

9 Impact on Cultural Heritage

9.1 Introduction

This chapter presents the cultural heritage impact assessment of the Project, identifying cultural heritage resources such as archaeological sites, built heritage structures and cultural and historical landscape features. The archaeological investigation did not identify any archaeological material or cultural layers, thus no mitigation measures are recommended. A number of built heritage resources will be affected by the Project, including 13 graves and 1 boulder path. Mitigation in the form of preservation by detailed record for all of the resources will be required during detailed design stage by the DBO Contractor.

The cultural heritage assessment has been conducted in accordance with the requirements of Annexes 10 and 19 of the TM-EIAO and Claus 3.4.7 of the EIA Study Brief for the Project.

9.2 Environmental Legislation & Standards

The relevant legislation and associated guidance notes applicable to the study for the assessment of impact on cultural heritage include:

- Antiquities and Monuments Ordinance, Cap 53;
- Environmental Impact Assessment Ordinance (EIAO), Cap. 499; and
- Technical Memorandum on Environmental Impact Assessment Process (TM-EIAO).

9.2.1 Antiquities and Monuments Ordinance (Cap.53)

The Antiquities and Monuments Ordinance (Cap. 53) was enacted in 1976. It provides the statutory framework for the preservation of objects of historical, archaeological and palaeontological interest. The Ordinance contains the statutory procedures for the Declaration of Monuments. Monument proposed can be any place, building, site or structure, which is considered to be of public interest by reason of its historical, archaeological or palaeontological significance. It should be noted that the protective measures contained in the ordinance only pertain to Declared or Deemed Monuments.

9.2.2 Environmental Impact Assessment Ordinance (Cap.499)

The EIAO provides additional legislative protection to sites of cultural heritage, which are threatened by development and the EPD is the enforcing authority. It stipulates guidelines and criteria for the assessment of sites of cultural heritage interest.

9.3 Description of the Study Area

The study area for the cultural heritage impact assessment (CHIA) consists of the Project area and all land within 50 metres of its boundary. A map showing the finalised layout plan is shown in **Drawing No. 24315/13/601**. For the purposes of site investigation, the study area has been divided into four sections, and the divisions are illustrated on **Drawing No. 24315/13/602** for ease of reference only.

9.3.1 Ngong Tong (North and West of Shek Tsai Ha Road: western and central section)

Ngong Tong terrain is typical of a landscape underlain by volcanic rocks. The hills in the Ngong Tong area rise to as high as +160 mPD and as can be seen in the photographs in Plates 1 and 2 in Appendix 9.1, the hillsides are very steep with scrubby vegetation, dominated by thick brushy ferns, and shallow soil deposits with outcroppings of rock

commonly seen. The existing landscape has also been formed through result of gully erosion and mass movements (specifically, debris slides). Plate 3 in Appendix 9.1, shows the result of a very recent debris slide.

There are three valleys in this part of the study area. All of the valleys can only be reached by descending down very steep slopes. The valley floors are very narrow ranging from approximately one metre in width at their narrowest points to a maximum of approximately ten metres at their widest points. The valley floors were also found to be marshy and covered by thick vegetation.

9.3.2 Tong To Shan (North of Shek Tsai Ha Road: east section)

Tong To Shan section consists of hillsides to the south of the valley where the primary remains of the historical settlement of Tong To Shan were located during the 2001 HKIA survey. The existing highest point in Tong To Shan is about +158 mPD. The slopes in this area range from very steep to moderate (Plates 4 and 5 in Appendix 9.1). There are short and narrow depressions (1 to 2 metres in width) at the higher elevations, mainly situated in saddles between the hilltops. The highest elevations, (Plate 6 in Appendix 9.1) contain the same scrubby vegetation, shallow soil and rock outcrops as described for the other parts of the NLES, although, not surprisingly, the more sheltered saddle depressions have thicker vegetation. The lower sections of the hillsides, however, are of a different character and contain more substantial vegetation with some sections actually being quite heavily wooded (Plate 7 in Appendix 9.1). Several of the small valleys have been artificially terraced. The valleys also show evidence of water erosion, in the form of gullies and with sections of hillsides washed away.

9.3.3 Shek Tsai Ha (South of Shek Tsai Ha Road: western section)

Shek Tsai Ha area is similar in nature to that of Ngong Tong, though it consists of even steeper mountain sides, again interspersed with narrow valleys. Vegetation is scrubby, except in the relatively sheltered valleys, where stands of trees have taken hold. The highest elevations of the existing range are between 170 and 200mPD (Plates 8 and 9 in Appendix 9.1).

9.3.4 Wo Keng Shan (South of Shek Tsai Ha Road: eastern section)

Wo Keng Shan area consists of a narrow band of land around the south-eastern boundary of the existing NENT Landfill site. The existing terrain is mountainous, being over 200 mPD in elevation (Plates 10 and 11 in Appendix 9.1).

9.4 Archaeology

9.4.1 Assessment Methodology

The methodology for the Archaeological Impact Assessment (AIA) is discussed in the following subsections.

9.4.1.1 Desk-based study

A desk-based study was carried out in order to identify any known or potential sites of archaeological interest. The following resources were consulted: the Antiquities and Monuments Office (AMO) published and unpublished papers and studies; publications on relevant historical, anthropological and other cultural studies; unpublished archival, papers, records; collections and libraries of tertiary institutions; historical documents which can be found in Public Records Office, Lands Registry, District Lands Office, District Office, Museum of History; cartographic and pictorial documentation; and existing geotechnical information. The desk-based study also included a review of all relevant impact assessment studies.

