HERITAGE COUNCIL OF WESTERN AUSTRALIA

REGISTER OF HERITAGE PLACES - ASSESSMENT DOCUMENTATION

11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE

The criteria adopted by the Heritage Council in November 1996 have been used to determine the cultural heritage significance of the place.

11. 1 AESTHETIC VALUE*

Both individually and collectively, the buildings of *Victoria Quay* display complex and striking aesthetic characteristics. The C.Y. O'Connor Centre and Immigration Office, official buildings on a domestic scale, display fine detailing, as do many of the transit sheds and wharf buildings. (Criterion 1.1)

The *C.Y. O'Connor Memorial* is a fine example of the work of sculptor, P. G. Porcelli. The bronze statue is well crafted and adds an unusual, artistic quality to the industrial townscape of *Victoria Quay*. (Criteria 1.1 & 1.2)

Due to the landmark quality of the place, where the city of Fremantle, Swan River and Indian Ocean meet, and the nature of the buildings, *Victoria Quay* is a reference point that can be seen from various vantage points around Fremantle and from approach by sea. The place is a defining element of the city of Fremantle. (Criterion 1.3)

Victoria Quay, an industrial townscape with a strong relationship with the Swan River, the Indian Ocean and the city of Fremantle, is defined by a series of structures and spaces that are utilitarian and functional in nature. Many of the buildings share a consistency of scale, materials and detailing which forms a coherent townscape of visual unity. (Criterion 1.4)

Within *Victoria Quay*, there are a number of distinct precincts, defined by the nature of the structures and their relationship to the spaces they enclose. These include the transit sheds which follow the gentle curve of the wharf structure; the Harbour, river mouth, South Mole and its lighthouse; Slip Street, with its saw-tooth gable roofs; the slipways, winch houses and cranes at the western end of the Quay; the former immigration buildings; and, the office tower and podium complex. These precincts are unified by the hard, bituminous and concrete surfaces that dominate the place and contribute to its industrial nature. (Criterion 1.4)

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* For consistency, all references to architectural style are taken from Apperly, Richard; Irving, Robert and Reynolds, Peter *A Pictorial Guide to Identifying Australian Architecture: Styles and Terms from 1788 to the Present* , Angus & Robertson, North Ryde, 1989.

Victoria Quay is a significant element of the wider precinct of the West End of Fremantle. The West End is dominated by places which have a historical relationship to *Victoria Quay* and Fremantle Harbour, including the pilots' quarters, Round House and J Shed on Arthur Head and the shipping company buildings, weigh bridge, Railway Station, Customs House and hotels in the area bounded by Phillimore, High and Cliff streets. (Criterion 1.4)

Victoria Quay also has strong visual, functional and historic associations with the North Quay and Mole, complementary structures which protect the Inner Harbour and run parallel to Victoria Quay and South Mole to the entry channel where the Swan River meets the Indian Ocean. The two quays and moles are components of the same engineering solution to the formation of the harbour. (Criterion 1.4)

11. 2. HISTORIC VALUE

The development of early port facilities and later of the Inner Harbour and *Victoria Quay* at Fremantle have influenced both the physical layout of Fremantle and its identity as a 'port' city. (Criterion 2.1)

Victoria Quay has had a remarkable impact on the development of Fremantle and the State since the late 1800s. The establishment of the colony's major port at Fremantle led to the consolidation of the city of Fremantle, particularly in the West End, where port related activities were concentrated. (Criterion 2.1)

At the State level, the establishment of the Harbour and associated facilities at Fremantle led to Fremantle's emergence over Albany as the State's premier port and facilitated economic growth through improved trade and communications for industry, commerce and agriculture. (Criterion 2.1)

Victoria Quay is associated with the site of the claiming of possession of the western third of the continent of Australia for Britain by Captain Fremantle in June 1829, although the original shoreline has been obliterated by the construction and development of the harbour. (Criterion 2.2)

The buildings and structures of *Victoria Quay* reflect the various phases of the Western Australia's development, from the early jetties of the mid-1800s, to the Inner Harbour construction as a result of Responsible Government and gold boom prosperity in the 1890s. (Criterion 2.2)

Inter-war agricultural expansion and migration are evidenced by the transit sheds, immigration and information buildings and the World War Two defence structures provide evidence of *Victoria Quay*'s role in Australia's coastal defence network. Post-war mineral boom, migration, modernisation, containerisation and specialisation of modern shipping are also reflected in the structures and buildings of *Victoria Quay*. (Criterion 2.2)

From the time of European settlement in 1829 until the mid-1970s, Fremantle was the main point of entry for migrants and visitors entering Western Australia. *Victoria Quay* was particularly important as the main

entry port for immigrants in the period following World War Two. (Criterion 2.2)

Victoria Quay has an historic link with Rottnest, through the activities of the harbour master and pilots who guided ships from the coast into the Harbour. (Criterion 2.2)

Victoria Quay played an important role in the defence operations of Australia during World War Two. Australian, American, British and Dutch wartime service groups operated submarine bases from Victoria Quay and many troop and liberty ships berthed there. (Criterion 2.2)

Victoria Quay is important as the site of the 'Bloody Sunday' battle that took place between the police forces and waterside workers over working conditions on May 4, 1919. The place is associated with the many lumpers and dock workers who were employed on the wharves. (Criteria 2.2 & 2.3)

Victoria Quay has significant associations with many individuals and groups, including its designer C. Y. O'Connor, its construction workforce, the Public Works Department of Western Australia and the Premier of the day, Lord John Forrest. O'Connor was responsible for the most significant civil engineering works of Western Australia at the time, and Forrest gave his political support to the construction of the Inner Harbour at both the local and federal level. (Criterion 2.3)

Victoria Quay is also associated with F. W. D Tydeman, General Manager of the Fremantle Harbour Trust from 1950 to 1963, who was responsible for the modernisation of the Harbour. (Criterion 2.3)

The wharf structure of *Victoria Quay* represents a significant engineering achievement of the late 1800s. (Criterion 2.4)

11. 3. SCIENTIFIC VALUE

The development of *Victoria Quay* necessitated reclamation works and transformation of the natural shoreline, fast construction, and the subsequent recycling, reconstruction and replacement of buildings as operational and technical needs of the port developed. As such, the place is a major archaeological resource. (Criterion 3.1)

The *Victoria Quay* structure exhibits a high and innovative degree of engineering accomplishment and technical proficiency. (Criterion 3.3)

11. 4. SOCIAL VALUE

Victoria Quay has national significance as first landfall and point of entry for tens of thousands of migrants to Australia who, regardless of their subsequent residence in other States and Territories, still regard the place as symbolic of the commencement of a new chapter in their lives. (Criterion 4.1)

Victoria Quay is highly valued by special interest groups, the local community and the wider public for its port and river related activities and cultural facilities. The place is regularly visited for a range of activities, including recreation, entertainment and education. (Criterion 4.1)

Victoria Quay is valued by the general community as the main port, once the only port, connecting the mainland with Rottnest Island, a highly patronised and valued holiday destination. (Criterion 4.1)

As a workplace place rich in aesthetic appeal and technological interest, the place ranks with Fremantle Prison and the West End as a focus of the identity of Fremantle. As a main port and a major public recreational asset, *Victoria Quay* contributes to a sense of place for the wider community. (Criterion 4.2)

12. DEGREE OF SIGNIFICANCE

12. 1. RARITY

The moles are a rare example in Western Australia of a river mouth based harbour design. O'Connor also designed Bunbury harbour on similar lines to the Fremantle moles; a long timber jetty within a protected bay. Geraldton and Albany both had land backed wharves and their timber jetties have either been demolished or are in a poor condition. (Criterion 5.1)

The lighthouse on South Mole is one of a small number in Western Australia which incorporate imported cast-iron fabricated towers, with sophisticated light chambers. The obsolescence of lighthouse technology is likely to increase the rarity value of this lighthouse, and its counterpart on North Mole, as examples of a type. (Criterion 5.1)

The transit sheds are unusual examples of maritime buildings of their period. The shed interiors and detailing are uncommon, as are the winch houses and their plant, and the remains of the World War Two submarine bases. Wartime defence buildings are increasingly uncommon in Western Australia. (Criterion 5.1)

The place is rare as a mostly intact surviving late 19th century port, linked to a similarly intact 19th century town, which together represent the heritage of an international gold exploitation venture. (Criterion 5.2)

Victoria Quay is uncommon on the national level as an industrial townscape that remains connected to a working port. Victoria and Constitution Docks, Sullivans Cove, Hobart, have a similar history which involved reclamation of the foreshore to create docks. Circular Quay and Cockatoo Island, Sydney, also have a similar history, but lack entrance moles and are no longer associated with a working port, although passenger activities remain. Nobby's Lighthouse and Head, Newcastle, have similar physical characteristics and scale to *Victoria Quay*, but are not directly related to port facilities, which are located further up river. (Criterion 5.2)

12. 2 REPRESENTATIVENESS

Fremantle Harbour and *Victoria Quay* are representative of the development pattern of Australian harbours. Beginning as small seaward jetties with poor shelter and harbour facilities, the port at Fremantle has developed into one of Australia's most efficient ports since the late 1800s. (Criterion 6.1)

The port structures are representative of the State's Gold Boom and other mineral, agricultural and demographic boom developments and exhibit remarkable technical expertise, confidence of execution and qualities which are particular to their time. (Criterion 6.2)

12. 3 CONDITION

Most buildings and structures are in a reasonable state of repair and are in good condition, as befits a working port.

