fig 42. The plan of the areas opened for public in business hours. The area coloured in yellow are Ecological Discovery Area. The area coloured in orange are Heritage Interpretation Area. The area coloured in green are Agricultural Microcosm Area and other open area. Edited by Hannah Liu.

The leaflet with information on the guided tour including the guided tour maps and brief programme of LHTWC will be issued at the open area in front of the Customer Services Room. Electronic equipment will also be provided for self-service guided tour if required. A brief background of the historic buildings will be presented in front of the Main Block. The tour participants could also scan the QR code on the leaflet to get more information during the guided tour. The architectural features of the LHTWC and contribution of Sir Robert Ho Tung Family will be introduced when the participants walk around the Main Block. Then they will be guided to the Bungalow through the covered walkway. Internal architectural details such as the roof structure and fireplace will be displayed in Exhibition Area 1 of Bungalow. Through the Exhibition Area 1 and get out of the Bungalow, the participants will guided to the Exhibition Area 2, where they can learn more stories and activities once took place here.

For the school or the other groups, the guided tour will not only hold in the historic buildings, but also the surrounding area for interpretation of the history development of Kwu Tung area, such as Kam Tsin Tsuen, Long Valley

and etc.

Detail route for the guided tour is shown in below plan.

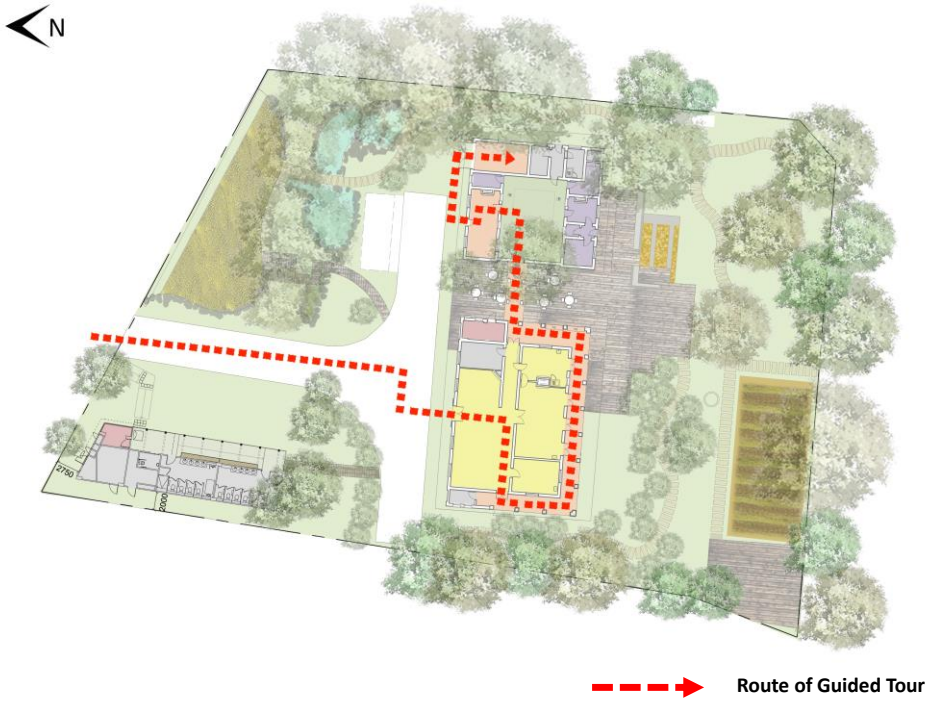


Fig 43. The plan of the main route of guided tour for interpretation. Edited by Hannah Liu.

10.0 MANAGEMENT AND IMPLEMENTATION

10.1 Maintenance Plan

Maintenance is an essential part of the conservation process and should be taken where fabric is of cultural significance and its maintenance is necessary for retaining that cultural significance. A maintenance schedule should be developed and reviewed annually by building management professionals, conservationists and professionals.

A maintenance schedule including the followings should be developed:

- Regular inspection of the condition of all CDEs
- Regular inspection of internal and external finishes and fittings
- Regular cleansing of drainage and plumbing system
- Regular checking of site drainage system

A maintenance manual with repairing method specified with special materials, techniques and requirement of specialist of identified conservation items and schedule of building materials should be provided to the future frontline maintenance staff. All repair works should be carried out to match the existing materials, colour, texture and craftsmanship of the historic fabrics for authenticity and maximum compatibility. Replacements should be avoided except the historical fabrics are beyond repair.

The maintenance plan should be reviewed annually by management professionals, conservationists and professionals with thorough understanding of managing a heritage site to ensure the execution of a proper maintenance programme.

