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*

The aesthetic value of the place is high. When viewed from the breakwater to the west of the place, the low horizontal form of the Darling Scarp in the distance is repeated in *Bunbury Timber Jetty*. When viewed from the east, the regular rhythm of the timber piers contrasts with the stone breakwater beyond. When viewed from close quarters, the weathered timbers and straightforward connections have a direct and satisfying visual appeal. (Criterion 1.1)

Due to its considerable length, the place has a landmark quality. From *Bunbury Timber Jetty*, extensive views can be enjoyed to the coast north of Bunbury, to the east across Koombana Bay and the Darling Scarp beyond, south to the town of Bunbury, south-west to Marlston Hill and west to the breakwater. (Criterion 1.3)

Together with the causeway, breakwater, and the grain silos, *Bunbury Timber Jetty* forms a maritime precinctual environment which has landmark qualities. (Criterion 1.4)

11. 2. HISTORIC VALUE

Bunbury Timber Jetty is significant in the development of the Bunbury region, as it was the first stage of growth for the predominantly small farming community towards a prosperous port city. The place has historic importance as it dates from 1864 when it was built with convict labour. Later, it provided a constant source of employment for many people from the town of Bunbury. (Criterion 2.1)

Bunbury Timber Jetty is also significant as a barometer of the economic growth that occurred in the region since the mid 1800s, especially during the 1890s gold rush boom. It was closely associated with the development of important south-west industries like timber, wheat, and wool. The jetty enabled these products to be exported to other national and international

* 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.

ports, thereby increasing the growth of these industries. The jetty also made possible the large amounts of imports and other shipping services, like the regular transportation between Fremantle and Bunbury from 1921, which helped contribute to the development of Bunbury and its hinterland. (Criterion 2.2)

Furthermore, it is a symbol of the on-going struggle with the natural elements, which constantly worked to hinder the development of the area. (Criterion 2.2)

11. 3. SCIENTIFIC VALUE

The unique location of *Bunbury Timber Jetty* gives the place potential as a research and teaching site, which would contribute to the study of natural history in Koombana Bay. The potential for scientific value is high (Criterion 3.1)

The place contributes to an understanding of the development of sea transport in the region. (Criterion 3.2)

The large scale and good condition of *Bunbury Timber Jetty* demonstrates technical innovation and achievement. (Criterion 3.3)

11. 4. SOCIAL VALUE

Bunbury Timber Jetty is highly valued by the local community for its social and economic associations because it gave Bunbury and adjoining regions the opportunity to reach world markets with its produce. It also offered a constant source of work in the manual loading of cargoes and it fostered the development of local industries. It is presently highly valued for its recreational associations. In 1983, due to the threat of demolition, the jetty was protected by the formation and successful lobbying of the Bunbury Timber Jetty Preservation Society. (Criterion 4.1)

Bunbury Timber Jetty contributes to the community's sense of place as a significant Western Australian harbour city that dates back from the late 1800s. This sense of place has been manifested in the City of Bunbury's "Harbour 2000" project and the "Port City" signature logotype, in which the *Bunbury Timber Jetty* is represented. (Criterion 4.2)

12. DEGREE OF SIGNIFICANCE

12. 1. RARITY

By virtue of its size and good condition, *Bunbury Timber Jetty* is rare when compared to similar structures, such as Busselton jetty. (Criterion 5.1)

For the berthing of ships, timber jetties have become superseded by stone or concrete breakwaters. The loading of grain has also become larger in scale and more automated than the methods employed on *Bunbury Timber Jetty*. As such, *Bunbury Timber Jetty* represents a design and process no longer practised. (Criterion 5.2)

12. 2 REPRESENTATIVENESS

Bunbury Timber Jetty is characteristic of its class, that of timber docking jetty. (Criterion 6.1)

12. 3 CONDITION

The condition of *Bunbury Timber Jetty* varies considerably. In places fires have badly damaged the place, but these are localised areas and not typical of *Bunbury Timber Jetty* as a whole. About a quarter of the piles, a quarter of the diagonal cross bracings, and a third of the walings are badly deteriorated or missing. The transverse and decking beams are generally in good condition. The decking timbers have weathered on the upper face, but at the time of inspection about one quarter of the total number of decking timbers had, as part of the renovation of the place, been turned upside down, thus exposing a relatively unweathered face, and re-spiked. It is obvious that *Bunbury Timber Jetty* was originally over-designed so as to accommodate the deterioration or loss of a substantial amount of its fabric. In addition, it is highly likely that the construction of the breakwater has contributed to the preservation of the place by minimising wave action. In summary, the condition of *Bunbury Timber Jetty* is fair.

