

### 9. ARCHAEOLOGICAL AND CULTURAL RESOURCES

#### 9.1 Introduction

This section presents the findings of the assessment of the impacts to archaeological, and historic and cultural resources due to the construction and operation of the MOS Extension.

#### 9.2 Environmental Legislation and Standards

Annex 10 of the Environmental Impact Assessment Ordinance Technical Memorandum (EIAO TM) states that the criteria for evaluating impacts to sites of cultural heritage include:

- a) 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 and identity for culture and tradition.
- b) Adverse impacts on sites of cultural heritage shall be kept to an absolute minimum.

In addition to the EIA Ordinance, the heritage resources of Hong Kong are governed by a range of legislative and planning mechanisms. The *Antiquities and Monuments Ordinance (Cap. 53)*, provides powers for the designation of Antiquities and Monuments Sites or Declared Monuments in Hong Kong. The Ordinance provides statutory protection against the threat of development for declared monuments, historic buildings and archaeological sites which have been recommended by the Antiquities Advisory Board (AAB), approved by the Chief Executive and gazetted in the government gazette to enable their preservation for posterity.

Deemed Monuments have been identified by the Antiquities and Monuments Office (AMO) and agreement reached with the owners of the Monument to provide for specific measures to ensure preservation. Deemed Monuments have the potential to be upgraded to statutory Declared Monuments.

A wide range of sites of cultural heritage are identified and recorded by the AMO. Recorded historic buildings and structures are defined as follows:

- 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, but not yet qualified for consideration as possible monuments. These are to be recorded and used as a pool for future selection.

Although there are no statutory provisions for the protection of Sites of Historical Interest, Deemed Monuments and Graded Buildings in Hong Kong, the Government has administrative procedures which state that consideration must be given to protecting listed and locally designated historic buildings and sites of cultural interest. However, the current record of archaeological sites is known to be incomplete as many areas are not yet surveyed. Although *Section 11* (and its relevant sub-sections) of the *Antiquities and Monuments Ordinance* require any person who discovers an antiquity or supposed antiquity to report the discovery to the Antiquities Authority, there is a need to ensure that procedures and mechanisms, which ensure the preservation or formal notification of previously unknown archaeological resources that may be revealed or discovered during project assessment or construction, are identified at an early stage in Project planning.

### 9.3 Assessment Methodology

#### 9.3.1 Spatial Scope

The potential impacts to the archaeological, historical and cultural resources within a corridor of 500 m from either side and along the full stretch of the railway alignment and associated facilities have been assessed in accordance with *Section 3.10.1* of the MOS EIA Study Brief.

The following heritage resources have been assessed:

- *Archaeological Remains*, including a variety of buried and upstanding forms dating from the prehistoric to historical times;
- *Historic Buildings and Structures*, which include all pre-1950 buildings and structures; selected post-1950 buildings and structures of high architectural and historical significance and interest; and
- *Landscape Features*, including sites of historical events, building setting or monument of architectural or archaeological importance, historic landmarks, historic field patterns, tracks, fish ponds and cultural elements such as *fung shui* features and clan grave sites.

The development phase with the greatest potential direct impact to heritage features will be during the construction of the new railway. However, the study team has also assessed, where relevant, the indirect impacts associated with the operating railway.

#### 9.3.2 Prediction Methodology

##### *Identifying Archaeological Resources*

Data gathering on known heritage resources has focused on the records held by the Antiquities and Monuments Office (AMO), supplemented by discussions with representatives of AMO and field work and literature review conducted by the heritage assessment team. At the preliminary review stage, a review of existing AMO records

established that no known archaeological sites will be directly impacted by the Ma On Shan Extension. The findings are presented in *Section 9.4*.

### *Establishing Archaeological Potential*

It is widely acknowledged that the existing archaeological sites and monuments record for Hong Kong does not provide comprehensive coverage of its archaeology, and that certain areas remain largely uninvestigated. As a consequence, the lack of archaeological records relating to the alignment of the Ma On Shan Extension may reflect a lack of investigation and perhaps a consequence of surface deposits having masked recognition, rather than the absence of sites and features.

The EIA study team has evaluated the existing archaeological records of the area and has established a methodology for assessing and establishing the archaeological potential of the route alignment using the approach described by Marsden(1997)<sup>1</sup>.

Whilst no assessment strategy can guarantee absolute certainty as to the presence or otherwise of buried archaeological deposits, the development and implementation of a systematic desk top study, supplemented by a subsequent focused field evaluation of areas of potential, is likely to provide a sufficient level of certainty regarding archaeological potential to enable the planning of the railway to accommodate the preservation (in situ or by record) of archaeological deposits.

