

APPENDIX G3 – ARCHAEOLOGICAL IMPACT ASSESSMENT (HIA ANNEXURE C)

Pre-Application Draft Basic Assessment Report

**Basic Assessment for Mixed-Use Development on Project
Parcels O, P, A1, And A2 on Erven 158570 RE, 149294 RE,
177854 and 179076, Breakwater Precinct, V&A Waterfront,
Cape Town by the V&A Waterfront**

2026

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**ARCHAEOLOGICAL IMPACT ASSESSMENT: PROPOSED
DEVELOPMENT OF GRANGER BAY PRECINCT PHASE 1B, ON
PORTIONS OF REMAINDER ERF 158570 AND ERF 149294, V&A
WATERFRONT, CAPE TOWN, WESTERN CAPE**

Assessment conducted under Section 38 (8) of the National Heritage Resources Act (No. 25 of 1999) as part of an Environmental Impact Assessment

Prepared for:

Cindy Postlethwaite (Heritage Practitioner)

On behalf of:

Anchor Environmental Consultants (Pty) Ltd

Draft for Comment: 26 July 2025



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EXECUTIVE SUMMARY

Project Name

Granger Bay Precinct Phase 1B

Location

The approximate centrepoint of the project area: 33°54'4.58"S and 18°25'20.14"E.

Locality Plan

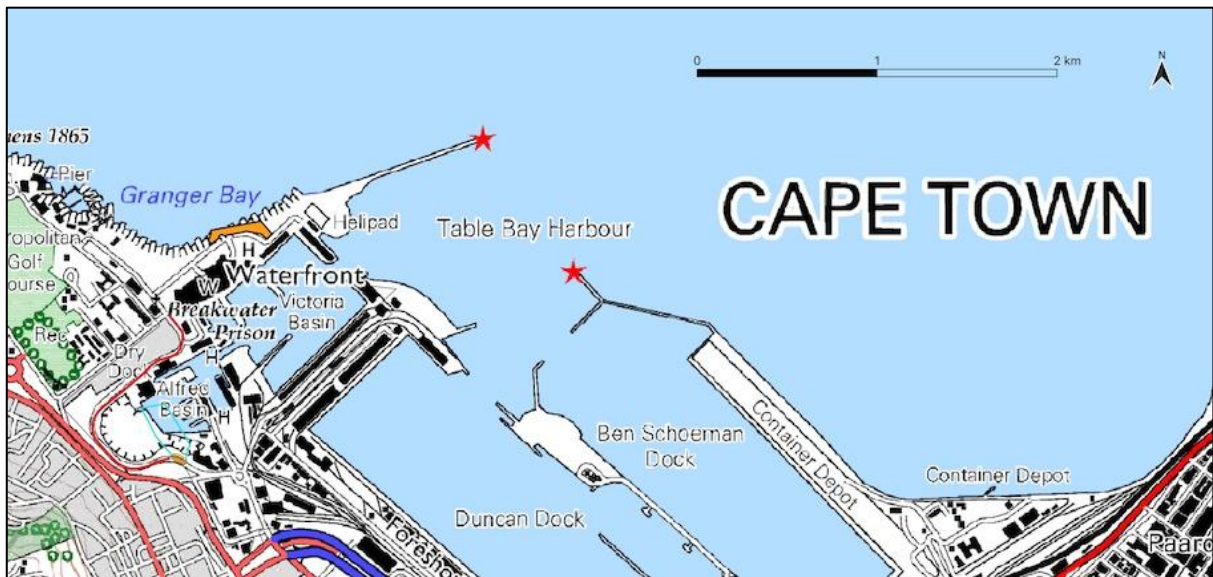


Figure 1: The location and extent of the Granger Bay Precinct Phase 1B project site (orange polygon) within its local context.

Purpose of the Study

TerraMare Archaeology (Pty) Ltd was appointed by Cindy Postlethwaite (Heritage Practitioner), on behalf of Anchor Environmental Consultants (Pty) Ltd, to undertake a desk-based archaeological impact assessment for the proposed development of Granger Bay Precinct Phase 1B, located between Breakwater Boulevard and the coastline in the Breakwater North precinct, Remainder Erf 158570 and Erf 149294, V&A Waterfront, Cape Town, Western Cape.

Brief Project Description

The proposed development of the Granger Bay Precinct Phase 1B includes development parcels O, P, a1 and a2. Buildings O and P are planned as residential and hotel, as part of the proposed residential-led development of the broader Granger Bay area.

Parcels a1 and a2 are earmarked for a turtle care center aimed at showcasing the rescue and rehabilitation of sea turtles.

A public open space, to be known as Atlantic Park is proposed at a key urban design junction at the end of the Promenade, Breakwater Boulevard, Victoria Wharf Shopping Centre (east

wing) and pedestrian link from Table Bay Square to Atlantic Square.

Brief Study Methodology

The proposed development area is located on made ground, comprising fill deposited at various stages between the late 19th and late 20th centuries as part of the development of the Breakwater precinct west of the historical breakwater wall in the harbour.

Archaeological monitoring of recent basement excavations at both the adjoining Q and R portions of the Granger Bay precinct and Quay 7 on the eastern side of the breakwater wall indicate that this fill is very varied and while there is some potential for the presence of historical artefacts within the fill, such material will have very little archaeological value, having lost both its original context and provenance.

The fill underlying the development site is, therefore, of very low archaeological potential or value.

The 2024 AIA for the whole of the V&A identified areas of archaeological sensitivity within the V&W and indicates that the project site has potential maritime archaeological sensitivity.

This desktop AIA, therefore, addresses the potential for the presence of maritime archaeological sites or material buried under the project area which could be impacted by the proposed development. It also addresses the potential for submerged pre-colonial archaeological material in or on the former seabed.

Findings

Maritime Archaeology: Several texts and a shipwreck database maintained by TerraMare Archaeology, indicate that more than 20 shipwrecks or shipping losses occurred in the area between the Green Point and Granger Bay between the 16th and 19th centuries.

Some of these wrecks can confidently be placed outside the study area because their remains have been found and their positions on the seabed are thus accurately known.

However, the vagueness of contemporary historical descriptions of many of the maritime casualties suggests that it would be wise to consider the possibility that at least some of the other recorded casualties as having occurred within the project area. Two examples are the *Wasp* (1863) and *Sheperd* (1874) which were lost slightly offshore near the Breakwater, and whose remains could be within the Granger Bay Precinct Phase 1B project area.

Submerged Pre-colonial Archaeology: Since the start of the Quaternary, approximately 2.6 million years ago, the world has been subject to a series of cooling and warming climatic cycles and sea level was mainly lower than it is today. During the last 900,000 years, during which our tool-making ancestors were colonising much of the world, global sea levels have fluctuated substantially on at least three occasions, the result of increased and decreased polar glaciation which cyclically locked up and released huge quantities of seawater from polar ice sheets. The most extreme recent sea level drop occurred between circa 20,000 and 17,000 years ago when at the height of the last glaciation, the sea was more than 120 m lower than it is today

Each of these low stands would have “added a large coastal plain to the South African land mass” where parts of the continental shelf were exposed as dry land. The exposed continental shelf was repeatedly populated by terrestrial flora and fauna, and by our human ancestors

who were dependant on these resources, and for periods numbering in the tens of thousands of years, on at least three occasions during the last 500,000 years, our ancestors inhabited areas of what is now seabed around the South African coast.

Increasingly frequent discoveries in various parts of the world of drowned, formerly terrestrial landscapes, often because of development-led seabed surveys and sampling, is providing evidence for the survival of prehistoric archaeological sites on and within the current seabed.

The recovery in the mid-1990s of three Early Stone Age handaxes, dating from between 300,000 and 1.4 million ago, from Pleistocene sediments in an ancient submerged and infilled river channel on the eastern shore of Table Bay provides local evidence that during periods of lower sea level our ancestors are likely to have moved out onto the exposed floor of Table Bay and left evidence of their use of that landscape.