10.2 Management Proposal

The conservation and adaption of the buildings is only the first stage in an ongoing process of care and management. It is important that everyone involved with the use of the heritage site is aware of its value and the level of care which must be taken when any works are proposed. Damaging and often irreversible changes can inadvertently occur through ill-considered actions or ignorance. To avoid this situation occurring, all staff involved in any aspect of the management of the LHTWC must be briefed on the significance and appropriate management of the buildings and its setting. An operation manual detailing the significance and appropriate management of the buildings and its setting, as well as the identified conservation items will be complied and provided to future users for guiding the operation of the building without degrading its heritage significance in any aspect. No new work, however minor or seemingly insignificant should occur without approval and checking. For example, nothing should be fixed on or into internal or external walls without prior approval. The property management plan will be reviewed annually by building management professionals, conservationists and professionals with thorough understanding of managing a historic building to ensure the execution of a proper management programme.

10.3 Future Development

The immediate environs of LHTWC and setting should be maintained. For future development of this Grade 2 historic building, including renovation, restoration, alteration and addition, advice should be sought from AMO prior to commencement. The proposed works should follow the internationally accepted conservation principles and practice. They should be designed and supervised by Conservation Architect or a Heritage Consultant.

10.4 Documentation

A detailed photographic and cartographic survey should be conducted prior any works commence. All Existing fabric, use, associations and meanings should be adequately recorded before any change is made to the place.

To facilitate future management, all the survey reports, conservation studies, inspection records and monitoring reports should be kept at the management office and made available to the users and professionals who are responsible for future inspection, repair and up-keeping works.

10.5 Implementation of this Heritage Impact Assessment

The policies and mitigation measures set out in this Heritage Impact Assessment confer responsibilities on a number of organizations, which are summarized below.

Principal among these responsibilities is the need to take ownership of the approved document, which rests with the Sik Sik Yuen Lady Ho Tung Welfare Centre Eco-Learn Institute Limited. This means taking direct responsibility during construction to operation stage, such as management, maintenance and interpretation, but also ensuring that the responsibilities of others are met. A heritage conservation expertise within its organization should be appointed to implement the tasks and duties that have been identified.

Prior to handover of the completed project, the consultant team, including the heritage consultant, and the appointed contractor will need to ensure that the conservation policies stated in the conservation management plan (for example the preference to repair rather than replace) and construction operations (such as protection of historic fabric, (a joint responsibility)) can be appropriately and effectively executed during the design and construction stage. The Sik Sik Yuen Lady Ho Tung Welfare Centre Eco-Learn Institute Limited will have a role at this stage where for example design decisions may have an impact on construction costs. Provision for these responsibilities is expected to be included in contract documents, not least in order that contractors understand what is expected of them. Clear and unambiguous accountability, and the monies to pay for the measures required, is essential in all respects. It is assumed the Authorized Person will also act as the Contract Administrator, which places him in the best position to ensure that this task is implemented fully. However, all consultants involved in the design, procurement and

management of the project have a role to play.

To ensure that the roles and responsibilities are understood, it is recommended that each member of the Project Team should read and get familiar with the approval of HIA.

Any proposed works in future not mentioned in this HIA, including demolition, alteration and addition works, restoration and repair works to the identified CDEs shall be reported with mitigation for further approval from AMO.

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APPENDIX I

DRAWING

B.D. REFERENCE

F.S.D. REFERENCE

W.W.O. REFERENCE

NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

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ECO-LEARN INSTITUTE LIMITED

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PROJECT TITLE :
REVITALIZATION OF THE LADY HO TUNG WELFARE CENTRE INTO LADY HO TUNG WELFARE CENTRE ECO-LEARN INSTITUTE