The wharf structure is generally in good condition, although some concrete piles have suffered severe corrosion above the water line. The limestone of South Mole and the supporting filling under the landward side of the wharf has survived well in its marine environment. Some of the steel sheet piling of the slipways have suffered severe corrosion.

The buildings are principally constructed of timber, corrugated iron and asbestos-cement sheeting. Elements of some buildings have been subject to chemical erosion, weathering and general wear and tear. The condition of the various elements of the place ranges from fair to excellent.

12. 4 INTEGRITY

Overall, *Victoria Quay* has a moderate to high degree of integrity.

The wharf and majority of the buildings are largely intact and are still used for wharf related activities. Management, engineering and construction services have always been based in this place since the initial construction of the harbour.

The TAFE facilities and the closure of the shipyards at the western end of the Quay have reduced the integrity of this area. With the removal of cargo handling to the North Quay, the transit sheds on *Victoria Quay* have become redundant and are used for a variety of recreational and educational uses.

Nevertheless, the place continues to be a publicly accessible vantage point for viewing the Harbour and Ocean, as well as port facilities and activities. The traditional public and community uses of the western end of the Quay continue, as distinct from the working port at the eastern end of the Quay and on North Wharf. Ferry services and light industries in Slip Street, as well as port administration continue to operate on *Victoria Quay*.

12. 5 AUTHENTICITY

Overall, *Victoria Quay* has a high degree of authenticity.

The Quay and South Mole maintain the historic lineal harbour design, which replaced the earlier ocean jetty port. The wharf and the majority of the buildings are largely intact, as is the slipway area which has been largely unaltered since World War Two and the immediate post-War modernisation. The World War Two structures display high authenticity, despite deterioration and later additions. Slip Street and the bounding buildings are substantially intact and have a high degree of authenticity.

Changes to layout of the place and the fabric of individual elements reflect the continuing and changing needs of the working port and illustrate the sequence of development and evolution of the place.

13. SUPPORTING EVIDENCE

Supporting documentation has been compiled from the following sources:

Agnieshka Kiera, David Hutchison, Russel Kingdom, Jack Kent, Larraine Stevens and Tanya Suba, 'Victoria Quay and its architecture - its history and assessment of cultural significance', City of Fremantle, Fremantle, 1991.

Ian Molyneux and Associates, 'Victoria Quay Heritage Study', volumes 1, 2 & 3, prepared for the Fremantle Port Authority, Fremantle, July 1998.

David Heaver Architect, 'Summary of the Victoria Quay Heritage Study', prepared for the Fremantle Port Authority, March 1998.

The supporting documentation does not aim to give a full history of *Victoria Quay*, nor a full description of its components. For further information, refer to the above documents.

13. 1 DOCUMENTARY EVIDENCE

1829 Arrival of Captain Fremantle and Captain Stirling with the first British settlers. In June, Captain Fremantle claimed the western third of the continent of Australia for the British Empire near the location of present day *Victoria Quay*. Twenty-one vessels arrived by the end of the year.

1837 Whaling and ship building activity centred at Bather's Beach.

Lieut. Jones proposed a breakwater to crate an artificial harbour, south of Arthur Head.

1839 Surveyor General, J. S. Roe, proposed a similar scheme to Lieut. Jones'.

1849 Fremantle Harbour Board appointed; work started on Trigg's channel though the rock bar at the mouth of the Swan River.

1850 Arrival of the first convicts to Western Australia.

1851 First lighthouse built on Arthur Head, to the south-west of the Round House.

1853 Construction of a river jetty at the end of Cliff Street commenced; this became known as South Jetty.

1855 Captain E. Y. W. Henderson proposed a scheme for an artificial harbour, similar to Jones' 1837 and Roe's 1939 schemes.

1866 Completion of the first bridge across the Swan River at North Fremantle, using convict labour. The bridge placed limits on the possible upstream extension of the harbour.

1867 Extreme winter storms wrecked several ships and this galvanised efforts to design a safe harbour. Designs included a floating breakwater, the cutting of a channel through Rocky Bay, deepening of Trigg's Passage, and other ambitious schemes for the construction of moles or harbours outside the river.

1868 Cessation of convict transportation to Western Australia and subsequent decline in economic and demographic growth.

Walter Bickley proposed an artificial harbour, with breakwaters, at Rous Head.

1870 'Responsible government' granted to the colony of Western Australia.

By this time, there was extensive overseas and intercolonial trade passing through Fremantle, with about 100 ships visiting Fremantle each year. Western Australia was exporting wool, timer, minerals, horses, sandalwood and pearl shell, as well as importing a number of goods. Fremantle was also the entry point for many new settlers arriving in the colony, as well as visitors and tourists.

Fremantle was first seriously considered as the major port of the colony when Governor Hampton engaged W. T. Doyle, consulting engineer, to report on proposed harbour works. Doyle reported on 28 February and cited major technical challenges in establishing a harbour at Fremantle, particularly due to the small tidal range and low current force in the river, which caused littoral sand drift and silting. Doyle recommended that Trigg's Passage be deepened and widened and that the idea of Fremantle becoming the primary port of the colony be abandoned.

1872 New Jetty, later known as the Long Jetty, was built by Mason, Bird & Co., a timber firm. This was the first major public works project commissioned by the new representative government. The jetty ran south-west from Anglesea Point and originated a little west of the existing South Jetty. Ships drawing more than 3.2 metres still had to anchor in Gage Roads and unload into lighters.

The construction of a mole from Rous Head was first proposed by G Randell. A. J. Johnson, who also proposed a harbour in the river mouth, which was to be protected by two breakwaters with a 200 foot wide channel, supported Randell's scheme. A Harbour Improvement Board, led by Surveyor General, Malcolm Fraser, was appointed by the Governor to investigate the proposals for harbour development.

Control of the Port was divided between the Harbour Master's Department, which dealt with movements of shipping and safety, and the Customs Department, which controlled jetty and shore activities, including the loading and discharging of cargoes.

A jetty was built at Rockingham, as proposed by Doyle, to connect the timber mills at Jarrahdale with the coast by rail. Rockingham became the chief timber port until 1889, when Hamelin Bay became the busiest timber port. Nevertheless, legislators did not see Rockingham as a suitable primary port for the colony.

1873 The Harbour Improvement Board reported on 11 June and recommended that the advice of 'an eminent engineer' be obtained.

A Select Committee was appointed by the Legislative Council on 8 July, with Wallace Bickley as Chairman, to consider the Harbour

Improvements Board report. Council sought the advice of three Victorian engineers, particularly as they wanted expert advice on the problem of siltage. Although none of the engineers visited the site, all recommended that the harbour be located in Cockburn Sound.

1874 A second Select Committee was established to investigate proposals for a harbour. It recommended that harbour works be constructed in Gages Roads and that the most suitable plan was a breakwater of jarrah piles.

1875 Victorian engineer, Wardell (one of the men consulted in 1873 and visited the site in 1974) recommended that an island breakwater be constructed on concrete blocks, on the western side of Gage Roads.

T. H. J. Brown, civil engineer, proposed to cut through the north bank to provide a basin, protected by two breakwaters. Brown had the support of local Fremantle merchants, including W. D. Moore, W. E. Marmion and W. S. Pearse. Together they led a deputation to the Government. Other merchants opposed this location for the harbour.

1876 A second lighthouse was built on Arthur Head and lighthouse keeper's quarters erected. The first lighthouse was used as a flag store until c. 1904.

Another Select Committee was appointed to examine harbour proposals on 2 December. It recommended a timber breakwater, almost identical to Henderson's 1855 proposal.

1877 The Government decided that funds for a harbour were inadequate and gave priority to the Eastern Railway and roads. Nevertheless, eminent English marine engineer, Sir John Coode, had been requested to report to the Western Australian Government on the harbour development. Coode proposed two alternate schemes, one each side of the river mouth, and stressed the need for a determination regarding the route of the proposed Perth-Fremantle railway.

1881 Fremantle-Guildford Railway completed, with the terminal at the river end of Cliff Street. By this time, Fremantle still only had two sea jetties and a single river jetty, despite a plethora of proposals, committees and reports.

1883 The Fremantle Chamber of Commerce was revived, with William Moore as President, to campaign on the location for a harbour.

1886 Government Railway workshops were established in Fremantle. Although the Long Jetty was extended and widened to accommodate the railway, it was still inadequate, with berths exposed to winter weather.

1888 The Long Jetty was extended once again by contractor, R. O. Law.

1890 Responsible Government granted to Western Australia. and the colony could now raise its own loans. Although Premier John Forrest was heavily committed to establishing a principal harbour at

Fremantle, he faced considerable opposition from postal authorities in the other colonies, who preferred Albany as the port of call for mail steamers.

1891 C. Y. O'Connor, an Irish civil engineer with extensive experience in New Zealand, arrived in Western Australia in June. O'Connor had been Undersecretary for Public Works in New Zealand for many years and was directly contacted and appointed to the position of Engineer-in-Chief by John Forrest.[1]

O'Connor had a tremendous impact on the development of Western Australia, including the creation of the Public Works Department, the design and construction of the Inner Harbour, the extension of railways and roads, the design and construction of major water supply schemes, was well as other public works. O'Connor also designed the Bunbury Jetty on similar lines to *Victoria Quay*, with a timber jetty protected by moles.

