Scottish Health Planning Note 35

Accommodation for people with mental illness

Part 1 – The acute unit

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Contents

About this series

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

These Notes are prepared in consultation with representatives of the National Health Service in Scotland and appropriate professional bodies.

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.

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1. Scope of SHPN 35 Part 1

Introduction

1.1 Scottish Health Planning Note (SHPN) 35 replaces Scottish Hospital Planning Note (SHPN) 35 – 'Accommodation for people with acute mental illness' published in 1994. However, Supplements: J – 'Psychiatric Rehabilitation', K – 'Acutely Disturbed Mentally Handicapped Patients', L – 'Acutely Disturbed Mentally Ill Patients' and M – 'Elderly Patients with Dementia' of Scottish Hospital Planning Note 1 continue to provide design guidance for these specialist areas.

1.2 This Note provides guidance on acute wards and other facilities which Trusts may wish to develop as part of their mental health service to the community. Chapter 1 describes the scope of the Note, Chapter 2 the service objectives, Chapter 3 deals with in-patient accommodation for the short term care and treatment of adults who are acutely mentally ill and accommodation for the assessment and short term treatment of the elderly mentally ill; Chapter 4 defines the types of day hospital facility and the accommodation required in these facilities.

1.3 The guidance contained in this Note is based upon the general principles of the previous Scottish Hospital Planning Note 35 updated to take account of changes in both clinical practice and technical requirements. The recommendations of the Royal College of Psychiatrists' Report "Not just bricks and mortar" have been influential in the review of the guidance.

1.4 Some of the main features of the Note are:

- it reflects the need for in-patient accommodation to comprise assessment and treatment wards with access to associated day hospital and other facilities;
- the number of in-patient beds is a matter for Trusts and their community and mental health teams (CMHTs) to decide. Individual wards should have no more than 15 beds although there may be instances when a smaller number of beds will suffice. Stand-alone acute psychiatric units should range in size from 3-5 Wards. Day hospitals will have a maximum of 20 places. If more places are needed then it may be necessary to plan more than one day hospital;
- the schedules of accommodation for wards and day hospitals are based on 15 beds and 20 places respectively. Should these numbers be too great then the accommodation requirements can be estimated from these schedules.

Inclusions

1.5 This Note provides information on the design of accommodation for the assessment and short-term care and treatment of adults and elderly people with mental illness, including:

- Wards, both adult and elderly;
- Therapy facilities;
- Electroconvulsive Therapy (ECT);
- Day hospital;
- Out-patient accommodation;
- Administration.

Exclusions

1.6 This Note does not deal with:

- use of DGH Out-patient Departments for mentally ill people;
- continuing care units for long-stay patients;
- accommodation for children and adolescents;
- units for alcohol and drug misusers;
- accommodation for acutely disturbed mentally handicapped patients;
- accommodation for acutely disturbed mentally ill patients.

1.7 Scottish Health Planning Note 35 Accommodation for people with mental illness: Part: 2 -Treatment and care in the community, gives guidance on the community based facilities to support mentally ill people without admission to hospital, including:

- a community and mental health team base;
- a drop-in/day centre;
- a day hospital;
- unstaffed residential accommodation;
- staffed residential accommodation, including 24-hour nursed residences.

2. Service objectives

Service planning

2.1 The guidance in this Note is based upon the general principles contained in Scottish Hospital Planning Note 35 – 'Accommodation for people with acute mental illness' (1994) updated to take account of changes in both clinical practice and technical requirements. The recommendations of the Royal College of Psychiatrists' report "Not just bricks and mortar" have been influential in the review of the guidance.

2.2 It is essential that health boards and trusts make a careful and detailed assessment of the mental health care needs of their population. The principal aim should be to develop a mainly community-based service, of which in-patient, day-patient and out-patient facilities will be a part. Factors which will influence planning will include current local policies regarding hospital provision, the range of other services provided by primary care, community health services and by local authority social work departments, housing services and voluntary and independent sector providers. All these factors markedly affect the need for hospital accommodation. Ignoring them may result in the building of units which are either too large or too small, or whose facilities are over- abundant or too restrictive and inadequate for the needs of the population they are designed to serve. Accommodation may be sited at a number of locations dependent on local needs within the community. The accommodation may include, for example, day hospitals and/or mental health resource centres offering local bases for the mental health services and community psychiatric nursing service which will link with primary health care services and residential accommodation for long-stay patients.

2.3 There will be wide variations in the forms services take, arising from differing philosophies of care. It is strongly recommended that, at an early stage of planning, the whole of the guidance contained in this Note should be discussed at a meeting with the Trust's professional representatives. As some of the key people involved in the use of the accommodation may not have been appointed at this early planning stage, it would be useful to repeat the meeting at intervals and review decisions as the team comes together. Local Authorities should be consulted on a joint planning basis, as should other relevant organisations in the voluntary and private sectors. The Scottish Ambulance Service should be consulted as some in-patients, day patients and out-patients, especially the elderly, will be dependent upon the ambulance service for transport.

2.4 The assessment and short-term treatment facility for elderly mentally ill people should be provided, if possible, in reasonable proximity to a DGH, if not actually on the same site, as the assessment of elderly people often requires the use of other hospital departments such as the radiology department and direct liaison with the geriatric department.

2.5 The units for both mentally ill adults and elderly people with mental illness will normally comprise acute in-patient assessment and treatment wards. There may be day hospital facilities and out-patient facilities. The number of in-patient beds required will need to be established by the health board and trust, as will day and out-patient facilities, which are likely also to be established at a number of locations in the area. These services for diagnosis, treatment and rehabilitation must have a base for management and organisation. For adults, this might be in the mental illness unit (see Chapter 3) or be elsewhere in the area. The base from which the services for elderly mentally ill people is organised and managed could be the assessment and short-term treatment unit which may be part of the DGH, or associated with the geriatric department, or be separate from both. Both bases will be focal points for specialist therapeutic teams providing service and advice generally.

2.6 The unit for mentally ill adults provides a service for patients requiring admission or re-admission for assessment and short-term treatment. It is not intended that 'new long-stay' or 'old long-stay' patients should be accommodated here as in-patients. The unit should be easily accessible to the community it serves and functionally related to the DGH, though it could be located elsewhere in the health board area it this is thought desirable or feasible.

2.7 In wards for adult and elderly people with acute mental illness, patients will require access to therapy facilities similar to those described in the day hospital. When the day hospital is neither on campus nor sufficiently near to be used conveniently by in-patients, then therapy facilities will have to be associated with the wards. There will need to be specific provision for occupational therapy and physiotherapy both in terms of activity areas - clean/quiet activity areas, dirty/noisy activity areas, 'Activities of Daily Living' (ADL) areas, beauty/hairdressing areas as well as occupational therapy/physiotherapy offices and storage areas.

General considerations

2.8 The pattern of mental illness services to be provided needs to be decided by the local health board and trusts. However, the accommodation required on one or more sites will usually include:

- Wards;
- Therapy facilities;
- Electroconvulsive Therapy (ECT);
- Out-patient accommodation;
- Administration suite.

The acute in-patient unit may be either part of a DGH complex, a mental illness hospital or campus, or free-standing. For both acute adult and elderly people with mental illness, individual wards should comprise no more than 15 beds although there may be instances when a smaller number of beds will suffice.

2.9 The guidance in this Note emphasises the need for the accommodation to promote a homely atmosphere to ensure the unit has an ethos suitable for patients suffering from mental illness. Admission to a psychiatric unit is, by definition, a stressful experience. The accommodation therefore needs to incorporate as many reassuring aspects as possible in its design. Its general and detailed appearance must help create the impression of a safe, caring environment and competent service. The quality of design and finish should make a statement about the care provided and should approximate a comfortable modern hotel.

Location

2.10 When establishing acute adult or elderly in-patient units, the following factors should be taken into account:

- if the unit is on a DGH site, it should be planned as a functionally self-contained unit to help create a less obviously clinical atmosphere, with easy access to catering and other services and diagnostic/treatment departments. It should be accessed via the main entrance to the hospital grounds with its main entrance off the hospital road system. The entrance should be obvious to visitors but also unobtrusive to passers-by. The unit should have a discrete exit for the emergency transfer of disturbed patients;
- alternatively, the acute elderly in-patient unit could be located in the DGH and close to the Department of Geriatric Medicine with ready access to the diagnostic services of the hospital.

- it is essential that the acute in-patient unit, if located on a DGH site, has direct access to adequate external recreational space;
- the possibility should be considered of using other facilities outside the unit, if located as part of the DGH complex (e.g. hospital chapel, staff changing and staff dining) or those in the immediate community (e.g. playing fields, local parks);
- the whole accommodation should be at ground level if possible. Wards may be on the first floor but no higher. If two storey accommodation is provided a lift or lifts will be required. There should be adequate sound proofing of all bedrooms, interview rooms and office spaces;
- adequate space for parking and manoeuvring of vehicles;
- the approach to the unit and the grounds adjacent to it should be made as pleasant as possible by the use of sympathetic landscaping. The grounds can, if necessary, be made safe by the discreet use of walls and fences, the latter disguised by trees or shrubs;
- fire fighting and evacuation routes.

2.11 Patients for admission will arrive at the unit entrance by ambulance, by car, or on foot, at any time. A few patients may be transferred from the DGH Accident and Emergency Department or from other in-patient accommodation. Out-patients may arrive and leave at varying times. Professional and other visitors will attend throughout the week; adequate parking space for them is most important.

Elderly people with mental illness

2.12 Accommodation for elderly people with mental illness may cater for elderly people with either functional mental illness or the dementias or both, from an age to be determined in consultation with the multi-disciplinary care team. The age selected will determine the size of provision. When planning services, Trusts will also need to consider whether it is desirable or appropriate to treat elderly patients with acute functional illness in the same wards as patients with dementia. The latter present particular problems in management. They will be confused and disoriented and some may have a tendency to wander. Some may also have physical disabilities and some may be incontinent.

2.13 The accommodation, which is for assessment and short-term treatment only, will supplement community based facilities. It may comprise:

- a ward(s) for assessment and short-term treatment;
- an out-patient suite;
- an administration suite for the service to the elderly mentally ill; alternatively, it may be decided that the administrative base of the service should be located in the community or in the same administrative department as that for the adult mental illness service;
- Electroconvulsive Therapy (ECT) suite;
- therapy facilities.

2.14 Accommodation will also be needed for longer term and continuing residential care of some people – refer to Supplement M of Scottish Hospital Planning Note (SHPN) 1. This is not described in this Note.

2.15 There should be a close relationship with both the general medical practitioner service and with local services for the physically frail elderly. Access to the services of physiotherapists, occupational and speech therapists, dentists, opticians, chiropodists and hearing aid technicians will also be required.

2.16 Many elderly people with mental illness can be assessed and treated at home, with the support of the day hospital. However, some patients will need admission for detailed evaluation of their physical and mental status and for short-term treatment. The number of beds to be provided will be determined by local circumstances and needs. Generally a ward should have no more than 15 beds.

2.17 It is a matter for local decision whether the out-patient service for elderly mentally ill people should be associated with the main out-patient department of the DGH or be a part of the service for mentally ill people. When there is separate accommodation for mentally ill people, the out-patient service for the elderly should normally use the accommodation for mentally ill adults even if minor modifications to the design are needed.

2.18 The accommodation for administration will be similar to that required for adult mentally ill people.

2.19 The schedule of accommodation and underlying planning principles and functions for a 15 bed ward for the elderly is the same as that for adults with acute mental illness. The design of the former differs however in that it should reflect the likelihood of physical disabilities and frailties of the elderly who often require walking aids and wheelchairs. Moreover, the elderly require a higher proportion of King's Fund type beds and therefore bedrooms should be designed to accommodate the larger beds.

2.20 The ECT suite used by adults with acute mental illness may also be used by the elderly, provided it is reasonably accessible. Otherwise, a suite should be provided for the elderly.

2.21 Occupational therapy, physiotherapy and other facilities will be required for the elderly mentally ill in the wards if these are not available in a nearby day hospital.

Components of accommodation

Wards

2.22 The ward should provide a comprehensive range of facilities so that it is self contained and self sufficient. In addition to basic living and dining areas, the ward design should include adequate space for day and quiet rooms, therapeutic activities including Occupational Therapy and Physiotherapy (where these activities are not available in a day hospital), office space and interview rooms. These spaces should be designed to be as flexible as possible to allow for changing needs over the years.

2.23 There should be a nurses' station, located so as to provide maximum observation of circulation areas and those bedrooms for the more seriously ill patients. It should be simply equipped for use by night staff and be so designed and furnished as to be a sitting place where informal exchanges between patients and staff may take place – see paragraph 3.24. If, as is most likely, a computer terminal is provided, the privacy of records and noise implications should be considered and appropriate measures taken.

Electroconvulsive Therapy (ECT) suite

2.24 ECT remains an effective form of treatment for certain conditions. A patient is brought to the suite, prepared for a general anaesthetic, anaesthetised and given a muscle relaxant prior to therapy. Recovery is in two stages, first recumbent, then sitting. Thereafter, the patient can return to general activity. The suite is used only a few hours a week on a sessional basis.

2.25 Each Trust will need to assess the volume of the therapy for which it will need to provide. No more than one suite will normally be required and its location is a matter for local decision. It should be preferably sited adjacent to the acute adult in-patient unit. When not in use, the ECT suite treatment room can be used for other minor treatments, examinations and procedures. The design should be such that other spaces in the suite can be used for other purposes as far as possible, e.g. a trolley bay should be incorporated thus freeing the recovery area for other purposes.

2.26 Only one size of suite is described in this Note. It is important to ensure that the inclusion of the suite is justified by the anticipated volume of therapy needed and not by the size of the unit with which it is associated – refer to Chapter 3.

2.27 For many patients, the prospect of receiving ECT, even under a general anaesthetic, is at least as daunting as having a minor operation. It is therefore essential that the facilities provided, particularly in the waiting and recovery spaces, should be as attractive and relaxing as possible and should accommodate the nurse and anyone accompanying the patient.

2.28 The paramount concern of the medical and nursing staff is that the procedure should be carried out under conditions of the utmost safety, both at the time of administration and during the recovery period. Guidance on good practice including effects on design is contained in the report published by the Royal College of Psychiatrists entitled 'The Practical Administration of Electroconvulsive Therapy (ECT), 1989' and advice should be sought from the consultant with overall responsibility.

Out-patient accommodation

2.29 It is for the Trust to decide whether the out-patient accommodation for mentally ill people should be a part of the main OPD of the DGH or whether a separate suite should be provided in the mental illness unit or outwith the DGH site. This Note describes out-patient facilities within the mental illness unit, as on balance it seems that this approach best meets the needs of mentally ill people for the ambience of a smaller, specifically organised service – refer to Chapter 3.

Administration

2.30 An administrative centre is required. This is the management base for the services for mentally ill people. Its size and location (see paragraph 3.33) will be influenced by the type of service to be provided and whether this is the administrative base just for the hospital services or for the wider network of community services as well.

2.31 The accommodation will meet the needs of the disciplines delivering this service – medical, nursing, community psychiatric nursing, psychology, professions allied to medicine, social work and their associated secretarial and support services. Paragraph 3.33 describes the functional spaces needed. A medical records service will be required and its type will depend on the operational policies of specific hospitals.

Therapy facilities

2.32 Occupational therapy and physiotherapy facilities will be required when they are not available in a nearby day hospital. The facilities accommodation for a 15 bed ward is similar to that listed on page 77 for a 20 place day hospital. Greater or lesser needs can be extrapolated from this list – refer to paragraph 2.7.