9.4.1.2 Preliminary site investigation

A surface field scan was undertaken to supplement the information gathered during the desk-based study. This was carried out by field walking of the natural landscape in a systematic manner, with attention to areas of exposed soil and recent cuts. This information was used to evaluate the archaeological potential of the study area and to determine if any further field evaluation, i.e. auger testing and test pit excavation would be necessary.

9.4.1.3 Field evaluation programme

As a result of the desk-based study and preliminary site investigation it was decided that an archaeological field evaluation would be required, the scope of which had been agreed with the AMO prior to implementation. The field evaluation consisted of an auger survey and test pit excavation.

9.4.1.4 Impact assessment and mitigation recommendations

An assessment of impacts according to the requirements of Annexes 10 and 19 of the TM-EIAO was undertaken and appropriate mitigation measures were presented where applicable.

9.4.2 Results of the Desk Based Study

9.4.2.1 Geological and topographical information

The solid geology of the study area is dominated by volcanic rocks, specifically, undivided coarse ash crystal tuff. This terrain is typified by moderate to steep slopes with gently concave side slopes and narrow convex ridges (Shaw et al 2000). Superficial deposits consist of unsorted debris flow made up of a mixture of gravely and clayey silt/sand with cobbles and boulders (**Drawing No. 24315/13/603**).

Topographically, the existing study area is dominated by steeply sloped hills with narrow valleys. The maximum elevations are approximately +180 to +200 mPD with an average around +150 mPD. The lowest elevations associated with the study area are approximately +100 to +110 mPD and are located on the valley floors and at the far northern and north-western sections of the study area, (i.e. to the northwest of Ngong Tong).

An aerial photograph taken in 1999 shows no evidence of any past settlement or agricultural cultivation in the study area (Plate 12 in Appendix 9.1). This is in contrast with another aerial photograph taken in 1999, of the hill slopes to the north of the study area, i.e. between the village of Lin Ma Hang and the abandoned village house at Tong To Shan, (Plate 13 in Appendix 9.1).

9.4.2.2 Previous Investigations

Archaeological material from the following periods has been recorded in the vicinity of the study area:

- Ming Dynasty AD 1368 - 1644
- Qing Dynasty AD 1644 – 1911

This material has been found in the area designated as the "Tong To Shan Archaeological Site". The historical background of the two villages in the vicinity of the study area, i.e. Tong To Shan and Lin Ma Hang can be found in the Built Heritage section of this report.

An archaeological survey, which included the Project area was carried out by the Hong Kong Institute of Archaeology (HKIA 2001). The survey included excavation of 4 test pits in the Ngong Tong and the boring of 120 auger holes in Ngong Tong and Tong To Shan. Two of the test pits were located on the top of Ngong Tong Shan and revealed a few historical shreds immediately below topsoil. The other test pits were located in the foothills; some

glazed historical shreds were recorded from the topsoil layer. The locations of the test pits and auger holes can be found in **Drawing No. 24315/13/604** (HKIA 2001).

The 2001 HKIA report noted the importance of the Tong To Shan Archaeological Site as a cultural heritage resource. However, the investigation (HKIA 2001) did not identify any subsurface cultural layers in the CHIA study area. The small numbers of historical shreds found in topsoil were associated with the historical graves, which was neither settlement nor agricultural activity. The extensive auger survey, carried out in Ngong Tong did not identify any areas of archaeological potential. No further survey or testing was recommended.

9.4.3 Results of the Preliminary Archaeological Site Investigation

All sections of the study area for the finalised Layout Plan, **Drawing No. 24315/01/107** were visited as part of the field scan. The terrain of much of the study area is mountainous and covered in heavy shrub vegetation. For purposes of this investigation, the study area has been divided into four sections for ease of reference, the divisions are illustrated on **Drawing No. 24315/13/602**. A summary of the archaeological potential of the four sections is provided below and recommendations for further field evaluation can be found in Table 9.1.

9.4.3.1 Ngong Tong (North and West of Shek Tsai Ha Road: western and central section)

The surface field scan showed the study area to be unchanged from that described in 2001. The previous archaeological investigation did not identify any archaeological deposits in Ngong Tong during either their auger testing programme or test pit excavations. These findings were consistent with the nature of the landscape, i.e. steep hillsides dominated by thin topsoil, numerous rock outcrops and evidence of history of mass movements and gully erosion. The surface field scan also did not identify indications of any previous land usage, apart from the historical grave sites, and sections of a boulder path, thus, reaffirming the 2001 report's conclusion that the Ngong Tong area has extremely low potential for containing any sub-surface cultural deposits.

9.4.3.2 Tong To Shan (North of Shek Tsai Ha Road: eastern section)

The 2001 survey did not identify any sub-surface archaeological material in this section of the study area and no evidence of archaeological surface material was identified during the current field scan. A number of cultural landscape features were identified, in the form of agricultural terraces and boulder paths and it is possible that sub-surface archaeological resources may exist in proximity to visible features.

9.4.3.3 Shek Tsai Ha (South of Shek Tsai Ha Road: western section)

The surface field scan did not identify any archaeological material and no land use features were identified in this part of the study area. The slopes in this area are steeper and slightly higher than those in Ngong Tong, but otherwise similar in nature. The potential for this area to contain any subsurface cultural deposits is extremely low. The reasons being the same as those stated for Ngong Tong.

9.4.3.4 Wo Keng Shan (South of Shek Tsai Ha Road: eastern section)

Wo Keng Shan consists of two narrow sections of mountain-tops. The surface field scan did not identify any archaeological material. No land use features were identified in this part of the study area. The area is located at very high elevations and the likelihood of any archaeological remains is extremely low.

