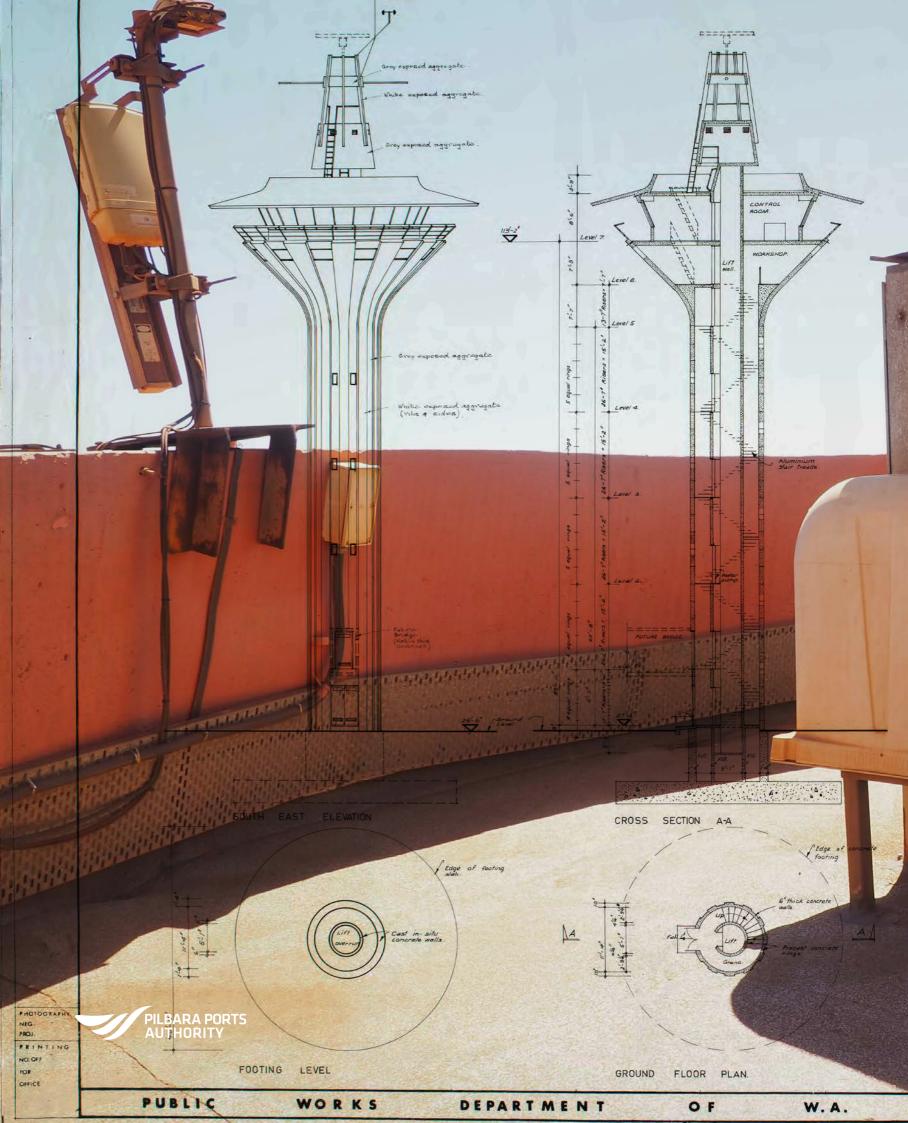
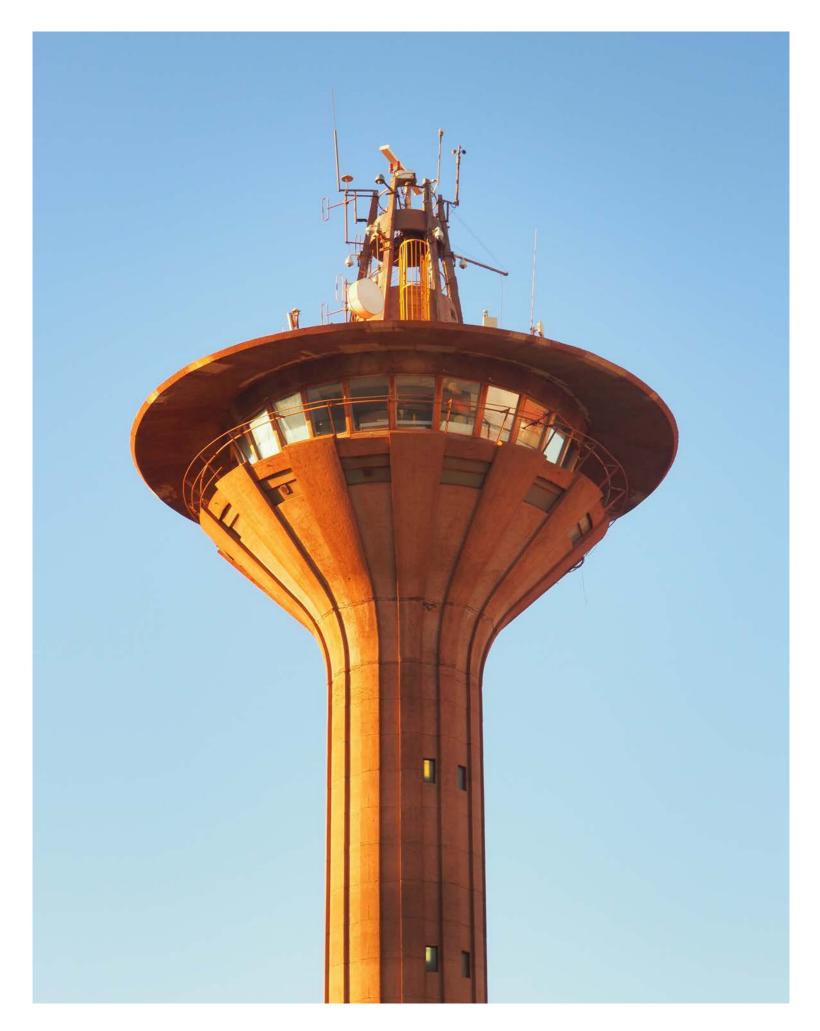
PORT HEDLAND PORT CONTROL TOWER

PILBARA PORTS AUTHORITY







PORT HEDLAND PORT CONTROL TOWER







Pilbara Ports Authority acknowledges the Kariyarra People as the traditional owners of Port Hedland, known by the traditional name Marapikurrinya, and pays respect to their Elders both past and present.

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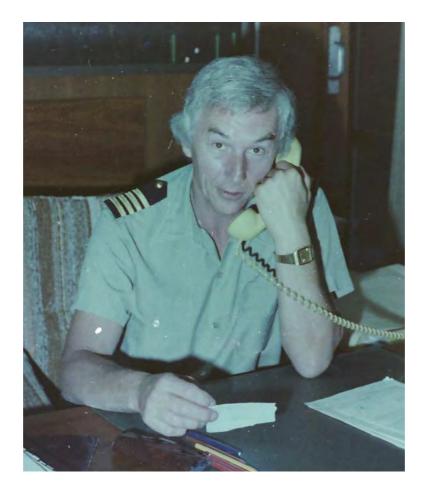
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Printed in Perth, Western Australia

First Printing, 2021

Published by Element Advisory Pty Ltd Level 18, 191 St Georges Terrace Perth, Western Australia, 6000



Dedicated to Captain Geoff Monks OBE (1930-2020), for his dedication and service, and to seafarers everywhere.

Foreword

The Geoff Monks Port Control Tower was cutting edge in design and technology when it was constructed in the 1960s. The tower offered 360-degree harbour views to a single Vessel Traffic Services (VTS) operator who would oversee about 500 vessel movements through the port each year, delivering a total annual throughput of about 15 million tonnes. Across its 50-year life, the tower's distinguishable silhouette became a mainstay of the port and Port Hedland itself.

In that half century, the Port of Port Hedland grew exponentially to become an integral part of Western Australia's valuable resource sector. By the time Pilbara Ports Authority began drawing up the plans for the new \$55.3 million Hedland Tower Integrated Marine Operations Centre in 2013, VTS operators worked in teams around the clock to deliver annual port throughput in the vicinity of 500 million tonnes, delivered across more than 6,000 vessel movements. The razing of the old tower and the construction of the new heralded a new capability for now and the future.

The new Hedland Tower integrates all the port's maritime operating components including Vessel Traffic Services, harbour masters, marine pilots and dredging services for efficiency and best maritime practice. The tower has been equipped with state-of-the-art technology and with the ability to change with the times into the future. Like its predecessor, the Hedland Tower will no doubt become a symbol of Port Hedland.

I am proud to have been part of the process of helping the Port of Port Hedland prepare for another 50-plus years of operations and growth. I thank all Pilbara Ports Authority team members, contractors and suppliers who were involved in replacing the old tower with the new, welcoming a new era of shipping for Port Hedland.

Roger Johnston Chief Executive Officer Pilbara Ports Authority

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Introduction



Tower under construction c. 1969.

The Department of Harbour and Light flag flies out the front of the administration building.

Pilbara Ports Authority

The Port of Port Hedland is located in the North West of Western Australia, in the Pilbara region and within the traditional lands of the Kariyarra people.

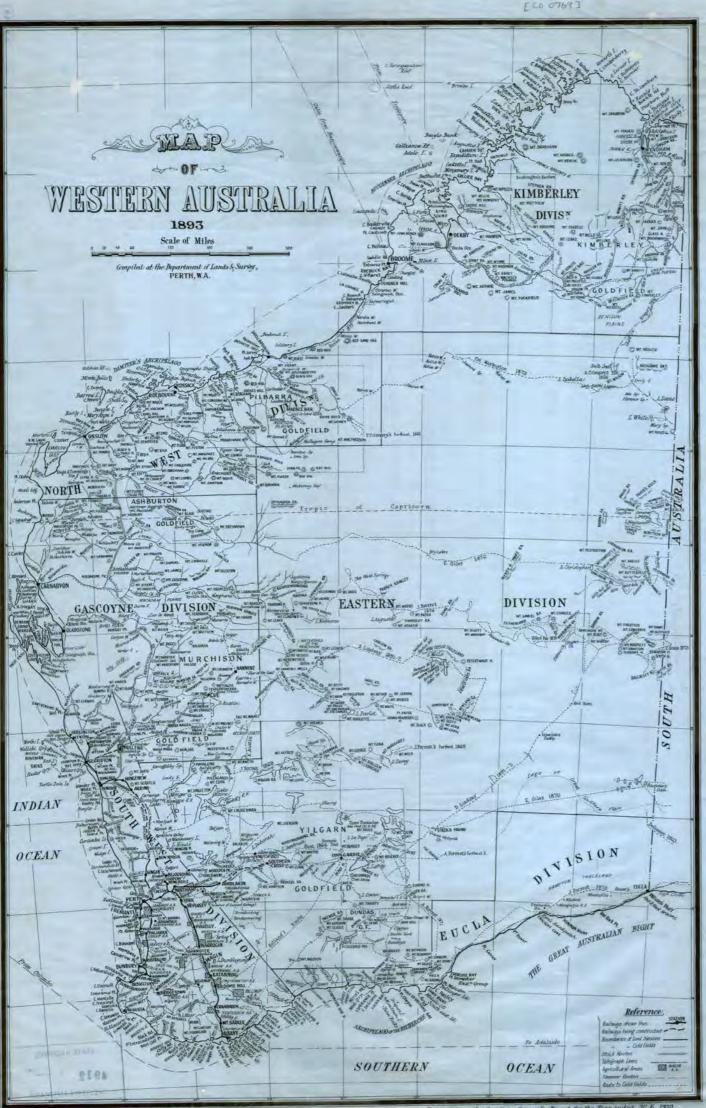
In 1863 the single-masted cutter *Mystery* dropped anchor in a mangrove inlet on the Pilbara coast. The site was subsequently given the name Port Hedland after the Master of the vessel, Captain Peter Hedland. From that time until the late 1930s, the port played a role in the pearling industry and was a key export site for livestock, wool, tin and gold from the Pilbara.

In 1965 the first iron ore was exported from Port Hedland, resulting in growth for the port and town, and the need for new port infrastructure. Preliminary works started on the Port Control Tower in 1967 and construction was completed by 1970. The tower was an integral element of the port's operations and became a fixture of Port Hedland's landscape.

When the tower was first built, the port saw around 500 vessel movements each year and annual throughput averaged 15 million tonnes. Over the next 50 years, the port continued to grow in size and throughput. By 2019 there were more than 6,000 vessel movements through the port each year and annual throughput exceeded 500 million tonnes.

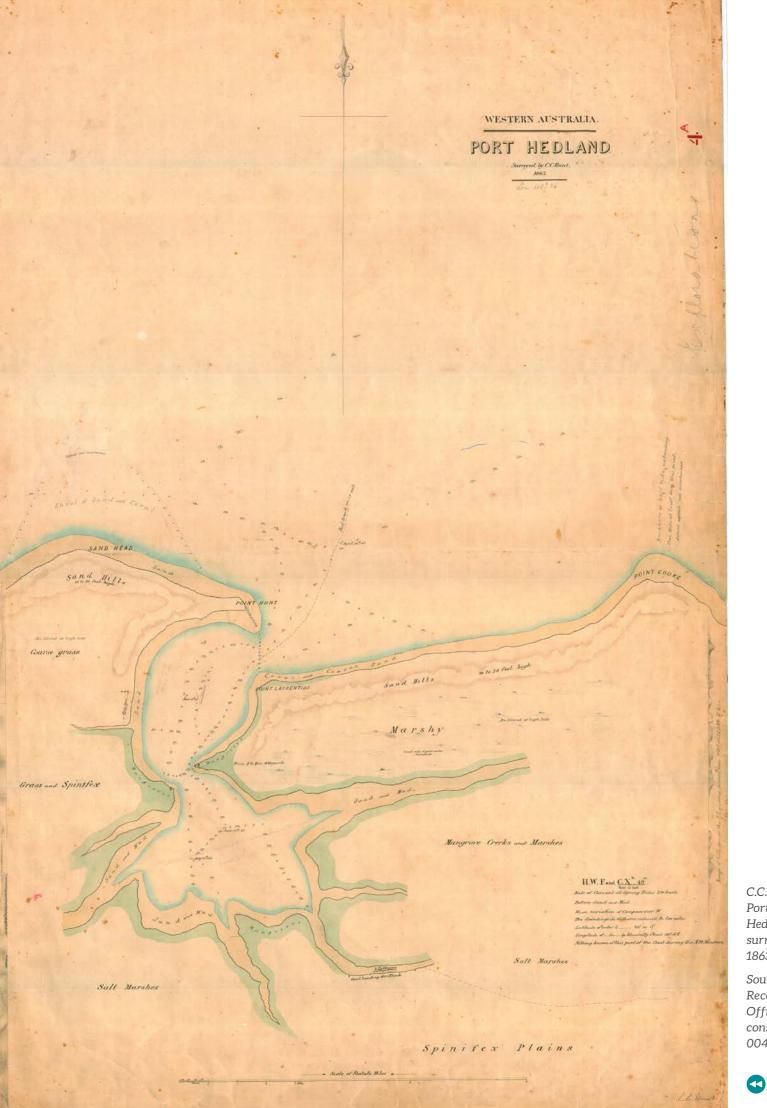
The tower could no longer meet the needs of the growing port and works began on a new facility equipped with the latest marine technology to ensure the safe and efficient movement of ships into the future. The Hedland Tower Integrated Marine Operations Centre was officially opened on 30 July 2019.

The original tower was brought down in a controlled environment on Saturday, 28 September 2019.



Map of Western Australia (1893) for 1929 annual report.

State Records Office cons4912/ CD0769



C.C. Hunt Port Hedland and surroundings, 1863.

Source State Records Office cons3423-004A





SS Minderoo and SS Charon at Port Hedland jetty. SS Charon is receiving a load of wool.

A fleet of pearl luggers is prominent in the background. c. 1910. State Library of Western Australia



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SS Koombana alongside Port Hedland jetty, 26 April 1909.

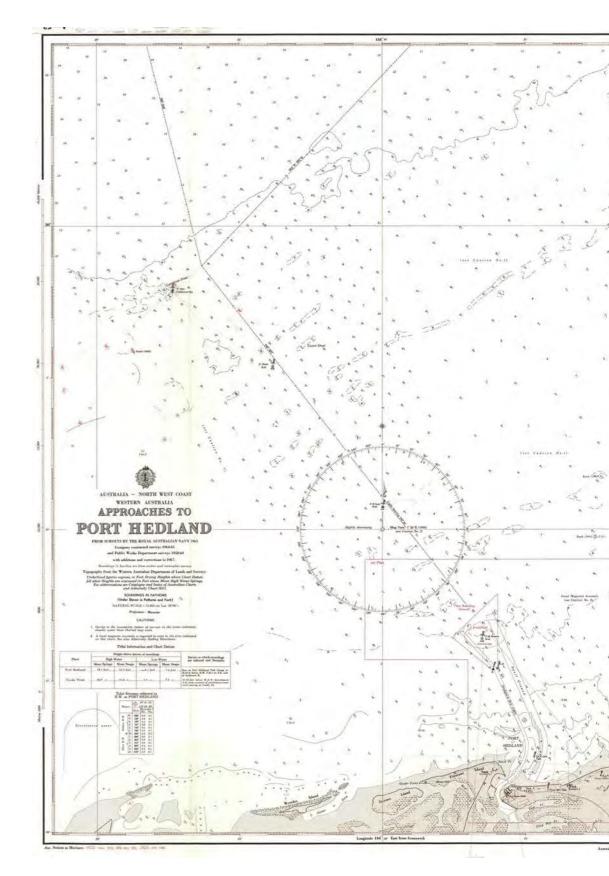
SS Koombana was lost at sea in a cyclone off the coast of Port Hedland on 20 March 1912 with the loss of 74 passengers and 76 crew. Only a small amount of wreckage was ever found and her location remains unknown.

Image provided courtesy of the Royal Western Australian Historical Society and State Library of Western Australia.

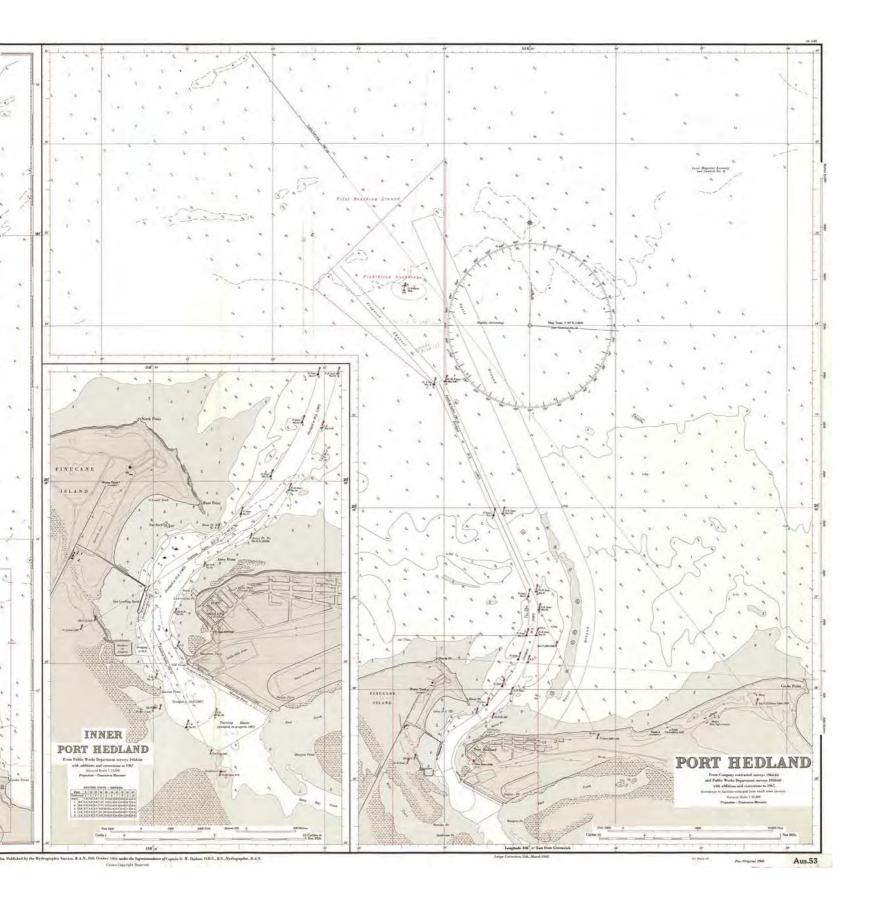
Location

Port Hedland is located approximately 1,765 kilometres north of Perth, 242 kilometres east of Karratha and 612 kilometres south west of Broome. The port is located around a 20-nautical-mile-long internal harbour shipping channel. This channel has a minimum width of 183 metres and, at its shallowest, is 14.2 metres deep.

Some of the port facilities are located on Finucane Island to the west of the channel and are only linked to the mainland via a two-lane causeway. The Port Control Tower was located on the eastern peninsula at the entry to the port near the intersection of The Esplanade and Anderson Street.



Map of approaches to the Port Hedland inner harbour by water, 1968.



| 11





Port of Port Hedland, c. 1970.





Port of Port Hedland, 2006.



History

Establishing Port Hedland

At 2.30 dropped anchor in the mangrove inlet discovered by the Mystery's party during the late trip to the DeGrey, and which Mr Hunt now named "Port Hedland," after the master, he having been the first to discern the entrance, which lies between a small rocky point projecting from a sandy beach on the western side, and a more sandy point on the eastern, at the head of a shallow bay or indent.

