

Gansbaai Fishing Harbour

Repair and maintenance work to be conducted



Report Prepared by
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1. Background and Introduction

The Coega Development Corporation (CDC), acting as implementing agent on behalf of the National Department of Public Works (NDPW), have appointed PRDW Consulting Port and Coastal Engineers (PRDW) as consultants to manage the repair, maintenance and upgrades of marine infrastructure at the Gansbaai fishing harbour.

PRDW have appointed Pieter Badenhorst Professional Services (PBPS) to identify and undertake the environmental approval and permitting processes required for the proposed works, which will be undertaken as part of the Operation Phakisa initiative.

Gansbaai Old Harbour

Gansbaai consists of two harbours: the old harbour and the new harbour. The old harbour is situated directly north from new harbour and is primarily used for fish processing and ship repair services. The marine infrastructure of the old harbour consists of a 370m long main breakwater, a 140m long secondary breakwater, two quays with fixed mooring facilities, 7.5 ton Derrick crane, two slipways and a small offloading jetty.

2. Statement on Maritime Structures at Gansbaai Harbour

According to the Statement on Maritime Structures at Gansbaai and Still Bay Harbours (provided by Vanessa Maitland, dated 03 October 2017), the quay wall (built between 1934 and 1935) and Breakwater 1 and 2 were built in 1939. Slipway 1 (mechanised) and Slipway 2 were built in 1947. As such, these structures are older than 60 years old and therefore require a permit. (See attached full Statement on Maritime Structures at Gansbaai and Still Bay Harbours, as Appendix A).

3. Proposed work on the structures which requires a permit

Breakwater 1:

The main northern breakwater of the old harbour consists of a 370m long mass concrete breakwater protected with concrete cubes and armour units. The armour units (dolosse) are located only on the seaward face. (see Figure 1). The crown wall/crest element serves as an access road to Quay Wall and the head of the breakwater.



Figure 1: Breakwater 1

Construction methodology: (see Figure 2 and 3)

- Stabilising existing founding blocks by tremie concrete.
- Horizontal and vertical cracks to be pressure grouted (cement).
- Localised concrete repair and patching as required.
- Rehabilitation of toe of structure to original design function.

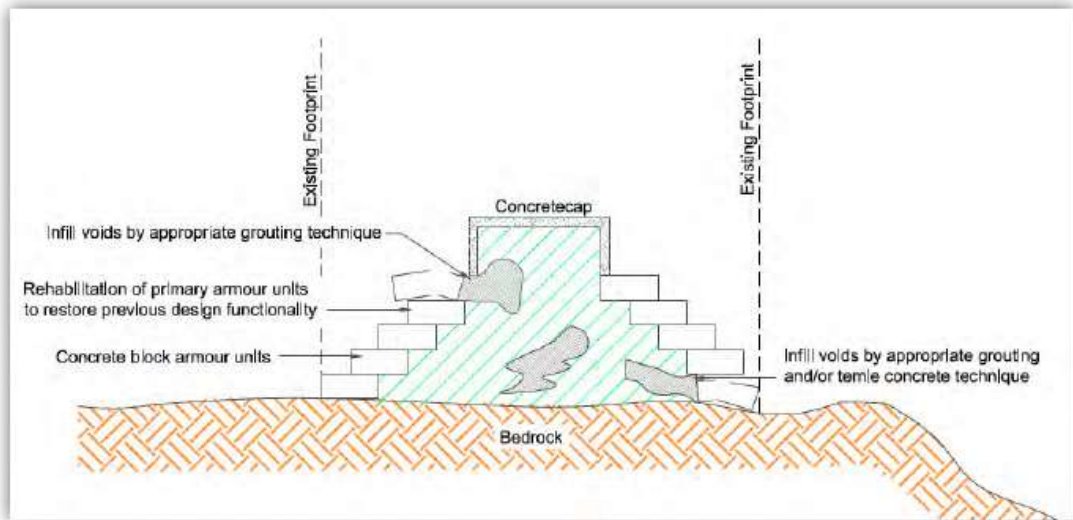


Figure 2: Section through Breakwater 1



Figure 3: Voids to be filled and undermining to be capped

Breakwater 2:

The breakwater is 140m long and comprises of mass concrete cast on bed rock and foundation block work, with cube armour units protecting the seaward face to approximately the high water mark.



Figure 4: Breakwater 2

Construction methodology: (see Figure 5)

- Stabilising existing founding blocks by tremie concrete.
- Horizontal and vertical cracks to be pressure grouted (cement)
- Localised concrete repair and patching as required.
- Rehabilitation of toe of structure to original design function.

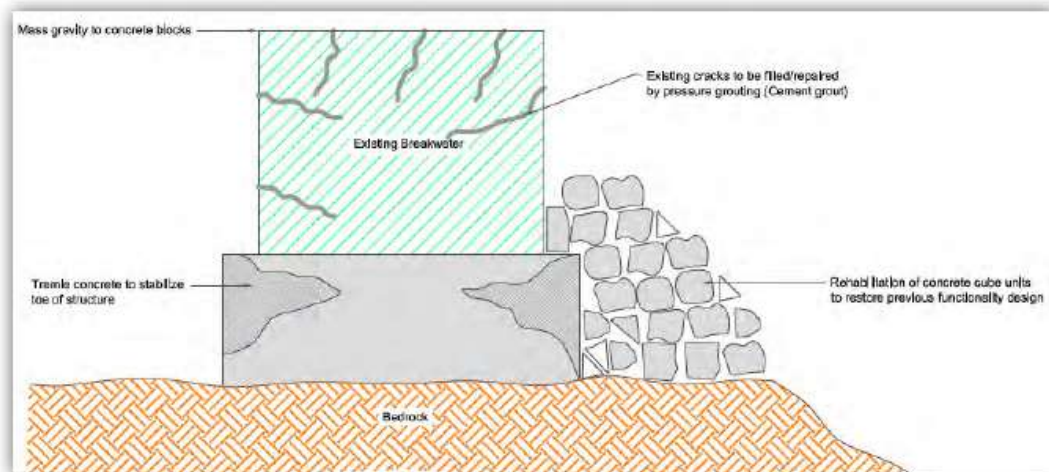


Figure 5: Section through Breakwater 2

Slipway 1 and 2:

