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THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

R E P O R T

relating to the proposed reconstruction of

SUTHERLAND WHARF

at

COCKATOO ISLAND DOCKYARD,
NEW SOUTH WALES.

CONTENTS

	<u>Paragraph</u>
The Committee's Investigation	1
The Proposal	2
Cockatoo Island Dockyard	4
The Existing Sutherland Wharf	6
The Need for the Proposed Works	10
Length of New Wharf	15
The Site	17
Construction of the Proposed Works	20
Programme	29
Estimate of Costs	30
Recommendations and Conclusions	31

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

RECONSTRUCTION OF SUTHERLAND WHARF AT COCKATOO
ISLAND DOCKYARD, NEW SOUTH WALES

R E P O R T

On 20 July 1967 His Excellency the Governor-General in Council referred to the Parliamentary Standing Committee on Public Works for investigation and report to the House of Representatives the proposal to reconstruct Sutherland Wharf at Cockatoo Island Dockyard, New South Wales.

The Committee have the honour to report as follows:

THE COMMITTEE'S INVESTIGATION

1. The Committee received statements from the Department of the Navy and the Department of Works, and took evidence at a public hearing in Canberra from representatives of these departments. We inspected the facilities of the Cockatoo Island Dockyard including the existing Sutherland Wharf.

THE PROPOSAL

2. The proposal submitted to the Committee is for the reconstruction of Sutherland Wharf at Cockatoo Island as a general purpose wharf and berth and for the provision of ancillary buildings and services in the wharf area. The objective of the proposal is to supplement the existing repair and refit facilities for ships of the Royal Australian Navy.

3. The proposed works, which are estimated to cost \$1.6 million, include:

- (a) demolition of the existing wharf, and a small amount of dredging of the berth;

- (b) construction of a 500-ft concrete wharf with associated services;
- (c) supply and installation of a 15-ton crane;
- (d) erection of a workshop, a gear store and a substation;
- (e) extension of a toilet block and the reconstruction of a septic tank; and
- (f) construction of access roads, and the clearing and paving of outdoor storage areas.

COCKATOO ISLAND DOCKYARD

4. Cockatoo Island, an island of over 37 acres, is situated in Sydney Harbour over two miles west of the Harbour Bridge. It is devoted entirely to ship building and ship repair work, its history as a dockyard dating back to the days of the early settlers. Notable among the facilities constructed over a century ago, and still in use today, are the Sutherland and Fitzroy Docks.

5. The island was acquired by the Commonwealth in 1913, and since 1933 it has been leased to Cockatoo Docks and Engineering Company Pty. Ltd, a subsidiary of the Vickers group, which operates the dockyard as a commercial venture. The terms of the lease bind the company to maintain the efficiency of the establishment as a dockyard for naval purposes, and to give priority, when required, to naval or other defence work.

6. The company is responsible for day to day maintenance of the facilities on the island, but the Commonwealth carries out major maintenance necessitated by ordinary wear, age and obsolescence. The lease allows the Commonwealth to construct new buildings and wharves and install new machinery.

7. The facilities on the island, which include wharves, building slips, dry docks, heavy engineering workshops, stores, and administrative buildings, are generally fairly old, but the dockyard provides an essential service for naval vessels and commercial shipping. We saw evidence that the stage has been reached when major maintenance and improvements have become essential.

8. The Existing Sutherland Wharf Sutherland Wharf, one of four major wharves at Cockatoo Island, is in the south-western corner between the entrance to the Sutherland Dock and the Patent Slipway. Built of timber in 1892, the original wharf still stands, but it is in poor condition. It was not fully reconstructed before this because there was not a requirement for it as a naval berth continuously. However, this situation altered and in 1965 two concrete dolphins were built into the old timber structure. The dolphins, which were designed to form part of a future new wharf, enable ships to be moored at the berth with safety.

9. Access to ships moored at the berth is by gangways slung between the ship and the shore.

THE NEED FOR THE PROPOSED WORKS

10. Most naval refitting is carried out at the dockyards at Garden Island, New South Wales, and Williamstown, Victoria. These facilities are supplemented by those available at Cockatoo Island.

11. Garden Island is the principal dockyard and the facilities there are capable of handling not only the largest ship in the Australian fleet, but also the largest warships in the navies of Australia's allies. In the normal course of events, H.M.A.S. Melbourne, Australia's largest naval vessel, would be refitted at Garden Island as would any ships of larger or comparable dimensions which may enter the Fleet in future.

12. The Committee were told that, notwithstanding the facilities available at Garden Island and Williamstown, it will be necessary by 1970 to carry out considerably more refitting work at Cockatoo Island than at present, and that this will include the refitting of larger ships such as H.M.A.S. Sydney and H.M.A.S. Stalwart as well as smaller vessels. This situation will arise because more larger ships are entering the Fleet and because conversion and modernisation of older units are contemplated.

13. Of the four major wharves at Cockatoo Island, only the berth at Sutherland Wharf is long enough and deep enough to take the larger ships, but in its present condition it is unsuitable for use as a refitting wharf.

14. The Committee concluded therefore that there is a need to reconstruct Sutherland Wharf to help obviate the shortage of naval repair and refit berths expected to develop by 1970. To make the proposed wharf fully effective, the Committee agreed that the services and facilities adjacent to the wharf should be improved concurrently.