Where landscape features and formerly terrestrial sediments have survived subsequent marine transgressions there is, thus, the potential to find pre-colonial archaeological sites and artefacts in submerged, seabed contexts within Table Bay.

Impacts

The proposed development of Granger Bay Precinct Phase 1B is likely to require substantial earthworks in the underlying fill, for the hotel and residential elements of the project. Impacts to maritime archaeological sites and material may occur where such earthworks intersect with the former seabed.

Based on recent experience at Quay 7 and at the Q and R sites adjacent to the Granger Bay Precinct Phase 1B project site, the assumption is that the fill disturbed by development-related activities on the Phase 1B site will be a similar conglomeration of mixed material from a variety of sources, some very recent, and of generally very low archaeological value or interest.

The provenance of the fill, from sites across the City of Cape Town, does mean that it may contain historical or archaeological objects or pockets of material of greater historical or archaeological interest, although their value will be limited.

Where the potential for encountering archaeological material of significance does exist is at the interface between overlying fill and the former seabed, where either maritime archaeological or pre-colonial archaeological sites and materials could be present.

Recommendations

The following recommendations are made in respect of measures to mitigate potential impacts to these two heritage receptors:

- Any groundworks on the Granger Bay Precinct Phase 1B site, to levels that may intersect with the former seabed must be subject to archaeological monitoring, with the necessary contingencies in place to allow the mitigation of shipwreck remains or pre-colonial archaeological material, should they be encountered. These contingencies may include the stoppage of work in the affected area until the necessary mitigation work has been concluded. Any such mitigation will be to the account of the developer.
- Monitoring visits should be conducted by a suitably experienced archaeologist at least once per week, but more regular visits may be required as excavations deepen, and the potential grows for encountering the interface with the former seabed.

- Archaeological information should be presented as part of the environmental training programme for all site staff and machine operators which will describe what sort of archaeological items could be found on site, how to identify them, and the reporting procedure to follow should material be found when the archaeologist is not on site.
- Should anything of interest be found by construction staff, this must immediately be reported to the project ECO and site manager, and the monitoring archaeologist called to site to assess the find and establish whether any form of mitigation is required. The sorts of material that would trigger such a call is large structural wooded or iron remains, layers of historical refuse containing particularly glass and ceramics, the remains of any built structures (although these are not expected in this area) and rocky, sandy or cobbly strata that may represent the former seabed.

The mitigation measures indicated above should be included in the project Environmental Management Programme.

Conclusion

Based on the assessment above, it is our reasoned opinion that the proposed development of the Granger Bay Precinct Phase 1B site has the potential, albeit low, to encounter maritime archaeological and/or submerged pre-colonial archaeological heritage resources below the modern fill, in or on the former seabed.

Provided the recommendations to mitigate and offset potential impacts are implemented under the Environmental Management Programme, it is our assessment that the proposed development of the Granger Bay Precinct Phase 1B site can be considered to be archaeologically acceptable and can be authorised.

THE AUTHOR

This study has been undertaken by John Gribble of TerraMare Archaeology (Pty) Ltd.

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John Gribble has an MA (UCT, 1989), in archaeology and has been working in cultural resource management since the early 1990s. He has worked in both the regulatory and commercial heritage management fields: the former during 13 years at the National Monuments Council / South African Heritage Resources Agency (SAHRA), and the latter as both a terrestrial and maritime archaeological consultant in South Africa and the UK.

He holds archaeological accreditation with the Association of Southern African Professional Archaeologists CRM section (Member #43) as follows:

- Principal Investigator: Maritime Archaeology and Colonial Archaeology; and
- Field Director: Stone Age Archaeology.

The author's CV is attached as Appendix A.

SPECIALIST REPORT REQUIREMENTS IN TERMS OF NEMA

This report is compiled in such a manner that it adheres to the EIA Regulation requirements as detailed in Appendix 6 of the NEMA EIA Regulations of 2014, as amended.

Section	Requirements	Section addressed in report
(a)	Details of	
	(i) the specialist who prepared the report; and	The Author
	(ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;	Appendix A
(b)	A declaration that the specialist is independent in a form as may be specified by the competent authority;	Appendix B
(c)	An indication of the scope of, and the purpose for which, the report was prepared, the quality and age of base data used for the specialist report and a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Sections 3 and 5
(d)	The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	N/A
(e)	A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 5
(f)	Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 7
(g)	An identification of any areas to be avoided, including buffers (if and where applicable);	N/A
(h)	A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers (if and where applicable);	Figures 4
(i)	A description of any assumptions made and any uncertainties or gaps in knowledge;	Section 5.4
(j)	A description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	Sections 6 - 8
(k)	Any mitigation measures for inclusion in the EMP;;	Section 9

(l)	Any conditions for inclusion in the environmental authorisation;	Section 9
(m)	Any monitoring requirements for inclusion in the EMPr or environmental authorization;	Section 9
(n)	A reasoned opinion—	Section 10
	(i) whether the proposed activity, activities or portions thereof should be authorized regarding the acceptability of the proposed activity or activities; and	Section 10
	(ii) if the opinion is that the proposed activity, activities, or portions thereof should be authorised, an avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Section 10
(o)	A description of any consultation process that was undertaken during the course of preparing the specialist report;	N/A
(p)	A summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	N/A
(q)	Any other information requested by the competent authority.	N/A

GLOSSARY

Archaeology: Remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures.

Dolos: A wave-dissipating concrete block used against the erosive force of waves as a form of coastal management. Invented in 1963, and first deployed in 1964 on the breakwater in East London.

Early Stone Age: Period of the Stone Age extending between approximately 2 million and 200 000 years ago.

Heritage: That which is inherited and forms part of the National Estate, as defined by the National Heritage Resources Act 25 of 1999.

Heritage Western Cape: The provincial heritage compliance authority for the Western Cape.

Later Stone Age: The archaeology of the last 20,000 years associated with fully modern people.

Marine Isotope Stage: Alternating warm and cool periods in the Earth's paleoclimate, deduced from oxygen isotope data reflecting changes in temperature derived from data from deep sea core samples.

Middle Stone Age: The archaeology of the Stone Age between approximately 200,000 and 20,000 years ago, associated with early modern humans.

SAHRA: South African Heritage Resources Agency – the compliance authority which protects national heritage.

ACRONYMS

AIA	Archaeological Impact Assessment
DEA&DP	Department of Environment Affairs and Development Planning
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Early Stone Age
HWC	Heritage Western Cape
LSA	Later Stone Age
MIS	Marine Isotope Stage
MSA	Middle Stone Age
NEMA	National Environmental Management Act (No 107 of 1998)
NHRA	National Heritage Resources Act (No 25 of 1999)
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System

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Plate 1: Views of the proposed development site showing its current nature and context. Top left and right show Breakwater Boulevard and the public park and walkway on the western, seaward edge of the site. Bottom left and right look east and south and show the development site with the Table Bay Hotel in the distance. The blue hoarding marks the eastern boundary of the development site (Photos: C Postlethwayt).	23
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1 INTRODUCTION

TerraMare Archaeology (Pty) Ltd was appointed by Cindy Postlethwaite (Heritage Practitioner), on behalf of Anchor Environmental Consultants (Pty) Ltd, to undertake a desk-based (Phase 1) archaeological impact assessment (AIA) for the proposed development of Granger Bay Precinct Phase 1B, between Breakwater Boulevard and the coastline in the Breakwater North precinct.

The project is located on Remainder Erf 158570 and Erf 149294 within the V&A Waterfront in Cape Town, Western Cape (see Figure 1 above and Figure 2).

This report provides baseline archaeological information for inclusion in the Scoping Report and Heritage Impact Assessment (HIA) is required as part of the Environmental Impact Assessment (EIA) being undertaken for the project.

