



Marine Habitat Survey

Address | 240 Hudson Parade, Clareville

Client | Tina Bui

Survey Date | 13 June 2023

Report Date | 27 August 2023

Job Number 23-075-05

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1. Report Background

1.1 Purpose of the Report

All proposed waterfront development located below the mean high-water mark (“MHW”) is to be reviewed for compliance with environmental regulations.

Consent authorities for waterfront development are either Crown Lands or the local council.

Applications for waterfront development are assessed with reference to Chapter 6 of the State Environmental Planning Policy (Biodiversity and Conservation) 2021 (“SEPP”). In regard to aquatic ecology, SEPP 2021 aims to:

- protect, enhance and maintain the catchment, foreshores, waterways and islands of Sydney Harbour for existing and future generations;
- ensure a healthy, sustainable environment on land and water;
- achieve a high quality and ecologically sustainable urban environment; and
- ensure the protection, maintenance and rehabilitation of watercourses, wetlands, riparian lands, remnant vegetation and ecological connectivity.

The NSW Department of Primary Industries (“NSW DPI”) administers the *Fisheries Management Act 1994* (“FM Act”). The objectives of the FM Act are to conserve, develop and share the fisheries resources of NSW for the benefit of present and future generations, and in particular to protect key fish habitats and promote ecologically sustainable development.

The NSW DPI “Policy and guidelines for fish habitat conservation and management (2013)” outlines that any development proposal that requires consent from Crown Lands or a local council and one or more of the following permits, is deemed to be integrated development. Permits issued by Fisheries NSW which may be required for waterfront development are:

- **Section 201** – permit to carry out works of dredging or reclamation (i.e. any excavation within, or filling or draining of, water land or the removal of woody debris, snags, rocks or freshwater native aquatic vegetation or the removal of any other material from water land that disturbs, moves or harms these in-stream habitats).
- **Section 205** – permit to harm (cut, remove, injure, destroy, shade, etc) marine vegetation (saltmarshes, mangroves, seagrass and seaweeds).

Section 2.2.1 of the guidelines provides examples of integrated development that may require a permit.

The purpose of this Marine Habitat Survey report is to present the observations of the marine ecology, consider potential impacts as a result of the proposed development, and make recommendations for the mitigation measures to minimise such impacts.

This report also advises whether the application is deemed to be integrated development and thus requires a permit from Fisheries NSW.

1.2 Environmental Considerations

In summary, the main environmental considerations for waterfront development applications are:

- a) Protection of seagrasses;
- b) Protection of mangroves;
- c) Conservation of the existing ecology; and
- d) Impacts from dredging.

The regulations upon which the environmental considerations are based are discussed below.

The FM Act applies to habitat and aquatic flora and fauna that have the potential to be affected by a proposed waterfront development. The objectives of the FM Act are to conserve, develop and share the fisheries resources of NSW for the benefits of present and future generations, and in particular to protect key fish habitats and to promote ecologically sustainable development.

Two Fish Habitat Protection Plans have also been developed under the FM Act. The first plan deals broadly with dredging and reclamation activities, fish passage requirements, the protection of marine vegetation (in particular mangroves and seagrasses), and the importance of snags. The second plan is specific to the protection of seagrasses. Scientific research has shown that seagrasses are important to the ecology of shallow estuarine environments as they stabilise sediments and maintain water quality, provide shelter and food critical to the survival of a wide variety of juvenile fishes and mobile invertebrates (many of which are of commercial or recreational importance) and play an important role in the cycling of nutrients within estuaries. Seagrasses are a fragile ecological habitat, with many major estuaries in NSW having lost as much as 85% of their seagrass beds in the past 30 to 40 years. In 2012 the population of *Posidonia australis* seagrass (commonly known as strapweed) was listed as an Endangered Population in the estuaries of Sydney under the Fisheries Management Act (Part 7A).

1.3 The Property

The proposed waterfront development of the reduction in the length of the existing timber deck and installation of a new mesh skid is planned for 240 Hudson Parade, Clareville ("The Property").

For details of the existing structures at The Property and the proposed waterfront development refer to Sections 2.1 and 3.1 respectively

1.4 On-Site Survey Methodology of The Property

The on-site survey of The Property was conducted at 10:30 on 13 June 2023 by Rick Johnson of Waterfront Surveys Australia. Weather conditions at the time of the survey were overcast with a minimal breeze. The water surface was calm and underwater visibility was approximately 3 m. At the time of the survey the tide was rising, with a tidal height of 0.5 m.