12. 4 INTEGRITY

The place was constructed primarily as a working docking jetty for cargo and passenger ships, and no longer serves that function, having being superseded by the breakwater. The perceived integrity of the place, however, is high as its original purpose is obvious. Secondary uses of the place, such as recreational fishing and as a place to enjoy a walk or to view the bay, are still intact, although on a reduced scale due to limited public access. In general, the integrity of *Bunbury Timber Jetty* is fair.

12. 5 AUTHENTICITY

The authenticity of the sections of *Bunbury Timber Jetty* dating from 1906 onwards is high. Unlike Busselton Jetty, for example, which has been reinforced with steelwork, *Bunbury Timber Jetty* has undergone little change in the original fabric, apart from routine maintenance repairs normal for a structure of this type. As stated earlier; however, sections are missing due to fire and the effects of toredo worm. The sections dating from 1864 to 1906 are virtually entirely missing, having been demolished

or buried in the harbour. Overall, the authenticity of the extant part of *Bunbury Timber Jetty* is moderate to high.

13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Natasha Georgiou, Historical Researcher. The physical evidence has been compiled by John Loreck, Architect.

Curtilage should extend vertically down to the basalt. Horizontally, curtilage should extend from the end of the causeway and ten metres out from the perimeter of *Bunbury Timber Jetty*.

13. 1 DOCUMENTARY EVIDENCE

Bunbury Timber Jetty was originally constructed in 1864 for the Port of Bunbury as its first harbour loading facility. The *Bunbury Timber Jetty* adjoins a stone causeway, which was built in 1967. The timber structure built out from the causeway was constructed in ten stages from 1864 to its completion in 1957.

The possibilities of a port at Koombana Bay were first suggested by Lieutenant Henry Bunbury when, on his exploration of the region in 1836, he stressed the importance for a harbour to cope with 'the large amount of produce that one day would be grown on the rich grassy lands to the east'.[1] Glowing exploration reports from Lieutenant Preston, Dr. Collie, James Stirling, Surveyor-General Roe, and Lieutenant Bunbury did little to encourage development of the area, nor did the establishment of a small military station for six months in 1830.[2]

Due to huge tracts of fertile land being granted to absentee landholders, like Governor Stirling, James Henty, and Charles Prinsep, combined with the failure of establishing long-term industries like sandalwood and whaling, the Bunbury area was not settled until 1838. When settled, the predominantly farming community had to come to terms with the realities of unproductive soil and the harshness of summer drought and winter storms. Development was slow and on the eve of convict transportation in 1850, Bunbury was a nondescript collection of wooden buildings and unpaved streets alongside a treacherous harbour.[3] The 1848 census stated that a mere 66 people lived in the town, while the white population of the surrounding district of Wellington was only 358.[4] For the struggling town of Bunbury, its only hope for significant growth lay in the development of the harbour. This was to be achieved with the assistance of convict labour. As one of the few favoured country centres for the dispersal of the new labour force, since members of the Colonial Government wanted to see it to become the main port for the south-west region, Bunbury was to be changed physically by convict transportation.

On 24 April 1855, the area between Point Casuarina and the Leschenault Inlet was defined as a port.[5] However, it was to be another nine years before William Forrest (father of Sir John and Alexander) was contracted

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1 Clarke, G., *Early History of Bunbury*, Colortype Press, Perth, 1946, p. 43.

2 Municipal Inventory Working Group, 'City of Bunbury Municipal Inventory', Hocking Planning & Architecture, Subiaco, 1994, p. 1.

3 ibid.

4 *Western Australian Almanack*, 1849, pp. 32 & 41.

5 *Government Gazette*, 24.4.1855, p. 2.

for £200 to build a jetty in a north-easterly direction into seven feet (2m) of water.[6] The timber was supplied by H. W. Gillman, an ex-convict, at a cost of £339.[7] The *Bunbury Timber Jetty* was built with labour from a supervised convict gang sent directly from Fremantle.[8] When built in 1864, the original 1,400 feet (427m) of hewn timber piles were held together using wooden dowels instead of bolts.[9] For the fledgling colony the commencement of the jetty building program signified a radical shift from being a region of consumers to producers sending grain, wool, and particularly timber to other Australian and international ports. Five years after the first section of the *Bunbury Timber Jetty* was completed the town's Government Resident, W. P. Clifton, reported

