Scottish Health Planning Note 20

Facilities for Mortuary and Post-Mortem Room Services

Design and briefing guidance

NHSScotland, P&EFEx, January 2002

Contents

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About this series

The Scottish Health Planning Note series is intended to give advice on the briefing and design of healthcare premises in Scotland and appropriate professional bodies.

Scottish Health Planning Notes are aimed at multidisciplinary teams engaged in:

- designing new buildings;
- adapting or extending existing buildings.

Throughout the series, particular attention is paid to the relationship between the design of a given department and its subsequent management. Since this equation will have important implications for capital and running costs, alternative solutions are sometimes proposed. The intention is to give the reader informed guidance on which to base design decisions.

This guidance is based on core guidance produced by NHS Estates, England and adapted for use in Scotland by the Property and Environment Forum Executive on behalf of the NHSScotland Property and Environment Forum. It replaces Scottish Hospital Planning Note 20: 'Mortuary and post-mortem rooms' 1993.

Facilities for mortuary and post-mortem room services provides guidance to NHSScotland organisations on planning and designing comprehensive Mortuary and Post-Mortem Facilities. It includes accommodation for:

- the receipt, temporary storage, viewing and removal of bodies;
- post-mortem examinations;
- visiting relatives/friends;
- teaching and research.

The guidance may be used where the full facilities are not necessary, for example where a body store with viewing only is required.

Recent years have seen an increase in hospital mortuary throughput, which has resulted in a shortage of body storage spaces and even post-mortem tables in some cases. This document sets out the factors that need to be considered when calculating requirements for body storage and post-mortem tables.

It recommends that temporary body storage facilities may be used to cope with both expected increases in deaths (for example due to seasonal variations) and unexpected increases (for example due to major disasters). Decisions about

temporary storage facilities should be planned in advance and agreed with the Trust board.

The schedules of accommodation listed at the end of this document have adopted a modular approach to planning to enable project teams to "pick and mix" those facilities that are required.

At the start of any project the three reference guides (Fire Safety, Planning and Technical Guidance) should be consulted to verify what is the current Scottish or English Guidance approved for use in Scotland.

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Dr P Fineron	Forensic Medicine Unit, Department of Pathology, The University of Edinburgh Medical School.
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1. Scope of SHPN 20

Introduction

1.1 This document gives guidance on the planning and design of comprehensive NHSScotland mortuary and post-mortem (PM) facilities. It covers body receipt and temporary storage, body viewing, accommodation for visiting relatives, examination by PM, and the demonstration of PM findings in cases of clinical interest and for teaching purposes. The guidance may be used where the full facilities are not necessary, for example where a body store with viewing only is required.

1.2 This document replaces Scottish Hospital Planning Note 20 – 'Mortuary and post-mortem room' (published in 1993).

1.3 Whilst this guidance provides information that is current at the time of publication, there are obviously wider considerations associated with the subjects covered, and other related published guidance must, therefore, be taken into account. Additionally, some aspects of this guidance may be amended or qualified in the future. Project teams should consequently ensure that they check the currency of documents referred to within the text.

1.4 The Scottish Capital Investment Manual contains the procedural framework governing the inception, planning, processing and control of individual health building schemes. There are various mandatory requirements within this overall process, but the way these tasks are carried out is mainly for NHSScotland Trusts to determine. Approval from the Scottish Executive Health Department for business cases will depend on how NHSScotland organisations intend to carry out the mandatory tasks. The Manual gives guidance on the technical considerations of the full capital appraisal process and also provides a framework for establishing management arrangements to ensure that the benefits of every investment are identified, realised and evaluated. It emphasises three key points:

- each individual scheme must be supported by a sound business case. A business case must convincingly demonstrate that the investment is economically sound (through an option appraisal) and financially viable (affordable to the trust and its purchasers);
- an exploration of private finance alternatives should be viewed as a standard option whenever a capital scheme is being considered. Once the Outline Business Case has been approved, the preferred option should be compared to potential private finance alternatives. Approval of the Full Business Case will not be given unless there is a clear demonstration that the private finance alternatives have been adequately tested;
- the delivery of a major capital project is a difficult and complex task. Nevertheless, failure to deliver on time and to cost diverts resources from

direct patient care. The establishment of an appropriate project organisation is essential to ensure that projects are delivered within agreed budgets and timescales.

Building cost and revenue expenditure

General

1.5 General guidance on matters pertaining to building cost and revenue expenditure is given in Chapter 5 of SHPN 03 – 'General design guidance'.

1.6 When calculating the building cost of the Department described in this Note, allowance should be made for all accommodation, appropriate to the particular project, described in Chapter 6 and listed in the Schedules of Accommodation, the engineering services described in Chapter 8 and all Group 1 equipment. Primary engineering services should be costed from the boundary of the site and, where appropriate, an allowance should be made for a share of the central refrigeration plant and distribution system.

Functional Unit

1.7 The functional unit used to express the functional content of an endoscopy unit is the 'endoscopy room'.

2. General Service Considerations

Functions of a mortuary and post-mortem facility

2.1 A mortuary and PM facility fulfils five functions, which, so far as possible, should be kept physically separate. These five functions are:

- the receipt and temporary storage of bodies;
- investigations into the cause of death by performing a PM examination of the body;
- the demonstration of PM findings in cases of clinical interest or for teaching purposes;
- the viewing and/or identification of a body;
- accommodating visiting relatives/next of kin.

2.2 In a complete facility, it must be possible for these five functions to be carried out simultaneously in safety and privacy within the overall accommodation, which should be designed to achieve this end. In all facilities the receipt, temporary storage, viewing and collection of bodies must be achieved safely, and with discretion and dignity. Procedures for body viewing must also respect the sensitivities of the bereaved.

2.3 Post-mortems may be required on:

- deaths occurring in hospital, which are covered by the local hospital trust;
- people brought to the A&E department who are dead on arrival;
- deaths occurring outside the hospital.

Assessment of scale of provision

2.4 The size and type of facility required will depend upon the maximum number of bodies to be stored, and the maximum number of foreseeable PMs to be carried out. In circumstances where PMs are not carried out on-site, mortuary facilities only will be required. In exceptional circumstances bodies may be stored, for a few hours only, in a designated secure room within the hospital as long as due dignity is afforded to the body.

Calculating requirements for the number of body storage compartments and post-mortem tables

2.5 Recent years have seen an increase in throughput to hospital mortuaries. The end result is that many mortuaries have insufficient body storage compartments. A number may also have insufficient PM tables. Failure to provide sufficient body storage compartments and/or PM tables can lead to the need for expensive reconfigurations of facilities at a later date.

2.6 There is no simple formula for calculating requirements. The experience of the mortuary manager and senior technician should be used to identify future needs, drawing heavily on mortuary records as well as service plans. The following factors should be taken into account.

2.7 Where the planned facility replaces an existing facility, assess the adequacy of the existing facility using:

- information on current usage of the body store, looking at occupancy over the last three years, identifying peaks and troughs and paying particular attention to Bank Holidays and seasonal variations;
- information on number of PMs performed, looking at average daily figures and identifying any uneven distribution of workload;
- information on arrangements for disaster planning;
- critical analysis of circumstances where occupancy of the body store has risen to 95% or greater;
- information on planned service changes (including A&E department closure/relocation/opening) that might be expected to alter any of the following:
  - (i) in-patient death rate;
  - (ii) patient throughput;
  - (iii) patient population;
  - (iv) location of mortuaries (especially where mergers are planned, and mortuaries may be combined).

2.8 Additional factors that need to be considered in deciding the number of PMs tables are:

- the need for pathologists to be able to perform efficiently more than one PM examination at a single attendance in the mortuary;
- an assessment of the length of time normally required to perform a PM and the time required for preparation of the body prior to and after the examination;

- the number of pathologists, the estimated time they could devote to PM work, and the number of mortuary staff available to assist them. Pathologists may need to work simultaneously at adjacent PM tables.

2.9 Current mortuary practices should be reviewed with a view to streamlining or improving processes. This should involve discussions with other relevant stakeholders, including registrars, crematoria, funeral directors and local religious and community leaders. If the facility also acts as a public mortuary, it will be necessary to involve the police and Procurator Fiscal's office.

2.10 Where an entirely new facility is planned, in addition to the above factors, the following should be taken into account:

- the anticipated (live) patient throughput to the hospital;
- the likely in-patient death rate (based either on local information or national figures for relevant patient groups);
- the potential for seasonal variation (for instance, this is likely to be higher in an acute hospital than in an ambulatory care unit. It is also likely to be higher in areas that experience seasonal population changes, for example tourist areas and holiday resorts);
- the effect on other local mortuary facilities (that is, is this facility going to lead to a reduced demand for local alternatives?).

General issues

2.11 Occupancy is likely to increase during periods of epidemics or other widespread illness (most often during winter) and at Bank Holidays due to delays in funeral/removal arrangements. There should be sufficient body storage compartments (some of which may be of a temporary nature) and the capacity to carry out the required number of PMs to cope with an average winter increase in deaths.

Temporary increases in body storage requirements

2.12 Temporary body storage may be needed in a variety of circumstances, including:

- expected increase in deaths, for example during winter and/or due to seasonal variations in certain locations/circumstances;
- unexpected increases in deaths, for example due to major disasters and epidemics;
- planned decreases in capacity, for example due to refurbishment of facilities;
- unplanned decreases in capacity, for example due to damage to existing facilities.

2.13 In emergencies, it may be necessary to store bodies on trolleys in a secure room where the temperature can be reduced, for example an unused ward. This should be seen as an extreme measure and not as the solution of choice. In the past, there have been some instances of short-term body storage provision where the dignity of the deceased has not been adequately respected. Where emergency procedures are brought into action to cope with an increased demand for body storage, the dignity of the dead must be upheld at all times.

2.14 Planned or expected lack of capacity can be dealt with in a variety of ways:

- by negotiation with other local mortuaries (both public and private);
- by negotiation with funeral providers, crematoria and registrars to speed up throughput;
- the purchase or rental of extra “flat-pack” fridges installed in a suitable space, preferably within or adjacent to the mortuary;
- the installation of a temporary, custom-built, free-standing refrigerated store, which is secure, suitably screened and adjacent to the mortuary, with a discreet covered access and egress point.

2.15 The use of refrigerated vehicles or trailers, double occupancy of trays, trolleys and tables, and the laying of bodies on or off trays or stretchers on the floor is never acceptable and should be avoided at all times. Where a temporary refrigerated body store is installed, it must be secure and discreet, both in appearance and in its siting. It may be necessary to install temporary fencing to prevent the temporary facility being overlooked.

2.16 Decisions about temporary storage facilities should be planned in advance and agreed with the trust board. This should include procedures for dealing with both expected and unexpected increases in deaths. Trusts should also expect suppliers of temporary facilities to provide guidance on the use of equipment.

Joint NHS/public mortuary and post-mortem facilities

2.17 NHSScotland trusts should consult with the Procurator Fiscal and Chief Constables to ascertain whether joint mortuaries (on a cost-sharing basis, including capital costs) could meet the needs of both organisations. The main advantages of such arrangements are:

- all PMs can be done in the hospital, including those on patients who died outside of hospital. Hospital medical staff with an interest in the examination can attend more easily. The pathologist is more likely to be fully briefed on the events prior to death. Easy access to laboratory facilities for investigations on specimens obtained during the PM and access to patient records enhances the educational value of the PM and its role in clinical quality assessment and medical audit;
- staff time may be saved;

- the bereaved may feel more comfortable visiting a hospital that is familiar to them rather than a public mortuary, especially if there are PM findings to explain;
- the potential for reduced capital and revenue costs as a result of economies of scale.

2.18 When a joint NHS/public mortuary and PM facility is being planned, the following factors should be considered:

- the need for suitable arrangements to cope with increased vehicular traffic to the mortuary and receipt of bodies arriving from outside the hospital out of normal working hours;
- the need for additional security arrangements, for example lockable body store facility and safe storage of clothing and other belongings removed from bodies;
- the need for the forensic pathologist to have exclusive use of the mortuary, or part of it, on particular occasions. Consideration should be given to a second PM room;
- the need for the Procurator Fiscal, police, persons identifying the body, photographic and video-recording crews and other personnel to attend as necessary. This will have an impact on permanent and intermittent space requirements;
- the likelihood of there being a greater number of malodorous or verminous body cases from community-based deaths, for example even greater consideration should be given to the location and orientation of the mortuary to minimise problems that may arise from solar gains when dealing with a malodorous body. Good ventilation is a crucial consideration here;
- the need for facilities for the cleansing and containment of infections associated with unclean human remains;
- the likelihood of major forensic work being undertaken, for example in cases of suspected homicide. This would be decided locally after consultation with, for example, the forensic pathologist, the Procurator Fiscal and the police. The following facilities may be required: deep-freeze body storage compartments; mobile imaging facilities, or easy access to a radio-diagnostic department which may need to be open outside normal working hours; photographic facilities; a direct private telephone line; and additional storage areas;
- the need for an observation gallery or tiered area, physically separated from the PM room, for several people to view PMs;
- the need for additional body storage spaces and PM tables due to Local Authority demands may warrant the appraisal of alternative systems of body storage and provision in the PM room, (that is, double-ended body stores, tray storage using the tray as an alternative to the PM table-top), and the provision of more than one PM room;

- the enhanced need for adequate air conditioning of the mortuary and PM room because of heat generated by photographic and video recording equipment and/or solar heat gain;
- the need for even greater care in terms of the selection of the mortuary site, especially in view of the first and fifth bullet points.

3. General functional and design requirements

Introduction

3.1 This Chapter provides guidance on a range of topics which should be taken into account when designing a mortuary and PM facility. Reference should also be made to SHPN 03 for items of general guidance affecting all healthcare departments.

Security

3.2 The nature of the work that takes place within the accommodation may attract unwanted visitors. Unauthorised entry must be prevented for reasons of both health and security. If the mortuary may be staffed at any time by only one person, a risk assessment should be carried out to take account of the particular risks associated with lone working. Consideration should be given to security issues that might arise due to out of hours delivery of bodies to the mortuary. Visitors and undertakers will only gain access to the mortuary after operating a bell or audio-intercom at the appropriate entrance (see paragraph 3.11). Consideration should be given to the use of audio-visual intercoms, door alerts/alarms, video surveillance and remote locking of entrance doors.

Storage

3.3 As well as the routine need to safeguard supplies of linen, instruments and cleaning materials against theft, there are special needs for storage in a mortuary and PM facility:

- staff change their clothes in the facility. Storage lockers will, therefore, be needed for holding personal clothing and other personal items, as well as stocks of clean protective garments;
- it is the usual practice to remove from bodies, for safekeeping, all valuables that have not been removed previously. Storage facilities will be required for this purpose;
- some bodies are admitted fully-clothed. It is usual for the police to secure items of value in these cases but if the clothes are not to be removed until the time of the PM examination, a local policy to determine how the possessions of the deceased are to be held is required, and lockable storage space may be needed in the mortuary.

Fittings and equipment

3.4 Fittings and equipment should be made of robust, impervious, non-rusting, non-decaying and non-staining materials, which will not deteriorate under continuous hard use. They should be designed for ease of cleaning (on all sides of all fittings wherever possible).

3.5 Ledges in the details of floors, walls and door junctions should be avoided. All joints should be sealed.

Floors and drainage

3.6 Channel gratings should be designed in short sections, which can be easily lifted and disinfected by submersion in a sink or container.

3.7 Drains should be of sufficient diameter to prevent blockages, particularly waste pipes from sinks (see HTM 64 – 'Sanitary assemblies').