DRAWING TITLE :
SITE LAYOUT PLAN

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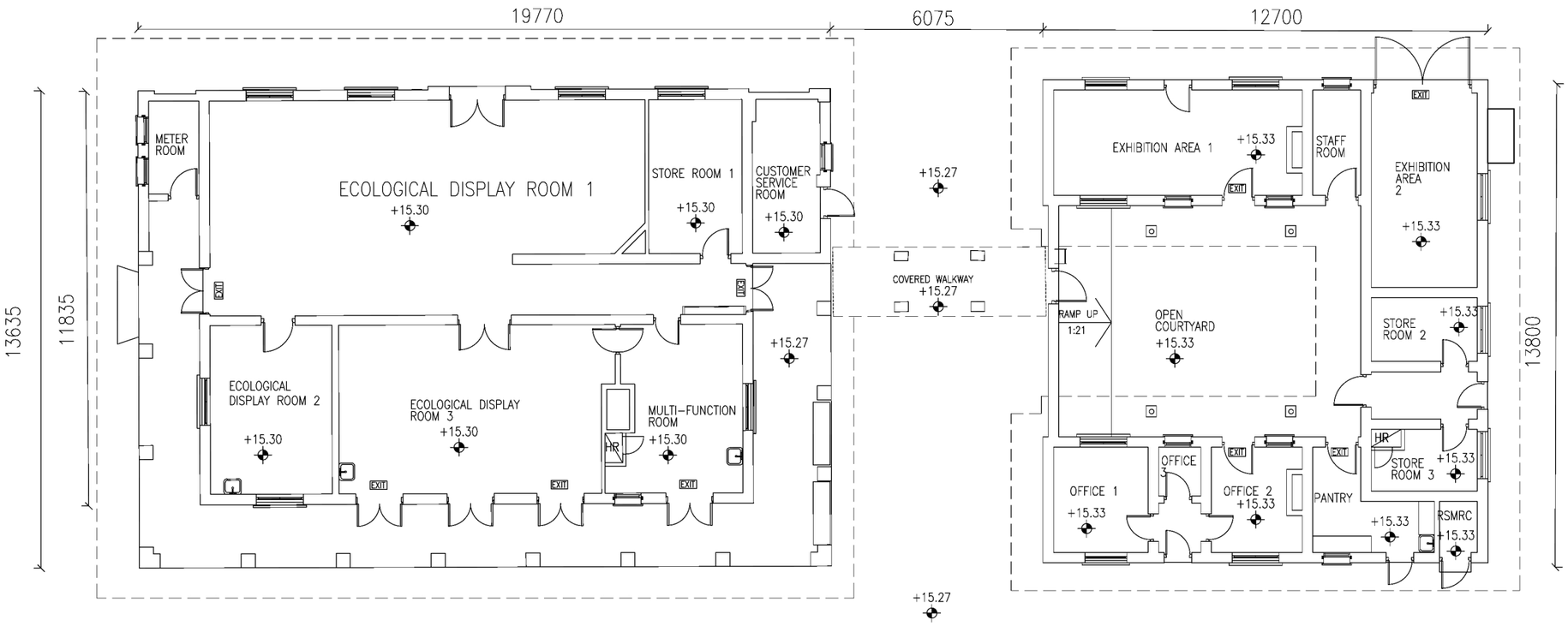
HL	MS
SCALE: 1: 300	DATE: 2017.02.07
PROJECT: 2594	DRAWING NO.: REV.:



PROPOSED GROUND FLOOR PLAN OF MAIN BLOCK AND BUNGALOW

B.D. REFERENCE

F.S.D. REFERENCE

W.W.O. REFERENCE

NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

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ECO-LEARN INSTITUTE LIMITED

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REVITALIZATION OF THE LADY HO TUNG WELFARE CENTRE INTO LADY HO TUNG WELFARE CENTRE ECO-LEARN INSTITUTE

DRAWING TITLE :
PROPOSED GROUND FLOOR PLAN FOR MAIN BLOCK AND BUNGALOW

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SCALE:	DATE:
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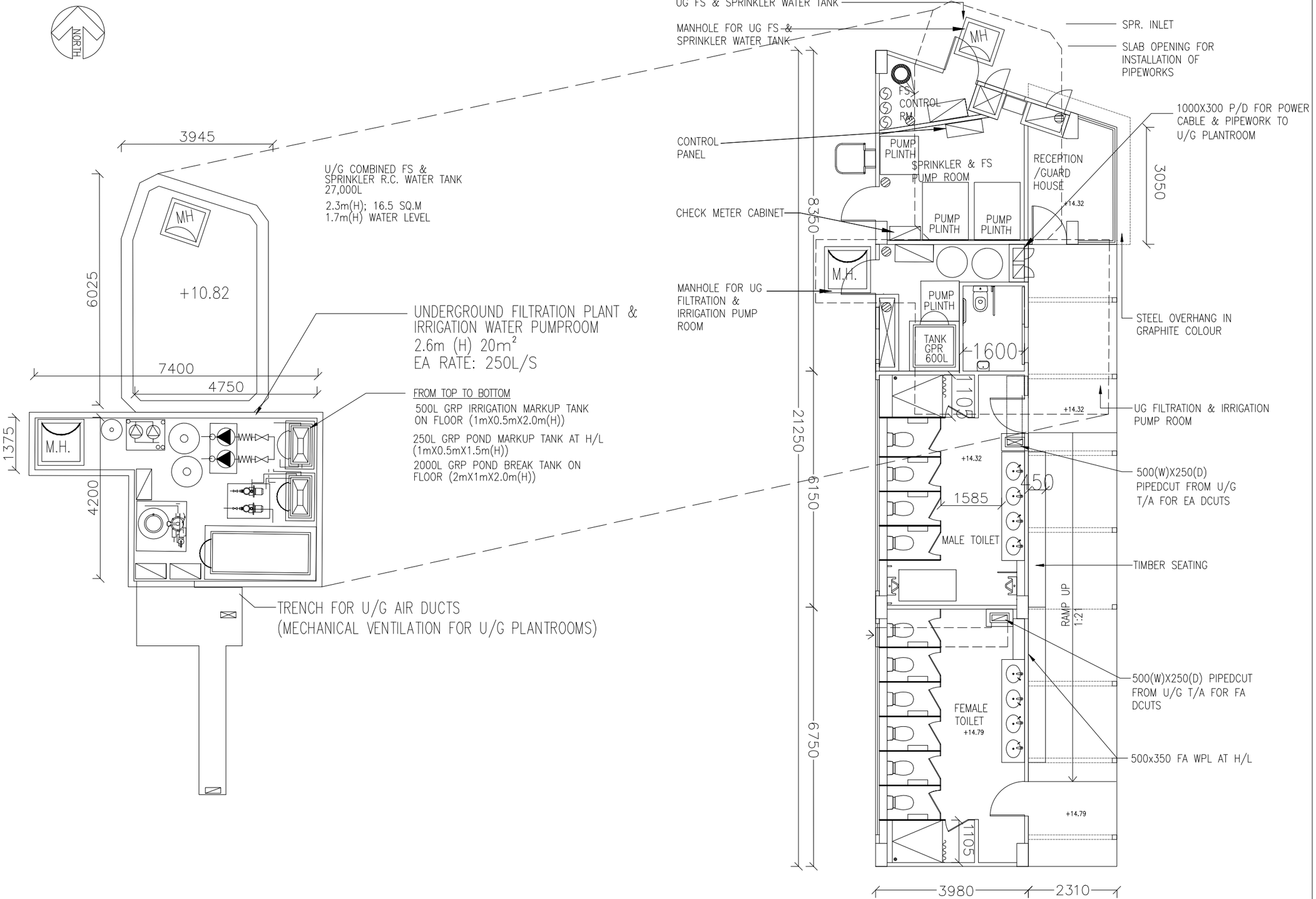
PROJECT:	DRAWING NO.: REV.:
2594	



