

Part B – Health Facility Briefing & Design
215 Mortuary Unit



*i*HFG

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Table of Contents

215	Mortuary - General	3
1	General Summary.....	3
2	Introduction	4
3	Functional and Planning Considerations	4
4	Design Considerations.....	8
5	Components of the Unit.....	10
6	Schedule of Equipment (SOE)	11
7	Schedule Of Accommodation	11
8	Further Reading.....	14

215 Mortuary - General

1 General Summary

This Functional Planning Unit (FPU) covers the requirements of a Mortuary Unit. This FPU refers to a facility for the viewing and/or identification of a body and the temporary holding/ storage of bodies. The needs of hospital staff, relatives of the deceased and attendant authorised persons should be considered in the design, layout and functionality of the unit to provide a safe and private environment. Provisions of body holding can be either in a walk-in cool room for individual trolleys or a bank of refrigerated cabinets stacked vertically and/or horizontally.

The functional zones in a Mortuary Unit include Entry/ Exit Lobby, Body Holding Area, Body Washing Area, Waiting/ Viewing Area, Storage and Support Areas as well as Staff Area. An Autopsy Area may also be included if required. The size of the Mortuary depends on the body holding capacity and the Health Facility's Operational Policy. The capacity of the unit should be determined by the clinical services and service plan.

Functional Zones and a Functional Relationship Diagram is provided to indicate the optimal Internal and External Relationships with other key departments and hospital services. For Mortuary, this includes relationships with the Emergency Unit, Inpatient Units, Critical Care, Operating Unit, and Housekeeping. The Unit shall be accessible through an exterior entrance and shall be located to avoid the need for transporting bodies through public areas.

In addition, where Autopsy Services are included, a relationship with Laboratories is required.

Optimum Internal Relationships are demonstrated in the diagram according to the Functional Zones whilst indicating the important paths of travel.

Design Considerations address a range of important issues including Finishes, Accessibility, Acoustics, Safety and Security, Building Services, and Infection Control.

A typical Schedule of Accommodation (SOA) is provided using Standard Components (typical room templates) and quantities for a typical unit at Role Delineation Levels (RDL) 4 to 6. This typical SOA guides designers in creating their own project-specific SOAs.

For each of the nominated room types within the SOA, the code linking it to the corresponding Room Data Sheet (RDS) and Room Layout Sheet (RLS) has been provided. Readers may use these codes to access information on the rooms in the section titled Standard Components on the website.

Further reading material is suggested at the end of this FPU but none is regarded as mandatory.

Users who wish to propose minor deviations from these guidelines should use the Non-Compliance Report (in Part A appendices) to briefly describe and record their reasoning based on models of care and specific circumstances.

The details of this FPU follow overleaf.

2 Introduction

The Mortuary Unit or Morgue is a facility for the temporary holding and storage of bodies. It may also be used for viewing and/ or identification of the deceased persons.

The needs of hospital staff, relatives of the deceased and attendant authorised persons should be considered in the design, layout and functionality of the unit to provide a safe and private environment.

The design must address the following:

- Number of bodies to be stored
- Method of storage i.e. refrigerated cabinets, cool room, freezing capacity
- Discreet separate entry point for families to view/ identify bodies
- Delivery of bodies from inside the hospital and external delivery (if applicable)
- Transfer of bodies outside the facility

It should be noted that the standard hospital Morgue facility should not be used for the storage of bodies associated with criminal investigations. In such cases the body is regarded as evidence, and enhanced security should be provided. Such facilities are generally centralised and Government controlled.

Autopsy facilities are optional. According to the local laws Autopsy may be centralised and provided only in certain Government facilities. This FPU does not cover centralised Government Morgues.

3 Functional and Planning Considerations

Operational Model

Hours of Operation

Working hours will be on a routine eight hours per day, five days per week. Work times are assumed 8.00am-5.00pm. The Hospital Morgue Unit will also be accessible to authorised personnel 24 hours per day and 7 days per week.

