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.

The documentation for this place is based on the heritage assessment completed by Kristy Bizzaca, Historian, and Philip Griffiths, Architect, in September 2004, with amendments and/or additions by HCWA staff and the Register Committee.

PRINCIPAL AUSTRALIAN HISTORIC THEME(S)

- 3.5.3 Developing agricultural industries
- 3.8.5 Moving goods & people on land
- 3.8.6 Buildings & maintaining railways
- 4.5 Making settlements to serve rural Australia

HERITAGE COUNCIL OF WESTERN AUSTRALIA THEME(S)

- 107 Settlements
- 202 Rail & light rail transport
- 302 Rural industry & market gardening

11. 1 AESTHETIC VALUE*

The Type B bin structure at *CBH Bins, Pingelly* is a well-resolved timber, steel and corrugated iron industrial structure and together with its conveyors is a simple and elegantly engineered suite of structures. (Criterion 1.1)

In common with wheat bins elsewhere, the Type B bin structure at *CBH Bins, Pingelly* has landmark qualities. (Criterion 1.3)

11. 2. HISTORIC VALUE

CBH Bins, Pingelly is associated with the development of the Pingelly area as an agricultural and farming area and in particular the wheat industry, which

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* For consistency, all references to architectural style are taken from Apperly, R., Irving, R., Reynolds, P. *A Pictorial Guide to Identifying Australian Architecture. Styles and Terms from 1788 to the Present,* Angus and Roberston, North Ryde, 1989.
For consistency, all references to garden and landscape types and styles are taken from Ramsay, J. *Parks, Gardens and Special Trees: A Classification and Assessment Method for the Register of the National Estate,* Australian Government Publishing Service, Canberra, 1991, with additional reference to Richards, O. *Theoretical Framework for Designed Landscapes in WA*, unpublished report, 1997.

has been the main industry for the district since the turn of the twentieth century. (Criterion 2.1)

CBH Bins, Pingelly demonstrates the important contribution to the State's economy of the wheat industry, and the significance of the railway system in the development of this industry and of rural Western Australia in general. (Criterion 2.1)

CBH Bins, Pingelly is associated with Co-operative Bulk Handling Limited (CBH), which was established in 1933 as a result of the growers need for a more cost efficient wheat handling scheme. CBH, a farmer run and elected organisation for which the majority of shareholders are grain growers, has been the only handler of Western Australia's wheat since 1935. (Criteria 2.2 & 2.3)

11. 3. SCIENTIFIC VALUE

The design of *CBH Bins, Pingelly*, including associated grain receival and despatch elements, was a technical innovation in the handling of grain loads. (Criterion 3.3)

11. 4. SOCIAL VALUE

CBH Bins, Pingelly is valued by the local community for its contribution to the history of the Pingelly district, and as a result contributes to this community's sense of place. This is evidenced by its inclusion in the Shire of Pingelly Municipal Inventory, community concern about its demolition and strong public support expressed in 2005 in favour of the place's retention. (Criterion 4.1 & 4.2)

12. DEGREE OF SIGNIFICANCE

12. 1. RARITY

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12. 2 REPRESENTATIVENESS

The Type B bin structure conveyors are a good representative example of grain storage facilities developed by CBH in the 1960s. (Criterion 6.1)

CBH Bins, Pingelly has associations with the establishment of Co-operative Bulk Handling Limited (CBH) and the development of bulk handling facilities throughout Western Australia. The 1962 Type B wheat bin, together with the Type K cells and the open storage pit, are representative of the evolution of the design of CBH's wheat storage units, which was modified to meet the demands of grain growers and the grain industry. (Criterion 6.2)

12. 3 CONDITION

CBH Bins, Pingelly is generally in fair to good condition, with some evidence of deterioration in the timber work of the Type B bin.

12. 4 INTEGRITY

CBH Bins, Pingelly continues to be used for grain storage and therefore retains a high degree of integrity.

12. 5 AUTHENTICITY

CBH Bins, Pingelly has been subject to minor change though time and retains a high degree of authenticity.

13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Kristy Bizzaca, Historian. The physical evidence has been compiled by Philip Griffiths, Architect.

