

20.0 Engineering and Maintenance Unit

20.1 Introduction

20.1.1 General

All facilities, no matter how large or small, will require environmental support services in the form of:

- Maintenance services
- Engineering
- Cleaning services
- Waste disposal
- Gardening services
- Storage.

20.1.2 Description

A Maintenance Service shall be provided. It may be in-house or contracted, with an on-call repair service. The complexity of the services provided by the facility will dictate the nature and extent of the Maintenance Service required. The Maintenance Service is provided to effect preventative maintenance and repairs to all elements of the facility, from the building fabric to items of specialist equipment.

Areas that require a 24-hour per day, 7-day per week 'on-call' maintenance service are:

- Medical gases and suction systems
- Lifts
- Fire systems
- Bio-electronic equipment
- Any life-support systems
- Emergency power systems
- Boiler plant
- Telecommunications systems including Public Address (PA), Emergency Warning and Intercommunications System (EWIS) and Nurse Call.

The potential life threatening nature of the failure of any of the above systems justifies a 24-hour service.

20.2 Planning

20.2.1 Functional Areas

The Engineering and Maintenance Unit may consist of the following Functional Areas dependent on the Operational Policy and service demand:

- Workshop areas which may include separate areas for carpentry, mechanical, plumbing and electrical services
- Storage areas for all specialty services/trades including paint, gardening and flammable liquids
- Office area for administrative and clerical activities
- Staff amenities which may be shared.

Electronics Workshop

A separate workshop may be provided specifically for the storage, repair and testing of electronic and other medical equipment. The amount of space and type of utilities will vary with the type of equipment involved and types of service and maintenance contracts used.

Engineer Office

If on-staff, an Engineer's Office shall be provided with file space and provision for protected storage of facility drawings, records and manuals.

Gardener Facilities

A room or shed shall be provided for the storage of all the necessary gardening equipment and material. Depending upon the size of the grounds team provision of a Head Gardener's office, hand-washing facilities, toilet and showering facilities should be considered.

Storage Areas

A storage room shall be provided for the storage of building maintenance supplies. Storage for solvents and flammable liquids shall comply with relevant statutory requirements.

Workshop Areas

A general maintenance workshop shall be provided for repair and maintenance. Sufficient space is required for a workbench, drill press, angle grinder, stainless steel trough, tool peg board, storage cabinets. Floor space is also required for the standing of equipment during repairs. Adequate lighting, power and ventilation are required. Note: If Maintenance Services are externally contracted, then a Workshop is not required. Maintenance workshops incorporating carpentry, metal fabrication, plumbing, refrigeration or other noise generating trades shall be acoustically isolated from non-maintenance areas.

20.2.2 *Functional Relationships*

The Engineering and Maintenance Unit should be located on the ground floor to facilitate delivery and dispatch of heavy items of equipment. Access to a loading dock is desirable. The Unit will require ready access to all areas of the hospital and in particular, to plant rooms and areas. Depending on the size of the Unit and the Operational Policy, considerable noise and fumes may be generated by the Unit and care should be taken in locating the Unit relative to other units such as Inpatient Accommodation Units.

20.3 Components of the Unit

20.3.1 *Standard Components*

The Engineering and Maintenance Unit will consist of Standard Components. Provide Standard Components to comply with details in Standard Components in these Guidelines. Refer also to Standard Components Room Data Sheets.

20.4 Schedule of Accommodation

Typical Engineering and Maintenance Unit for a tertiary level hospital

This schedule assumes that all services are provided in-house.

Note: For maximum functionality, some of the workshop areas may be combined into one large area.

