APPENDIX 12D
Archaeological Survey Report at Sha Lo Wan (West) Southern Headland (March 2007)
SHA LO WAN (West)
Southern Headland

Archaeological Survey Report

March 2007

Conducted for CHIA
Agreement No. CE 26 / 2003
Hong Kong Section of Hong Kong - Zhuhai – Macao Bridge and
Connection with North Lantau Highway - Investigation

Archaeo-Environments Ltd

Archaeo-Environments Ltd
1F 23A Main Street
Yung Shue Wan, Hong Kong
Ph 92430832 fax 29826144
Email eday@so-net.com.hk
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APPENDIX

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沙螺灣(西)南岬 - 陸上考古調查 - 總結

工程背景:

香港、澳門與珠江的西部通道，

背景:

無花紋的唐代製品，幾塊破裂的釉面碎片，TP2、TP3、TP4、TP6、AI2等

及相關設施(例：排水、電力)將會設於遺址以外。
1 INTRODUCTION

1.1 Project Background

The proposed Hong Kong - Zhuhai - Macao Bridge (HZMB) will be a dual 3-lane highway, providing a direct land crossing linking Hong Kong to Zhuhai and Macao. This link will shorten the travelling time between Hong Kong and western part of Pearl River Delta, which currently is linked mainly by water transport. The construction of the HZMB will promote the economic development of the western part of Pearl River Delta as well as boosting Hong Kong economy by fostering relationship in areas of tourism, logistics, finance and trade.

The Government of the Hong Kong Special Administrative Region (HKSAR) completed a Preliminary Environmental Review (PER) in October 2002 for the possible landing points of the Bridge and the alignments of the connecting infrastructure. The PER has recommended that the best landing point of the bridge should be at Northwest Lantau.

In March 2004, Arup was commissioned by Highways Department to carry out an investigation of the Hong Kong Section of the HZMB and its connection with the North Lantau Highway (NLHC). Option evaluation exercise is currently being conducted which has taken into consideration all key factors such as Engineering, Planning and Land matters, Environmental Issues, Implementation Programme, Cost, Traffic Planning and Impacts to Local Community. An alignment option WP has been circulated to various government departments. Out of the options identified, the alignment indicated in Figure 1A achieved the highest score and is the current preferred option.

1.1 EIA Study Brief and Project Scope

The proposed project is classified as a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO). In accordance with the requirements of Section 5(1) of the EIAO, a project profile was submitted to Environmental Protection Department (EPD) for the application of an EIA Study Brief on 8 October 2003. Pursuant to Section 5(7)(a) of the EIAO, EPD issued to the Project Proponent, namely Highways Department, a study brief (ref: EIA Study Brief No: ESB-110/2003 dated 15 November 2003) to carry out an EIA study.

According to Chapter 3.4.8 of ESB 110/2003, a Cultural Heritage Impact Assessment is to be carried out on marine archaeology, built heritage and terrestrial archaeology. The terrestrial archaeological component – which this report addresses is cited within the ESB – 110/2003 as follows:

3.4.8.2 The cultural heritage impact assessment shall include terrestrial and marine archaeological investigation as well as built heritage investigation. The Applicant shall refer to Appendix F for the detailed requirements.

(i) Terrestrial Archaeological Investigation
The study areas for terrestrial archaeological investigation shall include areas within 50 metres from the recommended alignment of the Project and works areas that may have adverse impacts on known and unknown archaeological sites. Special attention shall be paid to the archaeological sites at San Shek Wan, San Tau, Sha Lo Wan, Sha Lo Wan (West), Ha Law Wan and Tai Ho. The Applicant shall engage a qualified archaeologist who shall obtain a License from the Antiquities Authority before undertaking the field evaluation under the provision of the Antiquities and Monuments Ordinance (Cap. 53).

1.2 Aim of the Study

According to the latest route proposal, part of the Sha Lo Wan (West) archaeological site will be traversed by the viaduct route. Under this proposal the other archaeological sites listed above would not appear to be at risk from direct or indirect impact of the viaduct.

It is proposed to span the area at Sha Lo Wan (West) by the viaduct – an area some 150m to the south of the (now removed) Late Neolithic promontory site which was excavated in 1993. Although impacts are expected to be negligible, this area has however not been extensively investigated and has unproven archaeological potential. According to the scope cited in ESB-110/2003 (summarised in section 1.1) an archaeological survey was conducted in this area from Sept 6th – 15th 2004 within 50m of the proposed viaduct.

1.3 Location

Sha Lo Wan (West) lies on the northern coast of Lantau Island and opposite the south-western corner of the Chek Lap Kok airport. The location and boundary of the Sha Lo Wan (West) Archaeological Site is shown in Figures 1A – 1D.

Figure 1A  Location of Sha Lo Wan (west) and the latest route proposal (2A+, SR, TH)
Figure 1B  Sha Lo Wan (West) Archaeological Site

Figure 1C  Sha Lo Wan (West) Headland – view toward east.

Figure 1D  Aerial Photos of Sha Lo Wan (West) Archaeological Site
2 PREVIOUS WORK

2.1 The Sha Lo Wan (West) promontory site

The route alignment will span over a truncated promontory which forms a part of the Sha Lo Wan (West) Archaeological Site on the north-west coast of Lantau Island. Much of this promontory was removed in 1995 before airport construction together with the remains of a prominent Late Neolithic Archaeological Site, excavated in 1993 (Drewett 1995). The excavation covered some 340 sq m and produced a rich assemblage of artefacts such as pottery, stone tools, polished rings, stone weights and evidence of domestic structures as well as burials.

Though some 150m south of the archaeological site described above, the remaining headland has traces of Tang Dynasty (618 – 917 AD) and Neolithic period artefacts, found during a limited field survey and test pit program in this area in 1985 (Peacock and Nixon 1985) 1991 (CUHK 1991) and 1997 (Guangzhou Institute 1998). While it will be possible for the alignment to span over this promontory, an archaeological field survey was conducted to determine the archaeological potential within areas indirectly impacted by the limited piling or ancillary works.