The desk top study has comprised the following steps:

- **Review of Available Information:** A review of available archaeological records and published and unpublished excavation reports has been undertaken in respect of the alignment. Any known areas of archaeological potential within 500 m of the alignment have been noted.
- **Mapping of Archaeological Potential:** The outcome of the desk top study has been summarised through the preparation of a map indicating levels of archaeological potential. Land through which the Ma On Shan Extension alignment is to pass has been classified against the following levels of archaeological potential: "high", "medium", "low" or "none".
- **Field Survey:** Field visits have been undertaken to identify additional heritage resources and to verify actual levels of disturbance to areas of archaeological potential.

The determination of the level of impact to archaeological resources is based upon the nature and extent of construction activities (*the level of impact*) and the predicted potential (*the predicted value of the resource*) of the area within which the activities are to take place.

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<sup>1</sup>Marsden P.R. (1997). Heritage Impact Assessment Methodologies and Opportunities in Proceedings of the International Conference on Heritage and Education, Hong Kong 17-18 December 1997

If significant impacts are predicted, a programme of field evaluation will be required to confirm the presence and extent of areas to be investigated and to determine field evaluation protocols comprising sampling technique (e.g. test pit or trench), sampling rationale to be applied (e.g. numbers of test pits, pit dimensions, sampling grid), and site record forms to be used during subsequent excavations. The evaluation protocols would be produced with reference to those established in Hong Kong and would be compatible with the best field practice and data capture requirements of the AMO.

#### *Identifying Historic and Cultural Resources*

Culturally significant features such as clan grave sites, *fung shui* and temples have been identified through reference to the information collected through consultations with AMO, and through field surveys undertaken by the heritage assessment team. Mitigation measures which may be recommended include relocation or reprovisioning and the shielding of features from visual and noise impacts.

#### *Historic Buildings and Landscape Features*

The desk top study has focused on the records held by the Antiquities and Monuments Office (AMO), supplemented by information from the Lands Department, District Offices, from fieldwork conducted by historic specialists Professor SIU Kwok-Kin and Dr Patrick Hase and through the review of other relevant literature. Culturally significant historic and cultural features have been mapped and are discussed in *Section 9.4* below.

The direct and indirect impacts to these historic and cultural features have been assessed; where appropriate, measures to mitigate predicted impacts have been identified and are summarised in *Section 9.5*.

### **9.4 Existing Conditions**

#### **9.4.1 Archaeological Remains**

The desk-top literature research has not identified any sites or features of archaeological interest along the alignment of the new railway. However, two known sites, the Wu Kwai Sha archaeological site, located to the north of the alignment and Lee On Estate and northwest of Lee On Station, and the Sai O Archaeological Site, located to the north of Sai O have been identified (see *Figure 9.4a*).

Although no remains of built structures were recorded at the Wu Kwai Sha archaeological site, Song Dynasty (AD960-1279) and Ming Dynasty (AD1368-1644) pottery was found near Lok Wo Village. During the 1970s, Bronze Age double F pottery sherds were found on the eastern extent of the Wu Kwai Sha archaeological site, and on the north coast of the Sai O village site close to a small hill of 65 m in height.

In addition, Neolithic and Bronze Age pottery has been found on two small islands, Yim Tin Tsai and Central Island (A Chau) on the northern coast of Tolo Harbour, which was a centre of pearl fisheries in the 10th century. It is believed that the potential for

archaeological remains at Wu Kwai Sha is medium-high (the extent of the area with medium-high archaeological potential is depicted in *Figure 9.4a*). Although the area at Sai O village is outside of the MOS Extension alignment, it falls within the 500 m boundary area for the proposed Feeder Substation and has, therefore, been included in the assessment.

The lack of archaeological records within the Study Area may reflect a lack of investigation or may be a consequence of surface deposits having masked recognition, rather than the absence of sites and features. It is necessary, therefore, to evaluate the archaeological potential of the alignment on the basis of topographic and geological information and through reviewing existing archaeological records. The bringing together of this information enables broad statements to be made regarding the likely presence of archaeological deposits. Whilst such statements may ultimately need to be field tested, they do provide a means of directing a preliminary assessment and of identifying the need for subsequent field work.

As indicated in *Figures 9.4a* and *c*, much of the alignment is to be constructed on areas of recent or historical reclamation. In the Tai Wai area the fill material associated with the reclamation process overlays alluvium, but these deposits lie at some considerable depth. Ground disturbance in these areas is likely, therefore, to be limited to fill material associated with the reclamation process and will not give rise to impacts to archaeological deposits. Furthermore, the MOS Extension alignment is, in part, to be constructed between roadways and through areas of urban development; these areas are likely to have experienced considerable ground disturbance and may be considered to have extremely low or no archaeological potential.