PROPOSED UNDERGROUND PLAN

PROPOSED GROUND FLOOR PLAN

B.D. REFERENCE

F.S.D. REFERENCE

W.W.O. REFERENCE

NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

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嗇色園何東夫人醫局生態研習中心有限公司

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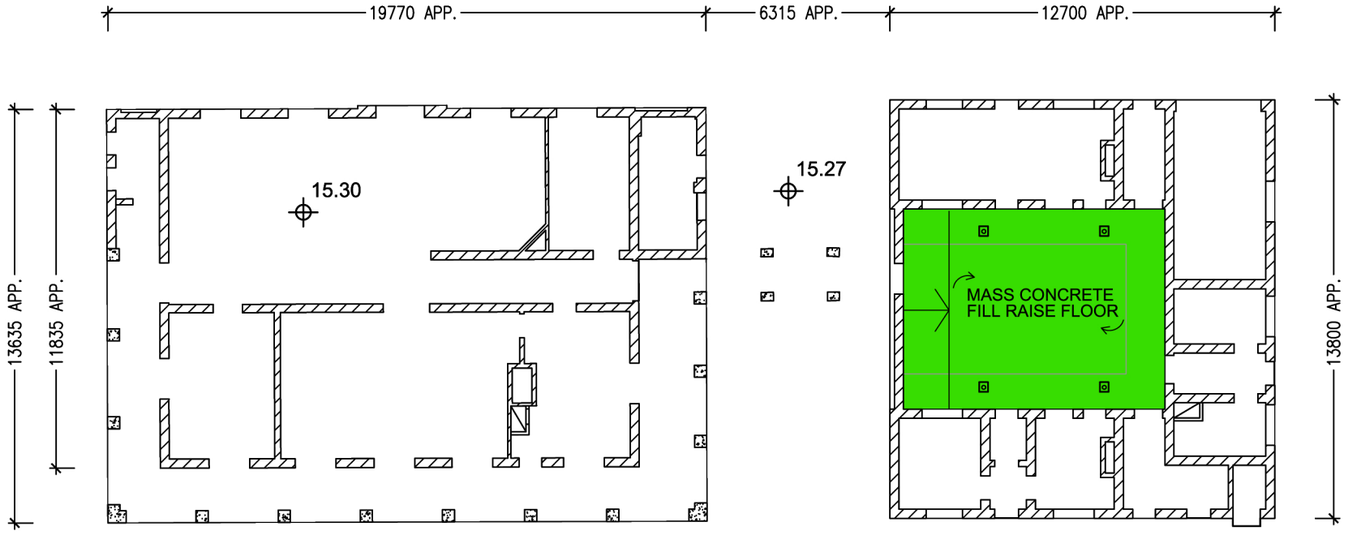
PROJECT TITLE :
REVITALIZATION OF THE LADY HO TUNG WELFARE CENTRE INTO LADY HO TUNG WELFARE CENTRE ECO-LEARN INSTITUTE

