

## 4 Cultural Heritage Impact

### 4.1 Introduction

The EIA Study Brief for SCL requires a Cultural Heritage Impact Assessment (CHIA) comprising a Built Heritage Impact Assessment (BHIA) and an Archaeological Impact Assessment (AIA) to be conducted. The BHIA needs to search historic buildings, clan graves and landscape features within the study area while the AIA requires a terrestrial investigation of the archaeological potential of the study area, particularly the former Tai Hom Village Archaeological Site.

The field investigation for former Tai Hom Village was carried out in March 2009. Tang/Song Dynasty remains found are sparse and redeposited and hence of lesser archaeological significance. However, assemblage of Tang/ Song archaeological finds within urban setting is considered rare in Hong Kong.

Other than the former Tai Hom Village Archaeological Site, the CHIA has also studied the impacts on the 3 historical buildings within former Tai Hom Village and, after studying their cultural significance and all possible options, recommended the most appropriate mitigation measures.

The possible impacts caused by the construction and operation of the Project on other built heritages including but not limited to the Lung Tsun Stone Bridge have also been studied and the impacts have been minimised by adopting alternative construction methodologies. More details of the assessment findings and mitigation measures are given in this Chapter.

### 4.2 Environmental Legislation, Standards and Guidelines

The assessment and protection of cultural heritage within HKSAR is governed by the following legislative standards and guidelines:

- Environmental Impact Assessment Ordinance (EIAO);
- Antiquities and Monuments Ordinance; and
- Hong Kong Planning Standards and Guidelines (HKPSG).

#### 4.2.1 Environmental Impact Assessment Ordinance

The Environmental Impact Assessment Ordinance (Cap 499) stipulates that consideration shall be given to cultural heritage and archaeological issues as part of the EIA process. Annexes 10 and 19 of the TM-EIAO cite the following:

- criteria for evaluating the impacts on sites of cultural heritage;
- guidelines for impact assessment;
- the general presumption in favour of the protection and conservation of all sites of cultural heritage because they provide an essential, finite and irreplaceable link between the past and the future and are points of reference identified for culture and tradition; and
- adverse impacts on sites of cultural heritage shall be kept to the absolute minimum.

The Guidance Note on Assessment of Impact on Site of Cultural Heritage in Environmental Impact Assessment Studies (<http://www.epd.gov.hk/eia/english/guid/cultural/basis.html>) serves as a reference to facilitate an understanding of the requirements set out in Annex 10 and Annex 19 of the TM-EIAO for assessing impacts on sites of cultural heritage in EIA studies.

The Cultural Heritage Impact Assessment (CHIA) Mechanism applies to “Sites of Cultural Heritage” within a project Study Area. A Site of Cultural Heritage is defined “as an antiquity or monument, whether being a place, building, site or structure or a relic, as defined in the Antiquities and Monuments Ordinance (Cap. 53) and any place, building, site, or structure or

a relic identified by the Antiquities and Monuments Office to be of archaeological, historical or palaeontological significance”.

A CHIA must be undertaken in order to identify construction and operational phase impacts of the project may have on the cultural heritage of the Study Area. The specific objectives of the CHIA include the following:

- To provide cultural heritage and archaeological impact assessment to satisfy the requirements of Section 3.4.8 of the EIA Study Brief (No. ESB-191/2008);
- To undertake a baseline study of the project study area in order to identify all heritage items as identified in the *Guidelines for Cultural Heritage Impact Assessment*;
- To identify any Sites of Cultural Heritage (i.e. Proposed and Declared Monuments) within the project study area and assess any impacts that will arise from the proposed project and recommend mitigation measures as appropriate; and
- To identify the impacts to identified heritage items and recommend mitigation for these items.

#### **4.2.2 Antiquities and Monuments Ordinance**

The Antiquities and Monuments Ordinance (Cap 53) was enacted in 1976. It prescribes the regulation over the discovery, excavation and protection of antiquities in HKSAR.

Under this Ordinance, the Secretary for Development is the Antiquities Authority. The statutory Antiquities Advisory Board (AAB) consists of members with expertise in various relevant fields to advise the Antiquities Authority on any matters relating to antiquities and monuments. The Antiquities and Monuments Office (AMO), as the executive arm of the Antiquities Authority, provides secretarial and executive support to the AAB in conserving places of historical and archaeological interest.

The Antiquities Authority may, after consulting AAB and with the approval of the Chief Executive as well as the publication of the notice in government gazette, legally declare a place to be protected. The Antiquities Authority is empowered to prevent alterations, or to impose conditions upon any proposed alterations as appropriate to protect the monument.

In addition to declared monuments, a large number and variety of sites of cultural heritage are identified and recorded by AMO. Recorded historic buildings and structures are classified into Grades 1, 2 and 3 by AAB to indicate their relative importance, as defined below:

- Grade 1 – Buildings of outstanding merit, which every effort should be made to preserve if possible.
- Grade 2 – Buildings of special merit; efforts should be made to selectively preserve.
- Grade 3 – Buildings of some merit; preservation in some form would be desirable and alternative means could be considered if preservation is not practicable.

Although graded buildings and structures carry no statutory protection, the Government has administrative procedures that require conservation be given to those historic buildings and sites of cultural heritage.

For archaeological sites, relics (defined under the Antiquities and Monuments Ordinance as fossils and objects/artefacts created, modified, etc. by human agency before 1800 AD) discovered after 1976 are, by law, properties of the government. All discoveries of antiquities or supposed antiquities must also be reported.

The excavation and search for relics require a licence from the Antiquities Authority. Once identified as having the potential for conservation, sites of archaeological interest are entered into a list. Archaeological items are administratively classified into 2 categories:

- Designated archaeological sites – Those which have been declared as monuments. These are gazetted under the Antiquities and Monuments Ordinance (Cap 53) and are to be protected and conserved at all costs.
- Recorded archaeological sites of interest – These are under administrative protection and are considered to be of archaeological interest but which are not declared as monuments.

#### **4.2.3 Hong Kong Planning Standards and Guidelines.**

Chapter 10 of the Hong Kong Planning Standards and Guidelines (HKPSG) provides guidelines relating to the conservation of historic buildings, archaeological sites and other antiquities. The guidelines detail the methods for the conservation and preservation of protected monuments, the method of identifying and recording antiquities, particularly buildings which should be conserved and the recording and grading of such buildings and archaeological sites.

### **4.3 Assessment Methodology**

#### **4.3.1 Background**

The definition/interpretation for Sites of Cultural Heritage under Schedule 1 of the EIAO consists of “any place, building, site or structure or a relic identified by the Antiquities and Monuments Office to be of archaeological, historical or paleontological significance”.

The CHIA comprises the identification of terrestrial archaeological and built heritage impacts to Sites of Cultural Heritage and the assessment methodology for each of these tasks is highlighted below. It should also be noted that as stipulated in the Guidelines for Cultural Heritage Impact Assessment, all items that fall within the scope of the guidelines will be included in this report.

Indirect impacts will arise from ground-borne vibration associated with major site formation works, such as tunnel construction. Appropriate vibration monitoring on the built heritages will be agreed with Buildings Department (BD)/ Geotechnical Engineering Office (GEO) and implemented under the requirement of the Buildings Ordinance and/or Blasting Permit as appropriate.

#### **4.3.2 General**

As stipulated in Section 3.4.8 of the EIA Study Brief (No. ESB-191/2008), the CHIA will follow the criteria and guidelines as stated in Annexes 10 and 19 of the TM-EIAO. The key stages for CHIA include the following:

- Baseline study (including both desktop study and field survey);
- Impact evaluation; and
- Formulation of recommended mitigation measures.

#### **4.3.3 Study Area**

According to the EIA Study Brief, the study area for field survey and impact evaluation includes the area of potential impact that would be caused by the chosen route alignment. These have been defined within the study brief as follows:

- For terrestrial archaeology, this is defined as a 50m buffer on either side of the chosen alignment.
- For built heritage this is defined as a 300m buffer on either side of the areas which will be or have the potential to be impacted by the chosen alignment.

#### **4.3.4 Baseline Study**

According to Annex 19 of the TM-EIAO, a baseline study will be conducted which includes both a desktop study and field survey, where necessary, within the study area to determine areas of archaeological and built heritage potential.

This will include any areas impacted by rail construction and operation as well as direct and indirect impacts of ancillary works areas, access sites and ventilation buildings etc. The desktop review of known terrestrial archaeology and built heritage items within the SCL study area are given in **Sections 4.4 and 4.5** respectively. This provides key data for more focussed survey, if required, of cultural heritage impact.

#### **4.3.5 Desktop Study**

AMO maintains a list of known and potential sites of cultural heritage which is being updated from time to time. This list can be consulted at AMO, or EPD's EIAO Register Office. However, the list is neither meant to be exhaustive, nor is the information contained therein comprehensive, particularly in the case of archaeological sites or cultural features buried underground.

Other useful sources of relevant information include the tertiary institutions (e.g. the Hong Kong Collection at the University of Hong Kong Library, Departments of History and Architecture at the University of Hong Kong and the Chinese University of Hong Kong), public libraries and archives (e.g. the reference libraries under LCSD, the Public Records Office), District Offices, District Lands Offices and Land Registries, etc.

#### **4.3.6 Field Survey Methodology – Terrestrial Archaeology**

The key steps for the terrestrial archaeological field survey are:

- Apply a licence from the relevant authority for the person leading and undertaking a ground survey involving search and excavation of antiquities. For those activities or works involving search and excavation of antiquities, the requirements set out in the Antiquities and Monuments Ordinance must be followed.
- Define areas of natural land undisturbed in the recent past;
- Conduct a field scan of the natural land undisturbed in the recent past in detail with special attention paid to areas of exposed soil which were searched for artefacts;
- Conduct systematic auger survey/shovel testing to establish the horizontal spread of cultural materials deposits;
- Excavate test pits to establish the vertical sequence of cultural materials. Test pits are to be of sufficient dimensions to record vertical sequence of artefacts if present. Typical dimensions of 1x1m or 1.5 x 1.5m are commonly used in Hong Kong;
- Prepare maps showing the boundary of each archaeological sites as supported and delineated by field walking, augering and test-pitting. Drawing of stratigraphic section of test-pits excavated which shows the cultural sequence of a site will also be prepared;
- Provide a full bibliography and the sources of information consulted to assist the evaluation of the quality of the evidence;
- Report to AMO as soon as possible if the field survey identifies any additional sites of cultural heritage within the study area which are of potential historic or archaeological importance. The historic and archaeological value of the items will be assessed and reported during the field program and in liaison with the AMO. Should a rescue excavation be necessary this will form part of the mitigation program.

#### **4.3.7 Field Survey Methodology – Built Heritage**

The key steps for built heritage fieldwork include:

- To conduct field survey in accordance to the requirements of Appendix D, *Guidelines for Cultural Heritage Impact Assessment*, of the EIA Study Brief (No. ESB-191/2008).

- Prepare maps in 1:1000 scale showing the boundary of each historic building or structure. Assemble records of each historical building or structure and detailed record of each historic building or structure including its construction year, previous and present uses, architectural characteristics, as well as legends, historic persons and events, and cultural activities associated with the structure.

#### **4.3.8 Impact Assessment**

Following the baseline research (including desktop study and field evaluation), an assessment of any impacted Sites of Cultural Heritage and the heritage items listed on section 3.4.8.2 of the EIA Study Brief (No. ESB – 191/2008) will be conducted, for both the construction and operational stages.

The impacts will include the following:

- Direct loss, destruction or disturbance of an element of cultural heritage;
- Impact on its settings which impinge on its character through inappropriate siting or design; and
- Potential damage to the physical fabric of archaeological remains, historic buildings or historic landscapes through air pollution, change of water-table, vibration, recreation pressure and ecological damage by the development.

Preservation in totality of any cultural heritage features impacted should be taken as the first priority. Detailed requirements of the impact assessment are contained in paragraph 4.3.1(c), item 2 of Annex 10, items 2.6 to 2.9 of Annex 19 and other relevant parts of the TM-EIAO. These include:

- If, due to site constraints and other factors, only preservation in part is possible, this must be fully justified with alternative proposals or layout designs which confirm the impracticability of total preservation;
- Total destruction must be taken as the very last resort in all cases and shall only be recommended with a meticulous and careful analysis balancing the interest of preserving the archaeological, historical, architectural and other cultural values as against that of the community as a whole; and
- A detailed description and plans should be provided to elaborate to what extent the sites of cultural heritage will be affected.

#### **4.3.9 Mitigation Measures**

It is always a good practice to recognise the sites of cultural heritage early in the planning stage and site selection process, and to avoid it, i.e. preserve it in-situ, or leaving a buffer zone around the site. Built heritage, sites and landscapes are to be in favour of preservation unless it can be shown that there is a need for a particular development which is of paramount importance and outweighs the significance of the heritage features.

If avoidance of impact on the cultural heritage is not possible, amelioration can be achieved by reduction of the potential impacts and the preservation of heritage features, such as physically relocating it. Measures like amendments of the siting, screening and revision of the detailed design of the development are required to lessen its degree of exposure if it causes visual intrusion to the cultural heritage and affecting its character.

For total destruction or for areas where preservation *in-situ* of terrestrial or marine archaeological remains is not possible, a comprehensive and practical rescue plan must be worked out. This is also applicable to sites of cultural heritage where only partial preservation is proposed. The rescue programme may involve preservation of the historic building or structure together with the relics inside, and its historic environment through relocation, detailed cartographic and photographic survey.

The implementation programme for mitigation measures shall list out clearly the proposed mitigation measures to be implemented, by whom, when, where, to what requirements and

the various implementation responsibilities. A comprehensive plan and programme for the protection and conservation of the partially preserved site of cultural heritage, if any, during the planning and design stage of the proposed project should be detailed.

#### **4.4 Desktop Review for Archaeological Sites**

##### **4.4.1 Known Archaeological Sites**

The known archaeological sites in the vicinity of the alignments are shown in **Figures 4.1.1 to 4.1.3**. It is emphasised that the boundary of the archaeological sites delimits an area within each region of both proven and potential archaeology. The “archaeological site” has been defined by AMO to include areas where archaeology has been found and areas of archaeological potential.

##### **4.4.2 Former Tai Hom Village (大磡村)**

Based on previous studies, former Tai Hom Village being proposed for the Diamond Hill Stabling Sidings has been identified as a site with potential archaeological value (**Figure 4.1.1**). A total of 2 archaeological surveys were conducted in Year 2002. These surveys include the following:

- “Archaeological Survey at Tai Hom Tsuen”, by Archaeo-Environments Ltd <sup>[4-1]</sup>
- “九龍鑽石山舊大磡村考古搶救發掘報告”，區家發文物考古顧問公司 <sup>[4-2]</sup>

The site of the Tai Hom old village lies at about 1km to the northeast of Kowloon City and 500m north of the old Kai Tak airport in East Kowloon. The demolished Diamond Hill squatter village was developed beside the villages of Tai Hom and Yuen Leng during the 1960's. In the 1970's, the population within the small corrugated iron and narrow laneways reached about 15,000 (Smart A 1992).

The site was cleared in year 2000 for future development and is currently planned as the site for the train stabling sidings for SCL. According to the latest Tsz Wan Shan, Diamond Hill & San Po Kong OZP (No S/K11/23), this site has been zoned as a Comprehensive Development Area (CDA) and the proposed use for train stabling sidings will need to be authorised under the Railways Ordinance and the Town Planning Ordinance.

##### **4.4.2.1 Settlement History of former Tai Hom Village**

###### **Before World War II**

Before development in recent decades which had altered the topography of the area, Tai Hom was a village built on the northern edge of an area of low-quality rice-land about 1 – 2 km north-east of Kowloon City. The village was sited where the fertile, flat lands of the Kowloon plain sloped upwards towards Temple Hill. The area was rocky and rather unattractive to subsistence rice-farmers, as the village name, "At the Great Cliff", suggests.

The early origins of Kowloon can be dated to the Imperial Salt Monopoly of Nan Yue times (200BC). In addition the Lei Cheng Uk tomb dated to 200AD is almost certainly the tomb of a high official of the Salt Monopoly (P. Hase in AE Ltd report on former Tai Hom Village Dec. 2002 p7). The main villages of the Kowloon plain were founded over 800 years ago. Former Tai Hom Village has a much shorter history, which was founded in the late 18<sup>th</sup> century. The agricultural potential of the area near former Tai Hom Village was poor and the founders of the village had to supplement their livelihood by stone-cutting, in addition to the rice which they were able to grow.