Table 9.1: Recommendations for further archaeological field evaluation

Location	Description (based on Field Scan)	Archaeological potential, i.e. presence of subsurface cultural layers	Recommendations
Ngong Tong	Steeply sloped hills with scrubby vegetation and numerous rock outcrops and narrow swampy valleys. No evidence of past land usage, apart from the presence of grave sites.	Extremely Low	No further field investigation
Shek Tsai Ha	Steeply sloped hills with scrubby vegetation and numerous rock outcrops. No evidence of past land usage apart from the presence of grave sites.	Extremely Low	No further field investigation
Wo Keng Shan	The upper elevations of steeply sloped hills.	Extremely Low	No further field investigation.
Tong To Shan	The southern part of this section consists of steeply sloped hillsides with a mixture of scrubby vegetation and woodland with numerous rock outcrops. The northern section has hillsides that are less steep and more heavily wooded.	Low	An area has been highlighted for archaeological testing as shown in Drawing No. 24315/13/604 . As this area is not large and consists mainly of steep hillslopes. Two 1m x 1m test pit and 10 auger holes were conducted.

9.4.4 Results of the Archaeological Field Evaluation

As a result of the field scan, it was agreed that a field evaluation would be carried out in the Tong To Shan section of the study area. A full report of the archaeological investigation was prepared and approved by AMO prior to the submission of this EIA report. The following section presents a summary of the findings from the archaeological investigation.

9.4.4.1 Results of the auger test programme

A total of ten auger hole tests were conducted within the area identified for further archaeological investigation (**Drawing No. 24315/13/604**). The results indicated that the hill slope and terraces consist of moderate to deeply weathered colluviums. The auger hole depths ranged between 0.27 and 1.49 metres in depth. No archaeological material was recovered during the auger testing.

9.4.4.2 Results of the Test pit Excavations

A total of two test pits were conducted. Locations of the test pits are shown in **Drawing No. 24315/13/604**.

Test Pit 1 measured one by one metre and was located near the boulder path (BP2) on boulder terrace (T1). The test pit was hand excavated to a depth of approximately 0.80 metres when the excavation was halted due to safety standards. The temporary benchmark is located to the south of the test pit at the base of the tree marked No. 859. A general view of the test pit area can be seen in the photograph in Plate 14 (in Appendix 9.1).

A total of three contexts were recorded. Context 01: topsoil, was very dark grey very clayey, gravely and slightly sandy silt with many roots. It was recorded for a maximum depth of 0.11 metres. It contained no archaeological material. Context 02 consisted of light brownish grey very clayey and slightly gravely silt subsoil. There were no archaeological finding in this layer; its inclusions were smallish mainly sub-angular rocks and roots. Context 02 had a thickness between 0.19 and 0.32 metres. Context 03 was a light brown sterile colluvial

layer, which consisted of very silty, gravely and slightly sandy clay. Context 03 contained many angular to sub-angular rocks and was recorded to a depth of 0.71 metres below the surface. The East and South section drawings are shown in **Drawing No. 24315/13/605**. A photograph of the East section is given in Plate 15 and the South section in Plate 16 (in Appendix 9.1).

Test Pit 2 measured one by one metre and was located on boulder terrace (T7) between boulder path (BP2) and the stream to the east of the terrace. It was hand excavated to a depth of 0.34 metres when the excavation was halted due to decomposing rock. The temporary benchmark is located to the north of the test pit at the base of the tree marked 'X'. A general view of the test pit area can be seen in the photograph in Plate 17 (in Appendix 9.1).

A total of three contexts were recorded. Context 01, topsoil was very dark grey clayey, slightly gravely silt with roots. It was recorded for a maximum depth of 0.16 metres. It contained no archaeological material. Context 02 consisted of grey very gravely clayey silt subsoil. There were no archaeological finds in this layer; its inclusions were small mainly angular rocks. Context 02 had a thickness between 0.9 and 0.16 metres. Context 03 was brownish yellow decomposing rock, which consisted of clayey slightly gravely silt. Context 03 was recorded at a depth between 0.19 and 0.29 metres below the surface and contained no archaeological material. The East and South Section drawings for this test pit are shown on **Drawing No. 24315/13/605**. A photograph of the East section is illustrated in Plate 18 and the South section in Plate 19 (in Appendix 9.1).

9.4.5 Identification and Evaluation of Potential Impacts

Any sub-surface deposits within the NENT Landfill Extension area will be directly impacted by the Project, either through site formation works or during the operation of the landfill extension. The deposits would either be destroyed through site formation works during the construction phase or deemed inaccessible through deposition of waste material during the operation of the landfill extension.

9.4.6 Mitigation Recommendations

The mitigation recommendations are presented in Table 9.2.

Table 9.2: Mitigation recommendations for archaeology

Location	Archaeological Potential	Recommended Mitigation
Ngong Tong	Extremely low (based on the desk-based study and preliminary site investigation)	No further investigation required
Shek Tsai Ha	Extremely low (based on the desk-based study and preliminary site investigation)	No further investigation required
Wo Keng Shan	Extremely low (based on the desk-based study and preliminary site investigation)	No further investigation required
Tong To Shan	Extremely low (based on the findings of the archaeological investigation)	No further investigation required

9.5 Built Heritage

9.5.1 Assessment methodology

The methodology for the Built Heritage Impact Assessment (BHIA) consists of:

9.5.1.1 Desk-Based Study

The first stage of investigation was to undertake a desk-based study to determine the presence of historical occupation of the study area and to assess the potential for built heritage resources to be present. This study includes information gathered from the following sources: -

- The Antiquities and Monuments Office published and unpublished papers and studies;
- Publications on relevant historical, anthropological and other cultural studies;
- Unpublished archival, papers, records; collections and libraries of tertiary institutions;
- Historical documents which can be found in Public Records Office, Lands Registry, District Lands Office, District Office, Museum of History; and
- Cartographic and pictorial documentation.