13. 1 DOCUMENTARY EVIDENCE

CBH Bins, Pingelly comprises a standard Type B timber and steel framed corrugated iron clad 500,000 bushel wheat bin, grain elevator, district office, sample stand, weighbridge, and late twentieth century Type K storage cells, located along the Great Southern Railway.

The area now known as Pingelly was originally called *Pingeculling*, an Aboriginal name referring to the entire gully and the fresh water spring located there.[1] The district was settled by Europeans in the late nineteenth century and was originally used for grazing and for the cutting of sandalwood.[2]

With the official opening of the Great Southern Railway between Beverley and Albany on 14 February 1889, a siding at the Pingelly gully was created.[3] This influenced the growth of the sandalwood industry in the area with carters using the siding as a central collection point from which the wood could be transported to Fremantle.[4]

The provision of the better communication route to Fremantle through the construction of the railway together with the clearing of land by the sandalwood cutters facilitated the increased settlement of Pingelly for grazing, primarily of sheep, and agricultural purposes. This was representative of the Western Australian Government's efforts to promote agricultural growth by utilising the monies now available to them as a result of Responsible Government to finance public works such as railways. A small town began to take shape around the siding at Pingelly and a townsite was officially declared there by 1898. Buildings in the town at this time included a railway station, a post and telegraph office, an agricultural hall, a hotel, a school, an Anglican church and a number of general stores.[5]

The period from 1900 to the 1920s saw the development of a wheat industry in Pingelly and its growth in Western Australia as a whole largely due to the 1901 release of William Farrar's rust-resistant strain of wheat ('Federation') and the mechanisation of farming.[6] The introduction of fertilizers and trace elements opened more land for production, also increasing wheat yields. By the 1920s, wheat rivalled wool as state's primary export[7], and in the Pingelly

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1 Ford, G., 'History of Pingelly', Major Assignment 1952, typescript, p. 11.

2 Ibid, Ch. 11.

3 Donald S. Garden, *Albany: A Panorama of the Sound from 1827*, Thomas Nelson Ltd, 1977, pp. 209 & 211.

4 Ford, op. cit., p. 12; Baskerville, B., 'A History of Pingelly', Graylands Teachers College, 1960, manuscript, Ch. 2 & 3; Lange, S., *Pingelly: Our People and Progress*, The Pingelly Tourist & Town Beautification Committee, 1981, pp. 35 – 38.

5 Ford, op. cit., pp. 12, 25 - 26; Baskerville, op. cit., Ch. 2 & 3; Lange, op. cit., pp. 35 – 38; Cox, J., 'A Co-operative Enterprise', Thesis, Perth, undated, pp. 1 - 4.

6 Cox, op. cit., pp. 5 - 8; CBH Ltd, 'CBH: A Profile', Perth, undated, pp. 2. The slow development of the industry was attributed to the failure of adapting European farming knowledge to Australian conditions as well as the use of European seeds unsuited to Australia's soil and climate. (Ibid both.)

7 Cox, J., op. cit., pp. 5 & 6, 8; 'CBH: A Profile', op. cit., p. 2.

district wheat growing had overtaken sheep grazing as the main industry. Oats were also a major crop for the area by this time.[8]

The bulk handling of wheat was first considered in Western Australia in 1913, when it was recognised that the traditional bagging of wheat had become 'cumbersome and costly'. The high costs associated with producing the hessian bags and large spaces required to store these bags at sidings and wharves resulted in wheat growers searching for a better system of moving their produce from the farms to the ships.[9] This system was used at Pingelly where the surplus bagged wheat not used at the town's roller flour mill built in the early 1900s was carted by teams to the railway siding where it was stored in large stacks prior to transportation.[10]

Delayed by the outbreak of World War One, bulk handling was not considered again until 1920 when agitation among wheat growers forced the Commonwealth Government to take action. The Commonwealth Government entered into an agreement with The Westralian Farmers Ltd to raise £650, 000 for the construction of grain silos and elevators in Western Australia. The new company was formed by the Primary Producers Association and named The Western Australian Grain Growers' Co-operative Elevators Ltd. It was disbanded after American and Australian experts found that the price and freight of bulk wheat and the cost of installing the new machinery greatly outweighed that of bagged wheat.[11]