![Figure 2: Previous archaeological investigation at Sha Lo Wan (West) prior to removal of promontory in 1995.](image-url)
2.2 The Sha Lo Wan Site

The wide beach and valley to the east of the study area (Fig 3), at the head of which lies Sha Lo Wan village forms the Sha Lo Wan archaeological site. The Sha Lo Wan archaeological site occupies an expansive open beach, a wide former estuary (now infilled) and a hinterland of low slopes which includes the village of Sha Lo Wan Tsuen.

During archaeological investigation in 1991 (CUHK 1991), 2 long test trenches and 2 test pits were excavated at both the western beach and eastern end (near the present football pitch). The recorded artefacts included a stone axe, stone spear-head, stone core, stone arrow-head, stone adze, quartz ring, stone ring, stone axe-mould, a bronze knife, a pair of axe moulds, prehistoric geometric and coarse corded pottery as well as Tang (618 – 917AD) and Song (960 - 1279 AD) Dynasty pottery and Song Dynasty coins. Tang Dynasty kiln debris was also found.

As part of the 1997 Territory-wide archaeological survey an archaeological team from the Guangzhou Institute (Guangzhou Institute 1998) found over 200 Neolithic period sherds together with Tang and Song Dynasty pottery also within the beach at Sha Lo Wan. The fact that the boundary of the archaeological site at Sha Lo Wan includes both the beach and hinterland suggests that further archaeological potential exists on the lower slopes and infilled valley.

Figure 3 Sha Lo Wan Beach
3 ENVIRONMENTAL SETTING

The geology of the Sha Lo Wan (West) headland is granite with mapped colluvial deposits occupying the central small valley toward the east of the study area (Sewell et al 1995). The scale of geological mapping produced in Hong Kong – for the most part at 1:20000 scale — is however only indicative and often of insufficient resolution to identify superficial soils and deposits, many of which may have direct or indirect archaeological significance. The fieldwork at Sha Lo Wan (West) again proved this to be the case, with the presence of a prominent and unmapped rear-beach sand deposit - on what were otherwise mapped as colluvial deposits - on the eastern side of the promontory.
4 METHOD

4.1 Field Survey Approach

The archaeological field survey program at Sha Lo Wan (West) followed the specifications for field survey within EI AO Technical memorandum Annex 19 and relevant guidelines for CHIA issued by the AMO (http://www.epd.gov.hk/eia/english/guid/cultural/basis.html). Prior to commencement of field work formal approval for field work was sought from the District Lands Office. This field survey method included:

- A definition of undisturbed terrain within the study area.
- A field scan of these areas with attention paid to exposed soil and artefacts within these areas.
- The employment of an auger survey/shovel test program to establish the soil type and depth as well as the horizontal spread of any deposit of cultural material.
- Excavation of test pits and recording of stratigraphic and archaeological data to establish the vertical sequence of cultural materials. Test pits at Sha Lo Wan (West) were of dimensions 1.5m x 1.5m, 1.5m x 1m, 1m x 1m and 0.8 x 0.8m.
- The number and location of auger holes and test pits proposed with justification was agreed with the AMO before field work commenced.
- Liaison with the AMO during the field program about any identified and additional sites of cultural heritage within the Sha Lo Wan (West) area. The historic and archaeological value of the items will be assessed and reported during the field program and should a rescue excavation be necessary this will form part of the mitigation program.

The project was directed by Dr Chris Day, Director Archaeo-Environments Ltd and the licensee (Licence No. 203) for this project.

4.2 Sampling Strategy at Sha Lo Wan (West)

Figure 4 shows the proposed route alignment which will span over the truncated headland at Sha Lo Wan (West). A 50m wide study area boundary (impact area) is shown on either side of the proposed alignment according to the terms of the brief ESB 110/2003. Figure 4 also shows the eastern and western extremities of the study area. These parts of the study area occupy narrow rocky coastline, are thereby of low archaeological potential and have been trimmed from subsequent study area maps.

The area is characterised by low sloping terrain – slightly steeper to the west. The eastern half of the survey area has traces of abandoned agriculture. A test pit excavated by an archaeological team from Chinese University in 1991 on the eastern side of the headland (Figure 2) and in the direct alignment of the proposed viaduct revealed sparse Tang Dynasty pottery fragments over Neolithic period fragments to a depth of 80cm.

A summary of the sampling strategy at Sha Lo Wan (West) is summarised below.

- A program of field walking across both the survey area and the wider promontory was conducted to note the presence or otherwise of any surface artefacts,
undisturbed landscape and other terrain features relevant to subsurface sampling.

- Based on the above fieldwork and in conjunction with air photo interpretation and an interpretation of local geomorphology, a series of 22 auger holes/shovel tests was planned on both elevated and lower slope sites within the survey area to determine the presence of archaeological remains.

- The strategy of the sampling program would also be governed by field results, with an initial focus on both the saddle of the hill (3 test pits) with a further 3, on the eastern slope. The aim of these test pits is to search for the prospect of further archaeological remains which might be associated with the former promontory site and both primary and secondary (mapped colluvial) remains respectively on the gentler slopes to the east.

- As will be discussed in the following section (Section 5), results in the field necessitated an adjustment in the initial sampling strategy. The area was overgrown with thick scrubby vegetation and while a grid and transect sampling method was proposed this proved impractical. In addition, the discovery during field scanning of surface artefacts and exposure of a cultural horizon on the eastern beach meant that closer sampling was conducted within and around this area. The observation of an elevated sand deposit rather than colluvial slopes indicated on geological maps was also a product of the field phase, which influenced the sampling strategy.

Figure 4 Map of study boundary showing route alignment and 50m buffer
5 RESULTS

5.1 Field scan

A field scan was conducted across the study area:
  o where thick scrub allowed
  o along existing and overgrown access tracks
  o along the beaches on the east and western side of the headland.