Maintenance and cleaning

3.8 Regular and intensive cleaning must be a feature of this accommodation. Materials and finishes should be selected to minimise maintenance and be compatible with their intended function. Work surfaces should be made from impervious materials. Building elements that require frequent redecoration or are difficult to service or clean should be avoided. Special design consideration should be given to entrances, corners, partitions, counters and any other elements that may be subjected to heavy use. Soft floor finishes may only be selected for areas used by visitors and for staff office accommodation. Wall coverings should be chosen with cleaning in mind. Health Technical Memoranda 56 and 58 give guidance on these aspects for partitions and internal doorsets.

Communications

3.9 In addition to the normal hospital telephone exchange facility, at least one direct line and one dedicated fax line should be installed. In dirty work areas, the use of wall-mounted, hands-free telephones and loudspeaking instruments may need to be considered;

3.10 The major communication needs within the mortuary and PM facility, and between it and the pathology laboratory, should normally be satisfied by an automatic telephone system (see paragraph 8.40);

3.11 There is a need for visitors and undertakers to alert staff on their arrival at the mortuary. A simple bell/audio-intercom with appropriate notice should be provided at the appropriate entrances. Staff call bells should be located in the technicians' office (see paragraphs 8.38 and 8.39);

3.12 A custom-built dictation system, suitable for the conditions within the PM room, may be provided.

4. Risks associated with a mortuary and post-mortem facility

Introduction

4.1 A mortuary and PM facility poses a number of health and safety risks. These include:

- physical risks: accidents and injuries may be associated with the use of equipment and heavy loads. The risks associated with lifting and dragging bodies should be assessed, this is becoming more critical with the increase in obesity. Slipping and falling due to the presence of fluids on the floor, and accidental cuts, either with sharp instruments, bone fragments, or corners of a fitting are significant risks in the PM room and body handling area;
- infection risks: arising from exposure to infectious agents, which might be present in bodies received for storage and/or PM. Infectious material may be dispersed in the form of aerosols and/or body fluids. Infection may occur as a result of inhalation, ingestion, inoculation or splashing into the eyes of infectious agents. It is important to be aware that infection issues may result not only from the work of pathologists and mortuary technicians but may arise as a result of contamination of visitors and contractors working in the facilities;
- electrical risks: arising from incorrect or poorly maintained fittings and connections. The danger of electrocution arising from the contact of water with electricity must also be borne in mind when specifying electric appliances and switches (see paragraphs 8.33 and 8.34). This is particularly important in the PM room;
- chemical risks: associated with noxious and/or flammable chemicals, possible fixatives, solvents, and disinfectants which are used regularly in the mortuary and PM room;
- radiation risks: radioactive materials following their use for diagnosis and/or treatment and still present in the body, or from imaging equipment used in the PM room.

Infection risks

4.2 'The Management and Control of Viral Haemorrhagic Fevers' published by the Advisory Committee on Dangerous Pathogens (ACDP) in December 1996 – which includes guidance on the handling of Hazard Group 4 VHFs of concern in the UK (that is, Lassa Fever, Crimean/Congo Haemorrhagic Fever, Ebola and Marburg viruses) – advises that a PM examination on a person known to have died of VHF exposes staff to unwarranted risk and should not be performed. In exceptional circumstances, limited sampling may be necessary to establish or eliminate diagnosis of VHF or provide an alternative diagnosis. This should only

be carried out after consultation with the appropriate specialists and by an experienced doctor adopting stringent protective measures. If the body is in an isolator, it is preferable to take the specimens before moving the body.

4.3 The Department of Health issued guidance in September 2000, on two further Hazard Group 4 pathogens, entitled 'Hendra Virus and Nipah Virus – Management and Control'. This advises that a PM examination on a person known to have died from either the Hendra or Nipah virus exposes staff to unwarranted risk and should not be performed. If the diagnosis is in doubt a High Security Infectious Disease Unit should be contacted for advice.

4.4 Rabies is classified by the ACDP as a Hazard Group 3 organism. The 'Memorandum on Rabies – Prevention and Control', published by the Department of Health in February 2000, advises that a PM should only be performed when absolutely necessary and when diagnosis cannot be made by any other means. Where a PM is necessary this should be conducted with regard to stringent precautions, and staff should be immunised against rabies. Post-mortems should only be performed in mortuaries with appropriate physical containment features, following HSAC guidance on safe working in the PM room.[1]

4.5 A mortuary and PM room built to the standards of this guidance will be adequate for dealing with bodies infected with the following Hazard Group 3 organisms: M tuberculosis; Hepatitis B virus; Hepatitis C virus; and Human Immunodeficiency Virus.

Risks arising from the use of formalin

4.6 Formalin, a solution of formaldehyde gas in water, is commonly used as a fixative to preserve tissues for microscopic examination. The vapour that arises from solutions exposed to the air is pungent and an extreme irritant to the eyes and respiratory tract even at very low concentrations. Skin exposure may lead to sensitisation.

4.7 The Control of Substances Hazardous to Health Regulations 1999 (COSHH) require that exposure to formaldehyde is controlled as low as possible below the maximum exposure limit of 2 ppm (2.5 mg m^{-3}) in the air for both the eight hour and 15 minute reference periods. (See also 'Occupational Exposure Limits', HSE Guidance Note EH40, which is revised annually.)

4.8 Prospective users of the facility should be consulted to determine precisely what activities involving formalin are being planned. Employers have a duty to limit exposure of their employees and others to formaldehyde under the terms of Sections 2, 3 and 4 of the Health and Safety at Work etc Act 1974.

4.9 As well as strict controls over the use, storage and transport of formalin, continuous mechanical ventilation is necessary in areas where formalin is

[1] See Appendix 1 for further guidance and a definition of Hazard Groups 1-4

handled in order to minimise the concentration of formaldehyde in the air to as far below the prescribed limit as is possible. COSHH requires that such local exhaust ventilation undergoes a thorough examination and test at least once every 14 months. Personal exposure to formaldehyde should also be monitored at least annually.

4.10 Formaldehyde should be provided on tap. The mixing and storage of formalin should preferably take place in the specimen store where continuous mechanical ventilation is provided. Where formalin is made up in the dirty utility room continuous ventilation will be needed here. Alternatively, formalin may be provided on tap to the point of use, for example the dissection benches. (See paragraphs 8.11 – 8.19)

Risks associated with disposal of waste

4.11 Waste arising in the mortuary and PM room will fall into five categories:

- disposable, generally single-use items such as paper shrouds, swabs, dressings, disposable protective clothing and gloves;
- human tissues and body fluids;
- discarded syringes, needles and other sharps;
- discarded chemicals such as used fixative solutions;
- clean waste arising from office activity.

4.12 Waste in categories (a)-(d) is both a potential risk to health and offensive for those who are required to deal with it prior to final disposal. For safe waste disposal, arrangements for clear segregation and appropriate containment of the different types of waste, from source to final disposal point, are essential. (For further information see HTM 2065 – 'Healthcare waste management: segregation of waste streams in clinical areas'.)

4.13 Most items to be discarded come under the term "clinical waste". For operational detail and categorisation using colour-coded containers, reference should be made to 'The Safe Disposal of Clinical Waste', Health Services Advisory Committee and Health & Safety Commission and to 'Safe working and the prevention of infection in the mortuary and post-mortem room', Health Services Advisory Committee. (Reference should also be made to NHS Estates' HGN – 'Safe disposal of clinical waste' and HTM 2075 – 'Clinical waste disposal/ treatment technologies'.)

4.14 Waste organic solvents awaiting disposal will need to be stored in well ventilated areas. The Health and Safety Executive in their publication EH40 'Occupation Exposure Limit', updated annually, sets limits which form part of COSHH regulations 1999.

4.15 In a mortuary and PM facility, two basic provisions are necessary to enable the safe management of waste. These are:

- a sluice or sluices for material suitable for direct discharge to the drains (subject to the consent of the appropriate water authority);
- adequate secure storage space for material in bags, packages or drums awaiting removal for appropriate treatment and disposal.

4.16 From the beginning of 2002, a UN type-approved rigid container will be required for transporting clinical waste by road.

Risks arising from handling radioactive bodies

4.17 Where radioactive compounds have been used for treatment or diagnosis during the life of the subject under examination this may present a radiation hazard.

4.18 The majority of diagnostic investigations are undertaken with a radioactive isotope known as Technetium 99m. This isotope has a short life of only six hours and thus PM examinations and embalming, burial etc can usually take place 48 hours after administration of the substance. The external radiation hazard associated with most diagnostic investigations will be small and special requirements are usually not necessary.

4.19 A number of therapeutic procedures are undertaken in cancer centres that involve large doses of unsealed radioactive substances being administered. Most notably amongst these is the use of Iodine-131 to treat thyroid cancer and Strontium 89 for bone metastases. Virtually all the substances used have relatively long half-lives.[2]

4.20 The design of the facility should adhere to guidelines set out in the Ionising Radiations Regulations and statutory requirements of the Radioactive Substances Act 1993/2000. Further guidance on dealing with radiation risks is given in Appendix 2.

4.21 Where mortuaries are separate from hospitals and are handling a radiation hazard for the first time there is a requirement for them to notify the HSE.

4.22 The special problems of infection and radiation risks associated with a mortuary and PM facility should be discussed at a local level and the advice of the hospital health and safety advisor, Infection Control Team member and Radiation Protection Adviser sought in the early stages of planning.

Design considerations for minimising risks

4.23 The risks associated with a mortuary and PM facility can be minimised not only by careful work practice, but by the design of the accommodation in terms of

2 Further information on specific design requirements and procedures for mortuaries and PM rooms handling bodies that have undergone such cancer treatments is given in Appendix 2.

layout. It is essential that the design team and other planners involved with a mortuary and PM facility consult with those operating and using the service. A project team should be set up under the leadership of a project director. Membership should include:

- a trust executive representative;
- a histopathology/mortuary manager;
- representatives of the operators and internal users of the mortuary service (that is, mortuary technicians, pathologists, hospital ward and hospital mortuary administrators, technical support and/or bereavement care officer);
- representatives from the infection control, health and safety, and estates teams.

4.24 This team should draw on both past experiences and future plans for the mortuary service. Internally, it is important to canvass the views of all users and operators and any other organisations affected by the proposed changes. Externally, commissioners, local mortuary service providers and users (for example Procurator Fiscal, police, funeral directors, universities, laboratories, external pathologists etc), and current and future mortuary equipment and materials maintenance and suppliers should be widely consulted. Reference should also be made to good practice in other mortuary operations, both locally and nationally.

4.25 For reasons of infection control, a mortuary and PM facility must comprise dirty and clean areas, a fact that needs to be considered at the planning stage, and will determine working practices within these areas. The employment of stringent hygiene practices and appropriate disinfection and cleansing agents on working surfaces, together with the immunisation of staff and provision of suitable protective clothing, is also essential.

5. Location and layout

Location

5.1 The location of a mortuary and PM facility needs careful consideration.[3] The following factors should be taken into account:

- the need for adequate vehicular access from the service road;
- where the facility is located on a hospital site, the functional layout of the hospital and the need for the mortuary to be discreetly sited away from clinical, kitchen and dining areas, with no direct entry to public and staff thoroughfares;
- the desirability for the mortuary to be located at ground level;
- the need for convenience of access by the various users (staff, visitors and undertakers);
- the need for the mortuary to be associated with/or near a histopathology laboratory;
- the number of external entrances required (see paragraph 6.3);
- the need to ensure that the exhaust from ventilation systems servicing the mortuary can be discharged safely. The siting of extract vents should be very carefully considered;
- the availability of space, that is, the size and shape of the site and the overall development control plans;
- the local strategy for energy conservation, for example length of service runs, position and size of energy centre;
- the costs of the development, both capital and revenue;
- the number of staff.

5.2 Convenient and separate access will be needed for staff, visiting relatives and undertakers (see paragraph 6.3). There should be easy access and parking for hearses. The immediate entrance for hearses should be screened from public view, and should be secure and accessible via a service road.

5.3 Planning decisions and site possibilities determine whether the mortuary and PM facility will be located in separate, purpose-built accommodation on the hospital site or attached to the hospital building (see Figures 1 and 2). The above listed requirements are most easily met when the mortuary is located independently but near the service zone. If this is not possible, the mortuary

3 The location of the mortuary should be in accordance with the Trust's estate strategy.

should be planned in a discreet location not readily overlooked by clinical, kitchen and dining areas and avoiding public and staff thoroughfares.

Layout

5.4 All the demands listed above will affect the layout of the facility, particularly the provision of separate access and circulation routes for visitors and staff to obviate the risk of visitors straying into work areas (for example the PM room). The relationships of individual spaces to each other is shown in Figure 3 and on Activity Room Sheets. The layout given assumes that double-ended body stores are used.

5.5 For the purpose of infection control, the facility must comprise clean activity areas, transit areas, and dirty activity areas. The work-flow should be planned so as to minimise and obviate, where possible, the need for movement of people and materials from potentially dirty activity areas to clean activity areas.

5.6 'Dirty' activity areas include:

- the PM room;
- the dirty utility room/instrument store;
- the body store.

5.7 'Clean' activity areas include:

- the reception area;
- waiting room(s);
- interview/counselling room(s);
- viewing room(s);
- bier room(s);
- offices;
- the general purpose and linen store;
- the observation area;
- the staff changing areas;
- the specimen store.

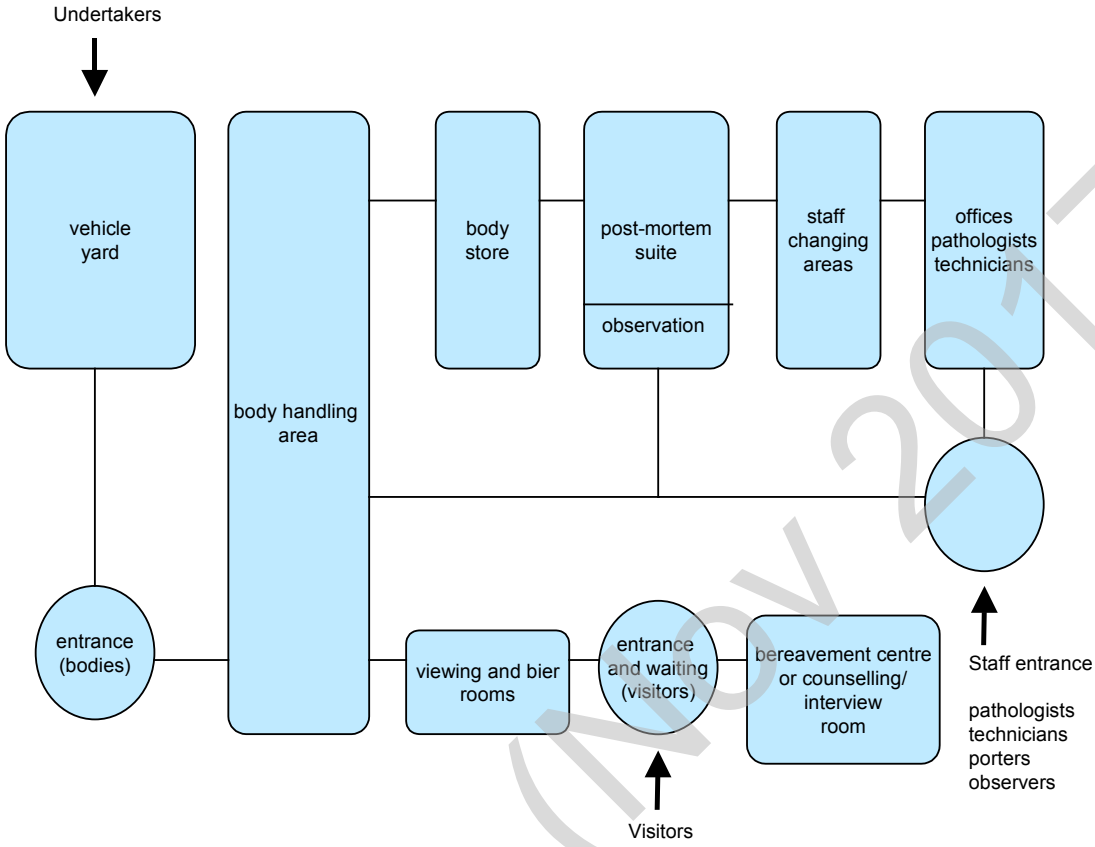


Figure 1: **Department free standing**

5.8 'Transit' activity areas include:

- the body handling area;
- the disposal room (where this leads off the PM room);
- the PM transit area.