In 1929, interest in bulk handling was again raised when the Western Australian Farmers Ltd and the Trustees of the Wheat Pool of Western Australia combined their interests to research and develop a cheap bulk handling scheme. The scheme involved the use of horizontal grain storage bins/sheds instead of the orthodox vertical cells and the conversion of bagging machinery to bucket elevators that could travel up and down the sheds. An added problem to any scheme was that the Railways Department had no rolling stock suited to bulk handling. Railway wagons therefore had to be fitted out on site with hessian and canvas liners to prevent the wheat from leaking out of the sides.[12]

To test the new system, five sidings were established in the Wyalkatchem area in 1931 and 1932 at Trayning, Yelbeni, Korrelocking, Benjaberring and Nembudding. It was considered to be a huge success and gained the approval of the wheat growers in that area. This was evidenced by the increase in the number of sidings from 5 in the 1931/1932 season, to 53 by 1933/1934.[13]

The leasing of additional sites for these new sidings in 1933 led to the establishment of the Co-operative Bulk Handling Limited (CBH). The company was registered on 5 April 1933 and took over the leases and plants

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8 Ford, op. cit., p. 27; Lange, op. cit., pp. 35 – 38.

9 'CBH: A Profile', op. cit., p. 2.

10 Ford, op. cit., pp. 25 – 26; Lange, op. cit., p. 173.

11 Co-operative Bulk Handling Ltd, 'A Co-operative Enterprise: A progressive history of Co-operative Bulk Handling Ltd to 31st December 1942', undated, p. 1.

12 'A Co-operative Enterprise', op. cit., pp. 1 - 5. Note: An example of a 'beetle' wagon, which was used to store the hessian linings for the wagons, can be still seen at *CBH Bins, Pingelly*. (Site inspection, 23/8/2004.)

13 Ibid, p. 13.

operated by Western Australian Farmers and the Wheat Pool of Western Australia.[14] The new company was based on that of The Western Australian Farmers Ltd which was a grower run and elected organisation with the shareholders being the grain growers of the state.[15]

In 1934, the State Government prevented CBH from establishing more sidings by stopping the Railways Department from leasing further sites to the company. The State Government had come under pressure from those opposing the bulk handling scheme and had decided that approval of the new bulk handling sidings would be given pending the outcome of an enquiry into CBH. Opposition to bulk handling came from the wheat and bag merchants as well as from those who wanted a government controlled system to be established. The Committee of Enquiry began investigating the matter in August 1934 and, on the Committee's recommendation, a Royal Commission was appointed on 23 January 1935.[16]

On 31 July 1935, based on evidence from 90 wheat growers, the Royal Commission advised 'that Co-operative Bulk Handling Limited be permitted to extend and carry out their proposals for a State-wide scheme relating to the bulk handling of wheat at country sidings'.[17] As a result of the recommendations of the Royal Commission, the *Bulk Handling Act, 1935* was established, granting CBH sole rights to the handling of wheat in Western Australia. For the 1936/1937 wheat season, the number of bulk handling sidings rose from 53 to 102.[18]

Local newspaper, *The Pingelly-Brookton Leader*, reported that the Pingelly siding was one of 46 sidings to have a wheat storage bin erected there for the purpose of bulk handling.[19] This bin was not located on the site of the present *CBH Bins, Pingelly*[20] and was likely to have been demolished as part of the early 1960s country improvement scheme (see information below). However, given available evidence it is known that the form which the earlier Pingelly structure took would have been a horizontal storage shed/bin. These bins were constructed economically using corrugated iron, timber and steel and proved much less costly to build then the more orthodox vertical silo, especially in light of the rapid expansion of wheat farming.[21]

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14 'A Co-operative Enterprise', op. cit., pp. 6 & 7.

15 Harcourt, G., 'History of Co-operative Bulk Handling', unpublished, 1998, p. 13.

16 'A Co-operative Enterprise', op. cit., p. 7.

17 'A Co-operative Enterprise', op. cit., p. 7.

18 Ibid, p. 13.

19 *The Pingelly-Brookton Leader*, 23/7/1936.