There are, however, a number of discreet areas crossed by the alignment that need to be critically assessed in order to establish the extent of their archaeological potential. These areas are as follows:

- A section of the Wu Kwai Sha archaeological site near Lee On Station. Findings of late Song and Ming Dynasty pottery and Bronze Age double F pottery sherds have been discovered on the eastern area of the Wu Kwai Sha archaeological site, and on the north coast of Sai O village, (see *Figure 9.4a*).
- The area adjacent to the small knoll to the east of Sha Tin Wai Road may have attracted occupation as a sheltered location to the south of Yuen Chau Kok. This site is considered to be relatively well preserved and may be considered, therefore, to have low-medium archaeological potential (the extent of the area considered as having low-medium archaeological potential is depicted in *Figure 9.4c*).
- The area at the foot of the mound upon which the High Rock Christian Camp stands near the junction of Che Kung Miu Road and Lion Rock Tunnel Road in Sha Tin Tau. In prehistoric and early historic times, this location would have represented a sheltered area of raised ground on the edge of the Shing Mun River estuarine flood plain. As such, the site may have been attractive as a temporary or more permanent occupation site. However, the area impacted

by the alignment is highly disturbed and may be considered, therefore, to have low archaeological potential, (see *Figure 9.4c*).

**9.4.2 Historical buildings & structures and cultural features**

**9.4.2.1 Existing Historical Buildings & Structures and Cultural Features**

All the historic and cultural features within a corridor of 500 m from either side and along the full stretch of the proposed railway alignment and associated facilities have been identified. They are presented in *Tables 9.4a-b* and depicted in *Figures 9.4a-d*.

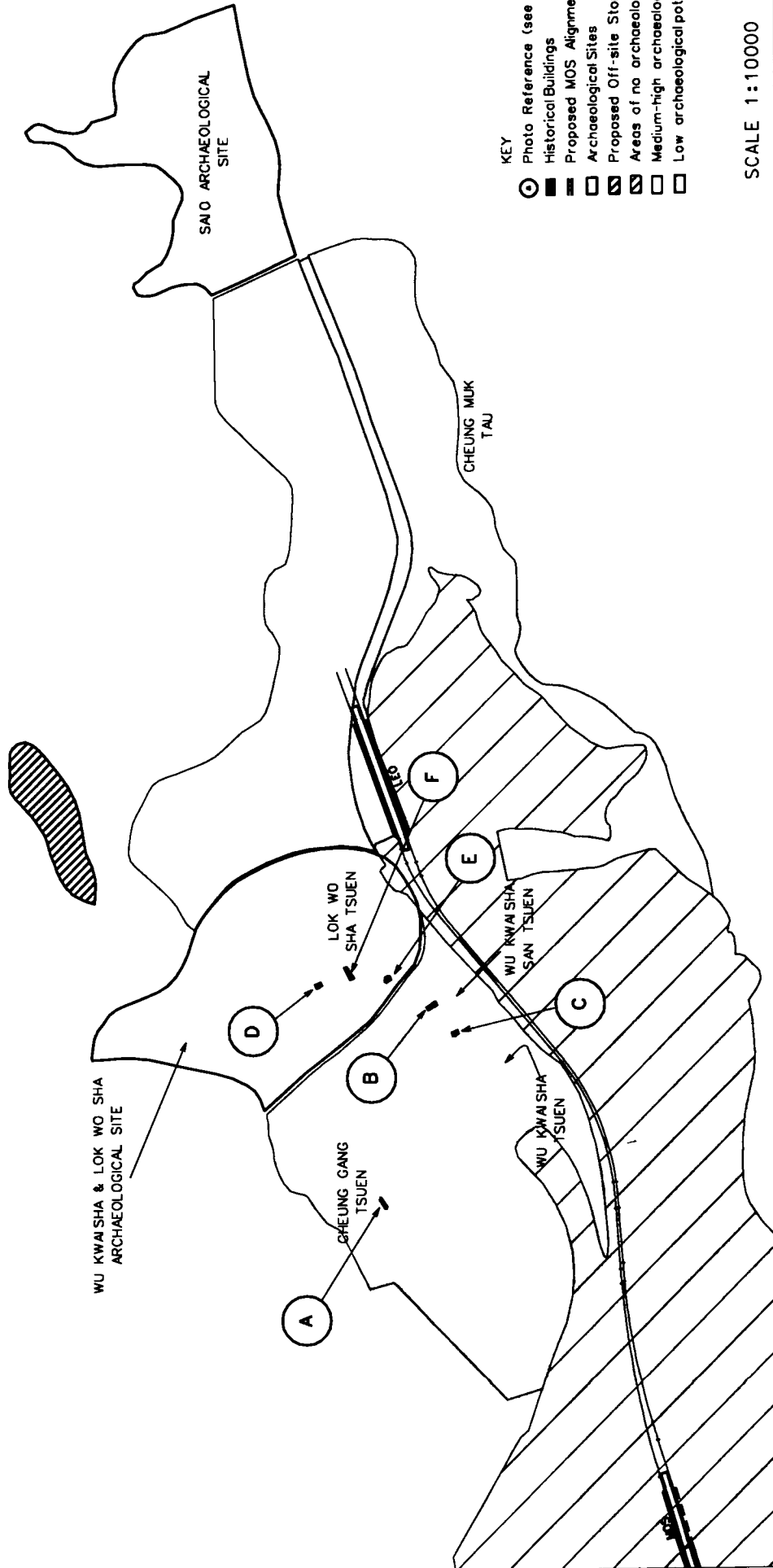
**Table 9.4a Historic Buildings & Structures and Landscape Features at Wu Kai Sha**