The desk-based study also included a review of all relevant impact assessment studies.

9.5.1.2 Built Heritage Field Survey

Based on the findings of the desk-based survey it was decided that the existing information was not sufficient for the purposes of assessment and a built heritage field survey was carried out. This survey was undertaken to supplement the information gathered in the desk-based study and to determine the current status of the previously recorded resources as well as identify any resources that had not been previously recorded.

9.5.1.3 Definition of Features within the Scope of the Built Heritage Survey

Features within the scope of the built heritage survey are defined below:

- All pre 1950 structures; these include a wide range of built features such as domestic buildings, ancestral halls, temples, shrines, monasteries and nunneries, village gates, wells, schools, historic walls, bridges and stone tablets;
- Any post 1950 structure deemed to possess features containing architectural or cultural merit; All pre-war clan graves;
- Cultural landscape features, such as fung shui woods, historical tracks and pathways, stone walls and terraces, ponds and other agricultural features.

9.5.1.4 Recording Methodology

The detailed methodology for each of the categories of resources is presented as follows:

Built Features

The recording of resources includes the collection of photographic, oral and written information, on the architecture and history of any structures that may be impacted by the proposed works. Any relevant information is hand recorded in the field and then entered onto type written forms for inclusion in the report. The design of the forms is based on AMO and ICOMOS (International Charter for the Conservation and Restoration of Monuments and Sites) standards for the recording of historical resources with modifications to suit architectural styles and situations encountered in Hong Kong. The forms have also been designed to provide details of all identified resources, including written descriptions of each recorded feature, including; age, details of architectural features, condition, past and present uses, an architectural appraisal, notes on any modifications, direction faced and

associations with historical/ cultural events or individuals. The location of each feature must also be highlighted on a 1:1000 scale map.

Graves

Detailed descriptions of pre-war clan graves are recorded on field recording forms, which included a written summary of the structural features, a photographic record, a copy of the inscription, orientation and the dimensions of the grave. The locations of any identified graves are also highlighted on a 1:1000 scale map.

Cultural and Historical Landscape Features

A written description of each recorded feature is made, including information gathered from interviews with local informants (if available). The location of each recorded feature has also been highlighted on a 1:1000 scale map and a photographic record made.

Impact Assessment and Mitigation Recommendations

Once all the resources within the study area have been recorded and mapped, any potential adverse impacts associated with the works will then be identified and assessed, as well as appropriate mitigation measures presented, if required.

9.5.2 Results of the Desk-based Study

A desk-based study was undertaken to review the information contained in previous reports as well as to provide more detailed information, if available. The following information was gathered in the desk-based study.

9.5.2.1 Declared Monuments

There are no Declared Monuments in the study area for the CHIA. This confirms the findings of the previous investigations.

9.5.2.2 Graded Historical Buildings

There are no Graded Historical Buildings in the study area. This also confirms the findings of previous investigations.

9.5.2.3 Ungraded Historical Buildings

There are no Ungraded Historical Buildings in the study area. This also confirms the findings of previous investigations.

9.5.2.4 Graves

The HKIA investigation report (2001) shows the locations of 20 graves or former grave sites in the study area for the finalised layout option. As part of the desk-based study 1:1000 scale maps were examined and more potential graves were identified. Based upon this information it was determined that a field survey would be carried out as part of the CHIA. Aerial photographs were also examined, but only one grave was clearly visible, see Plate 20 (in Appendix 9.1).

9.5.2.5 Cultural Landscape Features

The HKIA investigation report (2001) shows two boulder paths and approximately 20 boulder terraces in the vicinity of study area. A small section of one boulder path is the only cultural landscape feature that falls within the boundary of the Project area.

9.5.2.6 Historical Villages

There are no historical villages in the study area. There are, however, two historical villages located to the North and according to local informants, the boulder paths were used by residents of these villages and the graves identified in the study area are associated with them. A brief historical background of the two villages is provided as follows:

Lin Ma Hang : According to local informants (former and present village representatives), Lin Ma Hang was established approximately about 600 years ago. It was first founded by the Lau and Kwun clans, who were later joined by the Sin clan and lastly by the Hakka Yip clan from Po On, who settled here about 300 years ago. Nowadays, the village is almost occupied entirely by members of the Yip clan. There is only one Lau family still living in the village. Most of the clans, whether resident in the village or not still maintain their ancestral hall and members of the Lau and Kwun clans still come back to visit their ancestral halls every year. The Sin clan ancestral hall collapsed in the 1970s. The name "Lin Ma Hang" was derived from the fact that in the past, a lot of "lin ma" could be found in the stream. The villagers used to grow rice and sweet potatoes and regularly took any extra rice and collected wood to Sha Tau Kok Hui and Shenzhen Hui for sale. According to local informants the historical graves at Ngong Tong belong to former residents of Lin Ma Hang, whose descendants immigrated a number of years ago. The informants also noted that a path between Lin Ma Hang and Ngong Tong had once existed, but that today it is not used and graves in Ngong Tong are now accessed through the NENT Landfill site.