Body Holding Capacity

The size of the Mortuary Unit is primarily determined by the body holding capacity. The body holding capacity should be proportional to the number of beds in the hospital and its operational policies. It should also consider factors such as bodies being delivered to the hospital from outside the facility i.e. not from departments within the hospital.

There are two options available for body-holding provisions:

- Walk-in cool room for multiple trolleys
- Bank of individual refrigerated cabinets each accommodating 2, 3 or 4 bodies

In addition to the body holding capacity, consideration should be given to the following:

- Security of bodies
- Isolation and bariatric needs
- Expected length of time for retention of bodies

Morgue cold chambers could be provided in two ways as follows:

- Positive temperature +2/+4°C (the most common type)
- Negative temperature -15°C/-25°C (used by forensic institutes for the storage of bodies that have not yet been identified)

Planning Models

The Unit should be ideally located in the same building as the main health facility away from any public area to ensure that it is appropriately screened from visibility.

It should be ideally located at ground level to allow easy and discrete access to deliver and/ or remove bodies via an exit lobby. If ground level is congested or not available, the second-best alternative is the basement.

The size of the Unit will depend on the size of the facility, the calculated number of bodies to be stored and its Operational Policy. The size is also influenced by the cultural and religious factors. In some societies, bodies must be buried within a short time and therefore the Mortuary Unit tends to be very small.

Functional Areas

The Hospital Mortuary Unit consists of the following key Functional Zones:

- Entry Lobby/ Exit Lobby
- Body Holding Area
- Body Washing Area
- Autopsy Area (Optional)
- Waiting/ Viewing Area
- Storage and Support Area
- Staff Area

Entry Lobby/ Exit Lobby

The Entry Lobby to the Unit is commonly connected with an internal corridor of the facility from where bodies enter. This also forms an air lock prior to entering the Body Holding Area. The Exit Lobby will provide access for body retrieval from the Body Holding Area directly to the outside where a vehicle can be parked close by.

Transport Trolley parking can be considered in the Lobbies if additional space is required to accommodate mobile equipment. Both Lobbies should have access to hand washing facilities.

Body Holding Area

The Body Holding Area provides refrigerated space for the temporary storage of bodies. One part of the Area will include refrigerated cabinets stacked or placed side by side to the quantity as defined in the Operational Policy. Separate cabinets should be provided for isolation purposes. Ample space to be provided in front of refrigerated cabinets for manoeuvring and withdrawing trays using special lifting devices which are typically battery operated.

Alternatively, if cool rooms are preferred a minimum of 3m² per body holding (body on a loose tray or trolley) should be provided.

In both options (refrigerated cabinets and cool rooms) the bodies may be stacked 2, 3 or 4 high. It is recommended that some body cabinets (or bays) should be larger for bariatric or bloated bodies.

A hand wash basin is required and ideally positioned with easy access to the entry and exit lobbies. A workstation for body registration and removal records can be provided here or in a separate office within the Unit.

Based on a risk assessment in the hospital service plan, a small percentage of bodies may be bloated due to drowning. For such bodies, extra-large fridge bays will be required.

Within the body holding area or an adjacent corridor or bay, facilities for charging the electrical trolley lifters should be provided.

Body Washing Area

Body Washing Area to be located adjacent to the Body Holding Area. Stainless Steel tables with integral plumbing facilities and extendable hose should be found in the centre of the room.

A separate sink and hand wash basin are required. A stainless-steel bench, waste bins and storage facilities should be provided in this area.

Autopsy Area (Optional and Restricted)

The provision of Autopsy is governed by the Laws of the Country. Autopsy may not be permitted in all Hospitals, especially in Private Hospitals. The permission to provide Autopsy services should be checked with the responsible authorities.

The Autopsy Area should be located adjacent to the body cool store and have ready access to a clean-up or Dirty Utility area. Autopsy rooms should provide height adjustable post-mortem table/s which are easily cleanable and free from areas and details which may harbour potentially infectious material.