Figure 5 shows a summary of field walking areas. Nothing was found across the southern and western part of the study area, with the exception of a fragment (top half) of a large polished stone adze with clear grooves presumably where it was attached to a handle (Ref photo 1 in Appendix 2 and Drawing 1 in Appendix 3). This fragment was found on the hilltop to the west of the study area.

On the eastern beach however, to the north of a small stream outlet in the centre of the beach, highly weathered Prehistoric and Tang Dynasty artefacts were found along an approximate 40m sector of the beach. On closer examination of the beach and surrounds it was observed that archaeological remains were being eroded from a dark sandy, cultural horizon some 30 cm thick which lay immediately above the mottled granitic bedrock shown in Figure 6 below. Although disturbed by overlying construction debris and refuse, thin layers of organic material and part indurated layers were preserved within this horizon. Sparse prehistoric and historic period plain ware sherds were observed within this layer.

After attention had been drawn to this archaeological exposure, the area behind the beach was surveyed and prehistoric and historic period sherds were also found along an abandoned and eroded trackway to some 30m behind the beach (Figure 7). This traverse revealed the presence of an extensive and previously unmapped sand deposit. The discovery of the archaeological horizon exposed at the beach and the presence of a previously unmapped sand body behind the beach with associated surface artefacts suggested an area highly prospective for further archaeological material. This area was therefore a prominent focus of the survey program.
Figure 5 Map of field scan

Figure 6 Exposure of cultural horizon, Eastern beach.

Figure 7 Eroded trackway at rear of eastern beach (north).
5.2 Test Pit and auger- shovel test survey

A total of six test pits were excavated within the Sha Lo Wan (West) study area (Figure 8).

The location of test pits had 2 aims:

- To survey areas of prospective or predicted archaeological remains
- To ensure reasonable coverage of other areas – of lesser or unknown archaeological potential in order to optimise impact assessment within the area.

Each test pit was excavated to undisturbed bedrock (weathered granite) or superficial sterile material (colluvium). Stratigraphic data and archaeological artefacts were systematically recorded within each test pit.

A total of 22 auger hole and shovel tests were excavated across the study area to investigate the extent and archaeological potential of the sand deposit to the rear of the eastern beach. Auger holes were also excavated to investigate unproven and unknown areas throughout the study area.

Each shovel test was excavated with dimensions of approximately 50cm x 50cm and to a depth of approximately 80cm. The purpose of the shovel test was to maximise the prospect of recovering archaeological and stratigraphic data, particularly within the sand deposit. Thereafter an auger was used at each shovel test site to extend sampling to bedrock – up to 150cm. A 1:1000 scale location map for test pits and auger hole-shovel test sites is provided in Appendix 5.

All historic period artefacts recovered during both surface and subsurface sampling throughout the study area were submitted to Prof Peter Lam, Director, Museum of Art, Chinese University of Hong Kong and descriptions within the text for the historic period assemblage are based on his analysis of pottery type and age. The assemblage of prehistoric artefacts recovered during both surface and subsurface sampling throughout the study area was examined and corroborated by William Meacham, an archaeologist of 30 years experience in Hong Kong and Director of the adjacent Chek Lap Kok archaeological survey.
Figure 8 Location of Test pits and Auger holes at Sha Lo Wan (West)
5.2.1 TEST PIT RESULTS

TEST PIT 1

Test pit 1 is located within a cultivated area some 8m to the south of a small piggery on the western beach at Sha Lo Wan (West)(Figure 9). There have been no recorded archaeological finds in this area although the small beach and hinterland would appear to offer prospects for archaeological material. The area has been terraced for agriculture and three small dwellings and water tanks occupy the northern part of the beach.

SUMMARY

A test pit 1.5m x 1.5m in dimensions was excavated to a depth of about 70cm. 5 contexts were recorded and are summarised below. These included upper layers of sand and clayey sand above colluvial material and a basal cobble/pebble horizon deposited coincident with the hillslope and sloping from east to west. No archaeological material was observed within test pit1.

<table>
<thead>
<tr>
<th>Context</th>
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<th>Description</th>
<th>Finds</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0-13</td>
<td>Brown, fine-medium loamy sand</td>
<td>Nil</td>
</tr>
<tr>
<td>2</td>
<td>13-29</td>
<td>Mid Brown fine-medium clayey sand (as above) with quartz pebbles to 3-4cm diam.</td>
<td>Nil</td>
</tr>
<tr>
<td>3</td>
<td>29-60</td>
<td></td>
<td>Nil</td>
</tr>
<tr>
<td>4</td>
<td>60-70</td>
<td>Orange-brown uniform medium clayey sand</td>
<td>Nil</td>
</tr>
<tr>
<td>5</td>
<td>45-70</td>
<td>Pebbles and cobble horizon 3-8cm diameter.</td>
<td>Nil</td>
</tr>
</tbody>
</table>
Project  Sha Lo Wan West 2004
Date  10/9/2004
Test Pit No. 1
807410.1E  816847.9N (NW cnr)

North Section

4.85mPD

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TEST PIT 2

Test pit 2 was located some 5m to landward of the eastern beach at the Sha Lo Wan (West) southern headland. The site was chosen to investigate the presence of an *in situ* archaeological layer which was exposed above weathered bedrock at the upper beach and at about the high water mark.

SUMMARY

Test pit 2 revealed multiple layers of fill, rubble and building debris to a depth of about 74cm. The source of this material is unknown, though in the absence of any local development it may have been dumped during the removal of the former headland or construction of the airport.

Beneath the fill layers at 74-89cm was a layer of dark brown sand, variably disturbed. A Tang Dynasty (618 – 917AD) plain-ware sherd (base fragment) was recovered from this layer (Photo 2 – Appendix 2). This relatively thin layer would appear to conform with the layer of brown sand and artifacts which outcrops at the rear of the beach. The test pit was concluded within mottled and weathered granite at a depth of 1.10m.