Observation

2.33 In planning accommodation for people with mental illness, whether adult or elderly and whether in in-patient accommodation, day hospitals or out-patient departments, it has to be borne in mind that some patients will require special observation because of the nature of their illness. Such patients will include for example, those who present a risk either to themselves or to other people around them. Good observation of such patients is achieved primarily by setting appropriate staffing levels to manage patients according to the severity of their illness but it is important to bear in mind that good physical planning helps staff, whereas bad planning makes their task more difficult – refer to paragraph 3.8.

Control of infection

2.34 Prevention of cross-infection is fundamental to patient care. All wards should comply with the recommendations of the Scottish Infection Manual. The principal ways in which design may help in the control of cross-infection are:

- by the provision of single rooms and multi-bed rooms;
- by the provision of accommodation designed to facilitate safe practice; and
- depending on local needs and policies, some isolation may be needed to minimise the risk of cross-infection. Immuno-compromised patients may require to be nursed in a positive pressure environment, while patients who present a risk of infection to others would normally be nursed in a negative pressure environment. Where necessary up to 4 single-bed rooms in each 24 bed ward should be mechanically ventilated to enable either positive or negative pressurisation. The environmental standards are detailed further in Chapter 6.

Health and safety

2.35 The requirements of relevant sections of the document 'The Control of Substances Hazardous to Health – Guidance for the Initial Assessment in Hospitals' should be adopted.

Hospital clinical and operational policies

Catering

2.36 Each ward should have facilities for serving meals to patients in accordance with the hospital's catering policy. These facilities should comply with current food hygiene and safety legislation, for example the 'Food Safety Act, 1990' and the 'Food Hygiene Amendment Regulation, 1990'.

2.37 Two common methods of meal delivery service are:

- **central tray service** – meals which have been assembled to the individual patient's requirements and delivered to the ward in a trolley with the food kept hot by a heat retaining base under each plate or in a heated tray trolley. On arrival at the ward, meals are served at the earliest opportunity. Space should be provided to accommodate the delivery trolley without obstructing normal circulation.
- **cook-chill service** – chilled meals which have been assembled to the individual patient's requirements and delivered to the ward in a trolley. This may incorporate a reheating compartment, or a separate reheating unit may be provided at ward level or in a shared trolley holding room. Meals must be stored and heated under controlled conditions before being served to patients. Space, in addition to that needed for the bulky delivery trolleys, must be provided for activities associated with the controlled reheating process – for example temperature monitoring. An electric power supply will be needed.

Domestic services

2.38 The accommodation required for storage and cleaning of domestic equipment at ward level will be determined by the scope and extent of the service as outlined by the Hospital's operational policies.

Supply, storage and disposal

2.39 The concept of Materials Management involves the supply, distribution, storage and disposal or re-cycling of a wide range of goods and equipment essential to the efficient management of wards. The range of items are provided by a number of different hospital departments.

These include:

- Central Store;
- Sterilising and Disinfecting Unit;
- Pharmacy;
- Laundry;
- Kitchen;
- Laboratory;
- Engineering Services.

The methodology adopted by the hospital to provide an effective Materials Management System requires detailed planning and co-ordination.

2.40 The storage space required for supplies is influenced by three principal factors:

- **type**: medical surgical sundries, sterile supply service items, pharmaceutical supply etc;
- **quantity**: proportional to patient throughout;
- **policy**: the whole hospital policy determines the frequency of delivery of each type of supply.

2.41 The space provided should be sufficient to hold that quantity of each item which will match the expected demand for the longest period of time between consecutive deliveries. In practice this means making space available for holding not less than five days' supply.

2.42 The consequences of supply, storage and disposal policies for capital, revenue and service all interact. Increasing space and stock increases both capital and revenue costs. Reducing space reduces capital outlay but demands an increase in the frequency of delivery, so that running costs also increase. Insufficient stock can adversely affect patient care and nursing service because staff are distracted by the necessity of seeking or collecting the items required. Also, an unreliable supply encourages defensive overstocking.

2.43 Disposal of pressurised containers requires special attention – see SAB(88)79 'LPG Aerosol Containers: Risks arising from storage, use and disposal'. Specifically constructed containers (see Specification No. TSS/S 330) should be used for 'SHARPS' particularly needles. This minimises the risk of injury to staff, particularly portering staff, handling goods destined for incineration.

Information handling

2.44 Computing expertise is now widely available in the NHS and users should ensure that, at an early stage, they inform themselves of current and projected local computing policies and prepare their proposals accordingly.

Staff changing

2.45 Staff may change from outdoor clothes into hospital or department uniforms in changing accommodation located within the department, or elsewhere in the hospital, as determined by local policy.

2.46 If changing accommodation is located elsewhere, then it will be necessary to provide within the department:

- a staff cloakroom;
- small lockers for secure storage of small items of personal belongings;
- a shower;
- a WC.

2.47 This Note assumes that all staff who need to change will do so elsewhere in the hospital.

Purpose and siting of departmental stores

Activity / Space	Storage / holding – Categories of items to be stored								
	Medical and surgical inc IV fluids	Pharmacy/ lab reagents	Controlled drugs	Clean linen	Catering supplies	Stationery	House-keeping/ cleaning supplies	Mobile medical equipment	Furniture – bulk items
Staff base						●			
Bed areas	●							●	
Bulk supplies store	●						●		
Furniture store									●
Clean utility	●	●	●						
Linen store				■					
Dirty utility									
Clinical equipment store								●	
Laboratory		●							
Workshop									
Staff changing				●					
Staff rest room/pantry					●				
Patient pantry					●				
Relatives' pantry					●				
Offices						●			
Seminar room						●		●	
Cleaner's room							●		

Activity spaces not used for storage

Entrance/waiting area

Disposal room

On-call room

Equipment service room

Key

- ● store
- ■ policy option could be linen trolley

3. Functional and design requirements – Adult people with acute mental illness

Introduction

3.1 Chapters 1 and 2 describe how planners define the services to be provided and identify the range of options possible. This chapter describes the functional and design requirements of a 15 bed acute adult in-patient ward which could be either an integral part of a DGH, on a mental health campus, or free-standing either with or without an associated out-patient clinic or administration suite.

Patient areas

Bedrooms

3.2 Sleeping accommodation should be provided in single rooms. Patients will retain personal belongings in their rooms. Bedrooms will have en suite toilet facilities and be closely related to nurses' stations, day rooms and utility rooms.

3.3 The majority of mentally ill people do not need bedside care but require sleeping accommodation comparable to a small, comfortable, modern hotel bedroom. Standard bedhead units, piped oxygen and suction are not required.

3.4 Patients will require easy access to clothing and other personal possessions. Personal storage facilities with appropriate security should be provided within each bedroom, with a small store elsewhere for the personal belongings of patients who temporarily cannot be permitted to have access to them or where the amount is too great for it all to be stored in the bedroom.

3.5 Multi-bed rooms are not advised. A ward of all single rooms gives greater flexibility and allows male and female patients to be cared for in the same ward whilst allowing adequate segregation, safe space and privacy. Mothers admitted with their babies will require a room which can be observed easily by the nursing staff. It is not envisaged that children over about one year old will be resident other than in exceptional circumstances.

3.6 Bedrooms will require sufficient space so that care and treatment can be given. Each will require a divan bed (not so low as to make bedmaking difficult) chairs, chest of drawers and wardrobe space for hanging clothing and for storage. Built-in fittings would be quite appropriate. Consideration

should be given to the safety aspects of shower rails, coat hooks and exterior windows.

3.7 Bedrooms should be suitable for a variety of users and furnished accordingly.

3.8 In planning accommodation, care should be taken to ensure that disturbed patients are unlikely to be out of sight of staff for any length of time. Isolated spaces should be avoided as should open stair wells. A number of single bedrooms should be within clear visual range of the nurses' station. Patients who require a high degree of observation would normally be accommodated in these bedrooms. Consideration should be given to incorporating in such rooms partially glazed walls (with curtains to cut out unwanted light and allow privacy) and doors that open outward or can otherwise be opened from the corridor should there be an obstruction in the bedroom side (for example by the fitting of two-way locks or loose pin hinges). Attention is drawn elsewhere in this Note (Chapter 6, paragraphs 6.87-6.91) to the provision of a suitable range of alarm and call systems.

Sanitary facilities

3.9 All bedrooms should have en suite WC, shower and wash hand basin facilities. The facility should be accessible and manageable by people with physical or sensory disabilities with or without assistance. There should also be a wash hand basin for staff in all bedrooms. The doors to the WC, bath and shower rooms should have a 'vacant/engaged' indicator. All the locking devices must have an external release and the doors should open outwards or be removable in an emergency. Toilet facilities should not be sited between the room and the access corridor, as this creates a narrow passage preventing good observation through the vision panel in the door and compelling staff to enter the room in single file.

3.10 One assisted bathroom and one assisted shower room should be provided for each 15 bed ward. These rooms should also contain a WC and wash-hand basin and should be designed so that they can be used by someone in a wheelchair. Facilities for hair washing should also be included in these rooms.

Day activity areas

3.11 A *sitting room(s)* is required, which should be comfortably furnished and domestic in character. A television, video tape recorder and stereo system should be provided. The sitting room should be adjacent to the dining room and should be non-smoking. Beverage facilities should be provided for the use of both patients and visitors adjacent to the sitting room or dining area.

3.12 The *dining area* should be of sufficient size for one sitting only, to allow the space to be used for other purposes e.g. recreation and large group meetings. Too small a dining space inhibits this.

3.13 A *quiet room(s) or space(s)* should be provided in all wards. This room(s) may also be used for group therapy during the day and informally by patients during the evenings and weekends as an alternative to a sitting room. The room(s) should be comfortably furnished with homely domestic furniture, wall pictures, etc. Smoking facilities are dependent on individual hospitals' operational policies but if permitted, rooms affected should have an appropriate air extraction system.

3.14 The standard provision for day activity areas is 6.5 m^2 per patient. The provision of several rooms or spaces allows the designation of rooms/spaces for specific uses such as female only areas or smoking zones.

Treatment and utilities

3.15 A *treatment room* will provide an appropriate environment for patients undergoing procedures which cannot be carried out at the bedside. There will be no need for piped gases. The room should be conveniently close to the preparation and disposal/sluice/test room.

3.16 A *preparation room* is required for the storage of all supplies, both clean and sterile, necessary for the care and treatment of patients. It provides space for the preparation and assembly of items of equipment for nursing, diagnostic and therapeutic procedures. In addition, it provides storage space for 'dressings', trolleys, etc required to transport equipment to the point of use, bed rooms, treatment room and bathroom. Trolleys serve the dual role of worktop and conveyor. The room should be lockable and near the staff office. Secure storage is necessary for drugs, including Controlled Drugs, medicines, lotions and a small working stock of clean and sterile supplies. Space will be needed to assemble and prepare equipment for clinical procedures and to park the medicine trolley. Mobile resuscitation equipment, including oxygen and suction, may be stored here.

3.17 The *disposal/sluice/test room* is in part, the temporary storage point for all items of supplies and equipment which have to be removed for cleaning, reprocessing or destruction, e.g. linen and Sterile Services Department items – refer to paragraphs 5.60 - 5.61. Some items are cleaned in this room, e.g. trolleys before returning to the preparation room. The arrangement of flowers, which results in discarded material, should be done here. The room also serves as the temporary storage point and testing area for specimens. Bulky items such as bedpans with their carriers, urinals, etc have to be stored here, as will equipment for the destruction of disposable bedpans, etc. Such equipment may generate significant noise levels and care should be taken to eliminate this.

3.18 The *patients' utility room* is primarily for patients to launder small items of personal clothing. Washing, drying and ironing equipment will be needed. The relative merits of commercial, as against domestic equipment, will need to be considered.

3.19 A separate *patients' servery/pantry* located adjacent to the sitting room or dining area is required for the preparation of beverages outwith the normal meal times and supplements. Ample storage is required for dry goods and for limited crockery and cutlery. A refrigerator will be required for the storage of high risk foods. Facilities are required for dishwashing and for handwashing. Parking space will be required for catering and/or beverage trolleys. In designing the servery/pantry care must be taken to observe current regulations in respect of food safety and health and safety – notably on safe water temperatures and the control of Legionellae.

3.20 A small *baby food pantry* separate from the servery/pantry is required for the preparation of babyfood, if it is planned to admit a mother with her baby.

3.21 The *domestic service room* is the base from which the domestic service staff provide the immediate day-to-day cleaning service. It should include storage for cleaning materials and equipment in daily use and facilities for the routine servicing and cleaning of equipment. The room should be well lit and ventilated so that equipment can dry quickly. Bulky equipment has to be moved in and out of the room and this should be taken into account in its location.

Offices, etc

3.22 A *waitinglreception area* for patients and visitors should be conveniently located near the entrance to the ward. There should be only one point of entry to each ward or group of wards and this entry should be staffed by reception or security staff 24 hours per day or have CCTV surveillance. When two or three 15 bed wards are adjacent, this area can be shared and increased in area accordingly.

3.23 The *Charge Nurse's office* is the administrative base of the ward. It will be used for administration, briefing, staff counselling and interviewing patients and relatives. Temporary secure storage for patients' valuables will be required and where medical records and nursing care plans are housed. The office should be positioned and designed so that the activities of staff do not disturb patients at night.

3.24 The *nurses' station* is the space where patients and staff can pause to sit and have an informal conversation uninhibited by the sense of enclosure which a room provides. It is also a place from which staff can observe patients' movements and patients can locate staff, especially at night. It should be furnished with easy chairs, a desk and a low table. The lighting should provide identification of the space and be so arranged that staff can read at night. Staff must be able to observe the doors to as many bedrooms as possible and the corridor to the other bedrooms. The indicator lights for the call system and Controlled Drugs cupboard must be visible. A transfer of staff/staff calls and patient calls to an adjacent area in the mental illness unit may be needed. A telephone point with acoustic hood and a coin/card operated telephone, capable of being used by a disabled person, should be

located nearby. If a computer terminal is to be provided, the privacy of records and noise implications should be taken into account when locating the equipment.

3.25 A *duty/rest room* should be provided for staff taking short breaks and where informal multidisciplinary discussions can take place confidentially on the ward. The room needs to be close to the main ward areas and should be clearly a staff only area.

3.26 In each ward there should be two clinical *consulting/interview rooms*. Both rooms should be so constructed as to ensure oral privacy during interviews and while telephoning – refer to paragraph 6.18. One room should have the wall adjacent to the corridor semi-glazed and the door should open outwards with the glazed portion of the wall having a curtain. One room should be furnished in a homely manner and should be non- smoking. Doors should have engaged/vacant signs. Telephone points and an emergency call system should be installed in both rooms.

3.27 *Staff cloakroom* with shower, WCs and wash-hand basin facilities should be provided.

3.28 *Storage spaces* are required, including:

- *general/equipment store,* capable of holding nursing equipment and alternative furniture and other equipment;
- *patients' store,* to hold large suitcases, personal effects and some clothing provided for emergency use. Clothing and personal effects of a few patients will be stored away from their bedside;
- *linen store,* to hold sufficient linen in the light of the supply and laundry service as determined by the whole hospital policy. If there is a top-up system, shelves will be needed. If the trolley exchange system is used, space for the trolleys is required. The number of trolleys for which space is needed is determined by the frequency of exchange.

Essential Complementary Accommodation (ECA)

Electroconvulsive Therapy (ECT) suite

3.29 There is wide variation in the volume of ECT undertaken but treatment is on a sessional basis and the accommodation is generally used for just a few sessions each week so that consideration needs to be given to the use of the rooms for other purposes. The suite should be sited in association with the in-patient accommodation.