Downdraught ventilated tables are preferred. Each table should have a hot and a cold water supply and a waste outlet.

Waiting/ Viewing Area

Provide discrete and dedicated entry to the Unit for family members. This can be directly from outside and separate from the Exit Lobby.

Separate Male and Female Waiting areas may be required according to custom. Waiting areas are separate from Viewing Area. Waiting areas should have direct visibility through internal windows into the adjoining Viewing Area. Toilet facilities for both male and female should be provided in close proximity to the Waiting area.

Storage and Support areas

Provide sufficient storage area to the Unit for plastic body bags and sealing machine and other consumables. Lockable storage for personal effects of the deceased should be considered.

Provide Clean-up room including storage of waste and used linen within the Unit.

Provide Cleaner's room including cleaning equipment, materials and cleaning agents.

Staff Area

Staff Area to include the following:

- Changing facilities including lockers and toilets
- Storage of Clean Linen (can be inside the Change Rooms)
- Office(s) if required
- Meeting Room/s for education and tutorial sessions as well as meetings (optional or shared)

Functional Relationships

A functional Relationship can be defined as the correlation between various areas of activity which work together closely to promote the delivery of services that are efficient in terms of management, cost and human resources.

External

Mortuary/ Holding facilities shall be accessible through an interior and exterior entrance and shall be located to avoid the need for transporting bodies through public areas. It should also be located in proximity to Anatomical Pathology laboratories (if provided) and relevant clinical areas for transportation of laboratory specimens, if Autopsy is performed.

The Unit should also have:

- Direct access from the Hospital for delivery of the body
- Direct but separate and discreet access for relatives of the deceased from all relevant areas of the hospital to Mortuary Unit's waiting/ viewing area
- Adequate access for vehicle parking and screening provision surrounding the collection of bodies.
- Adequate access for ambulances delivering bodies
- Adequate access for police vehicles

Internal

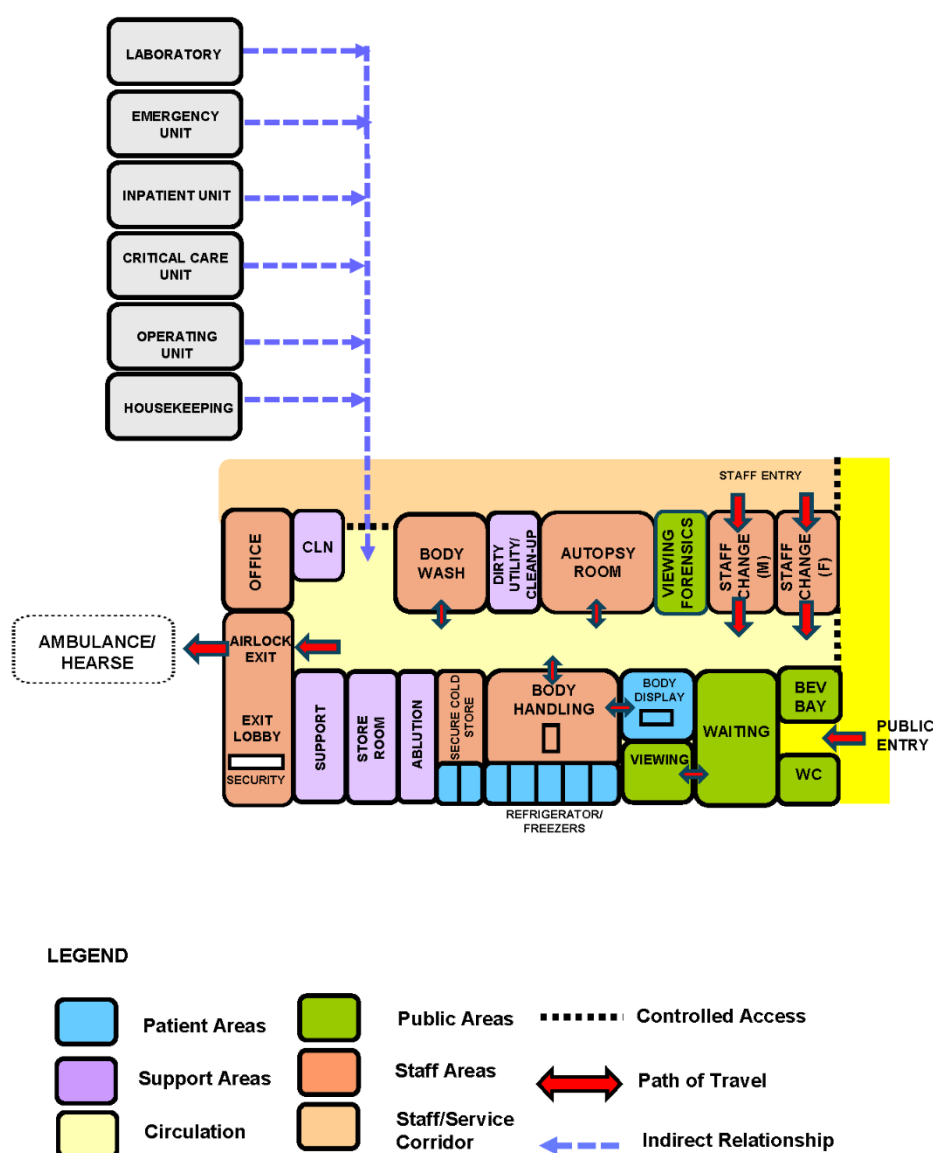
The Waiting Area and Viewing Area should be collocated however there should be no access to other sections of the Morgue for viewers.

