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NHS National Services Scotland

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Health Building Note 37

In-patient facilities for older people

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In-patient facilities for older people

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HBN 37
In-patient facilities for older people

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Executive summary

This publication follows the National Service Framework (NSF) for Older People which calls for the provision of new intermediate care places to provide rehabilitation and respite for older people and emphasises the need for ward environments which are clean and provide adequate privacy, space and rehabilitation services.

This publication also takes into account the NHS Plan and 'Securing our future health: taking a long-term view', Wanless, 2002 which calls for increased privacy, dignity, single-sex wards and single rooms. (See 'Enhancing privacy and dignity – achieving single sex accommodation', NHS Estates.)

The scheduled phasing out of "Nightingale" wards by 2004, as outlined in the NSF for Older People, is also acknowledged, as is the need for healthcare buildings to comply with the Disability Discrimination Act (DDA) 1995 and the Building Regulations 2000 Approved Document M – 'Access to and use of buildings' (2004 edition).

This publication gives best practice guidance for building or refurbishing dedicated in-patient facilities for older people. These comprise intermediate care facilities and facilities for people with dementia. Intermediate care services are those that do not require the resources of a general acute hospital, but are beyond the scope of the traditional primary care team. Facilities for people with dementia are specialised facilities providing assessment or longer-term care for people with dementia whose needs cannot be met in an ordinary residential/nursing home.

This publication replaces HBN 37 – 'Hospital accommodation for elderly people', 1981.

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Contents

1 Introduction

1.1 This publication gives guidance for building or refurbishing dedicated in-patient facilities for older people. These facilities comprise:

- **intermediate care facilities** – services that do not require the resources of a general acute hospital, but are beyond the scope of the traditional primary care team. Services provided may include occupational therapy and speech and language therapy for older people with impairments caused by conditions such as fractures or stroke;
- **facilities for people with dementia** – specialised facilities providing assessment or longer-term care for people with dementia whose needs cannot be met in an ordinary residential/nursing home. Services provided may include medical investigation, direct supervision, formal nursing care plans, help with activities of daily living (ADL), and personalised care designed to offer patients as much mental and memory stimulation as possible.

1.2 Both intermediate care facilities and facilities for people with dementia can be either stand-alone units or part of a community hospital or primary care facility. Community hospitals are smaller-scale hospitals that provide healthcare for people not requiring acute hospital facilities and who require care closer to home.

1.3 An associated follow-up and pre-emptive "day hospital" service is usually available alongside both intermediate care facilities and facilities for people with dementia in order to ensure continuity of care.

1.4 This publication is divided as follows:

- Chapter 1 gives the background and introduction to this document;
- Chapter 2 outlines the necessary requirements to ensure that intermediate care facilities and facilities for older people with dementia are suitable for use by older people. The principles may also be applied to other healthcare facilities;
- Chapter 3 gives detailed guidance on room spaces, highlighting any specific requirements for intermediate care facilities or facilities for people with dementia, and opportunities for sharing;
- Chapter 4 gives case studies of two stand-alone facilities effective for use by older people.

1.5 The schedules of accommodation for this publication are based on a typical facility comprising a total of 20 beds. However, changes in practices mean that provision of spaces that may be used flexibly is increasingly important (see Chapter 5 for schedules of accommodation).

BACKGROUND

1.6 Britain has an ageing population. In the last 40 years the number of people aged over 65 has more than doubled, to 9.4 million, while over-85s have tripled to 1.1 million (source: Office of National Statistics (ONS) 2001). By 2014 there will be more people over 65 years old than under 16 years old living in the UK.

1.7 This increase in the numbers of older people means that demands on healthcare facilities are set to rise. Older people are more likely to require healthcare, as they are more susceptible to illness and disability due to chronic conditions common in old age, such as arthritis, dementia and cardiovascular disease. Longer life-spans and increased therapeutic possibilities will also add to demand.

1.8 While new service models for older people's healthcare emphasise the importance of maintaining people's independence and of providing services at home (Community Care Act, 1990), two-thirds of all NHS hospital beds are currently occupied by older people.

1.9 Healthcare facilities should therefore be designed with the needs of older people in mind. This will have added benefits for the population as a whole, as facilities that are suitable for use by older people are suitable for use by all adults.

1.10 This document describes how to build or adapt in-patient facilities that achieve the best practice outlined in the NSF for Older People. The NSF acknowledges the central role played by the physical environment in delivering services that are patient-centred, non-ageist, needs-led, and which promote health and independence.