> This place Bunbury is progressing and every team in the district is employed carting sandalwood and timber, and many ships are being loaded this summer. At present there are three ships loading; the Bridgetown with wool, the Hildagarde with rail sleepers for India, and the St. Kilda with timber for Mauritius.[10]

In 1865, William Spencer further extended the jetty for £632.[11] George Rich continued the extensions in 1872 for £350.[12] It was only another three years before G. W. Floyd was employed to conduct major alterations and additions to the *Bunbury Timber Jetty* at the cost of £1,189.[13] The jetty at this stage was extended to 1,850 feet (563m) and the depth at the head was 11 feet (3m) deep.[14] The reason for these frequent extensions was not only to meet the demand for more berths, but also silt washed up from the Leschenault estuary collected around the pylons and periodic lengthening was necessary to maintain deep enough moorings. The alignment of successive extensions was altered in the attempt to address the silting problem, resulting in the angled form of the *Bunbury Timber Jetty*. From the time the jetty was built in the 1860s it had been understood that ownership would eventually be transferred from the Colonial Government to a local body.[15] Yet in 1878, as the town was achieving the full municipal status that seemed to make such a transfer likely, it was learned that the Government had changed its mind. Without control of the jetty, the Bunbury authorities had no direct power to forbid the building of a ship alongside it, an activity that restricted still further the cramped facilities for loading and unloading cargo. Government control also extended to the Strand, the waterfront land adjacent to the jetty. Without control of the Strand the locals had neither the power to build rails to facilitate jetty loading and unloading, nor the authority to erect the jetty warehouse which had long been sought after. When the warehouse

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6 *Government Gazette*, 3.5.1864, p. 91.
7 *Government Gazette*, 16.2.1864, p. 38; Barker, A. & Laurie, M., *Excellent Connections*, Southwest Printing and Publishing, Bunbury, 1992, p. 113.
8 *Inquirer and Commercial News*, 25.5.1864, p. 2.
9 Henry, N. J., 'Bunbury Harbour Works', 26.7.1937.
10 Clarke, op. cit., p. 25.
11 *Government Gazette*, 28.3.1865, p. 66.
12 *Government Gazette*, 8.10.1872, p. 230.
13 *Government Gazette*, 18.5.1875, p. 77.
14 Cumming, D. et.al., 'Port Related Structures on the Coast', Western Australian. Maritime Museum, Fremantle, 1995, p. 24.
15 Barker. & Laurie, op. cit., p. 123.

was finally built by the Government in 1881, the charges for its use were of course another source of Government rather than local revenue.[16]

Despite attempts at improvements to the harbour, complaints from ship captains to newspapers were a common occurrence, as the following quote illustrates,

> The port of Bunbury is certainly increasing in importance judging from the number of teams coming into town daily with timber, etc. But it is grievous to find that as the place is advancing in its commercial aspect the means of anchorage are receding, in fact accommodation in this respect has almost entirely disappeared. At the present time there is not a mooring buoy to which the smallest trading craft here can make fast and the lighthouse is the most miserable apology that could be imagined and has often been passed by ships bound for the port, the look-out being unable to distinguish it from a star.[17]

These inadequate facilities combined with the slow communication process, necessitated mooring buoys in the harbour for ships waiting their turn to load or unload cargoes. As a result, the custom of lightering continued long after the jetty's completion and subsequent additions.[18] Some of the further work that continued on the structure over the next decade included the erection of a sea wall at the end of the *Bunbury Timber Jetty* by G. W. Floyd in 1885.[19] In 1888, the jetty was further extended by 350 feet (90m) as the siltation problem at the shoreward end had moved the foreshore seawards by 950 feet (289m). The depth of the water at the head was then 16 feet (5 m) deep.[20] During that time the sea buried much of the original jetty. In 1889, mooring buoys were placed alongside the jetty to reduce its load.[21] Frequent repairs were also maintained so as to keep the jetty safe and secure during this period of heavy usage.