The on-site survey area included the footprint of the proposed structures and extended a further 10 m in all directions from the footprint of the proposed structures. The survey was conducted from the shore and inspection of the seabed was done on snorkel. Photos of each habitat were taken using an underwater digital camera and a description of each differing habitat, and species list of aquatic flora and fauna observed within the survey area, was recorded.

2. Existing Property Details

2.1 Existing Structures at The Property

The Property is located in Refuge Cove on the southern side of the Clareville headland, on the eastern shoreline of Pittwater. The Property faces in a southerly direction.

The existing structures (Photos 1 - 2) present at The Property at the time of the on-site survey included:

- a concrete area of reclamation on the western half of The Property;
- an area of timber decking with a boatshed on the eastern side of The Property;
- a timber jetty (4.5 x 1.4 m) with two timber outer piers;
- a mesh ramp (6.3 x 1.4 m);
- a mesh deck pontoon (2.4 x 3.6 m) with two timber fender piles on the outer corners; and
- two timber berthing piles on the western side of the pontoon and ramp that created a 9.0 x 5.0 m berthing area.

2.2 Existing Ecology at The Property

2.2.1 Existing Ecology Based on Observations from the On-Site Survey

a) Intertidal Ecology

The intertidal zone at The Property consisted of artificial and natural habitats. A concrete seawall incorporated the reclamation area on the western half of The Property (Photo 1) and the perpendicular reclamation under the western half of the existing timber decking (Photo 2). The eastern half of the timber decking (which is the location of the inner section of the proposed new skid) and under the existing boatshed consisted of concrete beam footings and numerous concrete support piers (Photos 4 - 6). The seawall on the western half was fronted by a sandy beach that extended 8 m offshore (Photos 1 - 2). The timber jetty piers, fender piles and berthing piles provided additional artificial intertidal habitat.

The base of the concrete seawalls, the concrete beam footings, the concrete and brick deck piers and the timber jetty piers were all colonised by a high density cover of Sydney rock oysters (*Saccostrea glomerata*; Photos 1, 2 and 4 - 6). The sandy beach was unvegetated.

b) Subtidal Ecology

The subtidal zone within the on-site survey area of The Property consisted of a moderately to steeply sloping rocky reef (Photos 7 - 8) that started at the base of the timber decking seawall and concrete beam footings and continued 9 m offshore to the end of the existing ramp. At that point the seabed transitioned to steeply sloping silty sand, which extended offshore beyond the limits of the survey area.

The rocky reef (the location of the outer half of the proposed new skid and new skid piers) was colonised by a high density understorey of green invasive pest alga (*Caulerpa taxifolia*) mixed with a medium density canopy of brown bubbleweed (*Sargassum* sp.; Photos 7 - 8).

The silty sand seabed (offshore of the end of the proposed new skid) was colonised by a high density cover of *Caulerpa taxifolia*.

Fish observed during the on-site survey included many yellowfin bream (*Acanthopagrus australis*), luderick (*Girella tricuspidata*) and eastern hulafish (*Trachinops taeniatus*).

c) Seagrass and Mangroves

No seagrasses or mangroves were observed within the on-site survey area of The Property.

2.2.2 Existing Ecology Based on Government Published Records

NSW Fisheries has done extensive mapping of the aquatic vegetation in Pittwater. The latest aquatic vegetation maps (Creese et al. 2009) indicate the absence of seagrass at The Property. The closest mapped seagrass is *Posidonia* located 75 m to the west and *Zostera* located 55 m to the east.

3. Proposed Waterfront Development

3.1 Proposed Structures of the Waterfront Development

The proposed waterfront development at The Property consists of the:

- reduction in the length of the timber decking in front of the boatshed by 3.25 m; and
- installation of a new skid ramp with mesh deck (8.0 x 2.75 m) in the location of the removed deck and extending 4.75 m beyond the seawall, supported on one pair of concrete piers.

3.2 Assessment of Potential Impacts of the Proposed Development to the Existing Ecology of The Property

3.2.1 Summary of Findings

In summary, the potential impacts on the aquatic ecology at The Property from the reduction in the length of the existing timber deck and installation of a new mesh skid are expected to be minimal, temporary and unlikely to cause any damage or harm to marine life.