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<td>0 - 48</td>
<td>Fill – rubble and building debris</td>
<td>Nil</td>
</tr>
<tr>
<td>2</td>
<td>48-70</td>
<td>Fill – rubble, plastic, wire in brown and orange sandy clay matrix</td>
<td>Nil</td>
</tr>
<tr>
<td>3</td>
<td>70-74</td>
<td>Beige/light brown sand</td>
<td>Nil</td>
</tr>
<tr>
<td>4</td>
<td>74-89</td>
<td>Brown fine-medium sand</td>
<td>1 Tang Dynasty plain-ware sherd (base fragment)</td>
</tr>
<tr>
<td>5</td>
<td>89-105</td>
<td>Orange-brown weathered granitic sandy clay (Parent material)</td>
<td>Nil</td>
</tr>
</tbody>
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Project  Sha Lo Wan West 2004
Date   11/9/2004
Test Pit No. 2  
817433.7E  816944.7N  (S-SE cnr)

South-east section

ARCHAEO-ENVIRONMENTS LTD
TEST PIT 3

Test pit 3 was located some 20m south of test pit 2 and within the sand deposit behind the eastern beach (Figure 10). The field scan had revealed sparse prehistoric and Tang Dynasty sherds particularly within a partly eroded track behind the beach. Test pit 3 was sited at the head of the eroded track with the purpose of proving whether this part of the sand bar was continuous with the archaeological material exposed at the beach.

Summary

Test pit 3 revealed a deposit of brown sand separated into 5 contexts, of total 95cm thickness above weathered granite. Finds are summarised below and in Appendix 4. Tang Dynasty artefacts were recovered within context 3 (dark brown sand 38 - 47cm). Notable among the 22 recovered Tang Dynasty sherds in context 3 were relatively large plain-ware rim and base fragments (Photos 3-5 – App2), as well as 3 small sherds of Tang Dynasty cracked glaze porcelain (Photo 6 – App2). Context 4 and 5 contained prehistoric (Late Neolithic) artefacts within slightly coarser textured sand at a depth of 47 – 60cm.

Among the 73 prehistoric artefacts found within context 4 were: soft geometric over-stamped fragments typical of the Late Neolithic period and ascribed to Phase IV (Late Prehistoric Period), 2200-1500BC Chau (1994) (Photo 7 – App2, Drawing 3 App3). In addition to highly weathered coarse-corded ware sherds (Photo 10 -11 – App2) sherds of well-fired soft impressed geometric “leaf-vein” patterned ware were recovered (Photo 8 – App2, Drawing 4, App3) and decorated coarse-ware (Photo 9 - App2, Drawing 5, App3). The latter sherds are of similar typology to those found at Sha Lo Wan (West) (Drewett 1995) and Yung Long (Meacham 1995) for which C14 dates of 2200-2900 BC were obtained. Context 5 included coarse-corded ware and a fragment of a polished stone adze (Photo 12 – App2, Drawing 6 & 7, App3).

The presence of 2 phases of later Neolithic pottery within context 4 (11cm) implies either post-depositional disturbance or a period of transition between the two periods. What is significant however from the assemblage at Test Pit 3 is evidence (whether disturbed or transitional) for later (LN Phase IV) occupation of this site - a phase otherwise absent from the assemblage the Sha Lo Wan (West) promontory site.

According to the principles of archaeology, artifacts of mixed periods (in this case a few hundred years apart) can exist in the same layer. Sham Wan is one of the best known, excavated and published sites in HK, and one of few sites in HK with a complete sequence of multi-period prehistoric occupation. For this reason it is a particularly relevant reference irrespective of when the site was excavated. However on p137 of the Chek Lap Kok monograph (Chek Lap Kok Island, Journal Monograph IV, Hong Kong Archaeological Society; 1994, Meacham, W (ed)) the following reference is also made "A few potsherds at the top of the Late Neolithic layer in Square FX might represent early Bronze Age, even though no hard geometric pottery was found. The coarse pieces with stamped geometric patterns and rather thin (3-4mm) bodies were found interspersed with Tang sherds; this type has been found on other sites with both Late Neolithic and
Bronze Age materials, and may be a transitional pottery type." Similar principles are also stated in reference such as "Techniques of Archaeological Excavation by Phillip Barker - Routledge 3rd ed(1999) (p137-138)" for a description of the type of layer and how mixing might occur.

Hence, the two possibilities occur because Context 4 represents a mixed layer of 2 types of pottery and which can be due to mixing caused by post-depositional processes such as agriculture, animal activity etc. This is also consistent with one of the main principles in archaeology that younger layers are deposited above older layers. This also supports the field method used during excavation of TP3 and that it was done carefully and with sufficient precision given the method common in archaeological test pit survey work. Due care was taken to investigate basic stratigraphy and stratigraphic relationships in each test pit.

In such circumstances a reinterpretation of simple stratigraphic principles is necessary. The fact that this mixed layer (Context 4) is thin (11cm) suggests it was identified with reasonable precision and not mixed during excavation.

Reference to similar transitional layers in Hong Kong can be found in W. Meacham (ed) (1978) Sham Wan, Lamma Island; An Archaeological Site Study, Journal Monograph III, Hong Kong Archaeological Society.

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<th>Finds</th>
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<tr>
<td>1</td>
<td>0-18</td>
<td>Brown organic loamy sand with common roots</td>
<td>Nil</td>
</tr>
<tr>
<td>2</td>
<td>18-35</td>
<td>Dark brown fine-medium sand</td>
<td>Nil</td>
</tr>
<tr>
<td>3</td>
<td>35-47</td>
<td>Mid brown fine-medium sand</td>
<td>Tang Dynasty plainware, crackled-glaze porcelain</td>
</tr>
<tr>
<td>4</td>
<td>47-58</td>
<td>Mid-dark brown fine-medium sand</td>
<td>Coarse-corded ware, Soft geometric. “Leaf vein” ware</td>
</tr>
<tr>
<td>5</td>
<td>58-77</td>
<td>Brown medium-coarse graniticsand</td>
<td>Coarse corded ware, polished stone adze fragment</td>
</tr>
<tr>
<td>6</td>
<td>77-92</td>
<td>Orange-brown coarse granitic sandy clay (Parent Material).</td>
<td>Nil</td>
</tr>
</tbody>
</table>
Date 11/9/2004
Test Pit No. 3
807423.4E  816923.8N
(NE cnr)

East section

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TEST PIT  4

Test pit 4 was sited on the southern side of the small valley some 25m from the beach and in the vicinity – and estimated approximately 20m south-east of the site of the test pit excavated by CUHK in 1991. Sparse Tang Dynasty and prehistoric pottery sherds were recorded within this test pit. Test pit 4 was therefore located in the vicinity to investigate the prospect of further archaeological remains on this side of the valley and whether the frequency of remains found in Test pit 3 might be replicated elsewhere within the sand deposit.