The nearest old village to Tai Hom was Po Kong, which was a few hundred metres (or a few hundred yards) south-west of Tai Hom. This village lies below today's Choi Hung Road Sports-ground, and the Market Building on Sheung Hei Street, San Po Kong. It dates from the 3<sup>rd</sup> quarter of the 12<sup>th</sup> century, and the villagers farmed the fertile lands which comprise today's San Po Kong area.

Tai Hom (see **Plate 1.1 of Appendix 4.1**) is a single-surname village of the Chu clan. The founding ancestor of the Chu's was a Hakka from Ng Wah District far to the north-east of

Hong Kong. He was a stone-cutter, and could not find enough work to feed his large family. He came to Hong Kong in Year 1762 to look for work in quarries which were at that date starting up in the eastern part of today's Victoria Harbour. He bought land at Tai Hom for two of his sons born in the 1750s. He supplemented by rice-growing with stone-cutting on the hills behind the village sold for use by masons in Kowloon City. Tai Hom was, therefore, a late settlement. It would probably take 40 years for the settlement and hence it is unlikely to have been founded much earlier than 1790.

### **During World War II**

Nga Tsin Wai, Po Kong, Ngau Chi Wan, Tai Hom and the other villages of this area remained agricultural settlements throughout the 1930s. When the Japanese took Hong Kong in 1941, they immediately extended the Airport to make it usable by modern fighter planes. The extension of the Airport required the clearance of Po Kong and Sha Tei Yuen villages and their fields. All the land within the great loop of today's Choi Hung Road was used as Airport (this area was only freed for the San Po Kong development in the late 1950s, after the Airport was moved seawards onto new reclamation). This development did not affect Tai Hom directly, since the village stood to the north of the Japanese Airport perimeter fence. However, the Japanese period did bring serious hardship and hunger to the former Tai Hom Villagers.

### **Post World War II**

After the War, the Tai Hom area resumed its traditional subsistence rice and market-gardening lifestyle. However, the capture of Canton by the victorious People's Liberation Army in 1949-1950 sent refugees into Hong Kong.

Given the lack of accommodation in Hong Kong at that time, most of the refugees lived in squatter huts. These huts were built on wherever land could be found and as close to the main urban area as possible. The Tai Hom area which lied at the edge of urban area at that time, became an obvious target for accommodation. By 1953-1955, most of the fields in former Tai Hom Village had disappeared beneath the new Diamond Hill squatter area. Only a few small fields survived between the new squatter huts. Most of the squatter huts in Diamond Hill were residences, but there were also many small squatter factories, shops and restaurants, some of which had become quite popular.

#### **4.4.2.2 Geological Setting of former Tai Hom Village**

The train stabling sidings occupies approximately 5 ha and is located between Lung Cheung Road and Choi Hung Road. It is situated at the southerly margin of low granite hills and what was originally marshland along the original coastline.

According to geological mapping by Strange and Shaw (1986), this area is located almost entirely on Quaternary alluvium with a small edge of debris flow entering the southern end of the site. On inspection of the local geology during the archaeological survey by Archaeo-Enviroments Ltd (2002), however, it was noted that a low hill (+14mPD) composed of deeply weathered granite occupies much of the centre and eastern half of the site.

Modern road construction in the vicinity has removed part of this granite hill to the south, revealed in the cross section in a road cutting some 3-4m high and 100m long along Choi Hung Road. Directly opposite to the cutting is a small outcrop of granite which indicates the southerly extent of this hill. The hill can also be seen at Um Ling on the 1904 map of the area (see **Plate 1.1 of Appendix 4.1**).

Relief throughout the Tai Hom area varies from +6 to 8mPD on the lower lying western half of the study area, while to the east relief is from +8 to 14mPD.

#### **4.4.2.3 Previous Investigations at former Tai Hom Village**

##### **Archaeological Survey July – August 2002**

This survey was conducted by Archaeo-Environments Ltd aiming to determine the archaeological potential of Tai Hom area and to recommend any further investigation works and mitigation of impacts (if any).

The archaeological potential was evaluated based on 3 phases of field sampling of increasing resolution, following a progression from broad general survey to subsurface excavation work with closer focus on areas of archaeological discovery and archaeological potential. The key steps are:

- Baseline review;
- Survey baseline/sampling grid;
- Phase 1 - test trenches;
- Phase 2a - test pits;
- Phase 2b - focused test pits;
- Phase 3 - follow-up test pits;
- Finds analysis; and
- Reporting.

A sampling grid of 25m x 25m was established across the study area, which was adjusted during the field program to accommodate buildings and vegetation. A total of 53 test trenches, 23 test pits and 2 focused test pits were excavated at Tai Hom during the survey. The results are summarised in “Archaeological Survey at Former Tai Hom Village” which was subsequently submitted to AMO.

#### **Archaeological and Landscape Summary at Tai Hom**

Aerial photos taken in 1948 showed a low hill with the RAF hangar occupied by agricultural fields and slopes extending to the south and east (see **Plate 1.2 of Appendix 4.1**). Dark grey clay within trenches and test pits at Tai Hom (paddy soils) provide evidence of cultivation of the Qing and modern period. They were widespread and effectively sealing sands and colluvium in mid and lower slopes to the centre-east of Tai Hom. Subsurface geological and archaeological information recorded within 49 test trenches and 18 test pits provide the following summary of stratigraphy at Tai Hom:

- (a) A low hill (+14mPD) composed of coarse grained deeply weathered granite occupies the centre-east of the study area which is ostensibly the area occupied by the former Yuen Ling old village. Soil cover was thin in the upper landscape and where undisturbed (cut into) by the old RAF hangar and house development, parent material of orange sandy clay was less than 30cm below surface and can be seen in terraces and batters cut for house sites south of the hangar. A thin cultural layer persists throughout this area, manifest in a brown sandy clay. Most part of this layer is thin containing disturbed Qing, modern and occasional Song period pottery.

The only early feature was a ditch or depression of similar brown sandy clay containing Song-Yuan Dynasty pottery. Follow-up excavation revealed little evidence of Song material in the surrounding area.

- (b) To the east of this low hill, the granite bedrock was blanketed by colluvium. It could be seen as pebbles and small cobbles within a mottled matrix. Colluvium had been covered by coarse sandy alluvium, variably iron and manganese stained and weakly mottled, and present above colluvium in the lower landscape. The presence of sandy alluvium suggested deposition in and around the granite bedrock as outwash material from drainage from the hills to the rear of the site. These deposits contain Song Dynasty pottery within an area of about 800m<sup>2</sup> in the east of the study area near Luen Yee road. Over 5kg of Song Dynasty pottery was found within Test pit 12 in the centre of this area. Pottery found within this deposit was well preserved, suggesting transport/redistribution from a proximal source. Further to the east and below the elevated freeway, house

debris was thick and the natural surface was difficult to examine. Dark grey paddy soils appear to overlie alluvium and recovery of archaeological material was poor, though the coarse sands of context 4, with minor Song period pottery - extend as far as test pit 48.

- (c) The center-west of the study area was low lying (+6-8mPD) and for the most part underlain by coarse colluvium. Cobbles and coarse alluvium represented a broad alluvial fan at the confluence of two main streams which was since diverted by the western nullah but shown in the 1904 map of the area (see **Plate 1.1 of Appendix 4.1**).

Archaeological materials in this region were restricted to Qing and modern period pottery. These materials were present even within alluvial cobbles, which had provided a recent date for these phases of deposition. The only notable find within the western half of the study area was at test pit 37 which produced a thick layer of 19th century and early 20th century tile and earthenware (Dr. P.Lam p.comm.) within a disturbed context which also contained mixed Song period and a single Warring States period sherd.

### **Recommendations**

The “Archaeological Survey at Former Tai Hom Tsuen” recommended the following investigation:

- 1) The low granite hill was represented by deposition of cultural material within a shallow ditch or depression offers the prospect of locating primary features. Although the surrounding area was highly disturbed, it had been truncated by house foundations, sewerage pits and pipelines. Excavation to follow the extent of this feature both to the west and east was recommended.
- 2) By contrast, Song period material at test pit 12 suggested a secondary deposit – material re-deposited from primary sites further up slope. A future excavation strategy should be centred on TP 12 with the aim of determining the extent and significance of this deposit, and the depth and relationship of the coarse alluvium in this part of the landscape. Primary occupation features were less likely in such a setting though investigation may repay further subsurface investigation.

### **Archaeological Excavation in October 2002**

A follow-up excavation was conducted by Mr Au Ka Fat in October 2002 based on the findings and recommendations of the “Archaeological Survey at Tai Hom Tsuen”<sup>[4-2]</sup>.

The excavation works were undertaken in 2 main areas, Area A and Area B, using 5m x 5m excavation trenches in each area as follows:

- Area A on the upper slope towards the eastern part of the study area occupying a total of 250m<sup>2</sup>; and
- Area B on the mid-lower slope towards the eastern part of the study area also occupying a total of 250m<sup>2</sup>.

Song Dynasty artefacts discovered at Tai Hom reflected the importance of the general Kowloon region during that period. There was also limited presence of geometric pottery and stone tools of earlier prehistoric occupation. However, in both cases, it was concluded from both the archaeological survey and follow-up excavation that the Song and earlier archaeological deposition at Tai Hom was secondary and was the product of re-deposition from off-site.

Area A revealed little cultural material before the Qing Dynasty within typically thin soil and highly disturbed setting with likely truncation/removal of earlier archaeological deposits. Zone A was the focus of the squatter village with likely removal of earlier archaeological material flushed toward Zone B.

Throughout the study area, there was no evidence of building remains, ceramic roof tile, bricks, ancient trackways, wells or domestic features or remains, etc. The ceramic assemblage recovered for most part from Test Sections 1- 9 within Area B were found with

sandy colluvial deposits which imply redeposition, likely from Song Dynasty occupation (now removed – north of the Tai Hom area).

While being a secondary site, the ceramic assemblage at Tai Hom were from kiln in southern China. It demonstrated that the Kowloon area in Tang and Song Dynasty were the trading area of ceramic, probably the outer port of Guangzhou. The area in Kowloon Bay was a relatively rich area. According to historical records, this area was one of the 10 sea salt base in Guangdong.

### **Consolidating the 2 Archaeological Surveys Findings in 2002**

The above sections have presented the findings from 2 previous archaeological surveys for former Tai Hom Village. The following consolidates all the key conclusions so far:

- The early settlement in former Tai Hom Village probably started in 1790;
- Before the World War II, former Tai Hom Village and surrounds was mainly an agricultural area;
- Some of the land was transferred into military uses during the war;
- After the war, former Tai Hom Village was mainly occupied as squatter area (with houses, factories and shops), all of which have been evacuated in year 2000;
- The squatter area, together with its associated utilities, sewers etc, had highly disturbed the original setting in former Tai Hom Village; and
- Modern infrastructure development such as the Choi Hung Road has significantly changed the original landscape greatly.

Qing Dynasty or modern pottery was common throughout the site with localised deposits of Song Dynasty artefacts and rare prehistoric artefacts in the centre-east and east of the study area. These latter deposits were found within secondary (colluvial) material and are therefore not part of an original (*in-situ*) occupation site. The author of the excavation report (Au Ka Fat 2002) concluded that the study area was not an important cultural site.

### **SCL Archaeological Survey at former Tai Hom Village**

An archaeological survey for former Tai Hom Village has been completed in March 2009 (refer to **Appendix 4.2**). The survey report has provided more information to update the archaeological baseline information.

A total of nine test pits were excavated initially in the Stage 1 survey with an additional two test pits excavated for the Stage 2 survey. Based on the results of the test pit program at the former Tai Hom Village in 2009 and in light of the results from archaeological works in 2002, the following highlights are noted:

- The results of the excavation in 2002 culminated in conclusions that the Tang/Song Dynasty remains at the former Tai Hom Village were the product of redeposition.
- The results of the test pit survey have proven the presence of a sparse Tang/Song Dynasty layer which extends to the north-eastern part of the site.
- While the 2009 program has proven a wider extent of the Tang/Song Dynasty remains, the deposit is secondary with no further evidence of *in-situ* remains, foundations, postholes or evidence of occupation.

The survey at the former Tai Hom Village has revealed that the Tang/ Song Dynasty remains are both sparse and redeposited and hence of lesser archaeological significance. However, assemblage of Tang/ Song archaeological finds within urban setting is considered rare in Hong Kong. It is therefore recommended that a survey-cum-excavation works to be conducted prior to the construction works at the former Tai Hom Village site. The tentative extent for the survey-cum-excavation within former Tai Hom Village is shown in **Figure 4.1A**. Before the excavation, the archaeologist shall conduct further test pits to refine the actual demarcation of the excavation area.

#### **4.4.3 Kai Tak Area**

According to the approved Kai Tak Development EIA Report, there are several known archaeological sites in Kai Tak that are relevant to this project. They are described below.

##### **4.4.3.1 Kowloon Fort (九龍砲臺)**

Literature review indicates that the Kowloon Fort was built in 1811 outside the southern gate of the Kowloon City (**Figure 4.1.2**). The fort was a square form with walls measuring about 103m long and 3.7m. There were 42 battlements, each of them standing 1m high. The top of the wall facing the sea was 4.3m wide, while that of the rear wall was 1.7m wide.

During the first Opium War in 1839, the Chinese Navy fired at the British Army at Kowloon Fort. It was later abandoned and then reused as Kowloon City Police Station until the early 1930s. The fort was demolished in the early 1930s when the Kai Tak area was developed and the Police Station moved to the former Terminal Building of Kai Tak Airport.

##### **4.4.3.2 Lung Tsun Stone Bridge (龍津石橋) and Former Kowloon City Pier**

Lung Tsun Stone Bridge was a landing pier built in 1873-1875 (**Figure 4.1.2**). The pier linked the east gate of Kowloon Walled City with the coastline. The stone bridge was subsequently buried underground during the Kai Tak reclamation in 1924.

A concrete extension of the Bridge was built in 1910 and used by the local steam-ferries. In 1930, it was removed and replaced by a new Government pier, which in turn disappeared when the Japanese reclaimed the foreshore during the Japanese Occupation.

Archaeological works in 2003 for Kai Tak Development did not find the bridge but in a subsequent development EIA work, a follow-up archaeological investigation in 2008 had revealed part of the Bridge and the Former Kowloon City Pier. Based on the information from the subsequent investigation on the Lung Tsun Stone Bridge and the unearthed structures at the archaeological site, three components/sections are identified including the following,

##### **Lung Tsun Stone Bridge**

The Bridge was constructed in three phases over a period of 35 years. The granite planks, masonry of six or seven spans and the Pier End Structure unearthed during the excavation in 2008 are part of the first phase Lung Tsun Stone Bridge. The third phase was a concrete extension built in 1910 to replace the second phase wooden structure. Both were at an angle of about 15° to the alignment built in 1875. According to the Conservation Management Plan for the Site of Lung Tsun Stone Bridge prepared by AMO in 2009, the remains of the Lung Tsun Stone Bridge are classified as archaeological features of high significance. The broken concrete supporting pillars and landing steps of the Former Kowloon City Pier are classified as archaeological features of medium significance.

##### **1924 reclamation seawall attached to the Lung Tsun Stone Bridge and the landing steps of the 1924 reclamation seawall**

The 1924 reclamation seawall marked the coastline at that time. Part of the first phase Lung Tsun Stone Bridge was buried by reclamation in 1924 behind the seawall. The landing steps of the 1924 seawall were located at approximately by 130 m east of the Bridge.

##### **Former Kowloon City Pier and the attached 1930s causeway/seawall**

Former Kowloon City Pier projected obliquely from the 1924 reclamation seawall and was approximately 60m long. It was constructed in 1930. The southern section of the Bridge and the Former Kowloon City Pier were likely demolished and buried in reclamation during the Japanese Occupation (1941 – 1945). A total of 47 supporting pillars and two landing steps of the Former Kowloon City Pier were exposed during the subsequent archaeological excavation conducted by CEDD. A section of 1930s causeway/ seawall attached to the Pier End Structure of Lung Tsun Stone Bridge was also unearthed. It marks the end of the first phase Lung Tsun Stone Bridge and the beginning of the Former Kowloon City Pier. It appears to have been incorporated into the construction of Former Kowloon City Pier. According to the Conservation Management Plan for the Site of Lung Tsun Stone Bridge

prepared by AMO in 2009, the remains of the Lung Tsun Stone Bridge are classified as archaeological features of high significance. The broken concrete supporting pillars and landing steps of the Former Kowloon City Pier are classified as archaeological features of medium significance.