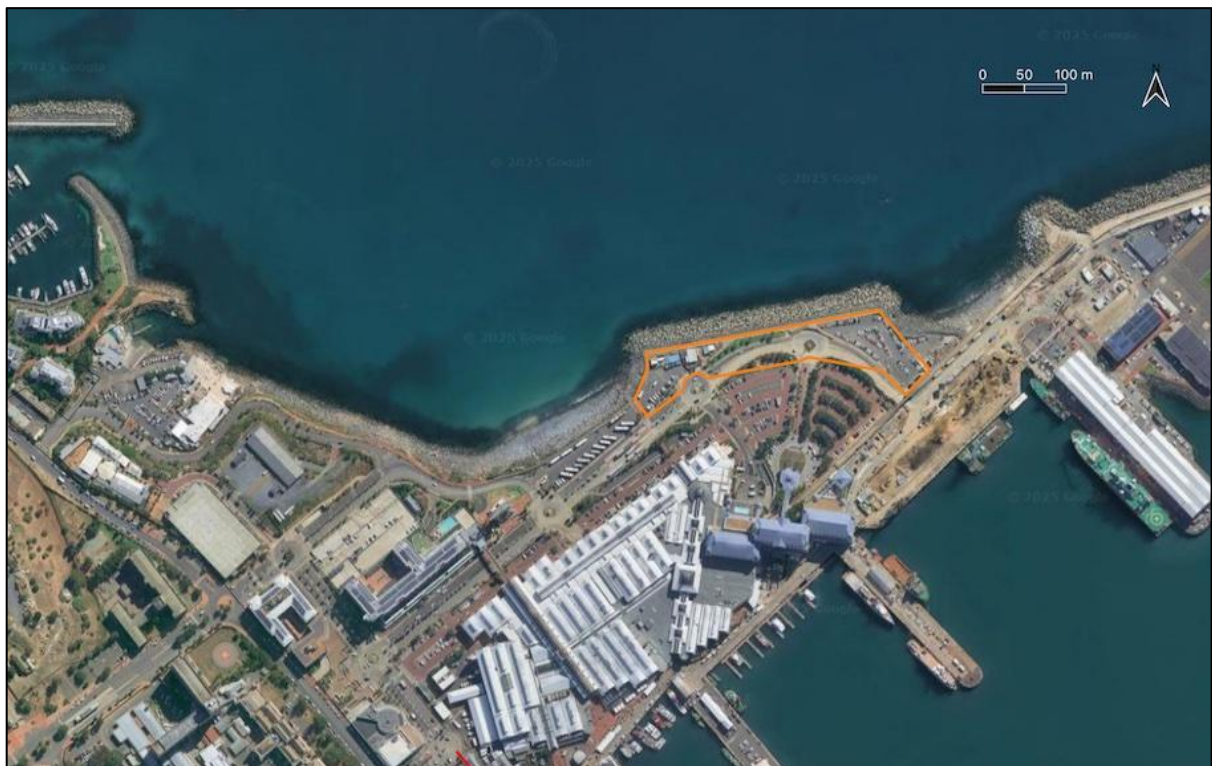


Figure 2: Granger Bay Precinct Phase 1B project area (orange polygon) overlain on a satellite image showing the location of the site within the V&A Waterfront (Source: Google Earth).

2 PROJECT DESCRIPTION

The proposed development of the north-eastern edge of the Granger Bay Precinct (Phase 1B) includes the development parcels known as O, P, a1 and a2 (Figure 3).

Buildings O and P are planned as residential and hotel uses, as part of the proposed residential-led development of the broader Granger Bay area. Parcels a1 and a2 are earmarked for a turtle care center and visitor center aimed at showcasing the rescue and rehabilitation of sea turtles.

A public open space, to be known as Atlantic Park is proposed at a key urban design junction at the end of the Promenade, Breakwater Boulevard, Victoria Wharf Shopping Centre (east wing) and pedestrian link from Table Bay Square to Atlantic Square.

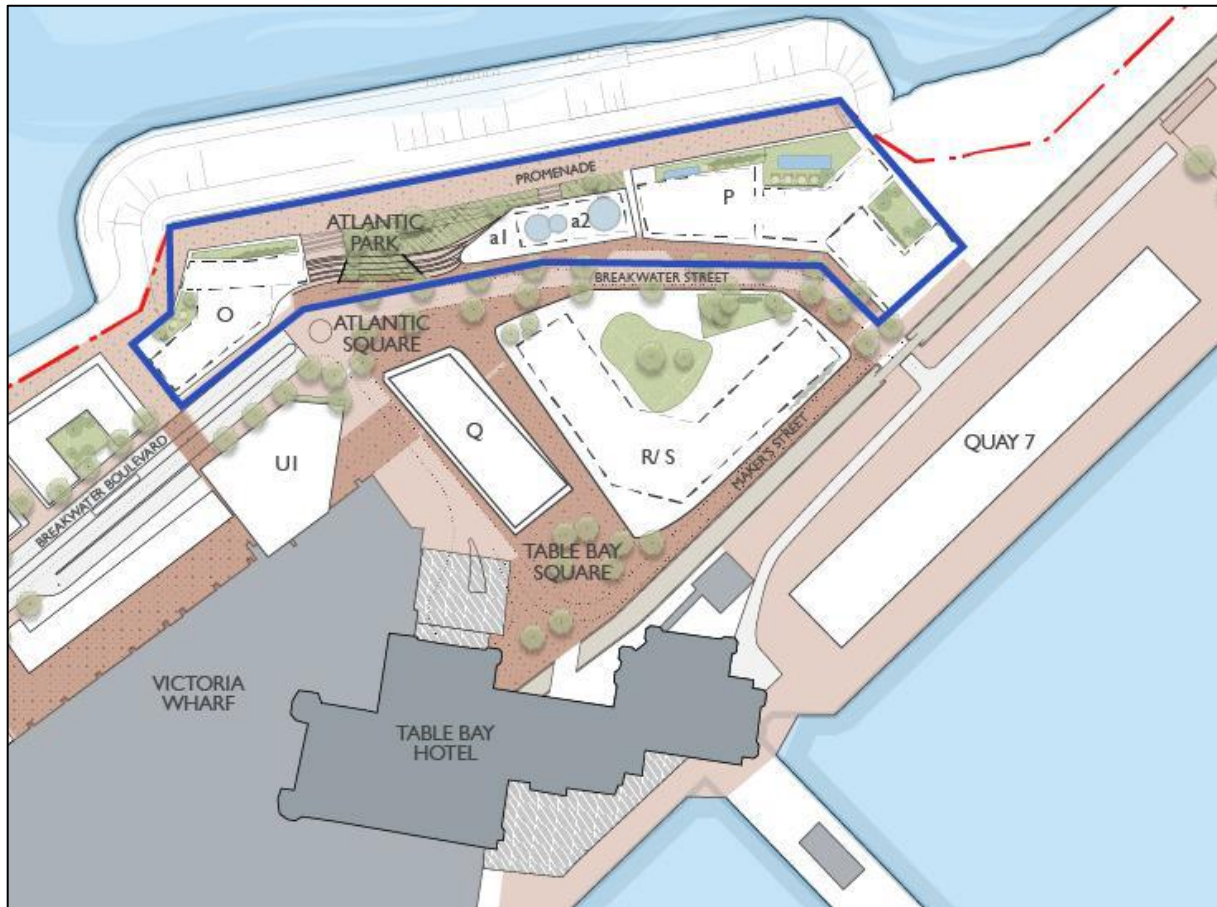


Figure 3: Proposed development layout for Phase GB01B (within the blue polygon). This phase includes Block P, O and a1 & a2.

3 TERMS OF REFERENCE

TerraMare Archaeology was appointed to produce a Phase 1 AIA to inform the Scoping Report and to form part of the HIA which is required as part of the EIA for the Granger Bay Precinct Phase 1B project.

The objectives of this AIA are:

- To determine whether there are likely to be important archaeological resources that will be impacted by the proposals,
- To indicate any constraints that will need to be considered in relation to the development proposal,
- To identify sensitive archaeological areas, and
- To recommend any necessary mitigation action.