The inner 3.25 m of the proposed new skid would replace the timber decking and be located above the concrete beam footings, as such there would be no impacts to the rocky intertidal habitat provided by the footings. The outer 4.75 m of the proposed new skid (with its two new concrete piers) would be located on the rocky subtidal seabed which was colonised by invasive *Caulerpa taxifolia* and very common brown bubbleweed. The only disturbance to this rocky seabed would be the insertion of two concrete skid piers, which would result in very minor impacts from the potential loss of bubbleweed.

As there were no seagrass habitats observed at the site, there would be no detrimental effects from the shading cast from the proposed new mesh skid. There would not be any negative impacts from the permanent berthing of a vessel in the berthing area.

3.2.2 Detailed Listing of Findings

The potential impacts to the existing ecology of The Property are assessed in detail below in relation to the four main environmental considerations:

- a) Protection of seagrasses;
- b) Protection of mangroves;
- c) Conservation of the existing ecology; and
- d) Impacts from dredging.

a) Protection of seagrasses

No ecological impact from the waterfront development as there were no seagrasses present in the survey area.

b) Protection of Mangroves

No ecological impact from the waterfront development as there were no mangroves present in the survey area.

c) Conservation of the Existing Ecology

<i>Development Works</i>	<i>Potential Impact to Existing Ecology</i>	
	<i>Summary</i>	<i>Discussion</i>
Installation of two new skid piers	Loss of a very small area of rocky subtidal habitat	The impact from the loss of a very small area of rocky substrata would be very minor, as the brown algae present (bubbleweed) is very commonly found in Pittwater
Installation of new mesh skid	Provide additional intertidal and subtidal artificial habitat	The installation of new mesh skid would provide additional intertidal and subtidal artificial habitat to be colonised by biota

d) Impacts from Dredging

No ecological impact from the waterfront development as there is no dredging required.

Prepared by



Rick Johnson

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Environment Institute of Australia and New Zealand member

Appendix A - On-site Survey Photos

The following photographs taken by Rick Johnson during the on-site survey conducted at The Property on 13 June 2023 are provided overleaf.

- Photos 1 - 4. Existing waterfront structures, intertidal habitats and location of the proposed structures at The Property.
- Photos 5 - 6. Intertidal artificial habitat under the timber decking.
- Photos 7 - 8. Subtidal rocky reef and algae at the site.

Photo 1. View inshore of the existing structures and intertidal habitats at The Property. The red arrow indicates the location of the proposed deck reduction and new mesh skid.

