ARCHAEOLOGICAL EXCAVATIONS AT ERF 164, MELKBOSSTRAND, MALMESBURY MAGISTERIAL DISTRICT, WESTERN CAPE

(Excavation conducted under HWC permit 2010/03/004)

Prepared for

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EXECUTIVE SUMMARY

The UCT archaeology Contracts Office was requested by Mr Graham Jacobs to conduct rescue excavations at Erf 164 Melkbosstrand (47 5th Avenue). This entailed exhumation of a pre-colonial burial that was accidentally discovered during construction work as well as sampling of shell middens present on the site. We also conducted several other test excavations to check for further buried material that might be impacted by the remainder of the construction work. Terms of reference were prepared by Heritage Western Cape after a site visit by them.

The 725 m^2 site has a house on it that has seen various modifications and alterations over the years. It is located immediately adjacent to the coast and some three quarters of the property was covered by grass prior to disturbance by the builders. Excavations were conducted between 30th March and 1st April 2010. Ten holes were dug, varying in size between 0.25 m^2 and 2.0 m^2. All material was sieved through a 3 mm mesh. We were restricted to some degree by the structures already on site, particularly in the case of the burial where we had to excavate beneath both the old and newly built walls.

The excavations produced two areas of low density shell midden with a remarkable paucity of cultural material. The finds are consistent with a possible herder occupation and this contention is supported by two radiocarbon dates of approximately AD 650 for the midden and AD 800 for the burial.

The burial was found to have been excavated through the midden level and its orientation and layout were consistent with other pre-colonial burials from the region. The individual (most likely a female greater than 60 years of age) lay on its side facing east, its head was to the south. No grave goods were found.

The work conducted is regarded as being sufficient to characterise the site and determine that no further significant impacts will occur. As such, no further archaeological intervention is required.

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1. INTRODUCTION

The UCT archaeology Contracts Office was requested by Mr Graham Jacobs to conduct rescue excavations at Erf 164 Melkbosstrand (47 5th Avenue; Figure 1), north of Cape Town. The work entailed exhumation of a pre-colonial burial that was accidentally discovered during construction work as well as sampling of shell middens present on the site. We also conducted several other test excavations to check for further buried material that might be impacted by the remainder of the construction work.

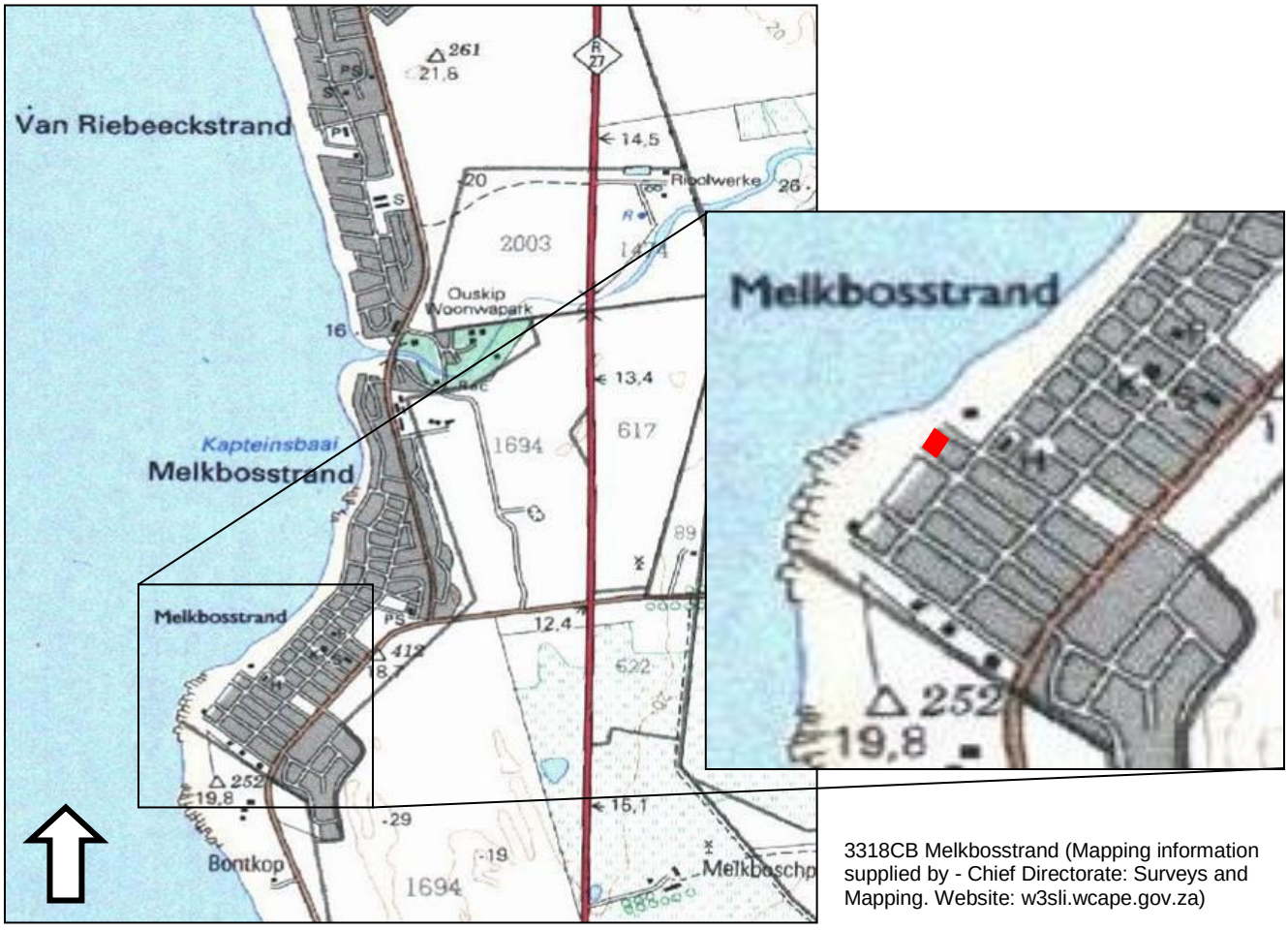

Figure 1: Map showing the location of the site (red polygon).

The site had an old house on it that was being restored and renovated to accommodate a restaurant. The original house is likely to have been mid-19th century, while modifications were made during the early to mid-20th century. The new additions took place to the rear (east) of the existing structure and it is in that area that archaeological impacts were experienced. After a visit by the archaeologists from Heritage Western Cape (HWC) a diagram showing the locations of likely impacts that would need to be tested or mitigated was produced. This, along with terms of reference from HWC, was used as a guide for planning the appropriate measures.

2. HERITAGE LEGISLATION

The National Heritage Resources Act (NHRA) No. 25 of 1999 protects a variety of heritage resources including palaeontological, prehistoric and historical material (including ruins) more than 100 years old (Section 35), human remains (Section 36) and non-ruined structures older than 60 years (Section 34). Landscapes with cultural significance are also protected under the definition of the National Estate (Section 3 (3.2d)). Heritage protected under both Sections 35 and 36 was thus encountered on Erf 164.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The site is an erf of approximately 725 m^2 located immediately inland of the coast, which, at this point, has a massive rocky shelf extending a few hundred metres out from the beach (Figure 2). This area would have provided an ideal source for shellfish collecting and a walk out over the rocks at low tide showed that most of the species encountered in the middens are still present there today. The existing structure covered approximately one quarter of the site with the rest being a level grass-covered garden prior to the new additions. When we were called on to site it was already heavily disturbed by the construction work which was in an advanced state (Figures 3 & 4).