Tong To Shan : There are two views on the timing of the founding of Tong To Shan according to local informants. Firstly, it is believed that Tong To Shan was settled by the Hakka Cheung family around the same time as Lin Ma Hang. Another opinion is that the village was settled at some point earlier than Lin Ma Hang. There were three fung shui houses in the village within living memory and all were originally built and occupied by members of the Cheung clan. The Cheungs eventually moved away, as they were no longer able to make a living in the area. A member of the Yip clan purchased all three houses and the surrounding land prior to 1929, with the land currently belonging to his grandson.

9.5.3 Results of the Built Heritage Field Survey

A field survey was undertaken to identify the full range of built heritage resources, as required by the EIA study brief. Two types of resources were identified; cultural landscape features and historical graves. The former consisted of 3 boulder paths, 9 boulder terrace features and the latter of 13 intact graves, 2 damaged graves, and 9 abandoned gravesites. Finally, 8 gravesites identified in the desk-based study, i.e. shown as graves on 1:1000 scale maps, were found to have no evidence remaining on site. The detailed recording forms of the identified resources can be found in Appendix 9.2 (Graves) and Appendix 9.3 (Boulder Terraces and Paths). A summary of the findings from the field survey is presented in this section.

9.5.3.1 Ngong Tong (North and West of Shek Tsai Ha Road: western and central section)

Historical Buildings

No historical buildings were identified in the field survey.

Graves

A total of 24 grave sites (including extant graves and sites of abandoned graves) were identified in the field survey. These included the graves identified in the 2001 HKIA report, as well as some that were not recorded as part of that study. A description of the graves is provided below and a catalogue of all the recorded historical graves, structurally modern graves and abandoned graves, with and without structural remains, is provided in **Drawing No. 24315/13/606** (a 1:4000 scale A3 drawing showing the recorded grave sites),

- Grave 2 is a Qing Dynasty grave and consists of a concrete enclosure and platform with green brick wall structure. The grey stone plaque is set into a carved stone frame. The grave has a renovation date of 1801. See **Drawing No. 24315/13/606** for location.
- Grave 3: Abandoned gravesite consisting of broken pieces of the concrete enclosure set onto a rubble stone backing, there was no evidence of the plaque. See **Drawing No. 24315/13/606** for location.

- Grave 4 is a Qing Grave and consists of a moulded concrete enclosure with grey stone plaque. It was renovated in 1894. See **Drawing No. 24315/13/606** for location.
- Grave 5 was renovated in 1966 with no original burial date provided on the plaque. The grave consists of a plain concrete enclosure and platform, it contains no historical structural elements. Location of grave is shown on **Drawing No. 24315/13/606**.
- Grave 6 is a Qing Dynasty grave with no renovation date given. Moulded concrete enclosure and platform with traces of red paint decoration still visible. See **Drawing No. 24315/13/606** for location.
- Grave 7 is another Qing dynasty grave renovated in 1909. It consists of a concrete enclosure with sections covered in whitewash. The grey stone plaque is surrounded by a moulded concrete frame painted red. See **Drawing No. 24315/13/606** for location.
- Grave 8 was renovated in 2000. The structure of the grave is modern with moulded concrete enclosure and platform. An historical plaque has been incorporated into the modern structure. Location of grave is shown on **Drawing No. 24315/13/606**.
- Grave 9: Abandoned gravesite with remnants of a concrete enclosure. The front of the grave has been broken and the remains removed and there was no plaque. See **Drawing No. 24315/13/606** for location.
- Grave 10: Abandoned gravesite consisting of empty urns and no structural remains. See **Drawing No. 24315/13/606** for location.
- Grave 11: Abandoned gravesite with the only remaining evidence being a cut in the hillside with a few loose bricks and pieces of the enclosure scattered about. See **Drawing No. 24315/13/606** for location.
- Grave 12: Abandoned gravesite, grave had been broken and the burial removed. The plaque had been cast aside and the family name had been chipped off it. (**Drawing No. 24315/13/606**).
- Grave 13: Abandoned gravesite; no burial and again the front section of the grave had been destroyed when the remains were removed. Some sections of the concrete enclosure were intact. There was no sign of the plaque in the vicinity of the grave (**Drawing No. 24315/13/606**).
- Grave 14 is a Qing Dynasty grave set into a steep hillside on a purposefully terraced platform. The grave consists of a concrete enclosure with a pale grey brick wall structure into which the plaque has been set. The plaque is bordered by a plain moulded concrete frame with traces of red colour (**Drawing No. 24315/13/606**).
- Grave 15 is a Qing dynasty grave, set on a terrace similar to that of grave 14. The grave consists of a concrete enclosure and platform with a brick wall structure (pale red bricks) with plaque set into it (framed with plain concrete). (**Drawing No. 24315/13/606**).
- Grave 17: Grave marked on 1:1000 scale map but no evidence remaining on site (**Drawing No. 24315/13/606**).
- Grave 18: Grave marked on 1:1000 scale map but no evidence remaining on site (**Drawing No. 24315/13/606**).
- Grave 22: Grave marked on 1:1000 scale map but no evidence remaining on site (**Drawing No. 24315/13/606**).