4 RELEVANT LEGISLATION, POLICY & GUIDELINES

4.1 National Heritage Resources Act (No. 25 of 1999)

The National Heritage Resources Act (NHRA) came into force in 2000 with the establishment of the SAHRA, replacing the National Monuments Act (No 28 of 1969 as amended) and the National Monuments Council as the national agency responsible for the management of South Africa's cultural heritage resources.

The NHRA reflects the tripartite (national/provincial/local) nature of public administration under the South African Constitution and makes provision for the devolution of cultural heritage management to the appropriate, competent level of government. In the Western Cape this is Heritage Western Cape (HWC).

Because national government is responsible for the management of the seabed below the mean high water mark, however, the management of maritime and underwater cultural heritage resources under the NHRA does not devolve to provincial or local heritage resources authorities but remains the responsibility of the national agency, SAHRA.

Because the proposed development will take place on reclaimed land there is a possibility that earthworks for the project will encounter the former seabed, this AIA should be submitted to both SAHRA and HWC as part of the statutory EIA public comment process.

The NHRA gives legal definition to the range and extent of what are considered to be South Africa's heritage resources. According to Section 2(xvi) of the Act a heritage resource is "any place or object of cultural significance". This means that the object or place has aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

In terms of the definitions provided in Section 2 of the NHRA, heritage resources potentially relevant to this archaeological assessment are:

- Material remains of human activity which are in a state of disuse and are in or on land [which includes land under water] and which are older than 100 years, including artefacts, human and hominid remains and artificial features;
- Rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years; and
- Any archaeological artefact, which as movable property of cultural significance may be protected in terms of any provisions of the NHRA.

As per the definitions provided above, these archaeological resources are protected by the NHRA and a permit from SAHRA or HWC, depending in this case on the context of any find, is required to destroy, damage, excavate, alter, deface or otherwise disturb any such sites or material.

It is also important to be aware that in terms of Section 35(2) of the NHRA, all archaeological material the property of the State and must, where recovered from a site, be lodged with an appropriate museum or other public institution.

Section 38 of the NHRA requires impact assessments for certain kinds of development. In relation to this project, the relevant activities are:

- A development which will change the character of a site exceeding 5000 m² in extent (Section 38(1)(c)(i)).

4.1.1 Grading of Heritage Resources

The South African heritage resources management system is based on grading, by means of which the appropriate level of management responsibility is assigned to any heritage resource.

Grading, according to Winter & Oberholzer (2013) is "generally based on the intactness, rarity and representivity of the resource, as well as its role in the larger landscape or cultural

context”.

Each heritage resource identified in this AIA was assessed according to criteria, specified in Section 3 of the NHRA, for assigning heritage significance. These are:

- Importance in the community or pattern in South Africa's history;
- Possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- Importance in demonstrating a high degree of creative or technical achievement during a particular period;
- Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- Strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- Significance in relating to the history of slavery in South Africa.

The generally accepted heritage resource grades are shown in Table 1 below.

Table 1: Grading of heritage resources (Source: Baumann & Winter 2005: Box 5).

Grade	Level of significance	Description
1	National	Of high intrinsic, associational and contextual heritage value within a national context, i.e. formally declared or potential Grade 1 heritage resources.
2	Provincial	Of high intrinsic, associational and contextual heritage value within a provincial context, i.e. formally declared or potential Grade 2 heritage resources.
3A	Local	Of high intrinsic, associational and contextual heritage value within a local context, i.e. formally declared or potential Grade 3A heritage resources.
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources.
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources.

4.1.2 Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment Reports

SAHRA has published *Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment Reports* (SAHRA, 2007), in terms of which standards an AIA must:

- Identify the archaeological sites on a proposed development site,
- Assess their significance,
- Comment on the impact of the development on these archaeological resources, and
- Make recommendations for their mitigation or conservation as appropriate.

Similarly, HWC has published its *Guide for Minimum Standards for Archaeology and Palaeontology Reports Submitted to Heritage Western Cape* (HWC, 2021) which lays out its requirements for a range of reports, including specialist reports produced during the impact assessment process.

This AIA complies with both SAHRA and HWC's minimum standards and is based on the report template for Section 38 (1 and 8) HIAs set out in Section 9.2. of the former document.

4.2 National Environmental Management Act (No 107 of 1998)

The National Environmental Management Act (NEMA), as amended, provides a framework for the integration of environmental issues into the planning, design, decision-making and implementation of plans and development proposals that are likely to have a negative effect on the environment.

Regulations governing the environmental authorisation process have been promulgated in terms of NEMA and include the EIA Regulations, 2014 as amended (GNR R326/2017) and Listing Notices 1 – 3 (GNR 324, 325 and 327/2017). These regulations were amended in April 2017 by Government Notices 324, 325, 326 and 327.

This project triggers a number of activities in the Listing Notices and will thus, in terms of GNR 325, be subject to an EIA process. V&AW will be required to obtain a positive EA from the Department of Environment Affairs and Development Planning (DEA&DP) prior to commencement of the proposed activities.

5 METHODOLOGY

The proposed development area is located on made ground, comprising fill deposited at various stages between the late 19th and late 20th centuries as part of the development of the Breakwater precinct of the harbour.

Archaeological monitoring of recent basement excavations at both the adjoining Q and R portions of the Granger Bay precinct (Gribble, in prep) and Quay 7 indicate that this fill is very varied (Gribble & Euston-Brown, 2024), and while there is some potential for the presence of historical artefacts within the fill, this material will have very little archaeological value, because it has lost both its original context and provenance. The fill underlying the development site is, therefore, of very low archaeological potential or value.

The 2024 AIA for the whole of the V&A identified areas of archaeological sensitivity within the V&W and indicates that the project site has potential maritime archaeological sensitivity (Gribble, 2024) (Figure 4).

This desktop AIA, therefore, addresses the potential for the presence of submerged pre-colonial and maritime archaeological sites or material buried under the project area which could be impacted by the proposed development.

The following sections provide an outline of the approach and methodology used in the assessment.



Figure 4: The Phase 1B project area (orange polygon) overlaid on the archaeological sensitivities within the V&W identified in Gribble (2024). The project area (orange) is in an area of maritime sensitivity (blue) and adjacent to the pink polygon which represents the shipwreck potential of Granger Bay.

5.1 Study Area

The study area for this AIA is shown on **Error! Reference source not found.** In the east it is bounded by the historical Breakwater Wall, the Table Bay Hotel, the Victoria Wharf shopping centre and Breakwater Boulevard. On the seaward side, the limit of the study area is defined by a 200 m buffer around the western edge of the proposed development site.