Figure 2: Aerial photograph from Google Earth showing the location of the site (red polygon) and its local context. The yellow scale bar represents 100 m.

Figure 3: View towards the south showing the disturbed yard. This photograph (provided by Heritage Western Cape) was taken on 11th March 2010 before we were called to site.

Figure 4: View of the eastern part of the yard where shell midden deposits were located. The excavation is one of ours.

4. HERITAGE CONTEXT

Melkbosstrand is well known for having produced an extremely high density of pre-colonial burials (Morris 1992; Yates 2001). The reason for this is likely to be as a result of a high density of occupation resulting from excellent shell-fishing opportunities that exist here. As a result, one would expect many shell middens. Sadly, though, the area is heavily developed and huge impacts are likely to have taken place through the years with much archaeology being lost.

It is only in recent years that cultural resource management (CRM) has been taking place and as a result a few surveys and mitigation excavations have taken place. These have revealed shell and artefact scatters and shell middens occurring in several areas (Kaplan 1997; Orton 2007, 2010) with some of the latter already having been excavated (Gray 2000; Kaplan 2000; Sealy *et al*. 2004). Only the Atlantic Beach sites have been analysed in detail and these provide the primary observations for the area. The sites were occupied within the last 2000 years and indicate probably hunter-gatherer and herder occupations during that time (Sealy *et al.* 2004).

5. METHODS

Three days were spent on site (30th March to 1st April 2010) conducting the excavations. In total ten excavations were conducted, excluding the burial. These varied in size with the largest being 2 m^2 and the smallest about 0.25 m^2. Finds were photographed during excavation and notes were kept to assist with their later interpretation. We soon realised that finds other than marine shell were extremely scarce and thus used only a 3 mm mesh sieve. This was also necessary due to the dampness of the deposits in some areas. Finally, samples of shellfish and human bone (ribs) were sent to the University of Georgia's Centre for Applied Isotope Studies for radiocarbon dating. The human bone was processed using the accelerator technique to keep the sampled bone to a minimum.

5.1. Limitations

Since the bulk of the construction work had already been completed we were restricted in terms of which areas we were able to work in. HWC had requested that certain areas be sampled and/or tested and we followed this guide as closely as possible The main restriction experienced was in relation to the burial. The contractors, in their eagerness to continue their work, contrived a way to protect the burial from further damage while at the same time allowing them to build over it. They built small walls around the burial, laid pre-cast concrete lintels and then continued their new walls atop the lintels, a sequence that was recorded photographically by the client (Figures 5 - 7). This resulted in very cramped excavating conditions and it was not possible to expose and record the burial in the conventional manner. In order to create a small space in which to work, some of the smaller walls had to be demolished and we had to excavate down into the *in situ* raised beach deposits that occur below the site. Furthermore, part of the burial was located beneath the original stone foundation of the 19th century house and we had to exercise care when excavating below this as it was in danger of collapsing into the hole.

Figure 5: Burial below stone foundation.

Figure 6: Burial being enclosed by walls.

Figure 7: New wall built over lintels.

Figure 8: Cramped conditions under which the burial was exhumed. The original wall lies on the right while the new wall lies on concrete lintels above the archaeologist.

6. FINDINGS

6.1. Excavations and midden structure

Figure 9 shows the locations of the excavations and burial on a plan of the site. Stratigraphy across the property was generally very poorly developed with those few discernible changes being related mainly to shellfish density. As such, no section drawings are presented as these hold little meaning. However, photographs of the sections from Holes E1-8 and J2 are provided as these were the two best examples of stratigraphy (Figures 10 – 13). Despite the presence of water worn shell fragments throughout, both contained an anthropogenic layer of perlemoen shells (*Haliotis midae*) in level 3 (Figure 14). A generalised description of the deposits along the eastern part of the property and from top to bottom is as follows:

- Grass / topsoil / building rubble;
- Topsoil / building rubble / scattered shell / modern items;
- Low density shell material including water-worn shell fragments with few modern intrusions;
- Higher density shell material including water-worn shell fragments without modern intrusions;
- Low density shell material including water-worn shell fragments;
- Beach sand (in places) with *in situ* Holocene beach deposits at the base.

In all the excavations the uppermost recently disturbed material was cleared away without sieving. The remaining disturbed deposit was removed and designated “TOP”. This material was also not sieved but was carefully examined during excavation such that any noticeable small finds could be collected. Beneath this, when relatively intact deposits were encountered, the various levels were numbered consecutively, sieved and sorted in the conventional manner.

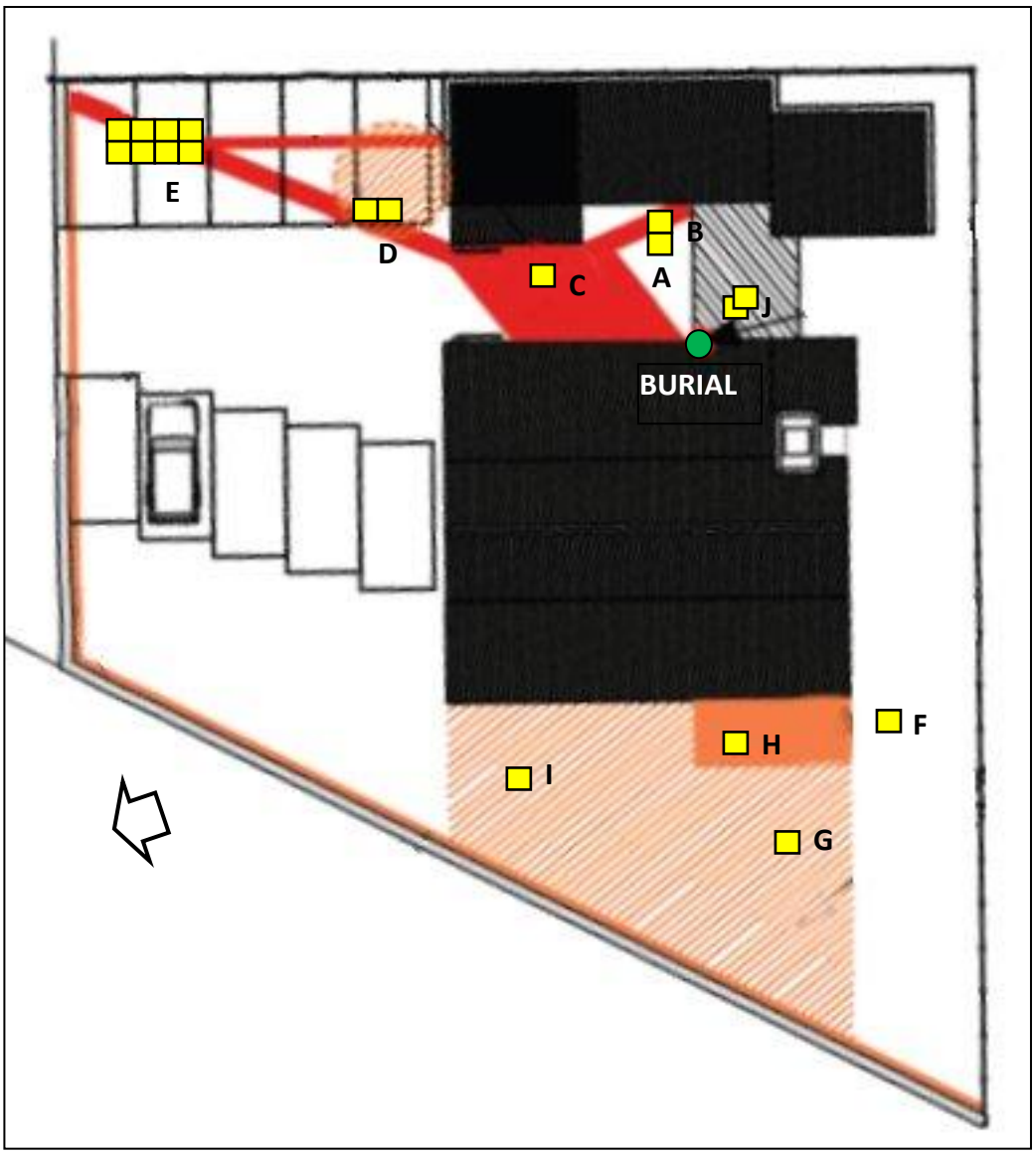

Figure 9: Map of Erf 164 showing the locations of the excavations (yellow squares) and burial (green dot). (Adapted from drawing supplied by HWC.)