Britain's ageing population means that an increasing number of older people are accessing healthcare

1.11 The NSF for Older People Standard 3 calls for the provision of 5000 new intermediate care places by 2004 to provide rehabilitation and respite for older people who are currently inappropriately placed on general wards.

1.12 The NSF for Older People Standard 4 emphasises the need for general ward environments that are clean and provide adequate privacy, space and rehabilitation services. It also calls for the phasing out of traditional "Nightingale" wards in favour of single-room accommodation and/or single-sex, four-bedded bays.

1.13 This publication takes into account the NHS Plan and 'Securing our future health: taking a long-term view', Wanless, 2002 which calls for increased privacy and dignity and encourages greater provision of single-sex wards and single rooms. The scheduled phasing-out of "Nightingale" wards is also acknowledged (see 'Enhancing privacy and dignity – achieving single-sex accommodation', NHS Estates), as is the need for healthcare buildings to comply with the Disability Discrimination Act (DDA) 1995 and the Building Regulations 2000 Approved Document M – 'Access to and use of buildings' (2004 edition).

1.14 In-patient facilities that are suitable for older people should take into account the physical and mental changes that affect older people's experience of using them. These include increased risk of confusion in unfamiliar environments, possibility of acquiring healthcare associated infections (HCAI), and risk of falls.

1.15 Effective building design may also help patients to recover more quickly, staff to work more effectively, and help promote a positive impression of services to the public.

1.16 The involvement of older people themselves in the planning of healthcare facilities is advisable. This will not only help ensure facilities are suitable, but will reflect the growing diversity of older people as a group and their resultant cultural and religious needs. The NHS Plan, Department of Health (DH) 2000, focuses future services on patient priorities, including patient wishes for the built environment.

OLDER PEOPLE'S EXPERIENCE OF HEALTHCARE

1.17 Older people frequently access in-patient hospital care via Accident & Emergency (A&E) units. They are assessed in order to establish clinical priority and to start urgent treatment. They may then have further specialist assessment to determine appropriate treatment and setting for that treatment.

1.18 People with common conditions, such as hip fracture, will be moved from acute wards to rehabilitation or intermediate care facilities as soon as possible.

1.19 Comorbidity (simultaneous appearance of two or more illnesses) is common in older age. For example, chronic conditions such as dementia may be complicated by acute problems such as an infection, fall or stroke. Underlying problems, such as dementia or compromised immunity, may be particularly influenced by the built environment.

1.20 Figure 1 illustrates the typical settings and possible problems that an older person may encounter on a typical hospital "journey". New service developments (see the NSF for Older People Standard 3) should ensure that older people do not remain for long in unsuitable facilities and receive the bulk of their healthcare in appropriately-designed facilities. This will allow rehabilitation and prevent unnecessary admissions to busy and unsuitable ward settings. Figure 1 also illustrates some possible benefits from the built environments that accompany these developments.

1.21 Whatever the setting, good design should enhance outcomes for all patients and visitors, including older people. A primary consideration should always be to ensure the privacy and dignity of older people using the facilities.

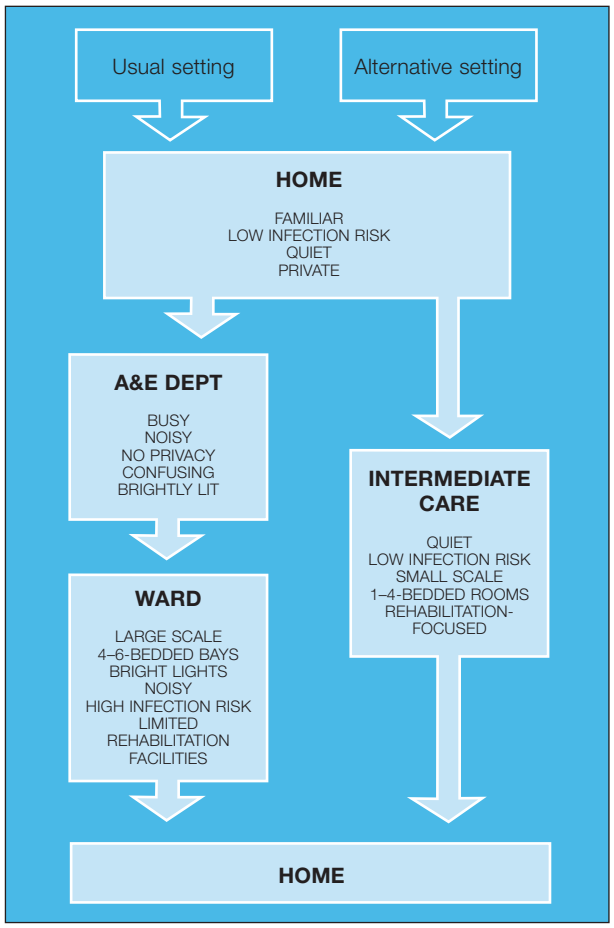


Figure 1 Possible problems that an older person may encounter on a typical hospital journey

REGULATIONS AND ACTS

1.22 This publication follows the Building Regulations 2000 Approved Document M – 'Access to and use of buildings' (2004 edition). It also draws on the recommendations of BS 8300.