Charles Cooke Hunt and Joseph Beete Ridley; edited by Ned Overton, Exploration of the North-West Coast of Australia, 1863.

Archaeological excavations indicate that Aboriginal people have occupied the Pilbara coast for at least 50,000 years. The Kariyarra People, who are the Traditional Owners of Port Hedland, know the mangrove inlet located at Port Hedland as Marapikurrinya. Generations of Kariyarra People have lived in the area, camping, fishing, hunting and holding ceremonial activities. Evidence of their way of life is still visible in the many archaeological sites that exist in the area, including intricate engraved artworks on the limestone outcrops. Marapikurrinya continues to hold significance to the Kariyarra People, for the abundance of archaeological remains, and for the stories and traditional mythology of the area.

The coast of Western Australia was visited by numerous mariners and explorers prior to the establishment of the Swan River Colony in 1829. It was not until 1863 that the cutter *Mystery* dropped anchor in a mangrove inlet on the North West coast. At first named Mangrove Harbour, the inlet was later renamed Port Hedland.¹

Due to the sandbar at the entrance to the inlet, the huge tidal range and insufficient water supplies, the site was not immediately developed as a port.²Rather, in the early 1870s, a port and hamlet were established north of Port Hedland on a tidal creek at Condon, gazetted as Shellborough in May 1872, serving the De Grey pastoral stations.

In 1887 gold was discovered at Mallina and, following the declaration of the Pilbara goldfield in October 1888, the next decade saw Condon reach its peak.³

A number of factors led to the decline of Condon and eventual development of Port Hedland. Siltation rendered the Condon port less viable and there was a need for a port closer to the Nullagine goldfields than the existing port at Cossack. The Condon port could not cater for larger vessels, so transferring cargo from the landing out to ships lying in deeper water became the norm.⁴

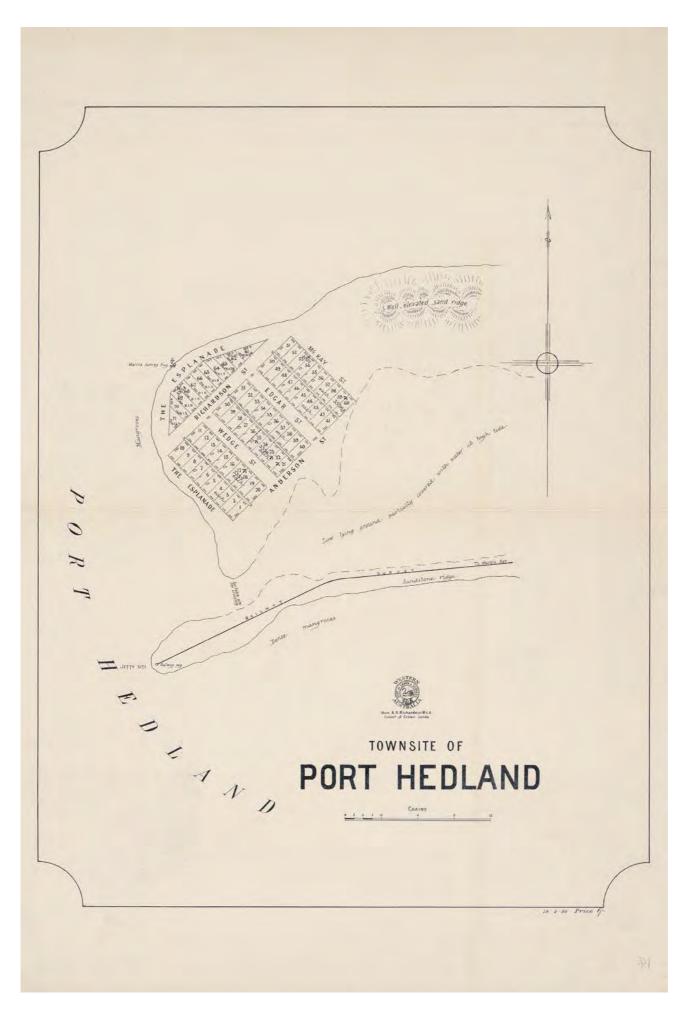
The move to establish a jetty at Port Hedland was progressed.

In 1896 the town site of Port Hedland was surveyed, and five reserves were gazetted for the purpose of public utility. Many of Condon's residents relocated to the new town, a progress association and the Pilbara Road Board (later named the Port Hedland Road Board) were formed. Construction of the first Port Hedland jetty began in 1896 and was completed in 1899.

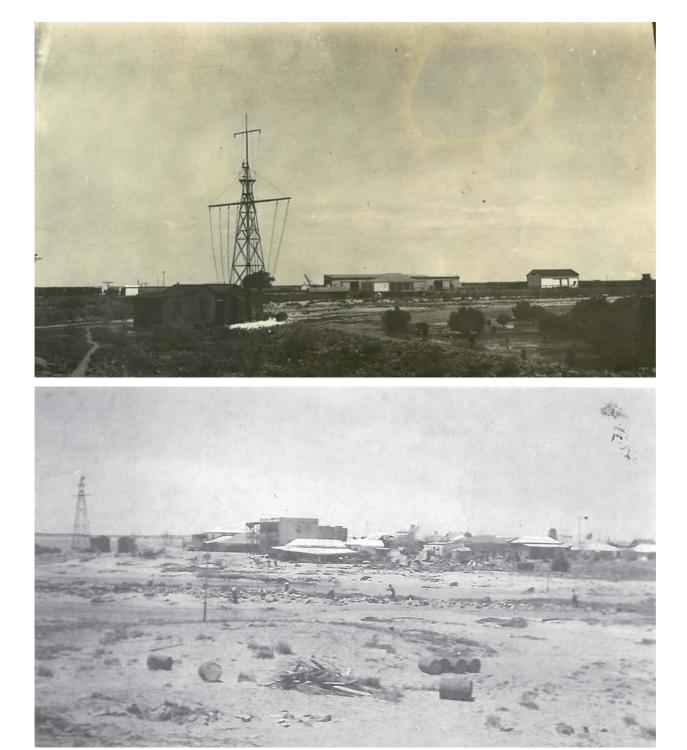
By 1900 the bustling harbour had become the focal point of Port Hedland. Early plans show The Esplanade forming the western boundary of the town before the commencement of the port waters. Over time, the area to the west of The Esplanade was reclaimed, effectively distancing the town from the water, and providing space for the expanding port facilities. With the subsequent growth of trade in the town associated with the discovery of gold near Marble Bar, an additional jetty was completed in 1908.

Until the 1930s the port was mainly used for exports of pearl shell, wool, livestock, gold, tin and small amounts of other minerals such as copper. Transportation to and from the port was initially undertaken by camel, donkey or bullock but this could be problematic and hazardous. To overcome this, a railroad was built linking Port Hedland and Marble Bar. The rail service, known as the Spinifex Express, operated from 1911 to 1951.

After World War II, the port continued to serve the pastoral industry in the area and received a boost with the mining of manganese. It was not until the development of the iron ore deposits in the 1960s that any major physical change took place to the port landscape.⁵



of Western Australia



Port Hedland inlet and signal tower

Kevin A Cotterall Collection c. 1911





Port Hedland, c. 1916

State Library of Western Australia







View of Port Hedland across the corner of The Esplanade and Anderson Street, 1936.

A ship, probably a State Ship, is entering the harbour in the background.

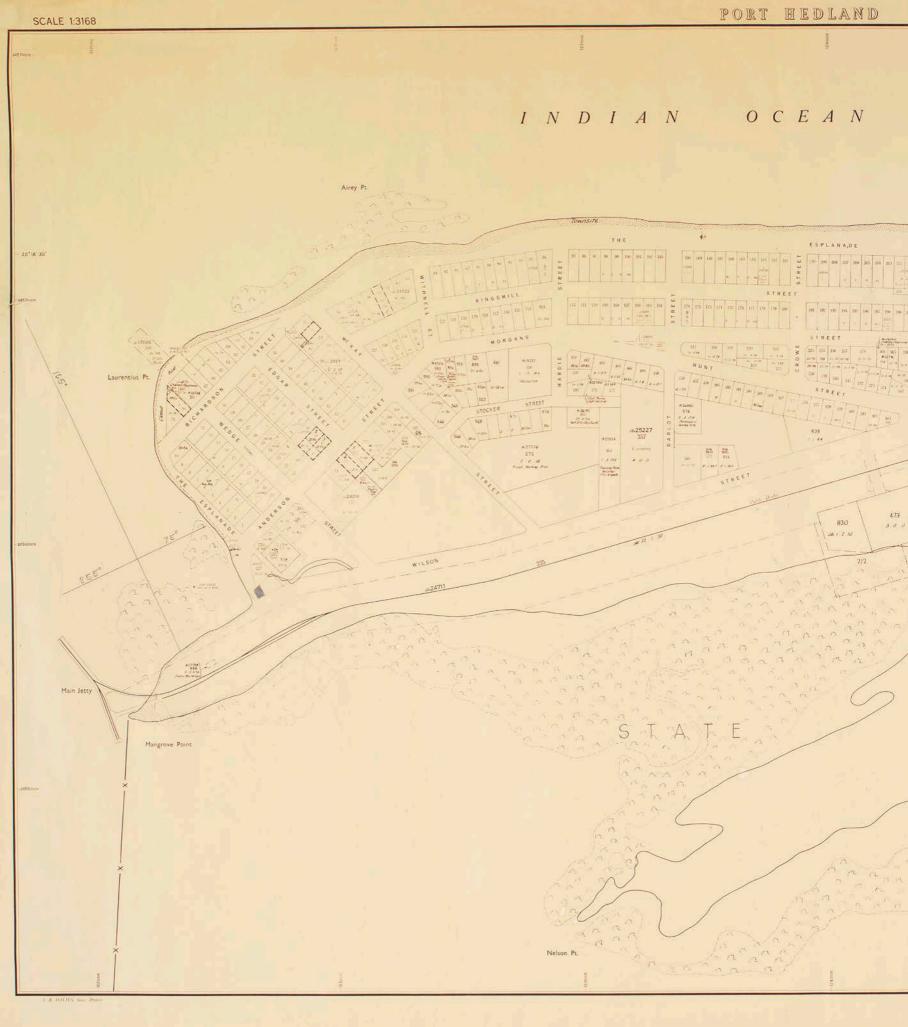
State Library of Western Australia





De Grey station, 1941

State Library of Western Australia



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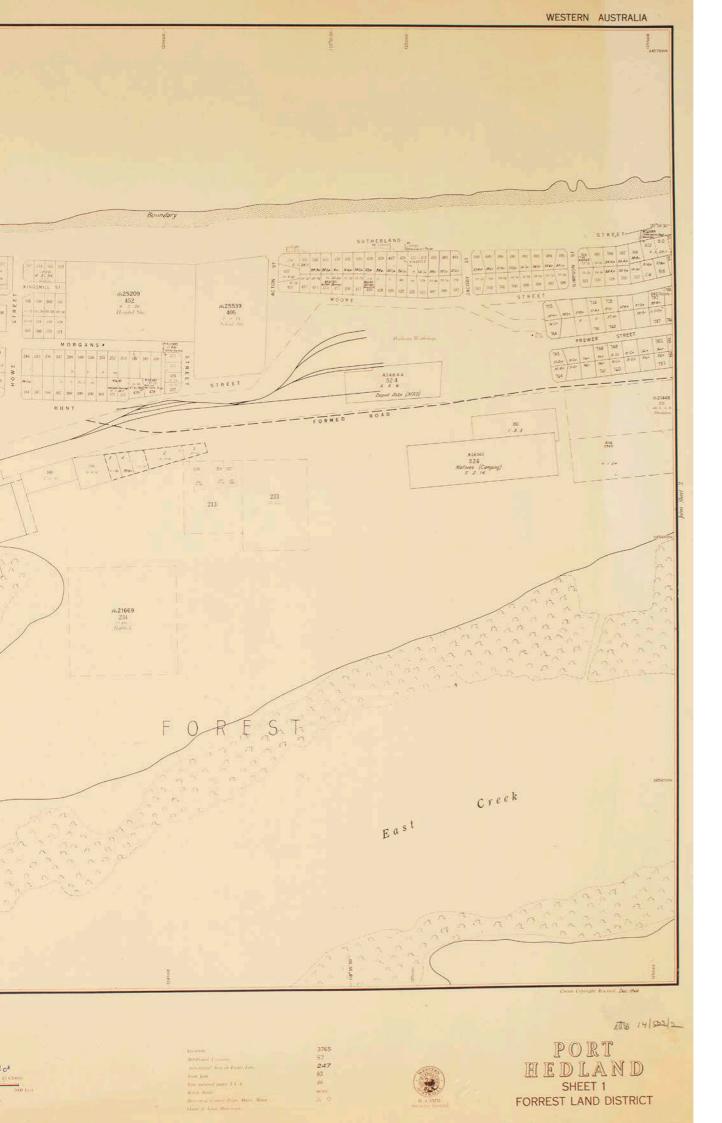
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Port Hedland, 1960 State Records Office





Opening of the Port Hedland to Marble Bar Railway, 16 July 1911.

The Spinifex Express operated from 1911-1951.

State Library of Western Australia



Early days of the port

It's a very challenging port. We've got large tidal ranges, seven and a half metre tidal ranges, you've got currents that run across the harbour entrance at two and a half knots, you've got this big S bend of the channel and you've got these huge ships that you have to bring in and out.

John Finch, Oral History, 20 September 2018.

Before the 1970s the port was under the control of the Harbour and Light Department, which was founded in 1880. The Department was responsible for control of all maritime matters, including lighthouses and other navigation aids and the administration of the shipping and pilotage legislation. The Department also controlled the ports of Albany, Vasse-Busselton, Bunbury, Geraldton, Port Irwin and Cossack and operated lighthouses at Bunbury, Bluff Leading Light, Breaksea, Cossack, Fremantle, Point Moore, Port Irwin, Point King, Rottnest Island and Vasse.⁶

The sandbar at the entrance of the port meant that ships could only enter or exit at high tide. A tide indicator tower was located near The Esplanade Hotel to assist ships navigating in and out of the port.

To get into the port you had to cross a sandbar, it was on the side, and you had to wait until there was enough water for the ship to cross over the bar. Once you did and you got inside the harbour well then you were trapped there until the next high tide came to let you out. So it was always quite exciting.

Harbour Master Geoffrey Monks and Jill Monks, Oral History, 17 March 2017.

Archival evidence suggests that an early signal tower was constructed at the port around 1907. The Department used this tower to signal the depth of water. Cane balls would be hoisted onto the yard arm to indicate the depth of the water in the harbour. At night hurricane lights inside glass-fronted kerosene tins lit the balls. On a rising tide the tower would fly a black flag, with a red flag on a falling tide. The sandbar dictated shipping movements until the harbour was dredged in the 1960s as evident in the following account:

When a ship was due, he [the wharfinger] used to check that the light on the beacon at Hunt Point was lit and also on the one buoy in the Inner Harbour that marked a corner of the Middle bank. As there was no channel into the port, vessels had to wait until the tide had risen to give sufficient depth for them to cross the bar.

The Wharfinger used to watch the height of the tide on a tide pole on the wharf and as it increased would indicate the height to the ship by switching on an arrangement of lights on the old signal mast. In the daytime a number of black balls were hoisted up to correspond to the heights.

A Seaman's View: The Development of Port Hedland as a Port, p. 2.

The depth of the port was a limiting factor and restricted the maximum size of ships to about 5,000 gross tonnes. Once a ship was alongside the jetty it had to stay there for at least 12 hours until, with the approach of the next tide, there was sufficient water over the bar for the ship to sail.⁷



Jetty with Port Hedland in the distance. Date unknown.

Rail Heritage WA

Expansion and growth

From Fremantle going North, the cargo was mostly foodstuffs—canned foodstuffs, building materials, beer (that was always one that I used to do at once) and, oh, things like parts for cars, and vehicles and machinery ... It was a wide variety.

Harbour Master Geoffrey Monks and Jill Monks, op. cit.

Until the 1950s, the port landscape and lifestyle was a stark contrast to what can be seen today.

There was plenty of time to go fishing and the old jetty was a good place to sit and entice the kingfish and pike and a dozen other good eating fish...

James, H. (1979). Western Australia: A pictorial parade of 150 years, p. 261.

In the early days the operation of the port was much slower than it is today, and time would go very slowly in the tower. Port workers would often go up and have a cup of tea with the tower workers to pass some time. There was a secret code-the tower workers would ask for someone to bring them a newspaper which meant 'bring up some beers'.

John and June Van Uden, Oral History, 12 December 2016.

In 1957 the State Public Works Department commenced works on major improvements and extensions to the original timber jetties. The works were completed in 1960, providing two 107-metre-long berths to allow manganese and general cargo to be handled simultaneously. In 1965 Port Hedland—still a small town of some 1,200 people—underwent a significant building and development program to transform the place into an export port for the iron ore industry.

One day it was just a sleepy little place, and within forty-eight hours it was teeming with people. The demands on services were unbelievable. It was impossible to get a taxi ... it was impossible to get service in a shop. Housing of course was impossible. There were people living in chook houses.

Panel in Port Hedland Historical Society Museum, viewed 30 August 2016 at Dalgety House.

The Port Authority's first Harbour Master, Geoffrey Monks, along with his wife Jill, moved to Port Hedland in 1965 to commence work at the port. Jill Monks recalls the housing conditions of the time:

There was no housing and Geoff lived in a hotel for the first six months and they played the Scottish anthem all the time...We moved into a unit that was actually built for teachers and Geoff and I had the bedroom and the three children were in the sleep-out out the back. And I couldn't use a broom because there wasn't enough room to get the handle under the bed. I had to get down and sweep it with a little pan!

Harbour Master Geoffrey Monks and Jill Monks, op. cit.

During this time the port was open to the community, with locals often assisting in the movement of cargo.

The local workforce came down and it included everybody—from teachers from the school, tradesmen... everybody—to make up the numbers to unload. It wasn't just waterside workers. There were a few of them but not enough to operate the cargo as fast as we wanted it to do.

Harbour Master Geoffrey Monks and Jill Monks, op. cit.

Geoff Monks recalled some stories during this period in the port's operations:

Had some trouble with some of the ships that came. The masters of them looked around and saw what sort of a port it was and I don't know if that drove them to drink or what, but certainly we had a few occasions where I refused to take one ship out of the harbour because I didn't think the master was sober enough to take charge of his ship.

I remember one came and it had cattle on board, and they hadn't been secured properly in the pen, so there was a night ... One of the herd who had climbed the open door climbed up and got up through and got up onto the deck of the ship and the officer on watch suddenly saw this cattle appear! So, he pressed the buzzer for the duty senior man on watch and they came out and got hold of it. They got the cow back into its pen.

Harbour Master Geoffrey Monks and Jill Monks, op. cit.

In 1966 Goldsworthy Mining Ltd, now BHP, dredged an approach channel and turning basin, which allowed iron ore ships up to 65,000 tonnes to access the port.⁸ The first shipment of iron ore departed from Finucane Island in June 1966. A second iron ore facility was opened in 1969, at Nelson Point.

In response to complaints about shipping access to and from the port, the Public Works Department was asked to design a control structure to oversee vessel movements at Port Hedland. A site for the tower was selected, which overlooked the entrance to the port. The overall cost was estimated at \$350,000 and engineering works on the site's foundation began in 1967.⁹





Port Hedland railway jetty

1 September 1972 Weston Langford Railway Photography





View over the port, c. 1987



The Geoff Monks Port Control Tower

They dug this great big hole to put the foundation down ... [T]hose circular rings were made off the site and they were brought in with a crane and lowered down onto it. And they had metal rods going up through. It was quite an interesting thing, watching it grow.

Harbour Master Geoffrey Monks and Jill Monks, op. cit.

In planning for the tower, a decision was made that the construction of the top section should follow the example of a water tower project being undertaken at the Tullamarine Airport in Melbourne, Victoria. In addition, the Public Works Department set out the following requirements to its architectural branch for the design of the tower:

- The floor height of the observation room must be at least 85 feet above the high-water level.
- The tower should be attached or located as close as possible to the Harbour Master's office building.
- The observation room should have sloped, tinted glass panels and be fitted with blinds for protection against sun and reflection. An outside balcony will be necessary for window cleaning.
- A signal mast will be required at the top of the Port Control Tower with yard arms to carry all necessary day and night signals, both mechanical and electronic, including wind vane, anemometer cups, radar and VHF aerials.
- Toilet, washing and light meal facilities should be provided for three staff.
- Consideration should be given to the provision of a lift.¹⁰

Consultation was also undertaken with key workers such as Harbour Master Geoff Monks, who recalled his input on the design and location of the tower:

I had discussions with the Public Works Department who were responsible for that sort of thing, and I just laid out things I thought we needed in the way of equipment, which was a good radiographer [and] something to record the actual height in waves, electronically. They were the main purposes of the tower.

Harbour Master Geoffrey Monks and Jill Monks, op. cit.

Referencing the Tullamarine water tower, principal architect Stanley Buckingham Cann and design engineer Sye de Jager designed the tower as a slender narrow stem, which flared out at the control room floor. The structural stem was composed of precast concrete rings. The external rings were stressed together from the control room floor to the concrete footings. The flared portion was composed of precast concrete panels, which were also stressed together and then lifted to the top of the tower with hydraulic packs. Anodised aluminium was used extensively for windows, doors, stairs and masts because of its hard-weathering properties.¹¹

In January 1969, tenders were called for construction. Steel Construction Co. in Osborne Park, Western Australia, were successful with a tender of \$344,995. At this time, the design for the tower was modified to include radar tracking in response to a request from Geoff Monks. By May, works were under way, with Sye de Jager inspecting progress and advising on the correct treatment of the concrete. By September the observation deck base was ready to be lifted into position and plans were made to film the event. By 1 November 1969 the outer structure was largely complete, with surface treatments under way and electrical services beginning to be installed. Inspections of the structure by Sye de Jager in February 1970 resulted in repairs and re-installation of some elements, with some small cracks noted in the structure.¹²

When asked what people thought of the tower when it was constructed, John van Uden, a skipper at the port in the 1960s, remembered:

Everyone liked it. It made everything so simple. Everyone was like, 'wow'.