Figure 10: View looking east of the section in Hole E. The rocks in the right hand square (E4) are in a pipe trench that compromised that square.

Figure 11: Close-up of the east section of square E1. The black spots on the tape measure represent 10 cm intervals and the red tags indicate the base of each level (1-5). Disturbed soil overlies level 1.

Figure 12: View looking east of the excavation at Hole J. J1 was the initial hole into disturbed deposits (front left part), while J2 was the expansion to the south and east beneath the concrete and into less disturbed deposits.

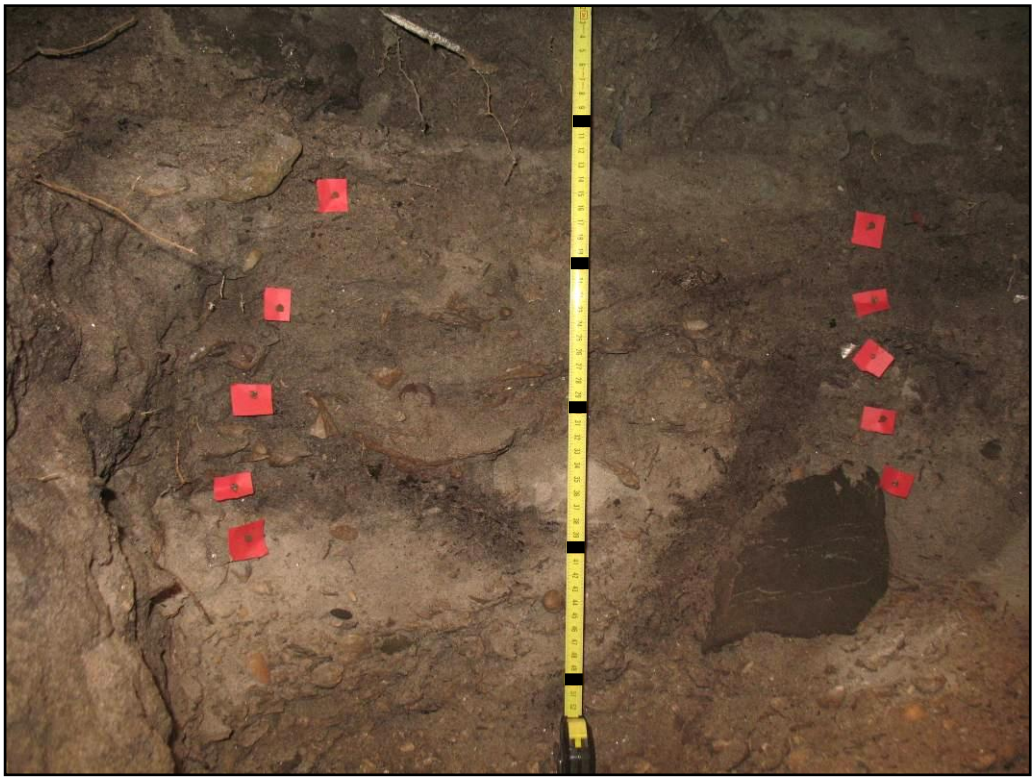

Figure 13: Close-up of the east section of J2. The black spots on the tape measure represent 10 cm intervals and the red tags indicate the base of each level (1-5). Darker disturbed soil overlies level 1.

Figure 14: View of the surface of the main midden deposit in Hole J2 (level 3). The area above the dotted line is *in situ* while the remainder (in Hole J) is disturbed. The top of level 3 in Hole E had a similar appearance.

6.2. Radiocarbon dates

Two radiocarbon dates were processed[1]. One was on ribs from the burial and the other from the midden deposits into which the burial was excavated. The results indicate that the midden formed during the mid-7th century AD and that the burial was dug into the midden deposits some 150 years later, close to the end of the 8th century AD. These dates are consistent with the vertical relationship between the midden and the burial.

Table 1: Results of the radiocarbon dating. The dates are calibrated using the Pretoria Radiocarbon Calibration Program.

Lab. number	Material	C^{14} age	$del_{13}C,‰$	Calibrated age
UGAMS-6605	Marine shell	1930 ± 30	+1.5	AD 624 (648) 666
UGAMS-6604	Bone collagen	1260 ± 25	-10.4	AD 782 (798) 871

6.3. Shellfish

Given the very close proximity of the site to the sea, it is very surprising to find any sort of prehistoric occupation there. This is borne out by the fact that much of the shell was found to be water worn, indicating that its deposition occurred naturally through the action of waves, probably during storm events. Generally, the best shell deposits were along the easternmost part of the property, furthest from the sea. There were also shells that were only partly worn making any analysis of what was collected and eaten by people very difficult. Furthermore, the shellfish assemblage was heavily fragmented, largely due to the fact that much of it was naturally rather than anthropogenically deposited, but possibly also partly due to subsequent modern use of the land immediately above the shell. For these reasons, no comprehensive shellfish analysis is presented. Instead lists of what species are present in the water worn and unworn states are provided (Table 2). All shellfish was weighed to provide an indication of density, but this is likely to give false information due to the inclusion of large quantities of water worn shell.

Table 2: Shellfish species present in the water worn (natural) and fresh (anthropogenic) shell samples. Asterisks denote species where only juveniles were observed. Species listed in bold blue type are those commonly expected to have been collected and eaten by people.

	E (all levels)		J2 L1		J2 L2		J2 L3		J2 L4		J2 L5	
Shell species	**WWS**	**fresh**	**WWS**	**fresh**	**WWS**	**fresh**	**WWS**	**fresh**	**WWS**	**fresh**	**WWS**	**fresh**
Choromytilus meridionalis	X	X	X		X	X	X	X	X	X	X	X
Aulacomya ater	X	X	X		X		X	X	X		X	
Scutellastra argenvillei	X		X	X	X	X					X	
Scutellastra barbara	X			X*	X	X		X		X		
Scutellastra granularis		X		X		X		X		X		
Scutellastra cochlear			X		X							
Cymbula compressa		X		X	X		X		X			
Cymbula granatina		X		X		X		X	X	X		X
Cymbula tabularis		X						X		X		
Cymbula miniata										X*		
Helcion sp.						X						
Crepidula sp.	X		X		X		X		X			

[1] Samples for dating were exported under a SAHRA export permit: No.80/10/05/006/52.