The Body Holding Room is to have direct access to/from:

- The hospital corridor for use by staff
- Viewing Room
 - Discreet access from body hold/ cool room to hearse and ambulance or private vehicle parking bays

Entry Lobby, Exit Lobby and Administrative Area form part of a single area.

Functional Relationships Diagram



4 Design Considerations

General

The design of the Unit shall provide staff with sufficient space, working surfaces and appropriate equipment to safely carry out their duties. Infection control, cooling and ventilation must be considered.

The Viewing Room and Waiting Areas shall be pleasant spaces with consideration given to adjustable lighting and possibly provision of a music system.

The Unit shall be ergonomically designed to avoid any potential injury to staff, family members and maintenance personnel.

Body storage up to triple stacked fits within the general ceiling height of 2700mm used in hospitals. However, quadruple stacked storage will likely require additional height.

Designers should check the exact height of the refrigerators or body racks to inform the correct ceiling height.

Easy access should be provided for the maintenance staff, especially in relation to the refrigeration facilities.

Environmental Considerations

Acoustics

Acoustic design shall ensure that conversations in adjoining rooms cannot be overheard by relatives in the viewing/ waiting areas.

Natural Light

While natural light may not always be a primary consideration in mortuary design, it can offer several benefits that should be considered where feasible. By carefully balancing natural light with practical needs, mortuaries can create a more positive and respectful environment for both staff and visitors.

Privacy

Privacy in a mortuary setting is crucial to maintaining the dignity of the deceased and respecting the rights of their loved ones. This involves ensuring confidentiality of personal information, protecting the body from public view, and providing a space for dignified visitation and customary mourning practices.

Interior décor

While body washing, cold storage and autopsy areas will need to be designed with finishes tuned to cleanliness, infection control, and appropriate lighting, the body viewing areas, waiting areas, etc. where the public may be provided access should take into consideration appropriate colours and finishes aligned to cultural and customary practices and traditions.

Space Standards and Components

Accessibility

All areas, both those accessed by staff of the Mortuary Unit and those accessed by the public, should be designed to be accessible and provided with appropriate accessible amenities (including accessible toilets and other facilities).

