



## AUSTRALIAN MARINE COMPLEX COMMON USER FACILITY

# FACILITY DESCRIPTION



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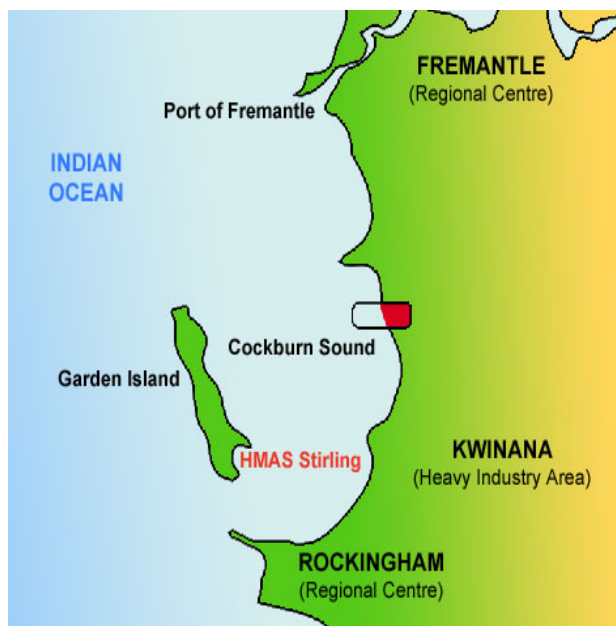
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## 1 Introduction

This document provides Users of the Australian Marine Complex, Common User Facility (AMC-CUF) with an overview of technical and operating information of the AMC-CUF, sufficient to allow potential users to commence early evaluation and planning for use of the facility. More detailed data can be made available.

### **Overview Of The AMC-CUF**

The AMC-CUF provides world class multi-purpose facilities for the fabrication, assembly and load-out of Pre-Assembled Units up to 15,000 tonnes, for local, national and international projects. These facilities create an extensive range of engineering, fabrication and manufacturing options while being suitable for multiple and overlapping projects.

Key features of the AMC-CUF:

- It is a key component of the Australian Marine Complex in Western Australia, which has financial backing from the Australian Federal Government and Western Australian State Government.
- It is located on the north-east sector of Cockburn Sound, 23 kilometres south of the State's capital city, Perth.
- The AMC-CUF has:
  - A fully accessible and protected Harbour and accessible water front with a Loadout Wharf and a Service/ Heavy Lift Wharf with loadout capability.
  - Two wharves which can be utilised for fit outs and refits of large vessels with a variety of configurations. The wharves are connected to the Fabrication/Assembly Hall and Laydown /Assembly Areas by Internal High-load Paved Corridors. These Corridors, within the AMC-CUF, are connected to the local High Wide Load Corridors utilising the Regional Highway System.
  - The 300 Tonne South Wharf Crane has a 300 tonne lift capacity at 25m and 150 tonne lift capacity at 32m with an auxiliary 50 tonne hook reaching to 34m.
  - A deep access/approach channel and Harbour Basin (depth 10.0 metres) suitable for large heavy lift vessels, barges and FPSO's (sections dredged to 11.0m and 12.7m).
  - A serviced 39 hectare common user module fabrication and assembly area, (land slope of common user facility generally less than 0.6% towards the water front).
  - A sophisticated mobile fabrication/assembly hall (80m long x 60m wide internally x 45m high) built for flexibility of operations in fabrication, assembly and loadout modes, with extensive portal and gantry crane systems.
  - Administrative support, project management offices and amenities, trade shops, workshops/warehouses and security systems.

Immediately adjacent to the AMC-CUF is an 80-hectare fabrication area. Companies that provide fabrication, engineering or relevant support industries can obtain this land, either on a lease or freehold basis. The fabrication area has direct access to the waterfront and wharf facilities via the AMC-CUF.

## **2 Harbour Channels, Island Breakwater, Harbour Basin and Berthing Pockets**

Figure 1 shows the Port Limits and Cockburn Sound configuration with the Southern Harbour access approach channel connected to the Medina Channel in Cockburn Sound.

Access to the Southern Harbour is from the south opening only, not through the northern opening. The northern opening has been designed to provide suitable flushing of the Harbour and access for small, limited draft vessels.