At a political meeting held in Bunbury in 1891, Sir John Forrest predicted Bunbury was destined to be the major port of the South-West.[22] Due to the occasion and the company he was speaking to, he might be forgiven for overlooking the fact that Bunbury was still only considered safe in the summer months. Its exposure to the heavy north-west gales made it unsafe in winter and so owners hesitated to send their ships there.[23] In the continuing absence of an extended breakwater – and not withstanding the erection of a lighthouse – the fear of shipwreck was constant and actually fulfilled. Twenty-nine ships were wrecked in Koombana Bay from 1840 until the breakwater was commenced, the last serious wreck ashore being the steel hulled ship, Carbett Castle, in 1897.[24]

After various discussions and proposals put forward to the Municipal Council, it was decided in 1896 to support the outer harbour scheme proposed by the State's Engineer-in-Chief, C. Y. O'Connor. The ideal

16 ibid.
17 *Inquirer & Commercial News*, 10.5.1882, p. 4.
18 Hunt, G., 'A Study of the Development of the Bunbury Harbour from the Inception of the Scheme until the Present Day', Government School, Kalgarin, 1962, p. 18.
19 *Government Gazette*, 6.8.1885, p. 388.
20 Tydeman, F.W.E., 'Report on Bunbury Harbour', Government Printer, Perth, 1949, p. 23.
21 *Government Gazette*, 11.4.1889, p. 266.
22 Barker & Laurie, op. cit., p. 141.
23 Clarke, op. cit., p. 43.
24 *Bunbury Times*, 16.6.1961, p. 1.

situation of creating an inner harbour was to be shelved and further extensions of the jetty were seen as being too difficult and costly. This was discovered after exploration found that the bottom of the harbour basin was like granite rock and hence it would be very expensive to drive pylons down only a few feet in depth. The only practical way to overcome the problems that the harbour was facing would be to 'construct a mole of loose stones and rubble, timbered in at the sides'.[25]

Despite the expense of extending the *Bunbury Timber Jetty*, it was still necessary to do so as berthing space was not satisfactory for the amount of traffic in the port. Six months after the survey of the harbour floor, work was commenced on the jetty. This was conducted by the newly formed Bunbury Jetty Works Government Department with Mr. J. J. Nolan supervising.[26] The 480 feet (146m) by 100 feet (30m) extension that provided 18 feet (5.5m) of water at the jetty head was completed in 1897.[27] In that same year according to the Bunbury Herald,

> The most important event which has yet occurred in Bunbury from a commercial point of view took place this afternoon [Tuesday] when Sir John Forrest performed the ceremony in connection with the construction of the mole at Casuarina Point by tipping the first truck load of stone into the harbour...The outer harbour scheme would meet harbour requirements for many years to come.[28]

The breakwater, which cost £116,705, took three years to complete to a length of 3,215 feet (980m).[29] This was mainly due to spasmodic Government action and inadequate funding.[30] By the turn of the century the Southern Times was voicing local complaints that Bunbury's potential as a port continued to be frustrated. This was mainly due to the fact that the breakwater only provided protection for vessels directly alongside the jetty. Furthermore, the breakwater heightened the problem of silting and the jetty kept on catching fire due to discarded cigarette butts and the heat created by the germination of wheat grains between the closely laid jetty piles.[31] Due to the construction of the South Western Railway the demand for sleepers boosted an increase in timber exports and imports. It was not an uncommon sight to see twenty ships awaiting cargoes at Bunbury.[32] Although the railway arrived at Bunbury in 1893, it was to be another six years before the *Bunbury Timber Jetty* was connected to the main line by a 1,400 foot (427m) stone embankment and a 1,100 foot (335m) timber viaduct.[33] By 1908, the jetty had been extended three times (1900, 1902, and 1906) to a length of 2,750 feet (838m) with a depth of 24 feet (7m) so as to accommodate nine vessels. [34] The breakwater also had to be extended to 3,969 feet (1,210m) for protection of the ships at the new

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25 *Bunbury Herald*, 6.3.1896, p. 3.
26 *Bunbury Herald*, 1.9.1896, p. 4.
27 PWD Plan Number 11495, 1897.
28 *Bunbury Herald*, 27.4.1897, p. 3.
29 Battye, J., *The Cyclopedia of Western Australia*, Vol. 1, Hesperion Press, Carlisle, 1985, p. 723.
30 Barker & Laurie, op. cit., p. 142.
31 *Southern Times*, 29.9.1894, p. 3; 30.12.1897, p. 3; 4.5.1899, p. 3.
32 Barker & Laurie, op. cit., p. 143.
33 'Statistical Register of Western Australia, 1899', Part IV, Government Printer, Perth, 1900, p. 152.
34 Cumming, op. cit., p 24.