Slipway 1: This is a mechanised slipway with a steel cradle running on steel rails to launch and retrieve vessels by means of a special winch. It Can be used for vessels up to 50t and has a side slip for vessel maintenance. The slipway has recently been extended.

Slipway 2: 30m wide slipway that tapers seawards with a 20m long jetty boarding the slipway on the west side.



Figure 6: Slipway 1 (left) and Slipway 2 (right)

Construction methodology: (see Figure 7)

- Repair and maintenance of mechanised slipway.
- Refurbishment of plant and equipment of the mechanised slipway to original design parameters.
- Crack to corner of slipway to be pressure grouted (cement).
- Localised concrete repair and patching where required to both slipways.



Figure 7: Proposed maintenance of slipways

Quay wall:

This 162m long concrete caisson quay wall consists of a 90m long suspended reinforced concrete slab structure and a 72m long concrete block structure as shown in Figure 8.

Maintenance dredging:

Please note that the maintenance dredging will not involve the dredging of an additional 67000m³ of material to create a sand trap.



Figure 8: Quay wall



Figure 9: Structural cracks to be repaired

Construction methodology:

- General concrete repair and maintenance – e.g. Maintenance and concrete repair work to concrete fenders and reinforced concrete slabs.

Appendix A

Statement on Maritime Structures at Gansbaai and Still Bay Harbours



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Date: 03-10-2017

Re: Statement on Maritime Structures at Gansbaai and Still Bay Harbours

According to the National Heritage Resources Act (No. 25 of 1999) Section 34. (1), "*No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.*"

To this end SAHRA has requested the ages of the maritime infrastructure in the harbours of Gansbaai and Still Bay that will be affected by the Maintenance Management Plans developed by the Coega Development Corporation on behalf of the National Department of Public Works (2017).

Therefore, any structure that was constructed prior to 1957 will bring into force the above-mentioned act.

Any structure below the low-water mark fall under SAHRA's Maritime and Underwater Cultural Heritage Unit. All structures above the low-water mark fall under Heritage Western Cape.

Note: I read the MMPs for these two harbours and note that dredging the harbours is part of the plan. Has an Underwater Heritage Impact Assessment been undertaken on these areas? They are both well-known shipwreck trap areas and there are several recorded shipwrecks in the areas.

Still Bay Harbour:

Construction on the harbour started in 1933 and ended a few years later (Carter and Brownlie 1990). These structures therefore require a permit.

Gansbaai New Harbour:

Repair slipways are to be built at Hermanus and at Kalk Bay.

Gansbaai harbor, which has become too small for the growing fishing industry of the town, is to be greatly enlarged at an estimated cost of R1 million (\$1.4 million).

To further encourage the development of the fishing industry on the Cape south-west coast, investigations will be made into the possibility of building a new harbor at Stilbaai, south of Morris Point. (The South African Shipping News and Fishing Industry Review, July 1963.)

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According to the above article (Gibbs 1963) the New Harbour in Gansbaai was not yet constructed. Ergo it does not require a permit, as it is younger than 60 years old.

Old Gansbaai Harbour

Although fishing has been an integral constituent of Gansbaai life since 1811, when the first reed-and-daub fishermen huts were built in the area. It was only in the early 20th century that harbour development was undertaken.



Figure 1: The original landing place in Gansbaai. Rocks have been cleared and there is some formal structure to the right of the image.

In January 1919, the "landing place" was improved by provincial authorities and rocks were removed to make place for ten boats. These were small fishing boats that were manned by 4 oarsmen and a pilot. In 1923 the provincial government proclaimed Gansbaai a Small Harbour. This paved the way for more development, funded by the government. Between 1934 and 1935 a concrete wall was laid, I believe this refers to the quay wall at the landing place.

Breakwater 1 and 2 were built in 1939. Slipway 1 (mechanised) and Slipway 2 were built in 1947.

These structures therefore require a permit.

In conclusion, the Still Bay Harbour and the Old Gansbaai Harbour maritime structures are older than sixty years and therefore require a permit to enable the MMP to go forward. Perhaps, before any work is done, a full photographic survey and proper mapping of the structures should be undertaken, in order to preserve the structural information.

Please contact me should there be any further queries.

Kind Regards

A handwritten signature in black ink, appearing to read 'Maitland', with a stylized flourish extending to the right.

Vanessa Maitland

References:

Barnard, Elizabeth. 1986. 'n Kultuurhistoriese Beeld van Gansbaai en Ongewing. MA Thesis: University of Stellenbosch.

Carter, R.A. and Brownlie, S. 1990. Estuaries of the Cape: Part II: Synopses of available information on individual systems. Rep. no. 34. Kafferskuil (CSW 24) and Duiwenhoks (CSW 23). Heydorn, A.E.F. and Morant, P.D. (eds) Stellenbosch: CSIR Research Report 433.

Gibbs, Robert H. 1963. Commercial Fisheries Review. 25 (7). US Dept. of the Interior. Fish and Wildlife Service.

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