5.9 The PM room should be directly connected to the body store, the dirty utility room/instrument store and PM transit area, through which access is gained to the staff changing area and from there the circulation routes. It may also be connected to the disposal room, although access to the disposal room from outside the PM room must be provided for the depositing and collection of securely packed waste and dirty linen bags (appropriately colour-coded). Where the disposal room leads off the PM room, waste and dirty linen generated in the PM suite must be bagged up within the PM suite and simply deposited in the disposal room for temporary storage. Unauthorised entry to the mortuary and free movement between the different areas should be prevented.

5.10 Disposal areas should be organised so that clinical waste, linen and domestic waste is not mixed together prior to collection.

5.11 Operational practice should ensure that all work with bodies, organs and unfixed specimens is strictly limited to the dirty activity areas. Specimens should be brought out of the PM room only in suitable containers and only after these have been subjected to appropriate surface cleansing and decontamination. The holding and transfer of specimens within the mortuary and subsequent transport to the pathology department are subject to guidance contained in 'Safe working and the prevention of infection in the mortuary and post-mortem room', Health Services Advisory Committee.

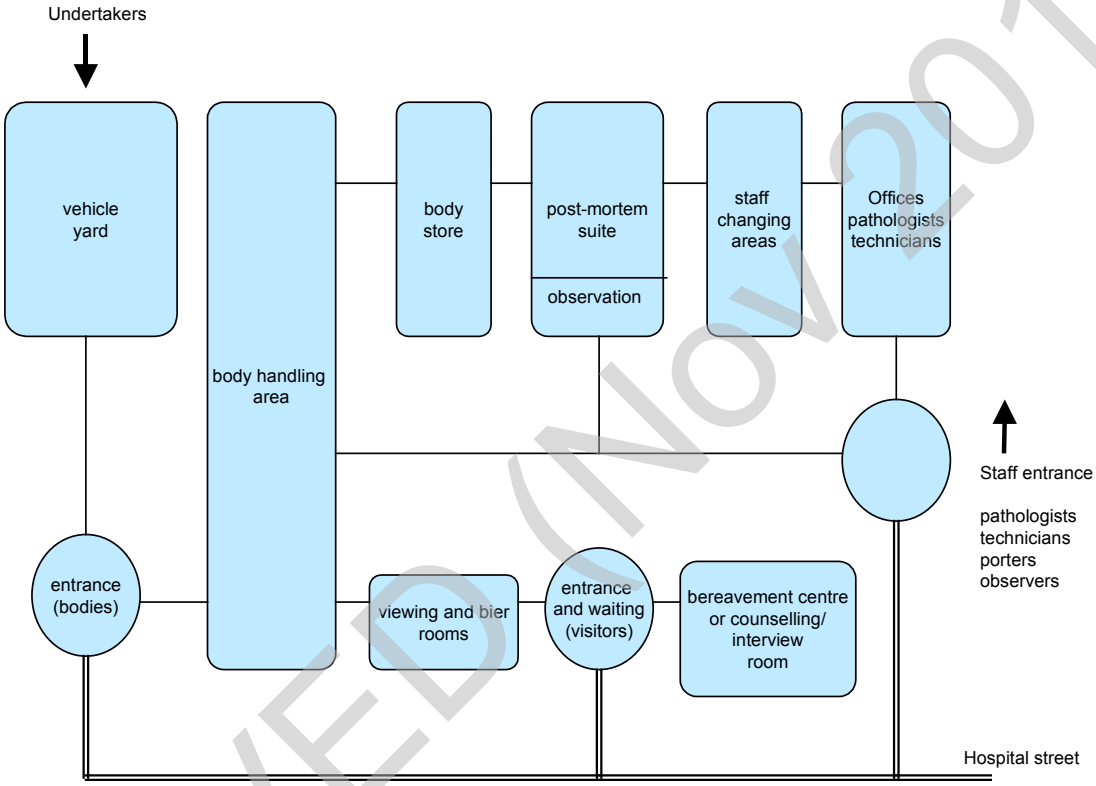


Figure 2: **Department attached to main building**

Staff changing

5.12 Staff and non-mortuary personnel must remove outer garments (overcoats, jackets and hospital white coats worn outside the mortuary) before entering the PM room. This will take place in the staff changing area. Lockers should be provided for holding personal clothing and other personal items.

5.13 Boots and stocks of protective garments (as prescribed by local policy) should be stored in the PM transit area, leading off the staff changing area and from where access is gained to the PM room. Staff should change into boots and protective garments in the PM transit area before entering the PM room.

5.14 Staff and others should discard used protective clothing and boots within the PM suite, and change into slip-on footwear before moving into the connecting

staff changing area. Reusable protective clothing should be bagged up as appropriate before transferring to the disposal room.

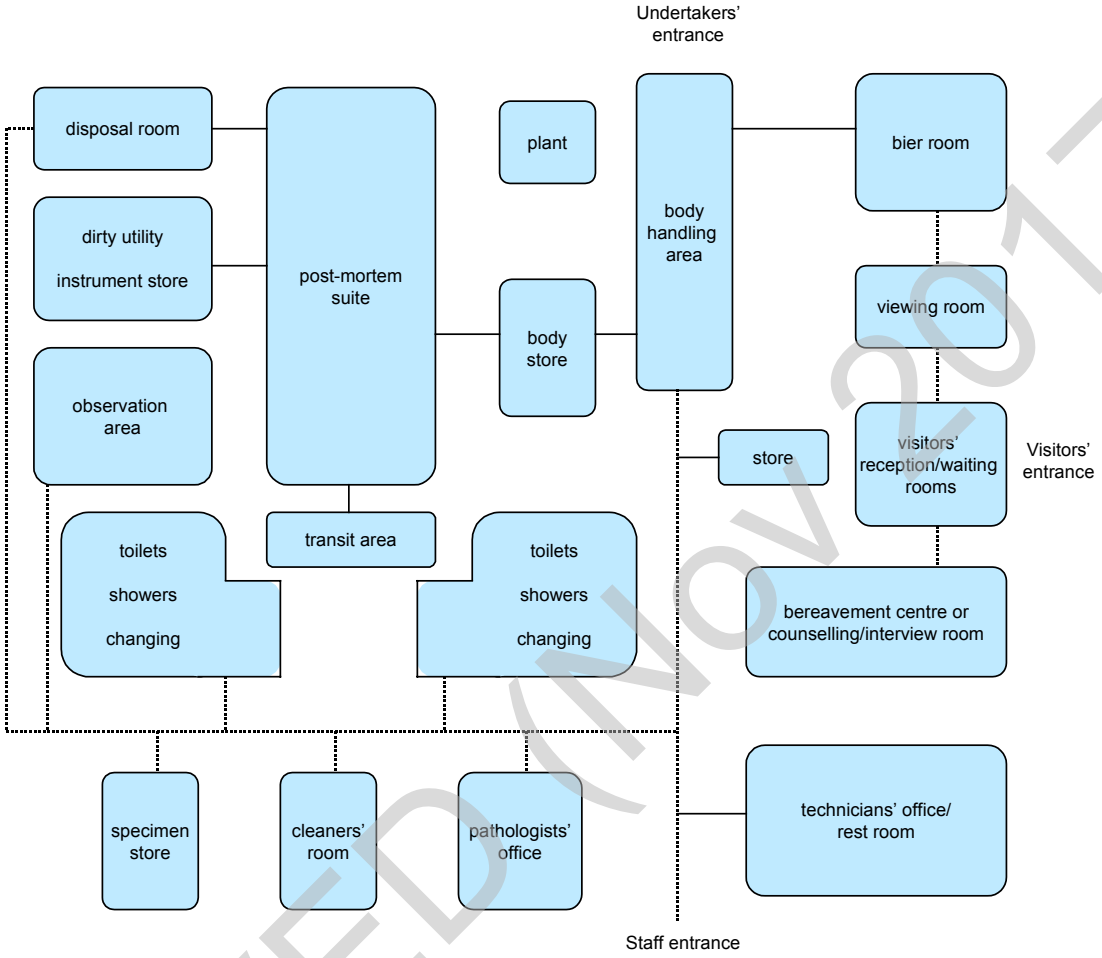


Figure 3: **Layout of department**

6. Specific functional and design requirements

Introduction

6.1 This Chapter provides guidance on the functional requirements and design implications for each of the activity spaces within the mortuary and PM facility (see Figure 3).

6.2 Activities, equipment, detailed environmental conditions and finishes of walls, floors and ceilings are given in the Activity Data Sheets. Reference should also be made to the relevant HTMs covering Component Data (listed at the end of this document).

Entrances and signposting

6.3 The number of entrances will be determined by whether the building is free-standing or linked directly to other hospital buildings. If the former, three entrances are required: one for staff, one for the delivery of bodies from the hospital or community (if appropriate) and for collection by undertakers, and one for visiting relatives and friends. If the latter, the number of entrances required will depend on whether staff, relatives and the arrival of bodies from the hospital share a common approach and then follow separate traffic routes to the individual entrances to the relevant parts of the mortuary, or whether there is direct access from a hospital street to the different parts of the mortuary. In either case, an entrance will be needed for collection of bodies by undertakers and, if appropriate, bodies arriving from outside the hospital. (See Figures 1 and 2.) External doors may also be needed for fire escape. (For further information refer to the Scottish guidance on 'Wayfinding' and 'Firecode' on NHSScotland Property and Environment Forum website.)

6.4 Bodies should not be taken in and out of the building within sight of patients and/or visitors. The external entrance for the collection of bodies and, if appropriate, delivery of bodies should be covered and screened from the view of patients and the public. The layout should also prevent overlooking of the body handling area within the building from outside by the provision of lobby doors or screening. The external entrance should be overlooked by the technician's office unless audio-visual intercoms are in operation. There should be sufficient space for large vehicles to manoeuvre. An exit to a subsidiary road, and nearby car parking space, is also desirable. (Reference should be made to Scottish Hospital Planning Note 45 – 'External works for health buildings'.)

6.5 All external entrances should normally be kept locked. The entrance for relatives, which may be via a lobby, should lead into the visitors' waiting room (see paragraph 6.8). A bell/audio-intercom with a clear and appropriate notice

should be provided at all entrances for visitors to summon the attention of mortuary staff (see paragraph 3.11).

Body viewing suite

6.6 This should comprise, at the very least, a separate entrance, a waiting room, an interview/counselling room, access to sanitary facilities, a viewing room and a bier room.

6.7 In the waiting room, interview/counselling room, viewing room and bier room a serene and reassuring environment is desirable. The choice of suitable colours, textures and lighting is important. It should be possible to dim the lights in the viewing and bier rooms. Ventilation should be such that comfortable conditions are maintained in these areas and should prevent the entry of odours from other parts of the mortuary.

6.8 The waiting room should contain comfortable chairs and a small table. Lighting should be non-institutional with natural light where possible. An adjacent WC is required. It should adjoin the viewing room with a door between them, and should also be readily accessible to mortuary staff.

6.9 The interview/counselling room should contain comfortable chairs and a small table. It may be used by the Procurator Fiscal's officers or mortuary staff to explain findings from PMs or to comfort relatives of the deceased. Consideration should be given to more extensive bereavement facilities, which may be provided in lieu of the interview/counselling room. A bereavement centre may be provided to deal with all aspects of bereavement care following a death in hospital, including issuing the death certificate, retrieval of the deceased's belongings, organising tissue donations, and offering advice and information to the bereaved.

6.10 The viewing room should connect both with the waiting room and the bier room. The wall adjacent to the bier room should incorporate a sliding viewing window at a suitable height to allow wheelchair users to touch and view the body. The window should be covered by easily drawn curtains or blinds. A connecting door to the bier room will be necessary for visitors wanting direct access to the body. Furnishings in the viewing room need only be minimal, but chairs may be needed for those who become unsteady.

6.11 The bier room should adjoin the body handling area and the viewing room. A body to be viewed may be prepared in the body handling area and laid out on a draped bier trolley which will then be wheeled into this room. Connecting doors between the two should allow easy, noiseless passage of the trolley, and while viewing is in progress, be kept securely shut. Flooring in the bier room should be washable and continuous with that of the body handling area or the connecting link between the two.

6.12 Both the viewing room and the bier room should be capable of minor adaptation to suit the needs of all religious beliefs and for devising more appropriate

arrangements for viewing bodies of infants. Where facilities for ritual washing are required these will have to be sited in an area that is accessible to visitors and also suitable for wet working. It should also be noted that religious beliefs may have an effect on the orientation of the body wash station.

Body store and body handling area

6.13 A refrigerated body store is required:

- to maintain bodies and/or fluids in a condition whereby the maximum scientific information can be obtained from a PM and subsequent analytical investigations;
- to limit tissue decomposition while burial or cremation arrangements are being made;
- to hold bodies and the occasional specimen for longer periods in conditions of security.

6.14 Some bodies received from cancer facilities will still contain radioactive materials administered during treatment. It will be necessary to provide body storage facilities that are shielded with lead-lined materials, including doors and roof to the enclosure. The lead thickness will be in the order of 2mm (readers should consult the local radiation protection advisor).

6.15 Protection will be needed to the roof of the body store because the refrigeration machinery is usually located here and access will be needed for routine and emergency maintenance.

6.16 Within the body store the drawers used for storage should be fabricated from non-ferrous materials. This will typically be a ceramic material.

6.17 Bodies usually remain in the mortuary for one to four days. Sometimes the period is longer if further investigations have to be carried out by the pathologist, or if the next-of-kin are difficult to trace.

6.18 The body handling area should be adjacent to the PM room and adjoin the bier room. Space is required in the body handling area for parking and manoeuvring trolleys. Body weighing facilities are required. Body weighing may be carried out either on a separate weighing machine or on a trolley which incorporates a weighing mechanism. The former will create greater space requirements. Space is also required for:

- the reception of bodies on trolleys from the hospital;
- the labelling or identification of bodies and entering details in a record book or computer;
- the placing of shrouds on bodies;
- the transfer of bodies to the refrigerated body store;

- the removal and transfer of bodies from the body store to the PM room (where double-ended body stores are not available) or to the bier room;
- the removal of bodies from the store;
- the confirmation of identity before handing over to undertakers or for police identifications.

Consideration should be given to the use of mobile and fixed hoists, which will have implications on space requirements. Consideration should also be given to an extra large fridge for obese bodies together with trolleys of a suitable capacity. Handling of heavy bodies is one of the more dangerous activities in a mortuary.

6.19 A writing surface is required in the vicinity for the record ledger, although the recording of bodies is sometimes carried out in the technicians' office if it adjoins the body handling area.