SUMMARY

Test pit 4 confirmed that the sand deposit was relatively thick – almost a metre - in this part of the study area. 4 Tang Dynasty plain ware sherds were recovered within context 3 (Photo 13 - App2) at a depth of 40 - 48cm. Notably, no prehistoric remains were found within lower contexts of this test pit. In light of the earlier recovery of both Tang Dynasty and prehistoric remains in the area and the general thickness of the sand deposit proven within test pit 4, this part of the study area remains prospective for further archaeological remains.

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<td>Brown fine-medium sand with organic material and common roots</td>
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<td>2</td>
<td>16-32</td>
<td>Mid-brown fine-medium sand</td>
<td>Nil</td>
</tr>
<tr>
<td>3</td>
<td>32-50</td>
<td>Dark brown fine-medium sand with some organic material</td>
<td>4x Tang Dynasty plain ware fragments</td>
</tr>
<tr>
<td>4</td>
<td>50-71</td>
<td>Mid brown clayey sand-sand</td>
<td>Nil</td>
</tr>
<tr>
<td>5</td>
<td>65-95</td>
<td>Orange-brown medium clayey sand</td>
<td>Nil</td>
</tr>
<tr>
<td>6</td>
<td>95-104</td>
<td>Orange-brown coarse granitic sandy clay (Parent Material)</td>
<td>Nil</td>
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Project  Sha Lo Wan West 2004
Date       13/9/2004
Test Pit No. 4
807484.6E  816902.3N (NE cnr)

East section

ARCHAEO-ENVIRONMENTS LTD
TEST PIT 5

Test pit 5 was sited in the topographic saddle/upper small valley and approximate midpoint between the eastern and western sides of the study area. It was located here particularly to delimit the sand deposit recorded throughout most of the eastern study area and to investigate whether the sand and/or associated archaeological remains extended to the west of earlier finds in test pit 3 and test pit 4.

SUMMARY

Test pit 5 revealed relatively shallow sand layers over weathered granite at about 40cm. There were no archaeological remains recovered within test pit 5. The shallow thickness of the brown sandy horizon within this test pit provides an indication of the western limit of the sand deposit and archaeological site at Sha Lo Wan (West).

<table>
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<td>19-39</td>
<td>Light brown medium-coarse quartz sand</td>
<td>Nil</td>
</tr>
<tr>
<td>3</td>
<td>39-60</td>
<td>Orange-brown coarse granitic sandy clay (Parent Material)</td>
<td>Nil</td>
</tr>
</tbody>
</table>
Project: Sha Lo Wan West 2004
Date: 14/9/2004
Test Pit No. 5
817452.2E  816884.2N (SW cnr)

South section

ARCHAEO-ENVIRONMENTS LTD
TEST PIT 6

Test pit 6 was sited on the crest of the prominent hill to the west of the study area with the aim of investigating whether this hilltop area contained any archaeological remain, particularly in light of its similar topographic setting with the rich Sha Lo Wan (West) promontory site located some 150m to the north.

SUMMARY

Test pit 6 revealed coarse skeletal soil and shallow bedrock – stratigraphically similar to that of the Sha Lo Wan (West) promontory site – although there was an absence of any archaeological remains. The hilltop was field scanned – during which a fragment of a polished stone adze was found – and surveyed by excavation of a test pit and shovel test. In spite of the lack of archaeological remains found through sub-surface survey, the prospect of archaeological remains on this hill cannot be ruled out.

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<th>Description</th>
<th>Finds</th>
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<td>Dark brown loamy sand</td>
<td>Nil</td>
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<tr>
<td>2</td>
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<td>Brown coarse sand-gravelly sand with common rock fragments</td>
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<td>34-60</td>
<td>Light brown coarse gravelly granitic sand</td>
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<td>4</td>
<td>60+</td>
<td>Bedrock – angular granitic rock fragments to 30cm.</td>
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</table>
Project: Sha Lo Wan West 2004
Date: 14/9/2004
Test Pit No.: 6
807392.1E 816894.5N (SW cnr)

West section

0.8m

ARCHAEO-ENVIRONMENTS LTD
5.2.2 AUGER-SHOVEL TEST RESULTS

The location of all auger and shovel test sites are shown in Figure 8 and results are listed in Appendix 1. A summary of this sampling program is discussed below.

Auger-shovel test 1
A1 was located some 15m to the south of Test Pit 3 with the purpose of further investigating the lateral extent, depth and archaeological potential of the sand deposit proven in TP3. A shovel test was excavated to about 80cm and an auger was used to extend sampling to a depth of 163cm. This sampling site revealed the sand deposit to be 143cm deep – the thickest section of the deposit recorded within the study area - above weathered granite. No archaeological materials were recorded with A1.

Auger-shovel test 2
A2 was located 14m west of A1 and some 20m south-west of TP3 with the purpose of investigating the extent of the sand deposit and any archaeological materials behind TP 3 and A1. A shovel test revealed brown sand to 45cm over weathered granite with no archaeological material, proving that the sand deposit thins within 20m west and to landward of TP3. The results from A2 provide an indication of the western limit of the sand deposit in this part of the study area.