20 In her history of Pingelly, S. Lange mentions that the site now occupied by *CBH Bins, Pingelly* was used in 1958 to provide camp accommodation for approximately 170 migrants. The migrants worked their way along the length of the Great Southern Railway replacing sleepers, which would likely to have been their required two years work under the auspices of the Federal Government's Post World War Two immigration program. (Lange, op. cit., p. 161; Evans, K., 'Dreams and Disappointments: The Displaced Persons Scheme in Western Australia', in Gregory, J. (ed), *On the Homefront: Western Australia and World War II*, UWA Press, Nedlands, 1996, pp. 266 – 267.)

21 Gray, L. & Rogers, P., 'Conservation Plan for Wheat Bin, Wyalkatchem', prepared for the Wyalkatchem Agricultural CBH Museum Committee, 1998, Section 4; RWAHS, *Early Days*, Vol. 8, Pt. 5, 1981, inside of front & back cover; Site inspection, 23/8/2004.

The addition of the 45,000 bushels-capacity bin to provide for the bulk handling of wheat facilitated growth of the wheat industry in Pingelly.[22] In subsequent years, development of the industry was further contributed to by the connection of the area to the Wellington Dam in 1957 and by the wheat breeding research undertaken by the Department of Agriculture in the post World War Two period.[23]

The early 1960s saw various changes to the activities of CBH, in particular the implementation of the first stages of a comprehensive country improvement scheme whereby earlier facilities where either upgraded or replaced.[24] The 1962 Annual Report for the company stated:

> Two improved type of bins were built during the year. These were at Pingelly and Beverley where bins with a capacity of 500,000 bushels and 400,000 bushels, respectively, were built. The foundations and floors of these bins are concrete, they have curved iron walls similar to the standard country bin but the roof is carried on steel trusses, giving a clear working space inside the bin. At Pingelly fixed machinery has also been installed and growers deliver their grain to an underground hopper or bin.[25]

The changes to the bin design in the early 1960s generally reflected improvements to the delivery system of grain to and from the bin. *CBH Bins, Pingelly*, or 'Type B' bin as it was known, not only had the farmers delivering their grain to an underground hopper, but also had a drag chain conveyor system installed at roof level. This allowed the more efficient delivery of grain by means of a number of chutes located along the length of the conveyor that could be opened or closed to fill different bays within the bin.[26]

At *CBH Bins, Pingelly* the hopper, track shed and elevator formed part of an adjoining structure located centrally on the west side of the bin. The bin had also entries to the north, south and west and comprised 70 bays. Each bay was sealed and had four roof ports to allow for fumigation. *CBH Bins, Pingelly* was constructed on a portion of the railway reserve just to the north of the townsite on the eastern side of the Great Southern Railway to which it was connected via a loop line.[27]

The country improvement and replacement program was developed as a result of increasing wheat production, the need to provide additional storage and the concurrent installation of the standard gauge railway throughout the state.[28] After the initial stages, the construction of Types A and B wheat bins, and other design types developed in subsequent years, began at receival

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22 Ford, op. cit., pp. 21 & 27; Baskerville, op. cit., p. 24.

23 Kelsall Binet Architects in association with K. Bizzaca, 'Agricultural Department Research Stations Thematic History & Survey', prepared for CAMS & AGWA, 2000, Section 2.4; Lange, op. cit., pp. 42 – 53.

24 CBH Ltd Annual Report, 1961, n.p. (for all Annual Reports); CBH Ltd Annual Report, 1962; CBH Ltd Annual Report, 1965; CBH Ltd Annual Report, 1966.

25 CBH Ltd Annual Report, 1962.

26 CBH Ltd Annual Report, 1962; CBH Ltd Annual Report, 1965; Site inspection, 23/8/2004.

27 CBH Ltd, Pingelly Bin Layout – 70 Bays 500,000 Bushels, 10/8/1962, Drwg No. 62/62, provided by Luke Etherington, Property Officer, CBH Ltd, Perth; Site inspection, 23/8/2004.