3.30 The ECT suite comprises:

- a *reception/waiting room,* which should be at the entrance to the suite and large enough to accommodate up to 10 people. It should be pleasing and restful in decor and furnishing, with easy chairs for patients and anyone with them. A small desk and chair are required for staff at a reception point and for the necessary administrative procedures. When not in use for ECT this room could be used for group activities and/or as sub waiting space for out-patients;
- an *ante-room* to the treatment room, in which the patient removes or loosens clothing, takes off shoes and gets on to a trolley bed. The trolley should have a low-level tray for the patient's personal effects. The entrance should be out of sight of waiting patients and requires double swing doors for the movement of trolleys into it from the corridor. Double swing doors are also needed from the ante-room into the treatment room. Subdued lighting will reduce the clinical atmosphere, but must be colour-corrected and capable of increased intensity when required. Sound transmission from the treatment room must be prevented. The ante-room and treatment rooms should be designed to afford auditory and visual privacy to patients;
- an *assisted WC* will be required adjacent to the anteroom for the use of patients and their relatives – see 'Common Activity Spaces' HBN 40 Volumes 1-4 and HBN/SHPN 40 Volume 5: Scottish Appendix;
- the *treatment room.* This is a clinical activity area and should be designed and equipped as such though the decor should be chosen with appreciation of the patient's apprehension and need for privacy. A ceiling-mounted examination light is required. Sufficient space is needed for the manoeuvring of the trolley bed from the ante-room and subsequently into the recovery room. Adequate space is needed for the anaesthetic apparatus and the anaesthetist; for the ECT equipment and the doctor using it; and at least two nursing staff. A wash hand basin should be provided. Medical gases can be obtained from the anaesthetic machine, but may be piped if the treatment room is adjacent to other accommodation with these services. Mechanical extract ventilation should be provided. A waste anaesthetic gas scavenging system however will not be necessary. The resuscitation equipment and a

cardiac arrest trolley will be held here. The room should be conveniently close to the disposal/sluice/test/room.

- a small *disposal/sluice/test room* will be required – refer to paragraph 3.17;
- a *recovery room (recumbent patients),* to which the patient is wheeled as soon as his reflexes return. Space for a maximum of five trolley beds will be necessary. Cubicle curtains or mobile screens are needed for privacy. People outside should not be able to look into the recovery room and blinds or curtains are required to prevent glare. The environment should be restful, the wall finish should not distort the patients' colour and colour corrected lighting is recommended. Between ECT sessions when cleared of trolleys this large room could be used for activity and relaxation classes;
- a *trolley bay* should be provided which will hold some of the trolleys between sessions, the remaining trolleys being stored in the ante-room, freeing the recovery room for other purposes when not being used for ECT;
- a *recovery room (ambulant patients),* the doors to which should be wide enough for a patient to enter with assistance. The environment should be domestic in character with a soft floor covering. About six easy chairs with high backs are required. The lighting should be domestic in character and there should be a pleasant outlook. When not required for ECT recovery, this space could be utilised for group therapy, seminars, etc. Since patients will have fasted prior to treatment, facilities for beverages and a snack should be available.

Out-patient suite

3.31 It is for local decision whether out-patients should be seen in the main out-patient department of the DGH or whether a separate suite should be provided in the mental illness unit and/or outwith the DGH site.

3.32 It should be adequate for the planned workload of clinical staff. All rooms should be furnished and equipped in domestic style and clinical equipment, e.g. examination couches should be discreetly positioned. The accommodation may include:

- *reception/waiting space* for the anticipated number of patients and escorts. A staff base, e.g. a desk and chair, may be required;
- *consulting/examination rooms* for clinical staff, some of which will be equipped with physical examination facilities, a wash-hand basin and the means for carrying out venepuncture. The rooms may also be used by community psychiatric nurses, social workers, clinical psychologists and others. The number of rooms should be determined locally. One or more of these may need to be designed as viewing rooms into adjacent consulting room(s). Walls adjacent to the corridor should be semi-glazed with doors opening outwards. The glazed portion of the wall should have a curtain;

- *a treatment room* for patients requiring treatments such as injections and dressings. It should not be necessary to provide this space if the out-patient suite is related to a ward which includes this facility – refer to paragraph 3.15;
- a small *preparation room* – refer to paragraph 3.16;
- a small *disposal/sluice/test room* for disposal of liquid and solid waste, with facilities for testing urine – refer to paragraph 3.17;
- an *assisted WC* for patients;
- staff cloakroom facilities and a staff WC/whb.

Administration suite

3.33 The community services for mentally ill people require an administrative centre (see paragraph 2.30). Usually, it will be located with the mental illness unit and near to the out-patient suite (if this is provided). When in-patient wards are not on the same site as the administrative centre there will be a need to provide some of this accommodation in association with the wards – see paragraph 7.7. The accommodation required will be:

- *offices** As necessary, bearing in mind provision elsewhere for senior medical, nursing and administrative staff. Offices, which may be shared, may be needed for other medical staff, psychologists, physiotherapists, occupational therapists, community psychiatric nursing staff, social workers, secretarial staff and voluntary workers. These should be provided and located in relation to local needs. Consideration should be given to the need for a Medical Records Department;
- † a small conference/seminar room*;
- a small *waiting area* for use by staff or visitors to serve all offices. It should be conveniently placed and under supervision;
- a *staff WC** to serve all offices, *and WC for disabled** patients or staff;
- staff cloakroom;
- a small *store.*

† There may be a need for a larger seminar room for multi-disciplinary team meetings and inter-agency teams meeting on a regular basis. Facilities should then include an appropriate range of audio and visual facilities.

*** For more detailed information about these spaces refer to the Common Activity Spaces Planning Note (HBN 40), Volumes 1-5.**

Optional Accommodation (OA)

Psychotherapy

3.34 Psychotherapy facilities, if required, could be provided in association with an in-patient unit, a day hospital, the out-patient department or be free-standing in the community. Such facilities will include the following:

- a group psychotherapy room;
- a viewing room;
- an individual psychotherapy room.

3.35 The *group psychotherapy room* will be used on a programmed basis. The room should accommodate 4-12 participants sitting in a circle overseen and overheard by appropriate audiovisual facilities in the viewing area. When not used for group therapy, the room should be used for family therapy, counselling, interviews, etc.

3.36 The *viewing room* should be adjacent to the psychotherapy room so that observers can monitor patients and therapist via a one-way mirror. In addition, observers will have the use of video equipment which will provide simultaneous viewing on a split screen monitor. The room should have comfortable seating for 2-6 observers.

3.37 The *individual psychotherapy room* will be used for one-to-one discussions, counselling and individual assessments. The room should be furnished for comfort with homely domestic furniture and so constructed to ensure oral privacy – see paragraph 5.31.

3.38 Consideration will need to be given to the need for Secretarial facilities if these are not provided elsewhere.

Admissions suite

3.39 One method of minimising the disruption caused on a Ward by the admission of a patient, especially at night, is to have a dedicated admissions suite. This would typically have a separate entrance, a small waiting/reception area and a consultation/examination room. The provision of this facility also allows the staff involved to concentrate on the needs of that particular patient.

4. Functional and design requirements – Day Hospitals

Introduction

4.1 Current practice suggests that it is no longer appropriate to plan for a standard day hospital but to consider the different forms of day care that should be provided. Three types of day hospital service have been identified and the characteristics of each are outlined as follows:

1. Acute Psychiatric Day Service

This will accommodate short-term programmes of active treatment of acute mental illness on a sessional attendance basis. A wide range of therapeutic programmes may be available, from supervised drug therapy through to individual or group psychotherapy.

2. Psychiatric Rehabilitation Day Service

These will accommodate a medium or longer term service providing a rehabilitative/support network for adults, enabling them to improve or maintain their level of functioning. The day hospital will also play a leading role in the re-settlement of patients in the community. It will provide facilities for, inter alia, skills and work assessment, 'ADL' and recreation. Many patients will be on maintenance drug therapy.

3. Psychiatric Day Service for the Elderly with Mental Illness

This will provide sessional attendance for the elderly with functional and/or organic mental illness. Many of these patients may be frail, and some will have physical disabilities and need to use walking aids, or wheelchairs. Some may be incontinent. Patients with dementia will be confused and disoriented and some may wander. The group rooms will serve for different activities, social interaction, reality orientation, reminiscence therapy, etc.

Location and access

4.2 It is for project teams to decide on the size of a day hospital and to reflect the needs of the patients in its choice of service and its location. For example, Day Hospitals do not necessarily require to be located within the Mental Health Campus or DGH as patients may be better served by a free-standing unit integrated into the local community. It is accepted that the Day Hospital for Care of the Elderly with Mental Illness is better sited in or close to the DGH or on the Mental Health Campus within easy reach of the assessment

facilities and the full support services of the hospital e.g. various clinics, x-ray, etc.

4.3 There should be suitable access for all patients who may arrive at the day hospital entrance by either ambulance or car or on foot. Some of these patients may be wheelchair bound. A canopy of adequate height to accommodate an ambulance should be provided to give some shelter from the weather whilst the patients are leaving ambulances or cars. Car parking space for staff and visitors will be required (see SHPN 45 – External works for health buildings). Day hospitals should be at ground level in a single storey building. In the grounds of the day hospital there should be a pleasant outdoor area for patients.

Components of accommodation

4.4 Having identified the type of day hospital service to be provided, some or all of the following should be provided:

Patient areas

Dining room

4.5 It is recommended that the *dining area* be sized for one sitting only. This will create a space sufficiently large that it can also be used for recreation and large group meetings. Too small a dining space would inhibit this. Careful consideration needs to be given to the design of the room.

Servery/pantry

4.6 A separate patients' *servery/pantry* adjacent to the dining area is required for the preparation of beverages outwith the normal meal times and supplements. Ample storage is required for dry goods and for limited crockery and cutlery. A refrigerator will be required for the storage of high risk foods. Facilities are required for dishwashing and for handwashing. Parking space will be required for catering and/or beverage trolleys. In designing the servery/pantry care must be taken to observe current regulations in respect of food safety and health and safety – notably on safe water temperatures and the control of Legionellae.

Sitting room/quiet room

4.7 A *sitting/quiet room* should be provided and be comfortably furnished with homely domestic furniture, wall pictures, etc. This room should be sited adjacent to the dining room so that the two can be combined for community meetings and social activities. A television, video tape recorder and stereo system should be provided. Smoking facilities are dependent on individual hospitals' operational policies but where it is intended to provide for both

smoking and non-smoking use, an additional sitting area may be provided from within the total space allowance. If a room is to be designated as a smoking area, consideration should be given to the provision of increased ventilation.

Sanitary facilities

4.8 Patient WCs with wash hand basins should be provided in the day hospital on a scale of 3 to 20 patients. An assisted bathroom and shower room as well as separate assisted WC should also be available for the disabled.

Patient cloakrooms

4.9 Two patient cloakrooms should be provided with secure facilities for safe storage of patients' valuables.

Therapy areas

Occupational therapy

4.10 These should be designed to allow for the effective and flexible use of staff and be capable of multi-use. They need to provide a variety of activities which require a range of social interaction, intellectual ability and manipulative skills. In large units some of these activities may be undertaken in separate but similar rooms; one should be designated for 'quieter' activities. Heavy, fixed, specialised equipment will not be required. The spaces should include:

i. a *clean/quiet activity area,* with associated stores where craft, educational activates and clerical work may be undertaken, with sufficient space for table-top activities. Tables and chairs should be easy to stack. A sink and drainer is required and a display panel should be provided on at least one wall. Task lighting should be provided;

ii. a *dirty/noisy activity area,* with an associated storage space large enough to cope with patients' 'work in hand', for activities like woodwork, printing, art and pottery (when it will be necessary to install a mobile kiln, which should be in a separate space);

iii. *'Activities of Daily Living'* (ADL). In certain instances the provision of these facilities in a day hospital will be determined by local circumstances such as the proximity to a hospital rehabilitation department, to in-patient accommodation or to other 'ADL' facilities. The facilities comprise the following:

- An *'ADL' kitchen area.* This should be a separate space. The size and ambience should be that of a 'domestic' kitchen capable of accommodating a small group and furnished with equipment similar

to that likely to be in patients' homes. Both electric and gas appliances should be available. All the kitchen cupboards and the refrigerator should be lockable. There should be space for patients to work with the staff and for some of them to sit down and eat.

- An *'ADL' bathroom.* This should be of the same size and layout as the average domestic bathroom and the fittings should be domestic in type.
- An *'ADL' bedroom.* This can be quite small and the essential component here is a domestic size and style of bed to test first of all whether the patient can get in and out of bed and secondly whether they can make the bed.

iv. a *beauty/hairdressing area,* where facial care, manicure and hairdressing can be undertaken by either a hairdresser (in larger units), a member of staff or by patients themselves. Careful programming of use will be necessary in larger units;

v. a *patients' utility room* should be provided primarily for patients to launder small items of personal clothing. Washing, drying and ironing equipment will be needed. The relative merits of commercial as against domestic equipment will need to be considered;

vi. an *ongoing work store* and a *material/equipment store* are required. The former is required for storing patients' ongoing work in racks and shelves. In the latter secure storage is required for materials and equipment which will be issued for use in patients' treatment. Some equipment may also be loaned to patients during their in-patient stay and will need to be stored. Some racking and shelving will be needed for these.

Physiotherapy

4.11 The physiotherapy area should have *activity/recreation rooms* which should be large enough for group activities such as physical exercise, relaxation and music and movement classes. Adjacent to this area there should be a *bulk store* to accommodate exercise mats and other equipment.

Treatment and utilities

4.12 These rooms are similar in function and area to their counterparts in the 15 bed ward – refer to paragraphs 3.15-3.21.

Offices, etc

4.13 A *waiting/reception area* for patients and visitors should be conveniently located near the entrance of the day hospital.

4.14 The two *clinical consulting/interview rooms* will be used for one-to-one discussions, counselling and individual assessments. Both rooms should be so constructed as to ensure oral privacy during interviews and while telephoning – refer to paragraphs 5.30-5.31. One room should have the wall adjacent to the corridor semi-glazed and the door should open outwards with the glazed portion of the wall having a curtain. One room should be furnished in a homely manner and should be non-smoking. Doors should have engaged/vacant signs. Telephone points and an emergency call system should be installed in both rooms.

4.15 A *Charge nurse's office* is required. This is the focal administration area and should be located adjacent to the waiting/reception area. Current records of all patients will be held here.

4.16 A *duty room* should be provided where informal multidisciplinary discussions can take place confidentially on the ward.

4.17 *Staff cloakroom* facilities and *WCs with wash hand basins* should be provided.

4.18 A *multi-purpose office* will be required. This room will be used for interviews by a variety of professional staff and should be located within the administrative centre.

4.19 A *linen store* will be required to hold sufficient linen etc to supply the day hospital in the light of the DGH's operational policy regarding supplies (should the day hospital be within the curtilage of the DGH).

Occupational therapist's office

4.20 An *occupational therapist's office* is required to maintain case records and carry out associated administration work. The office should be so sited (wherever possible) that it oversees and has easy access to the activity areas and a view of the kitchen/hairdressing areas. In small day hospitals, this office may be combined with the physiotherapist's office.

Physiotherapist's office

4.21 A *physiotherapist's office* is required in which case records can be maintained and associated administrative work carried out. The office should overlook the activity/recreation area.

5. General functional and design requirements

Introduction

5.1 This Chapter contains guidance concerning aspects of function and design which are common to health buildings generally and which will need to be borne in mind when designing new buildings or upgrading existing premises. Certain aspects which have particular relevance to accommodation for mentally ill people are discussed in greater detail.

Economy

5.2 The planning of hospital buildings requires design solutions which not only satisfy functional requirements but also ensure maximum economy in respect of both capital and running costs. Due weight must therefore be given to the questions of space provision, maintenance (including cleaning), energy consumption and staffing requirements. Planning should ensure that spaces are used as intensively as possible and are not unnecessarily duplicated. Wherever possible spaces should be designed for flexibility of function, not only in their original use but also in terms of future change of use.