Two supporting concrete pillars of the Former Kowloon City Pier were exposed in 2008 archaeological excavation.

#### **4.4.3.3 Site of the Former Sacred Hill**

This site is most famously associated with the last emperor of the Song Dynasty (宋帝昺), who fled south from the invading Mongol Army in the Late 13<sup>th</sup> Century. The stay of the Song Court in Kowloon City for the five months of the summer and autumn of 1277 is an important historical event, and the Sung Wong Toi was the central local memorial of that stay.

The Kai Tak EIA report concluded that Sacred Hill remained a significant cultural site before it was destroyed in part by the Japanese in 1942 for use as reclamation fill for the runway extension at Kai Tak. The remainder of the hill was levelled by the Hong Kong Government in the 1950's for further runway extensions (Henry et.al. 1961). The former location of the hill with respect to the current layout of the site is given in **Figure 4.1.3**. The conclusion of the Kai Tak EIA Report was that no evidence of the hill remains.

The most prominent historical relic from Sacred Hill was a large inscribed boulder which is associated with the last boy emperor of the Sung Dynasty and was originally situated at the top of the Hill (see **Section 4.5.16**).

#### **4.4.3.4 Sacred Hill (North) Area**

An area north of Sacred Hill was excavated in March 2008 and revealed a large assemblage of Song Dynasty pottery. De-watering problems prevented completion of the excavation program and it was recommended that works be continued at this test trench (AA3 in Kai Tak EIA Report) in the far north-eastern part of this area as a series of 30m trenches. While the location of test trench AA3 (see **Figures 4.1.3 & 4.1.3A**) is outside the impact area of SCL works, it was recommended within the Kai Tak EIA that any archaeological findings within these trenches might inform the wider archaeological potential of the former coastal north of Sacred Hill.

An archaeological survey-cum-rescue excavation for a pumping station was undertaken to salvage the archaeological materials as part of the Sacred Hill (North) Study Area from 2009 to 2010. The excavation was divided into three main areas and was divided into two phases (see **Appendix 4.6**). Phase 1 covered Areas 1 and 2 and a total of 24 trenches were excavated. A total of 19 archaeological features and a large number of artifacts were unearthed in Areas 1 and 2, which include a large quantity of pottery and porcelain shards dating back to Song and Yuen Dynasties. Findings strongly suggested that inhabitant existed in Kowloon City area from Song to Yuen Dynasty. The Phase II excavation covered Area 3, and a total of 7 trenches. The total excavation area for Areas 1,2 & 3 were approximately 916m<sup>2</sup>.

The southern extent of the mapped Sacred Hill North area in **Figure 4.1.3** overlaps with the SCL works. The archaeological investigation by CEDD has verified the archaeological potential of the north of the Sacred Hill. Various evidences suggest that the area was utilized as a burial or living ground, and then turned into a dumping area after the inhabitants left the area. The study also concluded that the artifact density in the area to the east, south and north is low.

#### **4.4.3.5 Kowloon City Execution Ground**

The execution ground was a stretch of beach located near the former Sacred Hill at the boundary of Hong Kong and China prior to 1898. The exact extent of the execution ground is uncertain. The area was used to execute criminal such as pirates, who as can be seen in historical photographs were beheaded. The execution ground did not contain any structural features and the landscape was filled in for development at the site and is thought to have

been located near the western end of the former terminal building of Kai Tak Airport (Ove Arup 2001). The predicted location of the former Kowloon City Execution Ground is shown on a geological map in **Figure 4.1.2**.

## **4.5 Desktop Review for Built Heritage**

### **4.5.1 Built Heritage**

The following buildings within the study area represent a review of available data on built heritage which has been supplemented by partial field survey information. **Figures 4.2.1 to 4.2.6** show the locations of these built heritages. A field survey has also been conducted on these built heritage and the results are given in **Appendix 4.3**.

This EIA has assessed all the built heritage explicitly stipulated in the EIA Study Brief (No. ESB-191/2008) and those identified throughout the EIA process. It has been concluded that there are no Sites of Cultural Heritage (namely Declared Monument) situated in the Study Area. The Project Proponent shall implement all the recommended mitigation measures accordingly as discussed in **Section 4.9**.

### **4.5.2 Che Kung Temple (車公廟)**

The Che Kung Temple near Tai Wai (**Figure 4.2.1**) was built by the villagers in Shatin for the worship of Che Kung, a native of Nanchang of Jiangxi province in the Southern Song dynasty (1127–1279AD). Legend recorded that he was a general with supreme power to suppress rebellions and very loyal to the Emperor. His statue was first brought to Hong Kong by the Wans' (濫) and Wais' (韋) living in Ho Chung of Sai Kung. During the Ming Dynasty period when a plague had killed many in the Shatin area, people went to Ho Chung and brought a Che Kung statue back to Shatin. With the blessing of Che Kung, the area was soon pacified. A temple was then built to commemorate the deity. However, there was no record of when it was built.

In the 16<sup>th</sup> year of Guangxu reign (1890), the old temple behind the present one was built. It was managed by the Kau Yeuk union, until 1936, it was taken over by the Chinese Temples Committee till now. The present temple, which is bigger and taller than the old one, was built in 1994. The old temple has since remained at the back but it is normally not open to the public.

The temple is famous for its windmill in recent decades which people believed that it could bring luck and health to the worshippers. Every year, on the 2<sup>nd</sup> day of the first lunar month, i.e. the Che Kung Festival, lots of people go to the temple showing their respect and worship.

The old temple is a two-hall one-courtyard building with three bays. It was built with green bricks and a pitch roof. In the 2004 renovation, the walls were plastered with false brick lines. Only the granite door frame, lintel and the base of the temple was left to remain.

### **4.5.3 Tai Wai Tsuen (大圍村)**

Tai Wai Tsuen (originally named Chik Chuen Wai (積存圍)) was built around 1574 of the Ming Dynasty (**Figure 4.2.1**). It was a walled village of multi-clan with the Wais' (韋) a majority.

The village was walled to protect the villagers from bandits, pirates and/or unfriendly neighbours. It was rectangular in shape with 4 watch towers at its four corners. The towers and the walls have long been demolished leaving only the entrance gate and part of the front wall. The houses inside the walls are in rows, and many houses have been built outside the walls due to later development. Its original plan could not be traced.

The entrance gate is a Qing (清) structure which lies at the central axis in the middle of the front wall of the original walled village. It is constructed of grey bricks with granite blocks base. An earth god was worshipped inside the gate tower.

At the far end of the main lane is a small temple known as the Hau Wong Temple (侯王宮). The temple was originally sited outside the walled village and was moved inside during the Hsien Feng (咸豐) reign (1851-1862). At that time, bandit influence was severe. A stone

inscription inside the temple recorded the social condition of that time. Tai Ping Ching Chiu (太平清醮) is held every 10 years at the village.

#### 4.5.4 Tin Sam Village (田心村)

This village (Figure 4.2.1) was established in the late Ming Dynasty (明朝), comprising a mixed clans village of Choi, Wai, Leung, Tsang, Yuen, Fong, Ho, Liu and Li. At present, except for a few remaining old village houses, the majority of the village houses are modernized 3 storey structures. There are 4 built heritages identified in Figure 4.2.1 and as summarised below.

<u>Built Heritage</u>	<u>Description</u>
Liu Ancestral Hall	<ul style="list-style-type: none"> <li>A one-hall Hakka (客家) style ancestral hall.</li> </ul>
Choi Ancestral Hall	<ul style="list-style-type: none"> <li>A one-hall Hakka style ancestral hall which was built in the 1890s. The building was renovated in the 1995/ 6. The Choi 15<sup>th</sup> and 16<sup>th</sup> generation first settled in this village.</li> </ul>
Leung Ancestral Hall	<ul style="list-style-type: none"> <li>There were 2 ancestral houses of one-hall Hakka style which may have existed for over 100 years. However, site inspection suggests the ancestral hall had been demolished where only the entrance door and the floor remained. Oral history and the use of green brick in remaining structure suggest that they may have existed for over 100 years..</li> </ul>
Entrance Gate, Tin Sam	<ul style="list-style-type: none"> <li>A one-hall Hakka style gate built mainly for defence purposes during the 1700s. It was renovated in 1996. The entrance gate is facing the “Sha Tin Sea”.</li> </ul>

#### 4.5.5 Tai Wai Bunker Complex (大圍地堡)

Tai Wai Bunker Complex (Figure 4.2.1) was a military structure along Gin Drinker’s Line situated at the foothill of Tai Wai. The Gin Drinker’s Line was a British military defense line against the Japanese invasion of Hong Kong in 1941. The defense line was constructed between 1936 and 1938. Tai Wai Bunker Complex is located at more than 300m of the proposed alignment.

#### 4.5.6 Former Kowloon-Canton Railway (KCR) Beacon Hill Tunnel (前畢架山隧道)

The Former KCR Beacon Hill Tunnel (Figure 4.2.2) is neither a declared monument or graded building, nor is it proposed for grading. It is a single lane tunnel of standard gauge which was built in the early 20<sup>th</sup> century – completed in 1910. The construction method was drill and blast, brick lined with the portals at either end built of granite in ashlar work. The lining of the tunnel was upgraded in 1982 and 2008. The tunnel is currently only used for a 750mm gas pipeline and is not accessible by the public.

#### 4.5.7 Hin Tin Village (顯田村)

This village (Figure 4.2.2) was established in 1926 by the villagers of Shek Li Pui Village in Tsuen Wan who had resettled here due to the development of the area by the government. It was a mixed clan village comprising Law, So and Yeung clan groups. At present, the majority of the village houses are modernised 3-storey buildings. There are 4 built heritages identified in Figure 4.2.2 and as summarised below.

<u>Built Heritage</u>	<u>Description</u>
Law Ancestral Hall	<ul style="list-style-type: none"> <li>A one-hall Hakka style ancestral hall with simple decoration</li> </ul>
So Ancestral Hall	<ul style="list-style-type: none"> <li>A one-hall Hakka style ancestral hall with simple decoration</li> </ul>
Yeung Ancestral Hall	<ul style="list-style-type: none"> <li>A one-hall Hakka style ancestral hall with simple decoration. However, according to site inspection, the ancestral hall had been demolished.</li> </ul>
Earth Shrine	<ul style="list-style-type: none"> <li>Rectangular shaped earth shrine of the village which is a newly renovated.</li> </ul>

**4.5.8 Keng Hau Village** (徑口邨)

Keng Hau Village is formed by two villages, the Sheung Keng Hau Village and the Ha Keng Hau Village (**Figure 4.2.2**).

Sheung Keng Hau Village (上徑口村) was established by the Wais' (韋) from Tai Wai in the late 17th century. The Wai Ancestral Hall (No.5 Sheung Keng Hau Village) is located at the back row of the village houses along other houses with the Lion Rock (獅子山). It is a one-hall one-courtyard building constructed of grey bricks and a pitch roof. The name of the hall is moulded above the lintel of the entrance. The ancestral table is in the middle of the altar. It is managed by the Wai Chui Fuk Tong (韋聚福堂) and has undergone major renovation in the 1970s. Dim Deng (點燈) ceremony is still held at the hall for new born baby boys of previous year during Chinese New Year.

Ha Keng Hau Village was established by the Laws' (羅) and the Maks' (麥) during the 18th century. Outside the village, there was a well with a shrine which had been renovated with modern material. The only built heritage in the village is the village house with Hakka roofing style.

There are 3 built heritages identified in **Figure 4.2.2** and as summarised below.

<b><u>Built Heritage</u></b>	<b><u>Description</u></b>
Wai Ancestral Hall	• A one-hall one-courtyard building constructed of grey bricks and a pitch roof
Well Shrine	• A well shrine of the village which had been renovated with modern material
Village House	• The only historical village house with Hakka roofing style

**4.5.9 Chuk Yuen Village** (竹園村)

Chuk Yuen Village was established in the late 17th century. It was a mixed clan village of the Lins' (林), the Lis' (李) and the Kos' (古) with the Lins' a majority.

The Lins', originated from Fujian (福建), migrated to the Kowloon region during the North Song Period (北宋) (956-1127) and established the Pang Po Wai (彭埔圍). During the Coastal Evacuation (1661-1669) in the early Qing (清) dynasty, they moved back inland. After the Edict of the Coastal Evacuation was abandoned, they returned and founded the Chuk Yuen Village (竹園村). Later on, some of them moved to the nearby area and established the Po Kong village (莆崗村) in the early 18th century.

The village was destroyed during the Japanese Occupation (1941-1945). In 1957, the Hong Kong government demolished the village to make way for a new town development. Most of the people were resettled into the high-rise buildings of the Wong Tai Sin Estate nearby.

At present, what is remain of the old village are a few post-war stone houses (Village house No. 47, 48, 50, 65 and 73-75), and some ancestral tombs of the Lins' (near Wong Tai Sin Temple; **Figure 4.2.3**).

**4.5.10 Wong Tai Sin Temple** (黃大仙祠)

Wong Tai Sin Temple is a Grade 1 building (AMO Ref: 86-0368) and is located on the southern slope of Lion Rock (**Figure 4.2.3**). It is a Taoist (道教) Temple which is frequently visited by the locals as well as the tourists.

Some legends say that Wong Tai Sin (黃大仙 also named as 黃初平) was a shepherd boy living in a part of Zhejiang Province (浙江省) called Red Pine Hill (赤松山). When he was 15, he was taught the art of refining cinnabar into a medicine that was said to cure all illnesses.

The original Wong Tai Sin Temple was in Guangzhou and had one hundred years of history. It was seriously destroyed during the civil war in China. The portrait of Wong Tai Sin was brought to HK around 1915 and some altars were set up in Wanchai. In 1921, a Wong Tai Sin Temple was established in Chuk Yuen at the current location. It has remained largely

intact during the 2<sup>nd</sup> World War. Later on, the temple has become very famous <sup>(4-3)</sup> and <http://www.bic.cityu.edu.hk/cm20152/02a/t1c/homepage.htm>).

#### **4.5.11 Chi Lin Nunnery** (志蓮淨苑)

The Chi Lin nunnery (**Figure 4.2.4**) was first established by 葦庵法師 and 覺一法師 in 1934, near Diamond Hill. During the civil war of China in the 1940's, many refugees came to Hong Kong and resided near Diamond Hill. The nunnery had provided lots of voluntary services such as free education to those in need <sup>(4-3)</sup>.

During the 1980's, the government decided to take back the land and other neighbouring areas for the construction of Tate's Cairn Tunnel. With the support from lots of social sectors, the construction work of the new Chi Lin Nunnery had commenced in 1989 and was completed in 2000.

The buildings were uniquely designed and built with wooden rooftops without the use of a single nail in its construction. It was based on a Tang Dynasty architectural style which used special interlocking systems cut into the wood for construction.

Covering a space of about 30,000m<sup>2</sup>, Chi Lin Nunnery has statues of the Sakyamuni Buddha (佛陀畫傳), the goddess of mercy Guanyin (觀音) and other bodhisattvas. These statues are made of gold, clay, wood and stone. It is a living museum and a prominent tourist attraction.

#### **4.5.12 Former Royal Air Force Hangar** (前英國皇家空軍飛機庫) **at former Tai Hom Village** (大磡村)

##### **4.5.12.1 History of the hangar before and during 2<sup>nd</sup> World War**

Prior to the Japanese occupation, there were plans by the authorities to expand Kai Tak Airfield and build paved runways. Owing to this purpose, the RAF hangar located at the eastern end of the airfield and constructed in 1934, was dismantled in June 1941.

While it is not entirely clear when the hangar at Tai Hom was erected and by whom (Japanese or British), the current hangar was re-erected on-site around 1941-45 (**Figure 4.2.4**). It was designed to be taken down and reassembled quickly. The Hangar has been used by the Japanese troop during the 2<sup>nd</sup> World War.

##### **4.5.12.2 After the 2<sup>nd</sup> World War**

After the war, the RAF used the hangar which included housing the Spitfire squadron (**Plate 1.1 in Appendix 4.4**). The 1945-1958 Kai Tak Airport comprised two paved crossing runways that were built by the Japanese with British prisoner-of-war labour. The main runway in similar direction to the reclaimed runway at Kai Tak was located in the area that we know today as San Po Kong.