O'Connor concluded that Coode's 1877 proposals were based on inadequate data and faced some difficulties in getting politicians to accept his arguments. Premier Forrest advocated for work at Owens Anchorage. Minister for Works, H. W. Venn, was one of O'Connor's earliest supporters.

1892/3 Major gold finds in the Coolgardie area.

1892 O'Connor proposed two schemes for a harbour at Fremantle: the lesser to cost £560,00 and take 5 years; the greater to cost £800,000 and take 8 years. A Joint Select Committee of both houses of Parliament was established in January to report on the proposed harbour.

The Joint Select Committee reported in favour of O'Connor's scheme on 15 February. O'Connor also won the support of his co-workers and many politicians, including John Forrest, who grudgingly felt that he should support his own appointee. Forrest also felt that the development of a harbour at Fremantle, rather than at Albany or Esperance, suited his own railway and land development policies. Fremantle would become the gateway through which all mail and most visitors would pass.

O'Connor appointed three experienced engineers from New Zealand: F. W. Martin, W. W. Dartnell and A. W. Dillon Bell. Dillon Bell frequently served as O'Connor's deputy when O'Connor was away. Special branches of the Department of Public Works were created, and George Temple Poole was placed in charge of the Architectural Division.

As many of the Ministers were still learning how to administer their Departments under Responsible Government, O'Connor himself carried out much of the daily supervision of the harbour work. At this time, his duties as both Engineer-in-Chief and General Manager of Government Railways were expanding rapidly.

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1 See Merab Tauman, *The Chief: C Y O'Connor*, UWA Press, Nedlands, 1978.

Preliminary work on the Harbour began with the extension of the Long Jetty and completion of road approaches.[2] Quarry sites at Rocky Bay were tested and opened and a railway line laid from the quarry to Rous Head. Rolling stock and equipment were purchased.

Construction of the North Mole began in November 1892, using the pierre perdues system, whereby large blocks of stone are randomly placed directly on the sea bed.

1894 The South Mole was commenced in August, with work proceeding slowly. Material from the levelling of Arthur Head and stone from Rocky Bay, brought across from North Mole by a bridge, was used in the construction of the South Mole.

At the same time as the moles were under construction, work commenced on the blasting of the bar at the river mouth and dredging of the entrance channel. Temporary wooden stages were built over the bar, and shot holes were drilled by hand. Progress was slow due to the proximity of the town of Fremantle, as care had to be taken with the strength of blasts. Dredging of the blasted rock did not commence until October 1896, giving some indication of the scale of the project.

1895 The North Mole was completed in January to its original design length of 894.5 metres. However, it was decided to extend it to 1,051.6 metres; this was achieved in November. The entire Mole was constructed with stone from the Rocky Bay quarries. On completion, the North Mole contained about 440,000m^3 of rock.

1896 Dredging of blasted rock at river mouth commenced in October, with the dredges *Fremantle.* and *Parmelia.* The sand dredge *Premier* began work on deepening the inner harbour. Spoil from the dredging works was used to fill the embankment for the southern quay.

Due to the heavy traffic brought about by the gold rushes, temporary wharfage was constructed along the north (304.8 metres) and south (91.4 metres) moles. Considerable congestion and delays in unloading cargoes continued to occur, primarily due to the inadequacies of the railway system. This prompted reports in the press that stressed the plight of the miner awaiting food and machinery.

1897 *Victoria Quay* was substantially finished during this year and the Inner Harbour was effectively opened for traffic on 4 May, when the *S.S. Sultan*, a steamer operated by the Western Australian Steam Navigation Company, berthed on its return from Singapore. By June, the total wharfage, including temporary wharves, was 1,752.6 metres. The Harbour was immediately in heavy use from overseas vessels.

The South Mole was completed to a length of 621.8 metres. Work on further extension of the North Mole commenced in July. This was completed in December 1902, to a total length of 1,463 metres.

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[2] The Railways Department took over control of the Long Jetty from this time.

1898 On 28 February, the North German Line vessel, *Prinz Regent Leopold*, became the first mail steamer to berth at Fremantle. The occasion was celebrated with a banquet held in the Fremantle Town Hall.

1889 The Lumpers Union was formed on 4 July, becoming the first unskilled labourers union in Western Australia.

Dock workers played key roles in the development and working of the Harbour, as well as being a significant element of the Fremantle community. Working conditions for the lumpers and dockers were arduous and sometimes dangerous, often in poorly ventilated sheds over long hours. Work was not assured and fluctuated according to the season and the arrival of cargo vessels.

Men wanting work were required to assemble at a line drawn across the western end of Cliff Street and wait for a foreman, the 'pannikin boss', to blow a whistle. The men would then race to him and work would be awarded to those who got there first - the fastest and fittest got the most work. Later, wire compounds or 'bull rings' were erected and the labourers waited like herded cattle for the call to work.[3]

The lumpers, who loaded and unloaded cargo, were employed as casual labourers by the Fremantle Harbour Trust, and were only paid when working. The dockers were employed by the shipowners and stevedoring companies and many were placed in a labour pool, on which their employers could call when needed. The differences in job security created division among the workers, which prohibited united union action which may have improved at least some of the working conditions.

1900 The Post Master General in London gave approval for P&O and Orient Line mail steamers to berth at Fremantle, realising Forrest's long held ambition of making Fremantle Western Australia's principal port. *RMS Ormuz*, the first British steamer to berth at Fremantle, arrived on 13 August. This had a dramatic effect on the number of ships calling at Albany.

Victoria Quay had been designed as a marginal or continuous wharf, and the Orient Line initially refused to berth its ships alongside the Quay itself. Although one of seven planned 'finger' piers along the north side was completed to accommodate their steamers, the Orient Line did indeed berth at *Victoria Quay*. The northern side was eventually completed as a continuous wharf, similar to *Victoria Quay*, providing a wider inner basin for the turning of vessels.

A temporary slipway was built at Rous Head for larger vessels; this was used for nearly 50 years.

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3 See Stuart McIntyre, *Militant: The Life and Times of Paddy Troy,* Allen & Unwin, Sydney, 1984; Bryn Griffiths, *Wharfies: a celebration of 100 years on the Fremantle Waterfront 1889-1989*, Platypus Press, Perth, 1989; Bobbie Oliver, *War and Peace in Western Australia: the social and political impact of the Great War*, UWA Press, Nedlands, 1995.

1902 O'Connor committed suicide in March, by which time Fremantle was the leading port of Western Australia. O'Connor's plan for Fremantle Harbour was so far-sighted, that it was able to accommodate most large vessels for 60 years.[4]

Dredging of the entrance channel and of the inner harbour to a depth of 9.1 metres was completed by the suction dredge, *Premier*.

Transit sheds B, C and D were completed on *Victoria Quay*. [5] The end of South Mole was topped with granite in preparation for a new cast iron lighthouse.

1903 The Fremantle Harbour Trust took over control of the Port of Fremantle on 1 January, under the *Fremantle Trust Act* (1902). The Trust was administered by five commissioners and the Public Works Department remained as the design and construction authority.[6]

The pilot station was relocated from Rottnest to Fremantle in August and the pilot boat, *Lady Forrest*, was commissioned.[7] Lighthouses for the two moles arrived and the first, erected on South Mole, was found to be too strong. The white light was replaced with a fixed green light; the lighthouse intended for the North Mole was installed at Gantheume Point, Broome.[8]

Work on the Harbour was substantially finished by the end of the year, ahead of schedule. The cost of the harbour exceeded initial estimates (£1,353,920 as against £800,00) due to design changes, extension of the North Mole, and the larger width of the swinging basin. The South Mole was completed to original design.[9]

The construction of the Harbour had a significant impact on Fremantle, necessitating new public and commercial buildings. The commercial district shifted along High Street, towards Cliff Street and the entrance to the Quay. The locations of the new Post Office (1907), in Market Street, and the new Railway Station (1906) on Phillimore Street, emphasised the growing relationship between the town centre and the Quay. Woolstores, hotels and commercial buildings, particularly those related to shipping activities, concentrated along Phillimore Street, Elder Place and Beach Street. The facades of the buildings along the southern side of Phillimore Place followed the original shoreline. The relocation of the Government Railway Workshops from Fremantle to Midland in

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4 Malcolm Tull, 'The development of the Port of Fremantle, Australia's Western Gateway', in *Great Circle*, vol 7, no 2, 1985, p. 121; Erika Wagner, *Seaports in Western Australia*, trans. T. H. Elkins, Bamberg, 1988, p. 33.

5 Alpha-referencing for the transit shed initially ran east -west. This was changed in 1905 at the request of the Fremantle Harbour Trust Commissioners.

6 J. S. H. Le Page, *Building a State: a history of the Public Works Department 1829-1985*, WA Water Authority, Leederville, 1986, p. 330.