6.20 The body store consists of a number of labelled compartment bays, (refrigerated at approximately 4°C), each containing between three and five racks for holding the body trays upon which bodies are stored. Individual compartment bays may either be physically separated from one another or may be open between one another in a continuous run. The former may be used to store radioactive bodies and other high risk bodies. Compartment bays may either have a door at one end or may be double-ended in the case of pass-through fridges; the latter, although more expensive and requiring additional space on the PM room side to allow for the extraction of bodies, are preferable for reasons of hygiene and efficiency. Depending on the size of the installation, a number of the compartment bays should be deep-freeze and an extra wide compartment bay(s) should be provided to accommodate obese bodies.

6.21 All doors to the refrigerated compartment bays must open to give access to the body trays and also be constructed in such a manner that they will not fall closed while in use. All doors should be fitted with locks. High quality hinges and locks are an important consideration. Locks should also be operable from inside the compartment bay for safety purposes. All compartment bays should be capable of being drained. Internal rollers and racking holding body trays should be removable to permit clear entry to the compartment bay for cleaning purposes. The bottom tier of racking should be no lower than the lowest position of the body hoist or adjustable height mortuary trolley, so that trays bearing bodies do not have to be lifted by the mortuary staff. The refrigeration plant must be fully accessible for maintenance.

6.22 Hand hygiene facilities and wash down points must be provided in the body handling area. The floor may be either self-draining towards a drainage outlet or level without a drainage outlet depending on local preference.

6.23 Lockers for the storage of personal effects removed from bodies should be provided in a secure area.

6.24 The frequent movement of mortuary trolleys, which could be heavily laden and mobile hoists, has implications that must not be overlooked. Corners, doors and certain areas of walls must be protected against damage. Doorways through which trolleys are to pass must be wide enough to reduce the chances of collision and consequent damage to property and injury to staff.

6.25 The trolley area is for the parking of trolleys and the hoist when not in use. It should be in an out of the way part of the body handling area.

Finishes

6.26 The floor of the body handling area must be hard-wearing, non-slip and impervious to water and disinfectant. The floor may be either self-draining towards channels and gullies to allow for drainage after cleansing or level without a drainage outlet depending on local preference. The walls should be capable of withstanding regular washing or hosing down and should meet the raised edge of the coved junction with the floor at a waterproof joint. Ceilings and, where relevant, ceiling suspension grids should be capable of withstanding frequent washing down.

Ventilation

6.27 Mechanical ventilation should be provided to the body handling area so that air flows from this area into the PM room. Where there is direct access from outside to the body handling area, it will be necessary to provide some form of lobby, with two sets of doors.

Post-mortem room

6.28 The PM room, which is also known as the autopsy room, serves to carry out several functions. These include the opening of bodies, the weighing and dissection of organs, and demonstration of PMs to clinical staff. Bodies are brought from the body store on a hydraulic body hoist or trolley and transferred on to a PM table. In the case of full body handling systems the body remains on the body tray during the PM, supported on the PM station. The dissection of organs should take place on a dissecting bench running along a length of wall. The observation area should overlook part of the dissecting bench.

6.29 Bodies for examination will be drawn directly from a double-ended body storage compartment into the PM room. Space will be needed in the PM room for safely manoeuvring trolleys, for loading or transferring bodies onto the PM table or station, and for storing and using a second hoist (where provided), without risk of accident or injury. Where double-ended body storage compartments are not in use, bodies will be conveyed into the PM room on a trolley from the body handling area via a double-width doorway.

6.30 Tissues, organs and/or fluids obtained during PM examination are infused in fixative in various sized containers. This work will be carried out at the dissection bench (see paragraph 6.35). The samples may be held for a short time within the PM suite or specimen store prior to despatch to the pathology department or other departments.

Post-mortem room showing down-draught ventilated post-mortem tables and pull through fridges

6.31 Most PM rooms will require a minimum of two PM tables to permit the pathologist to carry out several examinations at one attendance. In some instances it may be appropriate due to the low workload to only provide one PM table.

6.32 Post-mortem tables must be easily cleanable and free from traps for potentially infected material. Down-draught ventilated PM tables offer microbiological improvements over conventional PM tables although they will be more expensive, and may be difficult to install, clean and service. Installation and associated cost implications need to be carefully considered: these may include the need to perforate the floor slab and floor finishes to accommodate the ventilation ducting; the possibility of external corrosion of, and condensation within, the ducting; access for cleaning and maintenance, and eventual replacement of the ducting.

6.33 Adjustable height tables should be provided to comply with European standards for working heights. Consideration should also be given to rotating tables.

Post-mortem room showing adjustable-height mortuary trolley

6.34 Each table should have a hot and cold water supply and a waste outlet of about 75mm diameter, fitted with a suitable, readily accessible trap and drainpipe. They should be fixed to the floor, located over a drain and be supplied with water at low pressure.

Adjustable height post-mortem table

6.35 During an examination, there may be a need to dictate findings, take X-rays, examine X-ray films taken earlier, and use other portable electrical equipment. Special safety precautions are required when using fixed and portable electrical equipment in the PM room. (See paragraphs 8.33 – 8.35.)

6.36 The dissecting bench should have raised edges and slope to a sink(s), which should be deep enough for the washing of organs. There should be provision for running water over the bench itself. The drainage flow of water should be checked and confirmed. The positioning of sinks along the dissecting bench should suit the pattern of working agreed upon by the staff. A sluice is required for the opening of intestines and disposal of contents. A low pressure water pipe should be provided, preferably in the wall of the sink(s). A standing waste is required. A filter trap is necessary.

6.37 The bench should be easily cleanable and have no traps for infected material. Preferably, it should be wall-mounted. It should have a specific dissecting position for each PM table. Each position should have a linear exhaust ventilation grille in an upstand at the rear. The recommended size of, and performance data for, the extract grille are described in Chapter 8. There should be several weighing machines of simple design.

Dissecting bench with weighing stations

6.38 Tissue samples for microscopic examination will be prepared at the dissection bench in the PM room before further processing in a tissue processor in the pathology department. Raw tissue is placed into small plastic cassettes for formalin fixation and then processing in the pathology laboratory. Alternatively,

larger tissue samples are left in formalin fixative for a day or so and then trimmed down to fit into the cassettes.

6.39 An emergency eye wash should be provided in close proximity to the PM suite.

Finishes and fittings

6.40 Walls and floors must be finished with hard and durable surfaces, which are easy to clean, impervious to liquids and resistant to disinfectants. Floors must be very hard-wearing, non-slip, raised at the junction with the walls. The floor may be either self-draining towards channels or gullies or level without a drainage outlet depending on local preference. The design of the floor and the cleaning regime is important and users should be consulted at an early stage of the design process. Joints in flooring and joints between floors and walls should have waterproof seals.

6.41 When selecting ceiling materials, account should be taken of the damaging effect of the damp atmosphere following frequent cleaning of the room with hot water (see HTM 60 'Ceilings').

6.42 Plastic laminate on wood, and wooden fittings, are not suitable as fixed work surfaces. Porcelain and stainless steel are satisfactory materials for sinks. Porcelain, although having a high quality finish, is expensive and liable to damage. All fittings should be ergonomically designed. All taps should be elbow-operated or hands-free.

Lighting

6.43 The PM room should have ample daylight. Distribution and location of windows should take into account the need to maintain total privacy, and to prevent glare and excess solar gain. High-level windows are generally preferable to rooflights. The windows should preferably face east or north. To avoid loss of control of air movement by the ventilation system, these windows must be fixed and non-openable. Artificial lighting should provide good general illumination with higher levels for task lighting over the PM tables and dissecting benches. Approved colour rendering light sources should be used in conjunction with high-efficiency luminaires.

Acoustics

6.44 Some acoustic control will be needed in the PM room to provide a suitable working environment, particularly where dictating equipment is used. There should also be control of noise breakout from the PM room to the body viewing areas.

Ventilation

6.45 Special attention must be given to the need for adequate ventilation in the PM room:

- to minimise the spread of offensive odours;
- to minimise the possibility of infection of staff and visitors by contaminated airborne droplets;
- to maintain a comfortable working environment. (See paragraphs 8.5). Careful attention must also be given to the siting of the point of discharge.

6.46 The air supply to the PM room, in conjunction with the extract, should promote good air distribution without generating undue turbulence at the working positions. Ventilation at the rear of the dissecting bench is essential and the exhaust volume resulting from a properly designed bench will comprise a significant proportion of the total extract from the PM room. Supplementary exhaust grilles should be sited at low level. The control of air movement in the PM room may be achieved partly by using air supplied to the body handling area, the observation area (when provided), and by air drawn into the PM room from other areas of the accommodation. Consideration should be given to the use of ventilated PM tables. (See paragraph 6.32)

6.47 The design philosophy for air movement control and the recommended supply and extract rates are detailed in SHPN 03 and paragraph 8.5.

6.48 When not in use, the ventilation system for the PM room can be shut down, provided it is allowed to run on for a limited period (a minimum of 30 minutes) after final cleaning of the room to purge residual odours and to assist in the drying of washed surfaces.

6.49 No naturally ventilated space should communicate with the PM room without an intervening lobby or corridor.

Possible project option of a PM table in a separate room

6.50 Where a project need for several tables has been identified and/or there is a joint NHS/public mortuary facility, or there is a significant undergraduate teaching commitment, locating one table in a separate PM room may have the following benefits:

- forensic PMs – requiring lengthy examination, privacy, the presence of police, photographic equipment and crew – can be performed here without disruption of routine work;
- post-mortem examinations for teaching purposes can be conducted without distraction or haste;

- when necessary, examinations of malodorous, decomposing bodies, or bodies of patients of known or suspected infection risk may be undertaken in the separate room. The number of people in attendance will be limited, and the area exposed to potential contamination and requiring cleansing reduced. In addition, the examination need not wait till the end of the day's work, as would be good practice if all the tables were in one room.

Dirty utility/instrument store

6.51 This room should open directly off the PM room. It serves as a dirty utility room and for the storage of instruments. An automated washer-disinfector, which meets BS 2745 and the requirements of SHTM 2030, should be provided for the cleansing and disinfection of instruments after use. Where sterilization of instruments is required, it is recommended that they are appropriately transported to the sterile service department for processing. Chemical solutions may also be prepared or dispensed in this room, according to local policy (see paragraph 4.10).

6.52 Sinks will be required for washing and disinfecting bowls and instruments. Waterproof aprons, if used, will also be washed in this room and facilities are needed for them to be hung to dry.

6.53 The reserve stock of instruments, unused specimen jars and chemical solutions may be held in this room.

6.54 A wash basin with hands-free tap controls is needed. A flushing sluice may be sited in this room or immediately outside within the PM room.

Post-mortem transit area

6.55 Entry to the PM room will be via the PM transit area, which leads off the staff changing area and separates clean and dirty activity areas.

6.56 Staff entering the PM room will need to change into protective clothing. Suitable shelving, racks and hooks should be provided within the PM transit area for the storage of protective clothing and boots.

6.57 Staff should discard used protective clothing within the PM transit area or PM room. Separate bins for the disposal of single-use items and collection of re-usable items pending cleaning should be provided.

6.58 Hand hygiene facilities with hands-free tap control should be provided for the washing of hands following the removal of protective clothing.

6.59 Staff must pass through a boot wash before entering, and upon leaving, the PM room. Boots should be stored in the PM transit area.

Dissecting bench with completely separate observation area

Observation area with partial height angled divider

Staff changing areas

6.60 Two identical sets of WCs/showers and lockable storage spaces should be provided in the staff changing area to allow for flexible use by both sexes or different staff groups (according to local policy). Hand washing facilities should be provided.

Observation area

6.61 The PM room may, depending on local procedures and the nature of the work being carried out, require an observation area, which is physically separate from the PM room, for clinical staff to observe a PM examination. The only entrance should therefore be from outside the PM room. This facility may also be required as part of undergraduate or postgraduate education and in the case of Procurator Fiscal's PMs for use by persons connected with his office. A dissecting bench should be provided along the wall of the PM room adjoining the observation area for the demonstration of pathological findings in organs. A glazed divider, either full height or partially open to the PM room, will protect viewers from splashes during the demonstration of findings and should be designed to provide a good view of the dissection bench. Where a full separating screen is used video/intercom facilities should be provided enabling two-way speech. If a partial height screen is provided the air supply system should be designed to ensure air flows from the observation area into the PM room. The observation area should accommodate 6–8 people. For larger groups consideration should be given to the provision of a raised or tiered observation area.

6.62 Air supplied to the observation area should contribute to the control of air movement within the PM room as a whole (see paragraphs 8.8 – 8.10). The ducting from the linear exhaust ventilation grille at the rear of the dissecting bench may be incorporated into the divider separating the observation area from the PM room.

6.63 The availability of an observation area will obviate the need for clinical staff and others attending a PM and demonstration of findings to change into protective clothing. The size of the observation area will vary according to local arrangements. If there are overwhelming reasons for clinical staff and others to be admitted into the PM room, they will be required to enter via the PM transit area, change into the protective clothing provided and observe the agreed local protocol. Extra facilities for storing personal clothing and valuables may be required in such circumstances.

6.64 Local policy may seek to limit direct observation during PM examination and may arrange for the demonstration of case findings to take place in, for example, the hospital education centre or pathology department seminar room. Where it is policy to use audio-visual aids for demonstration/teaching purposes, appropriate facilities for recording will be required in the PM room.

Specimen store

6.65 Tissue samples for microscopic examination in the pathology department, together with retained organs in fixative, may be kept in the specimen store for certain periods. Shelves made from impervious material will be required for holding jars or containers of various sizes. Floor space, or space below high benching, may be required for formalin containers. The room must be continuously ventilated because of the hazard arising from formalin used in the specimen containers. (See paragraphs 4.6–4.10 for further information on the use of formalin.)

Pathologists' office

6.66 The function of the pathologists' office is to provide space for consultations and writing reports. It should have a window for natural ventilation and light, and should be entered from the circulation route leading to the staff changing area and the body handling area.

Technicians' office/rest room

6.67 This room should have access to the body viewing facilities. It should be situated near the body handling area and the undertakers' entrance so that bodies may be registered and labelled before being deposited in the body store. It should be entered from the circulation route leading to other parts of the mortuary. The staff call bells for undertakers and visitors will need to be located here (see paragraph 3.11). Apart from clerical functions, the office will be used for relaxation between work periods. It should be furnished with a desk(s), chairs, shelves and filing cabinet. An external window that overlooks the external entrance (unless an audiovisual intercom is in operation), and one that overlooks the body handling area should be provided. Lockers should be provided to enable technicians to store clothing and personal effects in this room.

6.68 A staff beverage and snack area with a sink should be provided in an adjacent room or, where this is not practical, within a designated area in the technicians' room. Food preparation and consumption must be strictly confined within these areas.

Disposal room

6.69 The disposal of used items will depend on whole hospital policy but will be in accordance with the Health Services Advisory Committee and Health and Safety Commission's document on 'The Safe Disposal of Clinical Waste' 2nd edition 1999 and Scottish Hospital Technical Note 03 'Management and disposal of clinical waste'. A disposal room is required with adequate space for

the temporary storage of securely packed refuse and dirty linen bags (appropriately colour coded) with easy access for their collection.

Cleaners' room

6.70 A cleaners' room should be provided to service the whole accommodation. There should be lockable cupboard space for secure storage of stock and shelves for holding in-use materials. There should be adequate space for manoeuvring machines, for emptying and filling buckets and bowls, and the routine servicing and cleaning of equipment. There should be unrestricted access to the sink, and to a wash-hand basin.