Alterations and extensions to existing buildings

5.3 Guidance for new build is not intended to apply retrospectively to alterations to buildings. Nevertheless, the principles are equally valid and they should be applied wherever practicable when buildings are altered* or extended. Applying the Building Standards (Scotland) Regulations to this type of work sometimes presents difficulties. The basic principle is that the Regulations apply to both alterations and extensions but not to unaffected parts of the building even if these parts do not conform to the Regulations.

5.4 The cost of alterations and/or extensions should be established in accordance with the guidance outlined in the Healthcare Construction Project Price Guide published by NHS in Scotland Property and Environment Forum Executive. The guidance takes into consideration the estimated life of an existing building and the difference in cost between works to an existing building and that of new building.

*** Alterations include upgradings and adaptations of existing buildings.**

5.5 Before any decision is made to carry out such a project an option appraisal should be undertaken as described in the Healthcare Construction Project Price Guide. Consideration must be given to the long-term strategy for the service, the space required for the new service and the size of the building. Regard must also be paid to the orientation and aspect of the building and the adequacy and location of all necessary support services.

5.6 If there emerges a prima facie case for upgrading, a thorough analysis of all functional and physical conditions of the existing building should be undertaken.

5.7 When comparing alteration and/or extension of existing buildings with new build, economic considerations will not be the only criteria to be considered. Due account should be taken of matters such as location, accessibility, staffing, etc. The check of physical and other aspects of existing buildings should include:

- availability of space for alterations and additions;
- type of construction;
- insulation;
- age of the buildings, condition of fabric for example external and internal walls, floors, roofs, doors and windows, which can be determined by a condition survey;
- life expectancy and adequacy of engineering services, ease of access and facility for installation of new wiring and pipework, if required;
- the heights of ceilings (high ceilings do not necessarily call for the installation of false ceilings which are costly and often impair natural ventilation);
- changes of floor levels to obviate hazards to disabled people;
- fire precautions;
- physical constraints to adaptation such as load bearing walls and columns.

5.8 Having decided that existing premises are suitable for upgrading or conversion, the main requirement will be to assess how best the accommodation can be planned so as to facilitate the practice of modern care.

5.9 This summary of the main aspects of upgrading is general in character and it is recognised that each upgrading project will present its own problems. In many instances compromises may have to be made between Planning Note standards and what it is possible to achieve. Alterations should be functionally sound not merely cosmetic – and appropriate for the projected needs of patients and staff for a number of years to come. Extensions should be regarded as new build wherever practicable.

Statutory and other requirements

5.10 NHS Circular No 1991 (GEN)1 advised Health Boards of the requirement to comply with all relevant legislation following the removal of Crown immunity under Section 60 of the NHS and Community Care Act 1990. Health Boards and NHS Trusts are reminded of their responsibility for ensuring compliance with all statutes, regulations, codes and standards.

Smoking

5.11 Following NHS Management Executive letter MEL(1992), which set a target date of 31 May 1993, all health boards and NHS Trusts have introduced and implemented written no-smoking policies. No smoking is now the standard in all NHS premises. Although the policies may allow for provision for designated smoking areas for staff and patients, increasingly, boards and Trusts are adopting a total restriction on smoking. MEL(1992)24 refers to a fuller set of guidance available for those boards and Trusts who might find it a helpful resource. This guidance includes a statement that consideration should be given on how to adequately ventilate smoking rooms.

Fire safety

5.12 The project team members should familiarise themselves with NHS in Scotland Firecode which contains technical guidance on fire safety in hospitals and other National Health Service premises.

5.13 During the design stage it is important to establish those aspects of fire safety strategy which affect the layout and structure of a project. At appropriate stages of the design process the architect and engineer will be required to discuss their proposals with the local fire brigade, and ensure that the project team and all other NHS staff are fully acquainted with the fire safety strategy for the design in operational terms (staff responsibilities, etc) equipment provision, and engineering layouts. Health Technical Memoranda 57, 58, 59, 60 and NHS Estates publication ‘Wayfinding’ give detailed information on the selection of fire resisting components.

5.14 The principles of fire safety apply to both new projects and to alterations and upgrading of existing buildings.

5.15 Wards for mentally ill patients present a high fire risk, especially at night. Some patients have a diminished sense of awareness which can result, for example, in carelessly discarding smoking materials: it is possible that a very small number of patients may start fires. Some patients may be confused and slow to raise an alarm, or to co-operate in evacuating a danger area.

5.16 Each bedroom should be capable of being fully enclosed for the containment of smoke.

Telephones

5.17 Telephones should be provided in accordance with the needs of the unit. Ringing telephones in, and adjacent to, consultation/examination/treatment spaces are a particular nuisance at any time, and consideration should be given to the installation of a telephone system which will enable any incoming calls to be intercepted at a more appropriate location, for example the ward office or staff base.

5.18 Public telephones will be required for the use of patients, their escorts and visitors, preferably in a convenient and accessible location in, or near to, the main entrance and/or waiting area. Reference should be made to paragraphs 5.55-5.57 below with regard to the provision of public telephones for disabled people

Security

5.19 Assaults on hospital staff and theft of NHS property are recognised problems. The project team should discuss security with the officer in charge of the local Police Crime Prevention Department and the hospital or district security officer or adviser at an early stage in the design of the building. Fire and Security Officers should be consulted concurrently because the demands of security and fire safety may sometimes conflict. The attention of planners is drawn to NHS MEL(1992)35 about security and the revised NHS Security Manual to which it refers. Reference should also be made to Scottish Office PAN 46 – 'Planning for crime prevention'.

5.20 Security needs to be considered from both the point of view of security from outside intruders and the safety and security of patients and staff. The building should be designed, fitted and equipped to a standard which minimises opportunity for patients to engage in self-harming activities. The creation of a homely, domestic environment will be of equal importance.

Protection from intruders

5.21 The security of the unit from outside intruders must be given careful consideration. There should be only one point of entry to each unit which should be staffed 24 hours per day or have CCTV surveillance. Special consideration should be given to fire doors on escape routes which are not part of the usual circulation to ensure that they are used only for their proper function. The entrance door will need to be lockable at night. A bell push is required at the entrance to the department and to any self-contained component part of the unit.

5.22 Throughout the accommodation, except for ground floor windows looking onto courtyards, window openings should be restricted at the bottom to 100mm for reason of security and to discourage intruders. On the ground floor, which is more vulnerable to intruders, the degree of restriction at the

top of the window will be a matter for local decision, bearing in mind that the more a window can be opened the better the natural ventilation. On the first floor, some restriction of top opening is desirable but the amount should be left to local decision. However, in all sanitary and utility areas there should be restrictors to allow opening of windows 100mm at both the top and bottom. Similarly, casement windows, if used, should be restricted at the side. All restrictors should be tamper-proof.

Patient protection

5.23 Some patients may attempt to harm themselves or others and so some precautions need to be taken, though the overriding safety measures are good staff/patient relationships. In the units for the elderly, particular attention should be paid to the problem of patients who 'wander'. Thought will need to be given as to whether unit doors should be locked or suitably alarmed so that staff can be alerted if a patient wanders out of the ward. It is necessary to lock doors of those parts of the accommodation which are not used 'out of hours' and at weekends, e.g. some rooms in the day hospital, ECT suite, out-patient suite and administration. Restricted window openings which can contain a patient intent on suicide or one who is seriously deluded should be provided in all areas, without impairing the natural ventilation. A window that is easy to climb out of is more of a temptation in areas where patients are not observed by other patients and staff, such as WCs, bathrooms, empty bedrooms or quiet parts of corridors (see also paragraph 5.22). All the single and multi-bed rooms will require safety glazing. There should be no open stair wells. The Domestic Service Room should be lockable because it will contain toxic materials. Project managers should refer to the Mental Health Reference Group Guidance on Risk Management for further advice on the proper management of risk and the requirement for a comprehensive development programme.

Fittings

5.24 It is important to avoid any fittings which might be used as attachment points for those intent on hanging themselves. Curtain rails, cupboard rails, mechanical door closers, exposed pipes and decorative beams should be low weight bearing. However, the design of such fittings should also take into account risks arising from the breakage or collapse of fittings, either accidentally or through deliberate action. If games items such as pool tables are incorporated into the ward, cues, balls etc should be collected at night. The Mental Health Reference Group Guidance on Risk Management should again be referred to.

Valuables

5.25 Facilities should be provided for the temporary security of patients' valuables in a staff office. Valuables requiring longer-term storage should be kept in accordance with the whole hospital policy.

Drugs

5.26 Secure storage for Controlled Drugs will be required in the wards and the ECT treatment room. Because of their potential for abuse, normal control procedures over all drugs may need to be strengthened.

Damage in health buildings

5.27 When designing and equipping health buildings, the likely occurrence and effects of accidental damage should be considered. Damage in health buildings has increased over the years, to some extent as a result of lightweight, often less robust, building materials. Measures to minimise damage should be taken in the form of protective corners, buffers and plates where necessary, and to proper continuation of floor surfacing, ie strong screeds and fully bonded floor coverings. Protective devices, if used, should be capable of being renewed as need arises and should be designed as part of the decoration to retain the relaxed domestic character.

Building Component Data

5.28 The Building Component Data Base consists of a series of Health Technical Memoranda (HTMs) 54-71 which provide specification and design guidance on building components for health buildings which are not adequately covered by current British Standards. No firms or products are listed. The numbers and titles of the various SHTMs and HTMs in the series are listed in 'References'. Partitions (HTM 56) should be solid in construction and not of the hollow stud frame variety. Suspended ceilings (HTM 60) are prone to destruction by disturbed patients and should be avoided.

Environmental considerations

5.29 The effect of operations and actions on the environment is of significant importance and is an integral part of the responsibility for the health and well-being of the community. Care must be taken to contain the environmental impact of activities to a practical minimum consistent with maintaining responsibilities of providing high quality patient care. Commitment to the requirements of the Environmental Protection Act and all other relevant statutory legislation is essential. It is of particular importance to seek to:

- continue to promote the efficient use of energy in an economical and environmentally sound manner by promoting energy conservation and where economically viable, investing in energy saving technology and management;

- provide environmental training to appropriate staff, ensure that all staff are aware of the environmental policy and how they can contribute to the overall environmental performance;
- promote waste minimisation and reduce the environmental impact of waste through beneficial use, where practicable, or safe disposal where not;
- reduce, where practicable, pollution to air, land and water.

Internal environmental conditions

Noise

5.30 In order for the environment to be relaxing and non-institutional in character, the building will have to cater for both noisy and quiet activities and this should be borne in mind during the early stages of planning. In the wards it is important that sleeping areas, the quiet day space, interview rooms, and rooms where concentration is required, should not be adjacent to noisy areas. Utility rooms and pantries likely to be used at night should not be so close to the bedrooms as to cause a disturbance.

5.31 The quality of the acoustics is important and it is vital to avoid empty echoing sounds which create a very non-domestic impression. In addition to appropriate planning measures, noise can be lessened by isolating sound sources with sound containing partitions and doors, by attenuating sound with acoustic materials and generally using soft floor coverings, curtains and other such materials. There may be a need to ensure oral privacy, i.e. that confidential conversation is unintelligible in adjoining rooms or spaces. This will typically, but not exclusively, be required in consulting/examination rooms and interview rooms. The acceptable noise level, and any requirement for speech privacy, where applicable, in the individual spaces in this department is shown on the Activity Data Base sheets. (See Health Technical Memorandum 56 – 'Partitions'.)

Flooring

5.32 It is important to select a floor covering which contributes towards the creation of an attractive environment, but one which does not present a hazard to disabled people or the movement of wheeled equipment. It is important that whatever floor covering is chosen it can be effectively cleaned, maintained and repaired. Rapid developments in soft floor covering technology have produced a wide variety of new materials. (See Health Technical Memorandum 61 – 'Flooring'.) Floors should not present or appear to present a slip hazard and the patterning should not induce disorientation. Changes of floor level should be avoided wherever possible. Surface drag, static electricity, flammability and infection hazards are other factors which need to be considered – see also 'Maintenance and Cleaning' – paragraph 5.62.

Design features

5.33 The physical limitations of some people impose special demands on internal design and fittings. Elderly patients with dementia, whether in-patients or day- patients, will have particular needs because of their mental confusion which may or may not be compounded by some degree of physical disability. Careful attention will need to be paid to such features as floor coverings, lighting, and the use of colour and signposting as an aid to circulation. Interior design should facilitate sight lines, avoid isolated spaces and prevent unnecessary risks. There should be no “dead-end” corridors. Measures to contain patients at risk of wandering may also need to be considered. Features requiring special consideration are detailed in the following paragraphs.

Main entrance

5.34 The first impression gained by patients and visitors entering a mental illness unit is of fundamental importance. The design and furnishings of entrance, reception and waiting spaces should be warm and welcoming with a carefully chosen decor, soft floor coverings, pictures and plants. This feeling of warmth and welcome should be continued throughout the accommodation. See paragraphs 5.19-5.26 for comments on security.

Shape of rooms

5.35 The shape and appearance of rooms have effects on people. Rooms which are square or nearly square are preferable for most purposes. Long, narrow tunnel-like rooms and rooms which are small, internal, badly lit or poorly ventilated should be avoided. Rooms used for group therapy should allow patients to sit in a circle.

Doors and frames

5.36 Doors should be wide enough to allow a clear space for patients using a walking aid and for the passage of wheelchairs. Lever handles should be 900mm above the floor level. Rails across the sight line of seated patients should be avoided in the design of glazed doors. Doors which swing both ways need vision panels to help reduce accidents but, for reasons of privacy, some may require closable screens or curtains. Where necessary, doors should be able to be fastened in the open position. If magnetic door closers are required to meet fire regulations, they should be carefully selected to minimise interference with day-to-day activities. Any locked fire exit doors must have the capability of release on the activation of the fire alarm, or a local release facility of a type not likely to tempt patients to misuse it.

5.37 Lockable internal doors used by patients should, to avoid problems of barricading, either open both ways, be removable or have an external release. In bedrooms, some doors may need two leaves. In an emergency it must be possible to enter WCs from the outside. Doors should be fitted with

easygrip bolt handles. Bi-fold doors are not suitable. Bedroom doors should have windows with blinds or curtains accessible to staff from the outside for observation purposes. Double sets of doors to wards offer both noise and heat insulation and can act as a security “air-lock” should circumstances demand.

5.38 Natural ventilation and air conditioning are required in units of this type which are constantly occupied by many people and would otherwise become oppressive in hot and humid conditions.

Ventilation

5.39 Natural ventilation is usually caused by the effect of wind pressure. It will also occur to some extent if there is a temperature difference between inside and outside the building. This thermo-convective effect frequently predominates when the wind speed is low and will be enhanced if there is a difference in height between inlet and outlet openings. Ventilation induced by wind pressure can promote high air change rates through a building if air is able to move freely within the space from windward to the leeward side of the building. Internal partitions, fire compartment walls and closed doorways can, however, often impede the flow path and when this happens the process will be more dependent on single-sided ventilation. Nevertheless, even with this degree of obstruction to air movement, acceptable ventilation may still be obtained without excessive window openings which could prejudice safety, security and comfort. Some types of windows, e.g. vertical sliding, can enhance single-sided air exchange by temperature difference and these will improve the overall rate of natural ventilation in protected or sheltered areas where the effect of wind pressure is likely to be minimal. Section 2.3 of HTM 55 and BS 5925 provide further guidance on this subject.

Furnishings and finishes

5.40 Furnishings and finishes should be domestic in appearance but hardwearing. The problems of maintenance, cleaning and flammability should be borne in mind. (Flammability standards are set out in the Health Services Supply Purchasing Guide Vocabulary Section T). Protective rails or guards will be required in areas where there is likely to be damage by trolleys or mobile equipment, but the protection should be chosen to blend in as much as possible to prevent an institutional appearance.