Photo Reference	Site Name and Description	Distance from the MOS alignment
A	Four grey-brick houses of the Ngang Shan roof type in Cheung Gang Village	370m
B	Abandoned Ying Yin Study Hall in Wu Kai Sha San Tsuen	100m
C	Tai Wong Yeh shrine and earth shrine in Wu Kai Sha San Tsuen	100m
D	Tai Wong Yeh shrine and earth shrine in Lok Wo Sha village	220m
E, F	One isolated and three joined one-storey grey-brick houses of the Ngang Shan roof type in Lok Wo Sha	180m

- The **Cheung Gang Village** is located to the west of Lok Wo Sha which was established by the Wan clan originally from Ho Chung in Sai Kung. After the "Coastal Evacuation" (after 1669), the clan migrated to Ma On Shan, Cheung Muk Tau and Cheung Gang.

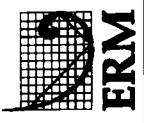
The Wan clan is now in its 7th generation but there are currently only three families left. There are four grey-brick houses of the Ngang Shan roof type (see *Figure 9.4a* and *Photo A* in *Figure 9.4b*) and some stone houses in the village. However, they have been abandoned. No ancestral hall has been built in the village as the villagers go to Ho Chung in Sai Kung to worship their ancestors.

- The original name **Lok Wo Sha Village** was Wu Kwai Sha (Old) Village established by a Liu clan. Native of Fujian, the ancestor of the Liu clan, Liu Chung Kit, migrated to Tuen Mun during the Yuan dynasty (AD1279-1368). Later, he migrated to Shenzhen and finally settled in Sheung Shui. His fourth son, Liu Chi Yuk migrated to Cheung Muk Tau in the early Ming dynasty (1368-1398) and later settled in Wu Kai Sha. In 1661, in order to stifle the supply of the Anti-Manchu rebels in Taiwan, the Emperor of the Qing dynasty promulgated the "Coastal Evacuation" by which people living along the coast of Guangdong had to move 5 *li* inland. The Liu clan was forced to move back to China. In 1669, the "Boundary Extension" was promulgated and the Liu



- KEY
- Photo Reference (see figure 9.4b)
  - Historical Buildings
  - ▬ Proposed MOS Alignment
  - Archaeological Sites
  - ▨ Proposed Off-site Storage
  - ▩ Areas of no archaeological potential
  - ▧ Medium-high archaeological potential
  - ▦ Low archaeological potential

SCALE 1:10000



Environmental  
Resources  
Management

HERITAGE RESOURCES AT WU KWAI SHA

FIGURE 9.40



(A) FOUR GREY-BRICK HOUSES OF THE NGANG SHAN ROOF TYPE IN CHEUNG GANG VILLAGE



(B) YING YIN STUDY HALL IN WU KWAI SHA SAN TSUEN



(C) TAI WONG YEH SHRINE AND EARTH SHRINE NEAR WU KWAI SHA SAN TSUEN



(D) TAI WONG YEH SHRINE AND EARTH SHRINES IN LOK WO SHA VILLAGE



(E)(F) ONE ISOLATED AND THREE JOINED ONE-STOREY GREY-BRICK HOUSES OF THE NGANG SHAN ROOF TYPE

FIGURE 9.4b

HISTORIC BUILDING & STRUCTURES AND LANDSCAPE FEATURES AT WU KWAI SHA

Environmental Resources Management







KEY  
 Photo Reference (see figure 9.4c)  
 Historical Buildings  
 Proposed MOS Alignment  
 Areas of no Archeological Potential