section of the jetty. This was done by Barry & McLaughlin in 1906-1908 for £59,966/6/0.[35] The jetty was now provided with water and a goods shed had been erected.[36] Donkey engines, five electric cranes, and one steam crane facilitated loading and labour was plentiful. Stronger moorings were provided off each berth at the jetty to ease the strain on it, as well as the wear and tear on the ships. Two sets of heavy moorings were provided in the stream at which vessels could lie in any weather and load to a draft of 24 feet. A dioptric second order light was exhibited from an open-braced lattice tower on a hill within 400 metres of Casuarina Point at an elevation of 122 feet (37 m) and was visible to 17 miles, which helped alleviate past problems with the lighthouse.[37] In that same year, 1908, it was reported to State Parliament that Bunbury was one of the principal shipping ports in Western Australia. Twenty-one sailing ships and 126 steamers called at Bunbury that financial year, with an average tonnage of 900 and 1300 tons respectively.[38]

In 1909, the Bunbury Harbour Trust Act was passed under which five Commissioners were appointed by the Governor-in-Council to control all matters relating to the harbour and its appurtenances.[39] Regulations of the Board were issued in November 1909.[40] In 1910, soon after the Board was established it was forced to further lengthen the *Bunbury Timber Jetty* to 3,250 feet (990m) to provide more berths and a depth of 26 feet at the jetty head.[41] The 1911 Annual Report of the Bunbury Harbour Board reported that,

> During the year the need of extensive harbour improvements has been forced upon the members. The question of future trade was fully considered by the Board, who arrived at the decision that in five years hence the Board will require to make provision to cope with the following additional annual trade; 70,000 tons of coal, 30,000 tons of wheat, 60,000 cases of fruit, to say nothing of increases in imports and other directions…The jetty at the present time is usually taxed to it utmost capacity, so that it will be impossible to deal with the additional trade named unless considerable extra wharfage space, as well as more extensive facilities, are provided. It is recognised that any further extension of the present jetty is out of question, so that an entirely new scheme will have to be evolved, which must of necessity provide for shed accommodation right alongside the ship, as it is quite impossible to handle an export produce trade by any other means except at an enhanced shipping cost to the producer…the present sea jetty has answered it purpose in demonstrating the importance of this port to the State. It is also an indisputable fact that in 5 to 9 years about 1,000 feet of the older portion of the jetty will have to be removed, at an estimated cost of £50,000.[42]

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35 *Government Gazette,* 27.4.1906, p. 1281.

36 There are no records of the exact date and location of these goods sheds. This is because these facilities, although recorded in the State's Statistical Register, were very transient and numerous due to the variable nature of the work conducted on the jetty.

37 Cumming, op. cit., p 25.

38 Department of Harbours and Lights, 'Report of the Chief Harbour Master for the Year Ending 30 June 1908', in Votes and Proceedings of Parliament 1908-1909, Vol. 1, Gov. Printer, Perth, 1908, pp. 4-7.

39 *Government Gazette,* 21.5.1909, p. 1613.

40 Battye, J., op. cit., p. 724.

41 South West Development Authority, 'Bunbury Harbour, History of Development', Bunbury, 1979, p. 2. [HCWA File 3402]

42 Bunbury Harbour Board, 'Annual Report of Members for the Period ending 30th June 1911', Government Printer, Perth, 1912, p. 5.

In 1921, the jetty was extended to 3,950 feet (1,204m) so as to provide more berths and a depth of 27 feet.[43] The deterioration of the older parts of the jetty was an ongoing problem for the Harbour Board, who in 1921 paid £2,462 for maintenance expenses alone.[44] However, there were high hopes of increased sales in the shipping industry. A promising innovation in January 1921, was the establishment of a regular Bunbury-Fremantle shipping schedule. By 1923, Bunbury, with a local population of 4,478, was still considered the principal port of the southern districts.[45] The jetty, having been saved from the partial destruction had been proposed by the Bunbury Harbour Board in 1911, was just one extension short of its maximum length. However, neither extensions to the *Bunbury Timber Jetty* or the breakwater, nor spasmodic dredging had solved the problem of siltation in the harbour. Its deterrent effects on shipping were still hidden only by the general slump in maritime activity. From 1929, the decline in port activity, due to the Depression and the decline in overseas trade, had a wider economic impact on the town. By 1931, it was claimed that only six out of 266 lumpers in the port had earned the basic wage. With many non-unionists far worse off, commercial activity contracted and a number of small independent firms left the area. Others were either absorbed by, or became agencies for, larger Perth firms. In 1937, the introduction of bulk handling facilities for wheat somewhat improved the potential of the port.[46]

In 1948, while thousands of pounds were being spent on harbour improvements, the Government employed consultant engineer Mr. F. W. Tydeman to report on the Bunbury harbour and submit a scheme for further development. This report, presented in August 1948, was henceforth known as the 'Tydeman Report' and was accepted by the Government as the basis for future port developments.[47] In his report he wrote the following of the undesirable situation of the jetty,