5.41 Mirrors which can be used by sitting or standing patients should be available to encourage patients to have regard for their appearances. Some mirrors should be full-length. All mirrors should be unbreakable and non-distorting.

5.42 It is important to avoid any fittings which might be used as attachment points for those intent on hanging themselves. Curtain rails, cupboard rails, closers, exposed pipes and decorative beams should be avoided if possible, but if such components must be incorporated, they should be carefully designed to avoid or at least minimise any risk.

Natural and artificial lighting

5.43 The design of windows must reconcile different needs as well as providing natural daylight and outside views. In addition to the various statutory requirements, the following aspects also require consideration:

- illumination and ventilation;
- insulation against noise;
- thermal loss or solar gain;
- the prevention of glare;
- the provision of a visual link with the outside world.

5.44 Design should ensure that it is possible for cleaners to have easy access to the inside and outside of windows. Guidance on types of window and on the safety aspects is available in HTM 55 'Windows'.

5.45 In day rooms and bedrooms, sill heights should be not greater than 800mm to enable patients when seated to look outside: floor to ceiling glazing is inappropriate. Requirements for cleaning the inside and outside of windows should not be overlooked. Consideration should also be given to strengthened glazing. Where windows are located in the wall behind the bedheads it is necessary to ensure that the space requirements for beds, lockers, bedhead services, etc are not compromised to the disadvantage of either patients or staff.

5.46 Decor should be light and pleasant. Natural lighting is essential to the well-being of patients. The provision of a comprehensive artificial lighting installation is also essential; it makes an important contribution to the aesthetic appeal of the ward. It should be possible to vary the level of illumination to suit functional activities. Task lighting of the required intensity with low-contrast glarefree background illumination should be provided. All lighting in the ward should have suitable colour rendering characteristics.

5.47 Orientation is an important consideration in any site development scheme. Sunlight enhances colour and shape and helps to make a room bright and cheerful. Glare can be reduced by attention to the detail of window design and can be controlled by curtains or blinds. The harmful effects of undesired solar gain can be mitigated by external screens – a costly solution – or by architectural details of the shape of windows and depth of reveals. Properly controlled solar gain contributes to energy efficiency.

Internal rooms

5.48 Internal rooms may contribute to economy in planning but the resulting continuous need for artificial lighting and mechanical ventilation will add to both capital and running costs. Such rooms do not provide good working conditions hence should be used only for activities of infrequent or

intermittent occurrence or which demand a controlled environment. Rooms that are likely to be occupied for any length of time by staff or patients should have windows.

Privacy

5.49 The design of the accommodation must preserve the privacy and dignity of patients particularly where men and women are treated in adjacent areas and share certain accommodation and circulation spaces. This must be reconciled with the need for unobtrusive observation which is vital for the care of the patient.

5.50 Within the ward or unit there will be different levels of rights of access and privacy. This will range from very public areas such as the reception and dining room to patients' individual bedrooms where a very high level of privacy will be required. Between these extremes there will be activity areas where patients congregate and clinical areas where patients and staff hold confidential discussions. There will also be staff only areas. This gradient of access/privacy should be clear from the design, both between and within the functional elements.

Art in hospitals

5.51 Works of art and craft can make a significant contribution towards the desired standard of the interior of wards and day hospitals. This need not be limited to the conventional hanging of pictures on a wall. Every opportunity should be taken to include works by local artists and craftspeople. These may include paintings, murals, prints, photographs, sculptures, decorative tiles, ceramics and textile hangings.

5.52 Often it is works of art and craft which lend special identity and which help give a sense of locality.

5.53 Advice should be sought from experts on:

- obtaining funding;
- ensuring quality in all art and craft works;
- appropriately locating art and craft works;
- selecting artists and craftspeople.

5.54 Colour can be used to good effect for decorative and other purposes. Colour schemes can be devised to aid in the identification of particular rooms or parts of the department. Drab colours should be avoided.

People with a disability

5.55 It is essential to ensure that suitable access and facilities are provided for disabled people who have problems of mobility or orientation. This includes, beside the wheelchair bound, those who for any reason have difficulty in walking and those with a sensory handicap such as a visual or hearing impairment. Health Boards and NHS Trusts are reminded of the need to comply with the statutory provisions for the chronically sick and disabled persons.

5.56 Readers should refer to SHFN 14 – 'Disability access'. Project teams are reminded of the need to comply with the provisions of:

- The Chronically Sick and Disabled Persons Act 1970 and The Chronically Sick and Disabled Persons (Scotland) Act 1972;
- The Chronically Sick and Disabled Persons (Amendment) Act 1976;
- The Disabled Persons Act 1981;
- The Disabled Persons (Services, Consultation and Representation) Act 1986;
- The Disability Discrimination Act 1995.

5.57 Attention is drawn to BS 5810: 1979 Code of Practice for Access for the Disabled to Buildings (under review). One of the effects of the 1981 Act is to apply this British Standard to premises covered by the 1970 Act, which includes those open to the public.

Wayfinding

5.58 To encourage patients to look after themselves, to use their initiative and to have freedom of movement about the unit, particular attention should be paid to wayfinding. The form of signposting used and the method of displaying notices should not detract from the desired environment but should be sufficiently explicit to be understood by patients who may be either confused or are from a different culture. Only certain doors require conventional labelling, e.g. fire exit doors, bathrooms, WCs and offices. Further guidance is available from NHS Estates publication 'Wayfinding'.

5.59 Project teams are encouraged to refer to HBN 40 – 'Common Activity Spaces: Volume 4, Circulation areas' and HBN/SHPN 40 Volume 5: Scottish Appendix. These give guidance and a set of ergonomic data sheets on access, space and equipment relating to disabled people in health buildings.

Waste disposal

5.60 The segregation, storage and the safe disposal of waste should comply with the guidance given in the Health and Safety Commission – Health Service Advisory Committee 'Safe Disposal of Clinical Waste', issued with letter reference NHS MEL(1993)2.

5.61 The waste disposal provision of used items should be consistent with the current policy of the health body for the disposal of clinical waste. A room for the temporary holding of waste should be provided at the entrance to the department.

Maintenance and cleaning

5.62 Materials and finishes should minimise maintenance and be compatible with their intended function. Building elements that require frequent redecoration or are difficult to service or clean should be avoided. Special consideration should be given to elements such as door sets, corners, partitions, and counters which may be subject to heavy use. Floor finishes should be restricted in variety and, where soft floor coverings are specified and spillage likely, should have a backing impervious to fluids and a non-absorbent pile. Wall coverings should be chosen with cleaning in mind. Advice on these topics is published in HTMs 56 – 'Partitions', 58 – 'Internal doorsets' and 61 – 'Flooring'.

Provision for Automatic Data Processing (ADP)

5.63 Information technology has a central role in health management. The use of computers and telecommunications – and, indeed the rate of technological innovation – continues to increase. The implications for project teams are threefold: firstly, a requirement for the housing of the computers; secondly, a requirement for the provision of ducts for transmission cabling; and thirdly, sufficient space and adequate power supplies for modems, visual display terminals (VDTs) and printers, and associated software and stationery. Even if the introduction of automatic data processing (ADP) is not proposed at the time that the project team completes its brief it will be advisable to design in such a way that equipment can be introduced easily and quickly at some later date.

5.64 There are two principal matters of concern: visibility and noise. VDTs are now a familiar sight, and it will easily be appreciated that they cannot be reduced beyond a certain size. Consequently, sufficient and convenient space must be provided for them. Since the brightness of the letters displayed on the screen cannot exceed a certain limit, special attention must be given to the ambient lighting to ensure that the contents of the screen are legible. Additional space will be required in front of the screen for a

keyboard. Printers are often noisy. Noise may not be too noticeable in bed areas during normal working hours but during quiet hours it will probably not be acceptable. If it is not possible to position a printer at a site remote from patient areas, expenditure on a quieter printer or on means of quietening a noisy printer can be justified.

5.65 Computer expertise is now widely available in the NHS and project teams should ensure that, at an early stage, they inform themselves concerning current and projected local computing policies, and that their proposals conform with them.

Clinical teaching and overnight accommodation

5.66 If it has been agreed that the teaching of undergraduate and postgraduate medical students will take place in the accommodation and their numbers necessitate additional space, reference should be made to the document 'Teaching Hospital Space Requirements' issued by SHHD/DS(74)99.

5.67 Suitable accommodation for the clinical teaching of student nurses should be provided including a seminar room and library facilities. These could perhaps be shared with the Community Services Administration Suite (see paragraph 3.33).

5.68 Postgraduate medical education requiring special facilities should take place in a postgraduate medical education centre or in the hospital education centre.

5.69 The requirements of students in professions other than medical and nursing will need to be taken into account and the appropriate people and/or bodies consulted at the initial planning stages.

5.70 On-call overnight accommodation for staff may be required in the hospital complex. This accommodation is not covered by this Note.

6. Engineering services

Introduction

6.1 This Chapter describes the engineering services contained within a mental illness unit and their integration with the engineering systems serving a whole site. Its purpose is not to inhibit the design solution but to acquaint the engineering members of the multi-disciplinary design team with the criteria adopted (in the terms of material specification, design conditions and reference data) to meet the functional requirements.

Model specifications

6.2 A series of model specifications including Scottish Supplements, for the specialised engineering services in healthcare buildings, has been issued nationally and is sufficiently flexible to reflect local needs. The NHS in Scotland cost guidance for the engineering services in each functional unit of this accommodation is based on the qualities of material and workmanship described in the relevant parts of the model specifications.

Economy

6.3 Engineering services are a significant proportion of the capital cost and thereafter remain a continuing charge on revenue budgets. Therefore the project design engineer should ensure not only the utmost economy in initial provision, consistent with meeting the functional requirements and maintaining clinical standards, but also the optimum benefit from the total financial resources these services are likely to absorb during their lifetime.

6.4 Where various design solutions are available the consequential capital and running costs should be compared using the discounting techniques described in the Scottish Capital Investment Manual.

6.5 The economic appraisal of design solutions should include heat conversion and distribution losses at the point of use. Where buildings are located remote from the development's load centre, these losses can often be significant.

6.6 The energy management and accounting system should be part of the hospital building management system (BMS) and should include metering of all services where practicable. If a hospital BMS is not available, the energy and accounting system for the unit should stand alone. It should be suitable for integration with a future BMS. Further detailed guidance is available in SHTM 2005 – ‘Building management systems’.

6.7 After satisfying the Building Standards (Scotland) Regulations (and subsequent amendments) on standards of thermal insulation, consideration should be given to the economics of additional insulation to the ground floor slab and the roof particularly, where accommodation is located in a 'low-rise' building. Where there is a solidly constructed ground floor, the inclusion of floor insulation will have the additional benefit of contributing to patient and staff comfort.

6.8 In view of the increasing costs of generating heat energy, consideration should be given to the economics of recovering some of the energy which would otherwise be discharged by mechanical ventilation systems and to turning off or reducing heating and ventilation in those spaces which are used only for part of the day.

Maximum demands

6.9 User demand on engineering services is often difficult to predict, but experience indicates that services designed for simultaneous peak conditions are seldom fully utilised in practice. The estimated maximum demand and storage requirement (where appropriate) for each engineering service in this accommodation will need to be assessed individually to take account of the range, size and shape of the functional units, geographical location, operational policies and intensity of use. The Property and Environment Forum Executive may provide estimates of the maximum demands and storage requirements for a specific project if required by the project team.

Space for plant and services

6.10 The satisfactory performance of plant in healthcare buildings is particularly important and the building design should allow for:

- easy and safe means of access protected as far as possible from unauthorised entry;
- frequent inspection and maintenance with sufficient access panels being provided for this purpose;
- eventual removal and replacement of plant with particular attention being paid to the requirements of the Manual Handling Operations Regulations (1992) and succeeding legislation.

6.11 Recommended spatial requirements for mechanical, electrical and public health engineering services in health buildings are given in SHTM 2023 – 'Access and accommodation for engineering services'. The information in this publication is specifically intended for use during the initial planning stages when precise dimensional details of plant are not available and it

makes reference to the Construction (Design and Management) Regulations.

6.12 The distribution of mechanical and electrical services to final points of use should, wherever possible, be concealed in walls and above ceilings. Heat emitters should be contained within a 200mm perimeter zone under window sills and critical dimensions should be taken from the boundary of this zone. The 200mm zone includes the floor area occupied by minor vertical engineering ducts and is included in the building circulation allowance.

6.13 Services contained in the space above the false ceiling, with the exception of drainage, should be confined to those required for the accommodation immediately below the false ceiling. Provision of satisfactory access should be provided to pipework, fittings and valves concealed in partitions, walls and ceilings.

Activity Data

6.14 Environmental and engineering technical data and equipment details are described in the Activity Data Base sheets (see Chapter 8). They should be referred to for space temperatures, lighting levels, outlets for power, telephones, equipment details etc and when positioning equipment and outlets. Any item which involves patient operation should be of a simple pattern and designed to inhibit interference.

Safety

6.15 The Health and Safety at Work etc., Act 1974 as partly amended by the Consumer Protection Act 1987, together with the Workplace Regulations, the Work Equipment Regulations and the Construction (Design and Management) Regulations 1994 impose statutory duties on employers and designers to ensure, so far as is reasonably practical, that design and construction is such that articles and equipment will be safe and without risk to health at all times when being set, used, cleaned or maintained by a person at work. Engineering components, e.g. pipework, terminals, etc, are covered by the term 'articles' and thus these duties apply to the designers of engineering services for non-domestic buildings. The arrangements for guarding power operated machines and the provision of any dust extraction equipment in therapy workshops should be agreed with the local Area Inspector of the Health and Safety Executive.

Fire safety

6.16 Fire safety measures should not only meet the requirements of the Building Standards (Scotland) Regulations and be to the satisfaction of the local fire brigade, but should also conform with NHS in Scotland Firecode. Firecode gives design guidance and requirements for fire safety in healthcare

buildings through a series of Scottish Health Technical Memoranda and Scottish Fire Practice Notes. Project team members should familiarise themselves with NHS in Scotland Firecode.

6.17 The design engineers should verify the design proposals are in accordance with the procedures described in paragraphs 5.12-5.16.

Noise

6.18 Excessive noise and vibration from engineering services, whether generated internally or externally and transmitted to internal areas, or noise from other sources e.g. speech which can be transmitted by the ventilation system, can adversely affect the operational efficiency of the department and cause discomfort to patients and staff. However, in addition to designing for control of noise levels, there may also be a need to ensure speech privacy so that confidential conversations are unintelligible in adjoining rooms or spaces. This will be important in consulting/examination and treatment rooms, particularly where these are located adjacent to waiting areas. The noise limits and means of control advocated in SHTM 2045 – 'Acoustics' should provide an acceptable acoustic environment.

Control access

6.19 Devices for control and safe isolation of engineering services should be:

- located in circulation rather than working areas to avoid disruption of clinical work;
- protected against unauthorised operation, for example switchgear and fuseboards should be housed in secure cupboards and, where appropriate, water stopcocks and drain down valves should be designed/positioned to thwart deliberate flooding;
- clearly visible to and accessible where intended for operation by the department's staff;
- easily accessible and visible to commissioning and maintenance personnel.

Engineering commissioning

6.20 It is essential that engineering services should be fully commissioned and adequate test facilities and devices should be included in the design to facilitate flow measurement and regulation of all water, ventilation and gaseous services. The services should be commissioned in accordance with the methods identified in relevant Health Technical Memoranda. Engineering

services for which a specific SHTM or HTM is not available should be commissioned in accordance with the following as appropriate:

Engineering commissioning published by The Institute of Healthcare Engineering and Estate Management (IHEEM).

Engineering Services commissioning codes published by the Chartered Institute of Building Services Engineers (CIBSE).

Trade associations' commissioning codes.