HERITAGE RESOURCES AT TAI WAI AND SHA TIN

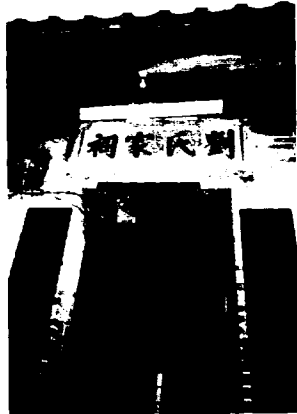
FIGURE 9.4C



(G) THREE VILLAGE HOUSES  
IN LEI UK TSUEN



(H) THE NGANG SHAN ROOF TYPE HOUSES  
IN SHA TIN TAU



(I) LAU'S ANCESTRAL HALL IN SHA TIN TAU



(J) LAM'S ANCESTRAL HALL IN  
SHA TIN TAU



(K) LEE'S ANCESTRAL HALL IN SHA TIN  
TAU



(L) CHAN'S ANCESTRAL HALL IN SHA TIN TAU



(M) AN OLD VILLAGE HOUSE COMPRISING OF TWO STOREYS AND  
OF THE NGANG SHAN ROOF STYLE IN WONG UK TSUEN



(N) TSE'S ANCESTRAL HALL



(O) CHENG'S ANCESTRAL HALL



(P) LAM'S ANCESTRAL HALL

FIGURE 9.4d HISTORIC BUILDINGS & STRUCTURES AND LANDSCAPE FEATURES  
IN TAI WAI AND SHA TIN

Environmental  
Resources  
Management



clan moved back to Wu Kwai Sha to rebuilt their old village; upon their return the name of the village was changed to Lok Wo Sha.

Due to the population growth in the village, a new village, the Wu Kwai Sha San Tsuen, was established in 1972.

Most of the buildings in this old village are re-constructed or transformed. There are only three one-storey grey brick houses of the Ngang Shan roof type left, (see *Figure 9.4a and Photo E, F in Figure 9.4b*).

There are three earth shrines located at the west entrance of the Lok Wo Sha village. A Tai Wang Yeh Shrine and an earth shrine are located beneath an old ficus at the south-east entrance of the village, (see *Figure 9.4a and Photo D in Figure 9.4b*).

In the Wu Kwai Sha San Tsuen, the Ying Yin Study Hall (see *Figure 9.4a and Photo B in Figure 9.4b*) was relocated from the old village in 1972, but now, it is left abandoned. A Tai Wan Yeh Shrine and earth shrines are also found near the Wu Kwai Sha San Tsuen. (see *Figure 9.4a and Photo C Figure 9.4b*).

- The **Cheung Muk Tau Village** is located to the south-east of Wu Kwai Sha and was established during the early Qing dynasty (about AD1670-1700) by five clans comprising the Ho, the Li, the Wan, the Liu and the Hau .

**Table 9.4b Historic Buildings & Structures and Landscape features at Tai Wai and Sha Tin**

Site Name	Description	Distance from MOS alignment
Che Kung Temple	<p>Built in the late 16th century during the Ming Dynasty and repaired in 1890 (16th year in the reign of Emperor Kuang Hsu, Ch'ing Dynasty). The building, which is listed as Grade 2 by the AMO (AMO Ref: 860371), comprises two halls and one courtyard, and is of the Ngang Shan roof type. Its walls are in traditional grey brick laid with white mortar.</p> <p>In 1991, a new temple, also with the Ngang Shan roof type, was built in front of the old one. This new temple comprises one large hall with three chambers, the Che Kung altar being placed in the middle chamber. The old temple behind it has now been closed.</p> <p>Besides serving for ritual needs, there are two major cultural events held in Che Kung Temple. One is the spinning of the wind-wheel: many Hong Kong people go to the Che Kung Temple on the third day of each Lunar New Year to ask for blessings and to spin the 'wind-wheel' in the Temple in order to obtain good luck for the coming year. The other major cultural event is the 'Ch'iao' festival which is a God thanking celebration held once every ten years. In addition to the above function, the temple is also a meeting place of the Sha Tin Kau Yeuk Committee. (see <i>Figure 9.4c</i>)</p>	40m
Tze Hong Monastery	<p>The establishment of this monastery for Buddhist nuns was made possible by the generous donation of Mr WU Man-fu early this century. The monastery comprises of six to seven two-storey Ngang Shan roof type buildings. (see <i>Figure 9.4c</i>)</p>	150m