7 The *Lady Forrest* is now on display in the Historic Boats Museum, B Shed, Victoria Quay.

8 Fremantle Harbour Trust Commissioners, 'Annual Report of the Fremantle Harbour Trust', Perth, 1903.

9 Le Page, op. cit., p. 199.

1904 also had a significant effect on housing and commerce in Fremantle, with 300 families moving away from Fremantle.[10]

1904 *Victoria Quay* was raised by 0.91m, for 426.7 metres east of Cliff Street, to allow for a loading platform at the rear of the transit sheds. The rubble embankment under *Victoria Quay* was faced with 1.6cm of concrete rendering.

Electric lighting was connected throughout the Quay and more sheds were constructed. By the end of the year, there were nine transit sheds on the Quay, which the Fremantle Harbour Trust Commissioners described as 'splendid buildings'.[11] One building, used the Public Works Department during the construction of the Harbour, was relocated to the west end of the Quay. The new sheds and the adjacent railway lines allowed for the concentration of cargo sorting work at ship-side and did away with the costly method of landing the cargo and trucking it to the railway sheds or yards.

1905 The Long Jetty and South Jetty, which had been vested in the Fremantle Harbour Trust, were revested in the Crown. The Long Jetty, now under the control of the Fremantle City Council, was used as a public promenade; South Jetty was handed over to the Fisheries Department.

A Passenger shelter shed and refreshment room were built at the junction of Cliff Street and the Quay. The alpha-referencing of the transit shed was reversed.

1906 By this time, the numerous detached buildings which had been constructed on *Victoria Quay* and occupied by stevedoring and other firms associated with the port, were in poor condition. The Public Works Department designed terrace buildings which were built abreast of B Shed, and the older buildings were removed.[12] A new shelter for wharf labourers was also built at this time, at the request of the Fremantle Lumpers Union. The timber and iron shelter provided seating for 100 men.

1907 Wheat began to replace gold as the most important export. The Harbour workers were able to cope with the increased export of wheat, largely due to more efficient cargo-handling methods.

An Information Bureau was erected for the dissemination of information to new arrivals and visitors, reflecting the growing role of the port as an entry point to Western Australia. The dining room for the Old Men's Depot at Mount Eliza, was relocated to the west end of the Quay for use as a workshop, and a railway siding laid through it to connect with the construction jetty at Arthur Point. A buoy and chain depot was established on the western side of this shed.[13] H.M. Customs offices in A Shed were completed.

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10 R. Reece and R. Pascoe, *A Place of Consequence: a pictorial history of Fremantle*, Fremantle Arts Centre Press, Fremantle, 1983, p. 56.

11 Fremantle Harbour Trust Commissioners, op. cit., 1904.

12 ibid., 1906.

13 ibid., 1907. The former dining room from Mt Eliza has presumably been demolished.

1911 Engineer-in-Chief, James Thompson, reported that the piles in the harbour were badly damaged by *teredo navalis* (marine worms) and that the wharves would require reconstruction. This resulted in a public debate regarding the relative merits of round and square piles' resistance to the marine worm.

The *C. Y. O'Connor Memorial* was unveiled on 23 June. Designed and crafted by P. G. Porcelli, the bronze sculpture was located in front of the Harbour Trust Offices. Porcelli, a popular sculptor who was responsible for many sculptures and memorials throughout the State, won the competition for the design of the memorial, ahead of 16 other competitors.

1912/3 *Victoria Quay* was repiled and redecked with jarrah timber, a substantial boost to the local timber industry. The eastern end of the Quay was extended 60.7 metres at the same time.[14]

J Shed was completed and C Shed extended. The Immigration and Information Bureau were relocated near the Market Street entrance of the Quay to make was for the C Shed extensions. I Shed was also extended and alterations to the eaves and guttering of all sheds was completed. The Waiting Room at the end of Cliff Street was part fitted out as a waiting room for ladies and children.

1913/4 The inner harbour was deepened to 10.97 metres and the old mail jetty (the pier built on the north side for the Orient Line steamers in 1900) was removed. The North Quay was extended 182.9 metres.[15]

1914 The Government appointed a Special Advisory Board to investigate and report on the bulk-handling of wheat. Although the Board reported in favour of adopting bulk handling, the Harbour Trust Commissioners did not act as they were awaiting a Government decision on the extension of the Harbour.

Development of the Harbour virtually stopped due to the outbreak of World War One. Works were limited to maintenance and some alterations to sheds and rail lines and repairs to the Quay itself because of further *teredo* worm damage. Horse troughs were provided on the approach roads to the transit sheds. Four 3 tonne cranes were erected, two on each mole, in addition to the nine existing cranes.

1916 Demolition of the South Mole wharf was completed.

1917 The Lumpers Union, now allied with the eastern States, became involved in a national dispute when the Fremantle Lumpers refused to load a Singaporean vessel with Western Australia flour, fearing it would eventually feed the soldiers of the enemy German forces. The State Government reacted by recruiting non-union, 'scab' labour to work on the wharves and the Commonwealth Government removed union preference clauses and used wartime regulations to force the lumpers to work alongside the scabs.

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14 Le Page, op. cit., p. 330.

15 ibid.

The lumpers resisted until they were forced back to work at the end of September, because of the hardships imposed on their families and threats that the union would be deregistered. The scabs formed an alternative union, the Fremantle National Waterside Workers Union and were given preference over the lumpers. Animosity between the two groups festered throughout 1918 and into 1919.

1919 'Bloody Sunday', a significant day in the history of Western Australian labour relations, occurred on May 4. Due to the spread of 'Spanish flu', a virulent strain of influenza, throughout the world, ships entering Fremantle were quarantined in Gage Roads for seven days.

On 10 April, the *S.S. Dimboola* arrived at Fremantle. After some passengers were transhipped to the quarantine station at Woodman Point, local merchants put pressure the Commonwealth quarantine officials to allow the vessel to berth for unloading. For once united, the lumpers and scabs refused to unload the vessel, fearing that the two day quarantine and fumigation was insufficient. The scabs broke ranks and began to unload before being forced off the wharf by the lumpers who picketed the vessel. Although the lumpers offered to unload other vessels, the employers would not allow it until the scabs were allowed back on the wharves. Supported by the Fremantle community, the lumpers held out and the impasse continued.

Premier Hal Colebatch issued an ineffective ultimatum on May 1. On Sunday, 4 May, Colebatch escorted a group of armed police and volunteer strike breakers to the port on ferries from Perth, so that barricades could be erected for the protection of the scab workers who were still trying to access the *Dimboola* to unload it. Hearing of these moves, the lumpers began to assemble at the Cliff Street entrance to the Quay and on the North Fremantle Traffic Bridge. Unionists and supporters began converging on Fremantle, led from the Fremantle Esplanade by the lumpers' president, W. Renton.

The crowd on the bridge pelted the Premier's ferries with rocks as they passed under; the police replied with revolver shots. Upon arrival at the Quay, foot and mounted police joined forces to formed two lines, one facing Cliff Street and the other facing eastwards towards the bridges. Upon reaching Cliff Street, Renton encouraged his men to withdraw, but buoyed by the excitement at the bridge, men and women surged down the Quay towards the barricades between B and C Sheds. They were gradually forced back by the police, but violence broke out when a lumper was hit with a policeman's baton.

Meanwhile, a crowd of about 4,000 gathered at the Cliff Street entrance. Others were gathered in the railway yards, where piles of ballast metal and truckloads of steel washers and bolts provided handy ammunition. As the lumpers and their supporters at the barricades moved forward, the police were ordered to fix bayonets before advancing. A lumper was immediately bayoneted in the

thigh and the rumour that he was a returned serviceman quickly spread.

Infuriated by what they had witnessed and heard, the lumpers broke through the barricade and onto the wharf before they were stopped at the end of C Shed by the armed police. The police charged. Renton's horse was dragged from under him; he was clubbed to the ground and lay with a head wound. Tom Edwards, another lumber, tried to come to his rescue. Edwards was struck on the head with a rifle butt, and collapsed on the ground, severely wounded.

As the battle raged, a Justice of the Peace tried to calm the crowd and live ammunition was issued to police. Sanity prevailed when Inspector Sellenger, senior Fremantle police officer and Alex McCallum, secretary of the State Labour Federation, stepped from the commotion and declared a brief truce. The lumpers' leaders agreed to talk with the Premier, who was granted safe passage back to Perth. The police and volunteers were withdrawn, but following another mass meeting later in the day, a procession converged on the wharf and proceeded to destroy many buildings, watched by a large crowd. Many of the protesters were returned servicemen, some of whom were still in uniform, having just landed in Fremantle that day. Tom Edwards died in the evening of May 7. On the same day, the scab workers were withdrawn.[16]

1921 The Long Jetty was demolished by R. O. Law. The few remaining stumps were retained in situ in 1984 when the breakwater for the Challenger Harbour was under construction.

A new ferry landing was built at the western end of *Victoria Quay*.

1922 A new slipway was built at Arthur Head, primarily for the construction of new hulls for the dredges *Fremantle* and *Parmelia*. and also for the overhaul of coastal vessels and dredges.

1923 Work on reconstructing the substructure of the Quay using reinforced concrete commenced, due to extensive *teredo* worm damage. A concrete casting yard was established behind the western end of the Quay. This represents the first significant use of reinforced concrete in a marine structure in Western Australia.[17]

1923 Royal Navy vessels visited *Victoria Quay* in February.

New level luffing gantry cranes, designed by Babcock and Wilcox and built by the State Implement Works, were ordered.