John and June Van Uden, op. cit.

The structure was completed on 7 August 1970. A photo of the new tower shows a uniform light colour, a radio-and-radar tower and white window frames on the observation deck.¹³

The tower was officially opened on 5 August 1970 to coincide with the arrival of the first 100,000 tonne iron ore train arriving from Mount Newman.¹⁴ The order for the official program acknowledged that 'the inspection of the tower after the ceremony may have to be restricted because the lift can only accommodate three people at a time.'¹⁵

Within a year of opening, complaints were received about the tower's performance in windy conditions:

The tower commences to sway noticeably in winds of 40 mph. At 60 mph a continuous vibrating of the tower could be felt. Above 75 mph the effect of movement could be likened to that of a moving train, with extra strong vibrations at the outset of each fresh gust of wind ... The lift is unsuitable whenever the tower is swaying.

State Records Office, Port Control Tower 1967

When it gets up to about sixty knots, the tower will actually sway. It sways a metre either side ... [Y]ou will actually get waves in the toilet bowl.

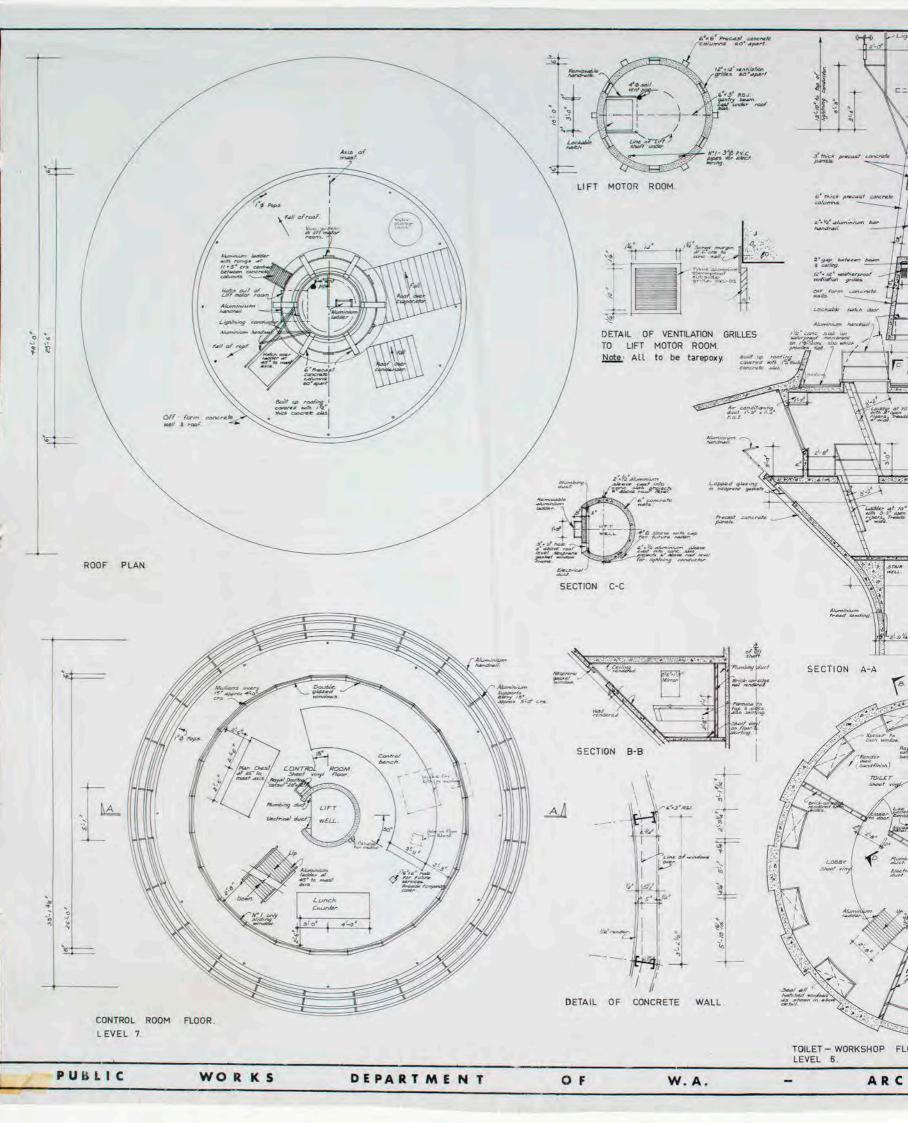
Chris Franich, Oral History, 2 November 2018.

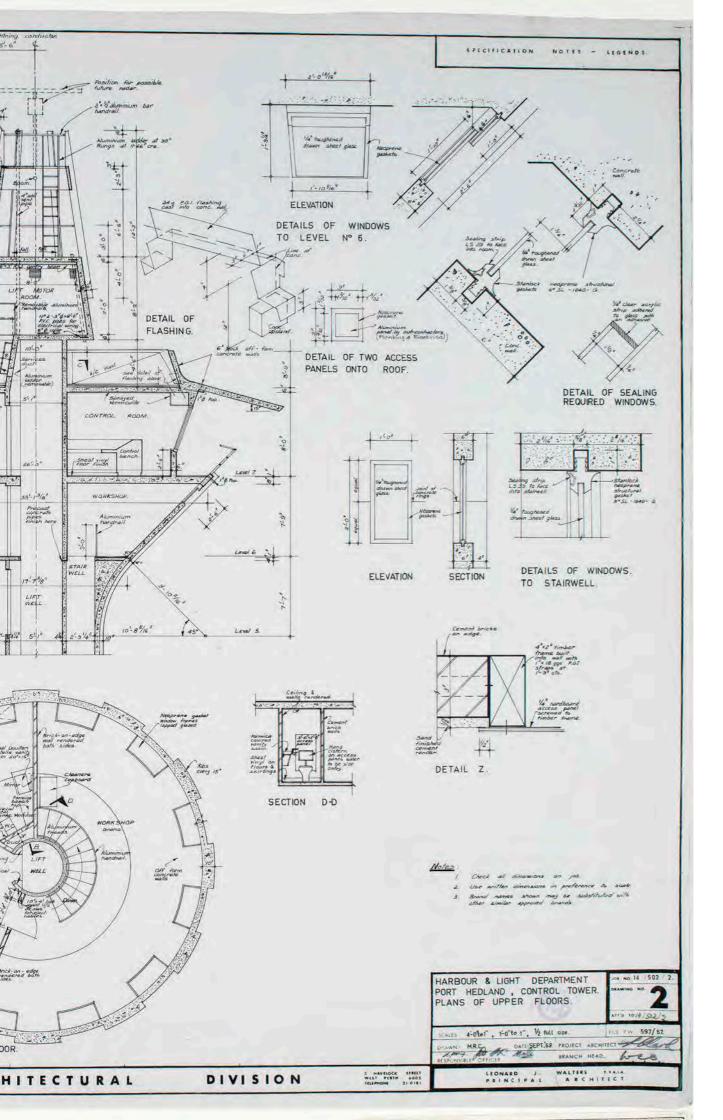
Equipment to measure displacement and movement was installed to assist with understanding and rectifying the swaying issues. Being in a cyclone zone however, there were times when the tower and port needed to be closed due to the conditions. These events were often memorable experiences for the employees.

We're a cyclone-prone area and every year we get the opportunity and the need to close the port. So that's a huge job these days, you know. We have nineteen berths, so invariably we have nineteen ships in the inner harbour [and] we may have normally thirty or forty ships in anchor, so the coordination of a cyclone evacuation is a huge event for us. And so quite regularly as harbour master, you're in the tower in pre-cyclone and postcyclone conditions. The tower does move and it's quite unnerving when you first experience it.

John Finch, op. cit.

In the 1980s the tower was officially named the Geoff Monks Port Control Tower in recognition of Captain Geoff Monks OBE, who served as the Harbour Master from 1965 to 1987. Captain Monks saw the port develop from two jetties to a major iron ore export port. In 1976, Captain Monks received an OBE after being personally nominated by then Premier Sir Charles Court.¹⁶

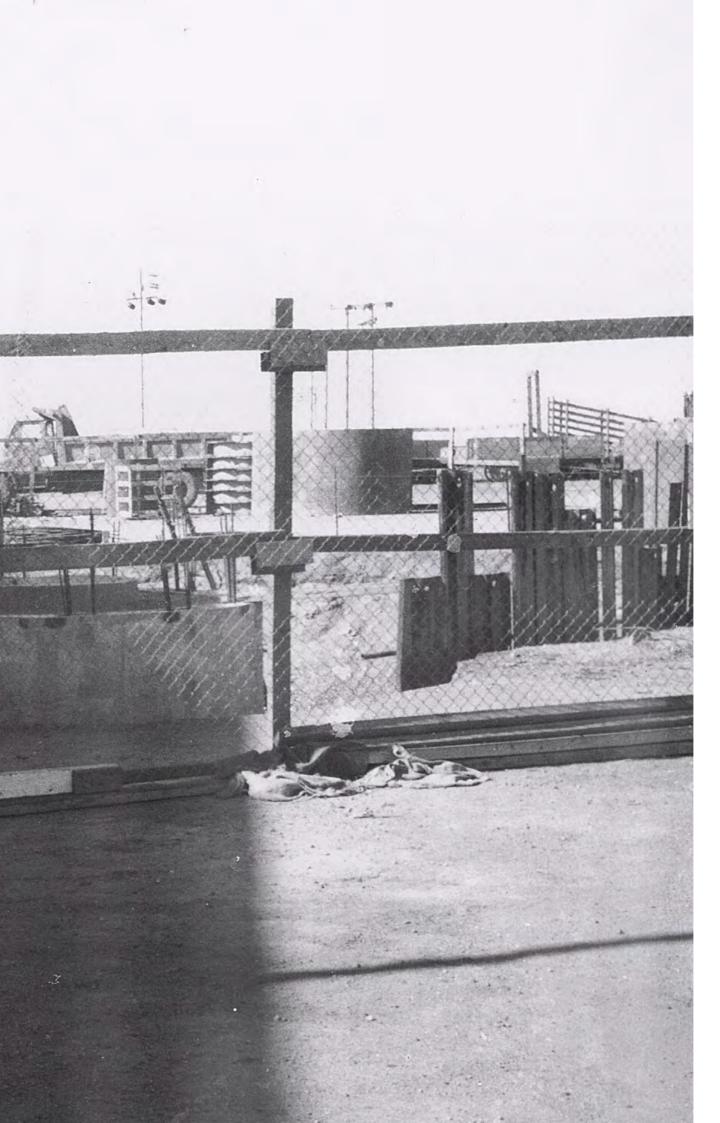




Construction Plans for the Port Control Tower

State Records Office, 1968



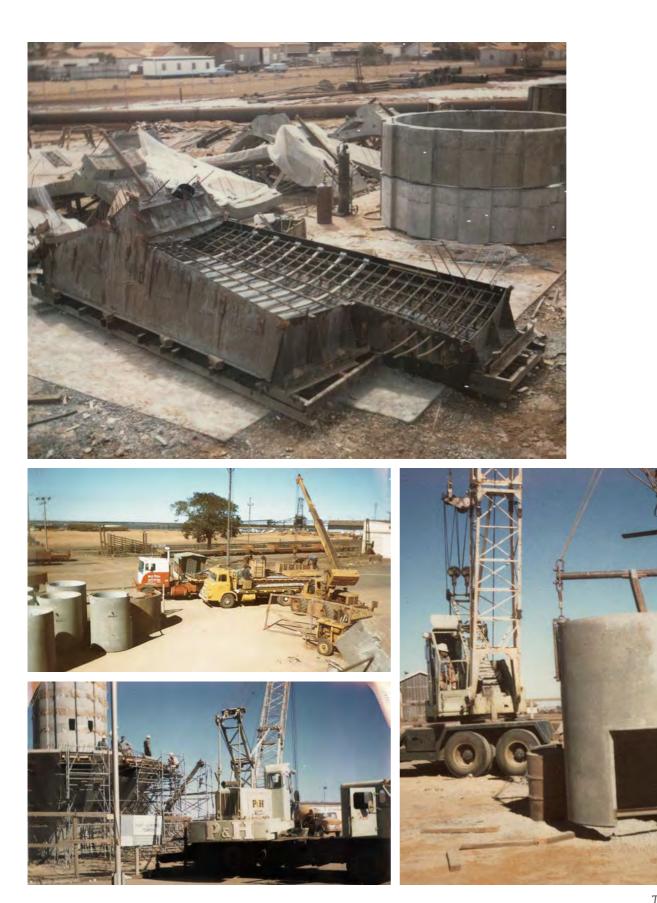


Groundworks at the construction site 1969





Frame of observation element being assembled, 1969

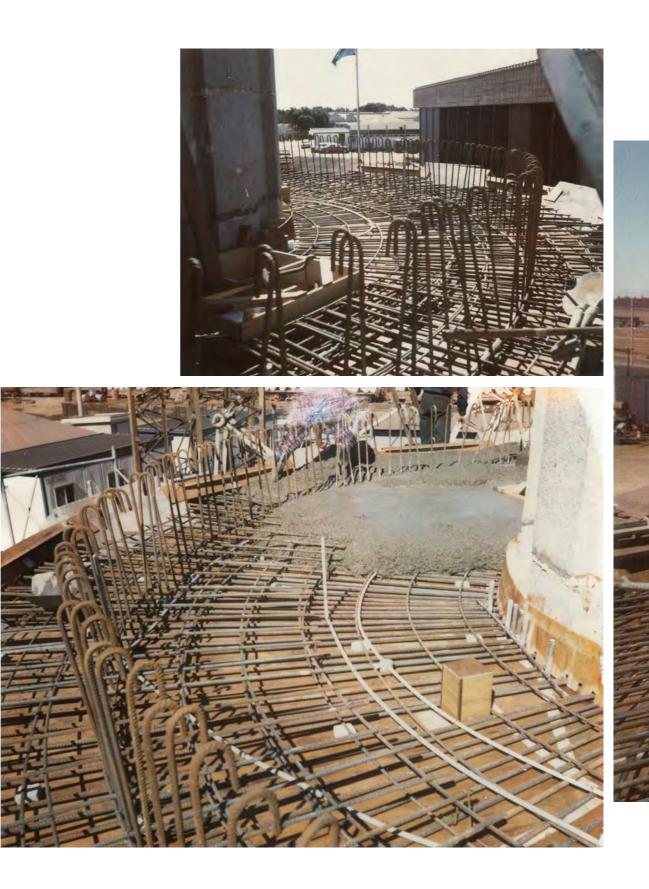


Tower components awaiting assembly, 1969



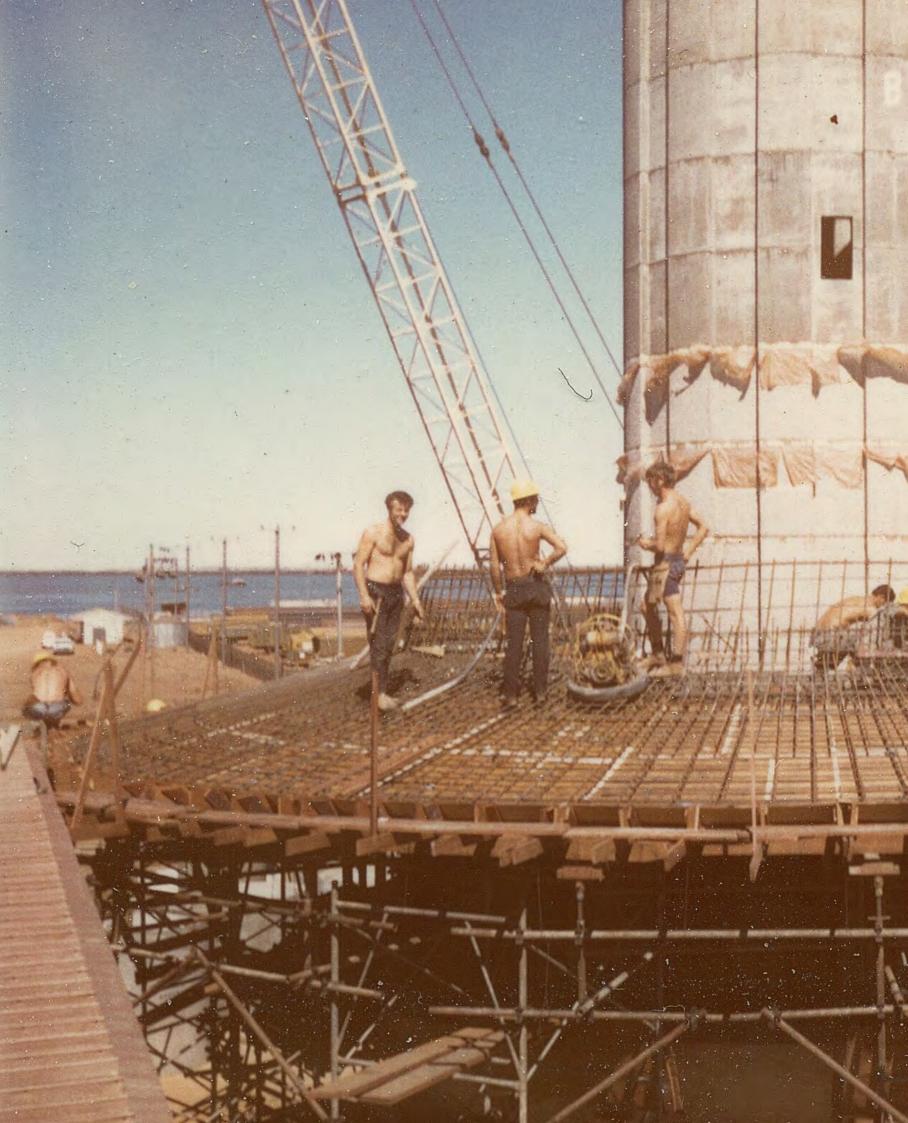


Tower stem under construction, 1969





Concreting over the reinforced steel of the observation element, 1969





Reinforced steel of the observation element, 1969









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Observation element being constructed, 1969





Observation element being raised to the top of the tower, 1969



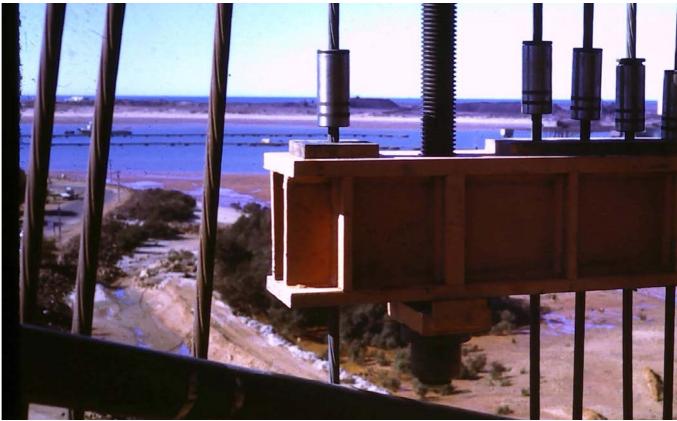


The control room level at the top of the tower was assembled on the ground then jacked into place using a cable system.

1969











Construction works viewed from the top of the tower, c. 1970

Exterior description

The tower was 37.16 metres high, constructed of pre-stressed concrete sections on a concrete base. The main section of the tower was a narrow 'stem' measuring 3.97 metres in diameter. The stem acted as the base for the 'chalice' which was a spreading observation deck that reached its fullest extent of 14.69 metres at the observation deck roof. A radarand-radio tower surmounted the building.¹⁷

The pre-stressed concrete stem was arranged in a pattern of prominent concrete ribs, with the only other feature being small rectangular fixed-frame windows. Three pairs of these windows punctured through the southern side of the stem while five pairs along the northern side provided light into the internal stairwell. The external rib pattern continued to the base of the observation deck with the expanding lines reflected into the angle and patterning of the metal balustrades around the control room.

The original plans proposed grey exposed aggregate for the walls of the tower with white exposed aggregate for the protruding ribs, although a photo taken before its official opening does not show any such colour difference.¹⁸ Being constructed of concrete, the tower was originally a grey structure. Over time it took on an orangey-red hue.