> The jetty structure has been gradually extended over the years, always seeking deeper water for larger ships; today it has the cumbersome length of 3,950 feet. It is difficult to ascertain how many berths there are for use. Generally it may be assumed that four overseas ships could berth in the east and west faces of the jetty…These jetty berths are designed primarily, and used today only, for handling special cargoes and not general cargoes. They are rail served only. There is no road access…Should general cargo ever be likely again at Bunbury, new facilities for general cargo would be necessary.
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> Bunbury's cargoes are specialised, i.e. timber and bulk wheat exports, and fertiliser imports. All these are handled direct into or out of rail wagons; timber and fertiliser by ship's gear part supplemented by quay crane and wheat by mechanical gantry-conveyors-loaders. In all cases, the land transport is by rail via the long jetty to the marshalling yard 1 miles away, a serious limiting factor, and reducing the berth worked to low efficiency and capacity.
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> No more than two ships are berthed together and then not very often. Rail facilities limit the efficient working of ships to the equivalent of only one. Of the two jetty-head berths in deeper water, the berths usually worked, one is fitted for

43 South West Development Authority, op. cit., p. 2.

44 Bunbury Harbour Board, 'Annual Report of Members for the Period ending 30th June 1921', Government Printer, Perth, 1922, p. 5.

45 Post Office Directories, 1923.

46 Municipal Inventory Working Group, op. cit., p. 9.

47 Hunt, G., op. cit., p. 72.

> bulk wheat handling and special cargo working, and the other for special cargoes only exclusive of bulk wheat. Mechanical equipment comprises two portable electric wheat loaders, five portable 3-ton electric quay cranes of limited radius, and one portable 3-ton steam crane. A 4-inch water main supplies water to ships. No oil bunkering mains are provided, or likely, owing to the absence of oil installations.[48]

The Tydeman Report included elaborate plans for future harbour development including extra berthing space in the outer basin. However, due to diversion of Government funds elsewhere, in particular the Kwinana project, the plans led to only minor changes and improvements. These included the 600 feet (182m) final addition to the jetty between 1951 to 1957 and the erection of a shore transit shed.[49]

Desperately needed improvements began in 1964 with the establishment of the Breakwater Berth No. 1 with loading facilities for bulk minerals. This land-backed berth was so successful that a second Breakwater Berth was commenced in 1966.[50] The following year a solid filled stone causeway was built to adjoin the *Bunbury Timber Jetty*. During this construction the 1864-1900 extensions were replaced and the first bend removed. The jetty abutting the causeway was extended 40 feet on one side and 240 feet on the other.[51] In 1973, the disused old approach neck of the jetty was demolished.[52] Three years later Sir Charles Court opened the $42 million dollar Bunbury Inner Harbour.[53] These improvements resulted in an all time peak in trade for the Port of Bunbury in 1978. For the 1977/1978 year, 3,099,370 tonnes made the port the 18th highest in Australia and the 5th highest in WA in order of volume of cargo handled.[54]

The *Bunbury Timber Jetty* ultimately comprised six berths on three bends and four straights, and for many years served the port well. Unfortunately, continuing high maintenance costs and the lack of road access finally necessitated the transfer of the commercial activities to other parts of the harbour. The phasing out of the *Bunbury Timber Jetty* for commercial shipping in the Bunbury Outer Harbour was completed during October 1982 when new grain loading facilities where established at Breakwater Berth No. 2. [55] In 1986, using Community Employment Program funding in excess of $300,000, some structural work was carried out on the jetty. This included the installation of a new water main, rehabilitation of two fire damaged area, re-bolting timbers, turning over and replacing decking, construction of a 130m long low level fishing platform and other minor works.[56]

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48 Tydeman, op. cit., pp. 11-12.
49 Barker & Laurie, op. cit., p. 307.
50 Bunbury Port Authority, 'Bunbury Port Strategy', Bunbury Port Authority, Perth, 1984, p. 21.
51 Conversation with John Vernon, member of the Bunbury Timber Jetty Preservation Society, 20.5.98.
52 South West Development Agency, op. cit., p. 4.
53 Bunbury Inner Harbour, 'Official Opening April 2, 1976', Government Printing, Perth, 1976, p. 1.
54 South West Development Agency, op. cit., p. 4; Votes and Proceedings 1979, Vol. 3, p. 7.
55 Bunbury Port Authority, op. cit., p. 21.
56 Department of Transport, 'Report on Bunbury Timber Jetty', Dec. 1994, p. 3.