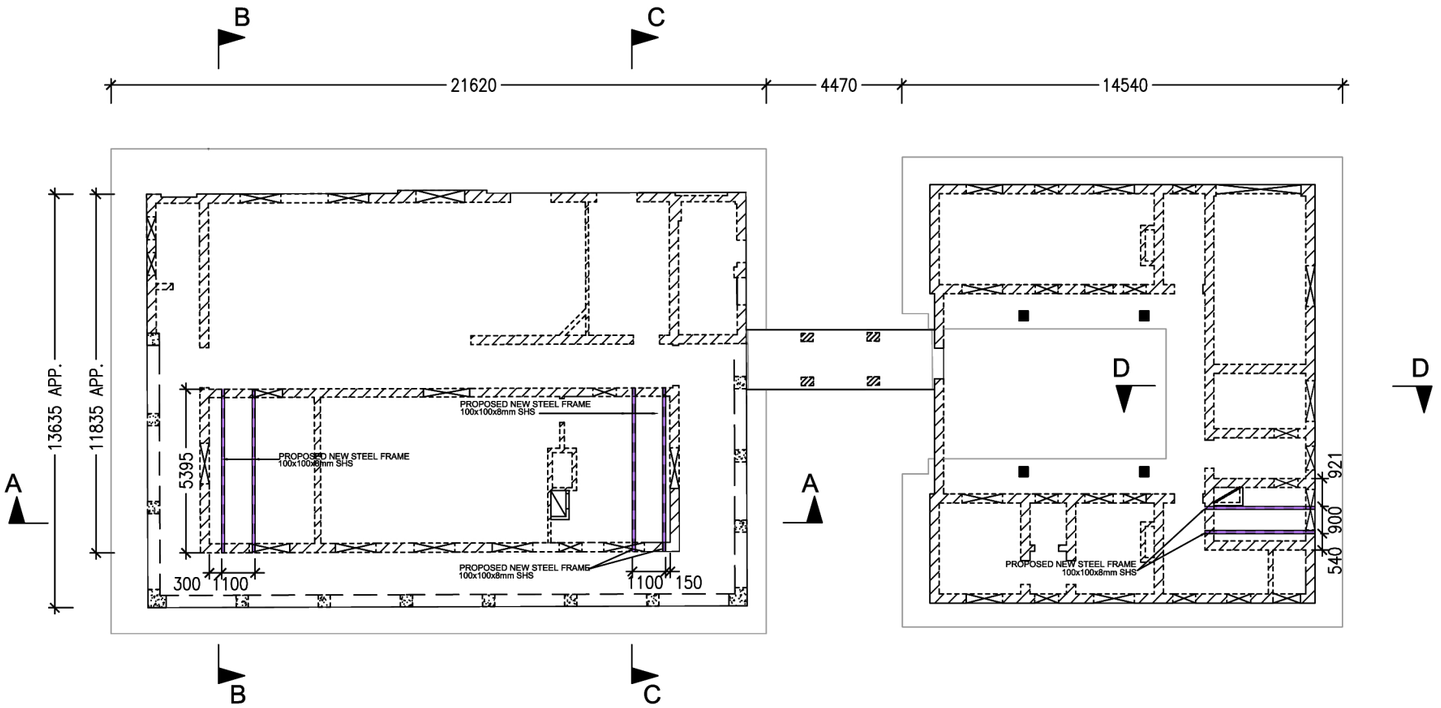
DRAWING TITLE :
PROPOSED UG, G/F PLANS FOR ANNEX BLOCK

DRAWN BY:	CHECKED BY:
HL	MS
SCALE: 1:100	DATE: 2017.02.14
PROJECT: 2594	DRAWING NO.: REV.:



GROUND FLOOR FRAMING PLAN

(1:50)



GROUND FLOOR FRAMING PLAN (+19.75)

(1:50)

LEGEND

EX. R.C. COLUMN

EX. BRICK WALL

B.D. REFERENCE

REVISIONS			INITIAL AND DESIGNATION		
NO.	DESCRIPTION	DATE	DWN	CKD	AUTH
–	1ST SUBMISSION	01 APR. 2016			

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- ALL DIMENSIONS ARE IN MILLIMETER EXCEPT OTHERWISE NOTED
- DO NOT SCALE DRAWING
- ALL MEASUREMENTS SHOULD BE VERIFIED ON SITE

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORIZED			
CHECKED			
DRAWN			

PROJECT

REVITALIAZATION OF THE LADY HO TUNG WELFARE CENTRE INTO LADY HO TUNG WELFARE CENTRE ECO–LEARN INSTITUTE CAUSEWAY BAY, HONG KONG