Prior to the closure of RAF Kai Tak in the 1970s, Kai Tak Airport and the airfield were divided into civilian and military use. The RAF had always occupied the eastern end of Kai Tak (next to today's Richland and Telford Gardens) whilst the civilian airfield was located at the western end. From the 1930s till 1941, the RAF and the Harbour Department (which controlled civilian airport operations) both operated their own separate hangars.

This hangar is the only surviving pre-war military aircraft hangar in Hong Kong. After the 2<sup>nd</sup> World War, the hangar had been used by the RAF until in the 1970's when the hangar was vacated.

Over the last 40 years after the use by the RAF, the hangar had served for various functions such as small scale industries and godown storage. The structure has now fallen into disrepair with the roof exposed and overgrown with vegetation (**Plate 1.3 in Appendix 4.4**). Details of the historical background, structural condition and cultural significance of the hangar and other similar historical buildings are given in **Appendix 4.4A** and a condition survey in **Appendix 4.4B**. A summary is given below for easy reference.

**Structural Conditions** A structural survey was conducted in January 2009 on the Former Royal Air Force Hangar. The key findings and conclusion of the

structural survey are summarised as follows:

- The general structural conditions are poor;
- Most of the steel members are extensively corroded and deteriorating, which would have significant effect on its structural integrity;
- The condition of the Hangar is currently not safe for public viewing.
- The wall cladding and roofing materials have been identified as having asbestos containing material. It will therefore be necessary to remove and dispose of the wall cladding and roofing to meet health and safety standards.

Similar Heritage  
Items in HK

According to the information in Hong Kong Aviation Club web-site, there used to be an aircraft hangar in their previous club house at Kai Tak before they moved to Shek Kong (ref <http://www.hkaviationclub.com.hk/nav4b.html>). The picture taken by Ron Pattinson also suggested that the shape and dimension was generally consistent with that in DHS. However, all the aircrafts had been relocated to Shek Kong Airfield when Kai Tak was closed down in 1998. Hence, the Former Royal Air Force Hangar in former Tai Hom Village is the only structure of its type in HK despite of its poor structural conditions.

Cultural Significance

- This hangar is unique as the only surviving pre-war military aircraft hangar in Hong Kong. It was used by the Japanese troop during 2<sup>nd</sup> World War.
- The hangar was first constructed in 1934 at the Kai Tak airfield, dismantled in 1941 and later re-erected at its current location. It was designed to be quickly dissembled and reassembled.
- Due to lack of regular maintenance, the structure of the hangar is not intact which diminishes its aesthetic and architectural value.
- Much of its surrounding associated historical landscape (such as the two crossing airport runways in 1945-1958) has disappeared and its original historical identity as a military aircraft hangar is blurred by previous use for small scale industries and godown storage.
- Organized historical information, including cartographic and photographic record would be necessary to communicate its historical value as a pre-war military aircraft hangar.
- Together with the Old Pillbox, they contribute to the recollection of wartime history.

**4.5.13 Stone House, No 4 Tai Koon Yuen** (大觀園 4 號石寓)

The Stone House, No. 4 Tai Koon Yuen (大觀園 4 號石寓) was built in 1947 (**Figure 4.2.4**). It was originally owned by Wu Junzhao (吳君肇), the ex-manager of the former Shanghai Bank of Communications, and was rented to actor Qiao Hong (喬宏) between 1950s and 1960s. The neighboring house at No 5 Tai Koon Yuen, now demolished, was once home of Li Hanxiang (李翰祥), a famous film director (**Photo 1.4 in Appendix 4.4**).

This Stone House was built of granite from quarry located within the Diamond Hill areas. It was a two storey building with temporary structure of corrugated steel sheets on the roof. The windows are framed with metal. The front part of the house is single storey with steel balustrade around the flat roof, used as a roof terrace.

The stone building is the only surviving building from the former Tai Hom Village. It is in disrepair and currently surrounded by perimeter fencing. Details of the historical background, structural condition and cultural significance of the Stone House and other similar historical buildings are given in **Appendix 4.4A** and a condition survey in **Appendix 4.4C**. A summary is given below for easy reference.

Structural Conditions	<p>A structural survey was conducted in February 2009 on the stone house. The key findings and conclusion of the structural survey are summarised as follows:</p> <ul style="list-style-type: none"> <li>• The general structural condition is poor and not suitable for living;</li> <li>• Part of the temporary squatter structure at the roof had collapsed;</li> <li>• Spalling and exposed reinforcement found under the roof and on the wall;</li> <li>• Most of the installation foam board in the audio room were damaged or in poor condition</li> <li>• If it is not properly repaired, this house would have the risk of collapsing.</li> <li>• Careful planning is required to record each member of the house before disassembling into smaller pieces for relocation and later reassemble.</li> </ul>
Similar Heritage Items in HK	<p>There are some stone houses of similar type in other places of Hong Kong. Examples are the one in Lok Fu district (within 何家園), and many others in the New Territories.</p>
Cultural Significance	<ul style="list-style-type: none"> <li>• The Stone House, No. 4 Tai Koon Yuen has historical linkage with Hong Kong's early film industry</li> <li>• Many of its architectural features had been modified to a form different from its original style during 1947 – 1960.</li> <li>• This building is a decent but not unique representation of this type of stone house architecture in Hong Kong. The interior structure of stone house is not intact due to lack of regular maintenance.</li> <li>• The cultural significance of the stone house is slightly diminished by the absence of nearby evidence of the early film industry in Hong Kong with which the building is associated. All previous film studios and associated production facilities had been removed during development in and around former Tai Hom Village over the past 40 years.</li> </ul>

#### **4.5.14 Old Pillbox (機槍堡) at former Tai Hom Village (大磡村)**

A fortified pillbox lies to the centre-north of the Tai Hom area, and close to the hangar (**Figure 4.2.4**). This old pillbox was constructed by the Japanese Air Force during the Japanese occupation (**Plates 1.5 and 1.6 in Appendix 4.4**). It was built to guard the eastern end of the Kai Tak Airport while holding the route from the north.

The pillbox is a dome-shaped structure, with an extension on one side to provide a protected entry. The domed section is approximately 5m in diameter and 2.4m from ground level to top. The walls are made of cut stone blocks which were rendered by cement. There

were originally five firing loopholes in the dome walls, and a further one through the wall to the entry. The interior is commonly flooded as the floor is below ground level.

After the war, the pillbox was abandoned and subsequently occupied by squatters. However, the pillbox was retained after the demolition of former Tai Hom Village in 2000 and is one of the few remains of the old Kai Tak Airport. Details of the historical background, structural condition and cultural significance of the old pillbox and other similar historical buildings are given in **Appendix 4.4A** and a condition survey in **Appendix 4.4C**. A summary is given below for easy reference.

**Structural Conditions** A structural survey was conducted in February 2009 on the old pillbox. The key findings and conclusion of the structural survey are summarised as follows:

- The general condition of the old pillbox is more satisfactory as compared to the Former Royal Air Force Hangar and stone house, except for the delamination of the plastering at the roof and some broken pieces of brickwork.
- The structural integrity of the pillbox is such that it should not be lifted in one piece. Subject to further engineering study of its structural integrity, the pillbox will need to be dismantled.

**Similar Heritage Items in HK** There were over seventy old pillboxes around the coast on Hong Kong Island and many more inland at the ends of the reservoirs and on road junctions during 1941. They were mainly British built pillboxes. Many survived and lay disrepair nowadays. Some of these old pillboxes are:

**Some Other Old Pillboxes in HK**

**Remark**

Old Pillbox on Chung Hom Kok beach

The top of the pillbox is covered with debris that has fallen down from the hillside. But the top of the small round structure can still be noted.

(ref <http://www.batgung.com/node/1628>)

Old Pillbox near Waterfall Bay (currently called Cyber Port)

It is constructed with an adjacent bunker. (ref '[Final EIA \(Environmental Impact Assessment\) Report for Agreement No CE 92/97'](#) )

Old Pillboxes JLO1 and JLO2 at Wong Nei Chung

They were manned by 3 Coy (Eurasian) of the Hong Kong Volunteer Defence Corps (HKVDC)

(ref <http://www.hkvca.ca/historical/banham.htm>)

Old Pillboxes along the Gin Drinker's Line

The Gin Drinker's Line in the north of the Kowloon Peninsula extended from Gin Drinker's Bay in Kwai Chung in the west, passing the Shing Mun Reservoir and Shing Mun River, Sha Tin, Tate's Cairn, Sha Tin Pass, to reach Sai Kung in the east. Its total length was 18 km.

Ditches, pillboxes and bunkers were also built along the line. This plan was once shelved but was relaunched in 1939. Construction of the line was completed in 1941.

(ref

[http://www.lcsd.gov.hk/en/ppr\\_release\\_det2.php?id=588](http://www.lcsd.gov.hk/en/ppr_release_det2.php?id=588))

Old Pillbox at Luk Keng	There are some trenches, pillboxes and observation posts in Luk Keng (ref "War Relics in the Green" by Ko Tim Keung)
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These old pillboxes are constructed by the British troops but the old pillbox at former Tai Hom Village is a Japanese built pillbox, of which it is the only one of its kind found in Hong Kong to date. Its historical value and interest is relatively high with a Grade 2 historic building status awarded by the Antiquities Advisory Board in 2002. It is part of the history of Japanese Invasion during the 2<sup>nd</sup> World War.

A complete picture of the old pillbox locations in the New Territories and on the Kowloon Peninsula is hard to find, but one exists for the Hong Kong Island can be found in the Japanese Record. **Photo 1.7 of Appendix 4.4** shows the locations of these British pillboxes in 1941. They were targets of the Japanese during their invasion. Many of them survived till now, although their conditions do vary a lot.

- Cultural Significance
- The old pillbox is a part of the Japanese fortification of Kai Tak airport during World War II.
  - It is the only Japanese constructed pillbox and the only graded old pillbox in HK.
  - Much of its surrounding associated historical landscape has disappeared (such as the old Kai Tak Airport during war time).
  - Together with the Hangar, they contribute to an important piece of wartime history.

#### **4.5.15 S.K.H. Holy Trinity Church** (聖公會聖三一堂)

The S.K.H. Holy Trinity Church was established in 1890s by Mr Ko (顧啟德先生) and the gatherings were mainly conducted at his home (**Figure 4.2.5**). With the increase in number of members, the first church building was completed in 1902, near Sung Wong Toi. However, the government later decided to take back the land and hence a second church building was constructed near the girls school (ie 維多利亞女校) around 1905.

About thirty years later, the church was in need of renovation and the government again appropriated the land for urban development. Hence, the church was re-constructed for the 3rd time, at the current location. The construction work was commenced in 1936 and completed in 1937.

The Chinese style architectural plan was designed by Mr Wu (吳建中先生). It is one of the very few church buildings in HK with such or similar Chinese style (ref <http://www.holytrinitychurch.org.hk/history/traditional-htc.htm>).

During the 2<sup>nd</sup> World War, the church stopped its operation and was occupied by Japanese troops. After the war, the church was used occasionally as a detention centre for Japanese soldiers. Church activities gradually resumed in the later years after the war<sup>[4-3]</sup>.

#### **4.5.16 Sung Wong Toi Inscription Rock** (宋王臺)

The original boulder was situated at the top of the Sacred Hill and is associated with the last boy emperor of the Sung Dynasty (宋朝) (**Figure 4.2.5**). The Hill and boulder were left intact until the Second World War when the Japanese destroyed part of the hill for the construction of a new runway at Kai Tak. The remainder of the hill was levelled for further runway expansion in the 1950's. The remnants of the large inscribed boulder that survived the levelling of the hill were placed in the Sung Wong Toi Garden in 1950's.

According to the inscription on the rock, it was renovated during the Qing Dynasty (清朝) in 1807. The original date of its creation is unknown, although some scholars have argued

that the stone was first inscribed during the Yuan Dynasty (元朝) (e.g. Jen 1967, 26-7; Chung 2001, 211). The Sung Wong Toi Inscription Rock is a Government Historic Site identified by the AMO. The rock is currently located in a small public garden outside the proposed boundary of the Kai Tak Development<sup>[4-5]</sup>.

#### **4.5.17 Tang King Po School (鄧鏡波學校)**

Tang King Po School (**Figure 4.2.5**) is a Catholic school run by the Rev. Father of the Salesian Society. The school was founded between 1952 and 1953 with the donation from a businessman Mr. Peter Tang King Po (1879-1956). In July, 1953, it was officially opened by Governor Sir Alexander William George Herder Grantham.

#### **4.5.18 Heep Yunn School, Main Building (協恩中學)**

Heep Yunn School (**Figure 4.2.5**) was officially founded by Bishop Mok Sau Tseng on 19<sup>th</sup> May, 1937. During the Occupation Period, the school was used by the Japanese Army as barracks. Later after the war, it was converted into a Japanese Internment Camp and an Indian Camp after the war. The School reopened as the first female school in Kowloon on 8<sup>th</sup> February 1947.

#### **4.5.19 Heep Yunn School, St. Clare Chapel (協恩中學教堂)**

St. Clare Chapel (**Figure 4.2.5**) was built inside the Heep Yunn School in 1957. It is usually used for weekly meetings of Christian Fellowship in school.

#### **4.5.20 Old Far East Flying Training School (The Hong Kong Aviation Club) (舊遠東飛行學校)**

The Old Far East Flying Training School, took over by the Hong Kong Aviation Club in 1983. (**Figure 4.2.5**). The Hong Kong Aviation Club is a complex comprised of three buildings, namely the Old Far East Training School building (built in 1958), the Old Aero Club building (1966) and the Old Hong Kong Flying Club building (1968) of the Old Far East Flying Training School. The Far East Flying Training School is the first commercial aviation enterprise in Hong Kong and was closely associated with aviation in Hong Kong. It provided flying and engineering training for civil pilots and engineers as well as members of the air Arm of the Hong Kong Volunteer Defence Corps.

#### **4.5.21 Fish Tail Rock (魚尾石)**

Fish Tail Rock is located at Hoi Sham Park (**Figure 4.2.6**). It was named Fish Tail Rock due to its resemblance to the tail of a fish diving into the sea. This site was an island prior to the reclamation during the 1960's. It was used as a place of worship by the local boat people and represents the culture of the boat people of the Kowloon Bay area. The original island was incorporated to the mainland due to reclamation and the temple on the site was demolished during the same time.

#### **4.5.22 Ma Tau Kok Animal Quarantine Depot (馬頭角牲畜檢疫站)**

The Ma Tau Kok Animal Quarantine Depot was built in 1908 (**Figure 4.2.5**). It covered about 1,700m<sup>2</sup> of site with an indoor area of about 270m<sup>2</sup>. It was the former quarantine station for animals and later on a slaughterhouse which used to hold some 120 cows, 200 sheep and 400 pigs. At that time, Ma Tau Wai was not densely populated<sup>[4-3]</sup>.

The depot was renovated to accommodate artists from the North Point Oil Street storehouse. It was renovated for the use by the Cattle Depot Artists Village in 2001 (ie 牛棚藝術村).

#### **4.5.23 Tin Hau Temple (To Kwa Wan) (土瓜灣天后廟)**

Tin Hau Temple (To Kwa Wan) was constructed in 1885 by local Hakka fishermen (**Figure 4.2.5**). Built facing the sea, Tin Hau was housed in the main hall while the Dragon Mother (龍母) and Kwun Yum (觀音) were housed in the side hall. The temple has been managed by the Chinese Temple Committee since 1928.

#### **4.5.24 Pak Tai Temple (Hung Hom) (紅磡北帝古廟)**

The Pak Tai Temple (Hung Hom) was built in 1876 at the junction of Tsing Chau Street and Ma Tau Wai Road (**Figure 4.2.6**). The temple was relocated to the present location due to

development in Hung Hom in 1929. Since its establishment, the temple has been managed by the Chinese Temples Committee.

#### **4.5.25 Kwun Yam Temple (紅磡觀音古廟)**

It was first constructed in 1873 and renovated twice in 1889 and 1910 (**Figure 4.2.6**)<sup>[4-3]</sup>. The temple has been very popular since its establishment. Many people pay their worship in the temple particularly during Chinese New Year. A traditional event is to “borrow” money from Kwun Yum for the next year during Chinese New Year (ie. 觀音開庫).