Ergonomics/ OH&S

Trolleys and transfer devices to enable safe handling of bodies should be provided sufficient to cater for the anticipated volume of bodies being managed each day, including provision to manage bariatric bodies. Procedures will need to be put in place to adequately address how bodies should be moved/lifted/etc. including manoeuvring onto post-mortem tables and washing facilities.

Safety and Security

Selection of interior finishes to the Mortuary Unit shall consider the impact on safety aspects including adequate drainage, protection from protrusions or sharp edges, stability and height of equipment or fittings, adequate protection against infection and other hazards.

The security aspects of the Unit will include storage of the bodies, valuables left by the deceased, staff personal belongings and security, access and egress, especially after hours.

If an autopsy facility is available, the storage and disposal of specimens during their removal shall be handled with care via a secure refrigerated storeroom.

Finishes

Floor Finishes

Floor finishes shall be non-slip for all wet areas or areas subject to water. It should be impervious, easy to clean, sealed with covering at the edges and have adequate drainage. Drains should be fitted with appropriately filtered traps for ease of hosing down.

Wall finishes

Wall surfaces in the body holding area should be washable and/or scrubbable.

Ceiling finishes

Ceiling linings within the Unit are to be washable, impermeable, and non-porous.

Refer to Part C - Access, Mobility and OH&S.

Fittings, Fixtures and Equipment

The Equipment layout of the Mortuary Unit shall ensure:

- Adequate provision for operation and maintenance
- Provision of services as required
- Doors sized to allow for delivery and removal of the equipment
- Design for the required heat loads
- Adequate provision for weight loads

Building Service Requirements

This section identifies unit specific services briefing requirements only and must be read in conjunction with Part E - Engineering Services for the detailed parameters and standards applicable.

Mechanical Services (HVAC)

The temperature of the body holding area should be maintained within a comfortable range not exceeding 20-21°C. The ventilation system should be isolated from other ventilation systems by being designed to minimize the spread of odours and airborne pathogens.

The working area of the body holding is regarded as a non-refrigerated area. The autopsy area is also regarded as a non-refrigerated area with the temperature ranging from 20 to 21°C. This non-refrigerated area, which handles bodies should be kept under negative pressure. Refrigerated cabinets or rooms do not require negative pressure.

The operating temperatures of all cooled and freezing facilities should be continuously monitored and fitted with alarms which are activated when the temperature exceeds a predetermined level. The alarms should be transmitted to a permanently manned workstation.

The risk of a single source of failure for the refrigeration systems should be considered and if necessary, backups should be provided.

All HVAC units and systems are to comply with services identified in Standard Components and Part E – Engineering Services.

Electrical Services

Provide protective covers to power supply outlets to protect outlets from becoming wet. Provide an emergency back-up system for the power supply to the refrigeration with high priority equipment and illumination.

Refer to Part E - Engineering Services for details.

Information Technology (IT) and Communications

It is recommended that an intercom be provided from the main/ exit (external) door/s to the to the body holding area to alert attendants.

Infection Control

Bodies stored in the Mortuary Unit which may contain infectious diseases must be contained.

Cleaned instruments and materials shall be re-circulated under normal procedures through the Sterile Supply Unit or autoclaved within the Mortuary Unit. The unit shall be designed to control infections utilising the following:

- Layout designed to minimise cross contamination in work areas
- Provision of a small wash-down/ disposal/ booting area
- Provision of an adequate number of hand wash facilities
- Provision of appropriate cleaning, waste storage and waste disposal
- Use of suitable materials and finishes
- Specimen storage facilities
- First aid facilities
- Adequate isolation of space and ventilation systems which present potential hazard

Handbasins

Handbasins for staff hand washing are required in areas where handling of the bodies occurs.

Antiseptic Hand Rubs

Antiseptic Hand Rub dispensers can be provided within the Unit and to comply with Part D - Infection Control. Antiseptic Hand Rubs, although very useful and welcome, cannot fully replace Handwash Bays. A combination of both is required.