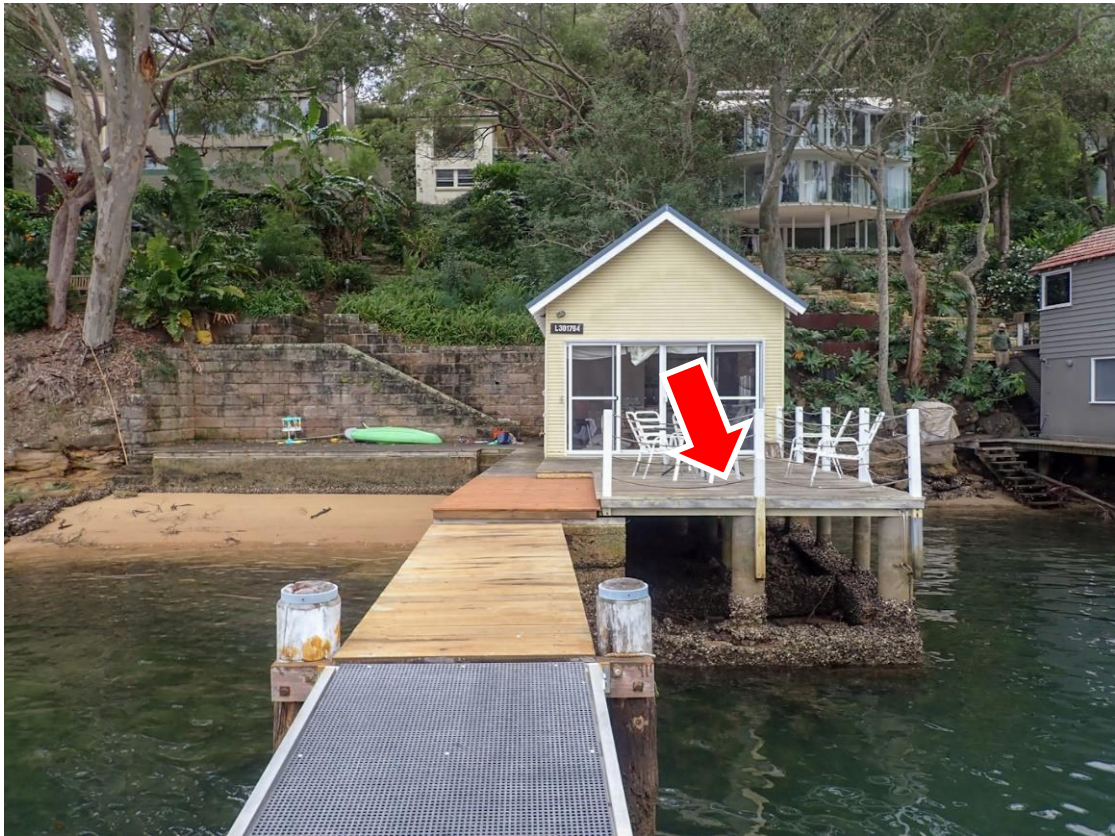


Photo 2. View looking east of the beach, existing concrete seawall, timber jetty, mesh ramp and pontoon.



Photo 3. The timber decking (proposed to be reduced by 3.25 m and a skid installed) in front of the boatshed.



Photo 4. The section of timber decking to be removed to allow for installation of a new mesh skid.



Photo 5. The intertidal concrete beam footings and concrete piers under the timber decking, all colonised by a high density cover of oysters.



Photo 6. View to the west of the side of the timber decking area and associated seawall and concrete piers.



Photo 7. Subtidal rocky reef off the base of the seawall that fronts the timber decking colonised by green invasive pest alga and brown bubbleweed.