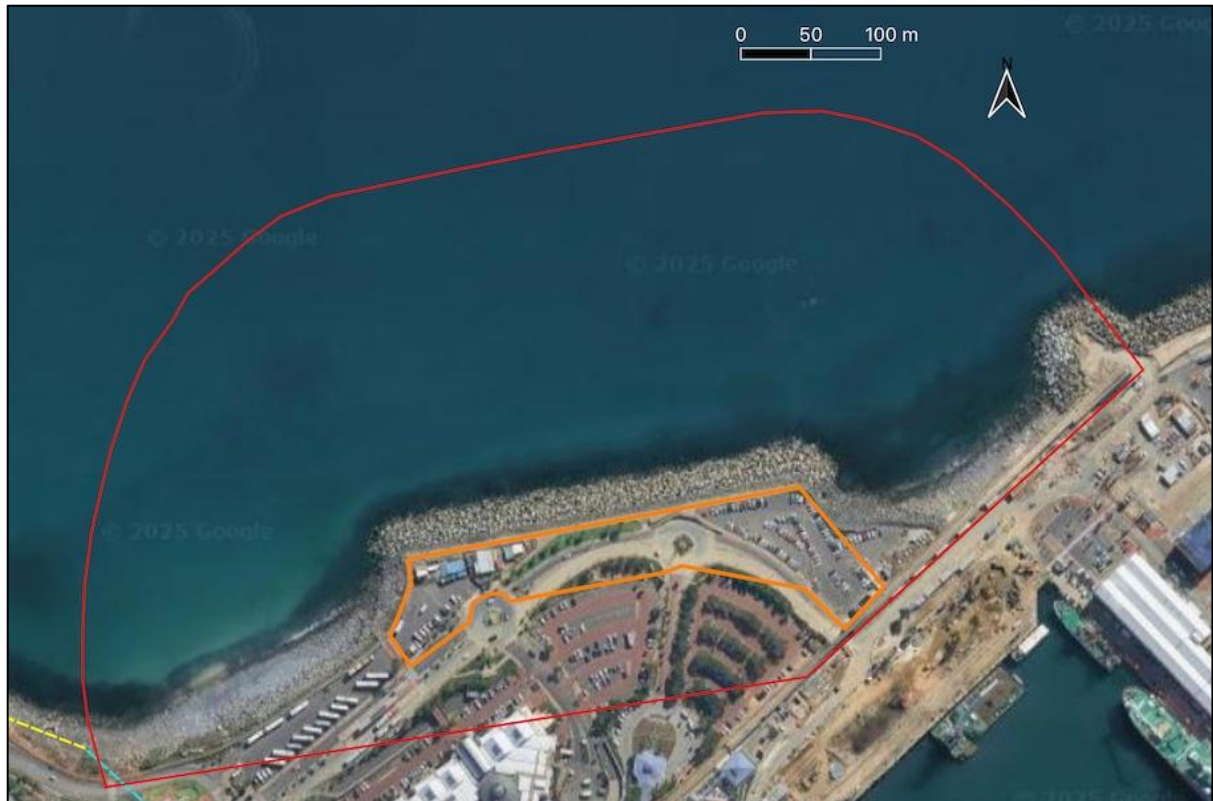


Figure 5: Study Area utilized for this AIA indicated by the red polygon (Source: Google Earth).

5.2 Sources of Information

A survey of available and relevant literature was carried out to assess the archaeological context within which the Granger Bay Phase 1B project will be set.

The two principal documents used were TerraMare Archaeology's AIA for the whole of the V&AW (Gribble, 2024) and ACO Associate's AIA for the approved Granger Bay Land Reclamation project (Schietecatte and Hart, 2014).

The results of archaeological monitoring of groundworks at Quay 7 (Gribble & Euston-Brown, 2024) and most recently on Portions Q and R of the Granger Bay precinct (Gribble, in prep) provided useful insight into the likely nature and makeup of the fill that underlies the Phase 1B site.

Other sources of information used are shown in Table 2 below and include published archaeological papers and reports for the general project area and unpublished archaeological and heritage impact assessments that have been undertaken in the vicinity of the project site, available on the SAHRIS online platform (<https://sahris.sahra.org.za/>) or sourced from other consultants.

Table 2: Information sources used in this assessment

Data/Information	Source	Date	Type	Description
Maps	Chief Directorate: National Geo- Spatial Information	Various	Spatial	Historical and current 1:50 000 topographic maps of the study area and immediate surrounds
Aerial	Chief Directorate: National Geo-	Various	Spatial	Historical aerial photography of the study area

photographs	Spatial Information			and immediate surrounds
Satellite imagery	Google Earth	Various	Spatial	Recent and historical satellite imagery of the study area and immediate surrounds
Cadastral data	Chief Directorate: National Geo-Spatial Information	Various	Survey diagrams	Historical and current survey diagrams, property survey and registration dates
Background data	South African Heritage Resources Information System (SAHRIS)	Various	Reports	Previous impact assessments for any developments in the vicinity of the study area
Background data	Books, journals, websites	Various	Books, journals, websites	Historical and current literature describing the study area and any relevant aspects of cultural heritage.

5.3 Archaeological Field Assessments

Given the modern built-up nature of the terrestrial portion of the study area and its foundation on landfill, no archaeological field assessment has been conducted for this AIA.

With respect to the offshore portion of the development site indicated on **Error! Reference source not found.**, we have not been able to find evidence of any existing geophysical or other seabed surveys covering the area, and the maritime archaeological assessment is thus also desk-based.

5.4 Restrictions and Assumptions

South Africa's record of maritime and underwater cultural heritage resources is based on a mix of information derived in the main from historical documents and secondary sources and from very limited primary sources such as geophysical data and other field-based observations and site recordings.

While every effort has been made to ensure the accuracy of the information presented below, the reliance on secondary data sources means that there are considerable gaps and inaccuracies in this record and the locations of any wrecks referred to in the following sections and are, for the most part, approximate.

The potential also exists for currently unknown and/or unrecorded maritime heritage sites to be encountered within the Granger Bay Precinct Phase 1B project area.

Direct evidence for submerged pre-colonial archaeological sites and materials on the South African continental shelf is extremely limited. However, submerged archaeological sites and materials found in offshore contexts elsewhere in the world and the known terrestrial archaeology of the South African, are indicative of the potential for such submerged sites and materials around our coast.

6 RECEIVING ENVIRONMENT

The development site is located at the northern end of the Granger Bay precinct. In the west it is bounded by the dolos revetment and the sea, while in the north-east and east it abuts the historical Breakwater Wall and is overlooked by the Table Bay Hotel, respectively. The centre

of the site straddles Breakwater Boulevard, while at its southern and northern extremities it encompasses parking lots (Figure 2 and Plate 1).

The entire development site is made ground, comprising fill deposited at various stages between the late 19th and late 20th centuries as part of the development of the Breakwater precinct of the harbour. Archaeological monitoring of recent basement excavations at both the adjoining Q and R portions of the Granger Bay precinct and Quay 7 (see Figure 3 above), have provided an insight into the nature of the made ground which is illustrated in Plate 2 below.



Plate 1: Views of the proposed development site showing its current nature and context. Top left and right show Breakwater Boulevard and the public park and walkway on the western, seaward edge of the site. Bottom left and right look east and south and show the development site with the Table Bay Hotel in the distance. The blue hoarding marks the eastern boundary of the development site (Photos: C Postlethway).



Plate 2: Views of the fill comprising the made ground, exposed during basement excavations in Portions Q and R of the Granger Bay precinct site adjacent to the proposed Phase 1B development site (Photos: J Kaplan).

7 BASELINE DESCRIPTION

7.1 Maritime Archaeology

Since the Portuguese explorer Vasco da Gama pioneered the sea route around Africa from Europe to the East in 1498, the southern tip of the African continent has played a vital role in global economic and maritime affairs, and until the opening of the Suez Canal in 1869, represented the most viable route between Europe and the markets of the East as shown on Figure 6 (Axelson, 1973; Turner, 1988; Gribble, 2002; Gribble and Sharfman, 2013).

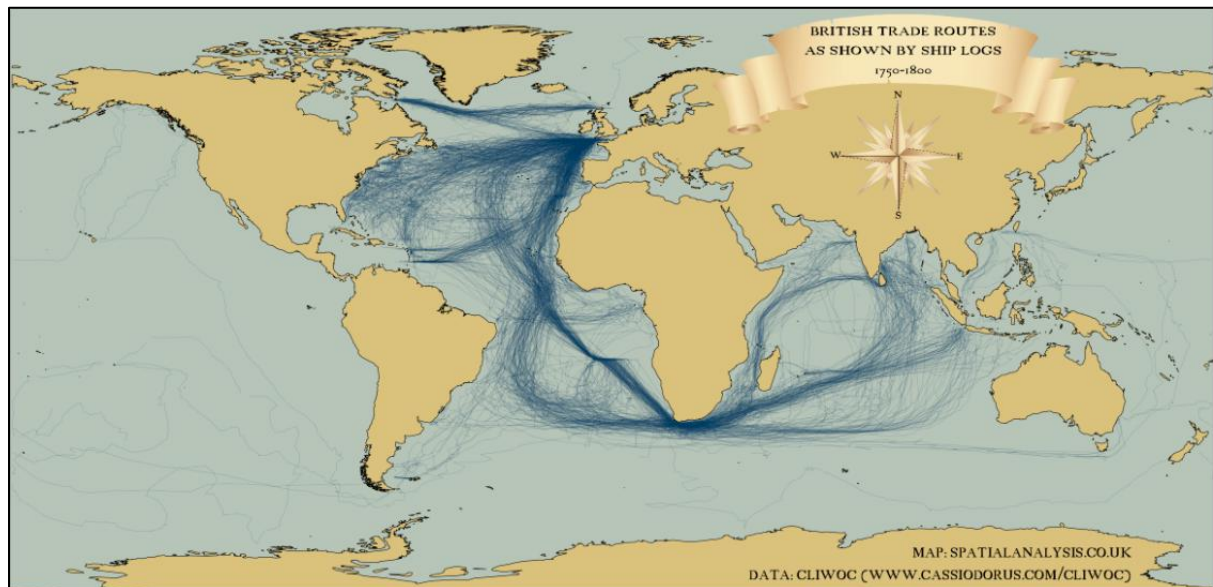


Figure 6: Example of the strategic position of the South African coast in global trade. British trade routes as shown by ship logs – 1750 to 1800 (Source: <http://www.theguardian.com/news/datablog/2012/apr/13/shipping-routes-history-map>).