Refer to Part D – Infection Control for additional details.

Safety Showers and Eye Wash

Provision of safety shower and eye wash or eye/ face wash equipment within the Unit.

5 Components of the Unit

Standard Components

Standard Components are typical rooms within a health facility, each represented by a Room Data Sheet (RDS) and a Room Layout Sheet (RLS).

The Room Data Sheets are written descriptions representing the minimum briefing requirements of each room type, described under various categories:

- Room Primary Information; includes Briefed Area, Occupancy, Room Description and relationships, and special room requirements).
- Building Fabric and Finishes; identifies the fabric and finish required for the room ceiling, floor, walls, doors, and glazing requirements.
- Furniture and Fittings; lists all the fittings and furniture typically located in the room; Furniture and Fittings are identified with a group number indicating who is responsible for providing the item according to a widely accepted description as follows:

Group	Description
1	Provided and installed by the Builder/ Contractor
2	Provided by the Client and installed by the Builder/Contractor
3	Provided and installed by the Client

- Fixtures and Equipment; includes all the serviced equipment typically located in the room along with the services required such as power, data and hydraulics; Fixtures and Equipment are also identified with a group number as above indicating who is responsible for provision.
- Building Services; indicates the requirement for communications, power, Heating, Ventilation

and Air conditioning (HVAC), medical gases, nurse/ emergency call and lighting along with quantities and types where appropriate. Provision of all services items listed is mandatory.

The Room Layout Sheets (RLS's) are indicative plan layouts and elevations illustrating an example of good design. The RLS indicated are deemed to satisfy these Guidelines. Alternative layouts and innovative planning shall be deemed to comply with these Guidelines provided that the following criteria are met:

- Compliance with the text of these Guidelines
- Minimum floor areas as shown in the schedule of accommodation
- Clearances and accessibility around various objects shown or implied
- Inclusion of all mandatory items identified in the RDS

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

6 Schedule of Equipment (SOE)

Room Name		
Mortuary - Body Washing & Embalming Room, Room Code (mor-bw-i)		
Embalming unit	Table: body wash with sink	
Mortuary - Autopsy Room, Room Code (mor-au-i)		
Light: procedure	Scale: organ/ tissue/ swab	Table: autopsy, with sink
Scale: morgue (optional)		
Mortuary - Cool Store/ Body Holding Room, Room Code (mor-cs-i)		
Cool room & rack system with body trays	Refrigerator: morgue (optional)	Freezer: morgue (optional)
Trolley: mortuary		

7 Schedule Of Accommodation

The Schedule of Accommodation (SOA) provided below represents generic requirements for this Unit. It identifies the rooms required along with the room quantities and the recommended room areas. The simple sum of the room areas is shown as the Sub Total. The Total Area is the Sub Total plus the circulation percentage. The circulation percentage represents the minimum recommended target area for internal corridors in an efficient and appropriate design.

Within the SOA, room sizes are indicated for typical units and are organized into Functional Zones. Not all rooms identified are mandatory therefore, optional rooms are indicated in the Remarks. These guidelines do not dictate the size of the facilities, therefore, the SOA provided represents a limited sample based on an assumed unit size.

The actual size of the facilities is determined by Service Planning or Feasibility Studies. Quantities of rooms need to be proportionally adjusted to suit the desired unit size and service needs.

The table below shows a typical Unit within a Hospital from RDL 4 to 6.

Any proposed deviations from the mandatory requirements, justified by innovative and alternative operational models may be proposed within the departure forms included in Part A of these guidelines for consideration by the health authority for approval.