	E (all levels)		J2 L1		J2 L2		J2 L3		J2 L4		J2 L5	
Shell species	**WWS**	**fresh**	**WWS**	**fresh**	**WWS**	**fresh**	**WWS**	**fresh**	**WWS**	**fresh**	**WWS**	**fresh**
Fissurella sp.					X				X			
Haliotis midae		**X**		**X**		**X**		**X**		**X**		**X**
Conus sp.					X						X	
***Burnupena* sp.**	**X**		**X**		**X**		**X**	**X**	**X**		**X**	
Nucella sp.	X											
Littorina sp.							X					
Bullia digitalis	X								X		X	
Diloma sp. / *Oxystele* sp.	X		X		X	X	X				X	X
***Turbo* sp.**	**X**										**X**	
Protoma capensis								X				
Barnacle				X			X		X		X	
Trigonephrus globulus				X								
small land snail				X								

Given the proximity to the coast it is unlikely that people were living here. The sparseness of cultural material and other faunal remains described below supports this. Instead it seems more likely that people were obtaining shellfish from the rocks and perhaps cooking it on the beach before removing the meat, discarding the shells and walking back to their home camps. This is particularly the case with the perlemoen shells (*Haliotis midae*) as these shells are large and heavy. Although telling anthropogenic from natural shellfish at MBS164 is extremely difficult, it did seem likely that *Haliotis midae* shells would account for perhaps 5 % or more of fresh-looking shellfish in the dense midden layers. This interpretation of site formation is supported by the complementary shellfish pattern at the Atlantic Beach shell middens where *Haliotis midae* never exceeds 0.6 % of all shellfish (Sealy *et al.* 2004: table 3). In addition, it was also very clear that the fabric of the primary shell lens in both the Hole E and Hole J areas was supported by a layer of *Haliotis midae* shells (Figure 14). The presence of other shellfish species commonly collected by people and deposited on their middens is also noted (Table 2).

Weights of all the shell samples were taken prior to selection of those that will be stored in perpetuity. Using the bucket counts one can calculate approximate density values for the shell. These densities are presented graphically in Figures 15 to 19 for those holes where this was meaningful, although the presence of water-worn shell in variable densities throughout the site may have resulted in some distortion of the values.

In Hole B, low density shell was encountered until a slight concentration at the base of Level 5 where there were also more *Haliotis midae* shells. The increase is evident in the graph. From Level 6 we started finding beach shell which further increases the density. The Level 7 column shows the dramatic increase in shell density in the beach shell where it is all tightly packed shingle. The final column is from a sample just a few cm lower, again showing a massive increase in density.

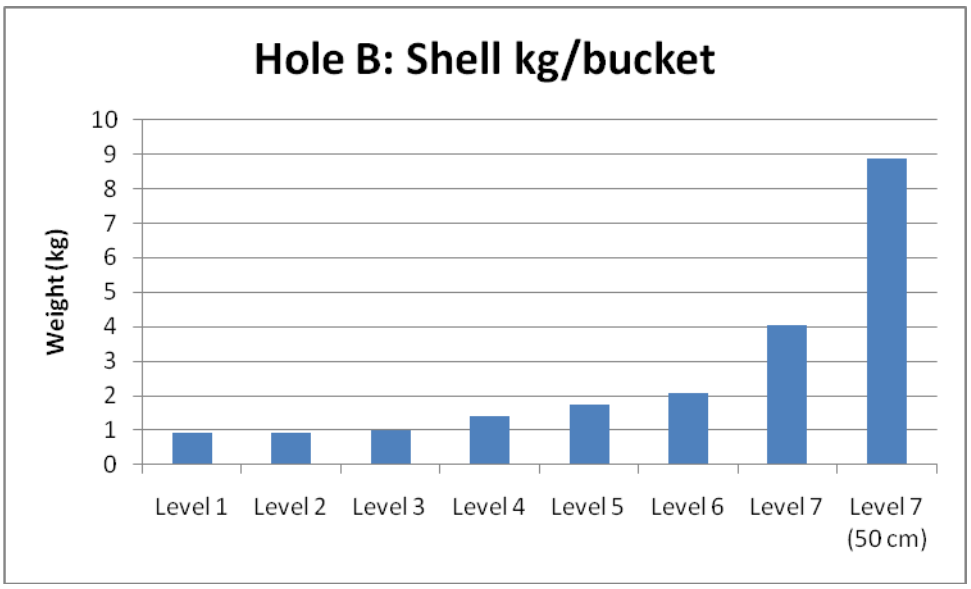

Figure 15: Shellfish density in Hole B.

In Hole C we also only encountered scattered shell rather than concentrated midden deposits. Density was reasonable in Level 2 but then dropped rapidly. The very low density in Level 4 reflects that fact that sterile beach sand was encountered at the base. Excavation stopped at that point but a test below showed 5 cm of sand before water-worn beach shell appeared.

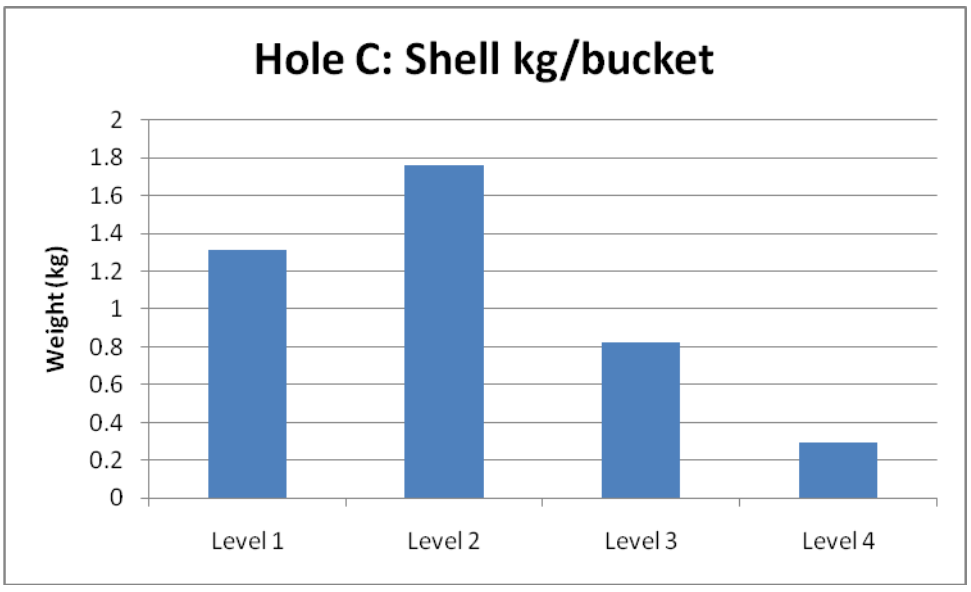

Figure 16: Shellfish density in Hole C.

Shell densities in Hole D were also low with no midden deposits encountered. Densities were lower here than in the other excavations.

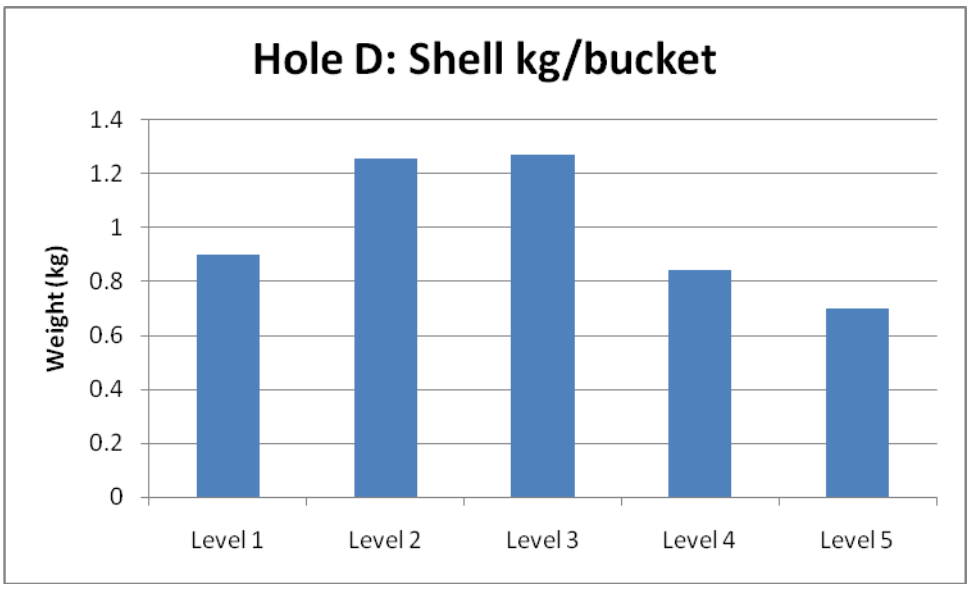

Figure 17: Shellfish density in Hole D.