Entry into the tower was along the southern elevation, through a set of double timberpanel doors, painted blue. Visual interest was achieved by a band of vertical black and white stripes around the base of the tower, corresponding with the height of the door. Mounted above the door were three plaques that read (from left to right):

THIS PLAQUE COMMEMORATES THE 20TH ANNIVERSARY OF THE PORT HEDLAND PORT AUTHORITY ESTABLISHED 15TH JUNE 1971. UNVEILED BY THE HONOURABLE ERNIE BRIDGE J.P. M.L.A MINISTER FOR AGRICULTURE WATER RESOURCES, NORTH-WEST 15TH JUNE 1991

THIS CONTROL TOWER WAS OPENED BY THE HONOURABLE ROSS HUTCHINSON D.F.C M.L.A MINISTER FOR WORKS AND WATER SUPPLIES ON THE 5TH AUGUST 1970

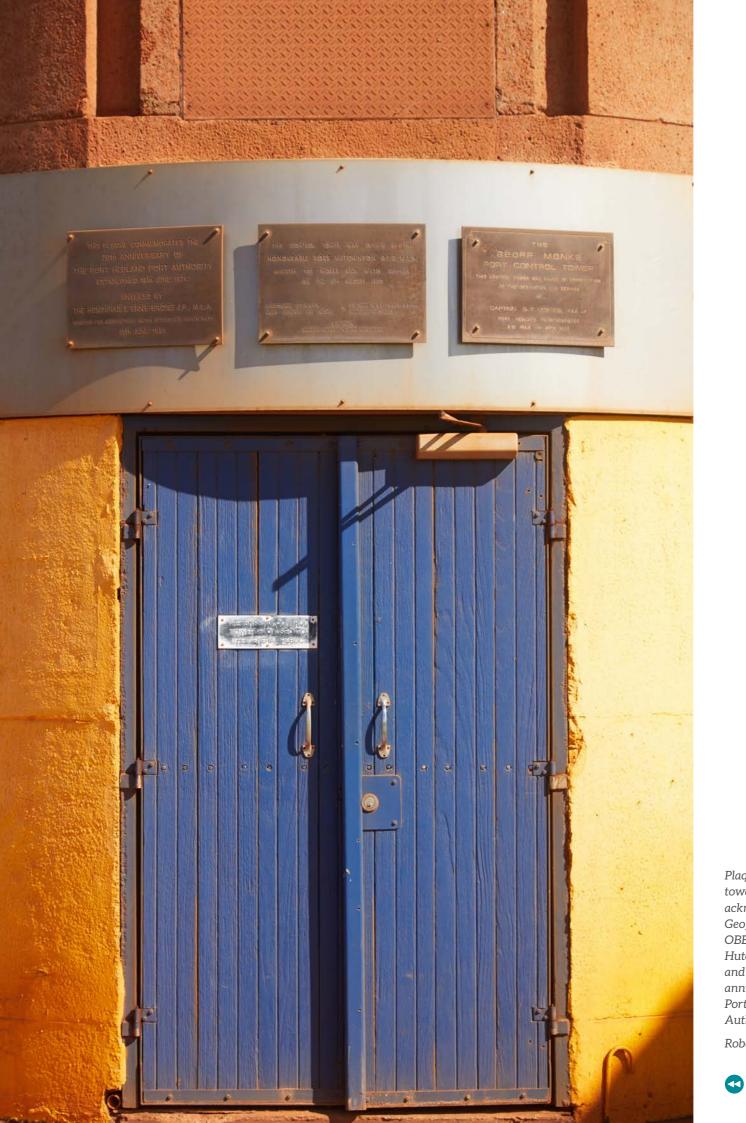
J.MCCONNELL J.P.A.A.S.A UNDER SECRETARY FOR WORKS

S.B. CANN M.B.R F.R.A.I.A.A.R.I.B.A PRINCIPAL ARCHITECT

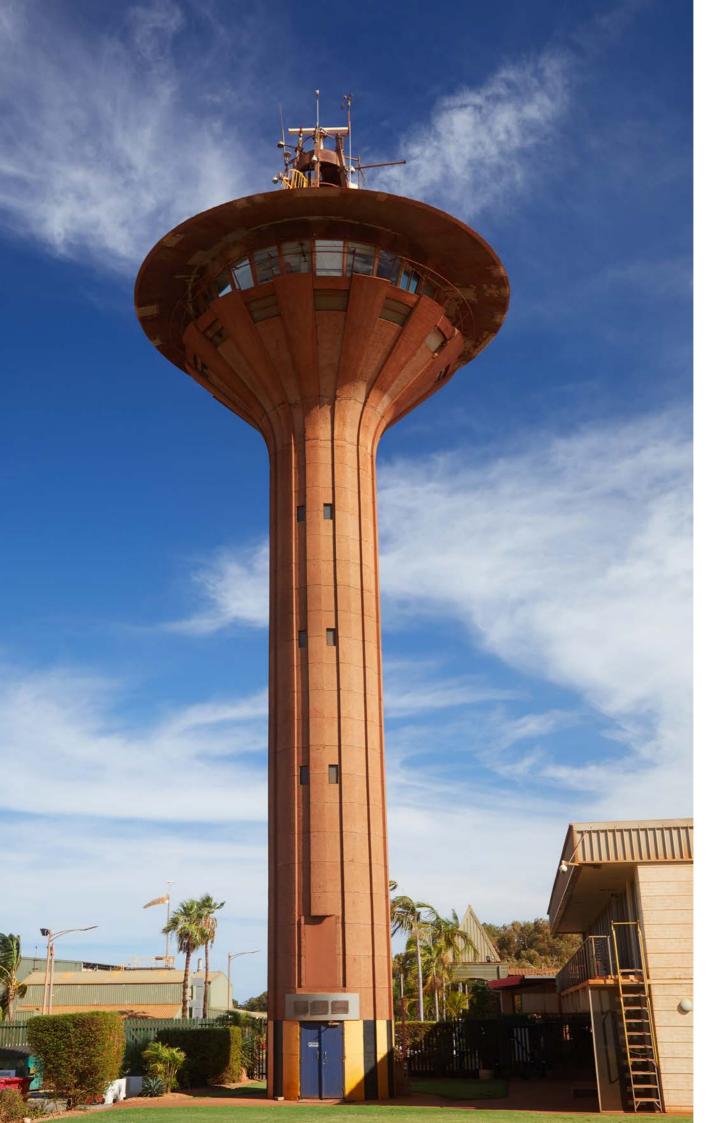
A.M FULLER MANAGER HARBOUR & LIGHTS DEPARTMENT

THE

GEOFF MONKS PORT CONTROL TOWER THIS CONTROL TOWER WAS NAMED IN APPRECIATION OF THE DEDICATION AND SERVICE OF CAPTAIN G.T.MONKS, O.B.E. J.P PORT HEDLAND HARBOURMASTER MAY 1965 – JUNE 1987



Plaques above the tower entry doors acknowledged Geoff Monks OBE, Hon Ross Hutchinson MLA and the 20th anniversary of the Port Hedland Port Authority



Port Control Tower in context. The checker plate panel above the blue doors marks the location of a planned connection between the tower and administration building.