1924 By June, reconstruction of the Quay, which had commenced at the eastern end of D Shed, was well advanced. Some of the first concrete piles were found to be defective and had to be replaced. It was also proposed that the height of the Quay above the water be raised, west from C Shed.

Fruit shippers called for a ventilated shed to allow fruit to cool after long country rail runs into the port. One shed was modified with

16 For a fuller account, see Bobby Oliver, op. cit.

17 Le Page, op. cit., p. 400.

wire netting shutters on all door openings. This became the standard design in the construction of new wharf sheds.

1925 The Commonwealth Government commissioned Sir George Buchanan to report of the operation of Australian ports.

1926 A and B Sheds were demolished and rebuilt.

Due to flooding and the collapse of the Fremantle traffic bridge causing silting, the inner harbour was re-dredged.

1927 F. W. Stileman, Engineer-in-Chief, was asked to report on the development of Fremantle Harbour and the State Government voted in favour of his plan on 2 October.

The Fremantle Business Men's Association met on 7 December and questioned why no provision had been made for bulk handling and electrification of the Metropolitan Railway in plans for the Harbour.

1928 A Royal Commission was established in July to consider the bulk handling of wheat, following a public meeting called by the Fremantle Municipal Council which passed a resolution calling for a Commission.

The Harbour Trust recommended that all sheds be lengthened to an average of about 137.2 metres. This was achieved by altering the grouping of the sheds during the reconstruction of the Quay. A and B Sheds were dismantled and portions annexed to existing sheds.

1929 D Shed was widened by the addition of a back bay. Together with E and F Sheds, D Shed was grouped into two large sheds, due to the increased length of vessels berthing at the Quay.[18] By the end of this year, reconstruction of the Quay had been completed to a length of 812.9 metres. As the eastern end of the Quay was still relatively sound, reconstruction work transferred to the North Quay. Pilot signal moved from Round House to Cantonment Hill.

In February, Sir Alexander Gibb and Partners was appointed to report on the Stileman plan, which they did in July.

Three major proposals for development of the Harbour were put forward between 1927 and 1929, as the trade and tonnage handled through *Victoria Quay* had reached capacity by this time. The ensuing debate was prolonged and vigorous.[19] However, no proposal was accepted as when the new government, under Sir James Mitchell, came to power on 30 April 1930 they claimed there were no funds for public works. Even reconstruction and reorganisation of wharf facilities had to be stopped in 1930 due to cutbacks caused by the Great Depression.

1930 Although the total length of the quays was over 3,000 metres, there were only 15 cranes operating at the port, suggesting that the

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18 Fremantle Harbour Trust Commissioners, op. cit., 1929.

19 For a detailed discussion of three major proposals see Tull, op. cit. Proposals were prepared by Engineer-in-Chief of the Public Works Department, F.W.H. Stileman (1927); Sir George Buchanan, eminent British consulting engineer (1927); and P. Rustat, of Sir Alexander Gill and Partners of London (1929).

harbour was inadequately mechanised and relied heavily on the manual labour of the lumpers. It has been suggested that the workers were opposed to mechanisation, seeking to protect their jobs.[20] Although no port development was undertaken during these years, cargo handling was improved through minor improvements to existing facilities and efficiency.[21]

1931 Following a proposal from Westralian Farmers Ltd., bulk handling was adopted, largely due to the prohibitive cost of bagging and transporting wheat following the bumper crop of 1930. Westralian Farmers provided bulk wheat bins at five country sidings and the Fremantle Harbour Trust provided temporary bulk handling equipment on North Quay.

1933 Westralian Farmers and the Trustees of the Wheat Pool of Western Australia, which had been established the previous year to operate the bulk handling system, formed the Co-operative Bulk Handling company. Co-operative Bulk Handling obtained leases for an additional 48 sidings, but the new Labor Government stopped further expansion, fearful that bulk handling would lead to a loss of jobs at the port.

1935 A Royal Commission appointed to investigate bulk handling of wheat reported in July that the output per man-hour would be trebled. The construction of concrete silos was also recommended, but this was delayed until after World War Two. One positive spin off from the introduction of bulk handling was that it freed up four berths, making the need for any major expenditure on works unnecessary for the immediate future.[22]

A new shed for waterside workers was erected, involving the demolition and rearrangement of existing buildings. A considerable amount of material was reused.

1937 Gun time signal discontinued on 8 January, as time signals were now given by wireless.

1939 Outbreak of World War Two in August

The Harbour was partly given over to naval requirements during World War Two, with British, Dutch and American submarines operating from the port and visits by war, troop and hospital ships placed extra pressure on the port. Works undertaken during the War were largely for defence purposes. Control of security on the wharves came under the control of the Commonwealth Government.

1940 The first Australian and New Zealand troop convoy arrived in Fremantle for on 18 January, staying for two days. The ships included the *Queen Elizabeth, Strathaid, Strathnaver, Orford, Orion, Orcades, Otranto, Empress of Canada* and *Empress of Japan*. Another convoy, which arrived in May, comprised of many of the

20 Wagner, op. cit., p. 34. See also Stuart McIntyre, op. cit and Griffiths, op. cit.

21 Tull, op, cit., p. 131.

22 ibid., p. 134.

great passenger liners, including the *Queen Mary*, *Empress of Britain*, *Mauritania*, *Andes*, *Empress of Canada*, and *Empress of Japan*. The *Queen Mary*, which pulled too much draft to enter the Inner Harbour, called at Fremantle many 19 times between 10 May 1940 and 26 March 1943. The larger Queen Elizabeth called 11 times between 10 May 1940 and 10 December 1941. At this time, the *Empress of Britain* was the largest merchant ship to berth in the Inner Harbour. Many of these passenger liners had visited the port during peace times.

A boom defence system, a wire rope fence with a central gate, was erected across the entrance of the Harbour and began operation in December. The gate was opened by a winch on the North Mole. Two buildings were erected at the west end of *Victoria Quay* for the naval unit operating and maintaining the boom defence.

1941 A troop convoy, including the world's five largest ships, arrived at Fremantle.

The Japanese attacked Pearl Harbour in December.

1942 H Shed was built at the easternmost end of the Quay for the Defence Department in January. The first convoy of American troops arrived in February. Gun posts were established in and around the harbour by an American anti-aircraft regiment in March; they were relieved by Australian Army units three months later.

The U.S. Navy established a depot at Fremantle to work their vessels, almost having exclusive use of the new slipway. The Harbour was also used extensively for repairs to merchant vessels which had been damaged by enemy action or required maintenance.

In March, following the fall of Singapore, accommodation in the harbour was under pressure from vessels brimming with refugees. At one time, as many as 30 ships were waiting in the Gage Roads for an available berth.

The Signal Station on Cantonment Hill was used by the Australian Navy from May 1940 until June 1944, when a naval signal station was completed on top of one of the silos on North Quay.

A new 2,000 tonne slipway at Arthur Head, which was commenced in October 1940, was completed in September. As many of the younger lumpers had joined the armed forces, the majority of the waterside work fell to all the older men. The U. S. Navy provided extra manpower and the Commonwealth Government provided extra funds for the completion of the slipway.

1943 Between the arrival of the first Liberty ship, on 3 January and 30 June 1943, over 200 such wartime vessels had been berthed at Fremantle. In September, several Royal Navy submarines arrived to establish a British submarine base; the Royal Netherlands Navy also had a powerful submarine force operating from the Harbour.

1945 A large section of the Royal Navy, including a battleship, three aircraft carriers, two cruisers and 11 destroyers arrived in February.

At the end of the War, the Fremantle Harbour Trust took up the challenge to upgrade the efficiency of the port with more mechanisation; however, no new work was undertaken on *Victoria Quay* until the early 1950s.

1949 A report on the development of Fremantle Harbour, prepared by consulting engineer, F. W. E. Tydeman, was released. Tydeman's brief was to consider only the layout of the Harbour and its structures, not its operation. Tydeman showed that it was impossible to consider one without the other and recommended works in five stages.[23] The Tydeman report was only partly implemented, as once again, debate ensued as to the best approach to upgrading the Harbour.[24]

New buildings for the wharf fire station were erected opposite F Shed.

1950 Tydeman was appointed General Manager of the Fremantle Harbour Trust, a position he held until 1963. At this time, the waterside workers numbered about 28,000.

Tydeman immediately implemented a program of mechanisation, and work also began on developing the North Quay for handling general cargo. As harbour work was heavily labour intensive, Tydeman experienced difficulties with the unions when he began to introduce mechanisation and containerisation. Many dockworkers were concerned about the effect of these developments on their jobs. Nevertheless, the unions slowly adapted to the new working conditions as the Harbour was under increasing pressure to meet demands. There were still backlogs created by the disruption of shipping services during the war, as well as a shortage of ships and dilapidated road and rail services. At some times, up to 25 ships would be waiting in Gage Roads, 'the Rottnest queue', for an available berth. *Victoria Qua*y had only four or five useable berths, and North Quay was used only for handling bagged wheat.

1951/3 Tydeman's mechanisation program implemented with the purchase of fork lift trucks, motor cranes and tow motors. Modern mechanical workshops were built and the accommodation for other maintenance sections improved. The North Quay transit sheds were completed.