28 CBH Ltd Annual Report, 1966.

points in earnest in 1963.[29] In 1965 CBH recorded 305 receival points, its largest number ever.[30]

In 1964, five Type B bins were built at Minnivale, Bokal, Highbury, Warralackin and Ravensthorpe.[31] Two were constructed at Dulyalbin and Wandering in 1964, and 2 at Cleary and Bonnie Rock in 1965.[32]

The 1966 CBH Annual Report lists the amount of bushels received at its facilities throughout the state. At *CBH Bins, Pingelly*, it was recorded that a total of 509,470 bushels of grain were received, 319,623 bushels of which was wheat and the remainder oats and barley.[33]

In 1971, work began on the conversion of CBH facilities to the metric system in time for the 1972/1973 season, which included all weighbridges. Advantage was taken of this to also install larger tonnage weighbridges at some of the different receival points.[34]

The year 1973 saw the beginnings of a scheme to provide a better standard of accommodation for CBH workers throughout the wheatbelt region. The standard residence comprised sleeping accommodation for two people, a kitchen, bathroom and toilet. It was built at the Company's workshop in Spearwood, in an effort to reduce costs, and transported in two sections to the site where it was assembled.[35] Historic photographs and physical evidence show that *CBH Bins, Pingelly* has one of these transportable homes completed during this period.[36] Unfortunately the Annual Reports do not provide information about construction dates of these structures. However, it is known that 150 of these had been built by 1975.[37]

A new structure was designed by CBH in 1975 to provide for the faster and more efficient sampling of grains brought to the receival points. The 'sampling platform' consisted of a shed mounted on a high platform, which allowed samplers to have easier access to the grain in the truck beds prior to it being transferred into storage. Like the transportable homes, the sampling platforms were built at the Spearwood workshop and assembled on site.[38] Again, the evidence clearly indicates one of these was built at the *CBH Bins, Pingelly* site; however, the exact date of construction cannot be found from the Annual Reports.[39]

The total grain received at *CBH Bins, Pingelly* in 1975 was 9,186 tons, 6,339 tons of which was wheat.[40]

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29 CBH Ltd Annual Report, 1962; CBH Ltd Annual Report, 1965; CBH Ltd Annual Report, 1968.
30 CBH Ltd Annual Report, 1992. A period of rationalisation undertaken by CBH in the late 1970s and 1980s led to the reduction of receival points to 193. (CBH Ltd Annual Report, 2002.)
31 CBH Ltd Annual Report, 1964.
32 CBH Ltd Annual Report, 1965; CBH Ltd Annual Report, 1966; CBH Ltd Annual Report, 1967.
33 CBH Ltd Annual Report, 1966.
34 CBH Ltd Annual Report, 1971. No specific mention of the replacement of a weighbridge at *CBH Bins, Pingelly* has been found in relation to this scheme.
35 CBH Ltd Annual Report, 1973; CBH Ltd Annual Report, 1975.
36 CBH Ltd Annual Report, 1973; CBH Ltd Annual Report, 1975; Site inspection, 23/8/2004.
37 CBH Ltd Annual Report, 1975.
38 CBH Ltd Annual Report, 1975.
39 Ibid; CBH Ltd Annual Report, 1977; CBH Ltd, Annual Report, 1978; Site inspection, 23/8/2004.
40 CBH Ltd Annual Report, 1975.

Demand from farmers for more efficient storage led to plans for additional unloading pits and improved elevators at receival points. In 1977, two pits (one of which was designated 'Type E') using different systems were trialled at Kulin and Dale.[41] Two years later, in 1979, CBH designed the 'Type K' bulk handling facility, which comprised grain storage cells and garner bins with an elevator as well as ground level receival pits.[42] The first of six Type K bins was constructed at Mogumber in 1980.[43] In 1981, a K type consisting of 4 cells each with a capacity of 1,200 tons was built at Pingelly.[44] This is located to the north of the Type B bin.