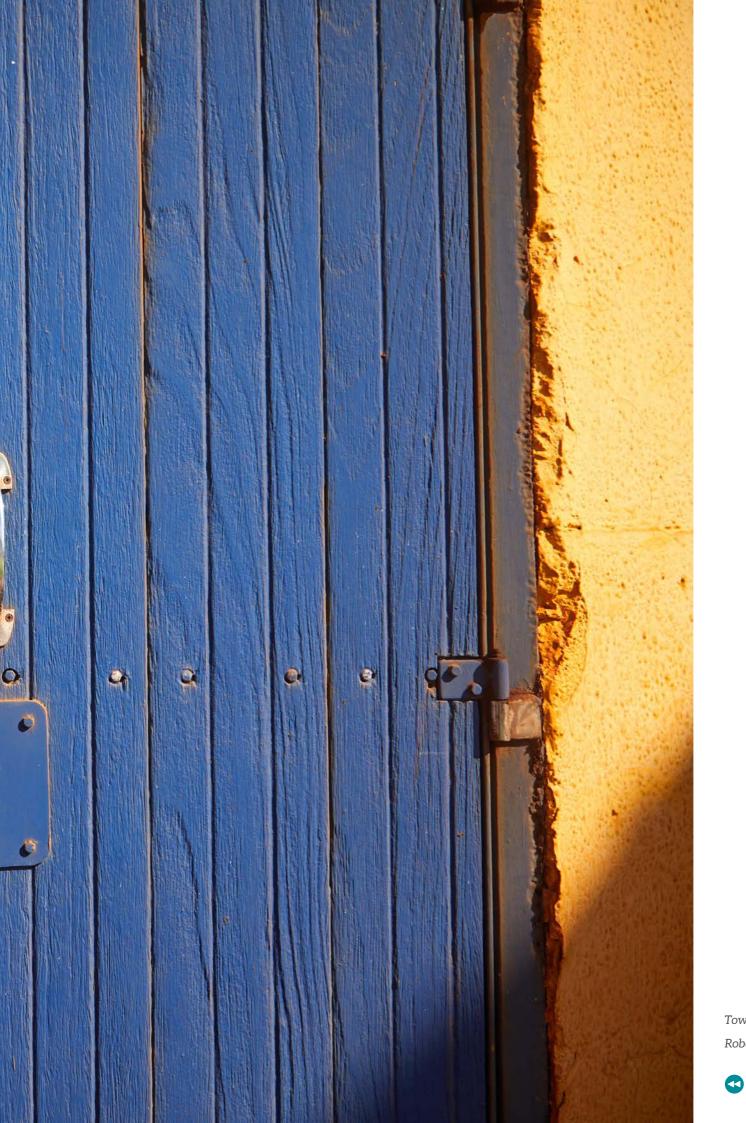




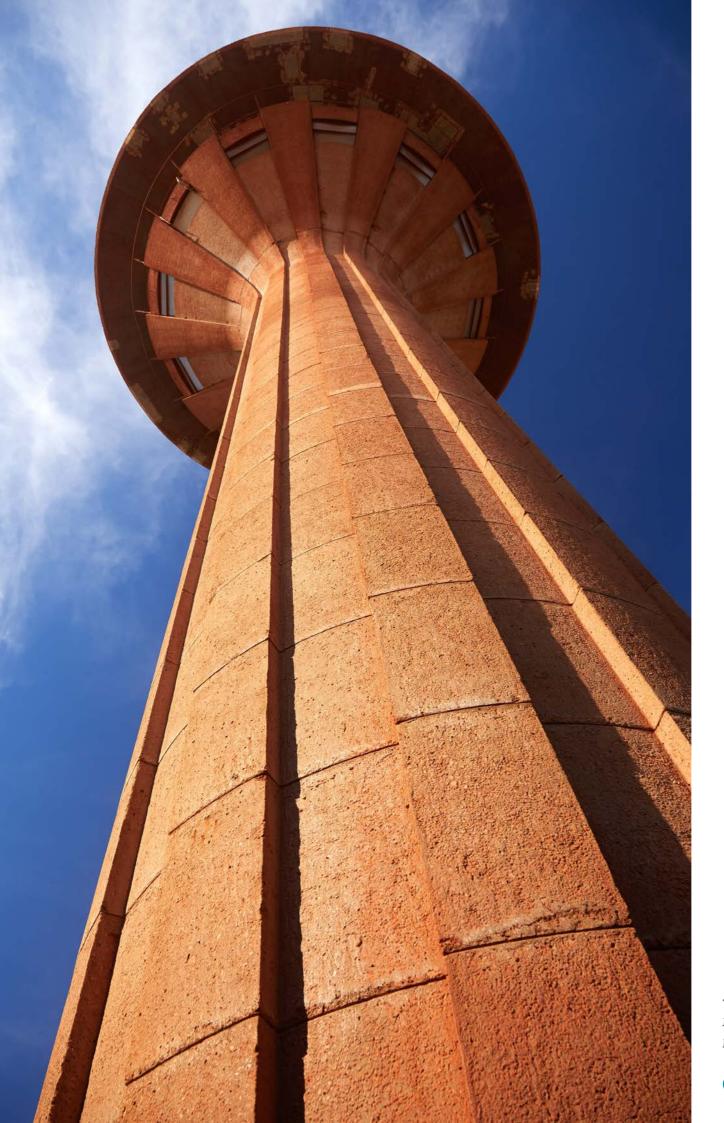
Patterning to the base of the tower

External tower details and materiality



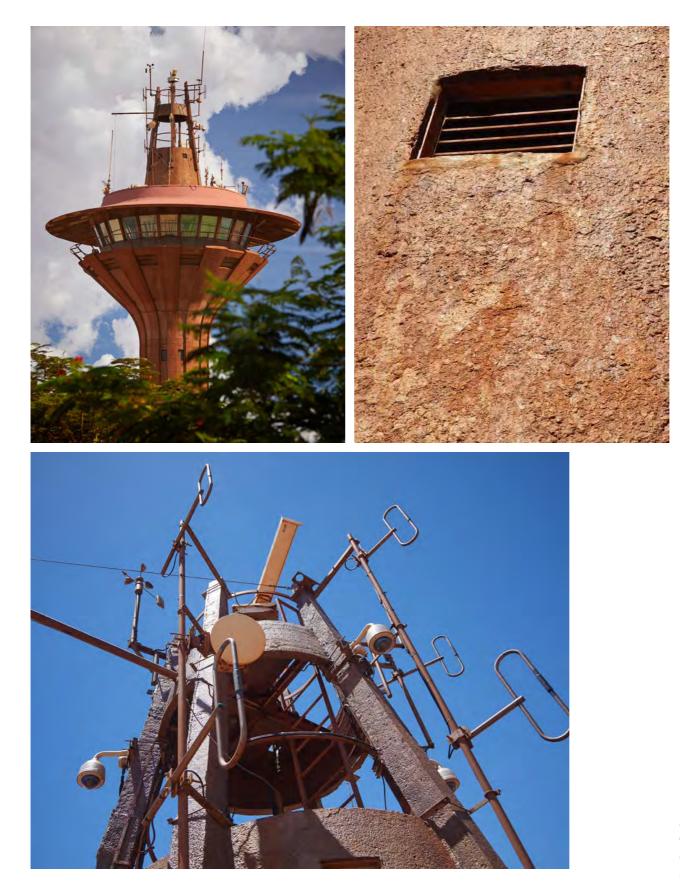


Tower entry doors Robert Garvey, 2017



The tower viewed from below Robert Garvey, 2017



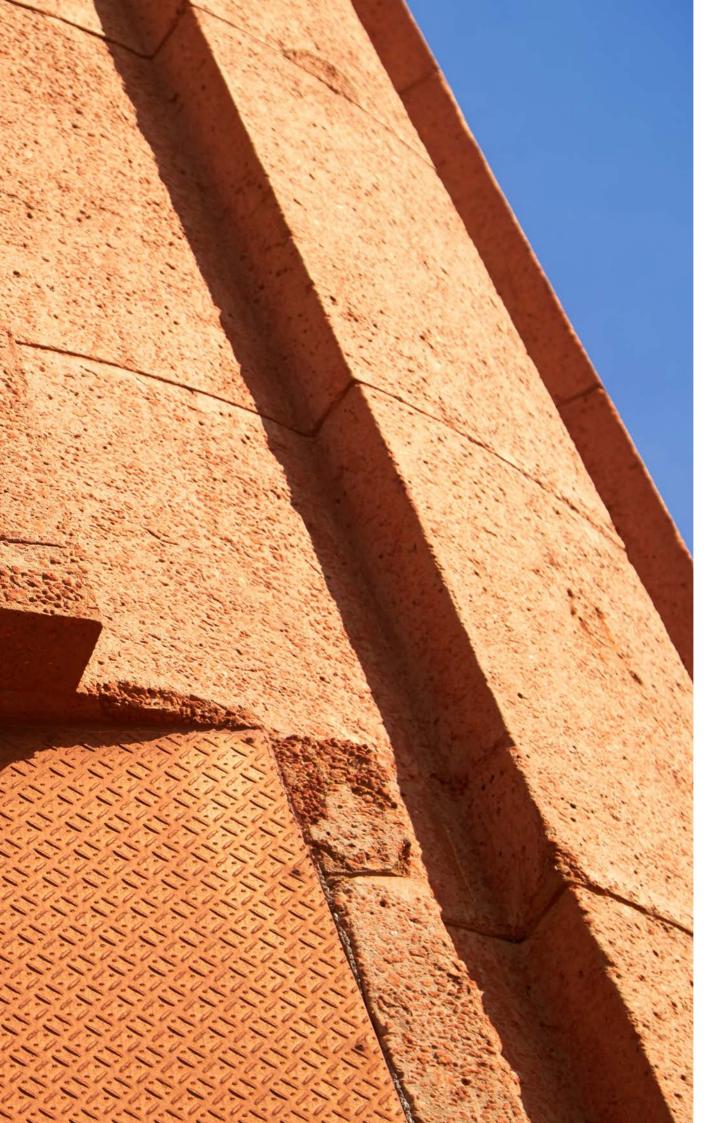


Port Control Tower observation deck

Tower, external texture and detailing

Radar-and-radio tower

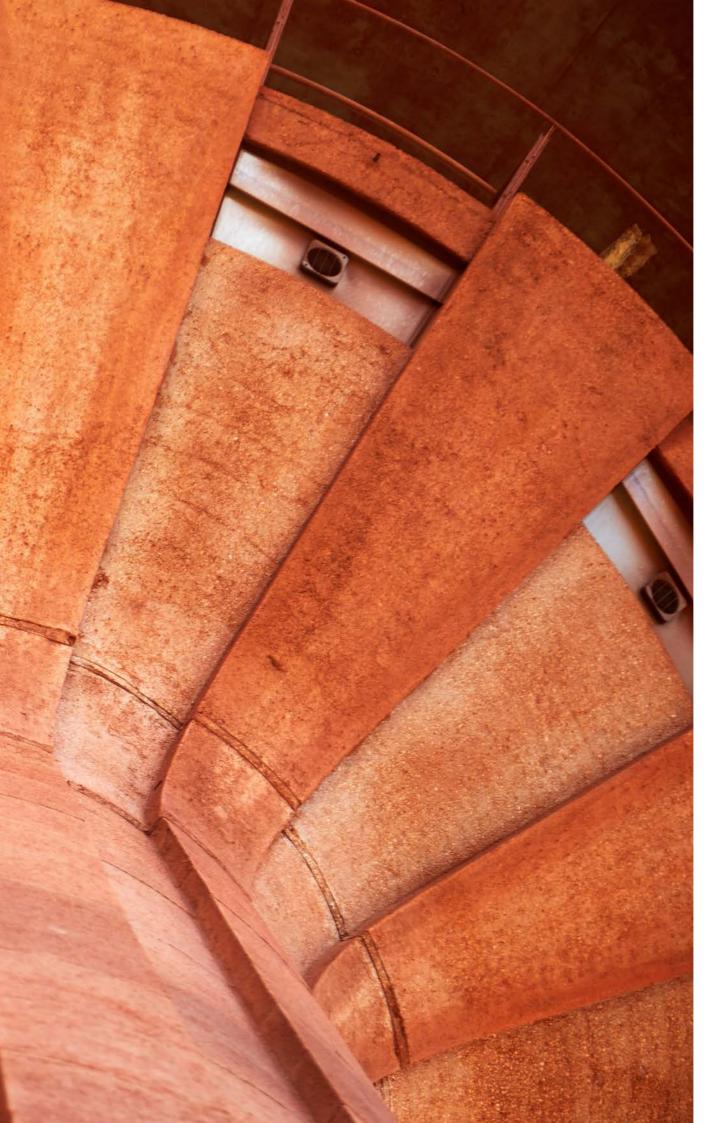




Port Control Tower, external texture and detailing Robert Garvey, 2017





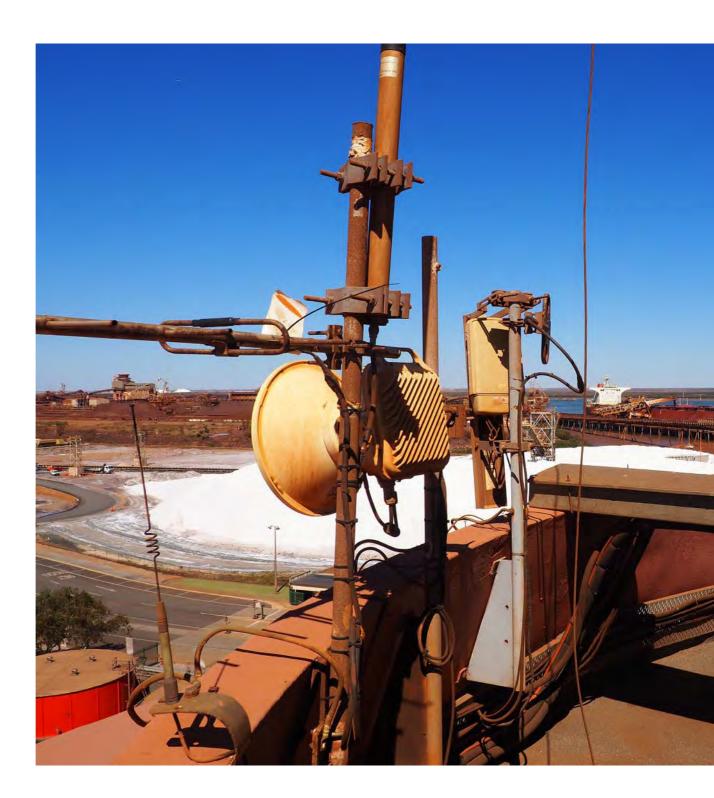


The strong, bold brutalist lines of the tower

Robert Garvey, 2017

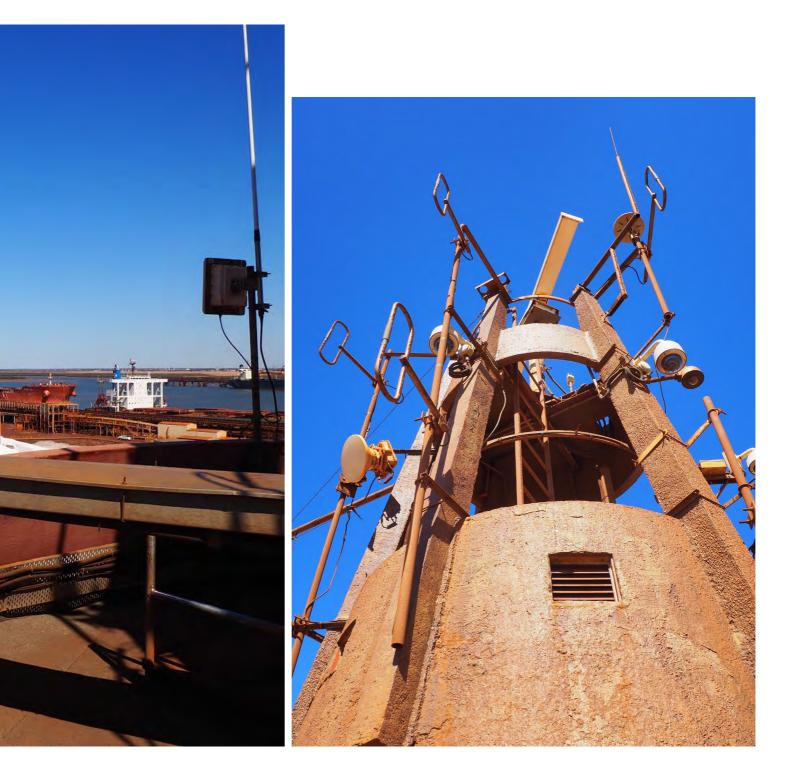


|75



View from the roof of the tower with radio and radar equipment

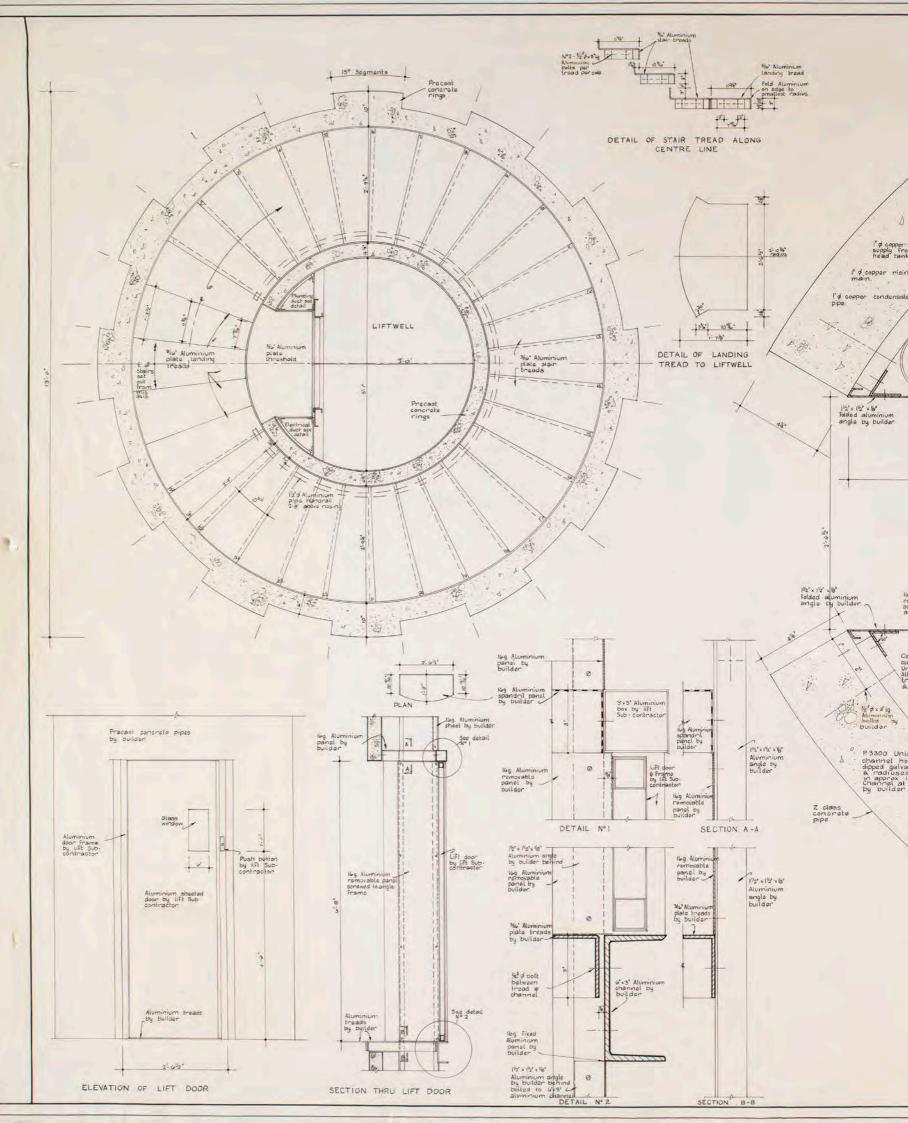
Radar-and-radio tower, including customs camera and port camera systems

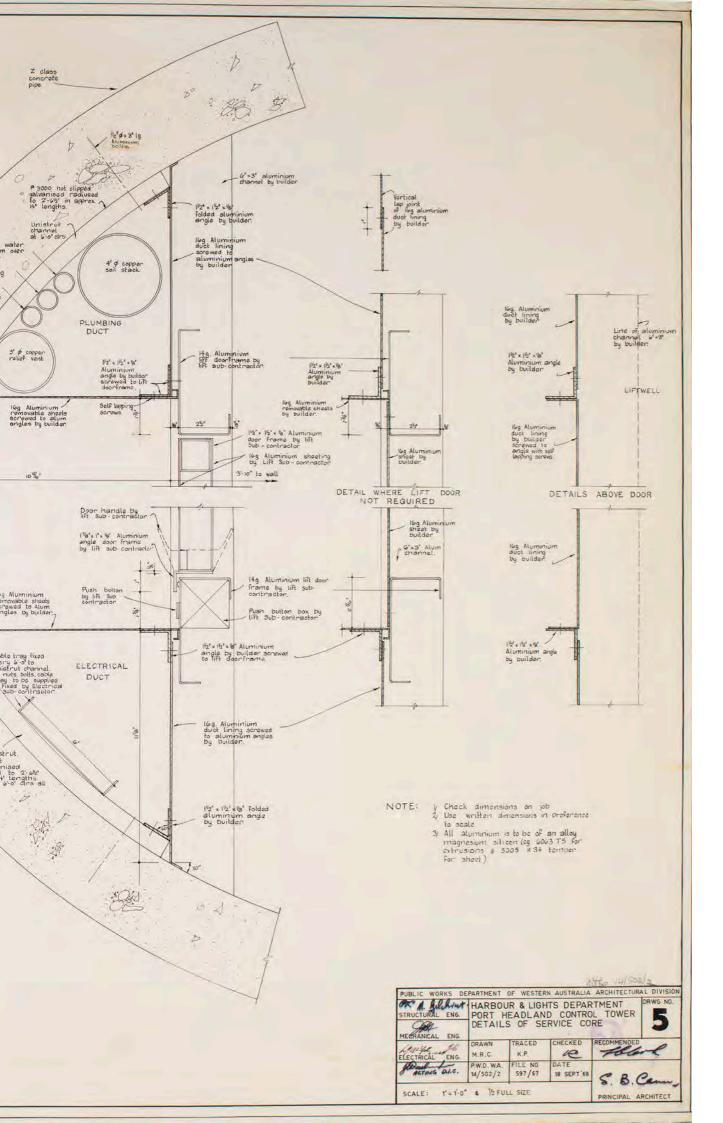






Tower aerial Robert Garvey, 2017





Construction plans

State Records Office, 1968

Interior description

Through the blue entry doors, a small lobby provided access to the spiral stairwell via a steel mesh security door, a small three-person lift, and the basement that housed the lift equipment.

The lift was a memorable feature of the tower for many:

I do remember a time once that we also had brought up some visitors. In the old days it was a manual closed-door lift, like the old Greek type doors that had criss-crosses, you had to manually close the door for it to operate. I do remember once that halfway down the door jumped open a little bit and stopped the lift, and I remember they got stuck in there for about an hour before we got people in to get them out.

Chris Franich, op. cit.

Most people preferred to take the lift and take a chance. I think it did get stuck on one occasion and we had to get the electrician out to get things working.

Harbour Master Geoffrey Monks and Jill Monks, op. cit.

It's very squeezy. Apparently it is supposed to be able to carry three people and I have been up there with three people and it's very intimate ... I remember having a government visit from a department of a couple of people a few years ago and jokingly as we were walking towards the control tower I said to this young lady who was part of the visit, "You're not claustrophobic, are you?" And she turned to look at me and said, "Yes I am." So she did get in the lift,

but she sort of gradually turned a green colour as we were in the lift, so it was quite amusing.

John Finch, Oral History, 20 September 2018.

The stairwell—which comprised five levels wrapped around the lift shaft and had smooth exposed-concrete walls. The internal walls had been discoloured by a combination of factors including rust, dust and cleaning chemicals. The stairs themselves were constructed from aluminium with a checker-plate tread. There was a powder-coated aluminium handrail along the internal wall and a wire conduit cabinet along the external facing wall. The wiring was originally housed within the lift shaft but relocated to improve ease of access.

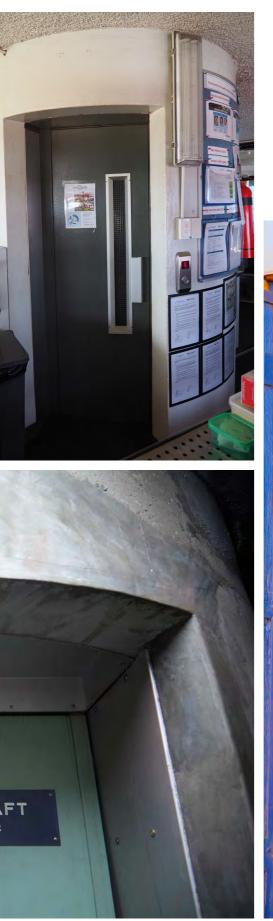
The chalice consisted of two floors: a control room radially arranged around the central access, approximately 10 metres in diameter; and a lower workshop room that was approximately 5 metres in diameter. Access to these levels was via the central lift well through the stem or the spiral staircase, which wrapped around the lift well. Access between the control room and the lower workshop floor was also provided by a timber ladder. The lower workshop floor contained ablutions and storage. The external walls of this level had a sharp angle which corresponded with the slope of the base of the chalice.

The external walls of the control room comprised large windows to enable 360-degree views of the harbour. Access to the roof deck from the control room was via a timber ladder and a manhole. Various radar and radio equipment as well as air-conditioning units were mounted on the roof deck as well as the radar-and-radio tower.



Entry to the tower Robert Garvey, 2017



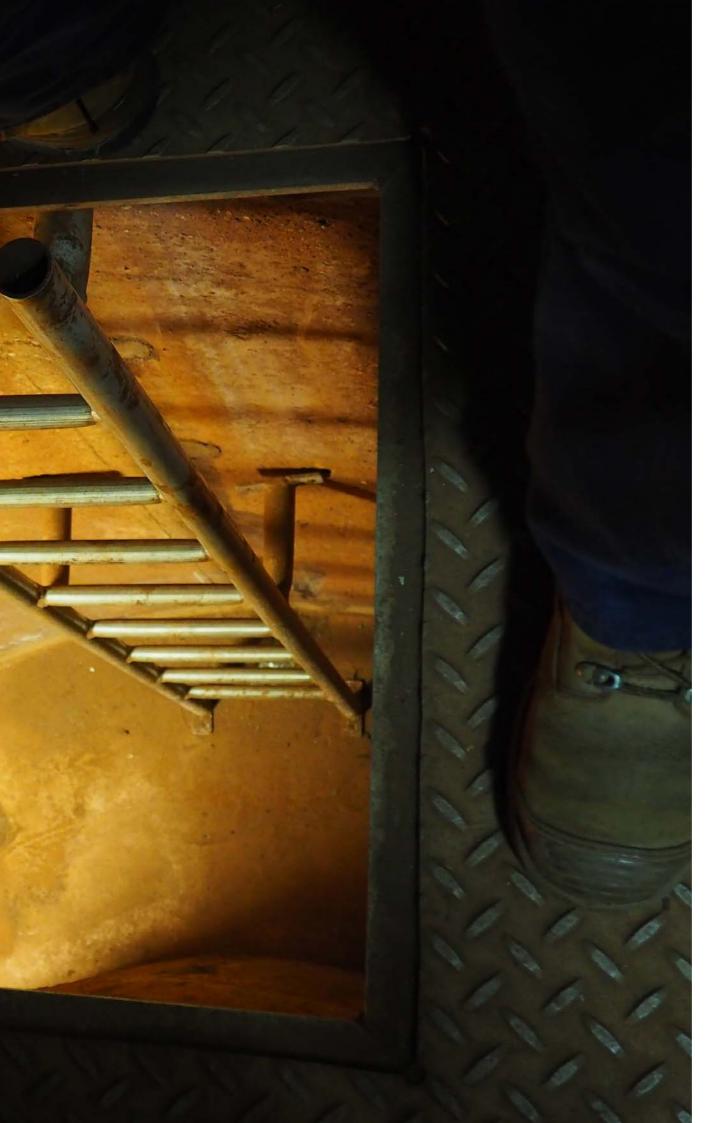




The snug fit of the tower lift gave rise to many tales.

Element, 2016





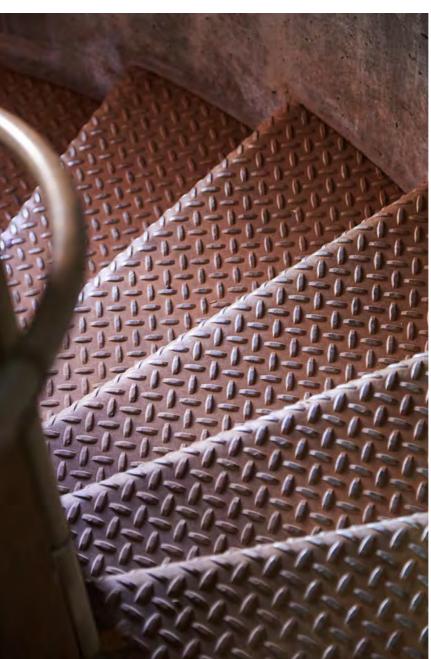
View into basement Element, 2016





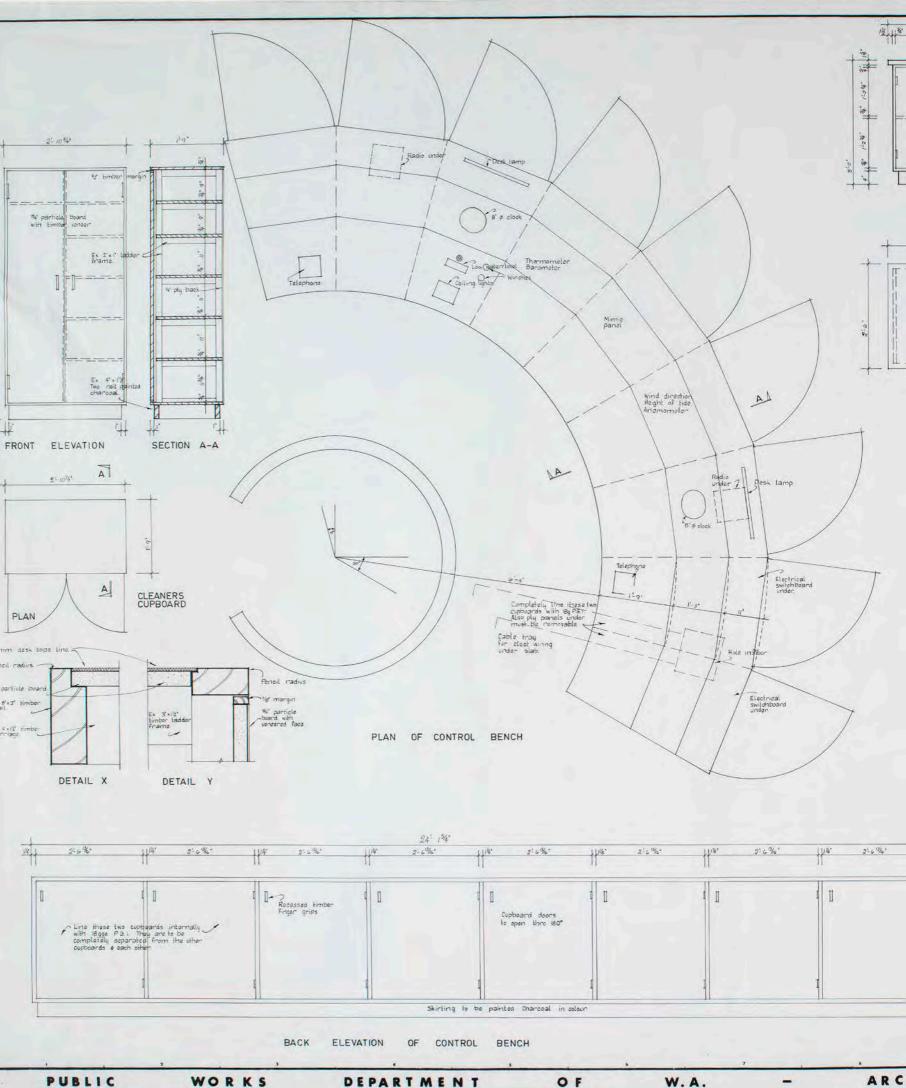




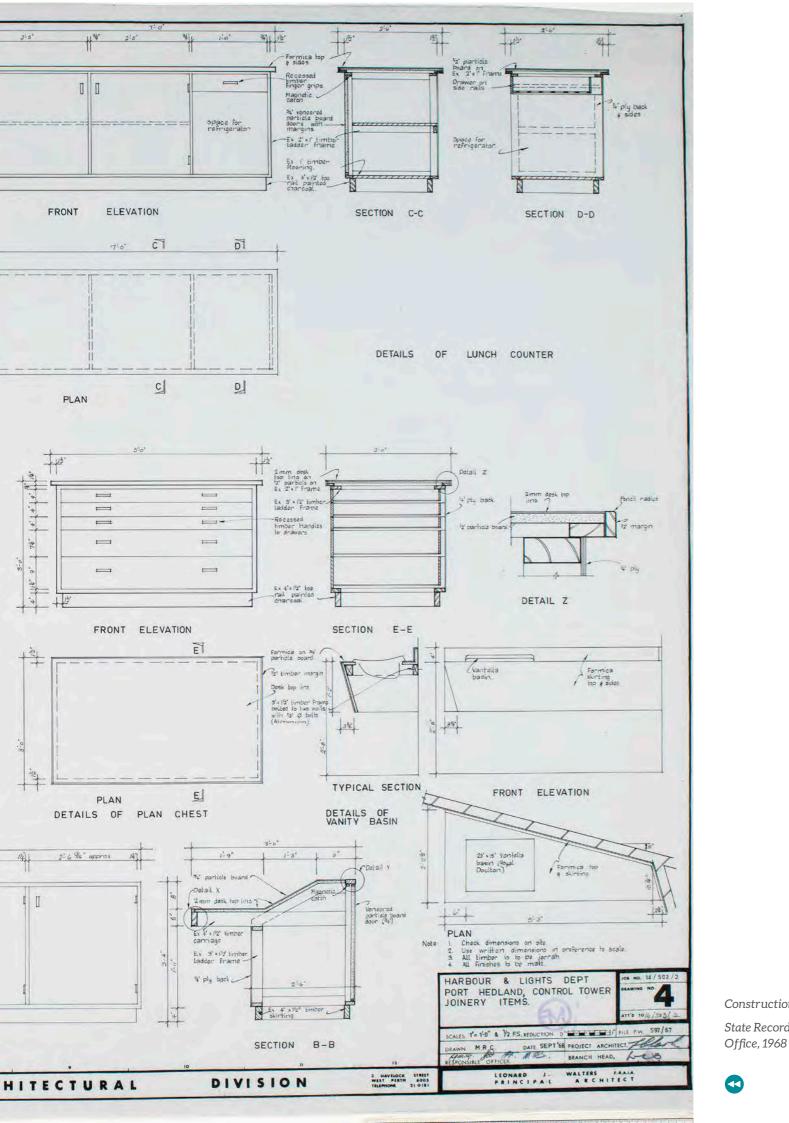


The hatch leading down to the control room and internal details of the tower.