The dredged depth in the access/approach channel and the harbour basin is 10.0 metres below CD. The approach channel is 160 metres wide and the dredged area in the harbour basin is 32 hectares.

In front of the Marine Service Wharf there is a berthing pocket dredged to a depth of 12.7 metres Chart Datum (CD) and in front of the Loadout Wharf there is berthing pocket dredged to a depth of 11.0 metres CD.

Figure 2 shows the channel, harbour basin and berthing pocket design specifications and general facility layout. More details of Cockburn Sound, channels, etc, is available from the Facility Manager (“Gage Roads and Cockburn Sound”, Australian Hydrographic Service).

### 3 Wharves, Hard-Stand Areas/Pavements, Facility Internal Access Roads and High-Wide Load Corridors access

#### 3.1 Wharves

- Design Basis – Types and size of vessels.

The harbour and wharves have been designed to accommodate a range of different vessels and configurations. The following tables show typical vessels that were considered in the design phase:

*Table 1- South Service / Heavy Lift Wharf – Heavy Lift Vessels*

	Maximum Vessel	Laden Vessel	Minimum Vessel
LOA	300m	200m	65m
Beam	45m	27m	15m
Moulded Depth	26m	15m	5m
Arrival Draft	9m	9m	4m
Arrival Displacement	85,000t	39,000t	2,750t
Bow/stern flare at fender zone	15° to the vertical	15° to the vertical	15° to the vertical
Bow/stern radius at fender zone	230m at 5° b/angle 150m at 10° b/angle	170m at 5° b/angle 110m at 10° b/angle	25m at 10° b/angle

*Table 2 – South Service / Heavy Lift Wharf – Heavy Lift Semi-Submersible Vessels*

Vessel Type	Length	Width	Moulded Depth	Laden Draft	Deck Height
Swan/Tern	181m	32m	13.3m	7.2 - 10.0m	3.3 - 6.1m
Dock Express 11	159m	24m	7.0m	6.0 - 7.8m	-0.8 - 1.0m
Transshelf	173m	40m	12.0m	7.0 - 8.8m	3.2 - 5.0m
M Servant 3	181m	40m	12.0m	7.0 - 9.1m	2.9 - 5.0m
M Servant 1	190m	50m	12.0m	7.0 - 9.3m	3.2 - 5.0m
Blue Marlin	225m	63m	13.3m	8.0 - 10.2m	3.1 - 5.3m
Black Marlin	218m	42m	13.3m	8.0 - 10.1m	3.2 - 5.3m
Enterprise	158m	29m	5.3m	4.4m	0.9m

*Table3 – South Service / Heavy Lift Wharf – Heavy Lift Barges*

Barge Capacity	Length	Width	Moulded Depth	Laden Draft	Deck Height
4,000t	90m	27m	6.5m	4.0m	2.5m
6,000t	170m	45m	11.0m	6.0m	5m
10,000t	200m	50m	12.0m	7.5m	4.5m
15,000t	225m	55m	12.0m	8.5m	3.5m

*Table4 – East Loadout Wharf – Heavy Lift Barges*

Barge Capacity	Length	Width	Moulded Depth	Laden Draft	Deck Height
3,000t	76m	22m	6m	3.5m	2.5m
4,000t	90m	27m	6.5m	4.0m	2.5m
6,000t	170m	45m	11.0m	6.0m	5m

- Berthing Pocket Specifications
  - Berthing Pocket For South Service / Heavy Lift Wharf

Berth pockets have been dredged to accommodate the vessels at all stages of the tide. A pocket, perpendicular to the wharf, 200m long by 100m wide has been dredged to 12.7m below Chart Datum to enable a loadout to be performed with the transport

vessel being end-on to the wharf face. An additional pocket, parallel to the wharf, 50m wide by 370m long has also been dredged to 12.7m below Chart Datum.

– Berthing Pocket For East Loadout Wharf

Berth pocket, perpendicular to the wharf to enable a loadout to be performed with the transport vessel being end-on to the wharf face, has been dredged to 11.0m below Chart Datum. The pocket is 60m wide and 210m long.

• Wharf Structural Systems

The wharf structures have been designed as conventional two way spanning reinforced concrete decks supported on a steel tube piling system.