The need 'to develop innovative, flexible and cost efficient facilities' at CBH's receival points continued to be a major policy for the Company throughout the 1980s. One of the ways in which this was achieved was through the excavation of Type E open storage ground pits and associated portable conveyor loader systems and throwers.[45]

An E type was installed at Pingelly circa 1985 making the entire capacity of the receival point 29,500 tons.[46] In 1985, *CBH Bins, Pingelly* handled an amount of 27,660 tons of grain, including 19,855 tons of wheat.[47] By 1995, the overall total had dropped to 25,665 tons.[48]

In the mid 1990s, CBH commenced a strategic planning analysis of its operations in anticipation of the estimated 15 million tons to be handled by the Company by 2005. This process included a study of CBH's receival points so as to maximise use of existing facilities with a view to reducing capital costs and increasing efficiency. The result of this study was the 1996/1997 identification of strategic receival points, which would be the focus of future expenditure.[49] CBH reported that this rationalisation would be a gradual process with minor improvements being undertaken to non-strategic points in the interim to maintain the 'grain pipeline'.[50] It went on to state that these non-strategic sites would have reduced services, resulting in the removal and/or relocation of equipment.[51] This strategic planning policy has continued through to 2004.[52]

The Type B bin at *CBH Bins, Pingelly* has been earmarked for demolition as part of this rationalisation and identification of strategic receival points throughout the wheatbelt. At this time (2005), it is thought that the Type K cells and the open storage pit will remain on the site for use during the next

41 CBH Ltd Annual Report, 1977; CBH Ltd Annual Report, 1978.
42 CBH Ltd Annual Report, 1979.
43 CBH Ltd Annual Report, 1980.
44 CBH Ltd Annual Report, 1981.
45 CBH Ltd Annual Report, 1985.
46 CBH Ltd Annual Report, 1985; CBH Ltd Annual Report, 1995. The exact date of construction for the open storage pit is not shown in the Annual Reports.
47 CBH Ltd Annual Report, 1985.
48 CBH Ltd Annual Report, 1995.
49 CBH Ltd Annual Report, 1996; CBH Ltd Annual Report, 1997.
50 CBH Ltd Annual Report, 1997.
51 CBH Ltd Annual Report, 1998.
52 CBH Ltd Annual Report, 2003.

harvest, with consideration given to the future relocation of the Type K and other equipment.[53]

The demolition of the Type B bin at Pingelly has been proposed for several reasons such as: the need for better sealed storage to allow the necessary fumigation practices; and, the need to accommodate the larger five to ten ton delivery trucks, which is currently limited due to the small size of the track bed structure. In addition to this, Worksafe has informed CBH that the operation of the drag line conveyor is unsafe with access to the fixed machinery only available externally via the roof catwalk. Therefore, the continued up-keep of the bin is considered to be uneconomic.[54]

CBH has been discussing the demolition of the B bin with various members of the local Pingelly community, who have expressed concern about the removal of the building. Under the current lease agreement for this land, CBH must remove all improvements from the site prior to terminating the lease.[55]

In September 2004, the B bin at *CBH Bins, Pingelly* is vacant and will not be used during the 2004/2005 harvest because of the limitation of the existing accommodation.

In July 2005, representatives of the Shire of Pingelly reported strong community support for the retention of *CBH Bins, Pingelly*, and its potential interpretation as a historic site within the town.[56]

13. 2 PHYSICAL EVIDENCE

CBH Bins, Pingelly, comprising a standard Type B timber and steel framed corrugated iron clad wheat bin (1962), grain elevator (1962), district office, sample stand (1975), weighbridge (1975), garner bin over the railway, and late twentieth century Type K storage cells (1979), is located alongside the Great Southern Railway in an open setting.

CBH Bins, Pingelly is located north of the town centre, with the Great Southern Highway and railway to the west and Marconi Street to the east. All buildings are aligned along the railway axis. The Type B bin is at the centre of the complex and the elevators are the tallest elements and are a local landmark.

Vehicle entry to the site is from the southern end at the Review Street level crossing with the buildings arranged along the axis commencing at the sample stand, then weighbridge, District Office, Type B bin and associated hopper and elevator, Type K storage pods and then an open storage pit. There are bitumen surfaced access roads around the site with gravel edges and a pair of track pass the bins, one the mainline and the other a line to serve the bins.

There is some tree screen plantings on the eastern side of the bins and between the access road and the railway. These comprise a selection of young Eucalypts.

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53 Site inspection, 23/8/2004.

54 Site inspection, 23/8/2004.

55 Site inspection, 23/8/2004.

56 Councillor David Freebairn and Mr Stuart Hobley, Chief Executive Officer, Shire of Pingelly, to Register Committee, 29 July 2005.