Site Name	Description	Distance from MOS alignment
San Tin Wai	This village was established by the Lau clan originally from Wai Chau in the late 19th century with Wong, Chan and other clans. The Lau's ancestral hall is located inside the village which comprises one hall and one courtyard and is of the Ngang Shan roof type where the tablets of the Lau, Wong and Chan ancestors are placed in the main chamber.(see <i>Figure 9.4c</i> )	400m
Koo Ngam Monastery	This monastery was established in the early 1990s. The building simulated the old-style structure and three statues of Buddha are placed inside the hall. (see <i>Figure 9.4c</i> )	75m
Lei Uk Tsuen	The village was established by the Lei clan during the late 17th century (Qing dynasty). There are three old village houses remaining, only one is in good condition, whilst the other two have fallen to ruins.(see <i>Figure 9.4c &amp; Photo G of Figure 9.4d</i> )	60m
Stewards High Rock Christian Camp	Located on the top of a small knoll to the north of Sha Tin Tau. The camp, which was built in 1924 and comprises of two blocks, is listed as a Grade 3 building by the AMO (AMO Ref: 930525)(see <i>Figure 9.4c</i> )	60m
Sha Tin Tau	A Hakka village established by Lau, Chan, Lam, Lei and Wong clans in the late 17th century (Qing dynasty). There are a number of Ngang Shan roof type houses in the front row of the village. The Lau, Chan Lam and Lei clans have their own ancestral halls with one hall and one courtyard, and of the Ngang Shan roof type. The Lau ancestral hall is an old-style stone house. The other three have since been renovated and have lost their original features and appearance. The Earth God shrine of the village is located at the foot of the Steward High Rock. (see <i>Figure 9.4c &amp; Photo H-L of Figure 9.4d</i> )	130m
Tsang Tai Uk	<p>A typical 'Hakka' walled village originally named as Shan Ha Wai. Commencing in 1848 (Qing dynasty), Tsang Koon-man spent 20 years building this single-clan walled village, completing the 60,000 square metres area in 1867.</p> <p>The architecture of the village resembles the style of Ng Wah Hakka walled village, with the walls built in grey bricks manufactured by a kiln in Kak Tin Tsuen. This rectangular shaped walled village comprises four entrances with each entrance connecting with the houses on the left and right sides, forming a chess-board structure. There are four guard-towers at the four corners of the village wall with pistol holes on the front wall.</p> <p>After World War II, this village was used as a refugee camp and became known as 'Tsang Tai Uk' (Tsang's Big House); it retains this name to the present day.</p> <p>Tsang Tai Uk is a unique Hong Kong example of a well preserved fortified Hakka village. It is listed as a Grade 1 building by the AMO.(see <i>Figure 9.4c</i>)</p>	70m
Sha Tin Wai	It was established by the Tse, Cheng and Lam clans from Pok Law in the mid 17th century. Each of the clans has their own ancestral hall which comprise of two halls and one courtyard and are of the Ngang Shan roof style. The Tse's ancestral hall has been repaired; the Lam's ancestral hall has been changed to a flat-roof stone house and the Cheng's ancestral hall has been changed to a three-storey residential house but the stone inscriptions bearing the name of the ancestral halls still remain. The Earth God shrine of the village is located at the entrance to Pok Hong Estate.(see	80m

Site Name	Description	Distance from MOS alignment
<i>Figure 9.4c &amp; Photo N-P of Figure 9.4d)</i>		
Wong Clan Ancestral Hall	Located at Wong Uk Lane, this newly built ancestral hall comprises one hall and one courtyard and was built in 1994. This Hall belongs to the Wong clan who migrated from 'Wong Uk Tsuen' at Yuen Chau Kok in recent years.(see <i>Figure 9.4c</i> )	20m
Wong Uk Tsuen	This village is located to the right of the Regal Riverside Hotel. The Wong clan established their village there in the early 18th century (Qing dynasty). In recent years, the Wong clan develop a new area and built a new ancestral hall there (the Wong Clan Ancestral Hall). The only remaining house in this old village is now reserved as a place for recreation and is listed as a Grade 2 building by the AMO. (see <i>Figure 9.4c &amp; Photo M of Figure 9.4d</i> )	360m
Liu's Ancestral Hall	A one-hall Hakka style ancestral hall. Ungraded.	100m
Choi's Ancestral Hall	A one-hall Hakka style ancestral hall which was built in the 1890's. The building was renovated in 1995/6. Ungraded.	130m
Leung's Ancestral Houses	Two ancestral houses, now occupied by tenants. Both houses are the one-hall Hakka style ancestral house which may have existed for over 100 years. Ungraded.	170m
Tin Sam Gate	A one-hall Hakka style gate built mainly for defence purpose during the 1700's; it was renovated in 1996. Ungraded yet.	180m

## 9.5 Prediction And Evaluation of Impacts

### 9.5.1 Archaeological Remains

No direct impact is expected to the known archaeological sites of Wu Kwai Sha and Sai O.