Auger-shovel test 3
A3 was located 12m north of Test Pit 3 and at the approximate midpoint between Test pit 3 and Test pit 2 on a prominent part of the sand deposit. A shovel test was excavated to a depth of 75cm through dark brown organic loamy sand and yellow-brown sand. Thereafter an auger hole extended sampling to a depth of 128cm and weathered granitic parent material. A coarse-corded sherd was recovered by the auger at a depth of 112cm within medium-coarse orange-brown sand and just above the weathered granite (Photo 14 – App2). The depth of sand deposit and the presence of artifacts at this site suggest that the area is highly prospective for further archaeological material.

Auger-shovel test 4
A4 was located about 18m west of Test Pit 4 on the southern side of the small valley/drainage line with the purpose of investigating the extent and archaeological potential of the sand deposit to the south of the prominent find-spots in TP3 and A3. A shovel test was excavated to a depth of 45cm within dark brown and brown sand and yellow-brown sand with occasional pebbles. Thereafter an auger extended the sampling to weathered granite at 64cm. A4 revealed that the sand deposit was only some 60cm thick – possibly slightly thinner on the margin of a small topographic rise which extends from west to east in this part of the study area. No archaeological remains were recovered in A4.

Auger-shovel test 5
A5 was located some 12m south of A4 on the southern side of the drainage line and on the same relatively broad and gentle slope/natural terrace sampled by TP4 and A5 – and indeed the general vicinity of Tang and prehistoric find-spots within a test pit excavated by CUHK in 1991. A shovel test was excavated which revealed brown sand and
weathered granite at 44cm. No archaeological remains were recorded. The depth of sand within A5 suggests that the sand deposit thins toward the north. A5 therefore provides an indication of the limit of the sandy body in this part of the study area.

Auger-shovel test 6
A6 was located some 12m to the east of Test Pit 5 and in the gentle saddle dividing the eastern and western beaches of the headland. Sited slightly further toward the estimated extent of the sand deposit in A1 and TP3, it was anticipated that A6 might prove the western extent of the deposit. A shovel test revealed brown sand and light brown sand above weathered granite at 56cm. While slightly deeper than the sand found within TP5, the results from A6 provide an indication that the sand deposit thins gradually toward the west in his part of the study area.

Auger-shovel test 7
A7 was located about 11m west of TP2 further to landward and within the sand deposit. Here the feature would appear to be limited in lateral extent confined by hillslopes which grade more steeply to the beach to the north of the study area. A shovel test was excavated to a depth of 70cm revealing dark brown and brown sand. A coarse-corded sherd was recovered at a depth of 65cm (Photo 15 – App2). Thereafter an auger was used to extend sampling to weathered granite at 90cm. The results from A7 indicate that the sand deposit and associated archaeological potential extend at least this far north within the study area.

Auger-shovel test 8
A8 was located near the centre-line (middle of proposed route alignment) and some 12m to the east of A1 and within the sand deposit. A shovel test revealed dark brown and brown sand to a depth of 56cm above weathered granite. No archaeological remains were recovered within A8. The results here show that the sandy body is rather thinner than at both A1 and TP3 to the west.

Auger-shovel test 9
A9 was located near the centre-line and 7m toward the beach from A8. A shovel test revealed dark brown sand and lighter brown sand above weathered granite at 65cm. No archaeological remains were recorded within this shovel test. As with A8, the depth of sand is rather thinner than might have been expected in this central part of the valley.

Auger-shovel test 10
A10 was located at the northern limit of the study area and some 15m west of the beach. This area is disturbed with building debris and rubbish throughout. An auger hole was attempted in 3 areas here but each was abandoned due to impenetrable rock/fill at about 10cm. This part of the study area would appear to covered in large part by debris – presumably accumulated during demolition of the promontory to the north.

Augerhole 11
A11 was located some 25m south of the piggery and small buildings on the western beach and some 15m south of Test Pit 1. Auger sampling revealed brown and light brown coarse granitic sand over rock at 95cm. No archaeological remains were recovered.
Auger-shovel test 12

A12 was located on the hillcrest some 20m north of test pit 6 on the western side of the study area with the purpose of investigating the prospect of archaeological remains in an area of topographic similarity to that of the Sha Lo Wan (West) site some 150m to the north. A shovel test revealed coarse gravelly loam and rock above impenetrable rock at 50cm. No archaeological remains were recovered.

Augerhole 13

A13 was located 20m to the west of A7 to investigate the archaeological potential of the lower hillslope – north of the identified sand deposit. The area was covered in scrub and it was necessary to cut a path through the undergrowth for some 25m to access – and provide sampling – within this part of the study area. The augerhole revealed coarse granitic sands and rubble to 58cm above coarse weathered granitic parent material. Situated on the lower part of a hillslope A13 proved, as might be expected - the existence of shallow soil and colluvium. No archaeological remains were found.

Augerhole 14 – 16

A14 – A16 were located in the southwestern part of the study area above the eastern beach. The purpose of these 3 auger-holes was to investigate the archaeological potential of lower and mid-slope areas to the south and southwest of the study area. Soil depth was within the range 34-42cm above weathered granite and no archaeological remains were recorded.

Augerhole 17

A17 was located adjacent a small spur some 30m south of test pit 4. An auger hole in this part of the study area was necessary to provide some evidence of the southern extent of the sand deposit. A17 revealed brown sand and thereby presence of the sand body albeit thinning to the south, above weathered granite at about 50cm. A small Tang Dynasty crackled-glaze sherd was found at a depth of about 8cm (Photo 16 – App2)

Augerhole 18

A18 was located 15m southeast and slightly upslope from test pit 4. An auger hole here would provide an indication of the western limit of the sand body found within TP4. A18 revealed brown and light brown sand for a depth of 75cm above weathered granite. Although this augerhole was archaeologically sterile it is clear – as the sand deposit is relatively thick here – that it probably extends as far as lower hillslope to the west.

Augerhole 19

A19 was located in a lower slope position next to the main access trackway which leads from east-west across the southern part of the study area. Brown loamy sand was recorded above weathered granite at 41cm. No archaeological remains were noted within A19.