Type B Bin

The Type B bin was designed as a 500,000 bushel bin and is currently rated as 13,600 tonnes capacity. The Type B bin is 390'5" long x 75'0" wide and some 32'0" to the ridgeline. The building is set on a concrete slab, and 8" x 7" posts at 7'3" centre set on concrete haunches, and restrained with 3three 1.25" tie rods drilled though the posts and anchored through to the ground. The wall cladding is corrugated galvanized iron pre-bent and radiused to take up the load imposed by the grain, and reverse curved to fit around the posts. The roof takes a gabled format and is covered in corrugated galvanized iron and is supported on timber purlins set on steel pipe construction converging chord trusses.

There are curved 14-gauge steel construction doors at each end of the shed and at three locations along the west side of the shed and these have inward opening upper sections and outward opening lower sections.

The overall appearance of the shed is a pattern of curves along all sides up to roof plate height, plain gables, a medium pitched roof and steel walkways on the roof. The curves are articulated by the timber columns, each one of which has a stenciled identification number running from the lowest number in the north.

The interior is one large space and comprises the concrete floor, steel tie rods to each column, concrete floor, corrugated iron wall cladding and the exposed roof construction. At the apex of the roof there is a drag conveyor that that runs almost the length of the shed dividing from the middle delivery point and running both north and south.

Grain Receival and Elevator (1962)

This facility is located to the west of the bin at its centre point and comprises a concrete hopper, grid, steel framed elevator, and a steel portal framed, timber purlin and corrugated iron track shed, open at both ends and closed against the weather on the west. There is a walkway above roof level, access ladder to the platform, a further ladder up to the top of the conveyor, and motor and gearbox mounted on the top platform. There are switchboards and controls under the roofed section of the track shed, set on angle stands and set clear of the ground.

Garner Bin (1962)

Located at the northern end of the Type B bin, the garner bin is set over the rail track and delivers grain to rail trucks. It is all steel construction with a conveyor to it, holding bin, chute, access platforms and ladders.

Sample Stand (1975)

The sample stand is a simple steel tube and steel beam construction platform with steps to platform level and articulated steps to access vehicle loads, and includes a small metal shed workspace enclosure with a lean to shelter on the western side.

Weighbridge (1975)

The weighbridge is a 50-ton platform with a pipe framed boom gate, and a metal-framed shed located to the east of the platform. There is a door at the southern end and a hatch overlooking the weighbridge.

District Office (n.d.)

The District Office comprises a prefabricated metal clad and metal roof shed set on steel stumps, with metal awnings and steel steps. The underside of the shed is protected with expanded metal mesh.

Type K Pods (1979)

There are four 1,225 tonne Type K pods at the northern end of the Type B bin, with their own grid and conveyor system. These too are all steel construction with a delivery conveyor over the top and loading conveyor under the bins.

Open Storage

Further north there is an open storage area some 166 metres x 22 metre with a capacity of 10,900 tonnes. This is formed with steel profile formers clad with metal decking and holdings are protected with tarpaulins.

13. 3 COMPARATIVE INFORMATION

A search of the Heritage Council of WA database reveals that there are three CBH storage facilities entered into the State Register of Heritage Places. These are P02999 *CBH Grain Silos*, Bunbury (1937), P00666 *Wubin Wheatbin Museum* (1936) and P15755 *Wyalkatchem Railway and CBH Precinct* (1936).[57]

Wubin Wheatbin Museum is a surviving example of CBH's early and common horizontal storage, which were based on a design by which the downward pressure was balanced the horizontal pressure. The bins comprised a number of curved bays which were reinforced by tie rods and allowed for different sections to be used to store different varieties and quantities of grain. Small openings located externally at the lower level of the bays were used to transport grain from the bin to the rail truck. This lowered the level of the grain inside the structure to enable the entry of vehicular equipment such as front-end loaders, via the removable bay sections, to move the product.[58]

The Wyalkatchem CBH Wheat Bin predominantly comprises a bush timber structural frame with chamfered milled jarrah posts supporting curved bays of horizontal corrugated iron that form the walls of the 61-metre long building. The gable roof is asymmetrical over the roof and forms a break pitch along the entire south west side of the building. [59]

Wyalkatchem, Wubin and Pingrup are the only three remaining 1936 CBH wheat bins in the State. CBH has gifted these buildings the local communities,

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57 HCWA Online Database, 6/9/2004.