The wharf system has been installed with an Impressed Current Cathodic Protection System, as a device for corrosion protection.

• Wharf Design Loads

The wharves have been designed for varying loads and load combinations. The following summarises the critical design live loads and combinations for each of the main structures.

South Service/ Heavy Lift Wharf (Ref Figure 3)

The heavy lift wharf has been designed for the following maximum live loading conditions:

A total load of 7,500t equally distributed on two skids (i.e. 3,750t per skid). Each skid distributes the load over a minimum area of 2m x 8m (i.e. a maximum Uniform Distributed Load of 234t/m<sup>2</sup> over an area not exceeding 16 m<sup>2</sup>). The skid load zones are marked on the wharf. The fixed track is 2m wide and located 10m from the western end of the wharf. The other is a variable track, at an adjustable spacing of between 20m and 40m eastward of the centreline of the fixed track. As the load moves towards the front edge of the wharf further concentration of load is allowed on the front 5m of the wharf.

A load of 5t/ m<sup>2</sup> may be considered in combination with the above over the remainder of the deck outside the line of the skids.

Outside of the designated skid areas a maximum uniform distributed load of 150t/m<sup>2</sup> can be applied to an area not exceeding 10m<sup>2</sup> (i.e. 1,500t maximum total load) no closer than 10m to the edge of the platform. A load of 5t/ m<sup>2</sup> may be considered in combination with the above over the remainder of the deck.

In addition the heavy lift wharf has been designed for:

1. A blanket uniformly distributed loading of 10t/m<sup>2</sup>.
2. A 40t lift capacity forklift truck operating at any location.
3. Multi-wheeled vehicles operating at any location.
4. Transit and operation of one 600t capacity wheeled or crawler-mounted mobile crane. Equates to four 1.9m x 9.9m 510 kPa (52t/ m<sup>2</sup>) track loads.
5. Transit and operation of two 250t capacity wheeled or crawler-mounted mobile cranes.
6. 2150 kN inward and 540 kN lateral fender loads.

### Dolphin/Crane Platforms

The dolphin and crane platforms have been designed for the following maximum live loading conditions:

1. A blanket uniformly distributed loading of 10t/m<sup>2</sup>.
2. A 40t lift capacity forklift truck operating at any location.
3. Multi-wheeled vehicles operating at any location.
4. Transit and operation of one 600t capacity wheeled or crawler-mounted mobile crane.
5. Transit and operation of two 250t capacity wheeled or crawler-mounted mobile cranes.
6. 2150 kN inward and 540 kN lateral fender loads.

### 300 Tonne South Wharf Crane (300T Crane – Ref: Figure 38 & 39)

Located on the crane pier adjacent to and east of the South Wharf loadout platform, the Pedestal Luffing Crane has a 300 tonne lift capacity at 25m radius from the centre of the turntable to 125 tonne at 32m radius with an auxiliary 50 tonne hook reaching to 34m. The crane can be turned in all directions with the maximum load.

### East Loadout Wharf (Ref Figure 4)

The loadout wharf has been designed for the following maximum live loading conditions:

A total load of 3,000t equally distributed on two skids (i.e. 1,500t per skid). Each skid distributes the load over a minimum area of 1.5m x 6m (i.e. a maximum Uniform Distributed Load of 166t/m<sup>2</sup> over an area not exceeding 9m<sup>2</sup>). The skid load zones are marked on the wharf. The fixed track is 2m wide and located 14m from the southern end of the wharf. The other is a variable track, at an adjustable spacing of between 15m and 30m northward of the centreline of the fixed track. As the load moves towards the front edge of the wharf further concentration of load is allowed on the front 5m of the wharf.

A load of 5t/ m<sup>2</sup> may be considered in combination with the above over the remainder of the deck outside the line of the skids.

In addition the loadout wharf has been designed for:

1. A blanket uniformly distributed loading of 6t/m<sup>2</sup> and a 30t/m line load parallel to the edge of the wharf and from 2 to 5m behind it.
2. A 40t lift capacity forklift truck operating at any location.
3. Multi-wheeled vehicles operating at any location.
4. Transit and operation of one 100t capacity wheeled or crawler-mounted mobile crane.