- Grave 23: Grave marked on 1:1000 scale map but no evidence remaining on site (**Drawing No. 24315/13/606**).
- Grave 24: Grave marked on 1:1000 scale map but no evidence remaining on site (**Drawing No. 24315/13/606**).
- Grave 25 is a Qing Dynasty grave, set on a large terrace with stone lined retaining wall. The grave consists of a concrete enclosure with grey stone plaque set in it. Much of the side sections of the grave had lost their outer covering and consisted of shaped earth and uncut stones (**Drawing No. 24315/13/606**).
- Grave 26 is a Qing Dynasty grave, set on a gently sloping section of the hillside and does not have a terrace associated with it. The grave consists of a plain concrete enclosure and back wall with reddish orange stone plaque set into it (**Drawing No. 24315/13/606**).
- Grave 27 is a Qing Dynasty grave set near the edge of the hillslope. The grave consists of some of the concrete enclosure, there was no plaque associated with the grave (**Drawing No. 24315/13/606**).
- Grave 29: Abandoned gravesite. Only remaining evidence consists of a small pile of stones (**Drawing No. 24315/13/606**).
- Grave 30: Abandoned gravesite. Only remaining evidence consists of a small pile of stones (**Drawing No. 24315/13/606**).

Cultural Landscape Features (Boulder Paths)

A boulder path was identified in the 2001 HKIA survey. The condition of the path has not changed since that time. The boulder path, referred to as (BP1) in this report was identified near the northeast boundary of the Finalised Layout Plan. The location is shown in **Drawing No. 24315/13/606** and the recording form is shown in Appendix 9.3. The southern section of the path is located at the edge of the Ngong Tong Section of the study area and runs northwards, leading eventually to the valley floor near the former Tong To Shan Tsuen. The path consists of a surface of uncut boulders and cobbles. The path has washed away in sections and some parts are not stone lined. It runs in a generally north-south direction. No other cultural landscape features were identified in this section of the study area.

9.5.3.2 Tong To Shan (North of Shek Tsai Ha Road: east section)

Historical Buildings

No historical buildings were identified in the field survey.

Graves

One intact historical grave was identified in the Tong To Shan. The two graves sites that were identified during the desk-based study G1 was found to have been abandoned with some pieces of the broken concrete enclosure visible. The location of G16 was marked on 1:1000 scale map but no evidence of it was remained on site. A third grave G28 (not identified in the desk-based study) was identified by the grave survey team, it is located in between two large sets of terraced slopes on the hillside overlooking Tong To Shan. A terrace for the grave had been constructed and the burial chamber was cut directly into the hillside at the back of the terrace. The grave is dated to the Late Qing Dynasty. **Drawing No. 24315/13/606** shows the locations of Graves 1, 16 and 28.

Cultural Landscape Features (Boulder Paths)

The maps from the HKIA study were consulted, but it was not possible to find all of the mapped paths on site. In light of this situation, all accessible parts of the study area were again walked on a field scan. As part of this field scan, two boulder paths were identified (**Drawing No. 24315/13/606**). The first path (BP2) was identified in two sections. The southern section is approximately 20 metres in length and runs in a north easterly direction. It has been truncated at its southern end and ends abruptly at an artificial hill slope (cut

during the installation of a drainage channel). At the northern end of this section, the path continues on as a dirt surface with a few isolated boulders that may be natural, for approximately 30m (across a flat area between two hilltops). At this point a clearly boulder lined surface is again visible. The path now leads from the flat area down the hillside containing the recorded terraces associated with Tong To Shan. It eventually meets up with another boulder path (BP3). After this junction, BP2 carries on in a north-easterly direction for approximately 10 metres, at this point it crosses a water course (near T7, described below) where a bridge has been constructed out of boulders and cobbles. After this, the path continues on in a north-north easterly direction.

BP3 can be followed for approximately 30m after the junction of itself and BP2. It runs in a generally east/west direction although it veers north/south just before the junction with BP2. The boulder lined surface disappears near the detectable end of the path. This section of the path is located on a steep hillside and there was evidence of water erosion in the form of gullies and many fallen trees. Because of these obstructions, it was impossible to tell if the path continued onwards. It should also be noted that there are also many small earth-lined paths connecting the terraces and running alongside them.

Boulder Terrace (Slope protection walls)

A series of boulder terraces were identified in the vicinity of boulder paths BP2 and BP3 (T1, T2, T3, T4, T5, T6, T7, T8 and T9). The locations of the terraces can be seen on **Drawing No. 24315/13/606**.

i) T1 consists of a terrace (approximately 5m in width and 20m in length) artificially cut into the hillside with an L-shaped unmortared stone retaining wall, constructed of cobbles and small boulders. The stone wall is generally intact in the vicinity of BP2, however, many sections of the wall have fallen away along the 20m length of the wall. There are evidence of some cut hill slopes around the terrace, but they are very rough and showed no evidence of stone lining.

ii) T2 is located near the highest point of boulder path 2. It consists of sections of a low, uncut and unmortared cobbled wall (c. 0.3m in height) running along the side of the boulder path and on cut sections of hillside perpendicular to the path. The stone lining could be seen to be partially washed away in some sections (with loose stones lying on the ground below the wall) and completely washed away in others with only the cut hillside remaining.

iii) T3 is a very low unmortared stone terrace constructed of unmodified cobbles. It runs perpendicular to BP2 and actually crosses it. It is visible to either side of the path, running for a few metres on either side, before it disappears. This area appears to have suffered from repeated water erosion and it was impossible to tell the original extent of the terrace due to washing away of the hill slope.

iv) T4 consists of another L-shaped terrace on the opposite side of BP2 than T1. This terrace, however, also has low (c. 0.5m high) walls in some sections. The terraces and walls consist of uncut and unmortared cobbles. There is also a ditch lying directly to the side of the boulder path. The ditch is also stone lined and it may have been constructed as a water control device. The boulder path near this feature is currently situated on a pedestal of soil, again showing a history of severe water erosion.

v) T5 is a series of uncut stone terraces, again unmortared, running down the hillslope to the valley floor. The uppermost section of this feature is situated at the junction of BP2 and BP3. Again small sections of the terrace edges have low uncut and unmortared walls. The stone lining is for the most part intact near BP2, however, further away from the path, whilst the hill slope shows clear signs of having been intentionally cut for terracing, it is not stone lined. A surface scan of the terraces did not show evidence of stones that had been washed away and it is possible that the walls were never stone lined.

vi) T6 is another series of terraces running northwards towards the valley floor from BP2, to the northeast of the junction with BP3. These terraces are similar in nature to those of T5.