During that time, at least 2,800 vessels are known to have sunk, or been wrecked, abandoned or scuttled in South African waters. This list of casualties is not believed to be complete and certainly does not include the yet unproven potential for shipwrecks and other sites that relate to pre-European, Indian Ocean maritime exploration, trade and interactions along the South African east coast.

South Africa's historical shipwrecks are an extremely valuable repository of information about global maritime trade during the last five centuries and potentially much further back into the past. These sites contain a wealth of cultural material associated with that trade and clues to the political, economic, social and cultural changes that accompanied this trade, and which contributed to the creation of the modern world.

There are records of more than 400 maritime casualties in the historical anchorage in Table Bay, the largest concentration of historical wrecks in South African waters. This is the result of a combination of factors, including a notorious lee shore to the Western Cape's winter storms, the long history of the bay as busy shipping hub, and indifferent harbour facilities for most of that period (Burman, 1976; Turner, 1988).

Unlike the southern and eastern shores of Table Bay where the bulk of historical shipping casualties occurred, however, the north-western portion of the bay, including Granger Bay, was relatively protected from the winter north-westerlies, and shipwrecks were less common

in this area.

Nevertheless, several texts (see Burman, 1976; Turner, 1988; Durden, 1992) and a shipwreck database maintained by TerraMare Archaeology, indicate that more than 20 shipwrecks or shipping losses occurred in the area between the Green Point and Granger Bay between the 16th and 19th centuries. Table 3 lists the recorded wrecks in this area.

Table 3: List of historical wrecks recorded in the vicinity of the project area

Name	Date	Place
<i>Apollo</i>	1823	Ran ashore at Green Point close to the Moulin Battery
<i>Arabia</i>	1858	Struck rocks and wrecked at Mouille Point
<i>Athens</i>	1865	Wrecked on the rocks between Green Point and Mouille Point
<i>Catherine Jamieson</i>	1840	Ran aground on rocks at Mouille Point
<i>Chieftan</i>	1848	Wrecked on Mouille Point
<i>Dido</i>	1853	Wrecked on rocks at Mouille Point
<i>Eliza</i>	1863	Ran aground on rocks at Mouille Point
<i>Ellen Maria</i>	1868	Wrecked on the rocks at Green Point
<i>Enchantress</i>	1849	Wrecked between Green Point and Mouille Point
<i>Frances</i>	1840	Ran ashore at Mouille Point
<i>Helen</i> / "Glass Wreck"	1842	Ran ashore at Mouille Point
<i>Highfields</i>	1902	Sank after collision with the <i>Kaiser</i> just outside the Breakwater
<i>Hoop</i>	1784	Ran ashore close to Mouille Point
<i>Juliana</i>	1839	Ran ashore at Mouille Point
<i>Mary Stewart</i>	1842	Went ashore between the lighthouses
<i>Miner</i>	1857	Capsized off Granger Bay
<i>Mulgrave Castle</i>	1825	Driven onshore and wrecked close to Green Point lighthouse
<i>Olga R</i>	1885	Ran aground on the reef at the point
<i>Palmer</i>	1840	Ran aground on rocks between the lighthouse and Moulin Battery
<i>Piscatatqua</i>	1865	Ran ashore opposite the wreck of the <i>Athens</i>
<i>Prince Rupert</i>	1841	Ran ashore at Mouille Point
<i>Reno</i>	1883	Ran aground at Mouille Point
<i>Royal William</i>	1837	Struck rocks at Green Point near Lazar's Fisheries
<i>Sheperd</i>	1874	Foundered on north side of Breakwater
<i>Sincapore</i>	1832	Ran ashore at Mouille Point
<i>Swea</i>	1852	Ran ashore near the "old" lighthouse
<i>Udeny Castle</i>	1840	Ran ashore at Mouille Point
<i>Wasp</i>	1863	Capsized outside the Breakwater

Some of these wrecks - for example the *Athens*, the *Highfields* and the *Helen* (also known as the Glass Wreck) - can confidently be placed outside the study area because their remains

have been found and their positions on the seabed are thus accurately known.

However, the vagueness of contemporary historical descriptions of many of the maritime casualties suggests that it would be wise to consider the possibility that at least some of the other recorded casualties listed in Table 3 as having occurred within the project area. Two examples are the *Wasp* (1863) and *Sheperd* (1874) which were lost slightly offshore near the Breakwater, and whose remains could be within the Granger Bay Precinct Phase 1B project area.

7.2 Submerged Pre-colonial Archaeology

Since the start of the Quaternary, approximately 2.6 million years ago, the world has been subject to a series of cooling and warming climatic cycles and sea level was mainly lower than it is today. During the last 900,000 years, during which our tool-making ancestors were colonising much of the world, global sea levels have fluctuated substantially on at least three occasions, the result of increased and decreased polar glaciation which cyclically locked up and released huge quantities of seawater from polar ice sheets.

The most extreme recent sea level drop occurred between circa 20,000 and 17,000 years ago when, during Marine Isotope Stage 2 (MIS) at the height of the last glaciation, the sea was more than 120 m lower than it is today (Waelbroeck *et al*, 2002; Rohling *et al*, 2009). Similar sea level low stands occurred during MIS 4 (~70,000 years ago), MIS 6 (~190,000 years ago), MIS 8 (~301,000 years ago) and MIS 12 (~478,000 years ago).

Each of these low stands would have “added a large coastal plain to the South African land mass” (Van Andel, 1989:133) where parts of the continental shelf were exposed as dry land (see Cawthra *et al*, 2016) (Figure 7). The exposure of the continental shelf would have been most pronounced on the wide Agulhas Bank off the southern Cape coast, and it is estimated that a new area of land, as much as 80,000 km² in extent, was exposed during the successive glacial maxima (Fisher *et al*, 2010).

The exposed continental shelf was repeatedly populated by terrestrial flora and fauna, and also by our human ancestors who were dependant on these resources (Compton, 2011), and for periods numbering in the tens of thousands of years, on at least three occasions during the last 500,000 years, covering the latter part of the Earlier Stone Age (ESA), the MSA, and the early LSA, our ancestors inhabited areas of what is now seabed around the South African coast.

This means that a large part of the archaeological record of the later ESA, MSA and early LSA is located on the continental shelf and is now “inundated and for all practical purposes absent from [that] record” (Van Andel, 1989:133-134).

Until relatively recently there was little or no global understanding of the potential for, or access to, submerged prehistoric landscapes and sites on the continental shelf. Increasingly frequent discoveries in various parts of the world of drowned, formerly terrestrial landscapes, often because of development-led seabed surveys and sampling, is, however, providing increasing evidence for the survival of prehistoric archaeological sites on and within the current seabed.