### Bollard Capacity

The bollards for the two wharfs are designed to take a load of 120 tonnes each. Their locations are shown on, Figure 3 and Figure 4.

### 3.2 Hard - Stand Areas and Pavements

The service wharf and loadout wharf corridor pavements have been designed for a distributed load of 10t / m<sup>2</sup>.

The corridors onto the service wharf and the loadout wharf are 60m wide. A 60m wide connecting corridor is also provided between each wharf. Refer to Figure 5 that shows how pavement and load distribution capacity is distributed across the site. Site compaction data is available on request.

The total pavement thickness within all corridors is 450mm, consisting of 40mm asphalt wearing surface, 10mm primer seal, 150 crushed rock base course and 250mm limestone sub-base.

The remaining area of reclamation behind the service wharf has been surfaced with a bituminous seal to prevent erosion. This area can be used for parking and storage of lightweight materials/equipment. All heavy equipment must remain within the pavement corridors adjacent to the wharves and fabrication hall.

Collection and disposal of stormwater runoff from the pavement corridors, wharves and reclamation area is through an extensive piped drainage system which discharges into a large drainage sump.

(See Figure 16 for areas)

### 3.3 Facility Internal Access Road and High-Wide Load Corridor Access.

Figure 5 shows how the High Wide Load access corridor (HWLC) aligns with the AMC-CUF.

The Western Australian Government has provided a HWLC to the Kwinana / Rockingham area to connect the fabrication and related facilities in the Kwinana area and has scoped a similar corridor(s) to the Welshpool and Bassendean industrial areas to the east and north of the AMC-CUF respectively. The Welshpool and Bassendean upgrades are subject to budget fund availability.

The HWLC allows modules with dimensions 9m x 9m by 50m and weighing less than 300 tonnes to be moved to and from the AMC-CUF with relatively few approval requirements. Loads that exceed these dimensions or weight will need special planning and Main Roads Western Australia approval. Specific loads greater than 300 tonnes and up to 17m wide have been approved in the past.

The roads within the AMC-CUF and their connections to the public road systems have been designed to at least satisfy the specifications set by Main Roads Western Australia for the HWLC. A few relevant specifications for the roads within the AMC-CUF are as follows:

- The heavy haulage roads and wharf pavements have been designed for loads of 10 tonnes/sqm.
- The pavement at the intersections to Cockburn Road have been designed to take 6 tonnes per single steer axle or 3.0 tonnes/tyre or 9 tonnes per dual wheeled axles (2.25 tonnes/tyre).

Loads moving to or from areas other than the Kwinana / Rockingham area generally need to be restricted to 6.5m wide x 6.5m high and weigh less than 200 tonnes.

## 4 On – Site Facilities – Fabrication Hall And Other Facilities

Figure 6 shows the different building and amenities provided in the AMC-CUF.

### 4.1 Building No. 1 - Fabrication Hall

The Main Fabrication Hall is one of the key features of the AMC-CUF. It provides for the fabrication and assembly of major structures in a fully protected, well ventilated, acoustically suitable and well lit environment capable of 24 hour operation. It provides year round weather protection in a marine environment, with good access from all sides and multiple methods for lifting and moving substantial modules (nominal limit of Services Wharf is 15,000 tonnes).

Figures 7, 8 and 9 provide layouts and elevations of the fabrication hall.

#### Dimensions

The under cover internal free working area of the fabrication hall is as follows:

- Length 80m
- Width 60m clear (between 150 tonne portal crane supports)
- Height 30m under hook of 150 tonne hoist / 34m to underside of 20 Tonne travelling crane.

#### Cranes

A 150 tonne portal crane has been provided in the fabrication hall. The crane also has two 50 tonne auxiliary hoists, one located on the main hoist trolley, the other on an independent trolley. The 150 and one of the two 50 tonne hoists can be used concurrently allowing a 200 tonne load to be lifted.

The facility also provides two overhead 20 tonne travelling cranes, each spanning one half of the building and capable of traversing the full length of the fabrication hall.

#### Building and Crane Movement

The entire building is supported on bogies that allow it to move 80m in an east/west direction. This allows a second module to be built under cover before the first module is ready for transport or load-out. There are tie down points for the building at 12.5 m intervals. The building can be moved and locked in position within 4 hours.