Due to the predominance of reclamation fill material and the highly urbanised, and hence disturbed nature, of the areas through which the majority of the proposed alignment is to pass, it is considered unlikely that the construction of the railway will give rise to significant impacts to any archaeological deposits along the majority of its length.

However, the assessment of archaeological potential has identified a number of areas of low, low-medium and medium-high archaeological potential comprising:

- The area at the foot of the mound upon which the High Rock Christian Camp stands has been evaluated as having low archaeological potential. The proposed works in the vicinity of this area comprise pier supports for the elevated viaduct. Although the precise location of these pier supports has yet to be finalised, the proposed Lion Rock Tunnel Road realignment is likely to impact more severely upon this area and will ensure that the positioning of the pier supports fall outside the area of potential. It is considered that further evaluation of this area will not be necessary.

- The area adjacent to Sha Tin Wai Hill, to the east of Sha Tin Wai Road is, however, a better preserved site which is considered to have low-medium archaeological potential. Pier supports are likely to impact at the base of the hill. It is recommended that when the detailed design process indicates the likely positioning of the pier supports footprints, archaeological evaluation is undertaken prior to the finalisation of the detailed design of the viaduct.
- The alignment between Ma On Shan Station and Lee On Station is contained for much of its length within the central reserve of a roadway, the construction of which has involved cutting and levelling of Lee On Hill. Examination of maps dating from before the development of the Lee On area, supplemented by field survey, has indicated that this construction activity will have removed any archaeological deposits which may have previously survived along the MOS Extension alignment.
- Lee On Station is to be constructed as an elevated structure on sloping land that is currently heavily wooded. The dense woodland is likely to compromise the retrieval of any surviving archaeological information, whilst the construction of the nearby Sai Sha Road on embankment is likely to have disturbed the area further. These factors lead the Consultants to conclude that the site of Lee On Station has a low archaeological potential and that no further action is required. However, the current preliminary engineering design proposes that short “over-run” tracks continue over the adjacent road into a less disturbed area which is considered to have medium to high archaeological potential. It is recommended that when the detailed design process indicates the likely positioning of the pier supports for the over-run tracks, on the eastern side of Sai Sha Road archaeological evaluation is undertaken prior to the finalisation of the detailed design of the viaduct.
- The preliminary design of the MOS Extension has indicated the need to locate an electricity feeder station in the Ma On Shan - Lee On area. The final location of the feeder station will be determined during the detailed design phase and following discussions with China Light and Power Co. Ltd (CLP). The proposed location of the feeder station shall be critically evaluated in terms of the potential impacts to heritage resources and, if appropriate, the intended location will be subject to archaeological field evaluation prior to a final decision being taken as to its location.

Annexes 19 and 20 of the EIAO TM provides technical guidance on the prediction of impacts to heritage resources within the EIA process. In line with the requirements of the EIAO TM, the Study Team has undertaken desk top research and observational field surveys to determine the current heritage resource baseline and the potential impacts likely to arise as a consequence of the proposed new railway.

The archaeological impact assessment has indicated that the impact to areas with the potential for surviving archaeological deposits is limited to two relatively small areas which will be impacted by the construction of the footings of the pier supports for the elevated railway viaduct. The precise location of these footings will be determined

following the detailed design of the viaduct: if the detailed design indicates that pier footings are to be located within the areas of archaeological potential at Sha Tin Wai Hill and east of Sai Sha Road at Lee On, it is recommended that positioning of these footings be archaeologically excavated prior to the finalisation of the viaduct design. It is committed by KCRC that the results of the archaeological field evaluation may require the revision of the engineering design and a repositioning of the pier footings in light of revealed archaeological deposits.

### **9.5.2 Historic Buildings**

No direct impact is expected to identified historic buildings and structures and landscape features. However, concerns have been raised regarding the potential indirect impacts to sites located in close proximity to the alignment.