General purpose and linen store

6.71 A general purpose store will be needed for a wide variety of stock items and linen that do not require specialised environmental conditions. As stock dimensions vary considerably, adjustable shelving would be an advantage. Adequate floor space should be allowed for the storage of bulky goods. Good natural or mechanical ventilation is required.

6.72 Arrangements for supplies and storage facilities will be in accordance with whole hospital policies for supplies and associated services. Storage is required for clean supplies of general utility and toilet items and for linen, including drapes, shrouds, white coats, protective clothing, disposable items, towels and other linen, and for the reserve stock of cleaning materials.

6.73 The store must be accessible to staff servicing both the body handling and viewing areas, and the PM room activity requirements.

Training and teaching facilities

6.74 In-house training of pathologists and technicians will be possible in a mortuary and PM room facility that meets the building space and design standards of this document.

6.75 If the teaching of undergraduate medical students is to take place in the accommodation, and their numbers necessitate additional space and facilities, this should be provided as part of the overall requirements for the facility.

7. General guidance

Introduction

7.1 For guidance on general functional and design requirements refer to SHPN 03 – 'General Design and Guidance', which should be implemented as appropriate for the project under consideration.

Upgrading or adaptation of existing buildings

7.2 Any upgrading work should minimise the disruption to existing services – that is, there should be a clear segregation between building activity and the ongoing delivery of services. In the case of upgrading mortuary services, relocating existing mortuary services into a temporary facility is always the most desirable option for builders and mortuary staff alike.

Critical dimensions

7.3 Appendix 3 contains information on critical dimensions for some of the activities mentioned in this document, which are not included in SHPN/HBN 40 – 'Common Activity Spaces'.

Information management and technology

7.4 The information management and technology (IM&T) system selected should offer a wide range of facilities, and be consistent with local and NHS IM&T strategies. It must operate for the whole mortuary and PM room facility and should be determined locally.

7.5 Examples of data handling needs which could be met by the installation of a comprehensive IM&T system include:

- within the mortuary and PM room facility:
  (i) operating an administration service for bodies;
  (ii) maintaining records;
  (iii) managing materials;
  (iv) managing statistical information.
- with other hospital departments/other hospitals:
  (i) receiving results from the histopathology department;
  (ii) receiving patient records.

8. Engineering services

Introduction

8.1 This Chapter describes specific engineering services requirements for mortuary and PM services. It complements the general engineering services guidance given in SHPN 03 – 'General design and guidance'. The combined guidance should not inhibit the design solution, but will acquaint the engineering members of the multi-disciplinary design team with the design criteria and material specification needed to meet the functional requirements.

Model specifications and technical manuals

8.2 In addition to the NHS Model Engineering Specifications the attention of the reader is directed towards the range of SHTMs relevant to mortuary and PM rooms.

Mechanical services

8.3 Ventilation plant associated with the mortuary and PM room should be included in the departmental cost.

8.4 The mechanical services also include the provision of refrigerated body storage compartments and all necessary refrigeration plant. The number of body store compartments to be provided will be indicated in the Activity Data Sheets.

Ventilation

General

8.5 The majority of the areas within this facility will require mechanical ventilation, due to equipment heat gains, staff numbers and clinical reasons.

Ventilation of post-mortem suite

8.6 The PM room, observation area and the body handling area, together with the associated dirty utility room PM transit area and staff changing areas, should have a supply and extract ventilation plant dedicated to this suite of accommodation. The supply air into the PM suite should be fitted with a pre-filter, where necessary, and a secondary filter. The pre-filter should be provided where the in-take air supply is likely to be exceptionally polluted and the secondary filter should be specified to provide the special conditions set out in paragraph 6.45. Additionally the filter(s) should be monitored for filter

performance and also be readily accessible for replacement and maintenance purposes.

8.7 Filtration on the extract system in the PM room is not considered to be necessary.

8.8 The ventilation of this suite should be arranged so that air flows towards the PM room from the adjoining transit area, staff changing areas and the body handling area. This will usually be achieved by air leakage via the doors between the PM room and these spaces. The ventilation of the dirty utility/instrument store should be arranged so that this space is at a negative pressure in relation to the PM room to minimise possible diffusion of offensive odours back into the PM room.

8.9 The fresh air supply to the PM room should be introduced at high level directly above the observation area and at appropriate positions in the PM working area in a manner which avoids discomfort to staff and observers, and also does not affect the localised air flow pattern provided by the extract grilles at the dissecting positions. The minimum recommended total fresh air supply rate to the PM room is 10 air changes per hour, including the proportion of this being supplied via the observation area. Cooling of the air supply may be desirable and should be a project option.

8.10 In order to ensure that an acceptable air movement occurs between the PM room and the associated spaces comprising the PM suite (as described in paragraph 8.8), the recommended total extract rate from the PM room is 12 air changes per hour, including the air extracted at the dissecting positions.

8.11 Published data regarding acceptable performance standards for containment of formaldehyde vapour at dissecting benches below the TLV of 2 ppm is not generally available. The guidance given in the following paragraphs is based on the results of Department of Health-commissioned tests on a model installation and is aimed at maintaining a concentration below 1 ppm. It is recommended as a solution, but does not preclude the consideration of any other system or equipment for which supporting evidence is available to demonstrate comparable performance.

8.12 Each dissecting position will usually be accommodated in a continuous run of benching which should not be more than 650mm from front to rear and which should be provided with a continuous upstand at the rear. Each dissecting position should have a linear extract grille mounted with its face flush with the upstand.

8.13 The bottom of the grille should be as close as practicable to the level of the working surface. For practical cleaning purposes, the minimum height of the bottom of the grille opening above the working surface is likely to be 75mm.

8.14 In practice, a working zone 1.2m long should suffice at each dissecting position. It is recommended that the extract grille should also be 1.2m long and 150mm high. For optimum extract performance, it should be mounted on a purpose-

designed plenum box (incorporating guide vanes as necessary) to ensure that, as far as practicable, there is a uniform face velocity of not less than 1m per second along the total length, and across the full height, of the extract grille opening. The grille should be readily demountable to permit periodic internal cleaning of the plenum box and any guide vanes.

8.15 Consideration should be given to down-draught dissecting benches, which alleviate the problems associated with splashing (See paragraph 6.29).

Ventilation of specimen store

8.16 Continuously operating extract ventilation to the specimen store will be required. This may be connected to the hospital main extract system.

8.17 An air flow switch should be incorporated into the extract branch connection serving the specimen store. When an air flow is established within this branch, the air flow switch should energise a light over the specimen store door, which should remain illuminated only while the air flow is maintained. A notice should be provided on the specimen store door warning not to enter the store unless the light is on.

Ventilation of visitors' sanitary accommodation

8.18 A separate extract system will be required for the visitors' sanitary facilities. This may be connected to the main hospital toilet extract system. If this is not practicable, a dual motor and fan unit with an automatic changeover facility should be provided. This system should ensure that, when the department is in use, this sanitary accommodation is maintained at a negative pressure in relation to the adjacent visitors' waiting area but does not draw air from the PM suite described in paragraph 8.8.

Ventilation of dirty utility

8.19 The extract system in this room should include a linear extract grille positioned above the workbench to achieve control of formaldehyde fumes when dilute formalin solutions are being made up. The general criteria for sizing and positioning described in paragraphs 8.12 - 8.14 may be applied except that a grille length of 0.6m will usually be sufficient.

Ventilation controls and alarms

8.20 The supply and extract ventilation system for the PM suite should include local controls and highly visible indicator lamps in the PM room to confirm the operational status of the system. These manual controls should be provided with labels clearly defining their function. This ventilation system must be

controlled by means of a timeclock with a manual override facility, located within the department (see paragraph 6.48).

8.21 The supply and extract fans to the mortuary and PM suite should be interlocked so that the supply fan will not operate unless an air flow is established within the extract system.

8.22 Alarms should be provided in the PM room to show “filter fault” and “low air flow”. The “filter fault” alarm should be initiated by a predetermined increase of pressure differential across the filters, thereby indicating a dirty filter or end of roll. The “low air flow” alarm should be initiated when the supply air quantity falls to around 80% of the design value to give indication of fan failure, closed dampers, plant access doors left open or any other eventuality that could cause a reduction of supply air quantity.

8.23 All primary heater battery coils should be provided with frost protection for severe weather.

Hot and cold water services

8.24 The hot and cold water service fittings in the PM room, body handling area and sluice room should be segregated on their own sub-circuit. Appropriate arrangements against back syphonage to any other water systems must be provided on these sub-circuits.

8.25 All taps in the working area should be hands-free. Post-mortem tables should be fitted with individual low-pressure water hoses, the hoses being supplied with temperature-controlled water from a thermostatically controlled mixing valve sited in the PM room. Water suction pumps should not be used. Floor service ducts should be avoided.

8.26 Wall-mounted hoses should be provided for washing purposes.

Refrigerating plant and body storage compartments

8.27 The refrigerating plant should be housed in a well-ventilated plant room suitable for one or more air-cooled compressors mounted on a brick or concrete plinth to facilitate servicing. The size of this room will depend upon the number of body storage spaces required. In practice, a body is stored in its own cold compartment and a vertical bank of between three and five compartments usually forms a construction module of one refrigerated compartment bay. The size of the plant room should allow for the accommodation of the electrical switchgear and distribution boards etc. External access to the plant room is required for servicing and maintenance.

Where top-mounted refrigeration systems are used, consideration should be given to the provision of adequate access space for maintenance and heat rejection from the unit.

8.28 The direct expansion cooling coils should be capable of reducing the temperature of the compartments and contents to 4°C within 10 hours from being loaded with bodies at a temperature of 37°C, when the external air temperature is 30°C and the initial temperature of the compartments, before loading, is 6ºC .

8.29 Unless defrosting is incorporated into the system, defrosting of the coils should be allowed for at the rate of once every seven days. Suitable drainage trays connected to piped drains will be required. The pipes should be protected by electrical tracer heating where the temperatures are likely to fall below freezing point. The refrigerant should be non-toxic.

8.30 The construction and insulation of the cold compartments should ensure that the running time does not exceed 18 hours per day, with normal or average periods for door opening. Door fastenings should be operable from both inside and outside the compartment bays. If a circulating fan is employed, it should be stopped by a door switch when the door is opened. It is recommended to provide a neon indicating lamp outside each compartment bay to indicate that its associated fan and compressors are working. Fittings in the compartment bays should be heavily galvanised or stainless steel. Lighting fittings should also be splash proof. Thermostatic control will be required for each compartment bay. Facilities should be provided locally in the body handling area to enable compartment bays not in use to be switched off. The chambers should be easily cleanable. Good quality door seals, handles, locks etc should be specified.

Lighting

8.31 Colour finishes and lighting throughout the body viewing facilities should be co-ordinated to create a calm and welcoming atmosphere. Practical methods are contained in the CIBSE Lighting Guide LG2 – 'Hospitals and Health Care Buildings'.

8.32 Dimmer switch-controlled luminaries may be appropriate in some instances.

Socket-outlets in the post-mortem suite

8.33 The socket-outlets in the PM room, body handling area, dirty utility and cleaning room should comply with BS196 (32) and be splash-proof (as classified in BS EN 60529). These socket-outlets should be fed via a safe supply unit. This unit should be mounted outside the PM suite but be readily accessible to the PM staff to permit the frequent trip testing that is required.

8.34 Guidance concerning the provision of the safe supply unit and the associated double-pole fused plugs and splash-proof socket-outlets is given in HN(82)39 ‘Electrical Safety in Post-Mortem Rooms’ (33). It should be noted that the term “hose-proof” used in HN(82)39 is now obsolete and that “splash-proof” (IPX4) is the current classification in BS EN 60529 (25).

8.35 Electro-mechanical floor cleaning equipment (scrubbers, water cleaning/vacuum units etc) used during the special cleaning routines of the PM room and body handling area should be dedicated to the zones supplied from the safe supply unit and be connected with double-pole fused plugs complying with BS196 (32). It is recognised that this will probably lead to some duplication of equipment, but this is necessary if the difficulty of matching plugs to sockets is to be avoided. It is not permissible, on an every-day basis, to operate this portable equipment fitted with standard 13 amp plugs described in BS1363 (34) from socket-outlets outside the safe supply unit zone.

8.36 If imaging facilities are required in the PM room, this can best be achieved by the use of a dedicated portable machine. This will overcome the difficulties of socket and plug compatibility. However, the manufacturer of the safe supply unit should be asked to confirm that their unit can supply the particular imaging machine's load characteristics.

Dictation system

8.37 A dictation system should be provided in the PM room. This may consist of microphones and approved splash-proof foot controls, complete with plugs and splash-proof sockets, or may be voice-activated. A remote controlled recorder unit should be located outside the PM room, if required.

Entrance bells

8.38 Each entrance to the mortuary should be provided with either a bell push/audio-intercom, which connects to the technician's office, or should have an audio-visual link to the office. Visual indication of which entrance bell is being operated should be via a suitably labelled small indicator panel located in the technician's office.

Staff location system

8.39 The hospital staff location system should be extended to include this department. Further guidance is contained in SHTM 2015 'Bedhead services'.

Telephones

8.40 Coin and/or card operated payphones and a free phone for taxis, depending on local policy, should be provided in the waiting area of the body viewing facilities.

9. Schedules of accommodation

Schedules of accommodation

9.1 The schedules of accommodation listed have adopted a modular approach to the planning of appropriate units to enable project teams to 'pick and mix' those facilities that are required.

9.2 The schedules are split into three distinct elements: schedules of space types; schedules of suites/modules; and departmental examples.

Schedules of space types

9.3 This lists all space types and major options covered by the document giving a range of provision sizes, when appropriate, together with a nominal area.

Schedules of suites/modules

9.4 This lists functional groupings of spaces. These form complete suites/modules of accommodation and can be provided either separately or as grouped accommodation with shared supporting accommodation. Suites/modules are functional associations and not physical groupings.

9.5 Accommodation solely related to any suite/module is listed under the core requirement for that suite/module whilst accommodation that can either be provided for a particular suite/module or shared between two or more suites/modules is listed under essential complementary/shared accommodation (ECA). Where there is an option to include accommodation within a suite/module or a major option on how that accommodation is provided it is listed under optional accommodation. These schedules include the appropriate nominal area taken from the schedule of space types together with a suggestion for the number of spaces required.

Departmental examples

9.6 Using this modular approach, examples have been built up for five different types of mortuary and PM departments (including a mortuary-only department). **The examples are not to be taken as ideal provision for any particular project.** DCAGs have been calculated based on these departmental examples.

The examples included are as follows:

(i) Mortuary-only department comprising:
Body viewing suite

Body storage suite containing
- two refrigerated body storage compartment bays (up to 10 bodies)

(ii) Mortuary and PM department comprising:
Body viewing suite
Body storage suite containing
- four refrigerated body storage compartment bays (up to 20 bodies)
- one deep freeze body storage compartment bay (up to five bodies)
Post-mortem suite with two PM tables

(iii) Mortuary and PM department comprising:
Body viewing suite
Body storage suite containing
- six refrigerated body storage compartment bays (up to 30 bodies)
- one deep freeze body storage compartment bay (up to five bodies)
Post-mortem suite with two PM tables

(iv) Mortuary and PM department comprising:
Body viewing suite
Body storage suite containing
- 14 refrigerated body storage compartment bays (up to 70 bodies)
- one deep freeze body storage compartment bay (up to five bodies)
Post-mortem suite with three PM tables

(v) Mortuary and PM department comprising:
two body viewing suites
Body storage suite containing
- 18 refrigerated body storage compartment bays (up to 90 bodies)
- two deep freeze body storage compartment bays (up to 10 bodies)
Post-mortem suite with four PM tables

Dimensions and areas

9.7 To assist project teams in preparing detailed design solutions for the rooms and spaces, studies have been carried out to establish dimensional requirements in the form of critical dimensions. The results of these studies appear as ergonomic diagrams in Appendix 3.