In Hole E a concentrated shell midden was encountered in Levels 2 and 3. This is reflected by the high shell density in Level 2 and subsequent reduction below this. Much of the midden was composed of *Haliotis midae* shells which are large and encapsulate much sand. This might be the reason for the relatively low density despite the presence of shell midden. The midden deposits end around the base of Level 4. Level 5 has little shell.

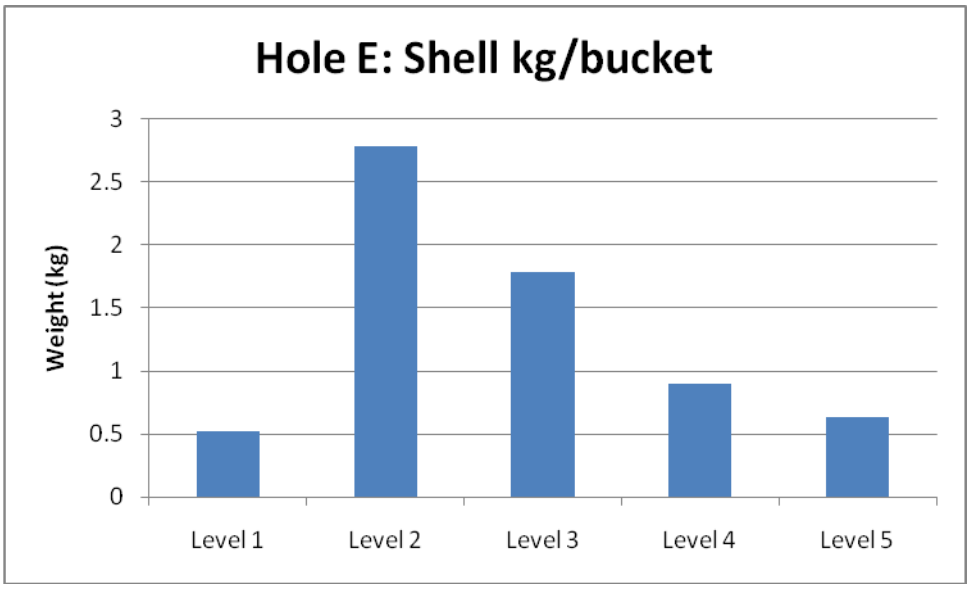

Figure 18: Shellfish density in Hole E.

Hole J also produced a concentrated archaeological shell midden. Level 3 reflects this with a large increase in shell density. It decreases in Level 4 as the midden tails off but then the natural beach shell in Level 5 results in another increase. Only the very uppermost part of the shell beach was sampled and density would no doubt increase dramatically if one were to sample deeper down as we did in nearby Hole B.

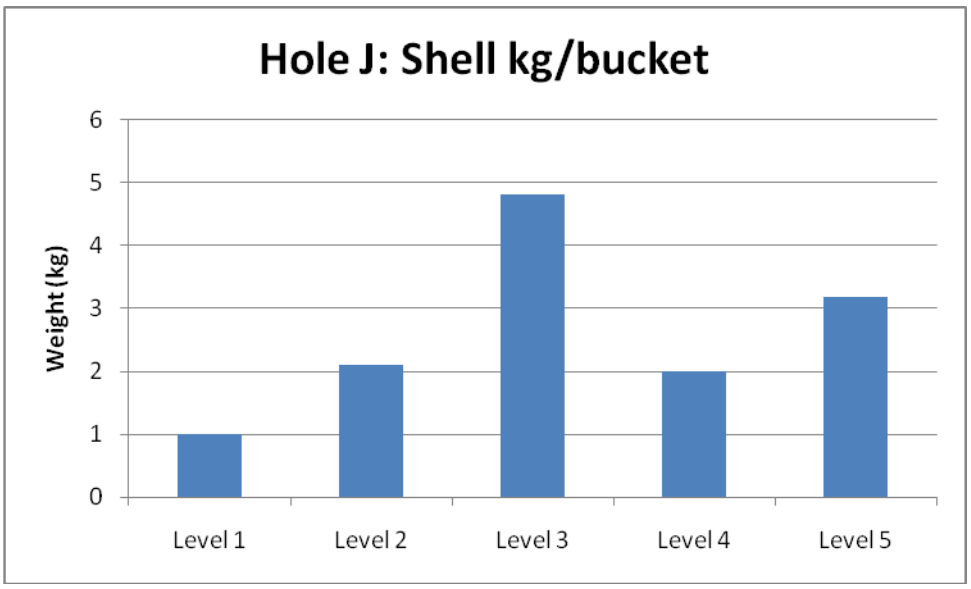

Figure 19: Shellfish density in Hole J.

6.4. Kreef (Cape rock lobster)

Very few kreef (*Jasus lalandii*) mandibles were present overall, with a total of eight found across all the excavations. Any sort of statistical analysis would be meaningless so they are simply listed in Table 3.

Table 3: List of kreef mandibles and sizes in mm.

Provenience (square/layer)	Broken left	Broken right	Fragments	Whole left	Whole right
A Top					14.68
B L1					11.14
B L3		1			
E4 L3					10.57
E5 L1				8.20	
E8 L1		1		8.31	
F Top				13.12	

6.5. Faunal remains

A reasonable number of bone fragments were found, but only a very low proportion could be identified to any particular animal. The bones have not been subjected to specialist analysis and so one or two bones could possibly still be identified to species. Table 4 shows the identifications that were possible from each excavation.

Table 4: Bone identifications. An "X" denotes unidentifiable bone fragments present, while a "-" shows no bone present at all. Fragments are not shown where other identifications could be made.

Excavation	Identified bone
A Top	tortoise, fish, mammal
B Level 1	fish
B Level 2	X
B Level 3	micromammal
B Level 4	X
B Level 5	fish
B Level 6	X
B Level 7	-
C Level 1	X
C Level 2	X
C Level 3	Snake
C Level 4	X
C Level 5	-
D Level 1	X
D Level 2	X
D Level 3	-
D Level 4	tortoise, small mammal
D Level 5	-
E Level 1	mammal, micromammal
E Level 2	tortoise, mammal
E Level 3	tortoise, mammal
E Level 4	tortoise, mammal
E Level 5	tortoise, mammal
F Top	fish, mammal (incl. cut bone)
F Level 1	X
F Level 2	-
G Level 1	X
H Top	fish, mammal (?sheep)
H Level 1	X
J Level 1	X
J Level 2	X
J Level 3	X
J Level 4	X
J Level 5	-
Spoil heap	X

6.6. Stone artefacts

Stone artefacts were extremely rare overall with one quartz flake found in Hole B Level 1 and a quartz chip found in Hole C Level 4. In E4 Level 1 there was a possible ground pebble. In Hole E there were many unmodified rocks collected from the beach. There was no evidence of any sort of spatial arrangement that might indicate a hearth[2] but three rocks in E3 Level 1 were fire-blackened. This probably means that some sort of hearth was present in the immediate vicinity. It is not possible to speculate on what form it might have taken.