58 Gray, L. & Rogers, P., 'Conservation Plan for Wheat Bin, Wyalkatchem', prepared for the Wyalkatchem Agricultural CBH Museum Committee, 1998, Section 4; RWAHS, *Early Days*, Vol. 8, Pt. 5, 1981, inside of front & back cover; Site inspection, 23/8/2004.

59 Register Documentation for P15755 *Wyalkatchem Railway And CBH Precinct,* May 2004.

representing the north, east and south wheatbelt regions.[60] The Wubin bin has a concrete floor, and Wyalkatchem Wheat Bin has the only remaining example of the original steel door. The Wyalkatchem CBH Wheat Bin is more than twice the length of the Wubin bin.[61]

Wheat bins were constructed economically with corrugated iron for bays and roof, iron for flooring and timber pole supports. *Wubin Wheatbin Museum* and Wheat Bin, Wyalkatchem (1936) are both of this type, but only the Wyalkatchem bin retains its original floor material.[62]

The changes to storage bin design in the early 1960s generally reflected improvements to the delivery system of grain to and from the bin. The 'Type B' (for example at *CBH Bins, Pingelly*) had an underground hopper and fixed drag bin conveyor system at roof level. The floor used in the new 1960s types was concrete and a truss system was used for support the roof instead of timber support poles.[63]

Wheat bins continue to be constructed into the present day (2004), however by the mid 1970s the curved bay design had made way for straight wall construction, and the use of concrete and steel throughout. These changes also resulted from the development of more efficient handling techniques and the need to provide best practice fumigation methods.[64]

Type B Bins

Annual reports reveal that a number of the Type B types were constructed throughout the Wheatbelt for CBH during the country comprehensive scheme. In 1964, five Type B bins were built at Minnivale, Bokal, Highbury, Warralackin and Ravensthorpe.[65] Two were constructed at Dulyalbin and Wandering in 1964, two at Cleary and Bonnie Rock in 1965, and five at Bullfinch, Gairdner River, Grass Valley, Jacup and South East Hyden during 1966.[66] In 1971, B bins were built at Buniche and Jerramungup, and in 1972 B bins were constructed at Broomehill, Coondle, Greenhills, Nyabing and York.[67]

A search of the Heritage Council database shows that the bins at Pingelly (1962), Warralackin (1964), South East Hyden (1966) and Buniche (1971) are extant and have been identified as part of the various local governments' municipal heritage inventory processes.[68]

Information from CBH staff at the time of the site inspection on 23 August 2004 indicates that the Type B bins also still exist at Minnivale (1964), Wandering (1964), Bonnie Rock (1965), Bullfinch (1966) and Jerramungup (1971).[69]

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60 'Conservation Plan for Wheat Bin, Wyalkatchem', op. cit., p. 17; Site inspection, 23/8/2004.
61 Register Documentation for P15755 *Wyalkatchem Railway And CBH Precinct,* May 2004.
62 'Conservation Plan for Wheat Bin, Wyalkatchem', op. cit., p. 17.
63 CBH Ltd Annual Report, 1962; CBH Ltd Annual Report, 1965; Site inspection, 23/8/2004; 'Conservation Plan for Wheat Bin, Wyalkatchem', op. cit., Section 3.
64 CBH Ltd Annual Reports, 1964 – 1978; Site inspection, 23/8/2004.
65 CBH Ltd Annual Report, 1964.
66 CBH Ltd Annual Report, 1965; CBH Ltd Annual Report, 1966; CBH Ltd Annual Report, 1967.
67 CBH Ltd Annual Report, 1971; CBH Ltd Annual Report, 1972.
68 HCWA Online Database, 6/9/2004.
69 Site inspection, 23/8/2004.

13. 4 KEY REFERENCES

No key references.

13. 5 FURTHER RESEARCH

The exact dates of construction of the transportable home, the sampling platform and the Type E open storage pit at *CBH Bins, Pingelly* are not known.