#### **4.5.26 Fuk Tak Temple (福德古廟)**

According to the shrine inside the temple, the temple was founded in late 19<sup>th</sup> century due to the stone slab structure. The temple was newly constructed outside the shrine. The temple lies at the corner of Po Loi Street and Bulkeley Street and is a one-hall small temple which lies inside a pavilion (**Figure 4.2.6**). Inside the temple, a stone, which represents the Earth God, is worshipped.

The temple was said to be a small shrine founded in late 19<sup>th</sup> century. It was enlarged into a small temple after the war, and rebuilt/ renovated many times. In 2005, electricity was installed with the help of the nearby store. Great worship ceremony is held yearly in this Hung Hom Kwun Yum Temple.

#### **4.5.27 Disused Air Raid Precaution Tunnels at Chatham Road (Tunnel Network K4) (漆咸道防空隧道 K4)**

This tunnel network is located in the area between Chatham Road, Fat Kwong Street, Wuhu Street and Gillies Ave (**Figure 4.2.6**). The majority of the tunnels were constructed of mortared random masonry side walls with precast reinforced concrete lintels with a layer of chunam fill over the crown. The remainder of the tunnels were unlined and localised enlargements were present. It was noted that some sections of the tunnels had been intersected by later construction projects and that the tunnels were sealed off in these places. At the time of the inspection in 1978, the tunnels were found to be in good condition.

#### **4.5.28 Disused Air Raid Precaution Tunnels at Valley Road (Tunnel Network K5) (山谷道防空隧道 K5)**

It is a network of pre-war air raid precaution tunnels (**Figure 4.2.6**) located beneath the former Valley Road Estate adjacent to Chatham Road in Hung Hom/ Ho Man Tin. Two tunnel exits can be identified on the ground surface. The tunnel network is located at a level of about +8mPD. Investigation has been undertaken by a GEO commissioned consultant in 1978 on all disused air raid precaution tunnel networks.

The supplementary report on the inspection of the tunnel network did not provide any useful information on the history, location or condition of the tunnels. However, a later report concerning the remedial repair works for this tunnel network contained the following relevant information; the tunnel network was categorised as a high priority network with respect to the potential for collapse affecting the general public and the remedial works were completed in May 1992. These consisted of filling in of voids above the tunnel network and backfilling of sections of the network. It was also noted that the tunnel network has high levels of Radon gas and that prolonged exposure to the atmosphere within the tunnels is a health hazard.

#### **4.5.29 Gradings for Built Heritage**

This EIA has assessed all the built heritage explicitly stipulated in the EIA Study Brief (No. ESB-191/2008) and those identified throughout the EIA process. It has been concluded that there are no Sites of Cultural Heritage (namely Declared Monument) situated in the Study Area. The Project Proponent shall implement all the recommended mitigation measures accordingly as discussed in **Section 4.9**.

The above built heritage has different gradings. In a recent comprehensive assessment of historical buildings, the grading for these built heritage have been reviewed by AMO (dated 18 March 2009) and submitted to Antiquities Advisory Board (AAB's) consideration. A

summary of the existing (at the time of writing this report) and the latest proposed grading is given below. The proposed grading of some of the built heritages has been confirmed according to the list of built heritage released by AMO on 2 September 2011. The 1:1000 plan maps showing the boundary of the built heritage are included in the built heritage survey (see **Appendix 4.3**).

**Table 4.1:** Existing and proposed grading of built heritage

1:1000 Plan Ref	Built Heritage	Ownership [1][2]	AMO Grading	
			Existing	Proposed [1]
A6.1-001	Che Kung Temple(車公廟)	CTC	Grade 2	Grade 2**
A6.1-002	Tai Wai Tsuen (大圍村) Entrance Gate, Chik Chuen Wai(積存圍圍門)	Private	No Grading	Grade 2**
A6.1-003	Tin Sam Village (田心村) Entrance Gate, Tin Sam	Private	No Grading	No Grading**
A6.1-004	Liu Ancestral Hall	Private	No Grading	N/A
A6.1-005	Choi Ancestral Hall	Private	No Grading	No Grading**
A6.1-006	Leung Ancestral Hall	Private	No Grading	N/A
A6.1-006A	Tai Wai Bunker Complex (大圍地堡)	Gov't	No Grading	N/A
A6.1-007	Former KCR Beacon Hill Tunnel (前畢架山隧道)	Gov't	No Grading	N/A
A6.1-008	Hin Tin Village (顯田邨) Law Ancestral Hall	Private	No Grading	Grade 3**
A6.1-009	So Ancestral Hall	Private	No Grading	Grade 3**
A6.1-010	Yeung Ancestral Hall	Private	No Grading	Grade 3**
A6.1-011	Earth Shrine	Private	No Grading	N/A
A6.1-012	Keng Hau Village (徑口邨) Wai Ancestral Hall, Sheung Keng Hau	Private	No Grading	Grade 3
A6.1-013	Village Houses	Private	No Grading	N/A
A6.1-014	Well Shrine	Private	No Grading	N/A
A6.1-015	Chuk Yuen Village (竹園村) Village House No.47	Private	No Grading	N/A
A6.1-016	Village House No.48	Private	No Grading	N/A
A6.1-017	Village House No.50	Private	No Grading	N/A
A6.1-018	Village House No.65	Private	No Grading	N/A
A6.1-019	Village House No.73-75	Private	No Grading	N/A
A6.1-020	Wong Tai Sin Temple (黃大仙祠)	CTC	Grade 2	Grade 1**
A6.1-021a,b	Chi Lin Nunnery (志蓮淨苑)	Private	No Grading	N/A
A6.1-022	Former Royal Air Force Hangar (前英國皇家空軍飛機庫)	Gov't	Grade 3	Grade 3**
A6.1-023	Stone House, No. 4 Tai Koon Yuen (大觀園 4 號石寓)	Gov't	Grade 3	No Grading**
A6.1-024	Old Pillbox (機槍堡)	Gov't	Grade 2	Grade 2**[3]
A6.1-025	S.K.H. Holy Trinity Church (聖公會聖三一堂)	Private	Grade 3	Grade 2**
A6.1-026	Sung Wong Toi Inscription Rock (宋王臺)	Gov't	No Grading	N/A
A6.1-027	Tang King Po School (鄧鏡波學校)	Private	No Grading	Grade 3**
A6.1-028	Heep Yunn School, Main Building (協恩中學)	Private	Grade 3	Grade 3**

1:1000 Plan Ref	Built Heritage	Ownership [1][2]	AMO Grading	
			Existing	Proposed [1]
A6.1-029	Heep Yunn School, St. Clare Chapel (協恩中學教堂)	Private	No Grading	Grade 3**
A6.1-030	Old Far East Flying Training School (舊遠東飛行學校)	Gov't	No Grading	Grade 3**
A6.1-031	Fish Tail Rock (魚尾石)	Gov't	No Grading	N/A
A6.1-032	Ma Tau Kok Animal Quarantine Depot (馬頭角牲畜檢疫站)	Gov't	Grade 3	Grade 2**
A6.1-033	Tin Hau Temple (To Kwa Wan) (土瓜灣天后廟)	CTC	Grade 3	Grade 3**
A6.1-034	Pak Tai Temple (Hung Hom) (紅磡北帝古廟)	CTC	Grade 3	No Grading**
A6.1-035	Kwun Yam Temple (Hung Hom) (紅磡觀音古廟)	CTC	Grade 2	Grade 1**
A6.1-036	Fuk Tak Temple(福德古廟)	Private	No Grading	N/A
A6.1-037	Disused Air Raid Precaution Tunnels at Chatham Road (Tunnel Network K4) (漆咸道防空隧道 K4)	Gov't	No Grading	N/A
A6.1-038	Disused Air Raid Precaution Tunnels at Valley Road (Tunnel Network K5) (山谷道防空隧道 K5)	Gov't	No Grading	N/A

Note:

[1] As per AMO's List of the Historic Buildings in Building Assessment (as of 2 September 2011)

[2] CTC – Chinese Temple Committee 華人廟宇委員會

[3] Grade 2 confirmed on 31 August 2010

\*\* Proposed grading has been confirmed for the Historic Building as per AMO's list (as of 2 September 2011)

#### 4.6 Desktop review for Marine Archaeology

There would be 2 barging facilities for the proposed works during the construction phase, one at Freight Pier, and one near Kai Tak Runway in Kowloon Bay (see **Figure 1.2**).

Dredging is not required for the barging facility at Freight Pier. However, there would be minor sediment dredging for the Kai Tak Runway Barging Point. The purpose of the dredging is to remove the silt that has been accumulated close to the runway structure over the years. The dredging would not need to extend beyond the original seabed level at about -6mPD. The area for dredging near the Kai Tak barging facility is shown in **Figure 4.2A**.

It can be seen from **Figure 4.2A** that the silt close to the runway has been accumulated up to a level of about -2mPD which is about 4m above the prevailing seabed. Closed grab dredger will be used to remove these accumulated silt to ensure sufficient water depth for the barges. Since the dredging is limited to those accumulated silt in recent years, it is considered that the dredging would not have any marine archaeological issues.

In addition, according to the previous marine archaeological impact assessment (KTD EIA ref EIA 157/2008) in this area, no further MAI is required but monitoring of archaeological finds is recommended during dredging, including the followings:

- (i) Contractors engaged for the dredging component of the development be briefed on the potential objects of cultural significance that they may encounter and the steps to take upon identifying them.
- (ii) If dredging is to take place within 20m of Kowloon Rock, a marine archaeologist should be consulted in the event that such objects are found during this phase of development

With reference to **Figure 4.2A**, the proposed dredging area will be separated from the Kowloon Rock for at least 25m. Therefore, recommendation item (ii) is not applicable to the proposed works.

## **4.7 Impact Assessment – Construction Phase**

### **4.7.1 Archaeological Sites**

#### **4.7.1.1 Former Tai Hom Village**

As can be seen in **Figure 4.1.1**, the DHS is located right at the former Tai Hom Village at Diamond Hill. Most of the former Tai Hom Village would be encroached by the DHS except for the north east portion of the archaeological site.

The alignment selection process has extensively investigated the possibility of avoiding the former Tai Hom Village archaeological site. The feasibility of using existing train depots and other works areas as the trains stabling sidings has been studied in details (see **Appendix 4.4D**). Examples of existing depots and areas that have been considered include the followings:

- |                     |  |
|---------------------|--|
| Existing MTR Depots | <ul style="list-style-type: none"><li>• Tai Wai Depot and Pat Heung Depot</li><li>• Ho Tung Lau Depot</li><li>• Kowloon Bay Depot</li></ul>                                    |
| Other areas         | <ul style="list-style-type: none"><li>• Hung Hom Freight Yard</li><li>• Shatin Pass Quarry</li><li>• Hin Keng</li><li>• Tai Shui Hang</li><li>• Wu Kai Sha CDA sites</li></ul> |

After investigations, it has been confirmed that former Tai Hom Village is the preferred location for the trains stabling sidings for SCL. As discussed in **Section 2.4.1**, adequate length and width have to be achieved (including EVA, access roads, turnouts, staff accommodation, plant rooms, but excluding structures). Hence, together with the associated approach tunnels, most of the former Tai Hom site would need to be occupied.

Studies have then been conducted to investigate the feasibility of constructing the DHS underground so as to minimise any impacts on this archaeological site and the other built heritages within the archaeological sites (including the Former Royal Air Force Hangar, Stone House No 4 and the Old Pillbox).

Due to various engineering constraints, such as programme, additional spoil generated, and fire safety, it is considered that constructing the DHS totally underground is not practical and would not be welcomed by the travelling public as this will delay the opening of SCL for approximately 9 to 12 months. In addition, a fully underground DHS will require more vertical ventilation shafts, giving additional engineering and landuse constraints on the Diamond Hill CDA site above. This option would therefore not be considered and hence a semi-underground approach would be adopted for the DHS. The construction of such semi-underground DHS would inevitably involve the removal of the surface of the former Tai Hom Village. Any archaeological remains within former Tai Hom Village would therefore be directly affected.

In order to investigate the archaeological potential of former Tai Hom Village, a field investigation was carried out at various locations over the former Tai Hom Village in March of 2009. The archaeological survey report is given in **Appendix 4.2** for information.

The survey at the former Tai Hom Village has revealed that the Tang/ Song Dynasty remains are both sparse and redeposited and hence of lesser archaeological significance. However, assemblage of Tang/ Song archaeological finds within urban setting is considered rare in Hong Kong. Since the presence of the sparse Tang/ Song Dynasty layer extends to

the north-eastern part of the former Tai Hom Village site would be directly impacted by the construction of the proposed DHS, appropriate mitigation measures would be recommended.

#### **4.7.1.2 Kowloon Fort Archaeological Site**

Kowloon Fort Archaeological Site (**Figure 4.1.2**) is located approximately 190m to the north of the main route alignment. The proposed construction method for this tunnel section is cut-&-cover. No in situ remains of the Kowloon Fort were found at this site according to the KTD EIA (2006). It was suggested that the fort had been robbed out and removed during the development works in the area in early 1930s. Given the considerable separation distance during construction phase, it is anticipated that there will be no significant impacts to this site.

#### **4.7.1.3 Lung Tsun Stone Bridge and Former Kowloon City Pier Archaeological Site**

Lung Tsun Stone Bridge was a landing pier built in 1873-1875 (**Figure 4.1.2**). The pier linked the east gate of Kowloon Walled City with the coastline. The Bridge was constructed in three phases over a period of 35 years. It appears to have been incorporated into the construction of Former Kowloon City Pier in 1930. The Former Kowloon City Pier projected obliquely from the 1924 reclamation seawall and was approximately 60m long. The southern section of the Bridge and the Former Kowloon City Pier were likely demolished and buried in reclamation during the Japanese Occupation (1941 – 1945).

The proposed SCL alignments will pass under the Former Kowloon City Pier (See **Figure 4.1.2, 4.1.2A and 4.1.2B**). A technical note on the Preservation of Lung Tsun Stone Bridge (see **Appendix 4.5**) has been prepared to assess the potential impacts from the Project.

The proposed SCL alignment would totally avoid the remains of the Lung Tsun Stone Bridge (including the dressed granite planks and masonry of six or seven spans and the Pier End Structure). The horizontal distance on plan from the Lung Tsun Stone Bridge (Pier End Structure) to the nearest buffer boundary would be about 25m. The buffer zone of Lung Tsun Stone Bridge and Former Kowloon City Pier is also illustrated.

Though there is a possibility that linking structures may be present beneath the excavation level between Lung Tsun Stone Bridge and Former Kowloon City Pier, the differential settlement imposed on such linking structure (if it does exist) is expected to be small and has negligible impact to Lung Tsun Stone Bridge.

According to the Technical Note (**Appendix 4.5**) deck level of the remnants of the first phase of Lung Tsun Stone Bridge, which lie outside the SCL alignment, is about +2.3mPD. The Bridge exposed remains (likely exist between +2.81mPD and -2.0mPD) would not extend into the SCL tunnel (approx. -8.2mPD) according to the further archaeological excavation.

Therefore, direct or indirect impact from the SCL works to the Lung Tsun Stone Bridge is considered unlikely.

Evidence of remains of the second and third phase of Lung Tsun Stone Bridge was not found in the subsequent archaeological excavation in 2009. Direct or indirect impact from the SCL works to the second and third phase of the Bridge is therefore considered unlikely.

The SCL alignment would however pass directly under the Former Kowloon City Pier. The general construction method for SCL structures proposed in Kai Tak Development area is the open cut method. The SCL structures will be built inside a trench excavated with sloping sides. Groundwater will be controlled by dewatering wells in the side slopes of the excavation. As shown on **Figures 4.1.2C and 4.3**, open cut and cofferdam construction methods are proposed west and east of the mined tunnels underneath the Former Kowloon City Pier respectively. A buffer zone to the remains of the Former Kowloon City Pier will be maintained during SCL construction within which no at-grade construction activities to be carried out. The extent of open excavation will be further reviewed in the detailed design stage. To the east, between Former Kowloon City Pier and KAT, trench excavation within

braced cofferdam walls is proposed and a buffer zone of Former Kowloon City Pier will be maintained as shown on **Figure 4.3**. This method has been adopted so as to preserve buried seawall steps of the 1924 seawall north of the SCL Alignment that would otherwise be disturbed by open cut excavation.