The 150 tonne portal crane can move on an internal 160m track and has been designed for internal and external use.

#### Access

The eastern wall has four electronically operated sections that can be opened to allow full access to the building's cross section and for the 150 tonne portal crane to move out of the building. There are also two electronically operated roller doors with dimensions of 5m by 5m to allow for vehicle access in the northern and southern walls.

The western wall is fully demountable and can be removed and replaced (requires crane). The bottom section has been designed to allow 10m x 10m panels to be removed.

### Ground Surface

The Fabrication Hall floor has been designed for a uniform distributed load of 10 tonne/ m<sup>2</sup> and to support a 600 tonne mobile crane lifting at full capacity at any location and with any orientation, or a 40 tonne forklift truck operating anywhere of the floor.

### Utility Services

Water and power connection points are provided to allow the building to be moved at 12.5m increments.

Underfloor pits on a 20m x 20m grid across the fabrication hall assembly area each provide:

- Electrical power – 1 x 63 AMP three phase welding outlet and 4 x 10 Amp double GPO.
- 2 x Compressed air outlets.
- Carbon Dioxide and Argon.

### Internal Facilities

Within the northern wall a series of offices and amenities have been provided to enhance project supervision and avoid the need for workers to move outside of the building during work periods. The offices / amenities have been located on two levels, one 7.5m and the other 10m above the Fabrication Hall floor. They include:

- 4 x 15 m<sup>2</sup> offices
- 5 x 30 m<sup>2</sup> offices
- male and female toilets to cater for 250 people
- a rest room/first aid room
- administration/stationery stores
- a photocopy/fax area.
- tea/coffee pantry.

The offices have doubled glazed walls on their interior face. They are air conditioned and have normal power supplies and data and voice conduiting.

Telephone connection points are located in the building. Communication between this building in the rest of the facility are in place.

## **4.2 Other Facilities**

A range of other on-site buildings and amenities have been designed to enhance the effectiveness of the overall AMC-CUF, providing a complete range of support services and infrastructure for a number of concurrent users. Users should be able to make use of the site with relatively low set up or establishment costs.

### **4.2.1 Building No. 2 - Workers Amenities**

A Worker's Amenities building is located to the north of the Main Fabrication Building (No.1) and adjacent to the car parking area. People can move between the Main Fabrication Hall and the Workers Amenities building under a covered walkway. Figure 10 shows the floor plan for the building.

The Amenities building provides a lunch room for workers, a kitchen, male and female toilets and change rooms, a cleaners room and a staff meeting area. It has been designed for 500 people per shift. The kitchen has facilities for the storage and heating of staff brought meals but it is not the intention for meals to be prepared for site personnel.

Some specific features

- the change rooms include showers, benches and coat hooks for 500 people;
- lockers have been provided in a separate area for 250 people;
- the toilets have been designed for 500 people per shift;
- the 500 person lunch room can also be used as a meeting room and has a public address system.

#### **4.2.2 Building No. 3 – Project Offices**

Building No.3 provides general offices for AMC-CUF users. It has been designed symmetrically around a common reception area to allow for two stand-alone projects to be run from the project offices at one time. Its plan is shown in Figure 11.

The total area of the building is 850 m<sup>2</sup> and includes:

- Two 2 x 35 m<sup>2</sup> meeting rooms;
- Twelve (12) 20 m<sup>2</sup> offices;
- Two open plan work areas, each 180 m<sup>2</sup>; and
- Two computer/equipment rooms and two staff lunch rooms.

When fitted out, it is expected that the building can accommodate about 70 people.

Computing equipment is not provided but all offices and open plan areas have reticulated voice and data conduits in place.

A card swipe security/access system has been provided for the entrance door and four internal doors so that the two sides of the building can be secured independently.

#### **4.2.3 Building No. 4 - Trade Shops and Workshop / Storage**

This building has been divided into a separate Warehouse and Storage area with an area of 1000 m<sup>2</sup>. The building has a 10 tonne overhead travelling crane with 5m under the crane hook and is designed for 20 tonne forklift truck access. Users may find it a good facility for small module assembly rather than as a warehouse.

The Trade Shop allows for specialist assembly offices and laboratories, with 4 specialist offices (hydraulics, electrical, instrumentation and clean room) and a 200 m<sup>2</sup> general maintenance area. Benches, power and communication conduits have been provided in the specialist offices.