Schedules of space types

Space type	*Nominal area*	*Notes*
Entrance/Reception Facilities		
Visitor entrance provision	-	Circulation
Staff entrance provision	-	Circulation
Body entrance including covered area provision	-	Circulation
Telephone area – single booth	1.5	
Telephone area – single booth, low height	2.0	
Waiting Facilities		
Waiting area – 5 person	7.5	
Waiting area – 10 person	15.0	
Visitors' waiting room – 4 person	11.0	
Counselling Facilities		
Interview/counselling room	9.0	
Family/counselling room	16.0	
Visitors' Support Facilities - Sanitary		
Visitors' wheelchair WC	4.5	
Mortuary Facilities – Body Viewing		
Viewing room	8.0	
Bier room	10.0	

Space type	*Nominal area*	*Notes*
Mortuary Facilities – Body Storage		
Refrigerated body store – double ended – 1 compartment bay	3.0	
Refrigerated body store – extra wide (obese) – double-ended – 1 compartment bay	3.5	
Refrigerated body store – deep freeze – double-ended – 1 compartment bay	3.0	
Refrigerated body store – deep freeze – extra wide (obese) – double-ended – 1 compartment bay	3.5	
Refrigerated body store – (radioactive body) – double-ended – 1 compartment bay	3.0	
Refrigerated body store – single-ended – 1 compartment bay	2.5	
Refrigerated body store – extra wide (obese) – single-ended – 1 compartment bay	3.0	
Refrigerated body store – deep freeze – single-ended – 1 compartment bay	2.5	
Refrigerated body store – deep freeze –extra wide (obese) – single-ended – 1 compartment bay	3.0	
Refrigerated body store – (radioactive body) – single ended – 1 compartment bay	2.5	
Body handling area – per compartment bay	3.5	
Body handling admin area	5.0	
Trolley/equipment parking area – 1 space	3.0	
Trolley/equipment parking area – 3 paces – trolleys/X-ray machine, etc	10.0	
Refrigeration plant room – includes switchgear space	7.5/10.0	
Temporary body storage building – up to 25 bodies	29.0	

Space type	*Nominal area*	*Notes*
Post-mortem Facilities		
Post-mortem room – 1 table (special procedures in separate PM room)	27.0	
Post-mortem room – 2 tables (direct body store access)	70.0	
Post-mortem room – 3 tables (direct body store access)	90.0	
Post-mortem room – 4 tables (direct body store access)	110.0	
Additional table allowance	20.0	
PM specimen store	5.5	
Cleaners' space/bay	2.5	
PM dirty utility/instrument store	10.0	
PM transit area	9.0	
PM observation area 6/8 people	8.0	
PM observation area 10/12 people	12.0	
Staff Support Facilities – Offices, etc		
Office – 1 person	9.0	
Office – 2 person	13.5	
Technicians' office/rest room –2 person	11.0	
Technicians' office/rest room with beverage facility –2 person	13.0	

Space type	*Nominal area*	*Notes*
Staff room with beverage facility – 5 persons	11.0	
Staff Support Facilities – Sanitary/Changing		
Staff changing - 3 staff	7.5	
Staff changing - 5 staff	9.0	
Staff changing – 10 staff	10.0	
Staff WCs	2.0	
Staff showers	2.0	
Support Facilities – Holding/Storage		
General purpose and linen store	3.0/4.5	
General purpose store/deceased's belongings	4.0	
Support Facilities – Miscellaneous		
Disposal room	3.0/6.0	
Cleaners' room	5.5	

Schedules of Functional Suites/Modules

Functional Group Type A: Body Viewing Facilities
Suite/module Type A1: Body Viewing Suite

Space	*Quantity*	*Area*	*Total area*	*Notes*
Core requirement				
Visitors' waiting room – 4 persons	1	11.0	11.0	
Interview/counselling room	1	9.0	9.0	
Viewing room	1	8.0	8.0	
Bier room	1	10.0	10.0	
Visitors' wheelchair WC	1	4.5	4.5	
Nett allowance			42.5	
5% planning allowance			2.0	
Total			44.5	
3% engineering allowance			1.5	
15% circulation allowance			6.5	
Total allowance			52.5	
Essential complementary/shared accommodation				
Visitor entrance space	-	-	-	Within circulation
Telephone area – single booth	1	1.5 + 0.5	2.0	
Telephone area – single booth, low height	1	2.0 + 0.5	2.5	
Optional accommodation				
Module B1 bereavement centre facilities is optional provisions in lieu of the interview/counselling room				

Functional Group Type B: Bereavement Centre Facilities
Suite/Module Type B1: Bereavement Centre

Space	*Quantity*	*Area*	*Total area*	*Notes*
Core requirement				
Waiting area – 5 persons	1	7.5	7.5	
Interview/counselling room	1	9.0	9.0	
Family/counselling room	1	16.0	16.0	
Office – 1 person	1	9.0	9.0	
Office – 2 persons	1	13.5	13.5	
Visitors' wheelchair WC	1	4.5	4.5	
Store: General/deceased's belongings	1	4.0	4.0	
Nett allowance			63.5	
5% planning allowance			3.0	
Total			66.5	
3% engineering allowance			2.0	
25% circulation allowance			16.5	
Total allowance			85.0	
Optional Accommodation				
Waiting area –10 persons	1	15.0 + 5.0	20.0	
Interview/counselling room (additional)	1	9.0 + 3.0	12.0	
Family/counselling room (additional)	1	16.0 + 5.0	21.0	

Functional Group Type C: Body Storage Facilities
Suite/Module Type C1: Body Storage Suite for 10 bodies (2 compartment bays)

Space	*Quantity*	*Area*	*Total area*	*Notes*
Core requirement				
Refrigerated body store- single-ended – 1 compartment bay	1	2.5	2.5	
Refrigerated body store – extra wide (obese) – single-ended – 1 compartment bay	1	3.0	3.0	
Refrigeration plant room	1	7.5	7.5	
Body handling area	2	3.5	7.0	
Body handling admin area	1	5.0	5.0	
Trolley parking area – 1 space	1	3.0	3.0	
Nett allowance			28.0	
5% planning allowance			1.5	
Total			29.5	
3% engineering allowance			1.0	
30% circulation allowance			9.0	
Total allowance			39.5	
Essential Complementary/Shared Accommodation				
Body entrance space				Within circulation
Staff entrance space				Within circulation
Technicians' office/rest room with beverage facility	1	13.0 + 5.0	18.0	
Staff changing – 3 staff	2 x 7.5	15.0 + 5.5	20.5	
Staff WCs	2 x 2.0	4.0 + 1.5	5.5	
Staff showers	2x 2.0	4.0 + 1.5	5.5	
General purpose and linen store	1	3.0 + 1.0	4.0	
Disposal room	1	3.0 + 1.0	4.0	
Cleaners' room	1	5.5 + 2.0	7.5	
Optional Accommodation				
Additional body store compartments/handling area	As above			
Refrigerated body store – deep freeze – extra wide (obese) – double-ended – 1 compartment bay	1	3.5 + 1.0	4.5	
Refrigerated body store – radioactive body – double-ended – 1 compartment bay	1	3.0 + 1.0	4.0	

Space	*Quantity*	*Area*	*Total area*	*Notes*
Core requirement				
Refrigerated body store- single-ended – 1 compartment bay	1	2.5	2.5	
Refrigerated body store – extra wide (obese) – single-ended – 1 compartment bay	1	3.0	3.0	
Refrigeration plant room	1	7.5	7.5	
Body handling area	2	3.5	7.0	
Body handling admin area	1	5.0	5.0	
Trolley parking area – 1 space	1	3.0	3.0	
Nett allowance			28.0	
5% planning allowance			1.5	
Total			29.5	
3% engineering allowance			1.0	
30% circulation allowance			9.0	
Total allowance			39.5	
Essential Complementary/Shared Accommodation				
Body entrance space				Within circulation
Staff entrance space				Within circulation
Technicians' office/rest room with beverage facility	1	13.0 + 5.0	18.0	
Staff changing – 3 staff	2 x 7.5	15.0 + 5.5	20.5	
Staff WCs	2 x 2.0	4.0 + 1.5	5.5	
Staff showers	2x 2.0	4.0 + 1.5	5.5	
General purpose and linen store	1	3.0 + 1.0	4.0	
Disposal room	1	3.0 + 1.0	4.0	
Cleaners' room	1	5.5 + 2.0	7.5	
Optional Accommodation				
Additional body store compartments/handling area	As above			
Refrigerated body store – deep freeze – extra wide (obese) – double-ended – 1 compartment bay	1	3.5 + 1.0	4.5	
Refrigerated body store – radioactive body – double-ended – 1 compartment bay	1	3.0 + 1.0	4.0	

Suite/Module Type C2: Body Storage Suite for 25 bodies (5 compartment bays)

Space	*Quantity*	*Area*	*Total area*	*Notes*
Core requirement				
Refrigerated body store – double-ended – 1 compartment bay	3	3.0	9.0	
Refrigerated body store – extra wide (obese) – double-ended – 1 compartment bay	1	3.5	3.5	
Refrigerated body store – deep freeze – double-ended – 1 compartment bay	1	3.0	3.0	
Refrigeration plant room	1	10.0	10.0	
Body handling area	5	3.5	17.5	
Body handling admin area	2	5.0	5.0	
Trolley parking area – 3 spaces	1	10.0	10.0	
Nett allowance			58.0	
5% planning allowance			3.0	
Total			61.0	
3% engineering allowance			2.0	
25% circulation allowance			15.0	
Total allowance			78.0	
Essential complementary/shared accommodation				
Body entrance space	-			Within circulation
Staff entrance space	-			Within circulation
Technicians' office/rest room with beverage facility	1	13.0 + 4.5	17.5	
Staff changing – 3 staff	2 x 7.5	15.0 + 5.0	20.0	
Staff WCs	2 x 2.0	4.0 + 1.5	5.5	
Staff showers	2 x 2.0	4.0 + 1.5	5.5	
General purpose and linen store	1	5.5 + 2.0	7.5	
Disposal room	1	6.0 + 2.0	8.0	
Cleaners' room	1	5.5 + 2.0	7.5	
Optional accommodation				
Additional body store compartments/handling area	As above			
Refrigerated body store – deep freeze –extra wide (obese) double-ended – 1 compartment bay	1	3.5 + 1.0	4.5	
Refrigerated body store – radioactive body –double-ended – 1 compartment bay	1	3.0 + 1.0	4.0	

Suite/Module Type C3: Body storage suite for 35 bodies (7 compartment bays)

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Refrigerated body store – double-ended – 1 compartment bay	5	3.0	15.0	
Refrigerated body store – extra wide (obese) – double-ended – 1 compartment bay	1	3.5	3.5	
Refrigerated body store – deep freeze – double-ended –1 compartment bay	1	3.0	3.0	
Refrigeration plant room	1	10.0	10.0	
Body handling area	7	3.5	24.5	
Body handling admin area	1	5.0	5.0	
Trolley parking area – 3 spaces	1	10.0	10.0	
Nett allowance			71.0	
5% planning allowance			3.5	
Total			74.5	
3% engineering allowance			2.0	
20% circulation allowance			15.0	
Total allowance			91.5	
Essential complementary/shared accommodation				
Body entrance space	-			Within circulation
Staff entrance space	-			Within circulation
Technicians' office/rest room with beverage facility	1	13.0 + 3.5	16.5	
Staff changing – 3 staff	2 x 7.5	15.0 + 4.0	19.0	
Staff WCs	2 x 2.0	4.0 + 1.0	5.0	
Staff showers	2 x 2.0	4.0 + 1.0	5.0	
General purpose and linen store	1	5.5 + 1.5	7.0	
Disposal room	1	6.0 + 1.5	7.5	
Cleaners' room	1	5.5 + 1.5	7.0	
Optional accommodation				
Additional body store compartment/handling area	As above			
Refrigerated body store – deep freeze – extra wide (obese) – double-ended – 1 compartment bay	1	3.5 + 1.0	4.5	
Refrigerated body store – radioactive body – single-ended – 1 compartment bay	1	3.0 + 1.0	4.0	
Staff room with beverage facility – 5 persons	1	11.0 + 3.0	14.0	See technicians' room

Suite/Module Type C4: Body storage suite for 75 bodies (15 compartment bays)

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Refrigerated body store – double-ended – 1 compartment bay	13	3.0	39.0	
Refrigerated body store – extra wide (obese) – double-ended – 1 compartment bay	1	3.5	3.5	
Refrigerated body store – deep freeze – double-ended –1 compartment bay	1	3.0	3.0	
Refrigeration plant room	1	10.0	10.0	
Body handling area	15	3.5	52.5	
Body handling admin area	1	5.0	5.0	
Trolley parking area – 3 spaces	1	10.0	10.0	
Nett allowance			123.0	
5% planning allowance			6.0	
Total			129.0	
3% engineering allowance			4.0	
20% circulation allowance			26.0	
Total allowance			159.0	
Essential complementary/shared accommodation				
Body entrance space	-			Within circulation
Staff entrance space	-			Within circulation
Technicians' office/rest room with beverage facility	1	13.0 + 3.5	16.5	
Staff changing – 3 staff	2 x 9.0	18.0 + 5.0	23.0	
Staff WCs	2 x 2.0	4.0 + 1.0	5.0	
Staff showers	2 x 2.0	4.0 + 1.0	5.0	
General purpose and linen store	1	5.5 + 1.5	7.0	
Disposal room	1	6.0 + 1.5	7.5	
Cleaners' room	1	5.5 + 1.5	7.0	
Optional accommodation				
Additional body store compartment/handling area	As above			
Refrigerated body store – deep freeze – extra wide (obese) – double-ended – 1 compartment bay	1	3.5 + 1.0	4.5	
Refrigerated body store – radioactive body – single-ended – 1 compartment bay	1	3.0 + 1.0	4.0	
Staff room with beverage facility – 5 persons	1	11.0 + 3.0	14.0	See technicians' room

Suite/Module Type C5: Body storage suite for 100 bodies (20 compartment bays)

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Refrigerated body store – double-ended – 1 compartment bay	17	3.0	51.0	
Refrigerated body store – extra wide (obese) – double-ended – 1 compartment bay	1	3.5	3.5	
Refrigerated body store – deep freeze – double-ended –1 compartment bay	2	3.0	6.0	
Refrigeration plant room	1	10.0	10.0	
Body handling area	20	3.5	70.0	
Body handling admin area	1	5.0	5.0	
Trolley parking area – 3 spaces	1	10.0	10.0	
Nett allowance			155.5	
5% planning allowance			8.0	
Total			163.5	
3% engineering allowance			5.0	
20% circulation allowance			32.5	
Total allowance			201.0	
Essential complementary/shared accommodation				
Body entrance space	-			Within circulation
Staff entrance space	-			Within circulation
Technicians' office/rest room with beverage facility	1	13.0 + 3.5	16.5	
Staff changing – 3 staff	2 x 9.0	18.0 + 5.0	23.0	
Staff WCs	2 x 2.0	4.0 + 1.0	5.0	
Staff showers	2 x 2.0	4.0 + 1.0	5.0	
General purpose and linen store	1	5.5 + 1.5	7.0	
Disposal room	1	6.0 + 1.5	7.5	
Cleaners' room	1	5.5 + 1.5	7.0	
Optional accommodation				
Additional body store compartment/handling area	As above			
Refrigerated body store – deep freeze – extra wide (obese) – double-ended – 1 compartment bay	1	3.5 + 1.0	4.5	
Refrigerated body store – radioactive body – single-ended – 1 compartment bay	1	3.0 + 1.0	4.0	
Staff room with beverage facility – 5 persons	1	11.0 + 3.0	14.0	See technicians' room

Function Group type D: Temporary body storage facilities (5 compartment bays)

Suite/Module Type D1: Temporary storage suite for 25 bodies

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Temporary body storage building (portable) (5 body store compartment bays)	1	29.0	29.0	Standard portable building requiring external standing space and service connections

Note: The maximum number of bodies that can be stored in this area may be increased if the whole space is refrigerated as opposed to installing refrigerated body store compartments. The latter has the advantage of providing a more comfortable working environment for staff.