Augerhole 20

A20 was located above a gentle rocky spur at the far eastern corner of the study area. Several attempts were made to sample within this area but augering was abandoned at less than 20cm due to impenetrable rock.
Augerhole 21
A21 was sited some 15m to the east of TP5, to provide another indicator of the extent of the sand body across the relatively gentle terrace on the southern side of the lower valley. Brown sandy loam however was only 38cm thick above weathered granite. The limit of the sand deposit would therefore appear to lie to the north of A21. No archaeological remains were recorded within this augerhole.

Augerhole 22
A22 was located only a few metres south of the eastern beach and within primary beach sands. Light brown-beige sand and yellow-brown sand with some pebbles extends to a depth of 80cm above weathered granite. With the exception of a small layer of brown sand immediately above the parent material, this augerhole sampled material within primary and recent beach deposits. No archaeological remains were recovered from A22.

5.2.3 Surveying

The survey of test pit co-ordinates and relative levels was conducted by professional surveyors John Barrett and Associates on March 12th 2005. The relative topographic level (mPD) and co-ordinates (eastings and northing according to the HK Grid) are provided with each test pit description. Auger hole-shovel test co-ordinates were located with reference to digital GPS measurements provided for the tree inventory. The accuracy of this grid was plus/minus 1m and was deemed suitable accuracy for the purposes of the archaeological survey. A summary of auger hole-shovel test data and co-ordinates is provided in Appendix 1.

*The reader will note that some disparity between the surveyed levels and the contour data on the base map. It is acknowledged that 1:1000 scale contour maps may not be accurate – especially in relatively remote parts of Hong Kong.
6 SUMMARY

Following the observation of surface Tang Dynasty and Prehistoric artifacts during field scanning on the eastern beach, and an exposure of a cultural horizon at the rear of this beach attention was drawn to rear beach area as a probably source of this material. A field scan of the rear beach area produced sparse prehistoric and early historic period sherds within what was clearly a remnant raised sand deposit which was partly exposed along an eroded pathway behind this part of the beach. Further inspection of the eastern beach and wider hinterland at Sha Lo Wan (West) revealed that this feature extends both to the west and to the south toward the edge of the hills in both directions for about 50m and 70m respectively. This sand body exists at an elevation of between 3-7m PD, is previously unmapped and is somewhat unexpected in this geomorphic setting - given the relatively small embayment and hinterland. In the light of this observation allied with the discovery of surface finds, in situ material along the beach and artefacts recovered during the Test pit and auger-shovel test survey, it would appear that this area holds considerable archaeological potential.

The focus sand deposit
TP 3 was located within the sand body proper and produced an assemblage of both Tang Dynasty ribbed plain-ware and several crackled glaze fragments above a prehistoric horizon which yielded a Late Neolithic assemblage of soft geometric stamped pottery, coarse-corded ware and well-fired soft geometric ware. The former - soft geometric pottery - is typical of a later phase (2200-1500BC) within the Late Neolithic, the latter well-fired soft geometric pottery and decorated coarse ware is typical of an earlier phase (2900-2200BC) found at the Sha Lo Wan (West) promontory site and at Yung Long for example. Following these observations and results, a prominent objective of the survey was to map the extent and assess the archaeological potential of this sand body. A total of four test pits and 13 auger holes were focused on the gentle valley and rear beach on the eastern side of the study area. In addition to the Tang Dynasty and Late Neolithic period assemblages found within TP3, Tang and/or Late Neolithic artefacts were also recovered from TP2, shovel test-augerholes A3 and A7 to the north of TP3 as well as from TP4 and A17 some 60m to the south. Figure 11 shows the interpreted extent of the sand body based on archaeological and stratigraphic data from the test pit and auger program in this area.

Hilltop
A program of 1 test pit and 1 shovel test failed to find any archaeological material on the hillcrest to the west of the study area. A stone hammer fragment was found within 3 metres of A12 during a surface scan. As a prominent Late Neolithic site was found on a similar feature only 150m to the north on the same headland some traces of similar activity might have been expected. While somewhat smaller and in a less prominent position, when compared with the headland site excavated in 1993, the presence of archaeological remains on this hilltop should not be ruled out.

Western beach
The western beach is of similar length to the eastern beach although the hinterland rises steeply behind the beach. A test pit (TP1) and auger hole (A11) just behind this beach and a series of auger-holes within mid and lower slope positions along the southern and northern margin of the study area also failed to find archaeological remains.
Figure 11  Map showing interpreted archaeologically prospective sand deposit at Sha Lo Wan (West).

Figure 12  Sand deposit near TP3
7 DISCUSSION

The sand body on the eastern side of the remaining Sha Lo Wan (West) headland occupies much of the small valley and gentle hinterland in two broad lobes, occupying some 200m² with variable thickness to 2 metres. Based on the amount and distribution of both Tang Dynasty and prehistoric pottery from both surface exposure and sample sites TP2, TP3, A3 and A7 there would seem to be a focus of archaeological material from these periods at the northern half of this feature.

The archaeological finds described above and the identification and mapping of what would appear to be an archaeologically prospective sand body on the eastern side of the Sha Lo Wan (West) headland suggest that this feature holds considerable further archaeological potential. While yielding fewer artefacts, the hilltop and slopes to the west of this sand body – by virtue of its physical similarity with the known (and removed) Late Neolithic promontory site to the north – is also considered to hold further archaeological potential. The beach to the west and the hillslopes to the south of the study area - on the basis of the results of the current survey – appear to be of less archaeologically prospective.

It would seem reasonable to speculate that the age and proximity of these finds to the rich Late Neolithic site, which once occupied the original promontory to the north, would suggest a connection between the two. Indeed contemporary occupation of both areas might be strongly argued, not only according to the typology of the respective artefacts, but also that the beach and rear-beach site found during this survey offers a more sheltered setting and (notably) beach access not offered by the rather inaccessible promontory site. There must have been transit between the promontory and the nearby beach during the Late Neolithic and it is difficult to conceive how the beach and rear beach to the south could have been avoided as an area of habitation – at the same time and likely by the same people who were occupied in a range of activities on the promontory.