[2] See Orton (in press) for a review of the occurrence of stone hearths.

6.7. Ostrich eggshell beads

A single ostrich eggshell bead was found in E7 Level 5. Its outside diameter is 8.10 mm, while its aperture measures 2.94 mm and it is 1.96 mm thick. Larger beads (greater than 5.5 mm) have typically been associated with pastoralist people rather than hunter-gatherers (Smith *et al.* 1991), but with just one bead one cannot make any conclusions in this regard.

6.8. Pottery

Pottery was the most frequent class of cultural material found on the site although only nine plain body sherds were recovered. As the sample is so small, Table 4 simply presents an analysis of the characteristics of each sherd. The sherd thicknesses are within the normal range of variation. Colour does not necessarily indicate any relationship between sherds as this can vary due to post-depositional factors and placement on the original pot.

Table 4: Characteristics of pot sherds recovered from MBS164.

Square	Level	Weight	Maximum thickness	Temper	Outside colour	Inside colour
B	L4	2.3	7.26	Qtz	dark brown	black
B	L5	1.5	7.06	Qtz & ?other	brown	black
B	L7	0.6	-	Qtz & other	-	dark brown
C	L3	8.1	7.21	Qtz & other	dark brown	black
D	L1	4.1	7.31	Qtz & other	brown	black
D	L1	2.3	6.5	Qtz & other	red	black
D	L2	1.2	7.08	Qtz	dark brown	black
E4	L2	4	5.74	Qtz & ?other	brown	brown
E5	L3	0.5	6.36	Qtz & other	brown	brown

6.9. Historical material

Much relatively recent material was found, predominantly within the uppermost deposits of each excavation. While it is not always possible to tell what is historical (greater than 100 years of age) and what modern, a few likely artefacts do fall into the historical category. One refined earthenware plate fragment with transfer printed willow pattern found in the uppermost deposits of Hole G dates to the late 19th century. Glass fragments of varying age, but mostly modern, were found in several areas. Most were in “Top” or Level 1 with the odd deeper fragment no doubt there through secondary disturbance. It seems likely that many of the bones encountered to the west of the house were historical, rather than modern. Some appeared to be of the right size for sheep and a few displayed saw marks.

A variety of more modern material was also encountered. This included fragments of plastic, 2 bullet cartridges, some tin foil, a bottle top, some nails and other fragments of rusted iron. The upper levels of many of the holes produced modern brick and cement fragments relating to recent or mid-20th century alterations to the building on the property. In J2 Level 1 some fragments of brick and cement were found that look as though they may date to the earlier 20th century.

6.10. Burial

After discovery, the skeleton was not treated as well as it might have been.. It was suitably covered with black plastic underlay to protect it from falling cement during the building operations that continued over the top of it, but during casting of the adjoining floor a fine cement slurry flowed beneath the plastic, coating many of the exposed bones (Figure 20). Then during a later (and second) visit from the police the plastic was apparently pulled off with the result that accumulated rubble fell onto the burial. Furthermore, the fact that building continued over the burial made it difficult to adequately protect it and recover as described in section 5.

Figure 20: The burial after removal of loose debris. The cement slurry is visible in the foreground.

The burial was lying on its side, head to the south and facing east (Figure 21). It must have been placed into a hole that was too short since the head was folded over onto the chest (Figures 21 & 22). The entire length of the burial, and hence the grave shaft, was only 60 cm.

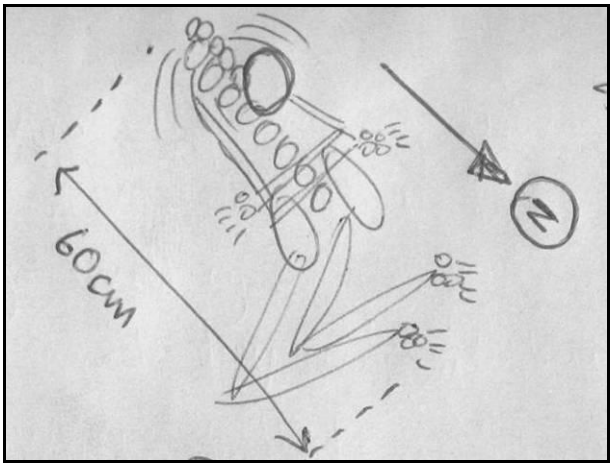

Figure 21: Plan view of the burial taken from the field notebook. The arm and leg positions are typical of pre-colonial burials.

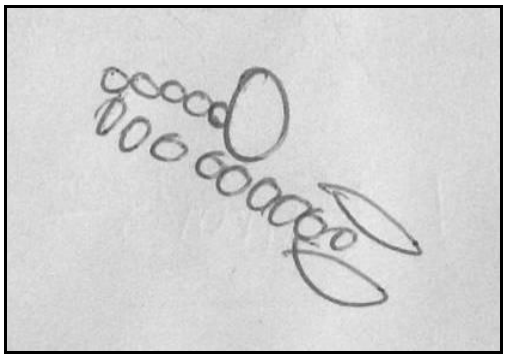

Figure 22: Section view of the axial skeleton facing west and showing the folded neck.

Interestingly, the builders of the historical stone wall beneath which the burial was located had only missed intersecting the skull by a few centimetres with their foundation trench (Figures 23 & 24). Due to the proximity of the foundation, it is not possible to determine if any of the stones found above the burial related to the original burial event. (fairly common practice which often included lower grindstones). It was not deemed safe to remove any of the foundation rocks to check for signs of grinding as there was a danger of collapse. No grave goods were found.

Figure 23: Section view facing west showing the burial with rocks in the foundation trench above it and natural beach shell below (foreground).

Figure 24: Plan view of the burial showing the very close proximity of rocks to the skull. The neck is just visible between the skull and the rock to the left.

Through disturbance by the builders, the knees (distal femora and proximal tibiae and fibulae) had been broken and displaced while most of the remaining skeleton was intact. A full osteologial report has been compiled by Genevieve Dewar and appears as Appendix A of this report.

Due to the extensive clearing of deposits around the burial and the fact that we could not access its western side that lay below the historical stone wall, it was not possible to obtain any clear relationship between the burial and the surrounding archaeological deposits. However, a single *Haliotis midae* shell was observed in the edge of the newly excavated pit at about the same level as the midden in Hole J2, located just to the south. As we have no idea how much deposit was cleared from the surface when the property was initially levelled for construction of the 19th century house, we also do not know what level the grave was excavated from. The radiocarbon dates have however confirmed that it is younger than the surrounding shell deposits.