Commissioning should also be carried out and documented in accordance with the requirements of Scottish Hospital Technical Note 1 – 'Post commissioning documentation for health buildings in Scotland'. It is essential that full information regarding commissioning codes and test methods to be used are included in the specification for engineering services.

Mechanical services

General scope

6.21 The mechanical services include the provision of heating, ventilation/air conditioning, hot and cold water services and medical gas supplies. For cost guidance purposes the distribution of all piped systems is deemed to commence at their point of entry into the accommodation and includes pipework, fittings, controls and connections to equipment and outlets. The cost guidance includes for air handling and treatment plants, ductwork and fittings, together with associated ventilation system controls.

6.22 For environmental requirements in individual spaces reference should be made to the Activity Data Base sheets. Recommended room temperatures, air change rates, hot water service temperatures, etc are grouped under 'Technical Design Data' on each A-Sheet.

Heating

6.23 When planning the heating system for an acute mental health unit the safety requirements of the patients are paramount, particularly in the intensive care ward where other than normal LST radiators should be considered. A risk assessment should be made of each project before a selection of heat emitter(s) is made. In general all pipework to heat emitters should be concealed, but where concealment is not possible it should be insulated in a manner so as to make tampering difficult. The need for above average temperatures in areas used by elderly patients and for some space heating outside the normal heating season requires the heating system to be designed to allow flexibility of use and control.

6.24 General space heating requirements can be met by a low pressure hot water system using convectors or enclosed radiators designed to ensure that their surface temperature does not exceed 43°C. For additional protection all exposed hot water pipework accessible to touch should be lagged. For safe hot water and surface temperatures see Scottish Health Guidance Note: '"Safe" hot water and surface temperatures'. Where radiators are used they should:

- have sufficient space below them to enable a floor cleaner to be used or they should terminate at low level in a grille bearing upon the floor;
- be resistant to patients using their internal spaces for the “storage” of debris;
- normally be located below windows or against exposed walls with consideration given to enhanced wall insulation immediately behind them to reduce heat loss through the wall;
- be secured over and above normal with tamperproof fixings while maintaining the essential requirements for operational maintenance;
- be provided with tamperproof draining down facilities.

6.25 Consideration should be given to the use of underfloor heating, which will potentially provide a comfortable environment, a safe method of heating and potential to increase energy efficiency. If underfloor heating is utilised, care should be given to the floor finishes and it should be installed strictly to manufacturer requirements. The location of the manifolds, together with pipe distribution to the various zones, should be carefully planned to minimise distribution pipework serving one zone passing through another zone and hence preventing unwanted heat gains. Floor surface temperature should be sufficiently low as to cause no discomfort to staff.

6.26 Consideration may be given to other forms of heating system which may improve safety, spatial and comfort control, such as perimeter strip radiant panel heating.

6.27 The system should be adequately zoned to provide good controllability. Zone valves should have the facility for operating them via a building/energy management system. The system should be capable of controlling the heating output to individual spaces to enable close control of temperature in each individual space.

Temperature controls

6.28 To facilitate overall temperature control each room should have its own means of temperature control. The control should be capable of being set to suit the patient or occupant, but in all patient areas it should not be available to the patient. Where radiator heating is employed, the water systems serving the radiators should be zoned and compensated and should operate in conjunction with thermostatic radiator controls, either room mounted

electric controls or thermostatic radiator valves. Where thermostatic radiator valves are utilised, they should be of robust construction selected to match the temperature and pressure characteristics of the system. In patient areas they should be totally concealed within the heat emitter enclosure, but shielded from direct radiation and able to sense the temperature at the return grille. In all areas, after the settings of the valves have been determined, the valves should be capable of being "locked" to prevent unauthorised opening beyond the locked setting. Where space is restricted or heat gains and/or losses are particularly variable, consideration may be given to the provision of thermostatically controlled fan convectors fitted with low speed control but only where generated noise is unlikely to be a nuisance. Such heaters shall require to meet the requirement for a maximum surface temperature of 43°C in accordance with Scottish Health Guidance Note – "'Safe" hot water and surface temperatures'. Where underfloor heating is considered, care must be taken to ensure that floor surface temperatures are low enough not to cause discomfort to patients and staff. The use of carpeting in certain areas may make the use of underfloor heating undesirable.

6.29 Where practicable, the heating system in the out-patient and those areas of the day patient accommodation not used during the evening or at weekends should be clock-controlled and programmed to accommodate the working hours of the unit. The control system, possibly incorporating an optimum-start device, should be used to set-back the space temperature to an anti-condensation level of approximately 10°C when the accommodation is closed (actual set-back to be determined from local trials). To allow for occasional abnormal hours of working, a conveniently sited manual override time restricted switch with visual indication should be provided for use by authorised staff.

6.30 The heat emitter in bedrooms should be enclosed and designed to prevent unauthorised access.

Ventilation

6.31 Recommendations for the ventilation of individual spaces are shown on Activity Data Base sheets. Mechanical ventilation systems are expensive in terms of both capital and running costs. Planning solutions should take maximum advantage of natural ventilation and most areas shall be naturally ventilated. The high capital cost and revenue consequences of air conditioning in general ward areas will rarely be justified. Deep planned spaces may need mechanical ventilation as will dining rooms and kitchens/serveries. Internal planning of the accommodation should seek to minimise the need for mechanical ventilation by ensuring that wherever practical core areas are reserved for:

- rooms that require mechanical ventilation for clinical or functional reasons irrespective of their location, e.g. sanitary facilities, preparation rooms, disposal rooms, pantries, treatment rooms;

- rooms which have only transient occupation and therefore require minimum ventilation.

Air conditioning may be justified in treatment areas, e.g. ECT suite where the internal air temperature (d.b.) is likely to rise to within 3°C (d.b.) of the external design temperature (d.b.). Further detailed guidance is given in SHTM 2025 –'Ventilation in healthcare premises'.

6.32 Air movement induced by mechanical ventilation should be from clean to dirty areas where these can be defined. The design should allow for adequate flow of air into any space having only mechanical extract ventilation via transfer grilles in doors or walls. Such arrangement should however avoid the introduction of untempered air and should not prejudice the requirements of fire safety or audio privacy. Fresh air should be introduced via a low velocity system, tempered and filtered before being distributed. Diffusers and grilles should be located to achieve uniform air distribution without causing discomfort to patients and staff. Ventilation plant should include air filters having a minimum arrestance of 85% when tested in accordance with BS EN 779: 1993. In certain circumstances, e.g. areas of high pollution, a higher standard of filtration may be justified.

6.33 Extract ventilation will be required in all beverage preparation rooms including therapy kitchens and dining room servery and in all areas used for occupational therapy where the particular activity is liable to cause dust or fumes e.g. pottery and woodwork. The Control of Substances Hazardous to Health Regulations (COSHH) shall require to be met where fumes/dust arise.

6.34 A separate extract system will be required for 'dirty' areas e.g. utility and sanitary facilities and a dual motor/fan unit with an automatic changeover facility should be provided to ensure that these rooms are always maintained at a negative pressure when the unit is in use.

6.35 If local extract systems are utilised, consideration must be given to the specific safety requirements of Acute Mental Illness (particularly in the intensive care ward) accommodation, e.g. some rooms/areas may have sealed ceilings precluding the mounting of the fan unit in the ceiling space. External discharge arrangements for extract systems should be protected against back pressure from adverse wind effects and located to avoid re-introduction of exhausted air into the building through air intakes and windows.

Ventilation of seclusion rooms

6.36 The seclusion room(s) should be mechanically ventilated by an independent system. Care and consideration should be given to the acoustic integrity of the space and hence the routing of ductwork, the treatment of ductwork and the location of air intakes/discharges should be carefully selected. Consideration should be given to providing comfort cooling and humidification to enhance the level of environmental comfort to this space,

particularly if calculations indicate the internal air temperature (d.b.) is likely to rise to within 3°C of the external air temperature (d.b.) at external design conditions. It should be possible to control the ventilation/air conditioning of this space from the seclusion room lobby. Air diffusers and grilles should be robust and tamperproof but should not present any opportunity for patient self injury.

Ventilation of day rooms/smoking rooms

6.37 Mechanical ventilation should be provided in any area where smoking is permitted. These areas should be kept at a negative pressure relative to surrounding areas and the extract should be capable of having a boost facility operated by key switch from the area being served. Consideration should be given to the use of recirculating electrostatic filter units within the spaces to reduce the amount of air being extracted.

Ventilation controls

6.38 Supply and extract ventilation systems should include indicator lamps to confirm the operational status of each system. When the system is used on a regular daily pattern, a time-switch control with manual override for a limited period should be considered. Where a system is provided for a particular space, the indicator should be in or immediately adjacent to that space and local controls provided as appropriate. In the case of a more general system of ventilation, e.g. toilet areas, the indicator should preferably be located at the staff base. Where manual controls are available for staff use, they should be provided with labels clearly defining their function. Further guidance is contained in SHTM 2005 – 'Building management systems'.

Hot, cold and drinking water services

6.39 Guidance concerning the design and installation of cold water supply pipework and distribution systems is given in SHTM 2027 – 'Hot and cold water supply, storage and mains services'. For frost protection and to prevent condensation staining decorative finishes, all cold water pipework, valves and flanges should be insulated and vapour sealed. For additional information see Scottish Hospital Technical Note 2 – 'Domestic Hot and Cold Water Systems for Scottish Health Care Premises'.

6.40 To limit the risk of Legionnaires disease, the water services should be designed, installed and commissioned in accordance with the recommendations in Scottish Health Technical Memorandum 2040 – 'The Control of Legionellae in Health Care Premises – A Code of Practice.'

6.41 The domestic hot water should be taken from the calorifier installation at an outflow temperature of 60°C +2°C -0°C and distributed to all outlets so that the return temperature at the calorifier and in any part of the mains pipework is not less than 50°C. The safety of all patients in this type of

accommodation is paramount and the water temperature at all outlets accessible to patients whether by design or accident should be “safe”. Outlet temperatures and fittings for sanitary fittings are shown on the Activity Data Base sheets. The general principle being that unless a higher temperature is required for functional reasons, the outlet temperature for domestic hot water should not exceed 43°C and the water temperature at outlets accessible to patients should not exceed 43°C or lower in certain circumstances. Thermostatic mixing valves should be of a type that have limited variation in control with water pressure variation and automatically close the hot water supply if the cold water supply fails. The provision of one thermostatic mixing valve to supply a group of baths or showers is not acceptable. Mechanical dual flow or mixed flow lever or hand operated taps with or without maximum temperature limiting arrangements are not acceptable in areas accessible to patients. Guidance on thermostatic mixing valves is available in Scottish Health Guidance Note – ‘“Safe” hot water and surface temperatures’.

6.42 Where fully potable cold water systems are not provided, drinking water outlets should be provided in the preparation room and servery/pantry. The supply should be direct from the mains.

6.43 The requirements for the control of legionellae bacteria in hot and cold water systems are set out in SHTM 2040 – ‘The control of legionellae in healthcare premises – a code of practice’.

6.44 Showers should be vandal-resistant and designed to prevent ligature points.

6.45 Isolation of water services should be available locally to each sanitary fitting. This facility should be accessible to staff only or be tamper resistant.

Fuel gas installation

6.46 Fuel gas outlets in patients areas should be regarded as a hazard and should be avoided if possible. If a gas installation is unavoidable whether it be from a mains supply or a bottle supply, a means of rapid isolation should be provided to enable staff to cut off the supply immediately in the event of an emergency. Each item of equipment should conform with British Gas Council recommendations and Gas Safety Regulations.

6.47 Where a mains gas supply is not conveniently available and the requirement for other gas fuelled catering, servery or occupational therapy equipment is minimal, the use of portable LPG bottles may be economically justified in therapy kitchens. For guidance on installation see Health and Safety Executive Guidance Notes CS4 – ‘The keeping of LPG in cylinders and similar containers’ and G34 – ‘The storage of LPG at fixed installations’.

Piped medical gases and vacuum

6.48 Guidance on piped medical gas systems, anaesthetic gas scavenging and gas storage is contained in SHTM 2022 – 'Medical gas pipeline systems'. There is normally a need for these systems in the ECT suite and this need can normally be met with portable apparatus. However, consideration may be given to extending the existing hospital systems to serve the ECT suite where these systems are in close proximity.

Electrical services

General scope

6.49 The electrical installation includes:

- the main intake switchgear;
- lighting;
- power (including supplies to ventilation plant);
- earth bonding of extraneous metal work;
- telephone wiring;
- wireways for data links;
- clocks;
- fire alarms;
- staff location;
- staff call.

The installation shall conform in all respects with BS 7671 – Requirements for electrical installations (current edition) and SHTM 2007 'Electrical Services – supply and distribution' and SHTM 2020 – 'Electrical safety code for low voltage systems'. Emergency electrical supplies shall be provided in accordance with SHTM 2011 – 'Emergency electrical services'.

6.50 Reference should be made to the Activity Data Base sheets for the recommended levels of internal illumination, disposition of outlets for power, telephones, call systems and clocks, etc in individual spaces.

6.51 The point of entry for the electrical supply will be a departmental switchroom housing the main isolators, the main distribution equipment and metering. The switchroom will also be the distribution centre of subsidiary electrical services and, wherever possible, all equipment should be mounted at a height to give easy access from a standing position. The switchroom should be positioned so as to minimise the cost of cabling required to serve the accommodation. All distribution boards and main switches should be

contained in secure cupboards, preferably in areas where there is normally a continuous staff presence.

Electrical installation

6.52 The electrical installation in occupied areas should be concealed in screwed steel conduit and steel trunking using appropriately insulated copper conductors – see SHTM 2007. In certain circumstances however metal sheathed or steel wired armoured (SWA) cables may be used. External installations should use screwed galvanised steel conduit with waterproof fittings. Plant areas should use screwed galvanised steel conduits and galvanised steel trunking. Steel conduits and trunking wireways for communications and data systems should also be concealed wherever possible.

Electrical interference

6.53 Care should be taken to avoid mains borne interference, electrical radio frequency and telephone interference affecting physiological monitoring equipment, computers and other electronic equipment used here and elsewhere. Guidance on the avoidance and abatement of electrical interference is contained in HTM 2014 – 'Abatement of electrical interference'. Fluorescent luminaires should comply with BS EN 55015: 1993.

6.54 Electrical products systems and installations should not cause or be unduly affected by electromagnetic interference. This requirement is in the form of an EC Directive on Electro-Magnetic Compatibility (89/336/EEC as amended by 97/263/EEC and 92/31/EEC). This Directive has been implemented in UK law by the Electromagnetic Compatibility Regulations 1992 (SI No. 2372).

Lighting

6.55 Practical methods of lighting the various functional spaces are contained in the CIBSE Lighting Guide LG 02 – 'Hospital and Health Care Buildings'. The choice of luminaire should take account not only of the requirements for light distribution and visual comfort appropriate to the space, but also the operational efficiency of the light source used. Luminaires should be of a type which are easily cleaned and maintained, as well as being manufactured and tested in accordance with the requirements specified in the relevant sections of BS 4533. Generally, energy efficient luminaires should be used. Infrequently used luminaires may be fitted with compact fluorescent or incandescent lamps. Luminaires require to be sufficiently robust and inherently safe from the user groups. Diffusers may require to be made of polycarbonate, possibly laminated. They should be secured in place with tamperproof screws to prevent patients gaining access to live terminals and controls. The luminaires should be fitted directly to the ceiling or they should be incorporated into the ceiling as flush fittings. Hinged units should be avoided if possible, but if used they should be so constructed as to avoid

any potential for the attachment of ligatures. The safety and non interference aspects of the luminaires and their associated switches are particularly important in the intensive care ward. Whilst maintaining the above requirements, every effort should be made to provide a decorative and domestic feel to the lighting.