1.23 It is recommended that, where possible, both the approved document and the British standard are followed. Where these may conflict with other NHS requirements, local decisions should be made about which document/criterion takes precedence. See also HFN 14 – 'Accessibility: design issues'.

ACTIVITY DATABASE

1.24 Activity DataBase (ADB) data and software assists project teams with the briefing and design of the healthcare environment.

1.25 Room data sheets provide an activity-based approach to building design and include data on personnel, planning relationships, environmental considerations, design character, space requirements and graphical layouts. Schedules of equipment/components are included for each room, which may be grouped into ergonomically arranged assemblies.

1.26 Schedules of equipment can also be obtained at department and project level.

1.27 Fully loaded drawings may be produced from the database.

1.28 Reference data is supplied with ADB which may be adapted and modified to suit the users' project-specific needs.

1.29 For further information please refer to ADB at of http://adb.www.nhsestates.gov.uk.

2 General design requirements

2.1 This chapter outlines the measures necessary to ensure that intermediate care facilities and facilities for older people with dementia are suitable for use by older people. The principles may also be applied to other healthcare facilities.

2.2 Facilities suitable for older people should be:

- supportive, whilst promoting independence;
- safe and secure;
- accessible;
- on a human/domestic scale;
- integrated with the full range of internal/external services;
- legible, with hierarchies of spaces from public to clinical to private;
- therapeutic.

2.3 These facilities should also enhance confidence, encourage social behaviour, facilitate effective service delivery, appeal to patients, and minimise hazards.

2.4 In-patient facilities that are suitable for older people should take into account the physical and mental changes that affect the older people using them:

- clear signs and directions will be easier for people with hearing, eyesight or memory impairments to use;
- equipment such as doors with overhead door closers, and taps on hand-wash basins and baths, may be hard for people with decreased muscular strength and dexterity to use;
- WCs will need to be conveniently placed in order to support effective continence management.

2.5 Consideration should also be given to the fact that older people are becoming increasingly diverse as a group. People with specific religious or cultural needs may have requirements such as prayer space or chaperoning facilities. Signage should be appropriate for older people who do not have English as their first language – see paragraphs 2.25–2.29.

2.6 Older people who are experiencing confusion or who are recovering from illness or surgery may experience further difficulties:

- dementia or temporary confusion may make it harder for people to find their way around or understand their environment;
- stroke and arthritis make people less mobile and at greater risk of falls;
- chest and heart conditions may cause breathlessness, making it harder to walk long distances;
- older people may also be more prone to developing HCAI.

2.7 Effective design may help to reduce the impact of symptoms associated with some of these conditions. It may also help patients to recover more quickly and staff to work more effectively, and help promote a positive impression of services to the public.

2.8 Effective design of healthcare facilities can also have a positive effect on patients' experience of healthcare; see 'Enhancing the Healing Environment: a guide for trusts' (King's Fund, 2004).

2.9 There are six key considerations when building or refurbishing healthcare facilities suitable for use by older people:

- mobility and access;
- infection control;
- WC and bathroom facilities;
- signage and wayfinding;
- creating a "domestic" environment (décor);
- requirements of people with sensory impairment.

MOBILITY AND ACCESS

2.10 Some older people may only able to walk short distances, due to accident, injury or surgery.

2.11 Excessive distances between destinations such as day rooms, dining areas and therapy rooms should be

avoided, and grab rails should be provided in all corridors. Key facilities should be easily visible and centrally placed. Facilities for occupational therapy and physiotherapy should be carefully planned to be near ward areas.

2.12 In intermediate care facilities some patients may be temporarily or permanently disabled. The environment should therefore present a low risk of new problems such as falls, but encourage maximum rehabilitation.

2.13 All entrances, corridors and common activity areas should be accessible. Corridors should be wide enough for two wheelchairs to pass with ease. Appropriate widths and turning circle requirements for wheelchair users are given in HBN 40 – 'Common activity spaces' Volume 4 'Circulation areas', and in BS 8300.

2.14 Non-ground-floor facilities require lifts. Lifts, directions and controls should all be accessible. Visual and audible information is a requirement for all lifts serving more than three storeys. Consideration should be given to provision of a second lift in case of emergencies.