15. Length of New Wharf An examination was made of the possibility of building the wharf longer than the proposed 500 ft, or extending the wharf in the future. We noted that the wharf could not be longer than 700 ft without encroaching on the entry to either the Sutherland Dock or the Patent Slipway, but that a 500-ft wharf equipped with a crane of the type proposed, would be adequate for H.M.A.S. Melbourne which is about 700 ft long. Although this ship will overhang the proposed wharf by 100 ft at each end, the greater part of the overhang will lie within the operating radius of the crane. It is relevant that the parts of the ship beyond the crane's reach contain no heavy equipment that would need to be lifted in the course of a normal refit.

16. The Committee were satisfied that there is no significant economic or functional advantage in building the wharf longer than 500 ft

at this stage, but that it would not be difficult to extend the wharf in the future if requirements change.

THE SITE

17. It is proposed to build the new wharf on the site of the existing wharf. The buildings, roads and storage areas will be situated between the wharf and the Sutherland Dock.

18. Tests have been made to ascertain the rock levels on shore and at the face of the wharf, and soundings have been taken over the berthing area. The results show that from a construction point of view the site is suitable for the proposed structure, although a small amount of dredging will be necessary at the eastern end of the berth.

19. We were agreed that the site is also suitable in other respects. It is in an area devoted to building, repairing and refitting ships, and is relatively close to the Navy's main refitting base at Garden Island. The approaches to the berth are good, and the berth, when dredged to 24 ft as proposed in this reference, will be adequate for all Australian naval vessels. Conditions in the area will allow subsequent dredging to at least 28 ft if required.

CONSTRUCTION OF THE PROPOSED WORKS

20. The wharf is to be a heavy duty structure 500 ft long and varying in width from 42 ft to 62 ft. The superstructure, of reinforced concrete, will be supported by four rows of cylindrical concrete piers founded on solid sandstone rock. The two existing concrete dolphins will form part of the new structure. A rock retaining wall is to be built under the wharf from a point 28 ft below low water level at the wharf face to just below the deck on the land side. The wharf is being designed for a superimposed loading of 500 lb per sq ft, whilst the fendering system will be timber piles backed by rubber buffers.

21. A travelling crane capable of lifting 15-ton loads at a 75-ft radius and up to 5 tons at a 105-ft radius is to be installed on the wharf. The tracks for the crane will be supported on beams formed in the deck structure and will run the full length of the wharf to permit the crane to operate at any point on the wharf. Provision is to be made in the design for a 5-ton crane to be installed later if required.

22. Services to be provided at the wharf will include fresh water, electricity, telephones, compressed air, oxygen, and salt water for fire fighting purposes. It is proposed to house the service lines in a reinforced concrete duct built into the wharf deck. The duct will not only protect the cables and pipes but also facilitate maintenance and future additions. Connection points will be provided at a number of places along the wharf face.

23. The reference includes the erection of a workshop, a gear store, a substation enclosure, extensions to a toilet block, reconstruction of a septic tank, and improvements to the effluent disposal area.

24. The workshop is to be a single storey structure, 72 ft by 27 ft, located at the eastern end of the Naval General Store. The building is to be of steel framed construction with brick infill walls and a galvanised iron roof. The gear store, which will be of similar construction, will be a 62 ft by 10 ft extension on the western end of the Naval General Store.

25. The substation enclosure and the toilet block extension will both be of brick. The former will provide an area of about 300 sq ft for additional substation equipment, and the latter will accommodate extra toilets.

26. The new septic tank will replace one which no longer functions efficiently. The tank and improvements to the effluent disposal area

are part of a scheme to improve the existing sewage disposal facilities which have been the subject of complaint from the Maritime Services Board.

27. Some minor new roads are to be built and some existing roads altered to improve access to the proposed wharf. Three areas at the rear of the wharf are to be cleared and paved to provide storage space for bulky and heavy items of equipment and stores.

28. We recommend the construction of the works in this reference.

PROGRAMME

29. The Committee were told that after approval is given to proceed with the project it will take 11 months to complete the design and to accept tenders, and that construction will take 18 months. The project is, therefore, due to be completed early in 1970.

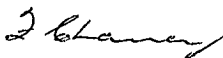
ESTIMATE OF COSTS

30. The estimated cost of the work when referred to the Committee was \$1,600,000 as follows:-

	\$
Wharf structure including dredging	850,000
15-ton crane	440,000
Engineering services	160,000
Buildings including services	130,000
Roads and paved areas	20,000
	<u>\$1,600,000</u>

31. The summary of recommendations and conclusions of the Committee is set out below. Alongside each is shown the paragraph in the report to which it refers.

	<u>Paragraph</u>
1. THERE IS A NEED TO RECONSTRUCT SUTHERLAND WHARF.	14
2. THE SERVICES AND FACILITIES ADJACENT TO THE WHARF SHOULD BE IMPROVED CONCURRENTLY.	14
3. THE SITE IS SUITABLE.	18/19
4. THE CONSTRUCTION OF THE WORKS IN THIS REFERENCE IS RECOMMENDED.	28
5. THE ESTIMATED COST OF THE WORKS WHEN REFERRED TO THE COMMITTEE WAS \$1,600,000.	30



F.C. CHANEY,
Chairman.

Parliamentary Standing Committee on Public Works,
Parliament House,
CANBERRA.

6 September, 1967.