Functional Group Type E: Post-mortem Facilities
Suite/Module Type E1: Post-mortem suite containing two post-mortem tables

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Post-mortem room – 2 PM tables (direct body store access)	1	70.0	70.0	
PM specimen store	1	5.5	5.5	
PM dirty utility/instrument store	1	10.0	10.0	
PM transit area	1	9.0	9.0	
PM observation area – 6/8 people	1	8.0	8.0	
Pathologists' office	1	11.0	11.0	
Cleaners' space/bay	1	2.5	2.5	
Nett allowance			116.0	
5% planning allowance			6.0	
Total			122.0	
3% engineering allowance			3.5	
15% circulation allowance			18.5	
Total allowance			144.0	
Essential complementary/shared accommodation				
Staff entrance space	-			Within circulation
Technicians' office/rest room with beverage facility	1	13.0 + 3.0	16.0	
Staff changing – 3 staff	2 x 7.5	15.0 + 3.5	18.5	
Staff WCs	2 x 2.0	4.0 + 1.0	5.0	
Staff showers	2 x 2.0	4.0 + 1.0	5.0	
General purpose and linen store	1	5.5 + 1.0	6.5	
Disposal room	1	6.0 + 1.5	7.5	
Optional accommodation				
Additional table for PM room	1	20.0 + 4.5	24.5	

Suite/Module Type E2: Post-mortem suite containing three post-mortem tables

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Post-mortem room – 3 PM tables (direct body store access)	1	90.0	90.0	
PM specimen store	1	5.5	5.5	
PM dirty utility/instrument store	1	10.0	10.0	
PM transit area	1	9.0	9.0	
PM observation area – 10/12 people	1	12.0	12.0	
Pathologists' office	1	11.0	11.0	
Cleaners' space/bay	1	2.5	2.5	
Nett allowance			140.0	
5% planning allowance			7.0	
Total			147.0	
3% engineering allowance			4.5	
15% circulation allowance			22.0	
Total allowance			173.5	
Essential complementary/shared accommodation				
Staff entrance space	-			Within circulation
Technicians' office/rest room with beverage facility	1	13.0 + 3.0	16.0	
Staff changing – 5 staff	2 x 9.0	18.0 + 4.0	22.0	
Staff WCs	2 x 2.0	4.0 + 1.0	5.0	
Staff showers	2 x 2.0	4.0 + 1.0	5.0	
General purpose and linen store	1	5.5 + 1.0	6.5	
Disposal room	1	6.0 + 1.5	7.5	
Optional accommodation				
Additional table for PM room	1	20.0 + 4.5	24.5	
Post-mortem room – 1 table (special procedures)	1	27.0 + 6.0	33.0	
Staff room with beverage facility – 5 persons	1	11.0 + 2.5	13.5	See technicians' office

Suite/Module Type E3: Post-mortem suite containing four post-mortem tables

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Post-mortem room – 4 PM tables (direct body store access)	1	110.0	110.0	
PM specimen store	1	5.5	5.5	
PM dirty utility/instrument store	1	10.0	10.0	
PM transit area	1	9.0	9.0	
PM observation area – 10/12 people	1	12.0	12.0	
Pathologists' office	1	11.0	11.0	
Cleaners' space/bay	1	2.5	2.5	
Nett allowance			160.0	
5% planning allowance			8.0	
Total			168.0	
3% engineering allowance			5.0	
15% circulation allowance			25.0	
Total allowance			198.0	
Essential complementary/shared accommodation				
Staff entrance space	-			Within circulation
Technicians' office/rest room with beverage facility	1	13.0 + 3.0	16.0	
Staff changing – 5 staff	2 x 9.0	18.0 + 4.0	22.0	
Staff WCs	2 x 2.0	4.0 + 1.0	5.0	
Staff showers	2 x 2.0	4.0 + 1.0	5.0	
General purpose and linen store	1	5.5 + 1.0	6.5	
Disposal room	1	6.0 + 1.5	7.5	
Optional accommodation				
Additional table for PM room	1	20.0 + 4.5	24.5	
Post-mortem room – 1 table (special procedures)	1	27.0 + 6.0	33.0	
Staff room with beverage facility – 5 persons	1	11.0 + 2.5	13.5	See technicians' office

Departmental Examples: Mortuary and Post-mortem departments

These examples do not include the bereavement centre accommodation, which is optional. If provided the accommodation listed in module B1 would replace the interview/counselling room contained within these schedules.

Example 1

Body viewing suite
Body storage suite for 10 bodies (single-ended body store – 2 compartment bays)
No post-mortem suite

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Visitor entrance provision	-	-	-	Circulation
Staff entrance provision	-	-	-	Circulation
Body entrance including covered area provision	-	-	-	Circulation
Telephone area – single booth, low height	1	2.0	2.0	
Visitors' waiting room – 4 persons	1	11.0	11.0	
Interview/counselling room	1	9.0	9.0	
Viewing room	1	8.0	8.0	
Bier room	1	10.0	10.0	
Visitors' wheelchair WC	1	4.5	4.5	
Refrigerated body store – single-ended – 1 compartment bay	1	2.5	2.5	
Refrigerated body store – extra wide (obese) – single-ended – 1 compartment bay	1	3.0	3.0	
Refrigeration plant room	1	7.5	7.5	
Body handling area	2	3.5	7.0	
Body handling admin area	1	5.0	5.0	
Technicians' office/rest room with beverage facility	1	13.0	13.0	
Staff changing – 3 staff	2	7.5	15.0	
Staff WCs	2	2.0	4.0	
Staff showers	2	2.0	4.0	

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement (continued)				
General purpose and linen store	1	3.0	3.0	
Disposal room	1	3.0	3.0	
Cleaners' room	1	5.5	5.5	
Nett allowance			120.0	
5% planning allowance			6.0	
Total			126.0	
3% engineering allowance			4.0	
20% circulation allowance			25.0	
Total allowance			155.0	

Example 2

Body viewing suite
Body storage suite for 25 bodies (double-ended body store – 5 compartment bays)
Post-mortem suite containing 2 PM tables

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Visitor entrance provision	-	-	-	Circulation
Staff entrance provision	-	-	-	Circulation
Body entrance including covered area provision	-	-	-	Circulation
Telephone area – single booth, low height	1	2.0	2.0	
Visitors' waiting room – 4 persons	1	11.0	11.0	
Interview/counselling room	1	9.0	9.0	
Viewing room	1	8.0	8.0	
Bier room	1	10.0	10.0	
Visitors' wheelchair WC	1	4.5	4.5	
Refrigerated body store – double-ended – 1 compartment bay	3	3.0	3.0	
Refrigerated body store – extra wide (obese) – double-ended – 1 compartment bay	1	3.5	3.5	
Refrigerated body store – deep freeze – double-ended – 1 compartment bay	1	3.0	3.0	
Refrigeration plant room	1	10.0	10.0	
Body handling area	5	3.5	17.5	
Body handling admin area	1	5.0	5.0	
Trolley parking area – 3 spaces	1	10.0	10.0	
Post-mortem room – 2 PM tables	1	70.0	70.0	
PM specimen store	1	5.5	5.5	
PM dirty utility/instrument store	1	10.0	10.0	
PM transit area	1	9.0	9.0	
PM observation area	1	8.0	8.0	
Pathologists' office	1	11.0	11.0	

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement (continued)				
Cleaners' space/bay (PM room)	1	2.5	2.5	
Technicians' office/rest room with beverage facility	1	13.0	13.0	
Staff changing – 3 staff	2	7.5	15.0	
Staff WCs	2	2.0	4.0	
Staff showers	2	2.0	4.0	
General purpose and linen store	1	5.5	5.5	
Disposal room	1	6.0	6.0	
Cleaners' room	1	5.5	5.5	
Nett allowance			271.5	
5% planning allowance			13.5	
Total			285.0	
3% engineering allowance			8.5	
20% circulation allowance			57.0	
Total allowance			350.5	

Example 3

Body viewing suite
Body storage suite for 35 bodies (double-ended body store – 7 compartment bays)
Post-mortem suite containing 2 PM tables

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Visitor entrance provision	-	-	-	Circulation
Staff entrance provision	-	-	-	Circulation
Body entrance including covered area provision	-	-	-	Circulation
Telephone area – single booth, low height	1	2.0	2.0	
Visitors' waiting room – 4 persons	1	11.0	11.0	
Interview/counselling room	1	9.0	9.0	
Viewing room	1	8.0	8.0	
Bier room	1	10.0	10.0	
Visitors' wheelchair WC	1	4.5	4.5	
Refrigerated body store – double-ended – 1 compartment bay	5	3.0	15.0	
Refrigerated body store – extra wide (obese) – double-ended – 1 compartment bay	1	3.5	3.5	
Refrigerated body store – deep freeze – double-ended – 1 compartment bay	1	3.0	3.0	
Refrigeration plant room	1	10.0	10.0	
Body handling area	7	3.5	24.5	
Body handling admin area	1	5.0	5.0	
Trolley parking area – 3 spaces	1	10.0	10.0	
Post-mortem room – 2 PM tables	1	70.0	70.0	
PM specimen store	1	5.5	5.5	
PM dirty utility/instrument store	1	10.0	10.0	
PM transit area	1	9.0	9.0	
PM observation area	1	8.0	8.0	
Pathologists' office	1	11.0	11.0	

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Cleaners' space/bay (PM room)	1	2.5	2.5	
Technicians' office/rest room with beverage facility	1	13.0	13.0	
Staff changing – 3 staff	2	7.5	15.0	
Staff WCs	2	2.0	4.0	
Staff showers	2	2.0	4.0	
General purpose and linen store	1	5.5	5.5	
Disposal room	1	6.0	6.0	
Cleaners' room	1	5.5	5.5	
Nett allowance			284.5	
5% planning allowance			14.0	
Total			298.5	
3% engineering allowance			9.0	
20% circulation allowance			59.0	
Total allowance			366.5	

Example 4

Body viewing suite
Body storage suite for 75 bodies (double-ended body store – 15 compartment bays)
Post-mortem suite containing 3 PM tables

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Visitor entrance provision	-	-	-	Circulation
Staff entrance provision	-	-	-	Circulation
Body entrance including covered area provision	-	-	-	Circulation
Telephone area – single booth	1	1.5	1.5	
Telephone area – single booth, low height	1	2.0	2.0	
Visitors' waiting room – 4 persons	1	11.0	11.0	
Interview/counselling room	1	9.0	9.0	
Viewing room	1	8.0	8.0	
Bier room	1	10.0	10.0	
Visitors' wheelchair WC	1	4.5	4.5	
Refrigerated body store – double-ended – 1 compartment bay	13	3.0	39.0	
Refrigerated body store – extra wide (obese) – double-ended – 1 compartment bay	1	3.5	3.5	
Refrigerated body store – deep freeze – double-ended – 1 compartment bay	1	3.0	3.0	
Refrigeration plant room	1	10.0	10.0	
Body handling area	15	3.5	52.5	
Body handling admin area	1	5.0	5.0	
Trolley parking area	1	10.0	10.0	
Post-mortem room – 3 PM tables	1	90.0	90.0	
PM specimen store	1	5.5	5.5	
PM dirty utility/instrument store	1	10.0	10.0	
PM transit area	1	9.0	9.0	
PM observation area	1	12.0	12.0	

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement (continued)				
Pathologists' office	1	11.0	11.0	
Cleaners' space/bay (PM room)	1	2.5	2.5	
Technicians' office/rest room with beverage facility	1	13.0	13.0	
Staff changing – 5 staff	1	9.0	9.0	
Staff changing – 10 staff	1	10.0	10.0	
Staff WCs	2	2.0	4.0	
Staff showers	2	2.0	4.0	
General purpose and linen store	1	5.5	5.5	
Disposal room	1	6.0	6.0	
Cleaners' room	1	5.5	5.5	
Nett allowance			366.0	
5% planning allowance			18.5	
Total			384.5	
3% engineering allowance			11.5	
15% circulation allowance			57.5	
Total allowance			453.5	

Example 5

Two body viewing suites
Body storage suite for 100 bodies (double-ended body store – 20 compartment bays)
Post-mortem suite containing 4 PM tables

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement				
Visitor entrance provision	-	-	-	Circulation
Staff entrance provision	-	-	-	Circulation
Body entrance including covered area provision	-	-	-	Circulation
Telephone area – single booth	1	1.5	1.5	
Telephone area – single booth, low height	1	2.0	2.0	
Visitors' waiting room – 4 persons	2	11.0	22.0	
Interview/counselling room	2	9.0	18.0	
Viewing room	2	8.0	16.0	
Bier room	2	10.0	20.0	
Visitors' wheelchair WC	1	4.5	4.5	
Refrigerated body store – double-ended – 1 compartment bay	17	3.5	51.0	
Refrigerated body store – extra wide (obese) – double-ended – 1 compartment bay	1	3.5	3.5	
Refrigerated body store – deep freeze – double-ended – 1 compartment bay	2	3.0	6.0	
Refrigeration plant room	1	10.0	10.0	
Body handling area	20	3.5	70.0	
Body handling admin area	1	5.0	5.0	
Trolley parking area – 3 spaces	1	10.0	10.0	
Post-mortem room – 4 PM tables	1	110.0	110.0	
PM specimen store	1	5.5	5.5	
PM dirty utility/instrument store	1	10.0	10.0	
PM transit area	1	9.0	9.0	
PM observation area	1	12.0	12.0	

Space	*Quantity*	*Area*	*Total Area*	*Notes*
Core requirement (continued)				
Pathologists' office	1	11.0	11.0	
Cleaners' space/bay (PM room)	1	2.5	2.5	
Technicians' office/rest room	1	11.0	11.0	
Staff room with beverage facilities	1	11.0	11.0	
Staff changing – 5 staff	1	9.0	9.0	
Staff changing – 10 staff	1	10.0	10.0	
Staff WCs	2	2.0	4.0	
Staff showers	2	2.0	4.0	
General purpose and linen store	1	5.5	5.5	
Disposal room	1	6.0	6.0	
Cleaners' room	1	5.5	5.5	
Nett allowance			465.5	
5% planning allowance			23.5	
Total			489.0	
3% engineering allowance			14.5	
15% circulation allowance			73.5	
Total allowance			577.0	

10. Appendices

Appendix 1

Categorisation of biological agents

The Advisory Committee on Dangerous Pathogens (ACDP) guidance document 'Categorisation of biological agents according to hazard and categories of containment', 4th Edition, 1995 details the containment levels. Its 2000 Second Supplement contains the Approved List (Categorisation 2000), which assigns biological agents into their hazard groupings as approved by the Health and Safety Commission and the Exemption Certificate for those Hazard Group 3 agents that are subject to derogation from Containment Level 3. The ACDP Supplement should be read in conjunction with the Control of Substances Hazardous to Health (COSHH) Regulations and in particular Schedule 3 of COSHH. All employers whose work involves exposure of their employees to biological agents will need to refer to the ACDP Guidance and its Supplement to be able to comply with COSHH.