6.56 In reception and circulation areas, colour graphics and lighting should be coordinated to create a calm and welcoming atmosphere whilst also contributing to the safe movement of patients throughout the department. For patient day areas, a humanistic design approach is required to achieve settings that are domestic in scale and which provide sufficient variation of local lighting to undertake the various individual and group activities.

6.57 The special needs of some elderly people with failing eyesight will need to be considered. For example, it may be appropriate to allow for some adjustable supplementary lighting to be available in day and assessment areas.

6.58 It is essential that fluorescent lighting in clinical areas is derived from one of the recommended types of lamps having suitable colour rendering characteristics. In such areas the colours chosen for walls, floors and ceilings should be carefully selected. Architects and engineers should collaborate to ensure that the decorative finishes are compatible with the colour rendering properties of the lamp and that spectral distribution of the light source is not unduly altered. Consideration should be given to using the same lamp characteristics in clinical and non clinical areas in order to simplify maintenance and stock replacement lamps.

6.59 The number and location of luminaires connected to a circuit and the number of switches and circuits provided should allow flexibility in the general and local level of illumination, particularly in areas away from windows where daylight can vary significantly. Areas which may be unoccupied for long periods may be suited to automatic presence switching. Although higher standards of illumination are generally recommended for enclosed internal spaces where tasks are performed, e.g. treatment rooms, occupational therapy rooms, excessive contrast with adjacent areas should be avoided.

Lighting in bed areas

6.60 The requirements for lighting in bed areas will differ according to their functional use. Luminaires in bed areas should comply with the requirements of BS 4533: Sections 102.55 and 103.2.

6.61 For patients requiring minimal nursing care, the recommended average illuminance is 100 lux in the circulation area with supplementary lighting at the bedhead. Night lighting is also required and should be designed to provide an indirect illuminance of I lux on the pillow but with maximum illuminance in the circulation area (particularly in the vicinity of the door) to allow staff to move across the whole space with safety. The luminaires

should be selected, and the lighting system as a whole should be designed to present a domestic, rather than institutional, character.

6.62 For elderly patients with mental illness, the standard of illumination provided at the bedhead is given in the CIBSE Lighting Guide LG 02 – 'Hospital and Health Care Buildings'.

6.63 The avoidance of glare from general lighting luminaires is important and their lamps should be screened from direct vision of a patient in bed – see CIBSE Lighting Guide LG 02 – 'Hospital and Health Care Buildings'.

Lighting of corridors and nurses' station

6.64 The lighting of corridors can make a major contribution to the creation of a non-institutional environment. The use of indirect fluorescent light sources, e.g. wall-washing techniques using fluorescent lamps concealed by a pelmet or cornice to enhance interior finishes and decor, combined with the judicious location of ceiling luminaires and illuminated signs to indicate a corridor junction or a particular facility can produce a somewhat domestic type ambience. The lighting of circulation space should be to an average level of 150 lux and in bed areas should be controlled by switches located at the nurses' station. Corridor night lighting should provide an average floor illumination of 10 lux and should be separately switched.

6.65 Dimmer controlled localised night lighting of the nurses' station should provide 300 lux on the table. This will meet the needs of staff and act as a focal point for patients at night. Where visual display terminals are to be used, the lighting should be designed to avoid bright reflections on the screen and to ensure that the contents of the screen are legible and meet the Health and Safety (Display Screen Equipment) Regulations 1992 implementing EU Directive No. 90/270/EEC 1990 – Further guidance is contained in CIBSE Lighting Guide LG 03. Emergency lighting should be provided on primary escape routes in accordance with SHTM 2011 – 'Electrical emergency services' and BS 5266 and should comply with the relevant sections of NHS in Scotland Firecode.

6.66 Switching arrangements should allow the patient control within their bedroom accommodation. It may be necessary for staff to be able to override this facility from outside the bedroom. All switch plates should be fitted with tamper-proof screws.

6.67 Mobile examination luminaires, where provided, should operate at extra low voltage (normally fed from an in-built step-down transformer), be totally enclosed and be equipped with a heat filter. The temperature of external surfaces should be such as to avoid injury to patients and staff.

Lighting of treatment rooms

6.68 A ceiling or wall mounted double arm examination luminaire should be located above the couch. This should operate at extra low voltage, be totally enclosed and be equipped with a heat filter. The temperature of external surfaces must be such as to avoid injury to patients and staff. These luminaires should comply with the requirements of BS 4533: Section 102.55 and be in accordance with the performance specification of Type B included in BS 4533: Section 103.2.

Lighting of therapy areas

6.69 Fluorescent luminaires should be generally used throughout these areas and should be circuited to avoid stroboscopic effects where rotating equipment is used. Ceiling mounted luminaires positioned above work benches and equipment are preferable to portable lamps for task lighting. The psychotherapy rooms and viewing rooms should have a luminance of 200 lux. Tungsten lighting is preferred for both types of rooms since it allows simple dimming facilities in the viewing room and minimises any interference which may be caused with the use of fluorescent lighting.

6.70 Where maximum flexibility of use is required, e.g. light workshop, it may be advantageous to install ceiling mounted power track. This will allow task lighting and power supplies for portable therapy equipment to be directly accessible without the hazard of trailing cables and has the potential for changing lighting patterns to suit other group activities.

Amenity lighting

6.71 Luminaires in day spaces, dining rooms, etc should be domestic in character and selected to harmonise sympathetically with furnishings and decor. Because of the significant effect of lighting on interior design and revenue budgets the final choice of luminaire should be acceptable to the architect as well as the engineer.

Bedhead units

6.72 With the exception of bedhead lighting previously mentioned and patient/staff call points (see paragraphs 6.60-6.63 and 6.87) no other bedhead services are required.

Controlled Drugs cupboard

6.73 A red indicating lamp should be provided on each Controlled Drugs cupboard and, where appropriate, outside the doorway to the room in which the cupboard is located and at a continuously staffed location. The lamps should be interlocked with the cupboard and alarm system to give visual and

audible indication at the continuously staffed location of unauthorised entry to the cupboard.

6.74 An indicating lamp denoting that the circuit is energised should also be fitted to each cupboard. The supply circuits for the lamps and alarm system should be derived from essential circuits. The electrical supply to the cupboard should be via an interference proof connection unit to avoid unauthorised disconnection. The cupboards should comply with BS 2881. Further information is contained in HTM 63 – 'Fitted storage systems'.

6.75 Guidance is also contained in the Scottish Home and Health Department publication 'Guidelines for the Safe and Secure Handling of Medicines', issued with NHS Circular No. 1988 (GEN) 33.

Socket outlets and power connections

6.76 All socket outlets in the intensive care ward bedrooms should be provided with cover plates having tamperproof screws and the socket outlets in each bedroom should be controlled by externally mounted key operated switches, having restricted access. Consideration should also be given to providing this facility in the non-intensive care bed areas.

6.77 Sufficient 13 amp switched and shuttered socket-outlets, connected to ring or spur circuits, should be provided to supply all portable appliances likely to be used simultaneously. The installation of twin outlets should be considered where activities occur in juxtaposition.

6.78 Switched socket-outlets should be provided in corridors and in individual rooms to enable domestic cleaning appliances with flexible leads (9 metres long) to operate over the whole department.

6.79 All socket-outlets in consultation/examination/treatment areas should be connected such that a supply is available from at least two separately fused circuits of the same phase.

6.80 All power circuits within patient areas should be protected by the use of RCDs. If protection is provided at the distribution board, nuisance tripping could result.

6.81 All power socket-outlets should be fitted with tamper-proof screws.

6.82 All electrical appliances, equipment and plant items whether automatically operated or not shall be provided with indicator lamps to show when the equipment is energised. Such indicators should be incorporated in the control unit of the apparatus, in the control switch of the apparatus, in the plug top of the apparatus or in the socket outlet from which the apparatus derives its supply.

6.83 Appliances requiring a three-phase supply or those rated in excess of 13 amp single phase should be permanently connected to separate final sub-circuits fed from the distribution board and independently switched at a local isolator of appropriate fused rating. Fixed appliances of less than 13 amp rating should be permanently connected to a double pole switched 13 amp spur outlet with indicating light and suitably fused for the appliance rating. These spur outlets may form part of a ring circuit. Isolation switches should be provided adjacent to all engineering plant and equipment for use by maintenance staff. Where appropriate provide lockable switches or separate means of disconnection.

6.84 The electrical supply connections to all medical electrical equipment should comply with BS EN 60601-2:1993.

Emergency electrical supplies

6.85 Guidance concerning the provision of emergency electricity supplies is given in SHTM 2011– 'Emergency electrical services' and the grade of standby lighting provisions is shown in the Activity Data Base sheets.

6.86 Socket-outlets should be so distributed that, in each area where essential equipment may be used, socket outlets connected to at least two separate ring circuits of common polarity are available. All socket-outlets in the in-patient accommodation for elderly patients, the ECT suite and all communication, clock and alarm systems throughout the department should be connected to the essential electricity supply system. Supplies to the controlled drug cupboard, bedpan disposal unit and refrigerators should also be derived from the essential circuits.

Patient/staff call system

6.87 Patient/staff call points should be provided at all bed positions and in all patient sanitary areas in the wards and day-patient accommodation, outpatient sanitary accommodation and any rooms where patients may be left unattended. Each call unit should comprise a push button, reassurance lamp and reset switch. Visual and audible indication of operation should be provided at the nurses' station to give responding staff unambiguous identification of the call. The audible signal initiated by the patients should operate for one second every 10 seconds until cancelled.

Staff/staff alarm system

6.88 An emergency staff/staff alarm system shall be installed. It is preferable that such a system be two stage and can be accomplished by a personal alarm system (radio or ultrasonic or similar) or by a combination of hard wired fixed and emergency pull points and personal alarms. Local security policies should determine at the planning stage whether or not staff are to be issued with personal alarm transmitters. If personal alarm transmitters are not self contained, conduits and accommodation for transmitting/receiving equipment

and propagating devices such as induction loops and/or aerials will be required to suit the selected system. If hard wired pull points are utilised, they should be strategically placed such that assistance can be summoned if a door or exit is blocked. Such pull points may however be subject to patient misuse and they do not give the degree of cover personal alarms give.

6.89 Stage 1 should alert staff within the immediate ward.
Stage 2 should alert staff within the unit and further afield if felt necessary, e.g. a centrally manned point within the hospital.
The first stage emergency alarm should operate at half-second intervals. The second stage should operate continuously or have a separate tone and should be initiated automatically within a set time of Stage 1 alarm if Stage 1 alarm has not been cancelled.

6.90 Local visual indicators for rooms to supplement those provided at the nurses' station or staff base may be required in circulation spaces serving the wards and day patient accommodation. If this facility is provided staff/staff alarm calls should be readily distinguishable from patient/staff calls.

Call systems general

6.91 Patient/staff and staff/staff call systems should operate at extra low voltage and further general guidance is given in SHTM 2015 – 'Bedhead services' and SHTM 2020 – 'Electrical safety code for low voltage systems'. Because of the rapid developments in the communications/security industry, project teams should evaluate the options available at the time of planning, particularly with regard to cordless technology and integration with the telephone system.

Security system

6.92 The main entrance to the acute unit should be controlled by a door security system which may operate in conjunction with a closed circuit television system with an electromagnetically operated door lock to be controlled from the main reception area. Locks should open automatically on the initiation of a fire alarm. Override facilities shall be provided in order to give staff access/egress for normal work. Similar arrangements may be appropriate at the link to the main hospital and at sub-divisions of the unit. Consideration should be given to the provision of an electronic/mechanical keypad door locking system. A security alarm activating switch located unobtrusively at the main reception desk should be connected to a continuously staffed area such as the hospital telephone switchboard. The foregoing may be adjusted to suit if security staff are employed continuously at the entrance(s).

6.93 The requirements of Scottish Office PAN 46 Planning for crime prevention, and NAHAT Security Manual, together with supplements shall be adhered to particularly with regard to fire door security. CCTV shall be considered for certain corridor areas, stairways and car parking areas. Security generally to be discussed with the local police crime prevention officer.

Staff location system

6.94 The staff location system employed in the hospital should be extended to give adequate cover to this department.

Telephones

6.95 Where possible central telephone services should be extended to serve the Acute Mental Patient Unit. Where this is not possible, the Unit will require to be provided with its own self-contained systems. Telephone outlet points will normally be indicated on the Activity Data Base sheets and where a wired system is used, wiring should terminate at each outlet point in a standard line jack unit. Consideration should be given however to a cordless telephone system which can be integrated with the staff alarm and security systems and staff locations systems. Because of the rapid developments in the communications/security industry, project teams should evaluate the options available to them at the time of planning.

6.96 Coin and/or card operated pay phones, which may be fixed or mobile depending upon local policy, should be provided to enable visitors and patients to make phone calls (if necessary in private). Consideration should be given to providing a free phone service for taxis in public areas as appropriate. The handsets of public telephones should be provided with inductive couplers to assist people wearing hearing aids.

6.97 Self-contained intercommunication systems are relatively inflexible and limited in the extent of their economic application. Any subsequent modifications to them usually involve disproportionate cost. In only very rare instances can such systems be justified for functional or clinical reasons. Consequently, reasons for providing a separate intercommunication system should be clearly shown. Option appraisals should be undertaken in considering the systems to be selected.

6.98 Guidance concerning the provision of telephone services, including the internal cabling distribution and telephone handsets, is contained in HBN 48 – 'Telephone services'.

Electric clocks

6.99 Electric clocks will generally be of the self-contained battery quartz type. They should be installed where indicated on Activity Data Base sheets.

Radio and television

6.100 The radio/television relay system should be supplied via the hospital communal aerial installation and central amplification equipment.

6.101 Radio reception loudspeakers each incorporating a programme selector, on/off switch and lockable volume control should be provided in all therapy areas, dining rooms and in all main sitting rooms not designated as quiet areas. The provision of radio and television reception facilities at bedheads is deemed unnecessary in this accommodation.

6.102 A coaxial outlet for television reception should be provided in the main sitting room in the day patient and in-patient accommodation, including each patient bedroom.

Group psychotherapy

6.103 Concealed conduits for interconnections between microphones and recording equipment will be required when an observation room is provided in association with the group psychotherapy room.

Intercom systems

6.104 Self-contained intercom systems are relatively inflexible and limited in the extent of their economic application and should be considered for specific purposes only. Concealed conduits for interconnection between microphones and recording equipment will be required when an observation room is provided with a group psychotherapy room. The communication circuits should be in accordance with consultants' requirements, but should generally be plug and socket type to enable the playing and recording of sounds/speech via suitably mounted loudspeakers/microphones in the two rooms and suitably mounted recording equipment in the viewing room. A two-way communication system should be provided between the seclusion room(s) and its lobby. It should be possible to adjust the volume of the output. The equipment in the seclusion room should be robust, flush mounted and interference proof.

Lightning protection

6.105 Protection against lightning should be provided in accordance with SHTM 2007, HSE Data Sheet DB 2 and BS 6651.

Internal drainage

General scope

6.106 The primary objective is to provide an internal drainage system which:

- uses the minimum of pipework;
- remains water- and air-tight at joints and connectors; and
- is sufficiently ventilated to retain the integrity of water seals.

Design parameters

6.107 The design should comply with the relevant British Standards and Codes of Practice, including BS 5572, BS 6367 and BS 8301 and the current building regulations. Recommendations for spatial and access requirements for public health engineering services are contained in HSE Data Sheet EA5.

6.108 The gradient of branch drains should be uniform and adequate to convey the maximum discharge to the stack without blockage. Practical considerations, such as available angles of bends, junctions and their assembly, as well as space considerations, usually limit the minimum gradient to about 1:50 (20 mm/m). For larger pipes, for example 100mm diameter, the gradient may be less, but this will require workmanship of a high standard if an adequate self-cleaning flow is to be maintained. It is not envisaged that pipes larger than 100mm diameter will be required within interfloor or ground floor systems serving this department.