Figures 12 and 13 show the layout and elevation of this building.

The building has a staff office, pantry and toilet facilities.

#### **4.2.4 Building No. 5 – Workshop**

Building No.5 is available for general engineering and light fabrication use. Its floor area is 230 m<sup>2</sup>. It has single and three phase power supplied and data and voice conduiting.

Its plan is shown in Figure 14.

#### **4.2.5 Building No. 6 – Induction / First Aid**

A small Induction / First Aid facility is available to all Users and is located next to building No. 5.

#### **4.2.6 Building No. 9 – Fabrication Hall No. 2**

Fabrication Hall No. 2 is another key feature of the AMC-CUF. It provides for the fabrication and assembly of major structures in a fully protected, well ventilated, acoustically suitable and well lit environment capable of 24 hour operation. It provides year round weather protection in a marine environment and is designed for 2 multiple Users, one in each bay.

Figures 33, 34 and 35 provide layouts and elevations and section of the fabrication hall.

##### Dimensions

The under cover internal free working area of the fabrication hall is as follows:

- Length 84m
- Width of each of the 2 bays is 22m centre-to-centre of the 20 tonne overhead crane supports
- Height 16m under hook of 20 tonne hoist.

##### Cranes

The facility provides two overhead 20 tonne travelling cranes, each spanning one half of the building and capable of traversing the full length of the fabrication hall. The crane rail system is designed for an additional 5 tonne travelling crane each for a total capability of 25 tonnes per bay.

##### Access

The western wall has two electronically operated sections that can be opened to allow full access to the building's cross section. There are also two electronically operated roller doors with dimensions of 5.0m by 4.5m to allow for vehicle access in the eastern wall.

##### Ground Surface

Fabrication Hall concrete floor has been designed for:

- uniformly distributed load of 10 tonnes/m<sup>2</sup>.
- forklift truck of 5 tonnes rated capacity (pneumatic tyres only).
- single-axle vehicles of maximum 12 tonnes axle load.

- tandem-axle vehicles of maximum 20 tonnes tandem-axle load.

Workshop and Store areas are suitable for vehicles of 5 tonnes axle load.

#### Utility Services (per tenancy)

Water is provided by way of three internal and two external hose-cocks. A separately-metered 65mm BIC outlet is provided.

Power Connection points are provided for 10, 20, 32 & 64 Amp outlets.

Compressed Air - 22 x Compressed air droppers, each with a Legris outlet.

Industrial Gases - 22 x Carbon Dioxide or Argon gas droppers, each with a ball valve (each dropper is capable of two outlets, each delivering 25 l/min).

#### Internal Facilities (per tenancy)

Adjacent to the general fabrication area, and within each of the northern and southern side a series of offices and amenities have been provided to enhance project supervision and avoid the need for workers to move outside of the building during work periods. The offices / amenities are located on ground levels and include:

- 2 x 17 m<sup>2</sup> offices
- 1 x 36 m<sup>2</sup> general office
- male and female toilets to cater for 95 men and 8 women
- crib room for 103 persons
- 1 x 75 m<sup>2</sup> Store (not suitable for the storage of flammable materials or substances).
- 1 x 256 m<sup>2</sup> Workshop.

The offices have doubled glazed walls on their interior face, air conditioned and have normal power supplies and data and voice conducting.

Telephone connection points are located in the building. Communication between this building and the rest of the facility is in place.

#### **4.2.7 Building No. 10 - Warehouse** (Figures 36 & 37 provide elevation and plan views)

Centrally located adjacent to the Main Gate. This Common User Warehouse is an open configuration and can be segregated to User's requirements. An office and toilet are included within the building. The floor is designed to cater for a 4 tonne axle loading. Total floor area is 1300m<sup>2</sup> with two 4.5m x 4.5m roller doors in the Western wall.

## 5 On –Site Facilities – General Services

### 5.1 Electrical Facilities

A 22kV Intake Substation at the northern end of the Facility, adjacent to the main access road from the north. The Intake Substation has been designed to meet the projected long-term electrical loads when the site is fully developed.