The Government appointed the Dumas-Brisbane Committee to review the overall planning for harbours, railways and roads in the State, following proposals for an oil refinery and steel rolling mill at Kwinana.

1954 Dumas-Brisbane Committee reported and construction of a new ort road, abutting the coastline in North Fremantle, was commenced. The old breakwind wall was demolished. The Fremantle Harbour

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23 F. W. E. Tydeman, 'Report on the Port of Fremantle', City of Fremantle, 1948.

24 If Tydeman's proposal had gone ahead, Fremantle would have been changed dramatically with the loss of Arthur Head, the Round House and the Esplanade. The West End would have become a peninsula, surrounded by docks, roads, railway lines and yards.

Trust obtained the title to further parcels of land in North Fremantle.

1955 From 1955, until c. 1972, Western Australia experienced a period of economic prosperity, brought about by agricultural and mineral booms. The mineral boom of 1959-72 triggered port development, which 'rivalled the great leap which occurred in the 1890s'.[25] Development was largely concentrated on the Outer Harbour, work in Cockburn Sound to serve Kwinana, existing southern ports and new northern ports.

Works in the Inner Harbour were concentrated on the North Mole and included further mechanisation, improved methods of bulk handling grain, containerisation and the modification of berths for 'roll on, roll off' ships. Seven of nine new quay cranes were installed.

1957 The first stage of the new Passenger Terminal commenced. The most dramatic effect on *Victoria Quay* from the mid late 1950s until the early 1979s was the volume of post-war migrants arriving in Fremantle.[26] From 1966 to 1971, the majority of interstate migrants and possible nearly all of the international immigrants arriving in the State would have arrived at Fremantle Harbour.

1959 New railway yards at Leighton, part of the Tydeman plan, were commenced. The yards included a new link line with the port and marshalling lines. The entrance channel to the Harbour was deepened and widened and the construction of two new slipways (610 tonne and 101 tonne), on the southern side of the Harbour, was started.

1960 The new Passenger Terminal was opened by Premier, Sir David Brand in December. The *Oriana* was the first liner to berth at the new terminal. Liners carrying tourists, sailing both to and from Fremantle, also made up a considerable portion of the Harbour traffic at this time.

1961 The first stage of additional bulk grain storage was commenced on North Quay. Work on a new railway bridge was also started. The old Fremantle Harbour Trust Offices were demolished in December, to make way for the new administration building.

1964 The new, 11 storey Administrative Block was opened on 5 March and the Signal Station from Cantonment Hill was relocated to the top of the building.

On 27 November, the Fremantle Harbour Trust was renamed the Fremantle Port Authority.

1965 Tydeman retired, after 15 years as General Manager. During his time, Fremantle Harbour had been expanded considerably to

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25 Le Page, op. cit., p. 531.

26 See R. N. Gosh, 'Economic development and population growth in Western Australia since 1945', in C. T. Stannage (ed), *A New History of Western Australia*, UWA Press, Nedlands, 1981.

become one of the most highly mechanised ports in the world.[27] The modernisation of the port had led to a rapid rise in the reduction of waterside workers, leading to changes in the commerce and community of Fremantle.

1971/2 The railway yarding backing *Victoria Quay* became redundant in 1971/2 when marshalling yards were opened at South Fremantle. Lines and equipment were cleared from the Quay and the land vested in the Fremantle Port Authority. Stage 1 of the new entrance at Cliff Street commenced in 1972, partly using the former railway land. The road was redesigned, the No. 1 gate demolished and the land in forecourt of the Administration Building landscaped.

By the end of 1972, *Victoria Quay* had virtually reached its present stage of development and even though there was a decline in passenger traffic from the early 1970s, the Inner Harbour was working at full capacity.

1974/5 C.Y. O'Connor statue was relocated to the forecourt in front of the Administration Building.

The Outer Harbour was further developed. Some Inner Harbour berths were modified, and other areas were converted to handle cargo containers.

1984 No significant work was undertaken in the 10 years leading up to the preparation for the America's Cup. Works for the Cup included the construction of Challenger Harbour.

1987/9 The Inner Harbour was dredged to 13 metres and a small boat harbour and new industrial area constructed on the north side.

1996 Relocation of E shed.

1997? Closure of slipway.

1998 The Fremantle Waterfront Proposal released, which aims to 'restore and revitalise' *Victoria Quay*.[28] The plan features a new Maritime Museum, a waterfront park, a new ferry terminal and a number of commercial developments.

COMPARATIVE INFORMATION

Fremantle Harbour and *Victoria Quay* are representative of the development pattern of Australian harbours, the majority of which began as small, seaward jetties with poor shelter and harbour facilities.

Victoria and Constitution Docks, Sullivans Cove, Hobart, have a similar history which involved reclamation of the foreshore to create docks. Circular Quay and Cockatoo Island, Sydney, also have a similar history, but lack entrance moles and are no longer associated with a working port, although passenger activities remain.

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27 Fremantle Harbour Trust, 'Port of Fremantle: First in Australia', October 1963, p. 2.

28 Government Property Office, 'Fremantle Waterfront: Draft Masterplan for the Redevelopment of the Western End of Victoria Quay', Perth, 1998.

Harbours with similar physical characteristics and scale also occur outside the capital cities, such as Nobby's Lighthouse and Head, Newcastle. However, this place is not directly associated with port facilities, which are located further upriver. Other industrial ports include Newcastle, Wollongong, Port Philip and Mackay.

13. 2 PHYSICAL EVIDENCE

Key to elements: **B** - Building **S** - Structure **A** - Archaeological Area

B1. C Y O'CONNOR CENTRE

Constructed c. 1942 adjacent to the Immigration Office, on the site of the demolished refreshment shop and Railway Wharf Office (c. 1925).

A brick and tile building, which represents a change in building materials on the wharf. The timber joinery is largely intact, although some windows have been enlarged.

B2. IMMIGRATION OFFICE

Built c. 1912 to replace the original immigration office, which was demolished to make way for C Shed. When its role as an immigration office became redundant, the place was used as a police station.

A timber frame construction, with external walls clad in weatherboard, and some fibre-cement sheeting between the gutter line and verandah roof. The tile roof probably replaces an earlier corrugated iron roof. The brick and concrete verandah/colonnade was probably added in the 1920s. This is an official building on a domestic scale.

B3. PUBLIC TOILET

Date of construction unknown, but it is likely to have been built after 1928. The place is associated with the Immigration Office.

A timber frame construction, with a custom orb roof. The lower walls are clad in weatherboard and the upper walls in fibre-cement sheeting. This well proportioned and carefully detailed building mimics the style and character of the large goods shed, and contributes significantly to the aesthetic and townscape character of the place.

B4. WAITING ROOM

Constructed between 1920 and 1928, this is a utilitarian building, similar to the majority of the wharf and railway buildings on *Victoria Quay*. The place provided support accommodation to the immigration activities and contributes to the townscape character of the Quay.

A timber frame construction with a mono-pitch, and corrugated iron roof. The northern elevation is a brick parapet wall and the remainder of the external walls are clad in weatherboards. A canopy is suspended from the parapet wall with asbestos sheet cladding to

the soffit and fascia. The western end of the building is probably an extension, designed to match the original detailing.

B5. FPA Building

Built in 1963, the FPA Building was designed to house the Port Authority's staff in one building, rather than the eight separate locations scattered around the wharf area. Designed by Hobbs, Winning and Leighton and built by A. T. Brine and Sons Ltd, the size of the building far exceeded the needs of the FPA staff and it was seen as a partial commercial venture. The construction of the building required the demolition of several buildings to the east end of Slip Street, including the former Harbour Trust Office and the State Shipping Office building.

The steel framed office and service tower building is carried on 220 'Frankie' piles driven to an average depth of 30 feet below ground level. The loading capacity is of each pile varies between 60 and 71 tons. The orientation of the building was given special consideration for controlled natural lighting. All windows are in anodised aluminium frames, glazed with anti-glare glass. Of interest is the fact that all windows are completely reversible, allowing all window cleaning to be carried out from within the building. All windows on the ground floor and north side are protected with fixed vertical and horizontal sun baffles which protect the windows from direct sunlight.

The roof over the ground floor is thought to be unique in Australia. It is a folded roof pattern of pre-stressed concrete units in two separate spans. Tiling has been used for both the exterior wall finish and interior wall decoration; ceilings throughout are generally acoustic tiles. The concourse floor is parquet in local jarrah and wandoo. The forecourt, which follows the alignment of the former North Jetty, incorporates a set down driveway, paving, lawns and other plantings.

The character of the building boldly counters the scale and style of the older wharf buildings.

B6. MECHANICAL WORKSHOPS

Plans for the concrete foundations and drainage layout were drawn in November 1951 and construction commenced the following year. The amount of mechanical equipment required for the quick turnover of shipping necessitated the construction of this building. The site was formerly occupied by the Elder Smith Steel Works (established c. 1918).

The buildings consist of four simple bays, each with a gable roof. The external walls are clad in corrugated iron sheeting, the roof is corrugated asbestos-cement sheeting, and the floor concrete. The window and doorframes are predominantly mild steel. The building fabric is largely intact.

The industrial form and materials of this building is consistent with other wharf buildings. It makes a positive contribution to the Slip Street streetscape, a narrow street, rich in wharf related activities.