This is supplemented by more specific guidance for work with blood-borne viruses, transmissible spongiform encephalopathies and viral haemorrhagic fevers. Anyone working with these organisms should follow the relevant specific guidance.

Definitions of hazard groups

Hazard Group 1

A biological agent unlikely to cause human disease.

Hazard Group 2

A biological agent that can cause human disease and may be a hazard to employees; it is unlikely to spread to the community and there is usually effective prophylaxis or effective treatment available.

Hazard Group 3

A biological agent that can cause severe human disease and presents a serious hazard to employees; it may present a risk of spreading to the community, but there is usually effective prophylaxis or treatment available.

Hazard Group 4

A biological agent that causes severe human disease and is a serious hazard to employees; it is likely to spread to the community and there is usually no effective prophylaxis or treatment.

Hazard group 4 pathogens

Cases of Hazard Group 4 infection are rare in this country. However, when cases occur, patients and clinical samples must be handled in appropriate facilities. Employers who intend to work with the agents responsible for Lassa and Ebola Fevers and a number of other agents listed in Schedule 3 of COSHH must give the Health and Safety Executive advance notification. This requirement applies to those intending to offer a diagnostic service, even if virus cultivation is not involved.

Appendix 2

Requirements for handling bodies that have undergone cancer treatments involving radioactive substances

Body storage

The compartment bays should be constructed so that there is no leakage of fluid from one compartment to another. Shielding of compartment bays to handle these cases will not normally be necessary due to their inherent design, although consultation with the RPA is advised. Appropriate signage should be appended to the front of the compartment bay to indicate the presence of a radiation hazard.

Personnel contamination hazards

Iodine-131 is used to treat thyroid cancer. Iodine is excreted through the sweat pores, urine, saliva and faecal routes. Therefore, the surface of a body that has been treated with Iodine-131 will probably be radioactively contaminated before it is transferred to the mortuary.

Staff handling radioactive bodies – both during transfer and throughout the PM procedure – should wear protective clothing, consisting of plastic gloves, waterproof overalls, face shields and plastic overshoes. Separate shielded facilities should be provided for the storage of these items before they are disposed of. These articles should be treated as solid radioactive waste. Facilities managers should be aware that adjustments to the radioactive waste disposal certificate may be required to account for these contaminated articles.

Staff undertaking PM examinations on radioactive bodies should check hands, arms, feet etc for radioactive contamination following the procedure. This should take place in the staff changing area. Storage of radioactive monitoring equipment and decontamination spill kits should be located in this area.

Facility considerations for the post-mortem room

The use of stainless steel PM tables and dissection benches is not advised when performing PM examinations on patients who have recently been administered radioactive iodine. The iodine compounds have an affinity with stainless steel, which makes decontamination of stainless steel surfaces as a result of radioactive iodine spills difficult. The use of ceramic PM tables and dissection benches is advised.

Care should be taken to minimise fissures in surfaces within the PM facility as radioactive substances can accumulate in cracks etc and give rise to contamination hazards. Walls and finishes should be designed to meet the requirements described in paragraphs 6.40 - 6.42, with the additional

consideration that they should be impervious to and easily cleaned of radioactive iodine compounds. Facilities managers should be aware that the use of bleach or similar chemicals on iodine is not advised as this can cause hazards from oxidation and the release of a potentially hazardous gas.

An additional sink may be needed for the disposal of aqueous radioactive substances, which may be collected during the PM examination. The sink will need to be designated for this purpose and labelled appropriately. Special considerations apply to the drainage of materials from these sinks (for further details see the engineering requirements appendix of the new SHPN 06 - 'Facilities for diagnostic imaging and interventional radiology', under 'Radionuclide imaging'). These considerations also apply to drainage from the floor.

The same sink may be used to wash and disinfect instruments, which will have become contaminated with radioactive substances during the PM procedure. Stainless steel devices which have, or are likely to, come into contact with iodine-131 should be treated as single-use instruments and arrangements made for their disposal and possible interim storage.

The use of fixed tiles in and around the sink may make it easy to clean up spills and splashes although the need to minimise fissures must be observed.

Cleaning the facility

Following a PM on a body containing radioactive material, standard cleaning and sterilisation procedures should be sufficient although these may need to be repeated many times in order to decontaminate the facility. Staff must check the room for radioactive contamination before and after cleaning. The actual procedures should be devised in conjunction with the RPA.

All waste generated from the cleaning process should be treated as low-level radioactive waste and disposed of accordingly. Waste disposal units may have to be located in the PM room to act as low-level radioactive temporary storage receptacles and must be labelled appropriately.

Appendix 3

Critical dimensions

Introduction

Critical dimensions, as detailed in HBM 40: Volume 1, are those dimensions which are critical to the efficient functioning of an activity; thus, the size of components, their positioning and the space around them may all be critical to the task being performed. Guidance on these dimensions for a particular activity is provided in the form of component-user data sheets. These illustrate components – that is, equipment, furniture and fittings – and provide ergonomic data on the space required for users to move, operate or otherwise use the component. Information about the component – for example fixing heights – and the users – for example reach – is also provided. Component-user data sheets thus complement the information given on Ergonomic Data Sheets.

Component dimensions

These relate to the size and position of components, as follows (diagrams from HBN 40: Volume 1 – paragraph 3.2):

- sizes of components (in mm) are shown thus:

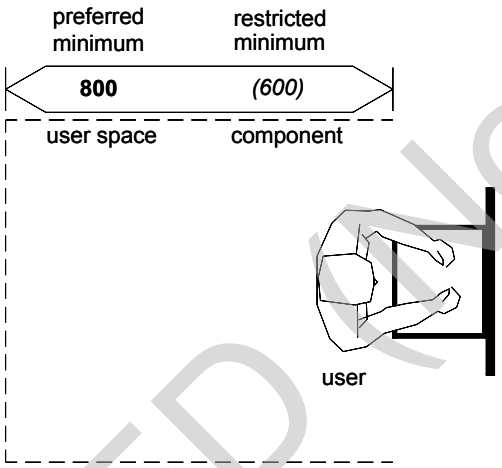
- preferred component fixing heights (in mm) are shown as heights above floor level, thus:

(In some cases an acceptable range of fixing heights is also given in italics.)

Activity dimensions

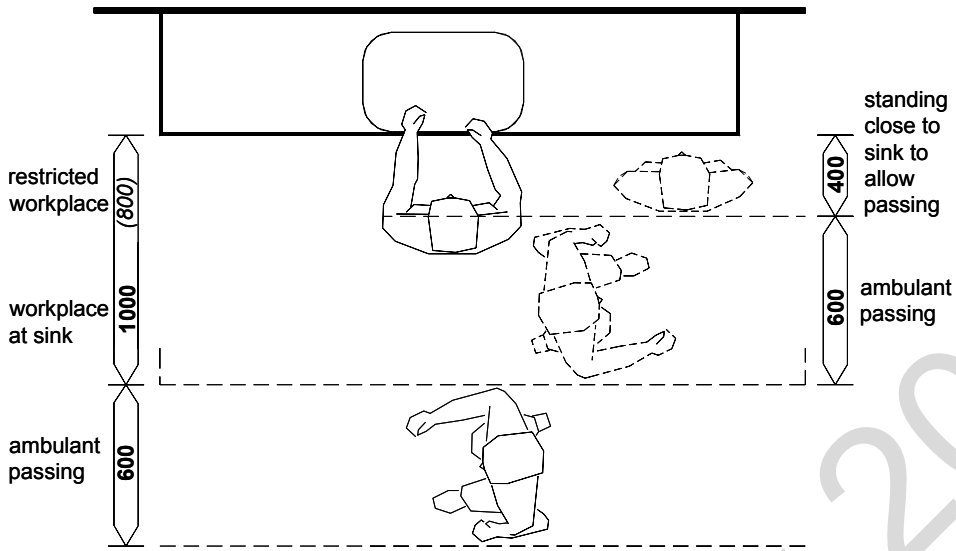
Activity dimensions define the user space, which is the minimum space required to perform an activity. Two types of activity dimension are given (diagram from HBN 40: Volume 1 – paragraph 3.3):

- preferred minimum – this defines the minimum space required to carry out an activity efficiently, and is shown in bold type;
- restricted minimum – this will only allow the activity to be performed at the expense of the user experiencing some difficulty. It is not recommended for general application but may be appropriate when considering the overlapping that can be allowed when two user spaces are adjoining.



Selection of activity dimensions

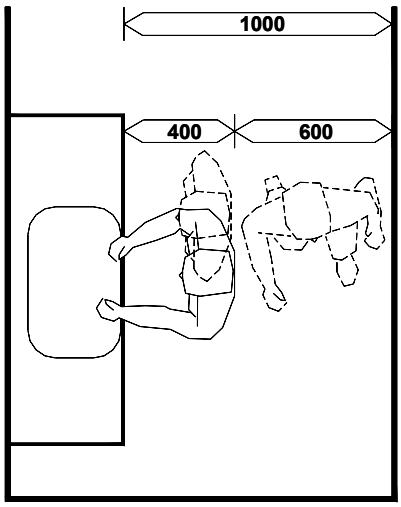
When using component-user data sheets to design activity space layouts, selection of the appropriate activity dimensions is essential for economy and efficiency. Selection should be based on careful consideration of the frequency, duration, timing and importance of the activities and also the number of people involved. A typical example of the use of a sink showing activity dimensions provided by the component user data sheet is shown below (diagram from HBN 40: Volume 1 – paragraph 3.4).



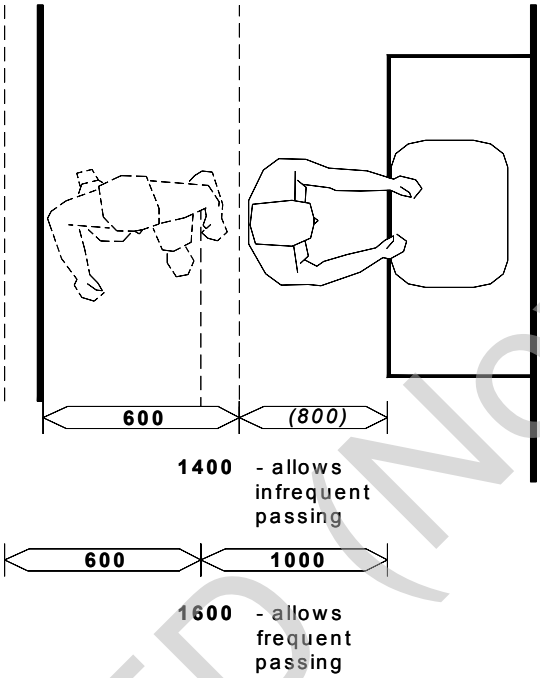
Examples

The following worked examples show the sink being used in three different situations and show how the appropriate dimensions would be selected but do not specifically relate to this particular document. These examples have been simplified; additional factors such as the movement of mobile equipment may also be critical:

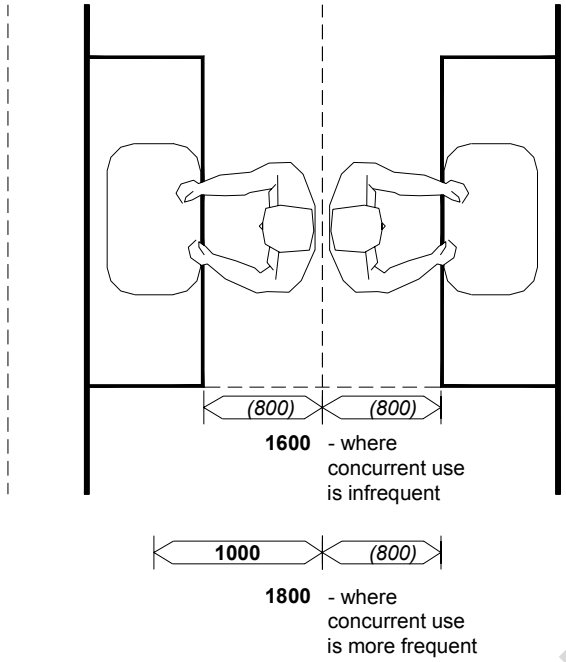
- if the room is normally occupied by one person only, the 1000 mm workspace dimension may be applicable. An (800) restricted dimension should not be used, as this dimension is only applicable where two user spaces are adjoining, not where an individual user space is bounded by a wall or solid obstruction. If the person using the sink stops work and stands close to the sink, 1000mm is also sufficient space to allow a second person to pass that is, 600mm + 400mm (diagram from HBN 40: Volume 1 – paragraph 3.5):



- if space is required to allow a person to pass, without the user of the sink stopping work, then the 600 mm passing dimension is added to the workspace dimension. If passing is infrequent, then temporary restriction of the sink user's space may be acceptable; this gives an overall dimension of 600mm + (800mm) = 1400mm. If passing is frequent, and restriction of the sink user's space is not acceptable, the overall dimension is 600mm + 1000mm = 1600mm (diagram from HBN 40 Volume 1 – paragraph 3.5):



- where space has to be provided to enable two sinks to be used concurrently, the overall dimension between sinks will be the sum of the workspace dimensions – for example, if concurrent use is infrequent and of short duration then (800mm) + (800mm) = 1600mm may be acceptable. Alternatively 1000mm + (800mm) = 1800mm allows the full workspace for one sink user and restricted space for the second user, where concurrent use of the sinks is more frequent (diagram from HBN 40: Volume 1 – paragraph 3.6).



Note: The passing of a third person between the two sink users may also be critical in this example. Where the sinks are staggered, 1400mm may be acceptable, as in the example above (second bullet point).

Appendix 4

Health and safety checklist for temporary body stores

Issues to be considered when assessing risks to health and safety that arise from the use of temporary body stores.

Outside the body store:

Issue	*Risks*
Lighting - level of illumination	Slips, trips & falls Violence
Access - condition of route	Slips, trips & falls
Electrical supply - integrity & condition	Electrocution
Door - design of condition of opening mechanism - height of opening mechanism - design & condition of door seals and hinges	Security Lacerations Manual handling

Inside the body store:

Issue	*Risks*
Ventilation- air changes per hour	Infection Asphyxiation
Temperature - level - integrity of cooling system	Infection Hypothermia Exposure to refrigerant gases
Lighting - level of illumination	Slips, trips and falls Ability to assess control of infection risks
Floor & other surfaces - design & condition - ease of cleaning	Slips, trips and falls Infection
Access ramp - safe working load - width - gradient of slope - nature of surface - features designed to prevent loss of hoist - weight of ramp	Slips, trips and falls Manual handling
Aisle - width (should be wide enough to accommodate hoist and person)	Manual handling Slips, trips & falls
Compartments - method of loading bodies (side-v-end) - height of compartments & racking - compartment dimensions (width x height x depth) - containment of body fluid spillages - devices (eg rollers) to facilitate lateral movements of body tray/body - ease of cleaning	Manual handling Infection
Hoist – Suitability	Manual handling Access

Emergency procedures

Issues	*Risks*
Emergency release - design & condition of door release mechanism	Lone working Hypothermia
Body fluid spillage **- procedures**	Infection
Capacity of temporary body store exceeded	Manual handling Infection
Temporary body store out of service	Manual handling Infection

Relevant underpinning legislation

Health and Safety at Work etc Act 1974

Management of Health and Safety at Work Regulations 1999

Workplace (Health, Safety & Welfare) Regulations 1999

Manual Handling Operations Regulations 1992

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