Element, 2016

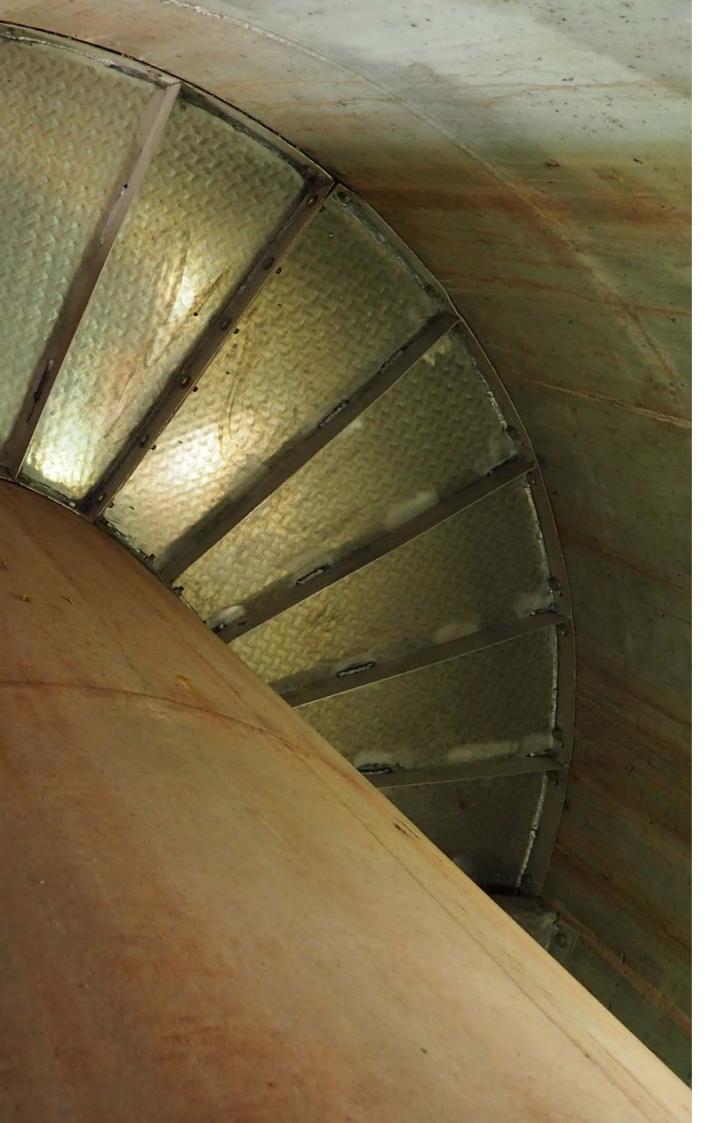


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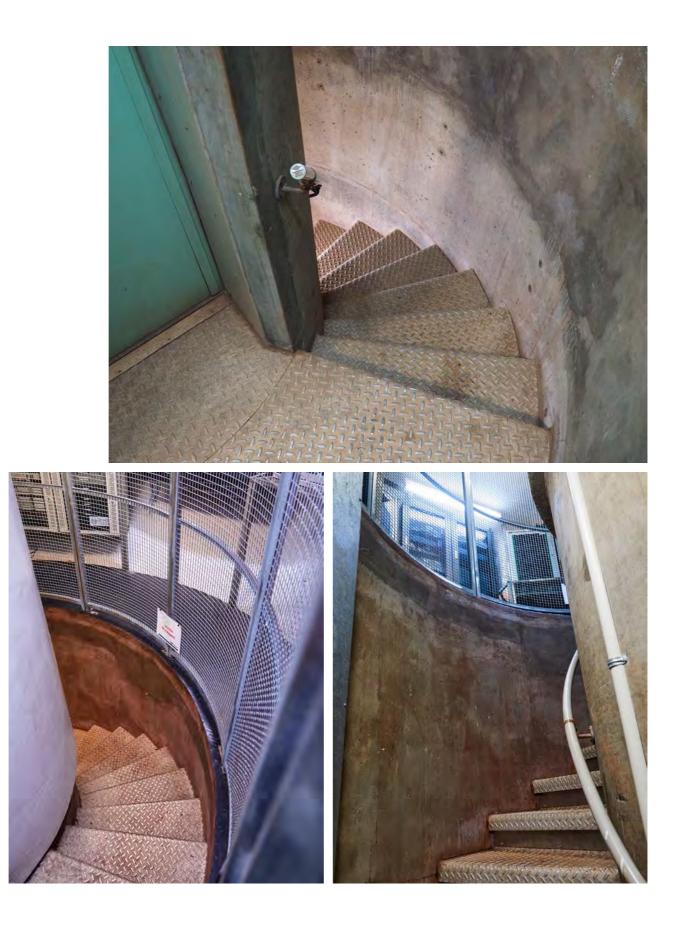
Construction plans State Records





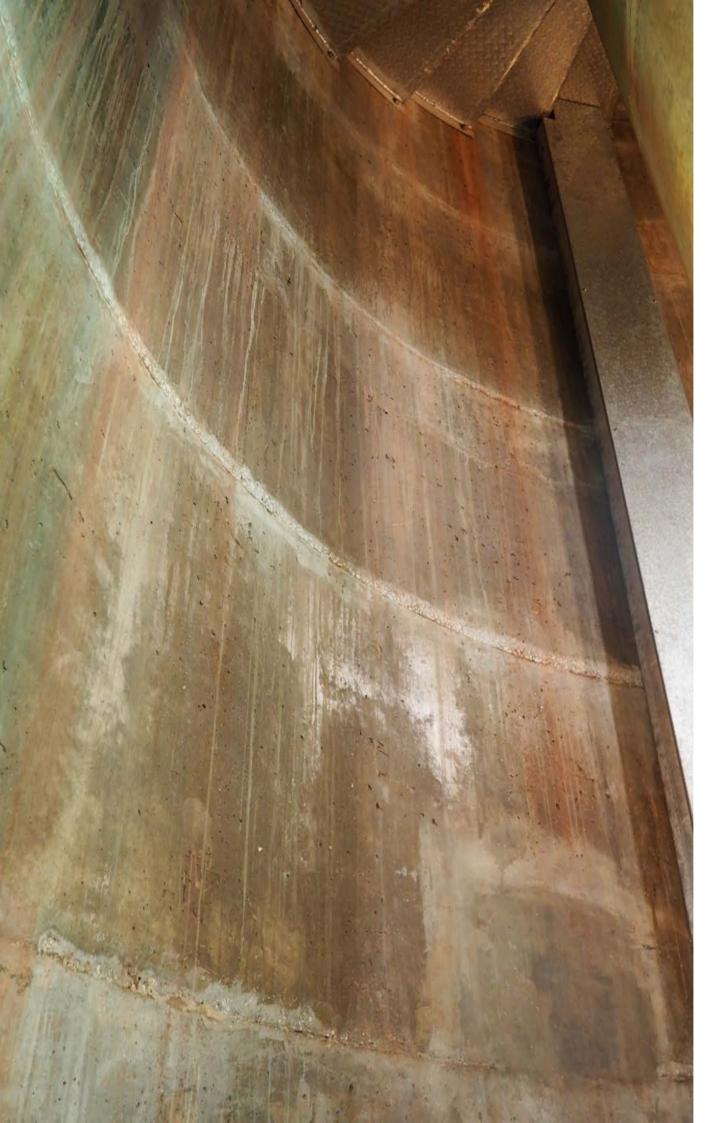
View from below the internal staircase Element, 2016





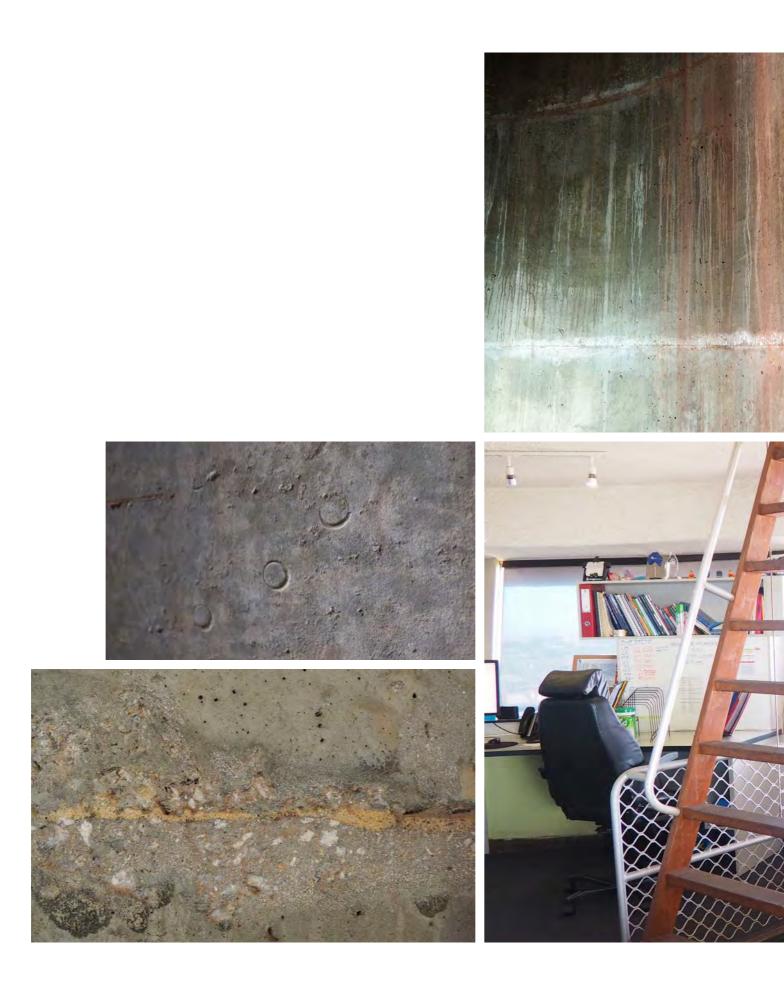
Level 5 landing Internal staircase Element, 2016 Robert Garvey, 2017





Internal walls of the tower Element, 2016





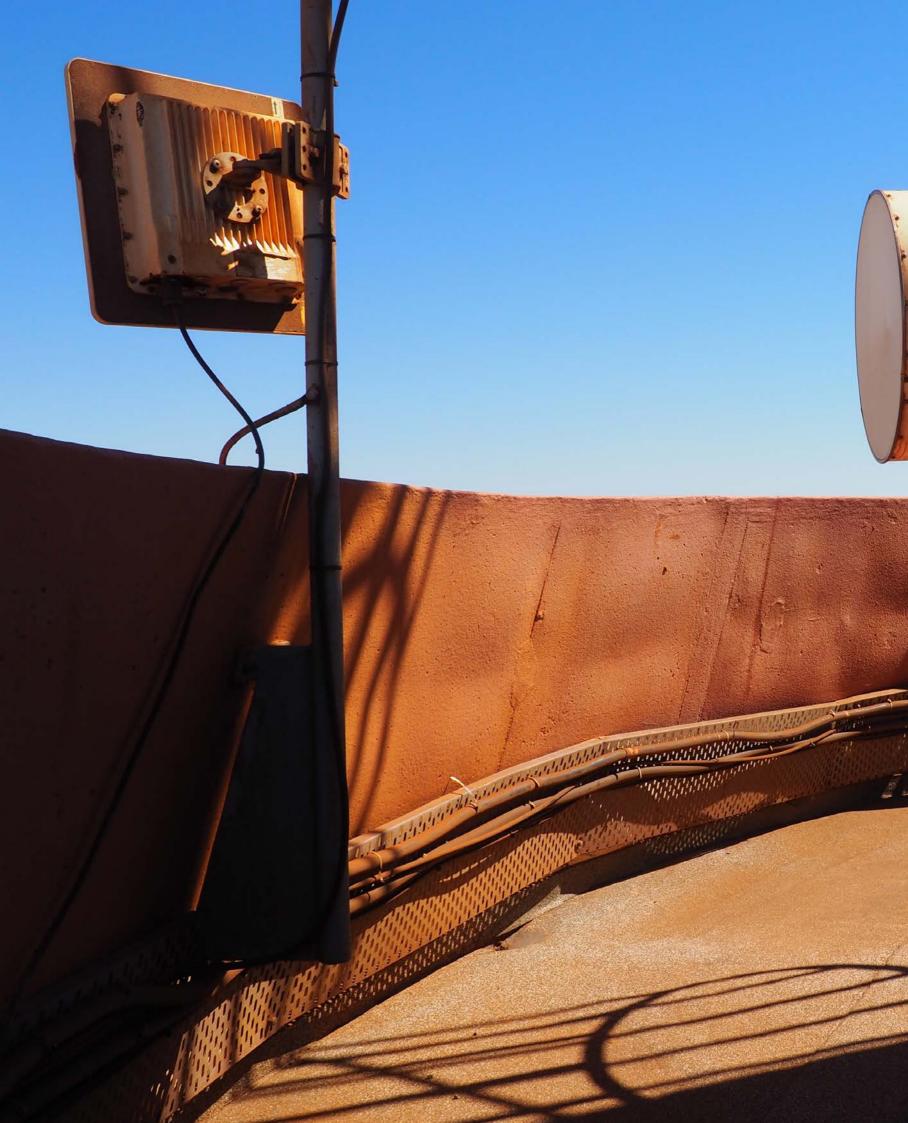


The walls were stained, possibly with iron ore and calcium or salt

Circular imprint pattern evident throughout the stairwell

Internal join between concrete sections

Element, 2016





View of equipment on the roof deck. Element, 2016



Context

The tower was located at the entry to the port, near the intersection of The Esplanade and Anderson Street. It was set back approximately 61 metres south-east of The Esplanade and 316 metres east of the harbour waters.

The retail heart of Port Hedland lies directly north-east of the port. The Esplanade Hotel, built in 1904, is the port's nearest neighbour. Beside it is the Hedland Emporium, built in 1898.

At ground level, the tower was concealed from the street by the Pilbara Ports Authority administration buildings, which were designed in the late-twentieth-century International architectural style. A number of temporary port office buildings were eventually added around the tower. Lawns and tropical plants were planted around the buildings.

The port sits on land that has been largely reclaimed since the 1960s and developed into an industrial shipping landscape. Over the years the area was developed to include a grassed helipad and fuel farm, bitumen laydown yards and large sheds that sat behind the berth.





View from inside port grounds shows The Esplanade Hotel and Hedland Emporium in the background.





Port of Port Hedland c. 1970





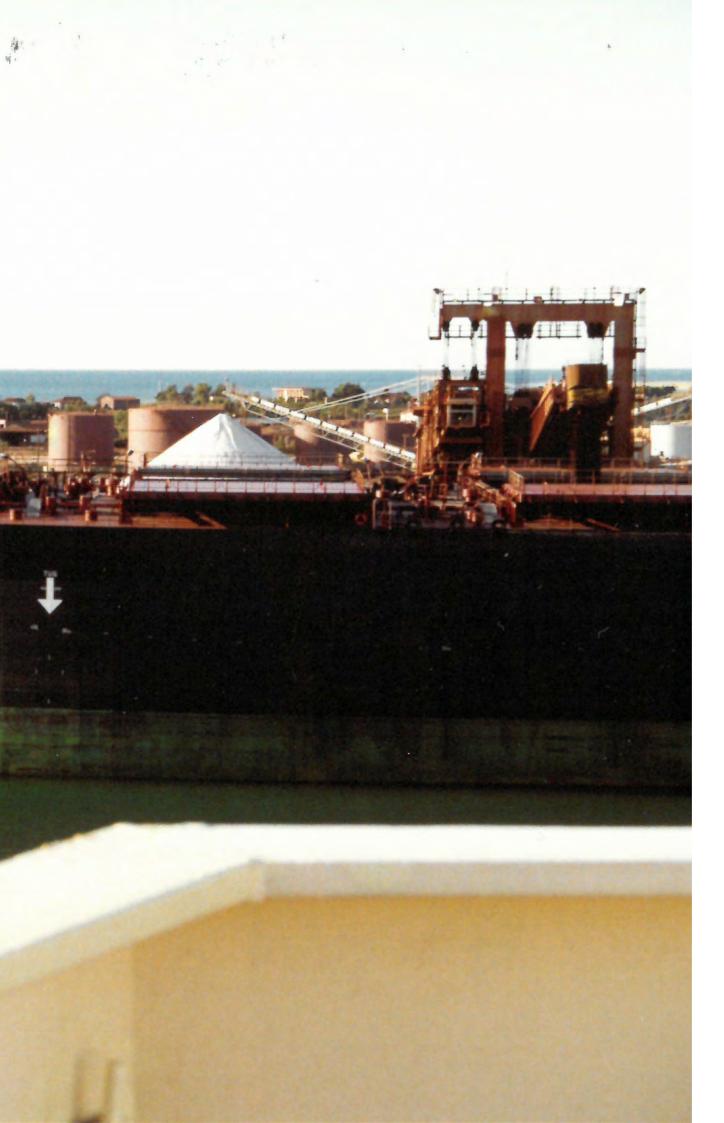
Aerial view of port including tower, helipad and Berth 1.

The remains of the original timber jetty can be seen at the top left.

The MV O Sole Mio discharging 13,389 tonnes of undersea gas pipe.

c. 1980





Iron Pacific at berth 1992





The under-harbour tunnel entrances on both sides of the port are visible.





Completed tower with salt and iron ore stockpiles c. 1980







The tower stood next to the port authority's administration building.







The tower was easy to recognise in the Port Hedland skyline.







The tower viewed from the corner of The Esplanade and Anderson streets

Robert Garvey, 2017





The tower and The Esplanade Hotel Robert Garvey, 2017



The tower from outside port grounds, with the Port Hedland War Memorial in the foreground

Robert Garvey, 2017



Heritage significance

The tower was included on the Town of Port Hedland's local heritage inventory as part of the port precinct. Under the State Government Heritage Property Disposal Process, the Department of Planning, Lands and Heritage (DPLH) undertook an assessment in 2016. The following is a description of the tower's heritage values, published in the DPLH assessment report.

The tower was relatively unique in Western Australia as a dedicated facility. Similar structures can be found within the state including the Perth Airport Air Traffic Control Tower (b. 1987), however the Port Hedland tower was unique in its connection to shipping-related functions. Nationally, comparative examples have been seen including the Sydney Harbour Control Tower (b. 1974), however this tower has also since been demolished (d. 2017).

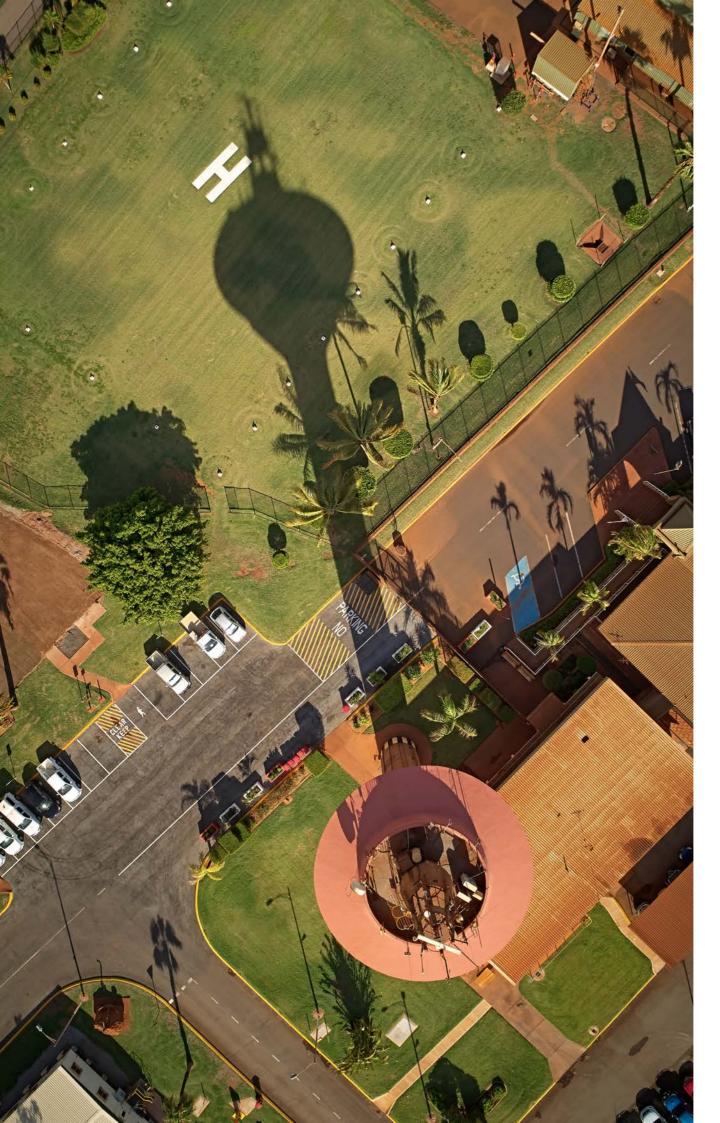
The tower was one of a comparatively small number of late-twentieth-century Brutalist structures known to have been constructed in WA. Brutalism is an architectural style known for its strong shapes, boldly composed scale and use of expressed reinforced concrete structures. Other notable Brutalist structures from this period in Western Australia include the Art Gallery of Western Australia, Northam Council Offices and Library, Bunbury Rotary lookout tower, and a number of private residences. The construction of a dedicated control tower demonstrated the development of Port Hedland from a small port into a major iron ore export port after 1965.

The tower demonstrated the focus and technical design innovation of the Public Works Department in the 1960s. Key individuals involved in the design and construction included principal architect Stanley Buckingham Cann and design engineer Sye de Jager.¹⁹



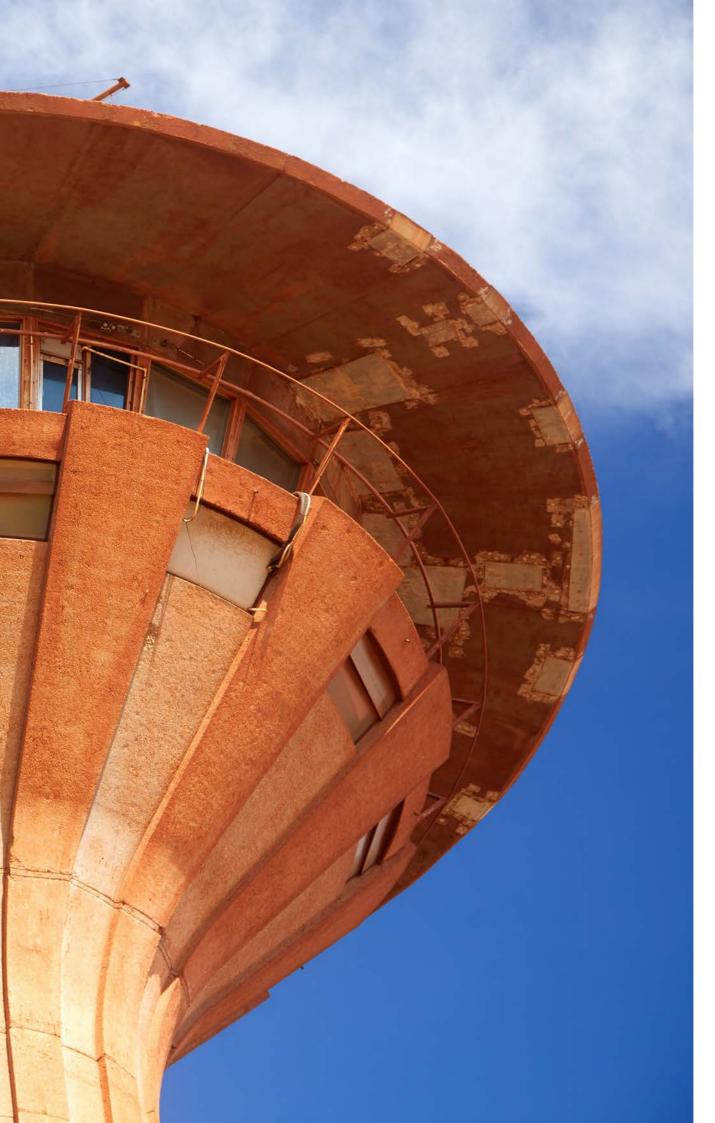
Robert Garvey, 2017





The tower from the air 2017





The tower was built in the latetwentieth-century brutalist style of architecture, which is known for strong, bold shapes and the use of reinforced concrete.