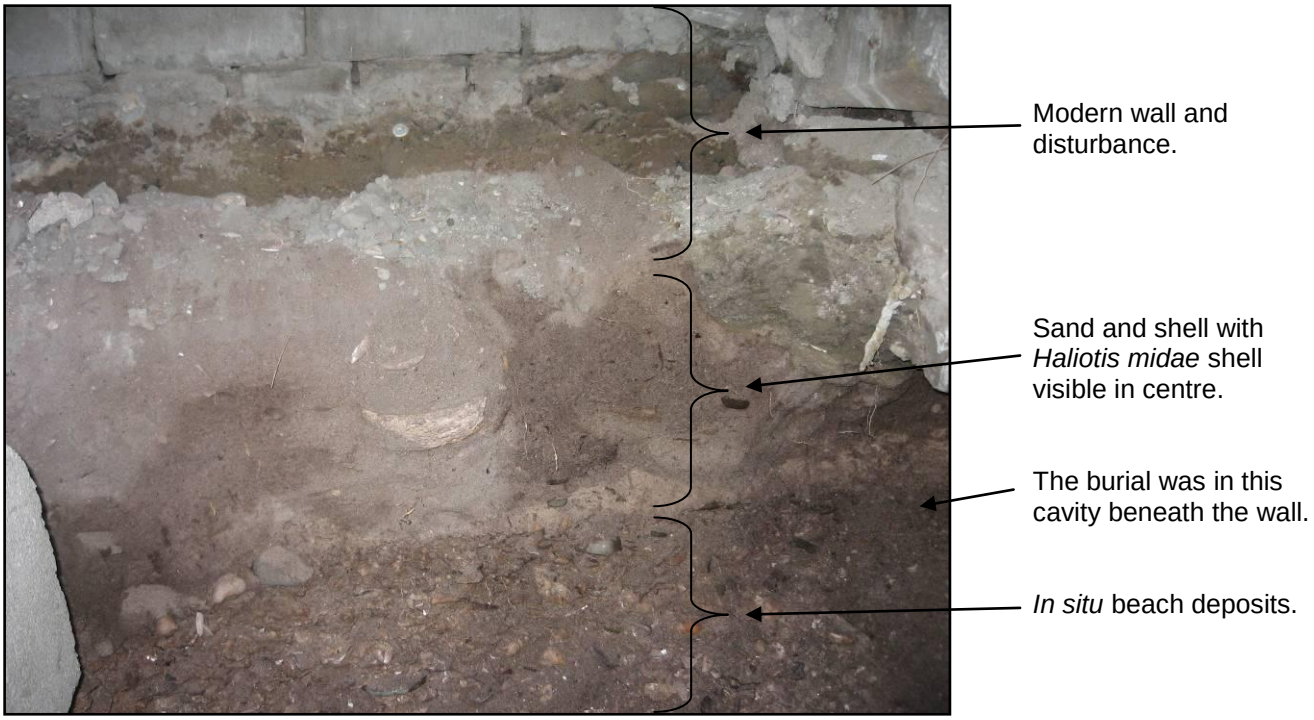

Figure 25: View to the south of the section close to the burial.

7. GENERAL DISCUSSION

It is unfortunate that so little cultural material was obtained from this site. However, what we did find seems consistent with an interpretation that pastoralist people might have been responsible for its deposition. Three factors support this contention:

- A radiocarbon date indicating deposition in the 7th century AD;

It is well documented that sheep and pottery only occur in southern Africa within the last 2000 years. The earliest directly dated sheep bone at about 50 BC is from Spoeg River Cave on the Namaqualand coast (Sealy & Yates 1994), while the vast majority of dates for sheep and pottery are younger than about AD 100. MBS164 thus falls well within what archaeologists generally refer to as 'the pottery period'.

- A preponderance of pottery in the cultural finds with very few lithics;

Sadr *et al.* (2003) employed a measure which they called the 'ceramic index'. This is a value that represents the proportion of potsherds within the entire collection of stone artefacts and potsherds. They consider an index of less than 20 % to indicate a hunter-gatherer presence, while values above 60 % suggest herders. Although the various excavations conducted at MBS164 might not technically be windows into the same archaeological "site", we can very loosely apply the concept to the collection as a whole. Altogether just two flaked stone artefacts and nine potsherds were recovered. This provides a ceramic index of 81.8 %, clearly well into the Sadr *et al*. (2003) herder range.

- The presence of a large OES bead;

Although just one bead is hardly statistically significant, it can be noted that large beads are generally considered to have been made by herder people rather than hunter-gatherers (Smith *et al.* 1991).

For many years it has been believed that pastoralist Khoekhoe people migrated into southern Africa bringing with them sheep and pottery (Boonzaier *et al.* 1996; Ehret 1982; Elphick 1985; Parkington 1984; Smith 1983, 1992). More recently an alternative hypothesis suggested that these commodities entered the subcontinent via diffusion among indigenous hunter-gatherers (Kinahan 1995; Sadr 1998, 2004). The former hypothesis would suggest that sites of pastoralists and hunter-gatherers should be distinguishable, while with the latter there would more likely be mixed cultural signatures. Attempts at identifying pastoralist and hunter-gatherer sites have produced few positive results but nonetheless some sites do support the distinction. It would appear that MBS164 might be added to the list of likely herder sites. Despite some archaeological support for the distinction, anatomical data have failed to provide any support for a new genetic population around 2000 years ago (Ginther 2008; Hausmann 1982; Stynder 2009).

8. DISCUSSION OF IMPACTS

It is unfortunate that the burial was not adequately protected after discovery, resulting in more damage occurring than necessary. The burial was fully recovered, however, and no major loss of data is likely. The absence of grave goods is unlikely to be due to their having been removed by the builders as such items usually accumulate in the base of the grave during decomposition.

There was not very much shell midden present on the site and no significant loss of data has occurred in this regard. Despite the difficulties presented by the presence of substantial amounts of water-worn beach shell, the samples obtained are certainly adequate to describe the archaeology that was present.

Once we had completed the excavations described above, and after consulting Heritage Western Cape, we instructed the builders to proceed with their excavations for the laying of sewage pipes at the back of the house. It was deemed advisable that they complete all their subsurface work in our presence so that if any further problems arose we would be on hand to deal with them. The trenching was completed uneventfully and no further archaeological impacts are expected on the site. The pergola could not be erected as permission had not yet been obtained for this. With no archaeological deposits present on the sea side of the house, there will be no impacts there should the planned excavations proceed in the future.

9. CONCLUSIONS

Two patches of low density shell midden were encountered on Erf 164. These probably represent areas where people cooked and processed shellfish. The sparseness of other remains probably reflects the fact that people would not have been camping on this spot due to the very close proximity to the shoreline. Sampling of the deposits and interpretation of the artefactual material has allowed characterisation of the site as a probable herder site.

Mitigation at Erf 164 is now considered to be complete and no further archaeological intervention is required.