According to the Technical Note (**Appendix 4.5**), based on the finding in the archaeological excavation, all the remains of the Former Kowloon City Pier exposed are apparently standalone elements at level between +3.2mPD and +2.0mPD. According to the information available including the results from PIT test by CEDD and recent test by MTR Corporation, the length of the piles are best estimated to be up to 9.5m. (see Technical Note – **Appendix 4.5A**). Based on the length of 9.5m, the SCL temporary canopy tubes at the tunnel crown area are 1.8m – 2.2m clear of the possible pile toe levels.

Moreover, based on the finding in the archaeological excavation, all the remains exposed are apparently standalone elements and complicated structures involving structural member(s) supported on another member(s) (such as a bridge deck wholly supported by supporting pillars or abutments) were not discovered above the excavation level. There is a possibility that linking structures may presence beneath the excavation level between Lung Tsun Stone Bridge and Former Kowloon City Pier. However, given the buffer zone from the edge of SCL tunnels, the differential settlement imposed to the linking structure between Lung Tsun Stone Bridge and Former Kowloon City Pier is expected to be small and has negligible impact to Lung Tsun Stone Bridge.

The mining method presented on **Figures 4.1.2C** is designed to cope with any obstructions that may be encountered. Canopy perforated hollow steel tubes are driven into the ground in advance of and above the tunnel face. Liquid cement (“grout”) is injected into each steel tubes to provide a solid, reinforced umbrella and consolidate the soil around the future tunnel. 5 nos. of bore hole logs at the adjacent area show that the SCL tunnels crown area are within alluvium stratum mainly with silty fine to coarse sand and thus grouting could be implemented effectively.

Indirect impacts on Lung Tsun Stone Bridge and the Former Kowloon City Pier due to ground-borne vibrations from construction equipment and SCL trains would not be significant as they do not possess sufficient power or energy to disrupt the relatively massive fragments.

#### **4.7.1.4 Site of Former Sacred Hill & Sacred Hill (North) Area**

The SCL works will impact directly on part of the former Sacred Hill site during the open cut construction of the TKW and the associated tunnel. Though once a historically significant site, Sacred Hill was destroyed by the Japanese during the 2nd World War and levelled during the 1950s. Archaeological potential at the site of Former Sacred Hill is considered low. Therefore, no significant impact on archaeology is expected at this site.

However, a large assemblage of Song Dynasty pottery was revealed in an archaeological investigation under the KTD EIA at an area north of the Sacred Hill – the Sacred Hill (North) Area (**Figure 4.1.3**). Rescue excavation by CEDD at test trench (AA3) located at the northern edge of the Sacred Hill (North) area was recommended under the KTD EIA. It is located at approximately 50 m north of TKW. The open cut construction of the TKW may potentially impact the southern extent of the Sacred Hill (North) Area directly as it overlaps with the SCL works area. The archaeological investigation by CEDD has verified the archaeological potential of the north of the Sacred Hill. Various evidences suggest that the area was utilized as a burial or living ground, and then turned into a dumping area after the inhabitants left the area. The study also concluded that the artifact density in the area to the east, south and north is low.

As discussed in Section 4.4.3.4, the archaeological survey-cum-rescue excavation for a pumping station at Sacred Hill (North) by DSD for the Areas 1 and 2 completed in 2010 unearthed a large number of artefacts. Artefacts unearthed include a large quantity of pottery and porcelain shards dating back to Song and Yuen Dynasties. The survey-cum-excavation indicates that the area around the pumping station is of archaeological potential.

Since the existing site for the Sacred Hill (North) Area had undergone a series of reclamation over the past few decades, it is anticipated that the archaeological potential for the fill material would be low and only the original soil layer is considered to have potential for archaeology. The survey-cum-excavation would be limited to the original soil layer within temporary excavation areas within the Sacred Hill (North) Study Area. The exact extent of survey-cum-excavation will be subject to the construction details of the TKW. The tentative area requiring survey-cum-excavation is shown in **Appendix 4.6**. The exact area of rescue excavation would be demarcated subject to the findings of the survey/investigation within the Sacred Hill (North) Study Area.

#### **4.7.1.5 Kowloon City Execution Ground**

The neighbouring at-grade temporary works areas in the vicinity of the TKW would overlap with the boundary of the Kowloon City Execution Ground (see **Figure 4.1.3**). As the execution ground did not contain any structural features and the landscape had been filled in, there is no archaeological potential at the site of the Kowloon City Execution Ground. Moreover, only temporary at-grade works such as stockpiling and office area is to be conducted on this site. No archaeological impact is anticipated at the site.

#### **4.7.2 Built Heritage**

There is no site of cultural heritage (Declared Monument) recorded in the Study Area. Potential impacts on built heritages other than Declared Monuments are assessed as below.

##### **4.7.2.1 Che Kung Temple**

Che Kung Temple (**Figure 4.2.1**) is located approximately 530m to the east of the northern limit of the alignment. The current construction plan for this area is to have at-grade track. Given the considerable separation distance, adverse impacts during construction phase are not anticipated.

##### **4.7.2.2 Tai Wai Tsuen**

Tai Wai Tsuen (**Figure 4.2.1**) (originally named Chik Chuen Wai was built around 1574 of the Ming Dynasty. It was a walled village of multi-clan with the Wais' majority. Of prime concern is the Chik Chuen Wai Entrance Gate which is located roughly 420m to the north of the current route alignment. The current construction plan for this area is to have at-grade tracks.

There are no anticipated impacts to the Chik Chuen Wai Entrance gate in Tai Wai Tsuen during the construction phase as the historical building is located a considerable distance from the proposed route alignment.

##### **4.7.2.3 Tin Sam Village**

Tin Sam Village (**Figure 4.2.1**) comprises four distinct historical buildings known as Lui, Choi and Leung Ancestral Hall and Entrance Gate at Tin Sam. The four historical buildings are located to south at varying distances from the current route alignment, ranging from 200m (Lui Ancestral Hall) to 280m (Entrance Gate at Tin Sam). The current construction plan for this area is to build the rail line at the current grade.

There are no anticipated impacts to the to any of the four historical buildings in Tin Sam Village during the construction phase as they are all located a considerable distance from the proposed route alignment.

##### **4.7.2.4 Tai Wai Bunker Complex**

Tai Wai Bunker Complex is located at about 350m to the north of the proposed alignment. The current construction plan for this area is to build the rail line at the current grade.

There are no anticipated impacts to the Tai Wai Bunker Complex (**Figure 4.2.1**) during the construction phase as it is located at a considerable distance from the proposed route alignment.

#### **4.7.2.5 Hin Tin Village**

Within Hin Tin Village (**Figure 4.2.2**) there are four recorded historical buildings: Law, So, and Yeung Ancestral Halls and the Earth Shrine. The three Ancestral Halls are located approximately 200m east of the current route alignment while the Earth Shrine is located approximately 165m. The proposed construction method for this section of the alignment will consist of a number of construction methods that include above ground station, viaduct and cut-&-cover construction.

There are no anticipated impacts to any of the four historical buildings in Hin Tin Village during the construction phase as they are all located a considerable distance from the proposed route alignment.

#### **4.7.2.6 Former KCR Beacon Hill Tunnel**

The Former KCR Beacon Hill Tunnel (**Figure 4.2.2**) is a single lane tunnel of standard gauge which was built in the early 20<sup>th</sup> century – completed in 1910. The lining of the tunnel was upgraded in 1982 and 2008. The tunnel is currently only used for a 750mm gas pipeline.

The Former KCR Beacon Hill Tunnel lies within 40m of the SCL alignment. Gas off-take Station adjacent to the Former KCR Beacon Hill tunnel portal lies within 0 - 5 m of the SCL alignment. The separation of soil between the train tunnel and the Former KCR Beacon Hill Tunnel will reduce vibration impacts and no monitoring is therefore necessary.

#### **4.7.2.7 Keng Hau Village**

There are three registered historical buildings within Keng Hau Village (**Figure 4.2.2**) spread out over an area of roughly 175 m. The Well of Shrines is located 425 m, the Village House is 410 m and the Wai Ancestral Hall is 365 m east of the current route alignment. The route in this area will be constructed at grade.

There are no anticipated impacts to the to any of the three historical buildings in the Keng Hau Village during the construction phase as they are all located a considerable distance from the proposed route alignment.

#### **4.7.2.8 Chuk Yuen Village**

There are a number of historical buildings in the Chuk Yuen Village (**Figure 4.2.3**) which have been designated as Village House No. 47, Village House No. 48, Village House No. 50, Village House No. 65 and Village House No. 73 – 75. The Village Houses in the Chuk Yuen Village are located between 55m to 24m south of the current route alignment. The proposed construction method in this particular area is the tunnel boring machine method.

It is anticipated that there will be no direct impacts to the historical buildings in Chuk Yuen Village. Potential Impacts due to vibration during the construction phase of SCL are considered negligible. Therefore, no vibration monitoring is necessary.

#### **4.7.2.9 Wong Tai Sin Temple**

The Wong Tai Sin Temple (**Figure 4.2.3**) is a Taoist Temple located on the southern slope of Lion Rock. The northern section of the temple is located directly within the path of the current route alignment. The proposed construction method for the area adjacent to Wong Tai Sin Temple is the tunnel boring machine method.

There are a number of anticipated impacts to the temple. Impacts due to vibration produced by the boring machine may impact on the temple. However, the 20 - 30m thick soil separation will provide some damping effect for the vibration induced from the train tunnel to the temple structures. Therefore, the vibration impacts may be negligible. In lieu of the particular importance of the much-visited temple precautionary measures, including pre-construction condition survey and vibration monitoring, would be recommended.

#### **4.7.2.10 Chi Lin Nunnery**

Chi Lin Nunnery (**Figure 4.2.4**) is a very large complex measuring approximately 360m across. The western most extent of the Nunnery is located approximately 240m to the

north-east of the current route alignment. Within the general area of the Chi Lin Nunnery there will be tunnel boring and cut-&-cover construction.

There are no anticipated impacts to the Chi Lin Nunnery during construction phase as it is located a considerable distance from the proposed route alignment.

#### **4.7.2.11 Three Historical Buildings at Former Tai Hom Village**

There are three built heritage structures within the former Tai Hom Village (**Figure 4.2.4**). The former Royal Air Force Hangar is located within the proposed development as are the Stone House No. 4 (Tai Koon Yuen) and the Old Pillbox.

The feasibility of using existing train depots and other works areas as the train stabling sidings has been studied in detail (see **Appendix 4.4D**). After investigations, the former Tai Hom Village was found to be the preferred location for the trains stabling sidings for SCL. Alternative design of constructing the DHS underground has also been considered and evaluated (see **Section 4.7.1.1**) in order to minimise the direct impacts on the historical buildings at former Tai Hom Village. Due to engineering constraints, it is considered that constructing the DHS totally underground is not practical and would not be welcomed by the travelling public as this will delay the opening of SCL for approximately 9 to 12 months.

Consequently, the entire structure of the Former Royal Air Force Hangar and the Stone House will be directly impacted by the construction of the DHS area immediately south of the DIH and the main route alignment. In-situ preservation of these structures is not practicable. Detail photographic and cartographic record of both structures would be recommended to document these historic buildings prior to disassembling them. The former Royal Air Force Hangar is in poor condition. The wall and roof cladding of the hangar comprises asbestos containing materials and will have to be removed and disposed of for health and safety reasons. The steel frame of the hangar is highly corroded and could not safely be reassembled. It is therefore proposed to retain some portions of the structure that are of historical interest.

The stone house is an ungraded structure with limited heritage value. Although it is not recommended to reinstate this under the Environmental Impact Assessment, it is understood that the public is expecting that the structure will be preserved in some forms. The Project Proponent will continue to seek views from the community and will deal with this as an initiative.

The proposed east end of the SCL-DIH station box will encroach onto the footprint of the Old Pillbox.

In view of the direct impact to the Pillbox, it is recommended to disassemble the Pillbox and store the parts at a location away from the heavy construction activities.

Detail photographic and cartographic record of the Old Pillbox would be recommended to document it prior to disassembling the Old Pillbox and it is proposed to be reinstated as far as practicably possible. However it is a fragile and brittle structure and some parts may be subject to reassembly with new materials to maintain an adequate level of structural integrity.

#### **4.7.2.12 S.K.H. Holy Trinity Church**

S.K.H. Holy Trinity Church (**Figure 4.2.5**) is located approximately 50 m north-west of the current tunnel alignment. Tunnel boring method will be adopted for the section of tunnel between TKW and MTW in order to minimize the disturbance to structures at this area.

There are no anticipated direct impacts to the S.K.H. Holy Trinity Church during the construction phase. The church may be indirectly impact by vibration due to its close proximity to the rail line. However, vibration impact caused by tunnel boring through soil in this section is negligible. In lieu of the particular importance of the much-visited church, precautionary measures, including pre-construction condition survey and vibration monitoring, will be recommended.

#### **4.7.2.13 Sung Wong Toi Inscription Rock**

Sung Wong Toi Inscription Rock, situated within Sung Wong Toi Garden (**Figure 4.2.5**) is located directly within the proposed alignment and about 60m away from TKW. Tunnel boring method will be adopted for the section of tunnel between TKW and MTW in order to minimize the disturbance to structures at this area.

Due to the nature of the proposed construction method all earth moving activities will take place below grade with sufficient vertical clearance with the structure. Therefore there would be no direct impacts during construction phase but potential indirect impacts consisting of vibrations are considered likely. However, the vertical separation of 10m between the train tunnel and Sung Wong Toi Inscription Rock will reduce vibration impacts and no monitoring is therefore necessary.

#### **4.7.2.14 Tang King Po School**

Tang King Po School (**Figure 4.2.5**) is located at approximately 250m away from the SCL alignment. Tunnel boring method will be adopted for the section of tunnel between TKW and MTW in order to minimize the disturbance to structures at this area.

There are no anticipated impacts to Tang King Po School during construction phase as it is located a considerable distance from the proposed route alignment.

#### **4.7.2.15 Heep Yunn School, Main Building**

The Main Building of Heep Yunn School (**Figure 4.2.5**) is located at approximately 150m away from the SCL alignment. Tunnel boring method will be adopted for the section of tunnel between TKW and MTW in order to minimize the disturbance to structures at this area.

There are no anticipated impacts to the Main Building of Heep Yunn School during construction phase as it is located a considerable distance from the proposed route alignment.

#### **4.7.2.16 Heep Yunn School, St. Clare Chapel**

St. Clare Chapel (**Figure 4.2.5**) inside the Heep Yunn School is located at approximately 130 m away from the SCL alignment. Tunnel boring method will be adopted for the section of tunnel between TKW and MTW in order to minimize the disturbance to structures at this area.

There are no anticipated impacts to the St. Clare Chapel of Heep Yunn School during construction phase as it is located a considerable distance from the proposed route alignment.

#### **4.7.2.17 Old Far East Flying Training School**

The various buildings of the Old Far East Flying Training School (**Figure 4.2.5**) are located about 10m from the adit, 70m from TKW construction site and 80m from the route alignment. Tunnel boring method will be adopted for the section of tunnel between TKW and MTW in order to minimize the disturbance to structures at this area.

There are no anticipated direct impacts to the Old Far East Flying Training School during the construction. However the buildings may be indirectly impact by vibration due to its close proximity to the TKW construction site. Appropriate mitigation measure would be recommended to reduce the potential impacts during construction.

#### **4.7.2.18 Fish Tail Rock**

The Fish Tail Rock (**Figure 4.2.6**) is located more than 300m from the current route alignment. Neither direct nor indirect impact from the construction of SCL (TAW-HUH) is expected.

#### **4.7.2.19 Ma Tau Kok Animal Quarantine Depot**

The Ma Tau Kok Animal Quarantine Depot (**Figure 4.2.5**) was built in 1908 and comprises an area of roughly 1,700m<sup>2</sup>. The southwestern most extent of the site is located 300m to

the east of the current route alignment. The rail line in this area will be constructed using the tunnel boring machine method.

There are no anticipated impacts to the animal quarantine depot during construction phase as it is located a considerable distance from the proposed route alignment.

#### **4.7.2.20 Tin Hau Temple (To Kwa Wan)**

Tin Hau Temple (To Kwa Wan) (Figure 4.2.5) which was first built in 1885 by a local fisherman is located approximately 120m from the main route alignment of the MTW. The construction methods varying and will consist of tunnelling boring for the rail line and cut-&-cover method for the MTW.

It is anticipated that there will be no impacts to the Tin Hau Temple (To Kwa Wan) as it is located at a considerable distance from the route alignment.

