

Part B – Health Facility Briefing & Design
85 Engineering & Maintenance Unit



iHFG

International Health Facility Guidelines

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85 Engineering & Maintenance Unit

1 Introduction

General

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

- Maintenance services
- Engineering services
- Cleaning services, - external areas, windows & building fabric (refer to Housekeeping Unit for Cleaning of internal areas)
- Waste disposal (refer to Waste Management Unit for specific details)
- Gardening services
- Storage.

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, fire warning alarm systems, Nurse/ Emergency Call, Duress call systems

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

2 Planning

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

Workshop Areas

Maintenance Workshop

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.

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.

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.

Gardener's Facilities

A room or shed shall be provided for the storage of all the necessary gardening equipment and material.

Staff Areas

Offices

Offices are required for full time management staff including:

- Engineer/ Head of Department, with file space and provision for protected storage of facility drawings, records and manuals
- Head Gardener, depending on the size of the facility.

Staff Facilities

Staff Facilities will include:

- Hand washing facilities located close to all workshop area
- Toilet, Shower and lockers, that may be shared with the main hospital
- Staff Room that may be shared with the main hospital

Functional Relationships

The Engineering & 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.

3 Components of the Unit

Standard Components

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

4 Schedule of Accommodation – Engineering & Maintenance Unit

The following Generic Schedule of Accommodation is for a typical Engineering & Maintenance Unit in a Level 4 Hospital with 120 Beds and a range of diagnostic and treatment facilities. This schedule assumes that all services are provided in-house.

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

ROOM / SPACE	Standard Component				Level 4 Qty x m ²	Remarks
OFFICE - SINGLE PERSON 12 m ²	OFF-S12-I				1 x 12	If Engineer on staff
STORE - PLAN FILE	STGN-12-I				1 x 12 Optional	
STORE - FLAMMABLE LIQUID	STFL-I				1 x 9	Or Steel Cupboard
WORKSHOP/STORE - GARDENING	WSS-GAR-I				1 x 12	
PAINTER'S STORE	STFL-I STGN-9-I				1 x 9 optional	Store flammable liquids in appropriate cabinets
WORKSHOP - CARPENTRY	WK-CA-I				1 x 30 optional	Including storage
WORKSHOP - MECHANICAL	WK-MC-I				1 x 30 optional	Including storage
WORKSHOP - PLUMBING	WK-PL-I				1 x 30 optional	Including storage
CIRCULATION ALLOWANCE %					15%	

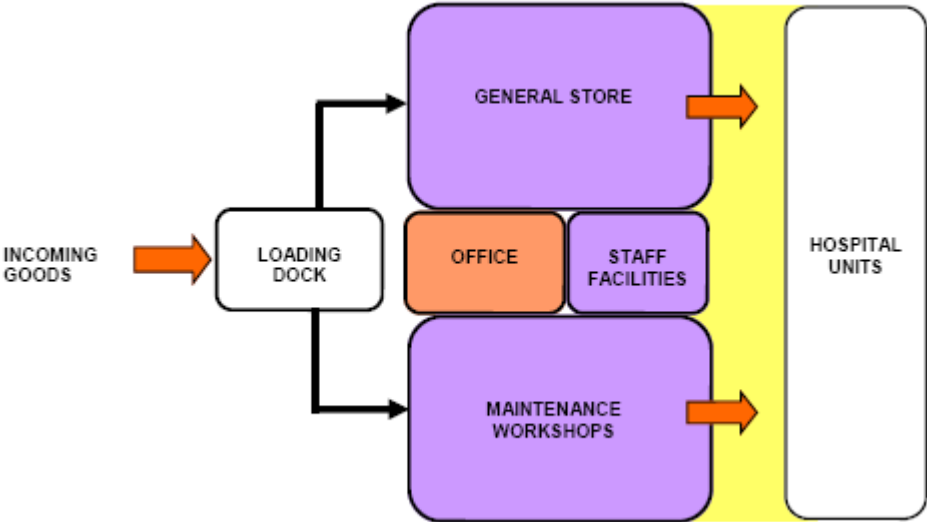
Shared Areas

ROOM / SPACE	Standard Component				Level 4 Qty x m ²	Remarks
BAY - CLEAN-IP	BCL-1.5-I				1 x 1.5	
STAFF ROOM	SRM-15-I				1 x 15	
TOILET - STAFF	WCST-I				2 x 3	Separate Male/ Female where applicable

Please note the following:

- 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 endorsed full time positions in the Unit
- Staff and support rooms may be shared between Functional Planning Units dependant on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

5 Functional Relationship Diagram – Engineering & Maintenance Unit



6 References and Further Reading

- Australasian Health Facility Guidelines, Part B Health Facility Briefing and Planning, Rev 4, 2012; refer to website www.healthfacilitydesign.com.au
- Guidelines for Design and Construction of Health Care Facilities; The Facility Guidelines Institute, 2010 Edition; refer to website www.fgiguideines.org .



The International Health Facility Guidelines recommends the use of HFBS “Health Facility Briefing System” to edit all room data sheet information for your project.

HFBS provides edit access to all iHFG standard rooms, and departments, and more than 100 custom report templates.

HFBS Health Facility Briefing System



Briefing Module

The Health Facility Briefing System (HFBS) has numerous modules available via annual subscription. It suits healthcare Architects, Medical Planners, Equipment Planners Project Managers and Health Authorities.

Use the HFBS Briefing Module to quickly drag in health facility departments or pre-configured room templates from the iHFG standard, edit the room features such as finishes, furniture, fittings, fixtures, medical equipment, engineering services. The system can print or download as PDF more than 100 custom reports including room data sheets, schedules, and more...

To learn more about the HFBS web-based Healthcare Briefing and Design Software and to obtain editable versions of the “Standard Components” including Room Data Sheets (RDS) and Room Layout Sheets (RLS) offered on the iHFG website, signup for HFBS using the link below.

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