The terraces in this section consisted for the most part of small flat areas with high terrace walls cut into the hillsides.

vii) T7 is the largest of the recorded features. The main section runs parallel to a stream course and consists of an approximately 2 to 3m high terrace wall. It is possible that it represents the lowest section of terraces associated with T4, although due to water erosion and vegetation it was not possible to discern the exact relationship.

viii) T8 and T9 are located in a small valley to the west of the terraces described above. T8 consists of a set of six terraces leading from the lower part of the hillside down to the valley floor. The slopes show clear signs of having been artificially cut and retaining walls of uncut stone had been constructed on some of them. As well, a stone lined ditch, probably associated with water management ran along the south eastern side of the terraces. T9 is a set of three large terraces set further up the hillside from T8. The area between T8 and T9 appears to be natural terrain, though there was evidence of quite substantial water erosion in the area and any modifications to the landscape may have been washed away. The terrace walls of T9 were very high, i.e. over 2 meters. Again there were paths running along side the terraces and associated stone constructed features that were again probably associated with water management.

9.5.3.3 Shek Tsai Ha (South of Shek Tsai Ha Road: western section)

Historical Buildings

No historical buildings were identified in the field survey.

Graves

Three grave sites, G19, G20 and G21, were located during the desk-based study of this section of the study area. During the field survey, two sites were located and there was no evidence found of the third. G19 is a Qing dynasty grave. It consists of a concrete enclosure with the burial removed. The front of the grave had been destroyed during the removal process. The urn has been placed to the side of the grave and the plaque set on top of it. G20 was located in the same area as G19. A cut in the hillside was the only visible evidence of the original gravesite. Upon investigation a plaque was discovered approximately 2 metres away, propped up against the hillside and held up by some loose stones and bricks. Grave 21 was marked on 1:1000 scale map but there was no evidence remaining on site. Locations are shown in **Drawing No. 24315/13/606**.

Cultural Landscape Features

No cultural landscape features were identified in this section of the study area.

9.5.3.4 Wo Keng Shan (South of Shek Tsai Ha Road: eastern section)

Historical Buildings

No historical buildings were identified in the field survey.

Graves

Two grave sites were identified in this section, both lying in the 50m buffer area to the southwest of the NLES. Grave 30 was marked on 1:1000 scale map but there was no evidence remaining on site. Grave 31 consisted of a concrete enclosure with some traces of decoration visible. Locations of the Graves are shown in **Drawing No. 24315/13/606**.

Cultural Landscape Features

No cultural landscape features were identified in this section of the study area.

9.6 Identification and Evaluation of Impacts

No historical buildings or structures were identified in the CHIA study area during the field survey. The identified features consisted of graves and cultural landscape features, the impacts are presented in the following sub-sections.

9.6.1 Ngong Tong (North and West of Shek Tsai Ha Road: western and central section)

Graves

All graves located in the Ngong Tong section of the study area will be directly impacted by the Project. Impacts will occur as part of site formation during the construction phase and will result in the destruction of the graves.

Cultural Landscape Features

The southernmost section of boulder path (BP1) is located just within or at the edge of the landfill extension boundary and may be directly impacted by the Project. Impacts will occur as part of site formation during the construction phase and will result in the destruction of any sections of the path that fall within the landfill extension boundary.

9.6.2 Tong To Shan (North of Shek Tsai Ha Road: east section)

Graves

No intact graves are located within the Project area. Grave (G28) is located approximately 40m from the boundary of the landfill extension area and will not be impacted by the Project.

Cultural Landscape Features

A small section of BP2 is located in the extension boundary area and will be directly impacted by the Project. Impacts will occur as part of site formation during the construction phase and will result in the destruction of any sections of the path that fall within the landfill extension area.

The remainder of BP2 is located outside of the extension area and will not be impacted by the Project.

The boulder terrace features are all located outside of the extension area at the following distances:

- T1: approx. 40m
- T2: approx. 20m
- T3: approx. 50m
- T4: approx. 60m
- T5: approx. 70m
- T6: approx. 85m
- T7: approx. 80m
- T8: approx. 60m
- T9: approx. 40m

The terrace features will not be impacted by the Project.

9.6.3 Shek Tsai Ha (South of Shek Tsai Ha Road: western section)

Graves

Two gravesites were located in this section of the study area and will be directly impacted by the Project. Impacts will occur as part of site formation during the construction phase and will result in the destruction of the graves.

9.6.4 Wo Keng Shan (South of Shek Tsai Ha Road: eastern section)

Graves

Grave 31 is located at a distance of approximately 20 metres from the nearest works area and will not be impacted by the construction or operation of the landfill extension.

9.7 Mitigation Recommendations

As mentioned above the impacts arising from this Project will result in the destruction of any resources located within the extension boundary. The mitigation recommendation for all of the impacted resources is preservation by detailed record. The full methodology for the recording and preparation of the archives for both the cultural landscape features (boulder paths and boulder terraces) and the graves can be found in Appendix 9.4. It should be noted that sites of abandoned graves would require no mitigation measures. It should also be noted that the study area for the Project was extremely overgrown with dense ground covering vegetation and that the potential for the presence of more historical graves in the study area exists. As a result of this situation it is recommended as mitigation that during the construction phase, if during the course of works a grave is found that the AMO is contacted immediately and that works stop in the immediate vicinity of the grave until it can be inspected by AMO staff.