Evidence however also exists from the present survey for a later phase of Neolithic occupation at the beach and rear beach site. If this is the case, then the area might be considered a Late Neolithic archaeological complex. With the northern part of this complex gone, the southern part may yet provide evidence of both contemporary and later occupation with perhaps varied activity. Both the beach and hilltop areas within the study area are therefore of considerable further archaeological potential.
8 RECOMMENDATIONS

A) As the proposed 2A viaduct will span the Sha Lo Wan (West) site there will be no direct impacts from the proposed construction, however the archaeological site should avoid any indirect impacts with particular attention to the defined sand bar and hilltop within the study area. No construction activities and personnel should be allowed to enter the archaeological site.

B) Given the priority within EIA -TM Annex 10 and 19 for the preservation of archaeological remains in-situ and in totality - and the fact that there will be no physical encroachment on the site - then no further excavation works are deemed necessary.

C) If there are to be any direct or indirect impacts from the proposed viaduct, then in situ preservation / preservation in totality is preferred. If impacts are unavoidable, according to EIAO Annex 19, a rescue excavation will be required to recover data and record the site. Sufficient time and funding will be made available for conducting a rescue excavation to salvage the archaeological record at this site.

D) Periodic monitoring of construction works should be conducted to ensure avoidance of any impacts. Subsequent to construction, monitoring should be conducted to ensure maintenance of (natural) protective vegetation and mitigation of erosion, should any shadow effects of the viaduct become evident on the local vegetation and soil cover.
9 REFERENCES


Chinese University of Hong Kong (1991) Report of the Archaeological Survey of North Lantau (unpubl), (Copy held by Antiquities and Monuments Office. HKSAR)


Provisional Airport Authority Hong Kong (1991) New Airport Master Plan – Environmental Impact Assessment, Hong Kong, Greiner - Maunsell

APPENDIX 1

AUGER-SHOVEL TEST DATA
<table>
<thead>
<tr>
<th>Auger No.</th>
<th>Location</th>
<th>Depth (cm)</th>
<th>Description</th>
<th>Archaeological summary</th>
</tr>
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<td>12-65</td>
<td>Lighter brown sand</td>
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<td>65-110</td>
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APPENDIX 2

FINDS PHOTOGRAPHS
FIELD SCAN   WEST HILLTOP

Photo 1  Polished stone hammer found on hilltop (west)

TEST PIT  2

Tang pottery context 4

Photo 2  Test Pit 2 Context 4  Tang Dynasty plain-ware base fragment
TEST PIT 3
Tang pottery (Context 3)

Photo 3  Test Pit 3  Context 3  Tang Dynasty ribbed plain ware.

Photo 4  Test Pit 3  Context 3  Tang Dynasty plain ware rim sherds

Photo 5  Test pit 3  Context 3  Tang Dynasty plain ware ribbed sherds and base.
TP3  Tang pottery Context 3 (contd)

Photo 6  Test Pit 3  Context 3  Tang Dynasty crackled glaze sherds
Test Pit 3
Late Neolithic pottery (Context 4)

Photo 7  Test Pit 3  Context 4
Soft geometric pottery sherds (L Neolithic, 2200-1500BC)

Photo 8  Test Pit 3  Context 4
Well-fired soft geometric leaf-vein design geometric sherds (L. Neolithic, 2900-2200BC)

Photo 9  Test Pit 3  Context 4
Wave design decorated coarse-ware sherd (L Neolithic, 2900-2200BC)
TEST PIT 3  Late Neolithic pottery (context 4)

Photo 10  Test Pit 3  Context 4  
Weathered coarse-corded ware (L Neolithic)

Test Pit 3  Late Neolithic pottery (Context 5)

Photo 11  Test Pit 3  Context 4  
Highly weathered coarse corded ware (L Neolithic)

Photo 12  Test Pit 3  Context 5  
Coarse corded ware, soft geometric (mid right) and fragment of polished adze (lower right) (L Neolithic).
TEST PIT 4
Tang pottery (Context 3)

Photo 13   Test Pit 4  Context 3
Tang Dynasty black-ware sherds

AUGER – SHOVEL TEST Finds

Photo 14   Shovel test-augerhole
3 Coarse – corded ware sherd
found at 112cm depth

Photo 15   Shovel test-augerhole
7 Coarse – corded ware sherd
found at 65cm depth
Photo 16  Auger hole 17  Tang Dynasty  
crackled glaze porcelain
APPENDIX 3

Drawings and pottery rubbings
Drawing 1
Drawing and sections of polished stone hammer found during field scan on hilltop (west)
Test Pit 3 Context 4
Well-fired soft geometric (leaf-vein pattern) pottery fragment (Late Neolithic 2900-2200BC) – reconstructed from 3 sherds.

Test Pit 4 Context 5
Coarse-ware sherd.

Test Pit 4 Context 5
Polished stone adze.

Drawing 2
Test Pit 3 Context 4
Rubbings of soft geometric sherds
Late Neolithic (2200-1500BC)
NB reconstructed fragment from 2 sherds (upper left).
Test pit 3  Context 4 Well-fired soft geometric (leaf-vein pattern) pottery fragment (Late Neolithic 2900-2200BC) – reconstructed from 3 sherds

Test pit 3  Context 4 Decorated coarse-ware sherd (Late Neolithic 2900-2200BC).

Test Pit 4  Context 5  Coarse-ware sherd

Test Pit 4  Context 5  Polished stone adze
### APPENDIX 4

**ARCHAEOLOGICAL FINDS SUMMARY**

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<th>Sample site</th>
<th>Context</th>
<th>No. Sherds</th>
<th>Period &gt; Tang</th>
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<td>7 well-fired soft geometric sherd</td>
<td>Polished adze fragment</td>
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<td>3</td>
<td>4</td>
<td>4 Plain ware sherds</td>
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APPENDIX 5

1:1000 sampling location map