#### **4.7.2.21 Pak Tai Temple (Hung Hom)**

Pak Tai Temple (Hung Hom) (Figure 4.2.6) is located approximately 230m to the south-east of the current route alignment. The primary construction method for the closest section will consist of the drill-&-blast method.

There are no anticipated impacts to the Pak Tai Temple (Hung Hom) during construction phase as it is located a considerable distance from the proposed route alignment.

#### **4.7.2.22 Kwun Yam Temple**

Kwun Yam Temple (Figure 4.2.6) is located approximately 200m to the east of the current route alignment and 140m from the south-eastern section of the HOM. The primary construction method for the rail line adjacent to the HOM is cut-&-cover method.

There are no anticipated impacts to the Kwun Yam Temple during construction phase as it is located a considerable distance from the proposed route alignment.

#### **4.7.2.23 Fuk Tak Temple**

Fuk Tak Temple (Figure 4.2.6) is located at over 400m from the SCL alignment. The primary construction method for the rail line adjacent to the HOM is the cut-&-cover method.

There are no anticipated impacts to the Fuk Tak Temple during construction phase as it is located a considerable distance from the proposed route alignment.

#### **4.7.2.24 Disused Air Raid Precaution at Chatham Road (Tunnel Network K4)**

The tunnel (Figure 4.2.6) network K4 is located approximately 200m to the south of the SCL route alignment and HOM. The proposed construction method for the SCL will consist of drill-&-blast and cut-&-cover methods. Cut-&-cover will be the primary construction method for the rail line for KTE (another concurrent Designated Project) adjacent to the tunnel network.

The KTE EIA Study identified that the tunnel network in their present state will create an unsafe working environment for the proposed HOM works site. Portions of the tunnels would be filled up by mass concrete prior to the construction phase, and hence the tunnel network would be directly impacted by the proposed works from KTE Project.

#### **4.7.2.25 Disused Air Raid Precaution Tunnel at Valley Road (Tunnel Network K5)**

The tunnel network K5 (Figure 4.2.6) is located adjacent to the current route alignment and to the HOM. The proposed construction method for the SCL will consist of drill-&-blast and cut-&-cover methods. Cut-&-cover will be the primary construction method for the HOM (another concurrent Designated Project) adjacent to the tunnel network.

The tunnel network in their present state will create an unsafe working environment for the proposed HOM works site. It has been recommended that portions of the tunnels be filled up by mass concrete prior to the construction phase, as such the tunnels will be directly impacted by the proposed works.

## **4.8 Impact Assessment– Operational Phase**

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### **4.8.1 Archaeological Sites**

#### **4.8.1.1 Former Tai Hom Village**

Figure 4.1.1, indicates that the DHS is located across the former Tai Hom Village at Diamond Hill and most of the former Tai Hom Village site will be directly impacted by the DHS except for the northeast portion of the archaeological site. Recommended mitigation measures would be conducted prior to the construction. Further mitigation measure during the operational phase is therefore not considered necessary.

#### **4.8.1.2 Kowloon Fort Archaeological Site**

No impacts anticipated at this site during operation phase of SCL due to its considerable distance from the route alignment.

#### **4.8.1.3 Lung Tsun Stone Bridge and Former Kowloon City Pier Archaeological Site**

SCL tunnels will pass under the Former Kowloon City Pier only, and has no impact to the remnant of Lung Tsun Stone Bridge. According to the Technical Note on the Preservation of Lung Tsun Stone Bridge (see **Appendix 4.5**), the fragments of Lung Tsun Stone Bridge and Former Kowloon City Pier do not possess the characteristics of structures that can be damaged by ground-borne vibration, namely, fragility, sensitivity to particular frequencies, or shapes that promote sympathetic vibration that can amplify movement in the fragments.

Moreover, in accordance with the Project Proponent, previous experience in railway construction and operation in several urban lines, ground-borne vibrations from construction equipment and SCL trains simply do not possess sufficient power or energy to disrupt the relatively massive fragments. For example, some sections of the Island Line tunnels which have been operating for near to 30 years have less than 300mm clearance between the tunnel lining and foundation of existing buildings. No detrimental effects had been reported during construction and operation stages.

For these reasons, no insurmountable impacts are expected from the SCL operation on the Lung Tsun Stone Bridge and the Former Kowloon City Pier.

#### **4.8.1.4 Site of Former Sacred Hill**

Sacred Hill was destroyed by the Japanese during the 2<sup>nd</sup> World War and levelled during the 1950s. Archaeological potential at the site of Former Sacred Hill is considered low. Therefore, no significant impact on archaeology is expected at this site during the operational phase.

The northern section of the Sacred Hill (North) area where rescue excavation was recommended under the Kai Tak Development EIA is located at approximately 50 m north of TKW. A survey-cum-excavation has been recommended for the construction phase. Impacts on archaeology at this site is not expected to be significant during the operational phase upon the completion of the required survey-cum-excavation prior to commencement of construction within the Sacred Hill (North) Area.

#### **4.8.1.5 Kowloon City Execution Ground**

The tunnel section would not run underneath the Kowloon City Execution Ground and hence no impacts are anticipated on this site during the operational phase of SCL.

### **4.8.2 Built Heritages**

There is no site of cultural heritage (Declared Monument) recorded in the Study Area. Potential impacts on built heritages other than Declared Monuments are assessed as below.

#### **4.8.2.1 Former KCR Beacon Hill Tunnel**

The Former KCR Beacon Hill Tunnel can be potentially impacted by ground borne vibration from the train during the operation of SCL. However, no adverse vibration impact is expected due to the considerable vertical separation (~25 m) between the train tunnel and the Former KCR Beacon Hill Tunnel. Therefore, no monitoring is necessary.

#### **4.8.2.2 Chuk Yuen Village**

The historical buildings within Chuk Yuen Village can be potentially impacted by ground borne vibration from the train during the operation of SCL. However, no adverse vibration impact is expected due to the considerable vertical separation (>40 m) between the train tunnel and the historical buildings. Therefore, no monitoring is necessary.

#### **4.8.2.3 Former Tai Hom Village**

As discussed in **Section 4.6.2.10**, the entire structure of RAF Hangar, the Old Pillbox and the Stone House No. 4 would be directly impacted during the construction phase.

As detailed photographic and cartographic records are recommended to document the Hangar, the Stone House and the Old Pillbox prior to disassembling them, no other mitigation measure is required during the construction phase of the SCL. However, the pillbox and some portions of the hangar will be stored temporary away from the DHS construction activities.

Description of the further details of the reassembling plan for each of the historical buildings at former Tai Hom Village is presented in **Section 4.9.2.4**.

During the operational phase, the pillbox will be reassembled within the DHS site. As discussed in **Section 4.9.2.4**, the heritage value of the reassembled structure would be largely reduced. Hence, there would not be any impacts during the operational phase.

#### **4.8.2.4 Wong Tai Sin Temple**

The Wong Tai Sin Temple can be potentially impacted by ground borne vibration from the train during the operation of SCL. However, no adverse vibration impact is expected due to the considerable vertical separation (~30 m) of soft ground section between the train tunnel and the Temple. Moreover, the construction of an Emergency Egress Point (EEP), approximately 6m tall, is proposed to be constructed at approximately 50m northeast of the Temple. Since the northeast side of the Temple is already surrounded by urban housing estate, significant visual impact to the Temple due to the establishment of the EEP is not considered likely.

#### **4.8.2.5 S.K.H Holy Trinity Church**

The S.K.H. Holy Trinity Church can be potentially impacted by ground borne vibration from the train during the operation of SCL. However, no adverse vibration impact is expected due to the considerable horizontal and vertical separation (50m and 10m) of soft ground section between the train tunnel and the Church.

#### **4.8.2.6 Sung Wong Toi Inscription Rock**

The Sung Wong Toi Inscription Rock can be potentially impacted by ground borne vibration from the train during the operation of SCL. However, no adverse vibration impact is expected due to the considerable vertical separation (10m) of soft ground section between the train tunnel and the Garden. Therefore, no monitoring is necessary.

#### **4.8.2.7 Old Far East Flying Training School**

The various buildings of the Old Far East Flying Training School (**Figure 4.2.5**) are located about 10m from the adit, 70m from the TKW construction site and 80m from the route alignment. Potential impact from the operation of TKW is considered unlikely as the station would be underground. Given the considerable distance between the buildings and the SCL route alignment, significant vibration impact during operation of SCL train is not expected.

#### **4.8.2.8 Fish Tail Rock**

The Fish Tail Rock (**Figure 4.2.6**) is located more than 300m from the current route alignment. Neither direct nor indirect impact from the construction of SCL (TAW-HUH) is expected.

#### **4.8.2.9 Disused Air Raid Precaution Tunnel at Chatham Road (Tunnel Network K4)**

The Disused Air Raid Precaution Tunnel network at No. K4 Chatham Road will be backfilled during the construction phase. Therefore, no direct or indirect impacts are expected during the operational phase.

#### **4.8.2.10 Disused Air Raid Precaution Tunnel at Valley Road (Tunnel Network K5)**

The Disused Air Raid Precaution Tunnel network at No. K5 Valley Road will be backfilled during the construction phase. Therefore, no direct or indirect impacts are expected during the operational phase.

#### **4.8.2.11 Others**

No direct or indirect impacts are expected during the operational phase of the proposed works for the following heritage sites given the considerable separation distance from the proposed works: Che Kung Temple, Tai Wai Tsuen, Tin Sam Village, Tai Wai Bunker Complex, Hin Tin Village, Keng Hau Village, Chi Lin Nunnery, Tang King Po School, Heep Yunn School (Main Building), Heep Yunn School (St. Clare Chapel), Ma Tau Kok Animal Quarantine Depot, Tin Hau Temple (To Kwan Wan), Pak Tai Temple (Hung Hom), Kwun Yam Temple and Fuk Tak Temple.

### **4.9 Mitigation Measures – Construction Phase**

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#### **4.9.1 Archaeological Sites**

##### **4.9.1.1 Former Tai Hom Village**

As discussed in **Section 4.4.2.3**, previous studies at the former Tai Hom Village Site reveal that the Tang/ Song Dynasty remains found are both sparse and redeposited and hence of lesser archaeological significance. However, assemblage of Tang/ Song archaeological finds within urban setting is considered rare in Hong Kong. It is therefore recommended that a survey-cum-excavation works to be conducted prior to the construction works at the former Tai Hom Village site. The tentative extent for the survey-cum-excavation within former Tai Hom Village is shown in **Figure 4.1A**. Before the excavation, the archaeologist shall conduct further test pits to refine the actual demarcation of the excavation area. The locations and total numbers of these test pits would need to be determined by the archaeologist and agreed with AMO on-site during the survey-cum-excavation.

An Archaeological Action Plan (AAP) following the Guideline for Archaeological Impact Assessment should be submitted to the Antiquities and Monuments Office (AMO) for agreement. The project proponent should appoint qualified and experienced archaeologist(s) with sufficient funding, time and personnel arrangements to implement the AAP. The AAP should include a detailed plan for the survey-cum-excavation and a contingency plan to address possible arrangement if significant archaeological findings are unearthed during the survey-cum-excavation. Details of the proposal plan with specification for the survey-cum-excavation should be agreed with AMO prior to the submission of licence application.

##### **4.9.1.2 Kowloon Fort Archaeological Site**

No impacts are expected during construction phase on the Kowloon Fort for Archaeological Site (see **Section 4.7.1.2**) and therefore mitigation measures are not required.

##### **4.9.1.3 Lung Tsun Stone Bridge and Former Kowloon City Pier**

As discussed in **Section 4.7.1.3**, potential direct impact on the Lung Tsun Stone Bridge and Former Kowloon City Pier has been avoided by tunneling underneath them and by adopting a construction method which consolidates and reinforces the soil during works. For Lung Tsun Stone Bridge, a horizontal buffer distance would be maintained (see **Figure 4.3**). For Former Kowloon City Pier, a vertical separation distance of 1.8-2.2m from the top of the tunnel would be maintained (see **Figure 4.1.2.B**).

#### **4.9.1.4 Site of Former Sacred Hill**

The archaeological investigation by CEDD has verified the archaeological potential of the north of the Sacred Hill. Various evidences suggest that the area was utilized as a burial or living ground, and then turned into a dumping area after the inhabitants left the area. The study also concluded that the artifact density in the area to the east, south and north is low. Since the existing site for the Sacred Hill (North) Area had undergone a series of reclamation over the past few decades, it is anticipated that the archaeological potential for the fill material would be low and only the original soil layer is considered to have potential for archaeology. The survey-cum-excavation would be limited to the original soil layer within temporary excavation areas within the Sacred Hill (North) Study Area. The exact extent of survey-cum-excavation will be subject to the construction details of the TKW. The tentative area requiring survey-cum-excavation is shown in **Appendix 4.6**. The exact area of rescue excavation would be demarcated subject to the findings of the survey/investigation within the Sacred Hill (North) Study Area.

An Archaeological Action Plan (AAP) following the Guideline for Archaeological Impact Assessment should be submitted to the Antiquities and Monuments Office (AMO) for agreement. The project proponent should appoint qualified and experienced archaeologist(s) with sufficient funding, time and personnel arrangements to implement the AAP. The AAP should include a detailed plan for the survey-cum-excavation, additional boreholes/trenches investigation and a contingency plan to address possible arrangement if significant archaeological findings are unearthed. Details of the proposal plan with specification for the survey-cum-excavation and additional boreholes/trenches investigation should be agreed with AMO prior to the submission of licence application.

#### **4.9.1.5 Kowloon City Execution Ground**

Impacts on archaeology at the Kowloon City Execution Ground, if any, are considered unlikely during the construction phase. Therefore, mitigation measures are not required.

#### **4.9.2 Built Heritage**

Indirect impacts will arise from ground-borne vibration associated with major site formation works, such as tunnel formation. Appropriate vibration monitoring on the built heritages will be agreed with Buildings Departments (BD)/ Geotechnical Engineering Office (GEO) and implemented under the requirement of the Buildings Ordinance and/or Blasting Permit as appropriate.

##### **4.9.2.1 Former KCR Beacon Hill Tunnel**

The separation between the train tunnel and the Former KCR Beacon Hill Tunnel (~ 25m vertical and 40m horizontal in plan) will reduce vibration impacts during construction phase of SCL and no monitoring is therefore necessary.

##### **4.9.2.2 Wong Tai Sin Temple**

A pre-construction building condition report should be conducted for the Temple. Tunnel boring construction method would be conducted at the northern side of the Temple grounds. Therefore, monthly vibration monitoring should be carried out during construction period as a precautionary measure to monitor the vibrations caused by the boring machine.

##### **4.9.2.3 Three Historical buildings at Former Tai Hom Village**

As discussed in **Section 4.7.2.10**, the Former Royal Air Force Hangar, the Old Pillbox and the Stone House No. 4 would be directly affected by the construction of the DHS and SCL-DIH. As detailed photographic and cartographic recorded will be recommended to document the Hangar, Old Pillbox and the Stone House prior to their removal, no other mitigation measure is required during the operational phase of the SCL. The Old Pillbox would be reinstated as far as practicable after being temporarily stored during the construction period. Portions of the hangar frame would also be stored during construction and placed in areas of the CDA site during operational stage to illustrate the structural technology used during war time. A model to represent the current form of the hangar will also be displayed to demonstrate the form and function of the hangar. The project

proponent shall submit a separate Conservation Plan for these 3 historical buildings. The following shows an outline conservation plan for reference.

**Appendix 4.4E** presented the evaluation of a number of possible mitigation measures. As on-site preservation is not practicable, the following good practice is recommended for the 3 historical buildings:

- |               |  |
|---------------|--|
| Old Pill Box: | <ul style="list-style-type: none"> <li>• Documentation prior to disassembling, temporary storage.</li> <li>• Reinstatement (as per the conservation plan) within CDA site</li> </ul>   |
| Stone House:  | <ul style="list-style-type: none"> <li>• Documentation prior to disassembling, temporary storage of portions of historical interest (if necessary).</li> <li>• Follow recommendation as per the conservation plan</li> </ul>                     |
| RAF Hangar:   | <ul style="list-style-type: none"> <li>• Documentation prior to disassembling, temporary storage of portions of historical interest.</li> <li>• Display of retained portions and a model within CDA site as per the conservation plan</li> </ul> |

Disassembling refers to the breaking down of the entire structure into smaller structural elements that would fit for temporary storage in an appropriate manner, either on-site or off-site. Nevertheless, it should be noted that the heritage values of these historical buildings would be largely reduced once they are disassembled based on the Principles for the Conservation of Heritage Sites in China (2003) and Burra Charter (1999).