From the Intake Substation, electrical power is reticulated around the site by a system of 22kV underground cabling. All 22kV cabling is installed in 150mm diameter heavy duty “Category A” electrical conduit. The installation includes cabling to meet initial requirements, with additional conduits provided to facilitate future expansion of the installation as required.

The initial installation includes three off 22/0.415kV distribution substations, located to suit the following facilities:

- The service area adjacent to the northern entry to the site (Substation 1).
- The East Loadout Wharf (Substation 2)
- The South Service / Heavy Lift Wharf (Substation 8)

Numbers 3 to 7 inclusive have been reserved for future distribution substations around the southern area of the site as this area is developed. The final result will be a 22kV open ring system, with substations sequentially numbered around the ring.

In addition to the new substations referred to above, there are a number of existing substations to the northern end of the site that will be integrated into the system.

All new distribution substations are to the Western Power standard design and comprise the following principal components:

- A 22kV Ring Main Unit
- A 22/0.415kV transformer
- A 415 volt distribution fuseboard

From the distribution substations, electrical power is reticulated to the adjacent facilities by a system of 415 volt underground cabling. All 415 volt cabling has been supplied and installed as a part of the construction of the associated facilities and includes the supply and installation of 415 volt cabling for the street lighting and the wharf floodlighting.

At each end of the Southern wharf and on each dolphin/crane platform there are cope points that contain 3x150mm dia. electrical conduits and 1x100mm dia. communications conduit. The electrical conduits are connected back to the substation and have drawstrings for the future provision of cable installation.

At each end of the Eastern wharf there are cope points that contain 2x150mm dia. electrical conduits and 1x100mm dia. communications conduit. The electrical conduits are connected back to the substation and have drawstrings for the future provision of cable installation.

The wharves have cope points which contain power supplies for connection to vessels.

The Southern Wharf has a 2 x 62A 30 415V and 4 x 400A 30 440V connections.

Both wharves also have a connection point to connect cathodic protection.

## **5.2 Water Supply**

At each end of the service wharf and on each dolphin/crane platform there are cope points that contain 1x100mm dia. water pipeline.

## **5.3 Waste Water (Sullage)**

A wastewater system has been installed for the removal of wastewater from the service buildings. The system does not extend to either the service wharf or the loadout wharf. Discharge of wastewater from ships will need to be into road tankers with the discharge disposed of into a Water Corporation approved facility.

## **5.4 Sewerage**

The Service Wharf has 2 x connections for sewerage. One sewerage connection is available on West end load out wharf.

## **5.5 Fire Water**

Both wharves have 2 x connections for sea water fire water supplies to vessels. The supply is via an automatic electric pump with a diesel pump back up.

## **5.6 Potable Water**

Both wharves have 2 x connection for Potable Water.

## **5.7 Communications**

Both wharves are fitted with a single communication connection.

## **5.8 Security & Port Facility Security Plan**

The entire AMC-CUF site, excluding the waterfrontage, is fenced with 1.8m high chain link plus three rows of barbed wire.

Access to the site for authorised personnel is through a control gate just north of the Buildings 2 (Workers Amenities) and 3 (Project Offices). Intercom and manual override facilities are provided at the gate with three way intercom connections to the Gate House, Facility Managers Offices and Project Offices.

Proximity card key facilities are available to control access into the site and between compounds.

CCTV -

A series of CCTV cameras operate within the AMC to enhance physical security. Cameras operate 24 hrs /day 7 days per week. Monitoring of the system is carried out using 24 hour manned security.

### **5.8.1 Port Facility Security Plan –**

The AMC has a Maritime Security Plan which has been developed within a national and international regulatory framework aimed to safeguard against unlawful interference with maritime transport by terrorist attack or other incursions. The Port Facility Security Plan for the Australian Marine Complex makes an appropriate contribution to maritime security outcomes by fulfilling AMC Management's legislated obligations to;

- reduce the vulnerability of terrorist attack against ships and port facilities within the Port of Fremantle
- reduce the likelihood of maritime transport through AMC being used to facilitate terrorist or other unlawful activities and
- enhance distribution of security information among maritime industry participants and relevant government agencies with maritime security responsibilities.

### **5.9 Australian Customs Section 15**

The AMC is a proclaimed port for the import and export of international cargo.

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**Attachments:**

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