DRAWING TITLE

G/F AND R/F FRAMING PLAN FOR PROPOSED STEEL FRAME DESIGN OF THE MAIN BLOCK AND BUNGALOW

SCALE AS–SHOWN

DRAWING NO F–01

SOURCE

CLIENT

ARCHITECT

STRUCTURAL ENGINEER

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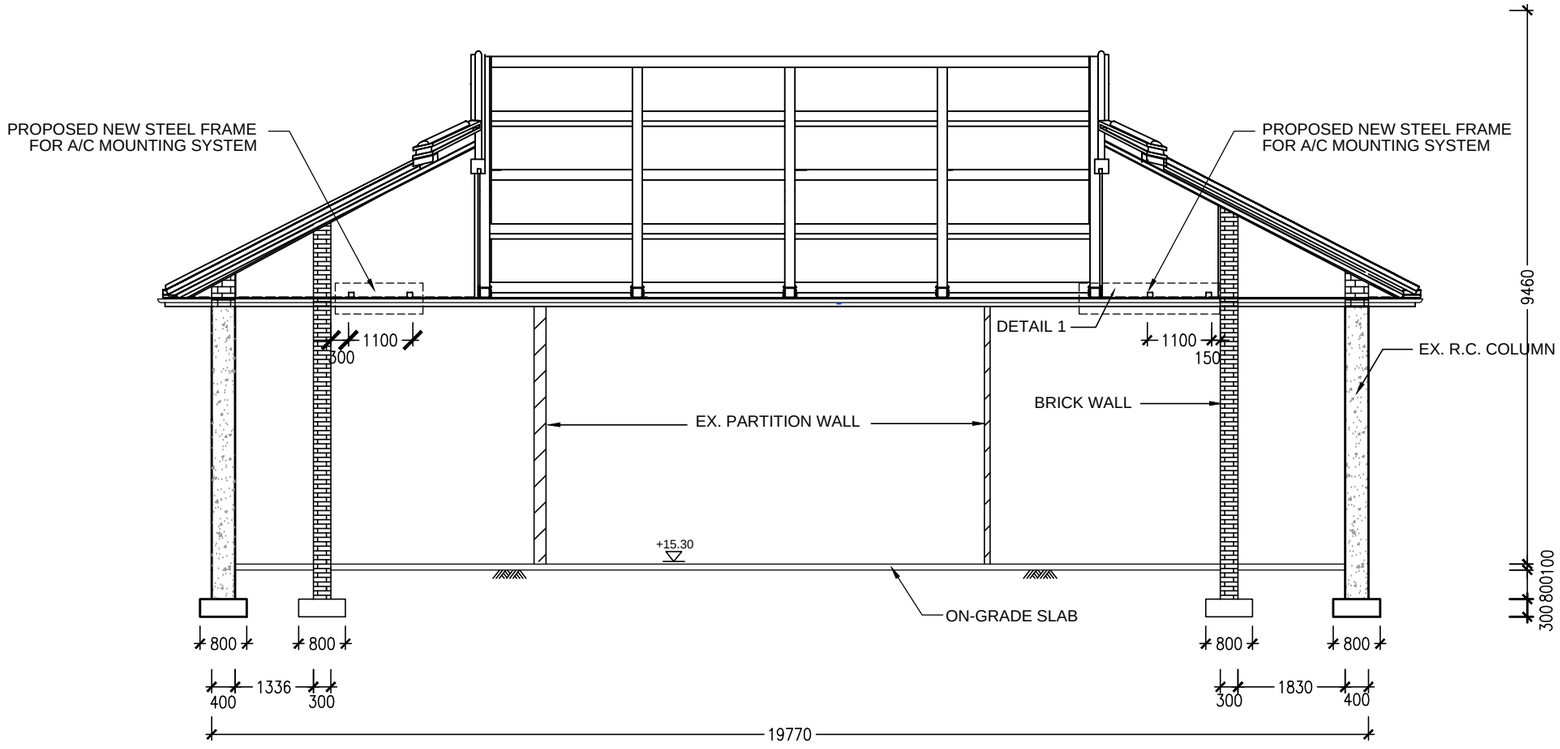
Fax:25591548

BD's OFFICIAL USE



SECTION A-A

(1:100)

LEGEND

EX. R.C. COLUMN

EX. BRICK WALL

EX. PARTITION WALL

B.D. REFERENCE

REVISIONS			INITIAL AND DESIGNATION		
NO.	DESCRIPTION	DATE	DWN	CKD	AUTH
–	1ST SUBMISSION	01 APR. 2016			

- ALL DIMENSIONS AND LEVELS ARE READ IN CONJUNCTION WITH GBP PLAN
- ALL DIMENSIONS ARE IN MILLIMETER EXCEPT OTHERWISE NOTED
- DO NOT SCALE DRAWING
- ALL MEASUREMENTS SHOULD BE VERIFIED ON SITE

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORIZED			
CHECKED			
DRAWN			

PROJECT

REVITALIAZATION OF THE LADY HO TUNG WELFARE CENTRE INTO LADY HO TUNG WELFARE CENTRE ECO–LEARN INSTITUTE
CAUSEWAY BAY, HONG KONG