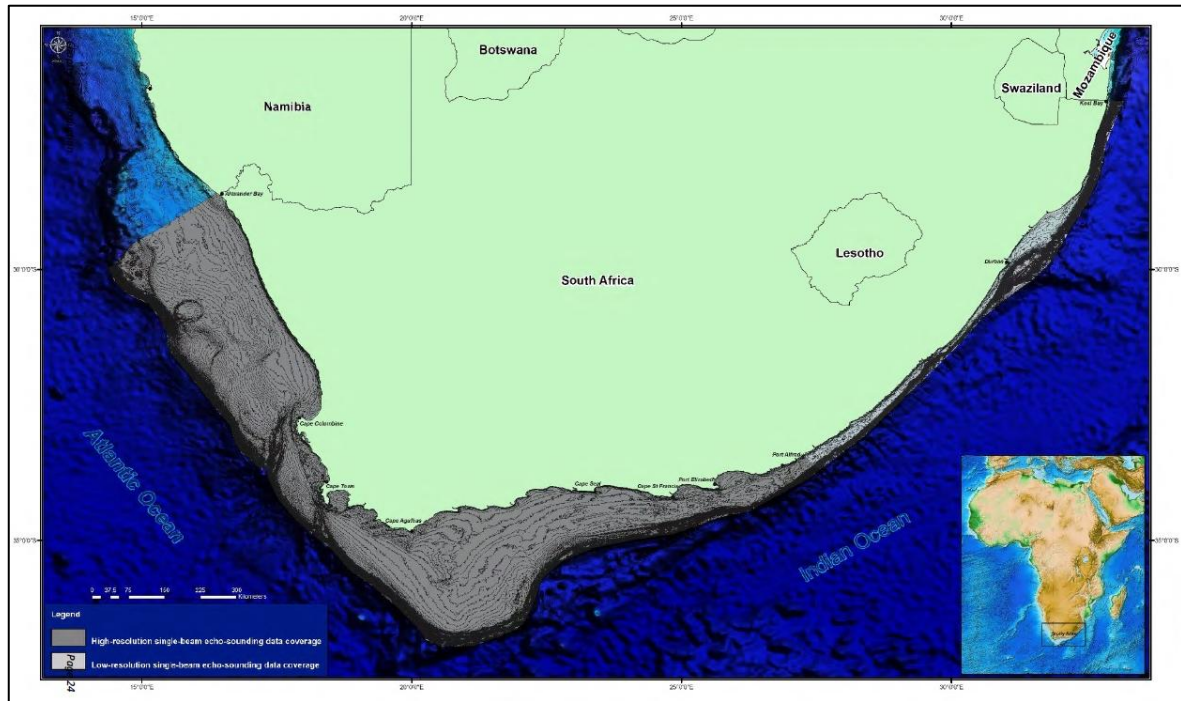


Figure 7: Extent of the South African continental shelf (light and dark grey area) (After De Wet, 2013).

Well-known examples of such evidence include archaeological material and late Pleistocene faunal remains recovered in the nets of fishing trawlers in the North Sea between the United Kingdom and the Netherlands throughout the 20th century (Peeters *et al*, 2009; Peeters, 2011) and the University of Birmingham's archaeological interpretation of 3D seismic data, collected in the same area by the oil and gas industry, which has revealed well-preserved prehistoric landscape features across the southern North Sea (Fitch *et al*, 2005, Gaffney *et al*, 2010).

Since the University of Birmingham work there have been increasing numbers of reports of submerged archaeological sites and material, for example, Tizzard *et al* (2011) and Faught and Gusick (2011) in Benjamin *et al* (2011).

Closer to home, there is archaeological evidence for a prehistoric human presence in Table Bay. In 1995 and 1996 during the excavation of two Dutch East India Company shipwrecks, the *Oosterland* and *Waddinxveen*, divers recovered three ESA handaxes from the seabed under the wrecks (Figure 8).

The stone tools, which are between 300,000 and 1.4 million years old, were found at a depth of 7-8 m below mean sea level and were associated with Pleistocene sediments from an ancient submerged and infilled river channel. Their unrolled and unworn condition indicate that they had not been carried to their current position by the ancient river and suggests that they were found more or less where they were dropped by ESA hominins more than 300,000 years ago (possibly during MIS 8 (~301,000 years ago) or MIS 12 (~478,000 years ago)), when the sea level was at least 10 m lower than it is today and much of Table Bay was an emergent terrestrial landscape (Werz and Flemming, 2001; Werz *et al*, 2014).

During periods of lower sea level our ancestors are likely to have moved out onto the exposed floor of Table Bay and left evidence of their use of that landscape. Where landscape features and formerly terrestrial sediments have survived subsequent marine transgressions there is, thus, the potential to find pre-colonial archaeological sites and artefacts in submerged, seabed contexts within Table Bay.



Figure 8: Location of the find of Table Bay ESA handaxes (inset) off Milnerton (top arrow) overlain on magnetometer data which shows the submerged palaeo-channel (green) of the Salt River (bottom arrow) (Sources: Google Earth; <http://www.aimure.org/index.php/aimure-projects>).

8 IMPACT ASSESSMENT

Activities associated with the Granger Bay Precinct Phase 1B project have the potential to impact maritime archaeological and submerged pre-colonial archaeological resources in or on the former seabed, below the fill that comprises the current land surface of the project area.

Terrestrial historical archaeological resources are not expected on the project site. Although historical artefacts may be present within the fill, these will have little archaeological value, because they will lack both their original context and provenance. Terrestrial historical archaeology has thus been scoped out of the impact assessment.

8.1 Maritime Archaeology

The proposed development of Phase 1B project is likely to include substantial earthworks in the underlying fill for the hotel and residential elements of the project.

Impacts to maritime archaeological sites and material may occur where such earthworks intersect with the former seabed.

Should they occur, these impacts will be direct and may result in the damage to, or destruction of archaeological sites and/or artefacts.

Impacts will be local in extent, occurring only within the footprint of development-related activities, but they will be permanent, because archaeological sites and materials are a non-renewable resource and cannot recover if damaged.

Because it is not known if there are any wrecks in the Granger Bay Phase 1B project area, it is difficult to assess the significance of impacts, which depends to a large degree on the archaeological value of the affected site or material. It is, however, likely that impacts to a

previously undiscovered wreck will be medium to high, which could be reduced to low with the implementation of suitable mitigation measures.

8.2 Submerged Pre-colonial Archaeology

As with maritime archaeological sites and material, impacts to submerged pre-colonial archaeological resources may occur where earthworks intersect with the former seabed.

Should they occur, impacts will be direct and may result in the damage to, or destruction of archaeological sites and/or artefacts.

Impacts will be local in extent, occurring only within the footprint of development-related activities, but they will be permanent, because archaeological sites and materials are a non-renewable resource and cannot recover if damaged.

It is almost certain, that at times of lower sea levels, our ancestors utilised and occupied the present floor of Table Bay and left traces of their presence in and on the land. If such archaeological material has survived the subsequent marine transgressions and is sequestered in the seabed underlying the Phase 1B project area, the significance of any project-related impacts on such resources is likely to be high. The implementation of appropriate mitigation measures could reduce the impact significance to medium.

9 RECOMMENDED MITIGATION MEASURES

Based on recent experience at Quay 7 and at the Q and R sites adjacent to the Granger Bay Precinct Phase 1B project site, the assumption is that the fill disturbed by development-related activities on the Phase 1B site will be a similar conglomeration of mixed material from a variety of sources, some very recent, of generally very low archaeological value or interest.

The provenance of the fill, from sites across the City of Cape Town, does mean that it may contain historical or archaeological objects or pockets of material of greater interest, although their archaeological value will be limited.

Where the potential for encountering archaeological material of significance does exist is at the interface between overlying fill and the former seabed, where either maritime archaeological or pre-colonial archaeological sites and materials could be present.