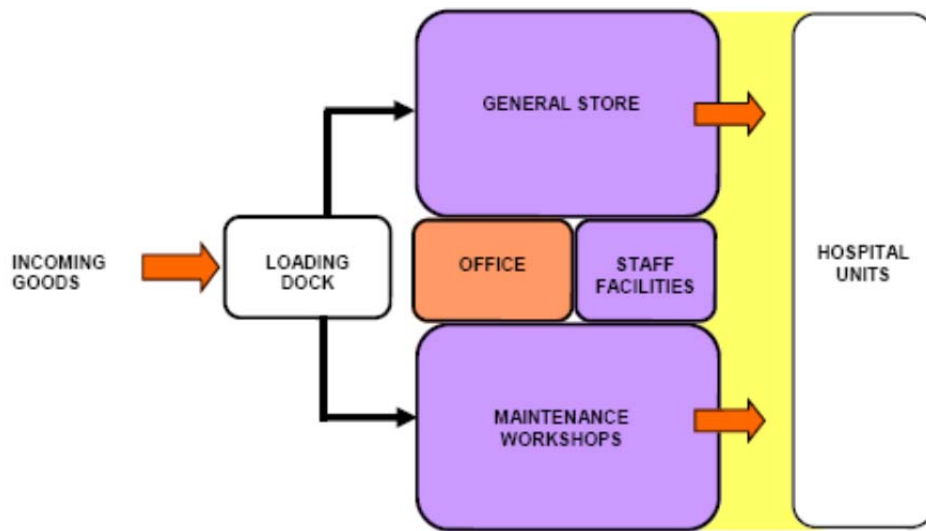
ROOM/SPACE	Standard Component								Level 5/6 Qty x m ²	Remarks
Entry/Reception										
Reception/Clerical	RECL-10-SJ								1 x 10	
Waiting	WAIT-10-SJ								1 x 5	
Office Areas										
Office – Head of Department	OFF-S9-SJ Similar								1 x 12	
Office – Managers/Supervisors	OFF-S9-SJ Similar								3 x 9	
Office – 4-Person Shared	OFF-4P-SJ								1 x 20	Administrative Support
Office – 4-Person Shared	OFF-4P-SJ								1 x 20	Leading Hands
Office – Workstation	OFF-WS-SJ								8 x 5	Facility Planners, Tenders staff, Engineers, Technical staff, Administrative support
Interview/Meeting Room	MEET-9-SJ								2 x 9	Interviews, small meetings
Meeting Room – Small	INTF-SJ								2 x 12	Tender/contract room
Meeting Room – Medium	MEET-L-15-SJ Similar								1 x 20	Group Meetings
Meeting Room – Large	MEET-L-30-SJ								1 x 30	Group meetings, teleconferencing room
Functional Engineering and Maintenance Areas										
BMS Room									1 x 20	
Command and Control Room									1 x 30	Optional; Crisis/Security management
Workshop – Mechanical	WK-GM-SJ								1 x 50	No wall between Mechanical and Civil and Electrical Room
Workshop – Electrical	WS-BM-SJ Similar								1 x 50	
Workshop – Biomedical	WS-BM-SJ								1 x 50	
Workshop/Store – Gardener	WSS-GAR-SJ								1 x 20	
Workshop/Store – Painters	WSS-PT-SJ								1 x 25	
Welding/Grinding area									1 x 20	
Plans and Drawings Room									1 x 20	With review and work areas
Support Areas										
Cleaner's Room	CLRM-5-SJ								1 x 5	
Communications Room	COMM-SJ								1 x 12	
Disposal Room	DISP-8-SJ								1 x 8	May use general waste facility
Store – Files	STFS-10-SJ								1 x 10	Documents, Minutes etc.
Store – Flammable Liquid	STFL-SJ								1 x 9	
Store – Gas Bottle									1 x 30	May be external
Store – General	STGN-20-SJ Similar								1 x 60	Supplies, spare parts, equipment
Store – Photocopy/Stationery	STPS-8-SJ								1 x 8	
Wash-up Room	WASH-SJ								1 x 10	
Staff Area										
Change – Staff (Male/Female)	CHST-12-SJ								2 x 12	
Staff Room	SRM-25-SJ								1 x 25	
Property Bay – Staff	PROP-3-SJ								2 x 3	Lockers

ROOM/SPACE	Standard Component			Level 5/6 Qty x m ²	Remarks
Total Net Department				718	
Circulation %				20	
Grand Total				861. 6	

Notes:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the Service Plan and the Operational Policies of the Unit
- Room sizes indicated should be viewed as a minimum requirement; variations are acceptable to reflect the needs of individual Unit
- Office areas are to be provided according to the Unit role delineation and staffing establishment; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus
- Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

20.5 Functional Relationship Diagram



20.6 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). 'Australasian Health Facility Guidelines'. Retrieved from website: www.healthfacilityguidelines.co.au 2014
- The Facility Guidelines Institute (US). 'Guidelines for Design and Construction of Health Care Facilities' 2010 Edition. Retrieved from website: www.fgiguideines.org 2014.