DRAWING TITLE

SECTION A-A FOR PROPOSED STEEL FRAME DESIGN OF THE MAIN BLOCK AND BUNGALOW

SCALE AS–SHOWN

DRAWING NO F–02

SOURCE

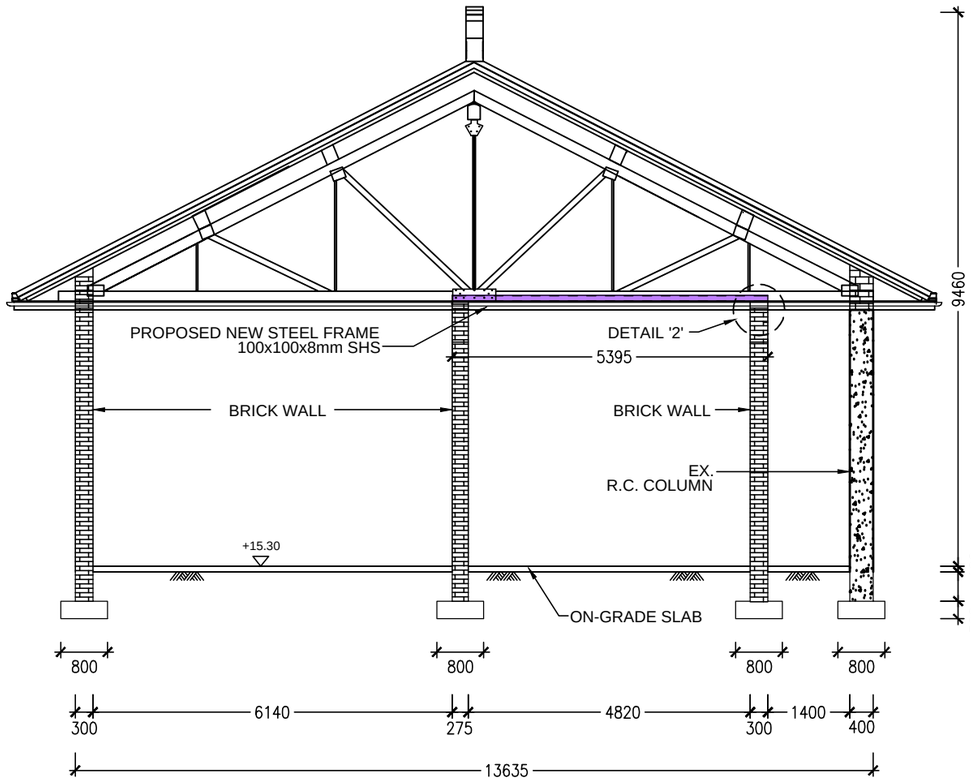
CLIENT

ARCHITECT

STRUCTURAL ENGINEER

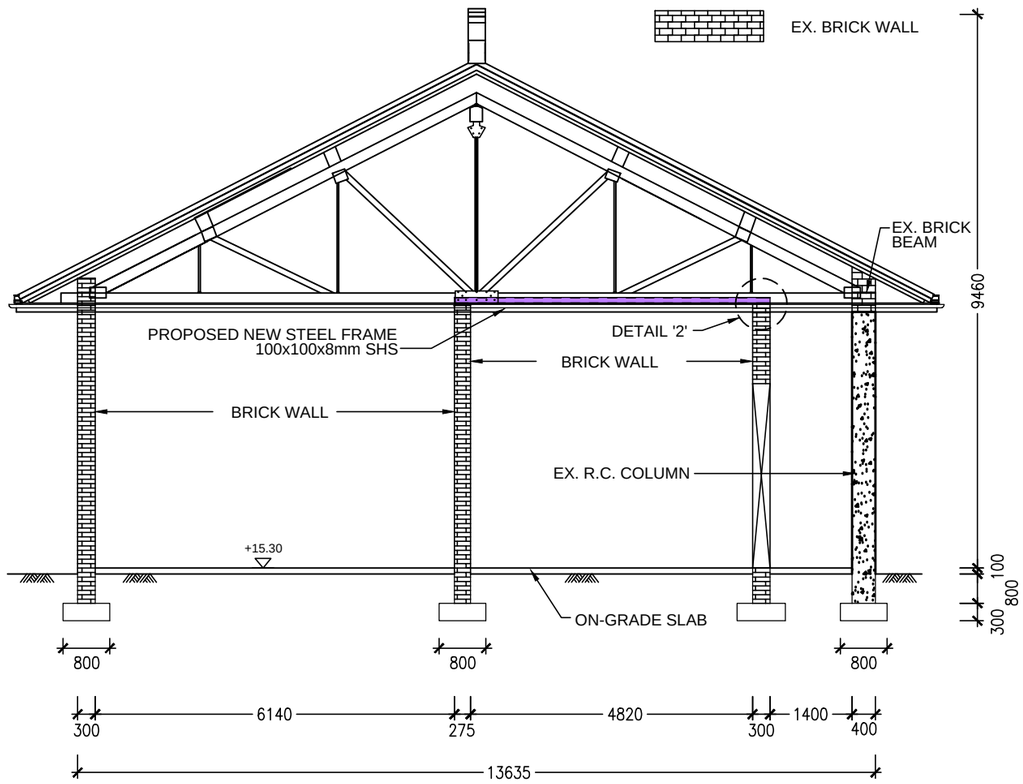
ARTHUR YUNG AND ASSOCIATES COMPANY LTD.
容亨達工程師事務所
17/F, HONG KONG JEWELLERY BUILDING
178–180 QUEEN'S ROAD CENTRAL, H.K.
Tel :22550708
Fax:25591548