Initially for reasons of economics and safety the Port Authority intended to remove the whole jetty, or at least the final 590 feet (180m) of it to provide more manoeuvring room for vessels approaching the breakwater berths. However it was agreed following various approaches from civic and tourist interests, and in particularly the newly formed Bunbury Timber Jetty Preservation Society, to leave the jetty intact.[57] Since the decision large fires have caused considerable damage to the jetty, and further damage was caused to port buildings through vandalism. The Bunbury Port Authority's maintenance staff has put much time and effort into removing the old grain gantries, electric cranes and buildings from the jetty and making it generally safe for pedestrians. Despite protests, in 1994, the outer 600 feet (800m) of the jetty that was constructed between 1951 and 1957 was removed at a cost of $400,000, so as to facilitate the movement of shipping to the land backed berths.[58] In June 1995, the jetty area of 57,480 hectares was officially made a Reserve (No. 43556) for harbour purposes.[59] Early in 1997, a fire that burnt on the jetty for more than twelve hours severely damaged a portion of the jetty, 32 feet (10m) from the sea end, that later had to be demolished.[60] This event led to the legal transfer of responsibility of the *Bunbury Timber Jetty* from the Department of Transport to the Bunbury City Council, by way of a Jetty Licence 'in perpetuity'.[61]

In 1998, members of the Bunbury Timber Jetty Preservation Society are restoring the *Bunbury Timber Jetty*, with funds obtained through a $1 million State Government grant.[62] The first 230 metres of the jetty is currently being used for recreational purposes, whilst the rest of the jetty is restricted to the public by gates as it is under repair.

13. 2 PHYSICAL EVIDENCE

Bunbury Timber Jetty is situated in Koombana Bay, at the end of a stone causeway. The stone causeway was built in 1967 and commences at the end of Henry Street, immediately west of the Naval Reserve Cadets Training Ship Bunbury building. On the shore north east of the building can be seen the remains of timber piles. Judging by a plan on file showing the various stages of a construction of *Bunbury Timber Jetty*, it is reasonable to assume that the remains of the timber piles are about half to two thirds 'out to sea' along the 1864 section.

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57 *South Western Times*, 23.1.1997, p. 9; The Preservation Society was formed in the second half of 1983, as a response to the imminent demolition of the jetty. After letters of exchange to various Government organisations, a Steering Committee was set up which was the forerunner of the Society. The original group numbered around 40 Bunbury citizens with John Vernon as the Chairman. Conversation with John Vernon, 9 June 1998.

58 Correspondence from the Bunbury Timber Jetty Preservation Society to Premier Richard Court, 3.11.1994. [HCWA file 3402]

59 *Government Gazette*, 27.6.1995, p. 2580.

60 *South Western Times*, 7.1.1997, p. 1.

61 Deed between the Hon. Eric James Charlton and City of Bunbury dated 2 April 1998 included as Attachment 3 in 'Bunbury Timber Jetty Interpretive Centre' document in HCWA File P3402.

62 *South Western Times*, 23.1.1997, p. 9.

The stone causeway is aligned along a south-west to north-west axis, is about 30 metres wide, has a public bitumen road, and terminates at *Bunbury Timber Jetty*.

Near the end of the causeway is a large crane that straddles the bitumen road. This crane has been relocated from the jetty to its present location in recent times. The crane is supported by four large stanchions, two to each side of the road, which in turn are supported by railway wheels.

On the north-west side the crane bears an inscription which reads as follows:

> SIR WILLIAM ARROL AND CO LTD
>
> PARKHEAD GLASGOW
>
> ORDER 543 LOAD 3 TONS 1911

Immediately beyond the crane the bitumen road ends and is replaced by a road formed from crushed limestone.

The causeway is terminated by a narrow breakwater, crescent shaped in plan, which provides additional protection to the boat harbour immediately west of the causeway.

In recent times the Bunbury Timber Jetty Preservation Society (Inc) have extended the 1967 causeway by about thirty metres to link with *Bunbury Timber Jetty*, near the start of the 1906 jetty extensions. It is likely that in constructing the extension to the causeway the remains of the 1900 jetty was removed.

Bunbury Timber Jetty, commencing from the end of the extended causeway, extends north-east for about 380 metres and then changes direction to extend east-north-east for about 210 metres. (The final two sections of Bunbury Timber Jetty, constructed in 1951 and 1957, were removed in 1993/94.)