The identified resources that will require mitigation are listed by section below:

9.7.1 Ngong Tong (North and West of Shek Tsai Ha Road: western and central section)

Cultural Landscape Features

The mitigation proposal for cultural landscape in Ngong Tong is summarised in Table 9.3.

Table 9.3: Mitigation recommendations for cultural landscape features in the Ngong Tong section of the study area

Resource	Impact Assessment	Mitigation Recommendation
Boulder Path (BP1)	Any sections of the boulder path that fall within the boundary extension for the finalised layout plan will be directly impacted by the Project.	The southern section of the path must be surveyed and mapped in order to determine if any sections of the path fall within the Project boundary. If any sections are found to be within the Project boundary then preservation by record must be undertaken and fulfill the requirements as stated in Appendix 9.4.

Graves

The mitigation proposal for graves in Ngong Tong section is summarised in Table 9.4.

Table 9.4: Mitigation recommendations for graves in the Ngong Tong section of the study area

Resource	Impact	Mitigation
G2, G4, G5, G6, G7, G8, G14, G15, G25, G26 and G27.	All graves will be directly impacted by the Project.	Preservation by record must be undertaken for all graves and fulfill the requirements as stated in Appendix 9.4.

9.7.2 Tong To Shan (North of Shek Tsai Ha Road: east section)

Cultural Landscape Features

The mitigation proposal for Tong To Shan is summarised in Table 9.5.

Table 9.5: Mitigation recommendations for cultural landscape features in the Tong To Shan section of the study area

Resource	Impact	Mitigation
Boulder Path (BP2)	The section of the boulder path that falls within the Project boundary will be directly impacted by the Project.	Preservation by record must be undertaken for the section of the path that will be directly impacted by the Project and it must fulfill the requirements as stated in Appendix 9.4

Graves

No intact graves will be impacted by the Project; no mitigation is required.

9.7.3 Shek Tsai Ha (South of Shek Tsai Ha Road: western section)

Cultural Landscape Features

No cultural landscape features were identified in this section of the study area and no mitigation is required.

Graves

The mitigation proposal for Shek Tsai Ha Section is summarised in Table 9.6.

Table 9.6: Mitigation recommendations for graves in the Shek Tsai Ha section of the study area

Resource	Impact	Mitigation
G19	Both graves will be directly impacted by the Project.	Urn is present but the structure has been severely damaged; no mitigation will be required.
G20		Only remaining structural feature of the grave is the plaque. No mitigation is required.

9.7.4 Wo Keng Shan (South of Shek Tsai Ha Road: eastern section)

Cultural Landscape Features and Graves

No resources recorded in this section of the study area will require mitigation.

9.8 Conclusions

9.8.1 Archaeology

As a result of the findings of the desk-based study and the preliminary site investigation, the Ngong Tong, Shek Tsai Ha and Wo Keng Shan sections of the study area were deemed to have extremely low archaeological potential and would require no mitigation measures. Further testing of the Tong To Shan section was recommended to determine if any sub-surface deposits were associated with the cultural landscape features identified there. The result of the archaeological investigation was that no archaeological material or cultural layers were identified. Thus, no further mitigation measures in the form of archaeological excavation are recommended.

The construction activities associated with the site formation for the NENT Landfill Extension will not impact on any areas containing archaeological potential. Archaeological resources identified as part of the Tong To Shan Archaeological Site in previous investigations are located outside of the extension boundary and will not be impacted by the construction works.

9.8.2 Built Heritage

A number of resources will be directly impacted by the Project; these consist of 13 graves (G2, G4, G5, G6, G7, G8, G14, G15, G25, G26, G27, G28 and G31) and 2 sections of boulder paths (BP1 & BP2). The section of boulder path (BP1) will have to be further surveyed to determine its exact relationship to the extension area and hence the nature of any impacts.

The impacts on the Cultural Landscape Features associated with the Tong To Shan Archaeological Site will be minimal as the agricultural terraces and associated features, including the main sections of the boulder paths are all beyond the extension boundary.

Mitigation in the form of detailed preservation by record for all of the resources will be required prior to the commencement of the construction phase. The survey of boulder path and the submission to AMO will be specified in the NENT Landfill Extension Contract. It is the responsibility of the DBO Contractor to ensure that the recording will be carried out by a qualified professional and that a report will be submitted to and approved by AMO prior to the commencement of any excavation works.

With the implementation of mitigation measures, there will be no impacts to cultural heritage resources during construction, operation, restoration and aftercare stages of the NENT Landfill Extension.

9.9 References

Fyfe J. A. et al (2000) The Quaternary Geology of Hong Kong, Hong Kong Geological Survey, Geotechnical Engineering Office, CED, The Government of the Hong Kong SAR.

Hong Kong Institute of Archaeology (2002) The 2001 Archaeological Survey & Assessment for the Proposed NENT Landfill Extension (Final report).

Hong Kong Geological Survey (1991) Sheung Shui; Sheet 3; Solid and Superficial Geology Series HGM20, Scale 1 : 20 000. Hong Kong Government.

Aerial Photograph Library (GEO) (1999) A49224 (Ta Kwu Ling)

(1999) CN23769 (Ta Kwu Ling)

(2004) CW57996 (Ta Kwu Ling)