B7. GENERAL/MAIN STORE

Constructed in 1956, this building now occupies land previously occupied by the Elder Smith Steel Works. The eastern and western bays pre-date the main building.

The building consists of 10 narrow, timber bays. The external walls are clad in horizontal corrugated iron; the three western most bays have been clad in custom orb at some stage. The saw-tooth timber roof structure is covered in corrugated asbestos sheeting; the older western and eastern bays have been re-roofed in custom orb. The original timber joinery is largely intact.

The materials and character of the building are consistent with the other buildings along Slip Street.

B8. BOOM DEFENCE BUILDING 1

Together with B10 Boom Defence Building 2, this building was built during 1941/2 to provide support accommodation for the operation of the State defence systems across the entrance of the Inner Harbour. Torpedo nets were made and repaired in the building. The building was later used for general port activities, and was the Wet Weather Clothing Store in 1964.

The simple building is constructed in brick, with a single span arched roof clad in corrugated asbestos cement sheeting. It is well proportioned, has a good standard of detailing and is largely intact.

While being different in style, materials and scale to the majority of the utilitarian, wharf builds in Slip Street, Boom Defence Building 1 contributes to the character of Slip Street.

B9. NAVY COMMANDER RESIDENCE

Constructed between August 1941 and April 1942 as a residence for the Australian Navy Commander in charge of the boom defence yard. The residence was located on the first floor, with offices on the ground floor. In 1965, the Fremantle Credit Union established an office the building.

The well proportioned, two-storey building is of a simple timber framed construction, with the access stairs to the first floor located on the outside. The roof is corrugated asbestos cement sheeting, as are the external walls. Both floors are timber. The fabric is largely intact.

While the building has an appropriate scale for its intended residential use, it retains the industrial aesthetics of *Victoria Quay* through the use of similar materials and style. Together with the two brick boom defence buildings (B8 & B10) and the workshop/store (b11), the place illustrates the wartime Navy operations and State defence network that operated from *Victoria Quay* during WWII.

B10. BOOM DEFENCE BUILDING 2

The second of two boom defence buildings constructed during World War Two. It was built during 1943 for the making and repair of torpedo nets.

The building was later used by the Fremantle Port Authority staff as office accommodation, prior to the FPA Administration Building being completed in 1963. It later served as a waterside workers' assembly area and was an indoor hockey stadium between 1982 and 1985.

The building was refurbished to become a media centre during the America's Cup Challenge (1986/7). The Building Management Authority prepared the designs and the work was carried out by the FPA workforce. In 1989, the place was converted to an annexe for the Maritime Studies Department of TAFE to provide a second campus for the Maritime College in Fremantle.

The simple building is constructed in brick, with a single span arched roof clad in corrugated asbestos cement sheeting. It is well proportioned, has a good standard of detailing and is largely intact, despite the internal refurbishment.

While being different in style, materials and scale to the majority of the utilitarian, wharf builds in Slip Street, Boom Defence Building 2 contributes to the character of Slip Street.

B11. WORKSHOP STORE

Built between 1941 and 1950 on land reserved for use by the Navy during World War Two. It is probable that it was built and used by the Navy as part of their defence operations. The building has since been used for general wharf related activities.

A basic timber framed construction, with metal sheet cladding on the external walls and a corrugated asbestos cement sheeting roof. Although the place has no refined detailing, it is largely intact.

The place contributes to the character of Slip Street.

B12. WORKS OFFICE

Constructed c. 1964, the place displays elements of an earlier period, suggesting that one joinery was reused from another building. The limbers shelters were demolished about this time.

A simple, two-storey timber framed building, with external cladding of corrugated iron sheeting. The joinery of varying ages is in good condition.

The place makes a sympathetic contribution to the streetscape of Slip Street and its form, materials and detailing are consistent with other wharf buildings in the vicinity.

B13. PLUMBERS WORKSHOP

Built c. 1954, it is possible that this building incorporates fabric from the earlier plumbers' workshop, which was built opposite A Shed c. 1920. In 1990, the building was still used for its original function.

A simple, single storey, timber framed building, with a corrugated asbestos cement roof and corrugated iron clad external walls, with a concrete floor.

The simple form and style of this building displays the industrial characteristics that are typical of the buildings at the western end of *Victoria Quay*. The building contributes to the streetscape of Slip Street.

B14. GARAGE/WORKSHOPS/OFFICE

A series of garages, workshops and offices constructed in 1957/8 to provide accommodation for particular port related activities, including a painter, joiner, sail maker, welder and turner. Together with basic staff amenities, vehicle parking was provided in the building. The building continues to house port related activities.

The building comprises a series of simple, timber framed bays. The western bay has an upper floor built in timber. Timber trusses and purloins support a corrugated asbestos cement roof. The external walls are clad in corrugated pressed metal and the floor is concrete. The fabric is largely intact.

The well proportioned building of simple form makes a positive contribution to the Slip Street streetscape.

B15. OFFICE AND AMENITIES BUILDING

Constructed c. 1958, the building was used by the accounting staff of the FPA prior to the construction of the Administration Building.

The simple, two-storey building is of timber frame construction, with timber cladding to the first floor. The upper floor is clad with asbestos sheeting. The simple dual pitch roof is clad in corrugated asbestos sheeting.

Being of similar scale, the building makes a positive contribution to the Slip Street streetscape and maintains a consistent frontage to the narrow street.

B16. F.P.A. FIRE STATION

The date of construction for this building is unclear. Many buildings at the eastern end of Slip Street were rearranged for the construction of the FPA Administration Building and is unclear whether the Fire Station was built before or after this time.

The building is a simple, timber frame construction, clad entirely with asbestos cement sheeting. The roof sheeting has a corrugated profile.

B17. A SHED

In 1925/6, A and B Sheds were completely rebuilt to handle an increase in vessel size and greater tonnage of cargo handled. The original sheds, built c. 1905, were significantly smaller. Together with B Shed, A Shed was built to the latest design and was fitted with an electric hoist that could handle up to 5 tonnes. In 1988, A

Shed was converted to a venue for the visual, literary and performing arts, as well as a restaurant.

Of simple form and construction, A Shed consists of two main longitudinal compartments that follow the gentle curve of the wharf. The timber roof trusses are supported on timber. The external walls are clad in timber up to approximately a height of three metres, and then in corrugated iron; the roof is clad in corrugated asbestos sheeting. The original timber joinery is largely intact and in good condition. A canopy runs the entire length of the building on the land side, supported by cantilevered trusses. The original lateral dormer roof structures have been removed, as has a window in the western gable.

While of simple form and construction, A Shed displays an unusually high standard of detailing for wharf architecture. While essentially industrial in character, the building is in its own right and forms part of a group of similar sheds along the quay-side. The place is significant in defining the north western edge of the city centre and its interface with the Swan River.

B18. B SHED

B Shed was completed shortly after A Shed. During the America's Cup, B Shed was used as an outside broadcasting unit by the ABC to co-ordinate coverage for the national network. In 1987, a substantial area of the building was leased to the Western Australian Museum for the purposes of an historic boat display following substantial improvements.

Of simple form and construction, B Shed consists of two main longitudinal compartments that follow the gentle curve of the wharf. The double gabled roof is crossed by four upper level dormer roofs. The timber columns and roof trusses and clad in a variety of materials. The lower wall, up to window head height, is clad with timber, with corrugated iron sheeting above. Similar profile sheeting is used on the roof. The original timber joinery is largely intact and a canopy runs the entire length of the building on the land side, supported by cantilevered trusses.

While of simple form and construction, B Shed displays an unusually high standard of detailing for wharf architecture. B Shed is the only shed on *Victoria Quay* which has surviving dormer roofs intersecting the main roof. While essential industrial in character, the building is in its own right and forms part of a group of similar sheds along the quay-side. The place is significant in defining the north western edge of the city centre and its interface with the Swan River.

B19. C SHED

Built in 1903/4, C Shed is the oldest existing goods shed on *Victoria Quay*. Of the nine sheds built along the Quay between 1901 and 1906, all have been replaced except C Shed. C Shed was extended in 1912/3 by 189 feet in a westerly direction, and widened in 1926/7. The western end of C Shed was reduced in length in 1985 and

during the America's Cup, it was used as a temporary passenger lounge.

Simple in form and construction, C Shed consists of three longitudinal compartments curving gently with the line of the wharf. The timber roof trusses are supported on timber columns. Timber cladding is on the external walls at the lower levels, with corrugated asbestos or pressed metal above. The roof is covered with corrugated asbestos sheeting. The original timber joinery is largely intact and in good condition. A canopy runs the entire length of the building on the land side, and is supported by large, decorative iron brackets.

While of simple form and construction, A Shed displays an unusually high standard of detailing for wharf architecture. While essentially industrial in character, the building is in its own right and forms part of a group of similar sheds along the quay-side. The place is significant in defining the north western edge of the city centre and its interface with the Swan River.

B 20. E SHED

E Shed, originally located outside the study area to the east of D Shed, was constructed in 1928/9 when D, E and F sheds were remodelled as the longer and larger D and E Sheds. It is likely that E Shed contains some of the material from the earlier sheds. E Shed contains detailing and metal work that matches both C and D Sheds, suggesting either recycled elements or a conscience design effort to sustain architectural continuity among the goods sheds. E Shed was relocated to its present site in 1996 and now accommodates trading stores, food outlets and businesses, including the Rottnest Island Authority. When relocated, the building was reversed, so that now the land side faces the Inner Harbour.