The construction of *Bunbury Timber Jetty* is as follows: (All dimensions are approximate)

Timber piles, 450 mm in diameter are located at four metres centres longitudinally and two metres laterally.

Located at a height which corresponds roughly with high tide level, two horizontal members (or walings) about 300 mm by 150 mm in section, are transversely fixed to the piles, one to each side, by means of a single bolted connection which passes through both walings and the pier in between.

Positioned transversely and over the walings are cross braces, 300 mm by 120 mm in section and aligned about 30 degrees above the horizontal. Each cross brace spans across two pier bays, from directly below the longitudinal decking beams to a point immediately over the walings. At the centre of the resultant 'X' shape, a single bolt connects the two cross braces and the pier in between. Each pair of braces is generally adjacent to another pair of braces, with a shared pier in between.

There is no evidence of cross bracing running in the longitudinal direction.

The heads of the piers are notched at each side to provide bearing for a pair of 300mm by 120mm transverse beams (or half caps). The transverse beams vary in length and span up to three pier bays. The joints in each pair of beams do not align but are staggered to maximise structural integrity. The transverse beams have a joint at mid span that consists of a packer of the same depth as the transverse beams and the same width as the notched pier head. The ends of the transverse beams, the corresponding continuous transverse beam and the packer in between are joined with four or more bolts.

Sitting on top of, and at right angles to, the transverse beams are decking beams, spaced at approximately one metre centres. The decking beams are joined in two ways. The first method occurs on that section of jetty that extends from the causeway to point where the change in direction occurs, and consists of a simple bolted connection through the decking beam and the transverse beam under it. The second method, employed on the outer section of *Bunbury Timber Jetty* uses timber corbels, 1200mm long, 350mm deep and 300mm wide and aligned longitudinally, in the same direction as the decking beams. The decking beams are bolted to the corbels. This method is an improvement on the first method in that the horizontal distance between the fixing point at the end of the decking beam is increased, thus minimising splitting of the decking beam.

Generally, the decking beams provide the only longitudinal bracing for *Bunbury Timber Jetty*. In a few isolated cases, longitudinal timber bracing members have been fixed at a later date.

The decking timbers, 250mm wide and 100mm deep, are laid at right angles to, and fixed to the decking beams by means of iron spikes about 25mm long, with one spike at each end of each decking timber. The joints are staggered in some locations and aligned in others. Occasionally, to reduce bowing, two spikes are used at the ends of the decking timbers.

In order to facilitate the loading of cargo, railway lines where installed in 1899 on *Bunbury Timber Jetty*. Extensive sections of railway line are extant. A points switching mechanism is also extant and is located about 200 metres from the end of Bunbury Timber Jetty about one metre below the decking. Beyond the points switching mechanism are a number of metal bins , located under the railway lines, which were presumably used for the storage of grain.

Four sheds, no longer used and in poor to fair condition, are located about 60 metres apart on the outer leg of *Bunbury Timber Jetty*. The first is a staff shed, the second contains a basin and urinal, the third is a WC and the fourth and outermost shed houses machinery. The sheds are timber framed with corrugated iron wall and roof cladding.

In 1986 a low level landing, about 100 metres long and typically three metres wide, was constructed about halfway along *Bunbury Timber Jetty* on the western side. At present, however, this landing is only accessible by boat as it is situated beyond a chain link fence and gate erected in recent times as part of the reconstruction works. The fence and gate are located about 230 metres from the causeway, preventing public access to the outer jetty.

The reconstruction work has consisted of reducing the width of Bunbury Timber Jetty and replacing defective decking timbers in the central section with good timbers from the edges. If the central decking timbers where found to be in good condition then they were turned over rather than replaced. At the time of inspection about half the length of the jetty had timber decking removed to both sides. It is intended that the piers, walings , cross bracings, transverse beams and decking beams to the east and west sides will eventually be removed, leaving Bunbury Timber Jetty in good condition and the same length as the present structure.

In addition to the general reconstruction works, a new 100mm diameter galvanised water main has been installed with fire hydrants at approximately 20 metres apart, on the eastern side of *Bunbury Timber Jetty*. Also, four lamp poles have been installed at about 60 metre intervals, commencing from the causeway end. The 100mm diameter galvanised poles are about four metres high.

13. 3 REFERENCES

No key references.

13.4 FURTHER RESEARCH

Bunbury Timber Jetty is also significant in that the original 1864 section was constructed by using wooden dowels instead of bolts. A large amount of the original jetty is now buried in the harbour and therefore it might be useful to conduct further research of the bottom of the harbour.