FALEASAO RELIEF HARBOUR
ARCHAEOLOGICAL SURVEY

Report Prepared for
McConnell Dowell Ltd
Tafuna, American Samoa

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INTRODUCTION

This report presents the results of an archaeological survey and test excavations undertaken by the author on Ta’ū Island, American Samoa. This work was carried out on behalf of McConnell Dowell Ltd who have a contract to construct the Relief Harbour at Faleāsao village. Field work was undertaken between 7 and 10 May 1991.

Scope of Work

The site of the Faleāsao Relief Harbour is situated at Faleāsao village on the north-western corner of Ta’ū Island (Fig. 1). The entire construction area is located on the seaward side of the road (Fig. 2) and occupying the western half of the beach. This area was tested to ascertain the probability of any archaeological remains being present that could be affected by the wharf construction and the associated dredging of a channel through the reef. In addition there will be a requirement for rock to construct the beach revetment. Two areas where there appear to be suitable sources were surveyed for archaeological sites. The contractor does not intend to use any other areas, outside the construction easement, for equipment placement or other activities. The disposal area for waste material from the dredging, adjacent to the existing Ta’ū Harbour, has been disturbed by previous fill and excavation activities and is outside the permit area.

PROJECT RESULTS

Quarry Areas

Two areas where good quality rock could be quarried were selected by McConnell Dowell staff. Both were situated south of Ta’ū Harbour. The primary choice was the old quarry opened for the construction of the present harbour. It is situated 0.5 mile along the coast from the harbour. The second quarry site is situated 0.25 mile from the harbour. The location of both sites is shown in Fig. 2.

a) The ‘Old’ Quarry Site: This site is situated some 100’ from the beach in a cliff face. The area required to work this quarry extends 300’ along the cliff and will run inland for approximately 100’. This area was initially surveyed by Kikuchi et al (1975) who did not locate any archaeological sites. In this current survey a reconnaissance was carried out in an area extending 100’ on either side, and 300’ inland from the expected inner face of the quarry (to allow for possible landslips). Here the land rises very steeply to about 200’ and then levels off slightly. The quarry is not likely to extend much past the 200’ contour. The area is covered in heavy forest and has much loose rock on the surface. No archaeological sites were found in the area described above. It is not likely that any sub-surface remains are present. The flat
Fig. 1. Ta’ū Island showing locations of Harbour Project and possible quarry sites.
Fig. 2. Faleāsao Harbour Project: construction area, showing location of test units.
area between the cliff and the beach has been extensively modified by the original quarry workings and no archaeological sites were present.

b) The 'Road' Quarry Site: This is a secondary quarry site, selected as a back-up for the site described above. It is adjacent to the track cut to the 'old' quarry at the point where the cliff face was blasted to make the track. The extent of the possible quarry and the area of the reconnaissance undertaken here is much the same as that described above. On the seaward side of the track there is a steep cliff to the sea. No archaeological sites were located.

The existing track to the proposed quarry sites is in relatively good condition but will need to be improved for either quarry to be worked. This will not affect any archaeological sites.

Faleāsao Relief Harbour Site

Fig. 2 shows the construction easement for this harbour. A revetment, 600' long, is to be constructed along the edge of the beach (Plate 1) with an LCU ramp and a pier towards the western end of the revetment. An entrance channel (Plate 2), 130' wide with a turning circle 200' wide, is to be blasted and dredged through the reef. In the area of the turning circle the surface of the reef is about 2' to 3' below mean low water, dropping off to 7' to 10' below mean low water at the seaward entrance to the channel.

The whole beach has been affected by hurricanes and the sand over much the survey area has been removed for a depth of about 12" to 18", leaving a surface of large lumps of coral (see Plate. 2). No surface evidence of any archaeological features was present. A hole already dug on the beach ridge just to the west of the proposed LCU ramp was examined. It did not contain any cultural material or identifiable strata. However, Clark (1990:18) had found evidence of prehistoric occupation 50 m from the high tide level at Fagā, east along the coast from Faleāsao. With this in mind it was decided to concentrate on the more inland portion of the construction area, just on the seaward side of the road where there appeared to be a greater chance of locating cultural layers. To test for the presence of sub-surface remains three test units were dug. The location of these units is indicated in Fig. 2.

Saito Mao, mayor of Faleāsao informed me that there were no graves within the construction easement.

The Test Units

Each of the test units dug measured 1.2 m square with their western and eastern sides aligned towards magnetic north. Each was dug in arbitrary 10 cm spits, except where there was an interface between layers and the spit was dug only to the surface of the new layer. It had been intended to sieve all excavated material but,
Plate 1. Faleāsao Harbour Project: construction area looking west.