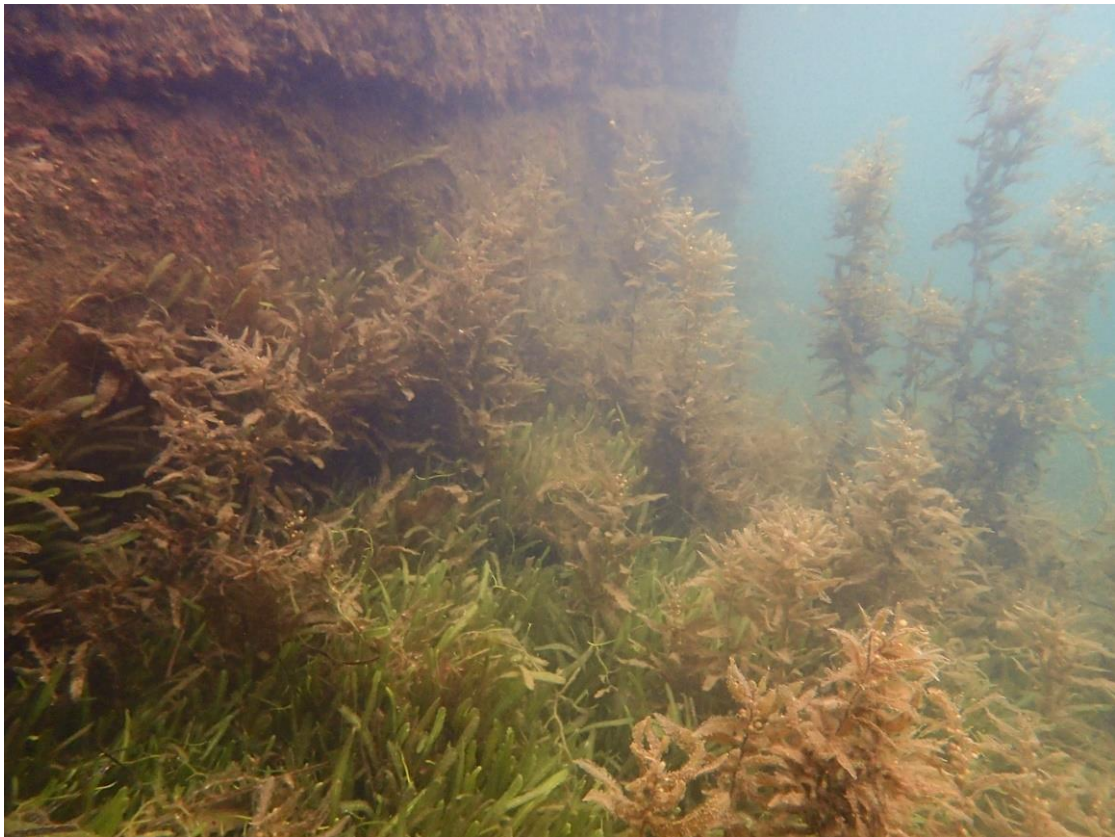
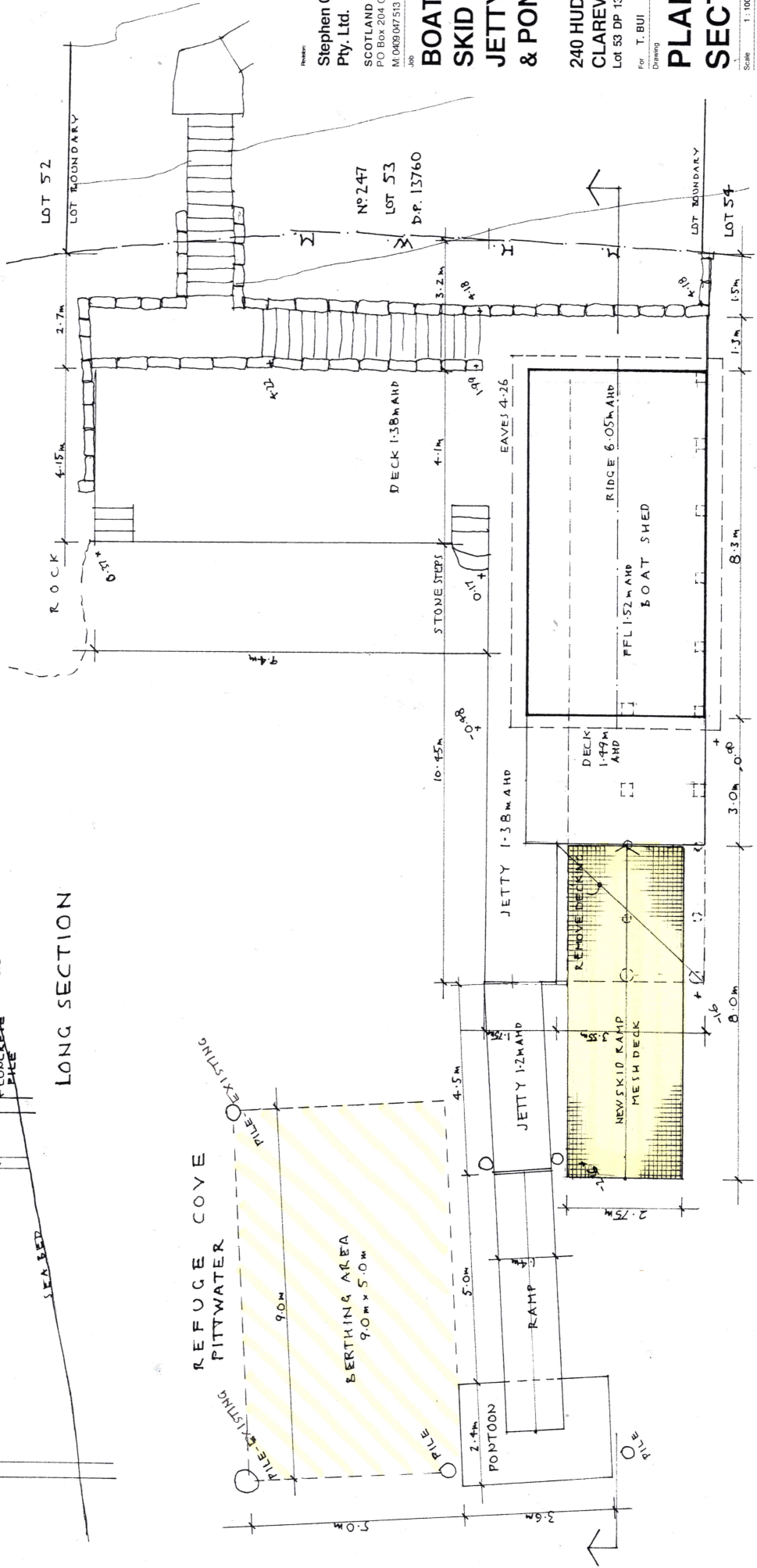
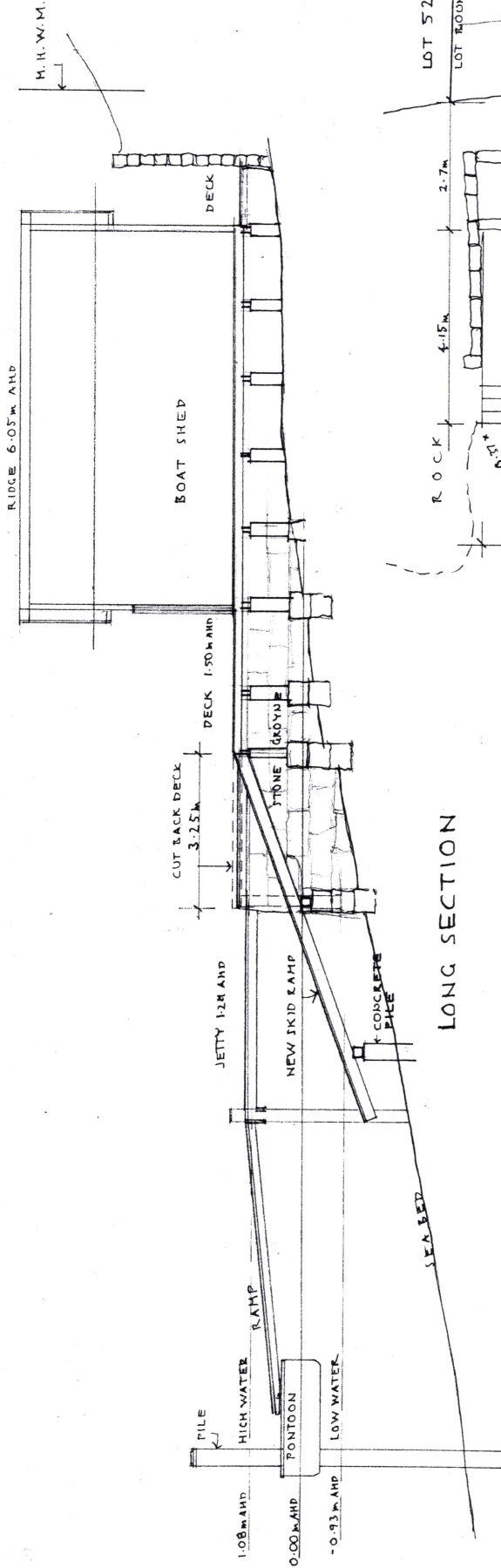
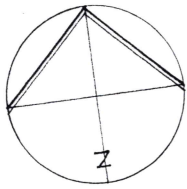


Photo 8. Steeply sloping subtidal rocky reef in the location of the proposed new concrete skid piers, colonised by green invasive pest alga and brown bubbleweed.



Appendix B - Layout Plan of Waterfront Development

The proposed waterfront development design layout plan for 240 Hudson Parade, Clareville (provided by Stephen Crosby & Associates Pty Ltd; Drawing 2063-DA01) are provided overleaf.



Stephen Crosby & Assoc.
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**BOAT SHED &
SKID RAMP,
JETTY, RAMP
& PONTOON**

240 HUDSON PDE.
CLAREVILLE
Lot 53 DP 13760

For T. BUI
Drawing

**PLAN &
SECTION**

Scale 1:100 AT A3
Date JULY 2023
Drawn S.C.
Drawing Number

2063 - DA 01

Appendix C - References

- Creese, R. G., Glasby, T. M., West, G. and Gallen, C. (2009). *Mapping the habitats of NSW estuaries*. Industry & Investment NSW Fisheries Final Report Series 113. Port Stephens, NSW, Australia. 95pp.
- NSW Department of Primary Industries (2013). *Policy and Guidelines for fish habitat conservation and management* (2013 update). 80pp.
- NSW Government (2021). *State Environmental Planning Policy*.