The following recommendations are made in respect of measures to mitigate potential impacts to these two heritage receptors:

- Any groundworks on the Granger Bay Precinct Phase 1B site, to levels that may intersect with the former seabed must be subject to archaeological monitoring, with the necessary contingencies in place to allow the mitigation of shipwreck remains or pre-colonial archaeological material, should they be encountered. These contingencies may include the stoppage of work in the affected area until the necessary mitigation work has been concluded. Any such mitigation will be to the account of the developer.
- Monitoring visits should be conducted by a suitably experienced archaeologist at least once per week, but more regular visits may be required as excavations deepen, and the potential grows for encountering the interface with the former seabed.
- Archaeological information should be presented as part of the environmental training programme for all site staff and machine operators which will describe what sort of

archaeological items could be found on site, how to identify them, and the reporting procedure to follow should material be found when the archaeologist is not on site.

- Should anything of interest be found by construction staff, this must immediately be reported to the project ECO and site manager, and the monitoring archaeologist called to site to assess the find and establish whether any form of mitigation is required. The sorts of material that would trigger such a call is large structural wooded or iron remains, layers of historical refuse containing particularly glass and ceramics, the remains of any built structures (although these are not expected in this area) and rocky, sandy or cobbly strata that may represent the former seabed.

The mitigation measures indicated above should be included in the project Environmental Management Programme (EMPr).

10 CONCLUSION

Based on the assessment above, it is our reasoned opinion that the proposed development of the Granger Bay Precinct Phase 1B site has the potential, albeit low, to encounter maritime archaeological and/or submerged pre-colonial archaeological heritage resources below the modern fill, in or on the former seabed.

Provided the recommendations to mitigate and offset potential impacts are implemented under the EMPr, it is our assessment that the proposed development of the Granger Bay Precinct Phase 1B site can be considered to be archaeologically acceptable and can be authorised.

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APPENDIX A: CURRICULUM VITAE – JOHN GRIBBLE

Name: John Gribble
Profession: Archaeologist (Maritime)
Date of Birth: 15 November 1965
Parent Firm: TerraMare Archaeology (Pty) Ltd
Position in Firm: Director & Senior Archaeologist
Years of experience: 33
Nationality: South African

Education:

- 1979-1983 Wynberg Boys' High School
- 1986 BA (Archaeology), University of Cape Town
- 1987 BA (Hons) (Archaeology), University of Cape Town
- 1990 Master of Arts, (Archaeology) University of Cape Town

Employment:

- September 2023 – present: TerraMare Archaeology, Director and Senior Archaeologist
- September 2017 – August 2023: ACO Associates, Senior Archaeologist and Consultant
- 2014-2017: South African Heritage Resources Agency, Manager: Maritime and Underwater Cultural Heritage Unit
- 2012-2018: Sea Change Heritage Consultants Limited, Director
- 2011-2012: TUV SUD PMSS (Romsey, United Kingdom), Principal Consultant: Maritime Archaeology
- 2009-2011: EMU Limited (Southampton, United Kingdom), Principal Consultant: Maritime Archaeology
- 2005-2009: Wessex Archaeology (Salisbury, United Kingdom), Project Manager: Coastal and Marine
- 1996-2005: National Monuments Council / South African Heritage Resources Agency, Maritime Archaeologist
- 1994-1996: National Monuments Council, Professional Officer: Boland and West Coast, Western Cape Office

Professional Qualifications and Accreditation:

- Member: Association of Southern African Professional Archaeologists (ASAPA) (No. 043)
- Principal Investigator: Maritime and Colonial Archaeology, ASAPA CRM Section
- Field Director: Stone Age Archaeology, ASAPA CRM Section
- Class III Diver (Surface Supply), Department of Labour (South Africa) / UK (HSE III)

Experience:

I have more than 30 years of professional archaeological and heritage management

experience. After completing my postgraduate studies and a period of freelance archaeological work in South Africa and abroad, I joined the National Monuments Council (NMC) (now the South African Heritage Resources Agency (SAHRA)) in 1994. In 1996 I became the NMC's first full-time maritime archaeologist and in this regulatory role was responsible for the management and protection of underwater cultural heritage in South Africa under the National Monuments Act, and subsequently under the National Heritage Resources Act.

In 2005 I moved to the UK to join Wessex Archaeology, one of the UK's biggest archaeological consultancies, as a project manager in its Coastal and Marine Section. In 2009 I joined Fugro EMU Limited, a marine geosurvey company to set up their maritime archaeological section. I then spent a year at TUV SUD PMSS, an international renewable energy consultancy, where I again provided maritime archaeological consultancy services to principally the offshore renewable and marine aggregate industries.

In August 2012 I established Sea Change Heritage Consultants Limited, a maritime archaeological consultancy. Sea Change traded until 2018, providing archaeological services to a range of UK maritime sectors, including marine aggregates and offshore renewable energy.

Relevant maritime experience includes specialist archaeological consultancy for more than two dozen offshore renewable energy projects and aggregate extraction licence areas in UK waters including:

- Lynn and Inner Dowsing OWF;
- Humber Gateway OWF;
- Sheringham Shoal OWF;
- Race Bank OWF;
- Docking Shoal OWF;
- Triton Knoll OWF;
- Neart na Gaoithe OWF;
- Dogger Bank OWF;
- Hornsea OWF;
- Navitus Bay OWF;
- Aggregate Area 392/393, Hilbre Swash;
- Area 478, East English Channel;
- Area 372/1, North Nab;
- Areas 401 & 2;
- Area 466, North West Rough; and
- Area 447, Cutline.

In the UK I was also involved in strategic projects which developed guidance and best practice for the UK offshore industry with respect to the marine historic environment. This included the principal authorship of two historic environment guidance documents for COWRIE and the UK renewable energy sector (*Historical Environment Guidance for the Offshore Renewable Energy Sector* (2007) and *Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector* (2010)). I was also manager and lead author in the development of the archaeological elements of the first Regional Environmental Assessments for the UK marine aggregates industry, and in the 2009 *UK Continental Shelf Offshore Oil and Gas and Wind Energy Strategic Environmental Assessment* for Department

of Energy and Climate Change. In 2013-14 I was lead author and project co-ordinator on *The UNESCO Convention on the Protection of the Underwater Cultural Heritage 2001: An Impact Review for the United Kingdom* and in 2016 I was co-author of a Historic England / Crown Estate / British Marine Aggregate Producers Association funded review of marine historic environment best practice guidance for the UK offshore aggregate industry.

I returned to South Africa in mid-2014 where I was re-appointed to my earlier post at SAHRA: Manager of the Maritime and Underwater Cultural Heritage Unit. In July 2016 I was appointed as Acting Manager of SAHRA's Archaeology, Palaeontology and Meteorites Unit.

I left SAHRA in September 2017 to join ACO Associates as Senior Archaeologist and Consultant. While at ACO I carried out a wide range of terrestrial and maritime archaeological assessments, many of which are listed in the following section. In 2018 I conducted an assessment of the potential impacts of marine mining on South Africa's palaeontological and archaeological heritage for the Council for Geoscience, on behalf of the Department of Mineral Resources.

On 1 September 2023 I left ACO to establish my own consultancy, TerraMare Archaeology (Pty) Ltd, which will provide specialist assessment and management services and advice for both terrestrial and maritime archaeological heritage.

I have been a member of the Association of Southern African Professional Archaeologists (No. 043) for nearly thirty years and am accredited by ASAPA's Cultural Resource Management section.

I have been a member of the ICOMOS International Committee for Underwater Cultural Heritage since 2000 and served as a member of its Bureau between 2009 and 2018.

Since 2010 I have been a member of the UK's Joint Nautical Archaeology Policy Committee.

I am a member of the Advisory Board of the George Washington University / Iziko Museums of South Africa / South African Heritage Resources Agency / Smithsonian Institution 'Southern African Slave Wrecks Project'.

I served on the Heritage Western Cape Archaeology, Palaeontology and Meteorites Committee between 2014 and 2023.

Selected Project Reports:

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APPENDIX B: SPECIALIST DECLARATION – J GRIBBLE

(See separate pdf file)

DECLARATION OF THE SPECIALIST

I, John Gribble, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the Specialist:

20 August 2026

Date:

TerraMare Archaeology (Pty) Ltd

Name of company (if applicable):