Plate 2. Faleāsao Harbour project: construction area looking north over proposed entrance channel (note coral rubble beach surface)
unfortunately the sieve was lost in transit to the island. A substitute from locally available scrap ¼" mesh was used, but it proved inefficient and in the end only a portion of each layer could be sieved, approximately 50%.

**Test Unit 1 (Fig. 3.)**

The stratigraphy of this test unit was simple with four main layers.

Layer 1a: coral rubble 10 - 15 cm deep. This layer was formerly mainly sand, which was depleted by hurricanes. Comparison with the area inland suggests that up to 50 cm of sand has been lost.

Layer 1b: this layer consisted of clean calcareous sand with numerous lumps of coral. It is probably the same as layer 1a.

Layer 2: this layer, some 17 cm deep consisted of organically enriched calcareous sand. It did not contain any charcoal or cultural material. It presumably represents a period of stabilisation and vegetation cover.

Layer 3: a layer of calcareous sand containing numerous small waterworn basaltic fragments varying in size from sand grains to lapilli. This layer was some 40 cm deep. It is interesting how similar in appearance this layer seems in comparison to layers IIA and IIC at Tō'aga on Ofu Island (Kirch, Hunt, Nagaoka & Tyler 1990:5)

Layer 4: A packed calcareous sand. This layer extended down to below the water table at some 1.8 m depth.

**Test Unit 2 (Fig. 4.)**

As with TU 1, four main layers were present —

Layer 1a: Coral rubble, 10 cm deep.

Layer 1b: Mixed sand and coral rubble, 12 cm deep.

Layer 1c: this layer was formed by a fire scoop feature, cut into the surface of layer 2. It was a deposit of dense charcoal with little, if any sand. Within this layer a copper nail was found, indicating a fairly recent date for the feature.

Layer 2: loose calcareous sand. The top part of the layer was heavily stained by, and contained lumps of, charcoal. however the base of the layer was very similar to layer 2 in TU 1. It is presumably a continuation of that layer, but has been modified by the scoop feature dug into it.
Figs 3, 4 & 5. Falcñasao Harbour Project: cross-sections of Test Units.
Layer 3: calcareous sand with basaltic lapilli, very similar to TU 1, layer 3. 50 cm deep.

Layer 4: packed calcareous sand, as for TU 1, layer 4. A single fragment of pottery was found at the top of this layer.

**Test Unit 3 (Fig. 5.)**

The stratigraphy of this test unit was similar to the two test units described above. The only difference was a thin layer (2b) of clean, loose, calcareous sand, some 6-8 cm deep, between the organically stained layer 2 and layer 3 with the volcanic lapilli. This is taken to indicate a very local disturbance to the beach in this area.

**The Potsherd**

The single potsherd recovered from Layer 4 of TU 2 is a fragment from the neck of a vessel. The sherd was very fragile and broke during recovery. The main remaining fragment is triangular in shape measuring 25 mm x 20.5 mm x 21.07 mm along its three sides and 4 mm thick. The other smaller fragments measure 16 mm x 18 mm, 13.4 mm x 11.9 mm and 11.5 x 14.4 mm. The inner surface of the sherd is missing: it would appear to be a spall broken off an originally thicker pot. The sherd shows little evidence of being beach-rolled.

The sherd is crumbly and contains calcareous sand grains and small quantities of shell. The core is not completely oxidised. The colour is a greyish brown (2.5YR 5/2), with the outer surface a mixture of reddish brown (5YR 3/4) and black.

The topography of Ta'ū restricts the areas available for occupation with little flat land and generally steep slopes. The present villages of Ta'ū, Faleăsao and Fiti'uta have been said to have an undoubtedly long sequence of prehistoric occupation (Hunt & Kirch 1988:162). Test excavations in the Siu'faga section of Ta'ū village produced evidence of an early ceramic (Polynesian plainware) occupation with a date of 2330 ± 50BP (uncorrected). A total of 115 sherds were recovered. The fragment described here appears to be very similar to the thick coarse-tempered ware described by Hunt and Kirch (1988:169-171) and is probably of a similar date. Simon Best (pers.comm.) suggests that the neck shape also indicates a date in the region of 2000 to 2500BP. Despite the fact that the sherd was not found in association with any other archaeological context, the fragile nature of the Faleăsao sherd and its unworn appearance both indicate that it must derive from a very close-by source, supporting Hunt and Kirch's hypothesis of a long prehistoric occupation at Faleăsao village.
DISCUSSION

The stratigraphy of the beach, as it appeared in the test units, was relatively uniform, with no identifiable cultural layers above the water table. However the potsherds found indicates that occupation dating to before 2000BP is close-by. Recent archaeological work in Manu’a has focused on early ceramic sites, with one major focus being to identify archaeological sites relating to the earliest known Polynesian culture, Lapita. One site, Mulifanua on Upolu in Western Samoa (Green & Davidson 1974), has produced pottery of the distinctive lapita style. The Tō’aga site on Ofu in American Samoa has produced pottery and artefacts which, although not clearly lapita in style, are of similar date (Kirch et al 1990:11).