Robert Garvey, 2017



Community life

Like many ports, Port Hedland was almost open to the public and people could walk, literally, into the port—they would go down to the wharves, and fish off the wharves.

John Finch, op. cit.

The tower was often the focal point for community and social events. It was used for recreational abseiling, as a platform for fireworks displays and a backdrop for social events. It was regularly included in the holiday itineraries of tourists visiting the town.

I used to get quite a few people coming around with cameras who would take photographs of the tower and requests from people to come up the tower and have a look at things. So we did that for a few weeks and then it got too much for us! ... It's surprising the number of people who came to Port Hedland for one reason or another for the day or for a couple of days...and would say "can we bring so and so round to you up in the tower" and we'd set a time for that, and get quite a number of tourists coming up, and having a look at the view, and a couple other Japanese people came and it was quite a little gathering.

Harbour Master Geoffrey Monks and Jill Monks, op. cit.

Fireworks, we used to dress it up with Christmas lights ... They used to string up Christmas lights up the side of the tower and dropping them down so it would be lit up for Christmas. So every December our maintenance person, Nifty, he would come along and help a few others and string up these party lights from the base to the very top and hang all these Christmas lights, and make it look like a Christmas tree.

Chris Franich, op. cit.

I have heard of all sorts of stories of people knocking on the door and asking to go up in the lift and have a look as a tourist, and you know we used to use the grounds of the Port Authority, particularly the grassed area around the tower there, for all sorts of functions back in the early days. But with a move into a security regulated port these days with the focus on safety and occupational health and safety, where you don't want people unescorted in the port anymore and everybody has to have a Maritime Security Card to get in ... We have put lighting on the tower, so for things like breast cancer day we put pink lighting on the tower in the past and things like that and so we still like to be connected to the community of Port Hedland. Obviously it's a very iconic building to people, it's very much part of the skyline in Port Hedland, so I think it's important that we still have that connection with the town and the community.

John Finch, op. cit.

Every New Years from the end of the 1960s to circa 2012, fireworks would be set off the roof deck of the Port Control Tower. The townspeople would go to The Esplanade Hotel first and then come out at midnight to watch the fireworks being set off the Shipping Control Tower.

John and June Van Uden, op. cit.









As a distinguishing feature on the Port Hedland skyline, the tower was sometimes included in celebrations.

Fireworks were launched from the tower in 1996 to celebrate the 25year anniversary of the Port Hedland Port Authority.





Abseiling down the side of the tower c. 1996







The Port of Port Hedland when it was accessible to the public





View of the port from the water c. 1987







Harbour Master Geoff Monks (far left) and other Port Authority staff with visiting guests

Taken between 1980 and 1987.





L-R: Pilot Peter Hoiles, Minister for Transport the Hon. Cyril Rushton, Harbour master Geoff Monks, helicopter pilot Gordon Nezich

1981







Port visitors c. 1980



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Security at the port was tightened following the September 11 2001 terrorist attacks in the USA.

Robert Garvey, 2017



Challenges of a growing port

Back in the day when the port was first built, it was mainly around agriculture and a little bit of minerals, but then the iron ore boom happened. The growth we've seen in recent years has been China-driven ... The thing about Port Hedland is you know, everything is big. Big ships, big tugs, big tidal ranges, big environmental conditions.

John Finch, op. cit.

The port continued to steadily grow over the years with increasing throughput, changing customers, and an increase in the number of staff stationed in the tower.

When I first started it was single operators. I think around 2010 we ended up splitting the roles from being the Port Marine Officer who used to do the radio and the shipping program every day. So then we had a Vessel Traffic Service Officer, and we also had Schedulers. A little bit later on we went to three people per shift.

Chris Franich, op. cit.

Orders concerning ship movements, allocations of berths and other port matters were passed from the Vessel Traffic Services Centre within the tower to ships, pilots, tugs and berthing gangs. In addition to monitoring and recording shipping movements, the VTS officer on duty responded to emergency calls for assistance. Ships were required to obtain permission before entering, leaving, or moving from place to place within the port. We were able to cover the distance up to about 25 nautical miles, offshore, on the radar, to pick up the images. And then we installed a recorder, a tape recorder, and that was then connected up to the communications radios, so that any messages that were written and received ... and it was recorded.

Harbour Master Geoffrey Monks and Jill Monks, op. cit.

With growing throughput came increased challenges for Port Hedland Port Authority team.

Those ships that are fully loaded are what we call tidally restricted so they can only go over the high-water period. So all of our ships have to sail within a very defined four-hour period and we regularly sail maybe five, six, seven even eight vessels on a tide and there is only a thirty minute separation so everything has to be absolutely perfect in timing to make sure that it all works. So it really is a challenging port to work in.

John Finch, op. cit.

Due to the changing demands, upgrades were made to the equipment needed to operate the tower. However, changes were logistically challenging owing to the small size of the lift, the difficulty in moving equipment and furniture up the stairwell, and the need for the Vessel Traffic Services Centre to remain operational 24 hours a day.

When required, a crane would be brought in to lift equipment and furniture up to the roof deck. A bespoke cage, made by staff, would be fitted to the crane and would snuggly fit down the manhole into the control room. The works would occur while the tower was in operation, with one or two quadrants of the control room being upgraded at a time.



Peter Gooch was a Port Marine Officer at the Port of Port Hedland. He retired in 2001 after 25 years of service.





BHP Iron Ore locomotives loaded into Iron Prince







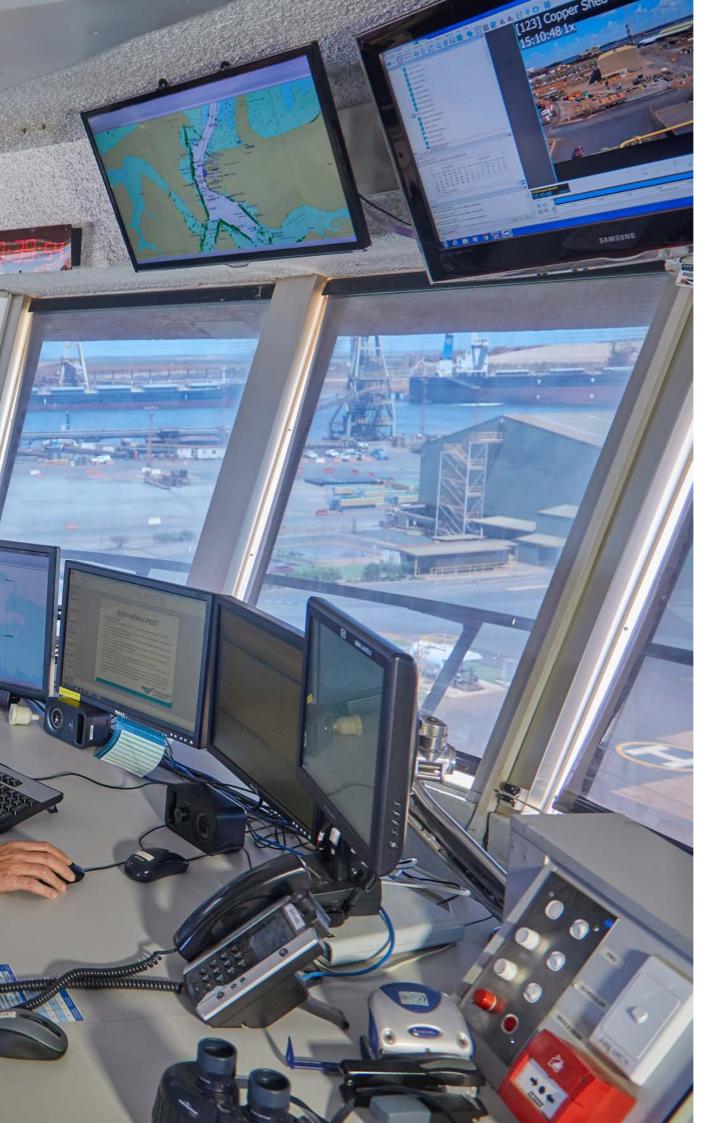
Equipment being helicoptered onto the top of the tower



The reactor shown here was among the diverse cargo to pass through the port.

c. 1996





Vessel Traffic Services Officers Kristy Adlam and Neil Webb

Robert Garvey, 2017





A new era

I remember being here when we did 100 million tonnes in the port, and we got a nice little shirt for it. I think when I first started it was about 80 million tonnes we were doing; we are now doing 520 million tonnes. So obviously the growth has been huge.

Chris Franich, op. cit.

As port throughput grew, so did staff numbers and the technology that underpinned operations. After almost fifty years of operation it was evident that the tower, which had been cutting-edge in its day, could no longer meet the needs of the port's growing operations. Space was becoming increasingly confined for operational staff and the tower was unable to be upgraded with modern equipment.

There was early evidence of corrosion to the concrete reinforcement within the structure. The building had become maintenanceintensive and, in future years, would not be safe to maintain.

In 2015 it was announced that a new Integrated Marine Operations Centre was to be constructed at the port to facilitate the safe and efficient movement of an increasing number of ships through the harbour. The requirements of the growing port included the need for the new operations centre to have 360-degree views, unimpeded by the existing tower.

Because the tower was included on the Town of Port Hedland's local heritage inventory, the proposal to demolish the structure was referred to the Heritage Council of Western Australia. On 10 June 2016, the Heritage Council supported demolition.





The Esplanade Hotel and tower from Anderson Street Robert Garvey, 2017





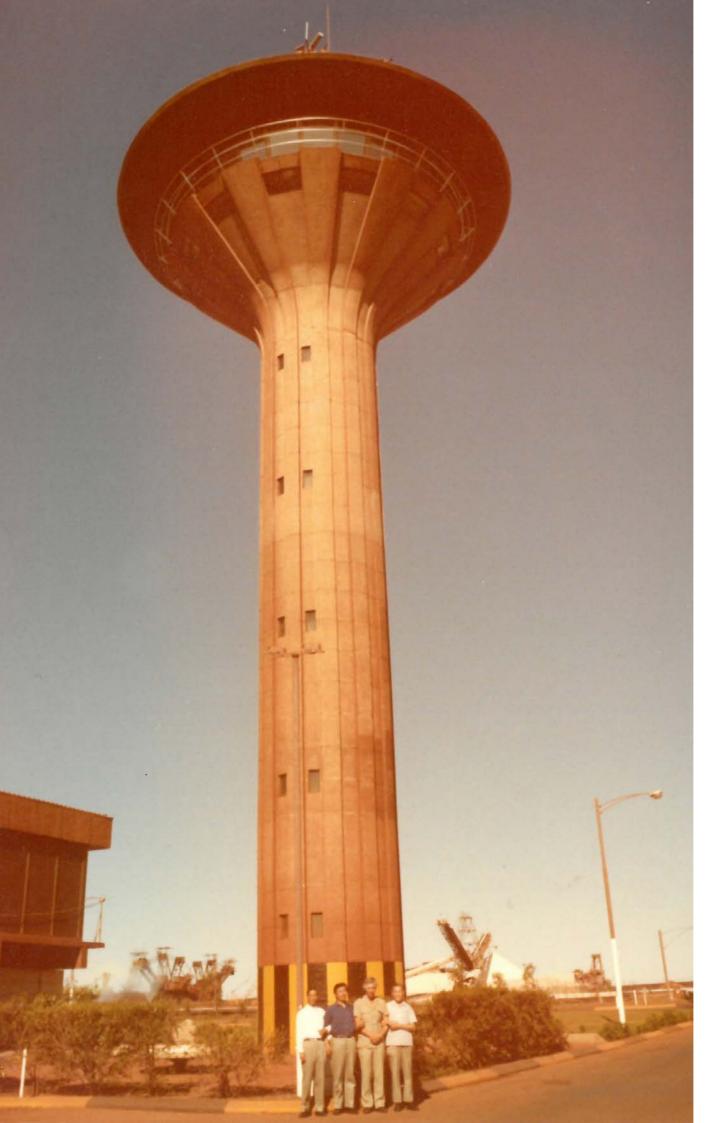


Tower aerial view Robert Garvey, 2017





Port of Port Hedland, 2019



The Tower, c. 1980



Helicopters provide transfers for marine pilots

Robert Garvey, 2017





Controlled demolition

I am sure it would have been regarded as this amazingly modern technology tower that it was and you know, we look at it now as if it is historical and a bit outdated compared to what we're about to get with the new Integrated Marine Operations Centre, but I am sure in the day it was a fantastic innovation.

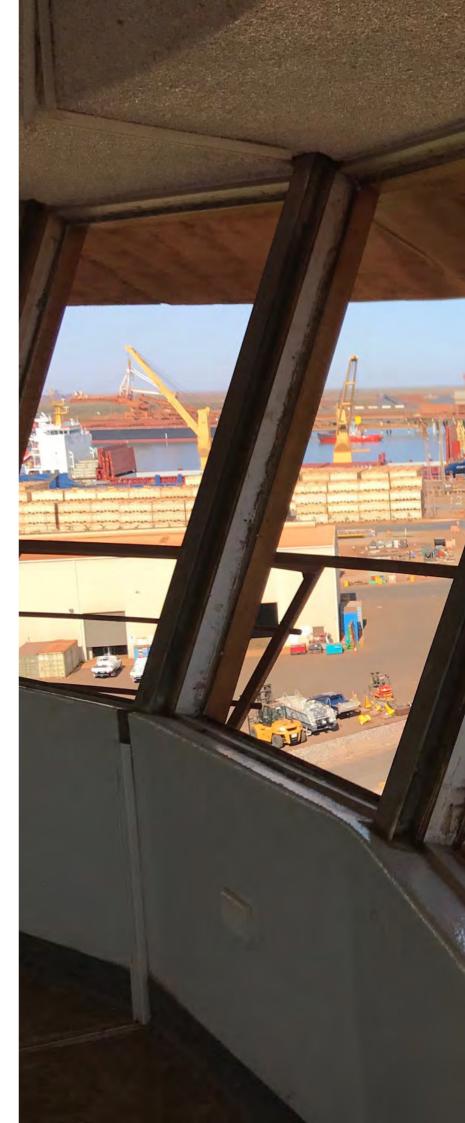
John Finch, op. cit.

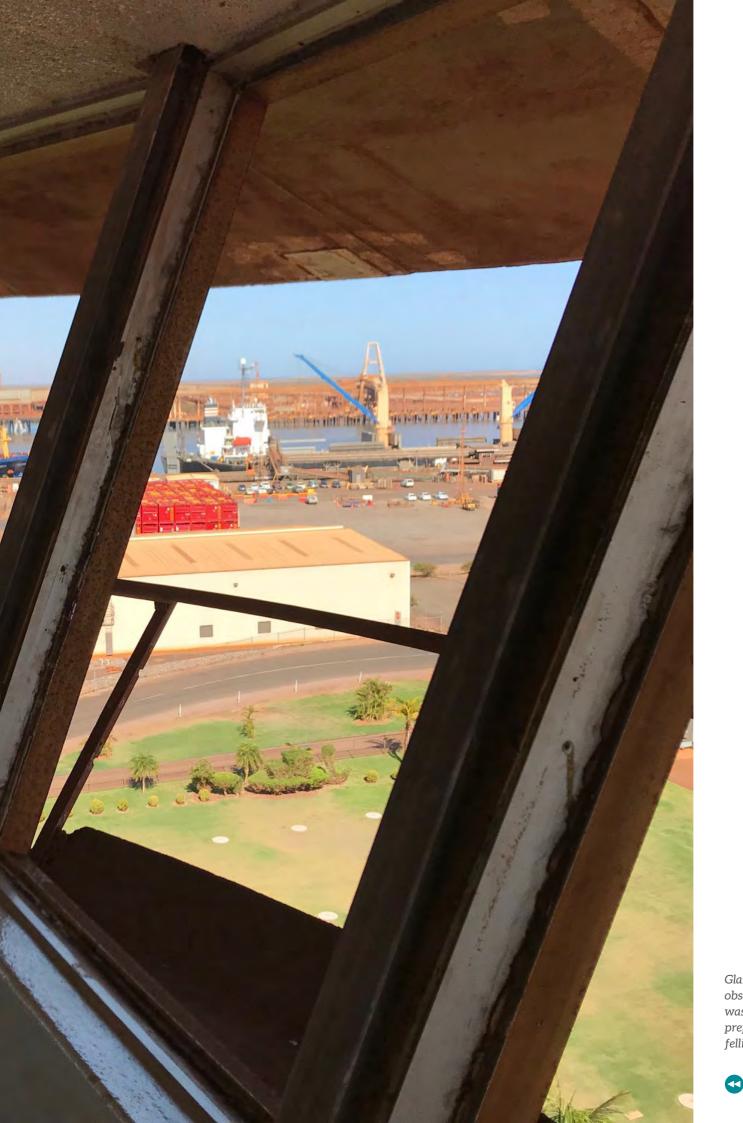
On 28 September 2019, the tower was brought down through a controlled demolition process.

Pilbara Ports Authority's Engineering and Infrastructure team led the project to fell the tower smoothly and safely. They worked closely with contractors McMahon Services and WGA Engineering, and were supported internally by their Marine Operations, Port Maintenance, Mapping and Data, Technology and Information, and Corporate Affairs teams.

The structure was weakened by engineered cuts in the reinforced concrete at the base. It was then pulled over, as a single piece, by a front-end loader. It fell at 1.30 pm, marking the final stage in the life of a landmark of the port and the Town of Port Hedland. The demolition was captured on video and published online by Pilbara Ports Authority.

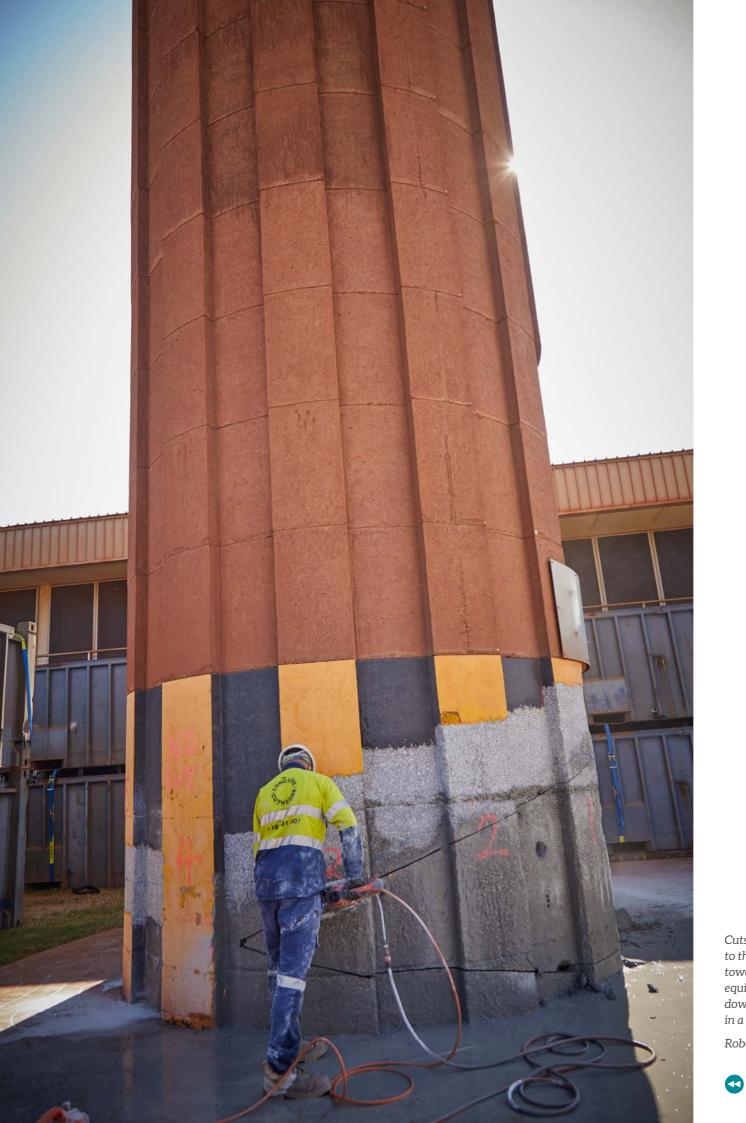
Pilbara Ports Authority offered pieces of the demolished tower to various community groups for historical purposes and community use. The lift and miscellaneous objects were given to the Port Hedland Historical Society. The radar from the top of the tower will be featured as part of a public artwork in the new marina in Port Hedland.





Glazing on the observation deck was removed in preparation for felling.





Cuts were made to the base of the tower before heavy equipment pulled down the tower in a single piece.