6.109 Provision for inspection, rodding and maintenance should ensure “full bore” access and be located to minimise disruption or possible contamination. Manholes should not be located within this department.

Materials specification

6.110 The materials specified for the drainage system in this department will depend upon their location and the nature of the effluent being discharged. Waste pipework should as far as practicable be concealed. Although adequate for drainage requirements, UPVC may not always be acceptable to the fire officer and should not be installed above 'sensitive' areas, e.g. operating theatres, intensive therapy, radio-diagnostic, catering departments, electrical switch-cupboards.

7. Cost information

Introduction

7.1 For all types of health buildings it is clearly of vital importance that building costs and revenue expenditure should be kept as low as possible consistent with acceptable standards. Within this general context Scottish Health Planning Notes provide a synopsis of accommodation for health buildings which the NHS in Scotland recommends for the provision of a given service.

Scottish Capital Investment Manual

7.2 The Scottish Capital Investment Manual, published by the National Health Service in Scotland Management Executive, provides detailed guidance for each of the main stages of capital schemes including those that may ultimately be delivered using private finance. It gives practical 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 capital investment are identified, evaluated and realised. Projects will not get Scottish Executive approval unless adequate project management arrangements can be demonstrated to be in place.

7.3 The Management of Construction Projects section of the Manual provides guidance on mandatory procedures and best practice for the planning and implementation of construction projects. It covers the stages of a project from the full business case through to technical commissioning and handover. The procedures are divided into six stages:

1. full Business Case, leading to approval;
2. design;
3. tender and contract;
4. construction and equipment supply;
5. technical commissioning and handover;
6. post-completion.

Cost guidance

7.4 The Departmental Cost Guides which reflect the building and engineering requirements of new-build accommodation associated with this SHPN are promulgated by the NHS in Scotland Property and Environment Forum Executive in their annual publication Healthcare Construction Project Price Guide.

Equipment

7.5 Group 1 items are provided for in the Departmental Cost Guides associated with this SHPN. Specific guidance on Group 2 and 3 equipment is available from the Common Services Agency's Scottish Healthcare Supplies.

Equipment is categorised into four groups:

Group 1:

Items (including engineering terminal outlets) supplied and fixed within the terms of the building contract;

Group 2:

Items which have space and/or building construction and/or engineering service requirements and are fixed within the terms of the building contract but supplied under arrangements separate from the building contract;

Group 3:

As Group 2 but supplied and fixed (or placed in position) under arrangements separate from the building contract;

Group 4:

Items supplied under arrangements separate from the building contract, possibly with storage implications but otherwise having no effect on space or engineering service requirements.

Functional units

7.6 The functional units are:

- 15 bed ward for Adult People with Acute Mental Illness;
- 15 bed ward for Elderly People with Acute mental Illness;
- 20 place Day Hospital;
- OPD suite;
- ECT suite;
- Administration suite.

Essential complementary accommodation (ECA)

7.7 This comprises activity spaces which are essential to the running of the Department, but which in certain circumstances may be available in a convenient location elsewhere in the hospital. The ECA costed in this Note is listed in the Schedules of Accommodation at the end of this Chapter and detailed in Chapters 3 and 4.

Optional accommodation and services (OAS)

7.8 Where appropriate this Note draws attention to other ways of providing services or facilities, including the likely cost implications. This information will allow project teams to select the solution which is most suitable to their needs. The Optional Accommodation and Services costed in this Note are listed in the schedules and detailed in Chapter 3.

Dimensions and areas

7.9 At the early stages of a project, designers should use the brief to make an approximate assessment of the total area of accommodation involved. Schedules of areas are given at the end of this Chapter. It is emphasised that these areas are for guidance in assessing options and planning schemes only.

7.10 In determining spatial requirements, the essential factors are the critical dimensions, i.e. the minimum linear dimensions within which activities may be performed with reasonable efficiency. The area required for an activity space is the product of the critical dimensions. Reference should also be made to the ergonomic diagrams in 'Common Activity Spaces' HBN 40 Volumes 1-4 and HBN/SHPN 40 Volume 5: Scottish Appendix

7.11 The schedules of areas were prepared for the purpose of establishing the cost guidance. It is emphasised that the areas published do not represent recommended room sizes, maximum or minimum costs, nor are they to be regarded in any way as specific individual entitlements.

Circulation space

7.12 The circulation space comprises space for all corridors, a heating and ventilation zone adjacent to external walls, small vertical ducts and spaces occupied by partitions, walls and planning flexibility. This space is included in the cost guidance.

Communications space

7.13 Staircases, lifts and plant rooms, with the exception of electrical switch cupboards, are not included in the cost guidance. The cost of communications space is covered in the 'on-costs' defined in paragraph 1.11 of Healthcare Construction Project Price Guide.

Engineering space

7.14 The cost guidance provides for space taken by mechanical and electrical service routes and for small vertical ducts. The space is included in the schedules of accommodation as part of the circulation provision.

Engineering services

7.15 The engineering services as described in Chapter 6, and exemplified in the Activity Data Base, are included in the cost guidance. Primary engineering services are assumed to be conveniently available at the boundary of the department but the cost guidance does include a share of the central refrigeration plant and distribution system. The cost guidance also includes for the ventilation plant and distribution system.

Mechanical services:

Heating:

Low pressure hot water system with zone control for aspect. Maximum touch temperature will be 43°C in all areas where patients have access.

Ventilation:

Mechanical supply and extract to meet clinical and functional requirements; other areas to be naturally ventilated.

Cold water service:

Centrally supplied to service points, including drinking water and fire hose reels. Storage tanks excluded.

Hot water service:

Centrally supplied to service points with local thermostatic temperature reduction at patient baths and showers (43°C). Storage excluded.

Electrical services:

Departmental distribution switchboard.

General lighting as required by tasks.

Fluorescent, tungsten, safety and emergency luminaires as appropriate.

Socket-outlets and other power supplies for fixed and portable equipment.

Supplementary equipotential earth bonding connections.

Standby and safety installations.

Patient/staff and staff/staff call systems.

Fire, security and drug cupboard alarm systems.

Clocks (part of wired system).

Radio and television relay outlets.

Staff location.

Telephone internal distribution cabling and outlets.

Data transmission conduits only.

Equipment Group 1:

Medical examination luminaires in treatment rooms and ECT room.

Schedules of Accommodation

7.16 The following schedules are based on the text in Chapters 3 and 4, and are illustrative of the acceptable accommodation for the functional units detailed.

Functional Unit - 15 bed ward for either Adult People with Acute Mental Illness or Elderly People with Acute Mental Illness requiring assessment & short-term treatment

Para No	Activity Space		Space Area sq. m.	Qty	Total area sq. m.
	PATIENT AREAS				
3.2	Single bedroom		11.5	15	172.5
3.9	WC/shower/whb				
	(en suite) single bed room		4.0	15	60.0
3.10	Assisted bathroom with WC & whb		16.0	1	16.0
3.10	Assisted shower room with WC & whb		12.0	1	12.0
3.12	Dining room		27.5	1	27.5
3.11	Sitting room(s)		35.0	1	35.0
3.13	Quiet room(s)		35.0	1	35.0
	TREATMENT AND UTILITIES				
3.15	Treatment room		16.5	1	16.5
3.16	Preparation room		11.5	1	11.5
3.17	Disposal/sluice/test room		12.0	1	12.0
3.18	Patients' utility		7.0	1	7.0
3.19	Patients' servery/pantry		16.0	1	16.0
3.20	Baby food pantry		4.0	1	4.0
3.21	Domestic Service Room		10.0	1	10.0
	OFFICES etc				
3.22	Waiting/reception		12.0	1	12.0
3.23	Charge nurse's office		12.0	1	12.0
3.25	Duty/rest room		16.5	1	16.5
3.24	Nurses' station		8.0	1	8.0
3.27	Staff shower/WC/whb		5.0	2	10.0
3.27	Staff cloakroom		5.0	1	5.0
3.26	Consulting/interview room		12.0	2	24.0
3.28	General & equipment store		14.0	1	14.0
3.28	Patients' store		2.0	2	4.0
3.28	Linen store		5.0	1	5.0
--	Switch cupboard		2.0	2	4.0
	Net total				554.0
	ADD – Planning provision	5%			27.7
	Sub-Total				581.7
	ADD – Engineering zone	3%			17.4
	ADD – Circulation	30%			174.5
	Gross Total				**773.6**
	Departmental area				774 sq.m.

Functional Unit - 20 place Day Hospital for Adult People with Acute Mental Illness and for Elderly People with Acute Mental Illness

Para No	Activity Space		Space Area sq. m.	Qty	Total area sq. m.
	PATIENT AREAS				
4.5	Dining room		32.0	1	32.0
4.6	Servery/pantry		16.0	1	16.0
4.7	Sitting room/quiet room		30.0	1	30.0
4.8	Assisted WC		4.0	1	4.0
4.8	Assisted bathroom & shower room		12.0	1	12.0
4.8	Patient WC/whb		3.0	3	9.0
4.9	Patient cloakroom		6.0	2	12.0
	THERAPY AREAS				
4.10	1. OCCUPATIONAL THERAPY				
	Clean/quiet activity area		20.0	1	20.0
	Dirty/noisy activity area		20.0	1	20.0
	'ADL' - kitchen		14.0	1	14.0
	- bathroom		12.0	1	12.0
	- bedroom		15.0	1	15.0
	Beauty/hairdressing area		11.0	1	11.0
	Ongoing work store		6.0	1	6.0
	Patients' utility room		7.0	1	7.0
	Materials/equipment store		9.0	1	9.0
4.11	2. PHYSIOTHERAPY				
	Activity/recreation rooms		30.0	1	30.0
	Bulk store		6.0	1	6.0
	TREATMENT AND UTILITIES				
3.15	Treatment room		16.5	1	16.5
3.16	Preparation room		11.5	1	11.5
3.17	Disposal/sluice room		12.0	1	12.0
3.18	Patients' utility		7.0	1	7.0
3.19	Servery/pantry		16.0	1	16.0
3.20	Baby food pantry		4.0	1	4.0
3.21	Domestic Service Room		10.0	1	10.0
	OFFICES etc				
4.13	Waiting/reception		12.0	1	12.0
4.14	Clinical Consulting/interview room		12.0	1	12.0
4.15	Charge nurse's office		12.5	1	12.5
4.17	Staff WC/whb		3.0	2	6.0
4.17	Staff cloakroom		5.0	1	5.0
4.20/21	Occupational and Physiotherapists' offices		12.0	2	24.0
4.18	Multi-purpose office		12.0	1	12.0
4.16	Duty room		16.5	1	16.5
4.19	Linen store		3.0	1	3.0
--	Switchroom		1.0	2	2.0
	Net total				447.0
	ADD – Planning provision	5%			22.3
	Sub-Total				469.3
	ADD – Engineering zone	3%			14.1
	ADD – Circulation	30%			140.8
	Gross Total				**624.2**
	Departmental area			625 sq.n	

Essential Complementary Accommodation

Para No	Activity Space		Space Area sq. m.	Qty	Total area sq. m.
	E.C.T. SUITE				
3.30	Reception/waiting		16.0	1	16.0
3.30	Ante room		9.0	1	9.0
3.30	Treatment room		23.0	1	23.0
3.30	Disposal/sluice/test		8.0	1	8.0
3.30	Recovery room (recumbent)		29.0	1	29.0
3.30	Recovery room (ambulant)		16.0	1	16.0
3.30	Trolley bay		4.5	1	4.5
3.30	Assisted WC		4.0	1	4.0
	Net total				109.5
	ADD – Planning provision	5%			5.5
	Sub-Total				115.0
	ADD – Engineering zone	3%			3.4
	ADD – Circulation	25%			28.7
	Gross Total				**147.1**
	Departmental area			148 sq.m.	
	ADMINISTRATION SUITE				
3.33	Waiting		4.5	1	4.5
3.33	Clerical office		11.0	1	11.0
3.33	Interview		12.0	2	24.0
3.33	Seminar/conference		16.5	1	16.5
3.33	Store		3.0	1	3.0
3.33	WC for disabled		4.5	1	4.5
3.33	Staff WC/whb		3.0	1	3.0
3.33	Staff cloaks		6.0	1	6.0
	Net total				72.5
	ADD – Planning provision	5%			3.6
	Sub-Total				76.1
	ADD – Engineering zone	3%			2.3
	ADD – Circulation	25%			19.0
	Gross Total				**97.4**
	Departmental area			98 sq.m.	
	OUT-PATIENT SUITE				
3.32	Reception/waiting		16.0	1	16.0
3.32	Consulting/examination rooms		16.5	3	49.5
3.15	Treatment room		16.5	1	16.5
3.16	Preparation room		11.5	1	11.5
3.17	Disposal/sluice/test room		12.0	1	12.0
3.32	Assisted WC		4.0	1	4.0
3.32	Staff WC/whb		3.0	1	3.0
3.32	Staff cloaks		6.0	1	6.0
	Net total				118.5
	ADD – Planning provision	5%			5.9
	Sub-Total				124.4
	ADD – Engineering zone	3%			3.7
	ADD – Circulation	25%			31.1
	Gross Total				**159.2**
	Departmental area			160 sq.m.	

Optional Accommodation

Para No	Activity Space		Space Area sq. m.	Qty	Total area sq. m.
	PSYCHOTHERAPY				
3.35	Group psychotherapy		20.0	1	20.0
3.36	Viewing room		10.0	1	10.0
3.37	Individual psychotherapy room		12.0	1	12.0
	Net total				42.0
	ADD – Planning provision	5%			2.1
	Sub-Total				44.1
	ADD – Engineering zone	3%			1.3
	ADD – Circulation	25%			11.0
	Gross Total				56.4
	Departmental area			57 sq.m.	
	ADMISSIONS SUITE				
3.39	Entrance area		5.0	1	5.0
3.39	Reception/waiting		16.0	1	16.0
3.39	Consulting/examination room		16.5	1	16.5
	Net total				37.5
	ADD – Planning provision	5%			1.9
	Sub-Total				39.4
	ADD – Engineering zone	3%			1.2
	ADD – Circulation	25%			9.8
	Gross Total				50.4
	Departmental area			51 sq.m.	

8. Activity data, critical dimensions and ergonomic drawings

Activity Data

8.1 The Activity Data Base is a computerised information system developed by NHS Estates to help project and design teams by defining the users' needs more precisely.

8.2 The Activity Data Base is not designed for Scottish application and therefore, if used by an NHSiS Trust, should be adapted with caution.

8.3 In particular, a number of Activity Spaces in common use in Scottish Hospitals may not be included in the Activity Data Base and the individual room activities, technical data and components may well be different in a Scottish context.

8.4 Further information about the use and preparation of activity data can be obtained from NHS Estates, Department of Health, 1 Trevelyan Square, Boar Lane, Leeds LS1 6AE.

8.5 It is unlikely that the NHS in Scotland Property and Environment Forum will be publishing a Scottish version of the Activity Data Base.

Critical dimensions

8.6 Critical dimensions are those dimensions which are critical to the efficient functioning of an activity; thus the size of components, their position 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 ergonomic drawings**.** 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.

Ergonomic drawings

8.7 Ergonomic data common to the design of a number of departments and relevant to accommodation for people with mental illness is contained in NHS Estates publication 'Common Activity Spaces' HBN 40 Volumes 1-4 and HBN/SHPN 40 Volume 5: Scottish Appendix, to which reference should also be made.

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Given below is a list of all Scottish Hospital Planning Notes. Those Notes which have to be read along with their counterpart Health Building Note (HBN) are marked with an *. This list is correct at time of publication of this Note, but refer also to the Health Building Notes and Scottish Health Planning Note Reference Guide published by the NHS in Scotland Property and Environment Forum Executive.

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