At Hunt and Kirch’s Ta’ū excavation (Hunt & Kirch 1988) ceramic occupation layers seem to have been found only some distance inland from the beach, although it is unclear how far. Their closest test unit to the beach produced only 2.25 m of non-ceramic cultural deposits. On the basis of their transect over the coastal flat at Siu’taga Hunt and Kirch argued that, at this location, there was evidence of coastal progradation, with the implication that the earliest sites would be found inland from the present beach. A similar situation was apparent at their later excavation at Tō’aga on Ofu (Kirch et al 1990:7), associated with an apparent drop in sea level of 1 m. This contrasts with the Mulifanua site where a sea level rise of over 2 m is indicated (Leach & Green 1989:326). Clearly there may be significant differences between the Manu’a Islands and the larger landmasses of Western Samoa. Within the Manu’an Islands such great differences should not be apparent, although local conditions (exposure to weather, catchment area for slope run-off etc.) need to be accounted for. At Faleāsao the restricted study area meant that it was not possible to identify conclusively what has happened to the shoreline within the bay itself where different geomorphological processes may have been active (for example, the flat at Faleāsao is surrounded by a low ridge that would restrict the amount of erosional material that could derive from the higher slopes). Whilst Hunt and Kirch’s argument for Ta’ū village may be correct, this is not definite evidence that Faleāsao beach is prograding. Given the lack of geomorphological evidence to the contrary, and the indication of a Polynesian Plainware site in the vicinity of the Harbour Project, prudence suggests that both the shallow water within the channel construction area and the landward beach revetment area should be investigated for further evidence. Professor R.C. Green (pers. comm.) suggests that, with the rises and falls in sea levels over the last 4000 years, the earliest Lapita sites should now be situated just off-shore in shallow water.

Within the channel construction area the bore hole logs provide evidence which narrows down the possible area that might be productive of archaeological evidence. Over the greater part of this area the logs indicate coral limestone in varying forms from the top to the bottom of the bore holes which were some 6 m deep. The Mulifanua site was buried under a thin coral crust, superimposed over a former beach (Leach and Green 1989:319 & Fig. 1.). No such conditions are indicated here. An exception is the area in the western and southern portion of the proposed turning circle (Bores 12, 32, 33, 34, and possibly 13) where there is a considerable depth of sand present under shallow water.
CONCLUSIONS AND RECOMMENDATIONS

The results of the Faleāsao Harbour Project Archaeological Survey and Test Excavation are described above. In general, where no archaeological sites are present no further archaeological investigation is recommended. In the case of this project this applies to both of the proposed quarry sites. If it is discovered that neither will provide sufficient, or any, rock of suitable quality, any further quarry sites will need archaeological assessment.

Whilst the construction of the Faleāsao Harbour will not affect any definable archaeological sites, one sherd of Polynesian Plainware pottery was recovered. The condition of that fragment suggests that further investigation is warranted, as there is a probability that significant archaeological information may be present within the construction area. Two areas are recommended for further investigation — parts of the channel and the revetment. In both these areas the sea and water table suggest that any cultural remains would be difficult to examine by standard archaeological excavation techniques. Monitoring the construction would appear to be the only satisfactory method of data recovery.

To recover any archaeological evidence that may be present it is recommended that the following parts of the project be monitored.

1. Channel Construction Area: The west and south portions of the turning circle (Fig. 6.). To monitor this portion of the project, as material is dredged from the monitored area, it should be inspected and a sample sieved. If it appears that significant quantities of cultural materials are present work should cease until the area can be assessed and data recovery undertaken if it is thought necessary. The channel construction will take six months to complete, but the current programme would require on-site monitoring only during the last month of the operation.

2. Beach revetment: The entire length of the excavations for the revetment. In this segment of the construction project the excavations should be monitored and samples sieved. If cultural materials and/or cultural layers be noted then work should stop to allow assessment and any necessary data recovery. Current projections are that this part of the project would be constructed after the completion of the channel. The entire revetment construction is estimated to take up to six weeks.

The archaeologist who monitors this work should carry it out in consultation with the State Historic Preservation Office and the Territorial Archaeologist of the American Samoan Government. The archaeologist for this project should consult with the Archaeologist for the Taʻū road project with regard to data recovery prior to the Notice to Proceed for the Taʻū Road being issued.
Fig. 6. Faleāsao Harbour Project: showing area of channel recommended for monitoring.
At the conclusion of this project all artefactual materials, archaeological samples, notebooks, photographs and field drawings, including those from the current survey and test excavation, will be deposited at a suitable institution for permanent preservation either at the direction of, or with the concurrence of, the Territorial Archaeologist, American Samoa Government.

REFERENCES CITED