BD's OFFICIAL USE



SECTION B-B

(1:100)



SECTION C-C

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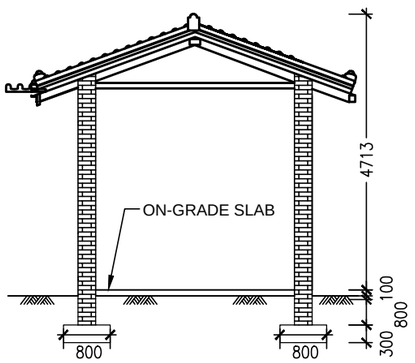
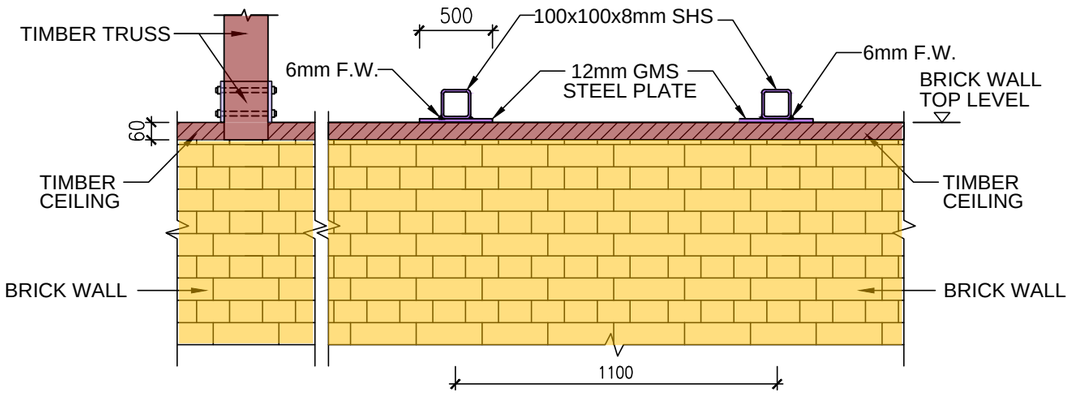


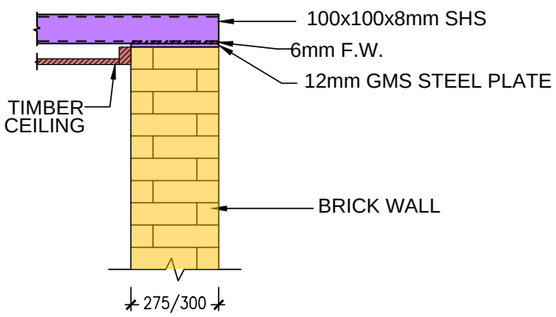
SECTION D-D

(1:100)



DETAIL 1

(1:20)



DETAIL 2

(1:20)

B.D. REFERENCE

REVISIONS

NO.	DESCRIPTION	DATE	DWN	CKD	AUTH
–	1ST SUBMISSION	01 APR. 2016			

INITIAL AND DESIGNATION

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	NAME AND DESIGNATION	INITIAL	DATE
AUTHORIZED			
CHECKED			
DRAWN			

PROJECT

REVITALIAZATION OF THE LADY HO TUNG WELFARE CENTRE INTO LADY HO TUNG WELFARE CENTRE ECO–LEARN INSTITUTE
CAUSEWAY BAY, HONG KONG

DRAWING TITLE

SECTION B-B, SECTION C-C, SECTION D-D AND DETAILS FOR PROPOSED STEEL FRAME DESIGN OF THE MAIN BLOCK AND BUNGALOW

SCALE AS–SHOWN

DRAWING NO F–03

SOURCE

CLIENT

ARCHITECT

STRUCTURAL ENGINEER

ARTHUR YUNG AND ASSOCIATES COMPANY LTD.
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178–180 QUEEN'S ROAD CENTRAL, H.K.
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BD's OFFICIAL USE

Perspective 1

Perspective 2

Perspective 3