Robert Garvey, 2019







Heavy equipment pulled down the tower using ropes fixed to the upper levels.





The tower was pulled down onto an insulated sand pad.

Robert Garvey, 2019







Tower aerial after controlled demolition October 2019





Tower demolition crew, October 2019





Building debris and the impact pad is cleared. 11 October 2019



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Steering the new phase of growth in Port Hedland

In 2017, Pilbara Ports Authority commenced work on the new Hedland Tower Integrated Marine Operations Centre. It was designed by Sandover Pinder architects and constructed by Pindan Contracting. This state-of-the-art facility was designed to meet the growing needs of the port which had fast become an international shipping hub, playing a key role in the global demand for resources.

Absolutely well-needed, you know. The old tower, she's done a great job over the years but we really need to move into a new technology and a new housing now to keep pace with the demands of the port. Port Hedland now is on its way up to 600 million tonnes and that will take it into the top five ports in the world in terms of throughput, so right up there with Singapore and Rotterdam and the big Chinese ports. [You] really have to invest in the technology that you need to risk-manage that day in and day out.

John Finch, op. cit.

The Hedland Tower has been designed to provide Pilbara Ports Authority staff with the space and technology required to steer the operations of the port into the future. My whole operations team will be moving into that building, so not just the tower but the whole operations team—security, dredging, survey, the marine operations, harbour masters, deputy harbour masters, you know ... the marine function and land side as well. And in addition, of course, there's the new control tower which is absolutely going to be state-of-the-art, best there is. I think close to 10 million dollars' worth of state-of-the-art technology is going into that tower. And the other thing that we've built into the new tower which is going to be amazing is a purpose-built incident control centre.

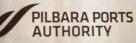
John Finch, op. cit.

Geoff Monks' contribution to the port continues to be recognised through the naming of the Monks meeting room inside the Hedland Tower. Another meeting room was named Stanton, in recognition of well-regarded Port Hedland identity Merv Stanton. The Incident Control Room has been named the Kariyarra Room, after the traditional owners of the land on which the Hedland Tower is built. The Operations Room has been named the Thurla Room. Thurla is the Kariyarra word for eye—a reference to the bird's-eye view from the top of the building.

On 30 July 2019, the new Hedland Tower was opened by the Hon Mark McGowan MLA, Premier of Western Australia, and the Hon Alannah MacTiernan MLC.



on 30 July 2019





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A plaque was unveiled at the official opening of Hedland Tower.

Robert Garvey, 2019

L-R:

Pilbara Ports Authority Chair, Brad Geatches;

Member for Pilbara, Kevin Michel MLA;

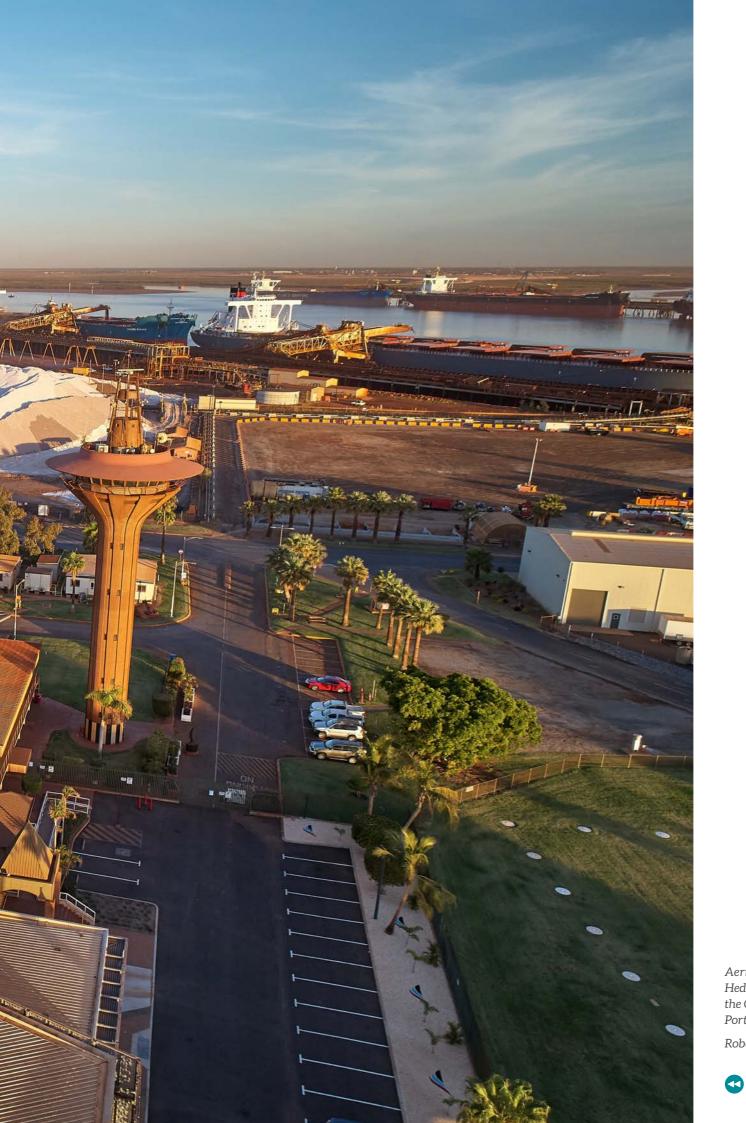
Minister for Ports, Hon Alannah MacTiernan MLC;

Premier of Western Australia, Hon Mark McGowan MLA;

Pilbara Ports Authority Chief Executive Officer, Roger Johnston.

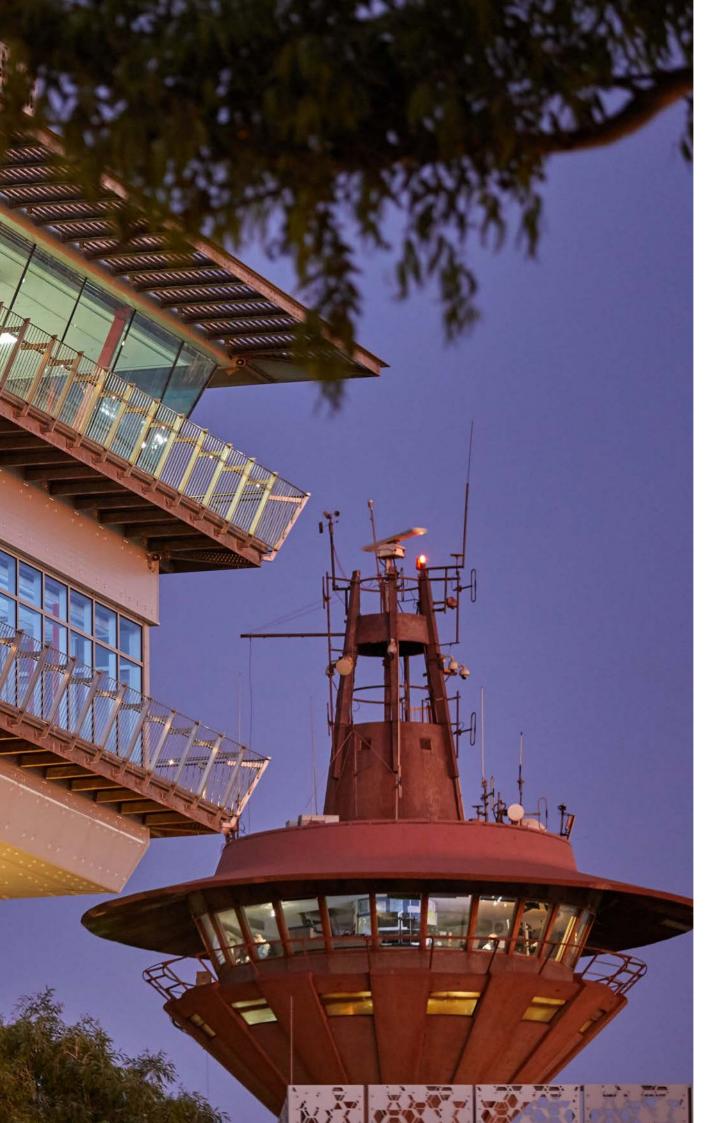
Robert Garvey, 2019





Aerial view of the Hedland Tower and the Geoff Monks Port Control Tower Robert Garvey, 2019



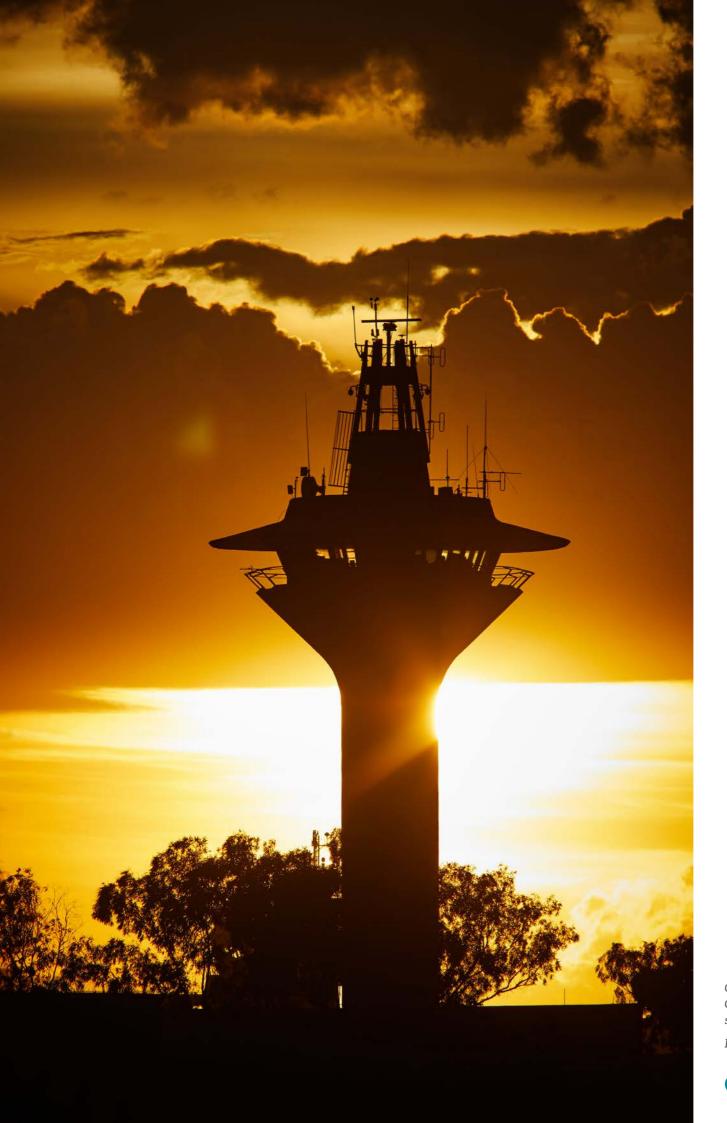


For a short time the two towers stood together.

Robert Garvey, 2019



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Geoff Monks Port Control Tower at sunset Robert Garvey, 2017





Endnotes

- 1 Pilbara Ports Authority. (2016). 2016 Port Handbook. Accessed 5 September 2016. p13.
- 2 Panel describing the development of the Port of Port Hedland curated by the Port Hedland Historical Society. (Dalgety House Museum. (2016). Port Hedland Historical Society Museum Displays. Port Hedland, WA. Viewed 30 August 2016.)
- 3 State Heritage Office Assessment Documentation of the nearby District Medical Officer's Quarters (fmr) provides additional historical background on the development of Condon and Port Hedland (State Heritage Office. (2006). Assessment Documentation: Port Hedland District Medical Officer's Quarters (fmr). Accessed 17 March 2016. p. 4)
- 4 Garratt, D., McCarthy, M., & Shaw, R. (1984). Condon Maritime Site Inspection RePort, WA Maritime Museum. Accessed 5 September 2016. p. 8.
- 5 Port Hedland Port Authority, op. cit., pp. 5-7.
- 6 State Records Office. (various dates). *Harbour and Shipping Records*. Accessed 5 September 2016.
- 7 Monks, G. (Date unknown). A Seaman's View: The Development of Port Hedland as a Port, Port Hedland Library Reference LH062, p.2
- 8 Pilbara Ports Authority, op cit.
- State Records Office. (1967). Port Hedland Harbour and Lights Department - Port Control Tower. Cons 6781 1967/0597. Accessed 5 September. pp. 2, 19-20, 31.
- 10 ibid. p. 9.
- 11 ibid. p. 86.
- 12 ibid. pp. 18, 109, 120-125, 139-140.
- 13 ibid. p. 122.
- 14 ibid. pp. 150-161.
- 15 ibid. p. 171.
- 16 An interview and retrospective look back at the career of Geoff Monks (Hymam, A. (27 November 2014). The harbourmaster who guided Port Hedland to the iron ore age. ABC Local. Accessed 15 September 2016.)
- 17 State Records Office. (1967). op. cit.
- 18 ibid. p. 159
- 19 The Department of Planning, Lands and Heritage undertook a heritage assessment of the Port Control Tower in 2016, as part of the Government Heritage Property Disposal Process

Image Credits and Acknowledgements

Except where noted below, images in this publication are provided by courtesy of Pilbara Ports Authority and Element Advisory Pty Ltd.

Thanks also to Rob Brock, Nifty Diver and Jon Giles at Pilbara Ports Authority.

Robert Garvey as photographer for Pilbara Ports Authority

Inside Cover; Pages 45, 80 & 90; Inside Back

Cover: Control Tower images (c. 1968), courtesy of the Department of Marine and Harbours, Port Hedland. State Records Office, Ref. 6158.

Page 4:

Map of Western Australia (1893) for 1929 annual report. State Records Office, Ref. S1364cons4912 CD0769

Page 5:

Port Hedland and surroundings, recorded by C.C. Hunt (1863). State Records Office, Ref. cons3423-004A

Page 7:

SS *Minderoo* and SS *Charon* at Port Hedland jetty (c. 1910). State Library of Western Australia, Ref. slwa_b4290873_2

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SS Koombana alongside new jetty, Port Hedland, (26 April, 1909). Image provided courtesy of the Royal Western Australian Historical Society and State Library of Western Australia, Ref slwa_b2961984_1

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Map of approaches to the Port Hedland inner harbour by water (1968). Image provided by the Pilbara Ports Authority, survey data courtesy of the Royal Australian Navy and Public Works Department.

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Townsite of Port Hedland (1896). State Library of Western Australia, Ref. slwa_b1964395_1

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Port Hedland inlet and signal tower (c. 1911), courtesy Port Hedland Library Local History, Kevin A Cotterall Collection

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Port Hedland (c. 1916). State Library of Western Australia, Ref. slwa_b4684638_4

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Aerial photograph of Port Hedland across the corner of The Esplanade and Anderson Street. State Library of Western Australia, Ref. slwa_ b5692557_1

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Aerial view of De Grey Station (March, 1941). State Library of Western Australia, Ref. slwa_ b4092045_1

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Opening of the Port Hedland-Marble Bar Railway (16 July, 1911). State Library of Western Australia, Ref. slwa_b2940895_2

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Jetty with Port Hedland in the distance (Date unknown). Rail Heritage WA, http://www. railheritagewa.org.au/archive_scans/

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Port Hedland Railway Jetty Looking towards shore (Date unknown). Weston Langford Railway Photography, https://www. westonlangford.com/media/photos/112032.jpg

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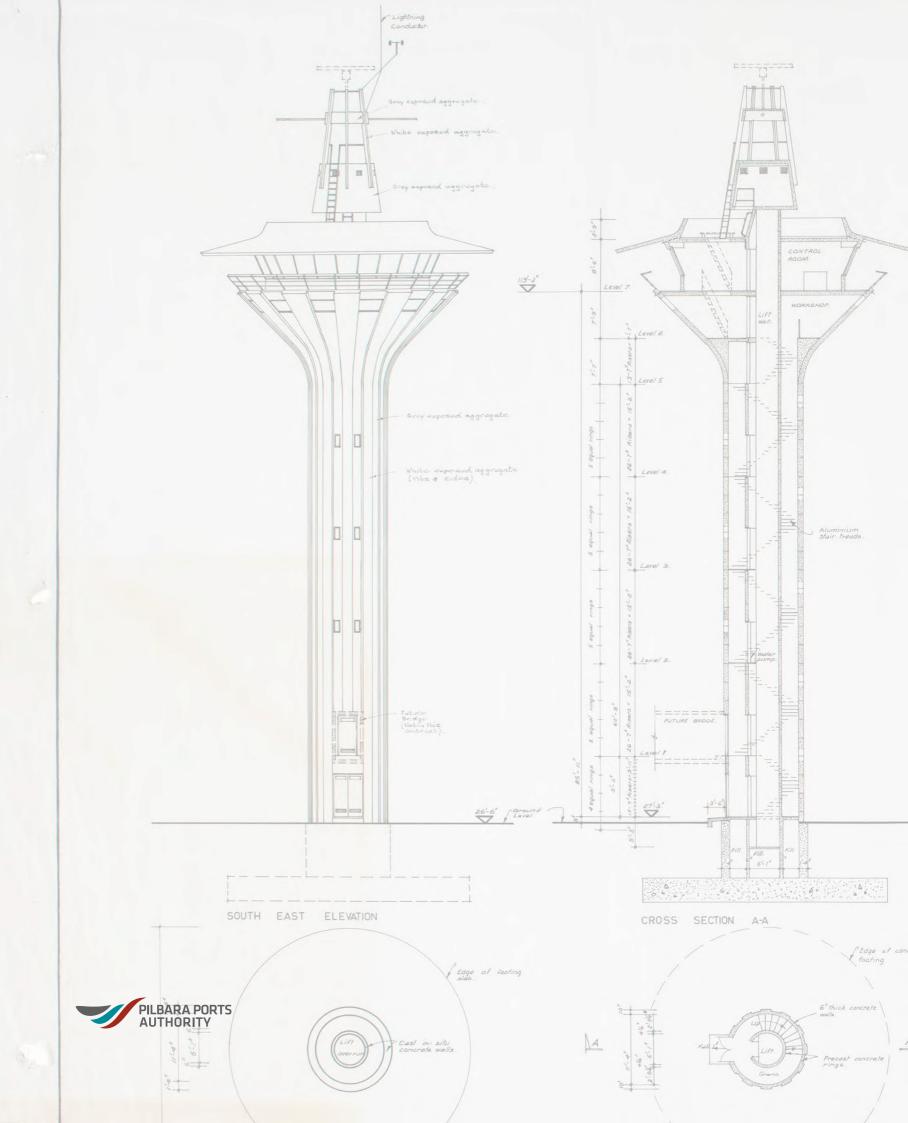
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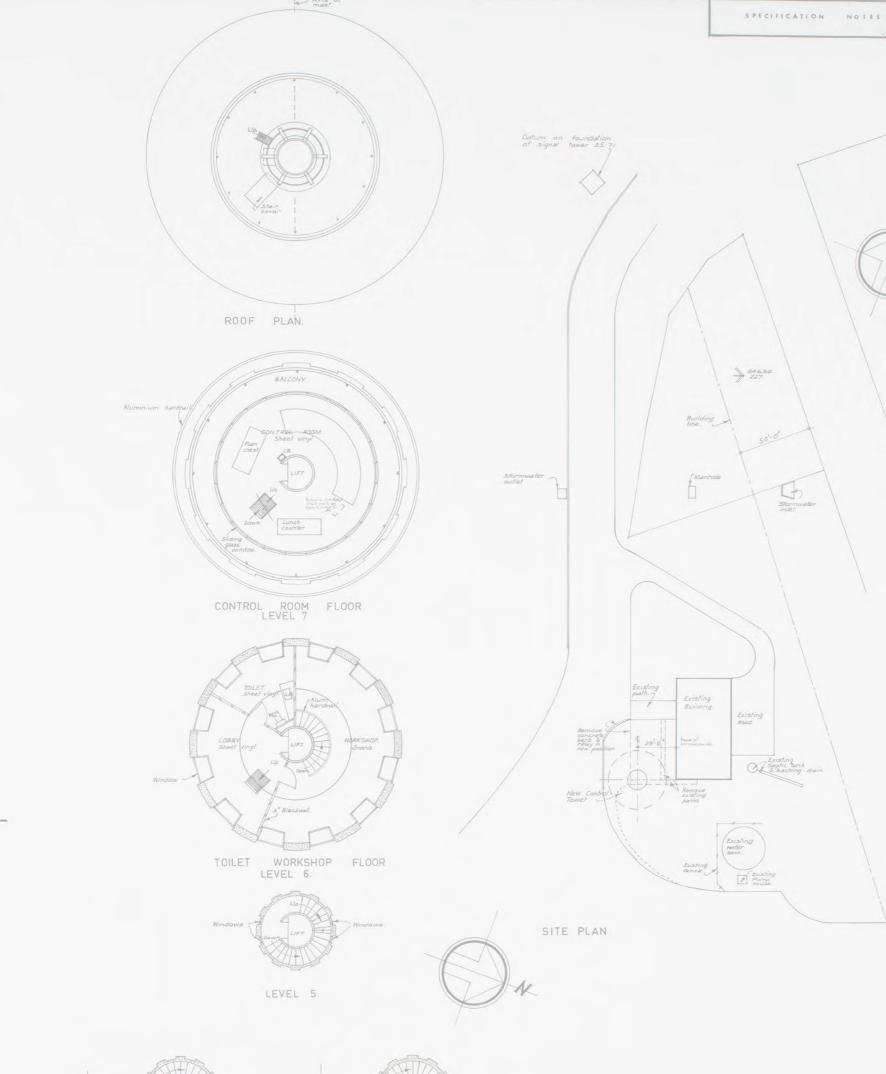
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