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11. INVESTIGATION TEAM

Fieldwork:	J. Orton N. Mjikeliso M. Sasa N. Stassen
Report:	J. Orton

12. APPENDIX A

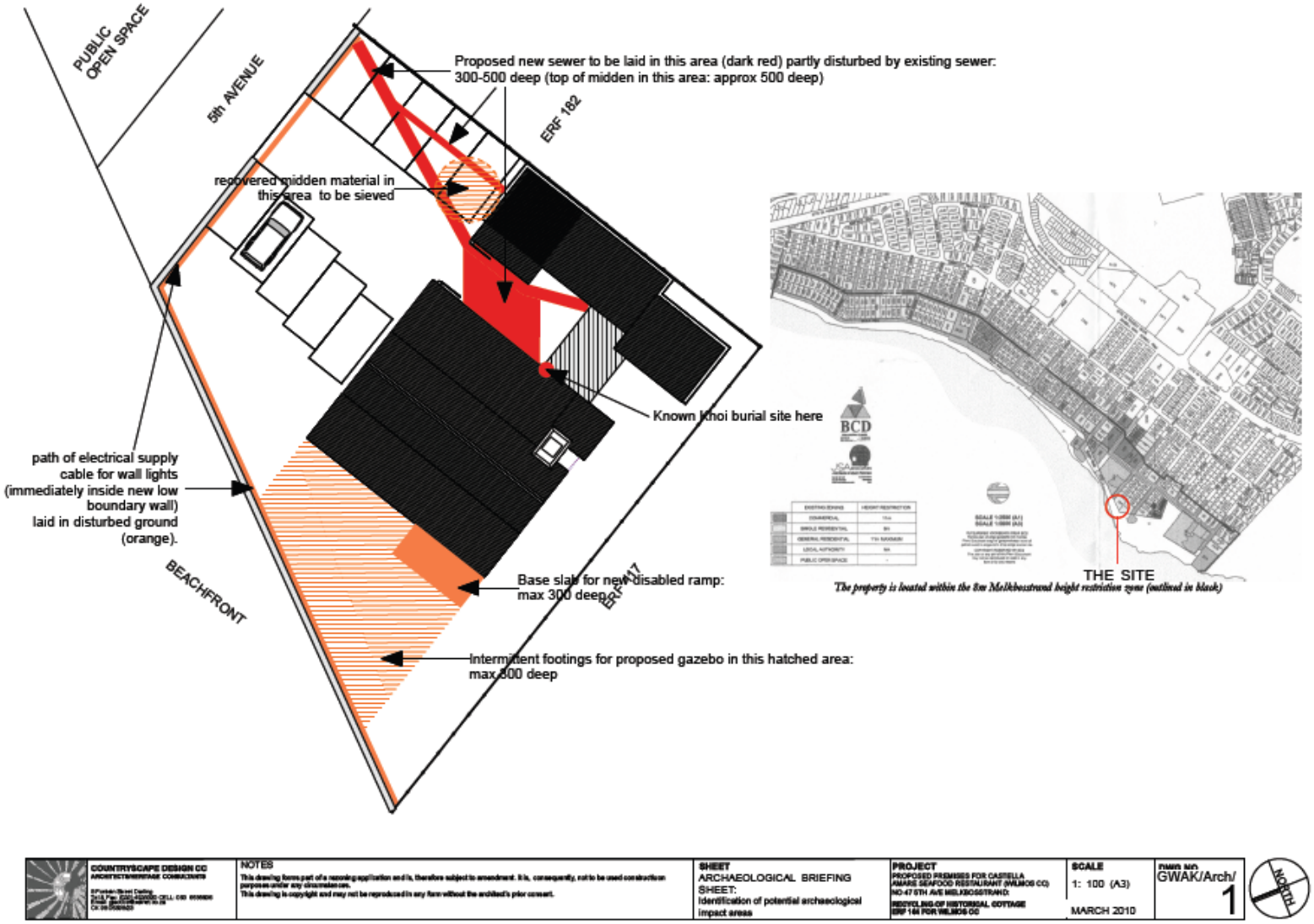


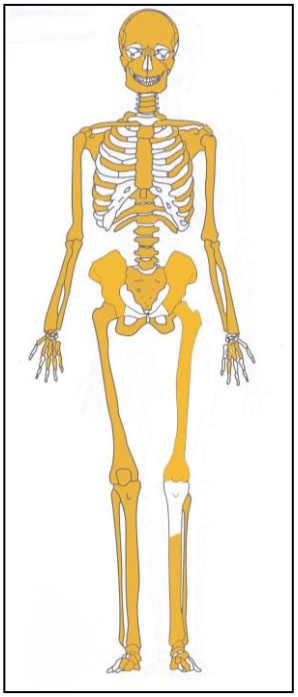
Figure A1: Briefing diagram prepared by Heritage Western Cape indicating areas of impact to archaeological resources.

13. APPENDIX B: OSTEOLOGICAL REPORT.

Prepared by: Genevieve Dewar, University of Toronto

1. Summary

The human burial identified at Erf 164 in Melkbosstrand is an old adult (60+) probable female of Khoisan descent. It is notoriously difficult to identify the specific age-at-death of older Khoisan individuals as they frequently lack the usual indicators of extreme old age used for other populations. There are few pathologies and numerous elements are covered in cement. The preservation of the remains is poor resulting in most bones being fragmented. This also means that the full suite of measurements was not accessible, however they were recorded when possible.



2. Methods

The skeleton was analysed at the University of Cape Town following standard methods of analysis. The inventory was recorded and the sex and estimated age at death was determined following Buikstra and Ubelaker (1994). Measurements were taken when possible using Mitutoyo digital vernier callipers and were recorded in mm.

3. Inventory

Even though the skeletal remains are fragmented, the majority of the elements were recovered with the exception of the proximal left tibia, the left temporal, both right and left pubis and some phalanges (see right). The pelvis and skull are particularly damaged making the identification of sex and age-at-death difficult.

4. Estimation of Sex

The sex of this individual is a probable female based on nine out of fourteen traits scoring for female (Buikstra and Ubelaker 1994).

Trait	Description	Sex
Muscle attachment sites	slight	female
Sciatic notch	moderate	unknown
Auricular surface	flat	male
Preauricular sulcus	very deep	female
Sacrum	slight curve	male
Supraorbital ridges	slight	female
Orbital margin	thin	female
Frontal bossing	present	female
Mastoid process	small	female
Occipital area	no protuberances	female
Ramus	broad	male
Chin	v-shaped	female
Gonial angle	obtuse	female
Gonion	flaring	male

5. Estimation of age-at-death

Based on the assumption that this individual is a female, the estimated age-at-death is 60+ years. All the long bone epiphyses are fused indicating this to be a mature individual (Buikstra and Ubelaker 1994). While the skull is too fragmented (and missing elements) to determine a proper sutural score, those that are present are obliterated suggesting that this is an individual who was 60+ (Buikstra & Ubelaker 1994). In addition, the dentition is heavily worn with molars exhibiting dentin pools indicating either a very old individual or someone who consumed a large amount of sand in their diet. As this individual was buried at the coast, they clearly were exposed to sandy conditions, it is unreliable to identify an exact age based on dental wear. In addition, the auricular surface of the innominates lack billowing, exhibit micro- and macroporocity and there is evidence for a rim. These traits suggest an age of 54+ (Buikstra & Ubelaker 1994).

6. Pathologies

There is substantial calculus (plaque) build up on the teeth as well as pre-mortem loss of the left second premolar of the mandible with an associated abscess. This could have lead to a severe infection. Additionally, there are several caries (cavities) in the right mandible that have caused the loss of >50% of the crown,(which today would have required root canal treatment). There is also slight evidence for osteoarthritic lipping on the face of the glenoid fossa of the left scapula, as well as on the articular surfaces of the cervical vertebrae. These all indicate an individual who was of advanced age at death.

7. Metrics

Where possible, measurements were recorded in order to establish a database of population variability. Femoral length is an estimate, due to the fact that the fragments were held together in order to measure maximum length.

Trait	side	mm
Thickness of ramus	L	34.3
Height of ramus	L	51.7
Thickness of mandible at mental foramen	L	11.5
Alveolar height		34.4
Femoral condylar breadth	L	69.6
Max head diameter of femur	L	40.8
Maximum length of femur	L	[387]*
Max head diameter of humerus	L	34.1
Max length of humerus	L	286

*estimate of length

8. Mass and Stature

It is difficult to use current formulae to determine the mass and stature of Khoisan individuals as the standards are based on much larger people such as Europeans or African Americans. It is therefore more informative to evaluate the proxies for mass and stature (femoral head and femoral length) against other Khoisan individuals (Pfeiffer & Sealy 2006). Comparing the

femoral metrics with Khoisan burials from the Western Cape who died in the same time period (Pfeiffer & Sealy 2006), this adult female is on the small end of the range for stature, but on the mid to large end of the range for body mass. She is however, entirely within the norm for late Holocene adult Khoisan females from the Western Cape.

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