Simple in form and construction, E Shed consists of three longitudinal compartments. The timber roof trusses are supported on timber columns; the walls are clad in a corrugated iron. The original timber joinery is largely intact and in good condition. A canopy runs the entire length of the building, supported by large, decorative iron brackets.

While of simple form and construction, A Shed displays an unusually high standard of detailing for wharf architecture. While essentially industrial in character, the building is in its own right and forms part of a group of similar sheds along the quay-side. The place lost some of its integrity and authenticity in the relocation.

B21. SHIPWRIGHTING AND SWAN DOCK BUILDINGS

This group of asbestos, timber and corrugated iron shed buildings includes a range of workshops, stores and offices in varying sizes.

S1. VICTORIA QUAY STRUCTURE

The wharf structure is variously constructed along its length as it has been rebuilt and raised over the years as the needs of the port have changed and materials have required replacement. On the

landward side, Victoria Quay wharf is supported by filling; on the Harbour side, it is supported on piles.

The deck is concrete slab or bituminous concrete paving on a timber decking, which is approximately 100mm thick. The deck sits on paired longitudinal timber joists on short lengths of timber (300mmx300mm) acting as span reliving and load distributing capitals. The capitals sit on two stacked layers of paired traverse bearers (300mmx150mm). The berth face of two stacked layers of paired lateral joists are protected by a composite buffer rail of two similar sized baulks supported on paired timber outer piles. The berth face of the upper deck is protected by a composite buffer rail of nine baulks or more.

The wharf is used for berthing, mooring and the servicing of ferries and other vessels, as well as for recreation.

The wharf structure provides fundamental physical evidence of this achievement, and embodies much of the port's cultural significance. The structure has both engineering and architectural significance.

S2. 610 TONNE SLIPWAY, FLANKING WHARVES AND WINCH HOUSE

This slipway was completed and in service in 1958/9. The slipway contributed to the active working operation of the wharf, as it provided for boat building and ship repair. The slipway was closed in **19??.**

The slipway is a ramped concrete deck, rising from steel sheet piled retaining walls. The slipway is flanked by two wharves with concrete decks.

The winch house is a single storey, shed of rectangular plan. The winch machinery and controls are still extant inside the building.

S3. 2,000 TONNE SLIPWAY, FLANKING WHARVES AND WINCH HOUSE

Construction of this slipway commenced in October 1940 to handle vessels up to 2,000 tonnes. It was completed in September 1942 and was placed under the control of the Public Works Department. It is not know when the slipway was closed.

The slipway is a ramped concrete deck rising from steel sheet pile retaining walls. The flanking wharfs are topped with reinforced concrete. A pair of mobile, rail mounted cranes are ancillary to the slipway.

The winch house is a substantial single storey, single span shed of rectangular plan with lean-tos. The main shed houses the winch machinery and controls.

The slipway provides physical evidence of the Australian and U.S. Navy operations on *Victoria Quay* during WWII. The place was also part of the working port activity that contributed to the overall character of *Victoria Quay*.

S4. 101 TONNE SLIPWAY, FLANKING WHARVES AND WINCH HOUSE

Constructed at the same time as the 610 tonne slipway, the 101 tonne slipway came into service in 1958/9. The slipway contributed to the active working operation of the wharf, as it provided for boat building and ship repair. It is not known when the slipway was closed.

The slipway is a concrete slab, flanked by masonry walls retaining the bitumen paved slip yard. The deck carries a pair of steel rails on separate raking plinths. The flanking jetties are personnel jetties of timber and concrete. The winch house is a small, single storey, single span shed of timber frame construction, with corrugated iron wall cladding and asbestos-cement roofing. The shed houses the winch machinery and controls.

S5. BOOM DEFENCE JETTY

The boom defence jetty was built as part of the boom defence system constructed across the entrance to the Inner Harbour. Work commenced prior to the outbreak of World War Two and was completed in December 1939. Post-war use of the jetty has not been determined.

Primarily of timber construction, the jetty is supported on concrete piles. It is a heavy load bearing structure, approximately 100 metres in length with minor mooring capstans.

S6. C Y O'CONNOR MEMORIAL

Designed and sculptured by Pietro. G. Porcelli, the C. Y. O'Connor Memorial was unveiled on 23 June 1911, following a competition for the memorial for which 17 entries were submitted. The memorial was originally located in front of the Harbour Trust Offices, before being relocated near the steps of the new Immigration Office in 1920. It was moved once again in 1973/4 in front of the FPA Administration Building.

The bronze statue is 10 feet 6 inches in height and is mounted on a pedestal of Western Australian granite, which is in turn mounted on a plinth supported by four bronze dolphins. The entire structure is 20 feet high. Three sides of the supporting plinth bear bronze panels celebrating the engineer's achievements: Mundaring Weir, the railway tunnel in John Forrest National Park, and Fremantle Harbour. The fourth panel bears a testimonial plaque.

Erected in memory of the Harbour's designer, the memorial is a fine, well crafted sculpture. It represents one of Porcelli's larger projects. The statue adds an unusual, artistic quality to the industrial townscape of *Victoria Quay* and reinforces the place's identity and character.

S7. SOUTH MOLE

South Mole is a land fill structure of large limestone boulders placed on the sea bed. It is approximately 30 metres wide at sea level and

750 metres long from the exposed remains of the natural rock outcrop of Point Marquis. The mole carries a bitumen roadway and minor buildings.

South Mole Lighthouse - A green and white painted, cast iron lighthouse in the Free Classical style. The lighthouse has a cantilevered balcony and domed light housing, surmounted by a weathervane and ventilator cap.

South Mole Gunnery Ruin - Part of the Fremantle Fixed Defence Artillery developed during World War Two, the gunnery ruin is comprised of the concrete remains of the gun emplacement and two associated shelters, which were presumably used for magazine storage and/or personnel. A similar structure is located on the North Mole.

South Mole anti-submarine boom net winch remains - Installed as part of the World War Two Harbour defences, the anti-submarine nets could be lowered to allow vessels to pass. The boom net remains comprise concrete aprons, bollard and capstan on the harbour face of the mole. A similar structure is located on the North Mole.

S8. CRANES

Two similar luffing cranes, relocated from the North Quay, are located to each side of the 2,000 tonne slipway. Built by the State Implement and Engineering Works, the cranes were designed by Babcock and Wilcox are of the patent folding lever type. The electrical equipment for the cranes came from General Electric Co. of Great Britain.

A1. ARCHAEOLOGICAL AREA 1

The site of the former railway goods shed, railway station and port offices at the north end of Cliff Street. The former railway goods sheds, one for inward bound goods and a larger one for outward bound goods, were constructed c. 1903 and were used up until the 1960s.

This area also includes the sites of the original Harbour Trust Office (c. 1900) and the State Shipping Office (c. 1920) which were demolished for when the new FPA Administration Building was built in the mid-1960s.

The site of the North Jetty, built in 1853 as the main river jetty, is also located in this area. It was constructed on the same alignment as Cliff Street and served shipping in the Swan River. It was removed during the earthworks and construction of *Victoria Quay* in 1896/7. It is possible that some of the fabric of the North Jetty remains under the superstructure of *Victoria Quay*.

A2. ARCHAEOLOGICAL AREA 2

The original and smaller A and B sheds were constructed in this area, as were the pilot's quarters, shipping offices, lumpers' shelters and a wide range of related workshops and stores. It would appear that these buildings were constructed, altered or demolished as the needs of the port changed. Historical research suggests that all of these buildings would have been lightweight in construction, using recyclable timber, corrugated iron and asbestos. Many of the buildings were demolished after World War Two and up to the mid-1960s, when port rationalisation occurred. Some buildings, or parts of buildings, remained and were upgraded to accommodate new services.

A3. SLIP STREET ARCHAEOLOGICAL AREA

The development of Slip Street has been gradual and constant throughout the history of *Victoria Quay*, with a more rapid period of development following World War Two. The alignment of Slip Street follows the original railway line that extended from the shunting yards to South Mole. This formed part of O'Connor's original plan for the Quay. Over time, workshops, stores and commercial buildings were constructed along the railway track to take advantage of the readily available transportation.

By c. 1940, the railway had been replaced by a road; the track may still exist under the road. After World War Two, Slip Street became the centre for all port related workshops and stores. The workshops that were erected and extended after the War are still in use. Although the buildings were erected at different times, they were often constructed adjoining each other. As a site almost entirely redeveloped within a decade after the end of World War Two, Slip Street provides physical evidence of a significant stage in the development of the Inner Harbour when it was almost fully mechanised.

Slip Street forms a distinctive and attractive streetscape, with very urban elements within an otherwise industrial environment. The close density and compactness of the builds contributes to this perception and forms a landmark quality which extends to the northern frontage of Fleet Street. The Slip Street setting enhances views from Arthur Head, from Phillimore Street and from other vantage points of Fremantle, the River and Ocean.

13. 3 REFERENCES

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13.4 FURTHER RESEARCH

The investigation of working ports and harbours throughout Australia to establish the frequency of places similar to *Victoria Quay*.