The recording documentation and disassembling for temporary storage would be undertaken by the Project Proponent.

Below is a description of the further details of the mitigation measures for each of the historical buildings at former Tai Hom Village.

<b><u>3 Historical Buildings in Former Tai Hom Village</u></b>	<b><u>Proposed Mitigation Measure Pre-construction</u></b>	<b><u>Post-construction</u></b>
Former Royal Air Force Hangar	<p>Further structural survey and documentation, including cartographic and photographic record and structural component inventory of the existing structure would be conducted.</p> <p>Disassemble the building with care, record and securely transport some portions of historical interest and store.</p> <p>It should be noted that the remaining wall and roof cladding has been identified to be asbestos containing material and therefore all such material will need to be removed and disposed of for health reasons.</p>	<p>The poor structural condition of the Hangar due to a lack of regular maintenance and the need to remove and dispose of wall and roof cladding asbestos containing materials would lead to the loss of most of its historical fabric.</p> <p>The Hangar is recommended to be dismantled and some portions of historical interest be retained for display within the future development site.</p> <p>The Project Proponent will be the responsible party for disassembling of the historic structure.</p> <p>The Project Proponent will be responsible for display the retained portions together with a model as per the recommendations in the conservation plan within the CDA</p>

**3 Historical Buildings in Former Tai Hom Village****Proposed Mitigation Measure**  
**Pre-construction****Post-construction**

<b><u>3 Historical Buildings in Former Tai Hom Village</u></b>	<b><u>Proposed Mitigation Measure</u></b> <b><u>Pre-construction</u></b>	<b><u>Post-construction</u></b>
Stone House No 4	Further structural survey and documentation, including cartographic and photographic record and structural component inventory of the existing structure would be conducted.	Site. The poor structural condition of the Stone House due to a lack of regular maintenance would lead to the loss of part of its historical fabric, such as the original bonding material of the granite stone during reassembling. With consideration of its ungraded status, it is therefore proposed to not reassemble under the EIA. However the Project Proponent will continue to seek views from the community and will deal with this as an initiative.
Old Pillbox	Further structural survey and documentation, including cartographic and photographic record and structural component inventory of the existing structure would be conducted.  A structural survey was conducted in February 2009 on the old pillbox. The general condition of the old pillbox is more satisfactory as compared to the Former Royal Air Force Hangar and stone house, except for the delamination of the plastering at the roof and some broken pieces of brickwork. The structural integrity of the pillbox is such that it should not be lifted in one piece. Subject to further engineering study of its structural integrity, the pillbox will need to be dismantled.  Disassemble the building with care, record and securely transport and store each reusable component.	The temporary relocation within DHS site would lead to loss of heritage value to the Pillbox.  Reassembling the Pillbox as far as practicable is proposed.  The Project Proponent will be the responsible party for disassembling of the historic structure and reassembly.  The Project Proponent will be responsible for reinstating the Old Pillbox as per the recommendations in the conservation plan within the CDA Site.

The project proponent shall submit a separate Conservation Plan for these 3 historical buildings as another mitigation measure. The following shows an outline conservation plan for reference.

**Key Aspects**      **Description**

Assessment of Cultural Significance	<ul style="list-style-type: none"> <li>• Assess and confirm the historical and cultural significance of the 3 historical buildings based on the latest information (including site visits, etc)</li> <li>• Identify any special elements of cultural interest and significance (including facade, or architectural and structural elements for the</li> </ul>
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	<ul style="list-style-type: none"> <li>period when the 3 historical buildings were actively used, etc)</li> <li>• Identify any gaps in the knowledge of the 3 historical buildings.</li> <li>• Prepare an inventory of heritage resources</li> </ul>
Assessment and Analysis of Conservation Needs	<ul style="list-style-type: none"> <li>• Physical conditions of the special elements of cultural interest and significance</li> <li>• Latest AAB's grading and public aspiration (including those from public consultation, if any)</li> <li>• List of special elements of cultural interest and significance that have to be conserved</li> </ul>
Identification of constraints and opportunities	<ul style="list-style-type: none"> <li>• Need and extent for physical repairing</li> <li>• Statutory requirements (eg means of public access and escape, utilities)</li> <li>• Safety constraints (eg asbestos containing materials have to be totally removed)</li> <li>• Land availability within the CDA site</li> <li>• Requirements on implementation timeframe / responsibility</li> </ul>
The Proposed Use	<ul style="list-style-type: none"> <li>• Conservation objectives</li> <li>• Conservation principles for proposal</li> <li>• Proposal plans (including design drawings)</li> <li>• Management plan and implementation agent</li> </ul>
Review Arrangement	<ul style="list-style-type: none"> <li>• Arrangement and timescale for a periodic review of the contents of the plan and the implementation of the actions recommended.</li> </ul>
Supplementary Information	<ul style="list-style-type: none"> <li>• Bibliography and references</li> <li>• Specialist reports and documentation</li> <li>• Plan, photographs and other site data (eg topo and building)</li> <li>• Survey data</li> </ul>

Reference has been made to the following documents:

- Conservation Plan by James Semple Kerr
- Conservation Plan by Charter of Venice (ICOMOS)
- Conservation Plan by the Burra Charter (ICOMOS Australia)
- Conservation Plan by the Principles for the Conservation of Heritage Sites in China (China ICOMOS)
- Conservation Plan by the Standards and Guidelines for the Conservation of Heritage Sites in Canada.
- "Conservation Plans – A guide to the Preparation of Conservation Plans " - Historic Scotland 2000
- "Conservation Plan: A Guide to the Preparation of Conservation Plans for Places of European Cultural Significance" - Sydney: National Trust of Australia (NSW), Kerr, J. S. 2000
- "The Illustrated Burra Charter, Australia" - Australia ICOMOS Inc., Walker, M and Marquis-Kyle, P. 2004
- "Conservation Management Plan for the old Tai O Police Station" – Hong Kong Heritage Conservation Foundation Plan, April 2009

#### **4.9.2.4 S.K.H Holy Trinity Church**

A pre-construction building condition survey should be conducted for the S.K.H Holy Trinity Church prior to construction. Moreover, monthly vibration monitoring during TKW construction works is recommended as a precautionary measure to monitor the vibrations caused by the works.

#### **4.9.2.5 Sung Wong Toi Inscription Rock**

Impacts due to vibration during construction phase of SCL are considered negligible. Therefore, no monitoring for vibration is necessary.

#### **4.9.2.6 Old Far East Flying Training School**

Pre-construction building condition survey should be conducted for the buildings of the Training School. Moreover, monthly vibration monitoring during TKW construction works is recommended as a precautionary measure to monitor the vibrations from the construction works.

#### **4.9.2.7 Disused Air Raid Precaution Tunnel at Chatham Road (Tunnel Network K4)**

According to KTE EIA Study, the Disused Air Raid Precaution Tunnel network will be backfilled during the construction works for the adjacent HOM. Thus, the tunnel network

would be directly impacted by the proposed works. A complete documentation of the Tunnel network, where safe access is permitted, including cartographic, photographic and structural survey, would be undertaken prior to commencement of works as a mitigation measure for the Disused Air Raid Tunnel network.

#### **4.9.2.8 Disused Air Raid Precaution Tunnel network K5 Valley Road**

The Disused Air Raid Precaution Tunnel network will be backfilled during the construction works for the proposed SCL alignment and adjacent HOM. Thus, the tunnel network would be directly impacted by the proposed works. A complete documentation of the tunnel network, where safe access is permitted, including cartographic, photographic and structural survey, would be undertaken prior to commencement of works as a mitigation measure for the Disused Air Raid Tunnel network.

#### **4.9.2.9 Others**

No mitigation measures are required for the following heritage sites as there will not be adverse impacts on these sites from the proposed works: Che Kung Temple, Tai Wai Tsuen, Tin Sam Village, Tai Wai Bunker Complex, Former KCR Beacon Hill Tunnel, Hin Tin Village, Keng Hau Village, Chuk Yuen Village, Chi Lin Nunnery, Tang King Po School, Heep Yunn School (Main Building), Heep Yunn School (St. Clare Chapel), Fish Tail Rock, Ma Tau Kok Animal Quarantine Depot, Tin Hau Temple (To Kwan Wan), Pak Tai Temple (Hung Hom), Kwun Yam Temple and Fuk Tak Temple.

### **4.10 Mitigation Measures - Operational Phase**

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No insurmountable adverse impacts are expected during the operational phase for all the heritage sites. Therefore, no mitigation measures are recommended for operational phase.

### **4.11 Considerations of HOM and HUH**

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As discussed in **Section 1**, HOM and HUH would be implemented by other DPs including KTE and SCL-Mong Kok East to Hung Hom Section respectively. However, under the requirements of the EIA Study Brief, the impacts and mitigation for these 2 stations are also discussed in this section.

#### **4.11.1 HOM**

According to the approved EIA Report of KTE (EIA-184/2010), the construction of the HOM would have direct impacts on the Disused Air Raid Precaution Tunnels at Valley Road (Tunnel Network K5).

The mitigation measures recommended for the Tunnel Network K5 should be implemented.

Information for K5 is given in **Section 4.5.28**. As discussed in **Section 4.8.2.10**, the K5 Tunnel would be backfilled during the construction phase. Operational phase mitigation measures are therefore not required.

#### **4.11.2 HUH**

According to the EIA Report for SCL – Mong Kok East to Hung Hom Section, there are neither known archaeological sites nor built heritage within 300m from the HUH. Hence, there would not be any impacts on archaeological site and built heritage. Mitigation measures are also not required.

## 4.12 Conclusion

A summary of the impacts and mitigation measures for cultural heritage is given below.

**Table 4.2:** Summary of impacts and mitigation measures for construction and operational phases

Heritage Items	Horiz Dist from Alignment	Construction Phase			Operational Phase		Construction Method
		Impact		Mitigation	Impact	Mitigation	
		Direct	Indirect				
<b>Archaeological Sites</b>							
Former Tai Hom Village	0 m	Y	N/A	Submission of Archaeological Action Plan Conduct Survey-Cum-Excavation prior to construction	N/A	N/A	Semi-underground construction
<b>Kai Tak Area</b>							
Lung Tsun Stone Bridge	25m (Distance between the bridge and the buffer boundary)	N	Negligible	Allow a buffer zone (see <b>Figure 4.1.2C</b> and <b>Figure 4.3</b> )	Negligible	N	Mining
Former Kowloon City Pier	0m (vert separation of 1.8m – 2.2m from the top of tunnel)	N	Negligible	Allow a buffer zone (see <b>Figure 4.1.2C</b> and <b>Figure 4.3</b> )	Negligible	N	Mining
Site of Former Scared Hill Sacred Hill (North) Area	0m	Y	N/A	Submission of Archaeological Action Plan. Conduct survey-cum-excavation and additional boreholes/trenches investigation prior to construction.	N/A	N/A	Open cut
<b>Built Heritage</b>							
Che Kung Temple	530 m	N	N	Nil	N	N	At-grade
Tai Wai Tsuen	420 m	N	N	Nil	N	N	At-grade
<b>Tin Sam Village</b>							
Liu Ancestral Hall	200 m	N	N	Nil	N	N	At-grade
Choi Ancestral Hall	220 m	N	N	Nil	N	N	At-grade
Leung Ancestral Hall	260 m	N	N	Nil	N	N	At-grade

Heritage Items	Horiz Dist from Alignment	Construction Phase			Operational Phase		Construction Method
		Impact		Mitigation	Impact	Mitigation	
		Direct	Indirect				
Entrance Gate, Tin Sam	280 m	N	N	Nil	N	N	At-grade
Tai Wai Bunker Complex	300m	N	N	Nil	N	N	At-grade
<b>Hin Tin Village</b>							
Law Ancestral Hall	200 m	N	N	Nil	N	N	Above ground station construction, viaduct and cut-&-cover
So Ancestral Hall	200 m	N	N	Nil	N	N	Above ground station construction, viaduct and cut-&-cover
Yeung Ancestral Hall	200 m	N	N	Nil	N	N	Above ground station construction, viaduct and cut-&-cover
Earth Shrine	165 m	N	N	Nil	N	N	Above ground station construction, viaduct and cut-&-cover
Former KCR Beacon Hill Tunnel	40 m (vert. separation of 25m)	N	Negligible	Nil	Negligible	N	Cut-&-cover, mined tunnel and drill-&-blast
<b>Keng Hau Village</b>							
Well Shrine	425 m	N	N	Nil	N	N	At-grade
Village House	410 m	N	N	Nil	N	N	At-grade
Wai Ancestral Hall	365 m	N	N	Nil	N	N	At-grade
<b>Chuk Yuen Village</b>							
Village House (no. 47)	50 m (vert. separation of 40m)	N	Negligible	Nil	Negligible	N	Bored tunneling
Village House (no. 48)	50 m (vert. separation of 40m)	N	Negligible				Bored tunneling
Village House (no. 50)	55 m (vert. separation of 40m)	N	Negligible				Bored tunneling
Village House (no. 65)	30 m (vert. separation of 40m)	N	Negligible				Bored tunneling

Heritage Items	Horiz Dist from Alignment	Construction Phase			Operational Phase		Construction Method
		Impact		Mitigation	Impact	Mitigation	
		Direct	Indirect				
Village House (no. 73 - 75)	24 m (vert. separation of 40m)	N	Negligible				Bored tunneling
Wong Tai Sin Temple	0 – 130 m (vert. separation ~30m)	N	Negligible	Pre-construction structural condition survey. Monthly ground-borne vibration monitoring during construction.	Negligible	N.	Bored tunneling
Chi Lin Nunnery	240 m	N	N	Nil	N	N	Bored tunneling and cut-&-cover
<b>Former Tai Hom Village</b>							
Former Royal Air Force Hangar	0 m	Y	N	A full cartographic and photographic survey documentation after asbestos containing materials has been removed but prior to disassembling the remainder of the Hangar. A conservation plan to be submitted. Portions of historical interest will be displayed together with a model within CDA site as per the conservation plan.	N/A	N/A	Cut-&-cover
Stone House No. 4	0 m	Y	N	A full cartographic and photographic survey documentation prior to disassembling the Stone House. A conservation plan to be submitted.	N/A	N/A	Cut-&-cover
Old Pillbox	5 m	Y	N	A full cartographic and photographic survey documentation prior to disassembling the Pillbox. A conservation plan to be submitted. Reinstatement as per the conservation plan within CDA Site.	N/A	N/A	Cut-&-cover
S.K.H. Holy Trinity Church	50 m (vert. separation of 10m)	N	Negligible	Pre-construction structural condition survey. Monthly ground-borne vibration monitoring during construction	Negligible	Nil	Bored tunneling / cut-&-cover

Heritage Items	Horiz Dist from Alignment	Construction Phase			Operational Phase		Construction Method
		Impact		Mitigation	Impact	Mitigation	
		Direct	Indirect				
Sung Wong Toi Inscription Rock	0 m (vert. separation of 10m)	N	Negligible	Nil	Negligible	N	Bored tunneling / Cut-&-cover
Old Far East Flying Training School	10 – 80m (about 10m from adit, 70m from TKW and 80m from the route alignment)	N	Y	Pre-construction structural condition survey. Monthly ground-borne vibration monitoring during construction	N	N	Bored tunneling
Fish Tail Rock	>300 m	N	N	Nil	N	N	Bored tunneling
Ma Tau Kok Animal Quarantine Depot	300 m	N	N	Nil	N	N	Bored tunneling
Tin Hau Temple (To Kwa Wan)	120 m	N	N	Nil	N	N	Bored tunneling and cut-&-cover
Pak Tai Temple (Hung Hom)	230 m	N	N	Nil	N	N	Drill-&-blast
Kwun Yam Temple	200 m	N	N	Nil	N	N	Cut-&-cover
Disused Air Raid Precaution at Chatham Road (Tunnel Network K4)	200 m	Y	N	A full cartographic and photographic survey should be conducted for the accessible sections of the tunnels prior to construction	N	N/A	Drill-&-blast and cut-&-cover
Disused Air Raid Precaution at Valley Road (Tunnel Network K5)	0 m	Y	N	A full cartographic and photographic survey should be conducted for the accessible sections of the tunnels prior to construction	N	N/A	Drill-&-blast and cut-&-cover

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