Mortuary Unit

Room/ Space	Standard Component Room Codes	RDL 4 - 6 Qty x m2			Remarks
Mortuary Unit					
Waiting – (Male/Female)	wait-15-i	2	x	15	Gender separation according to local custom
Viewing Room	mor-vr-i	1	x	9	Provide viewing windows to the waiting areas
Toilet – Accessible (Male/ Female)	wcac-i	2	x	6	Separate for Male and Female or shared with other WCs if nearby.
Airlock - Entry	airl-6-i	1	x	6	
Office - Workstation	off-ws-i	1	x	5.5	
Bay - Mobile Equipment	bmeq-4-i	1	x	4	For transport equipment/ trolley
Bay - Handwashing, Type B	bhws-b-i	1	x	1	
Mortuary - Exit Lobby	mor-ex-i	1	x	7	
Mortuary - Cool Store/ Body Holding Room	mor-cs-i similar	1	x	35	Sized for 12 body holding capacity; body holding area with refrigerated cabinets, triple stacked, or 16 bodies quadruple stacked (not including the fridges)
Mortuary - Body Washing / Embalming Room	mor-bw-i	1	x	18	Typically used before the transfer of bodies
Ablution Room	ablu-13-i similar	1	x	5	Optional, Adjacent to body washing room
Cleaners Room	clrm-6-i	1	x	6	
Mortuary - Clean-up Room	mor-cu-i	1	x	6	
Disposal Room	disp-8-i similar	1	x	5	
Change – Staff (Male/ Female)	chst-12-i similar	2	x	6	Lockers, WC and optional shower (allow additional 2m2 per shower cubicle); separate Male and Female
Store - General	stgn-8-i	1	x	8	
Office - Single	off-s9-i	1	x	9	Optional
Sub Total			164.5		
Circulation %			20		
Area Total			197		

Autopsy (Optional cased on the hospital service plan and Govt permission)

Room/ Space	Standard Component Room Codes	RDL 4 - 6 Qty x m2			Remarks
Mortuary Unit					
Autopsy Room	NS	1	x	15	Number of bays as per the service plan
Viewing Room	mor-vr-i	1	x	8	The area is per station
Viewing Room	obs-i similar	1	x	8	Police and forensic personnel only, Bench and chairs Optional
Secure Sample Store	stgn-8-i similar	1	x	5	Lockable, Optional Refrigerators
Dissection Bay /Room	mor-bw-i	1	X	18	May be integrated with the Autopsy Room
Police / Legal Office	off-s9-i	1	X	9	
Sub Total		61			
Circulation %		20			
Area Total		73			

Please note the following:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the Standard Components.
- All the areas shown in the SOA follow the No-Gap system described elsewhere in these Guidelines.
- Exact requirements for room quantities and sizes shall reflect Key Planning Units (KPU) identified in the Clinical Service Plan and the Operational Policies of the Unit.
- The room sizes indicated should be viewed as a minimum requirement; variations are acceptable to reflect the needs of individual Unit.
- Offices are to be provided according to the number of approved full-time positions within the Unit.

8 Further Reading

In addition to Sections referenced in this FPU, i.e., Part C- Access, Mobility, OH&S and Part D - Infection Control and Part E - Engineering Services, readers may find the following helpful:

- International Health Facility Guidelines (iHFG) www.healthdesign.com.au/iHFG
- The Facility Guidelines Institute (US), Guidelines for Design and Construction of Hospitals, 2022. Refer to website www.fgiguideines.org
- The Facility Guidelines Institute (US), Guidelines for Design and Construction of Outpatient Facilities, 2022. Refer to website www.fgiguideines.org
- NHS England | Health Building Note 00-04: Circulation and communication spaces ; refer to <https://www.england.nhs.uk/publication/designing-stairways-lifts-and-corridors-in-healthcare-buildings-hbn-00-04/>
- NHS England | Health Building Note 16-01: Facilities for mortuaries, including body stores and post-mortem services, refer to <https://www.england.nhs.uk/publication/hbn-16-01-facilities-for-mortuaries-including-body-stores-and-post-mortem-services/>
- Rob Lord, Director, SEED Engineers, Ventilation and Lighting in Funeral Homes and Mortuaries <https://seedengineers.com/ventilation-lighting-funeral-homes-mortuaries-2/>