The Che Kung Temple, the Koo Ngam Monastery, Lei Uk Tsuen, the Stewards High Rock Christian Camp, the Tsang Tai Uk, the Sha Tin Wai and the Wong Clan Ancestral Hall are all located within 100 m from the work site boundary. Whilst there is the potential for these buildings to experience high construction dust impact, in particular the Wong Clan Ancestral Hall, the implementation of the mitigation measures proposed in *Section 3.4.3*, along with appropriate Environmental Monitoring & Audit, will ensure that the construction dust impact to these sites is kept to an acceptable level.

No air quality impact is expected during the operational phase of the MOS Extension as limited potential sources have been identified. The design of the ventilation systems for the stations and the bus termini should be carefully considered to ensure that the established criteria are met.

For construction noise impacts, the assessment, reported in *Section 4.4*, indicated that unmitigated construction noise impacts to the above mentioned sites would be high. However, with the recommended mitigation measures identified in *Section 4.4*, the noise impacts could be controlled to within the required noise limit.

For operational noise impacts, the operational noise assessment, reported in *Section 4.5*, has demonstrated that the package of recommended mitigation measures will ensure there will be no exceedances of the noise criteria.

The construction and operation of the proposed rail development has the potential to generate visual impacts on the surrounding areas including the historic buildings in Tin Sum, Sha Tin Tau, Sha Tin Wai and Wu Kwai Sha, the Che Kung Temple, the Tsang Tai Uk and the Wong Uk Ancestral Hall. Particular concerns have been expressed by the AMO regarding the visual impacts to Tsang Tai Uk. As is detailed in *Sections 8.5* and *8.6*, Tsang Tai Uk is approximately 80m away from the proposed MOS Extension, and, due to its noted historic value, it has been rated as having a high receptor sensitivity. During the construction phase, the visual impact assessment concluded that the visual impacts to Tsang Tai Uk after mitigation will be high. This is principally because there are limited means of mitigating the visual impact of the construction works. However, the

duration of the viaduct construction period in this area will be short. With regard to the operational impacts, the visual impact assessment concluded that, before and after the implementation of the recommended mitigation measures, there would be a medium visual impact to Tsang Tai Uk as shown by *Figure 8.6(13)* in *Section 8*. It is considered that this is acceptable.

Overall, with the implementation of the proposed visual impact mitigation measures defined in *Sections 8.5* and *8.6* it is predicted that the impacts to all the historic buildings can be reduced to acceptable levels.

## **9.6 Conclusions and Summary of Recommended Mitigation Measures**

### **9.6.1 Archaeological Remains**

No direct impact is expected to the known archaeological sites of Wu Kwai Sha and Sai O.

However, the heritage study team has identified some areas of archaeological potential and the following mitigation measures are recommended:

- Archaeological excavation is recommended for impacted locations within the area of archaeological potential at Sha Tin Wai Hill. The evaluation is to be undertaken during the detailed design phase and prior to the final determination of pier footing locations. It is acknowledged that results of the evaluation may require a revision to the detailed design and a repositioning of the pier footings in light of revealed archaeological deposits. The evaluation will be undertaken under a formal licence from the AMO.
- Archaeological evaluation is recommended for impacted locations within the area of medium to high archaeological potential, east of the Sai Sha Road at Lee On. The evaluation is to be undertaken during the detailed design phase and prior to the final determination of pier footing locations. It is acknowledged that the results of the evaluation may require a revision to the detailed design and a repositioning of the pier footings in light of revealed archaeological deposits. The evaluation will be undertaken under a formal license from the AMO.

The application for the licensing of the recommended excavations shall be accompanied by an Excavation Plan detailing the approach to be adopted, the qualification and experience of the excavation team and proposed recording and reporting arrangements.

The proposed location of the feeder station in the Ma On Shan - Lee On area will be determined during the detailed design stage and following consultation with CLP. The proposed location of the feeder station shall be critically evaluated in terms of the potential impacts to heritage resources and, if appropriate, the intended location will be subject to archaeological field evaluation prior to a final decision being taken as to its location.



## **9.6.2 Historical Buildings & Structures and Landscape Features**

### *Historical Buildings*

No direct impact is expected to the identified historic and cultural features associated with the construction or operation of the new railway. However, concerns have been raised regarding the air quality, noise and visual impacts to the historic sites including at Tin Sam, Sha Tin Tau, Sha Tin Wai, Lei Uk Tsuen, the Che Kung Temple, the Stewards High Rock Christian Camp, the Tsang Tai Uk and the Wong Clan Ancestral Hall. It is anticipated that with the implementation of appropriate mitigation measures recommended during the construction and operational phases, the impacts to these sites will be kept to an acceptable and required level.