2.15 There should be sufficient space beside beds to provide access for staff and equipment and for patients to be offered assistance. Areas should be large enough to accommodate two staff members, a hoist and/or wheelchair (one assistant may need to stand on the opposite side of the bed from the hoist). Beds should be height-adjustable and far enough apart in order to minimise infection risk.

2.16 Most hoists are mobile. These are heavy, and require considerable floor space for operation. In settings where hoists are frequently used, ceiling-mounted hoists may be considered as a space-saving alternative.

2.17 The privacy and dignity of patients in multi-bedded bays should be ensured. Appropriate screening or curtaining, covering the whole bed space and assistance area, should be provided.

2.18 For details of WC provision see paragraphs 3.18–3.23.

2.19 Space alongside accessible baths should be large enough for patients to be offered assistance from both sides and for hoists to be positioned.

2.20 Effective signage should be employed, see paragraphs 2.25–2.29. For guidance on use of colour see HFN 14 'Accessibility – design issues'.

INFECTION CONTROL

2.21 Infection control teams should be consulted from the outset of any new-build or renovation project and should remain integral planning team members throughout.

Beds should have sufficient space beside them to enable staff to offer assistance to patients

2.22 In a new-build project this means that they should be members of the team that develop the business case from its inception.

2.23 Detailed information about the role of the infection control team in the built environment can be found in HFN 30 – 'Infection control in the built environment'.

2.24 HFN 30 should be the first point of reference for planning teams with regard to infection control and its relation to design.

SIGNAGE AND WAYFINDING

2.25 Older people with cognitive impairment may experience memory problems and difficulty with orientation and negotiating the physical environment. They may also have a visual or other physical impairment. Effective wayfinding strategies can help minimise the impact of this and may help prevent falls by reducing the need for unnecessary journeys.

2.26 Orientation may be aided by the removal of visual barriers, such as dividing screens, in dining rooms and other common areas.

2.27 Views of the outside world or common areas may also help. Long, featureless corridors should be avoided by using centrally-positioned key features and points of interest along the route.

2.28 Orientation clocks displaying day, date and time, and orientation information written on boards in prominent areas and updated daily, may also help people with dementia.

2.29 Signs with dense text should be avoided. Signs with strong symbolic meaning and using simple, bold, commonly understood words are preferable. These will also facilitate understanding for people whose first language is not English. See 'Wayfinding' (NHS Estates).

"WANDERING"

2.30 Some people with dementia "wander" (indulge in apparently aimless movement). This activity may provide exercise and relieve anxiety and boredom, but it can also cause patients to become lost, tired, and suffer from catabolism (severe weight loss).

2.31 Locking doors in order to prevent "wandering" is not acceptable. It may infringe people's human rights, cause distress, and limit opportunities for therapeutic walking. Alarm systems, which alert staff when a patient leaves the unit, are also subject to ethical concerns

Views of the outside world may aid orientation for older people with cognitive impairment

(Hughes and Louw, 2002). Methods such as screening off outdoor views or covering doors and walls (Dickinson et al, 1995) have also been questioned (Price et al, 2003).

2.32 Opportunities for safe "wandering" should therefore be considered. Provision of clear, safe walkways with obvious destinations may reduce concerns associated with "wandering". Such walkways are easily installed in outside spaces and may also be provided indoors in new-build facilities. In existing facilities, where it may be impossible to provide such routes, clear visual pathways to popular areas may help. Such walkways should never end in a "dead end" but either return to the starting point or culminate in a place of interest.

DÉCOR

2.33 Providing an environment that feels domestic and familiar can help healthcare facility users feel less intimidated and therefore less confused or alarmed. In facilities for people with dementia it is particularly important to reflect the fact that they are homes for their occupants; see 'Design for dementia' (Judd, Marshall and Phippen, 1997).

2.34 Familiar and unthreatening design may also help enhance social use of spaces and make stays more pleasant, as there is evidence that this enhances care and may improve recovery rates (see 'Enhancing the Healing Environment: a guide for trusts', King's Fund, 2004).

2.35 Warm, calming colours should be chosen for all areas. Softening features such as indoor plants are popular, but local infection control officers should be consulted prior to use as these may represent an infection risk.

2.36 Art and craftworks can enhance buildings, and act as a focus for wayfinding. See 'The art of good health: using visual arts in healthcare' and 'The art of good health: a practical handbook' (both NHS Estates).

FLOORING

2.37 Local fall prevention strategies should focus on potential hazard areas such as slippery or bumpy floors, stairwells, and cluttering of circulation areas by equipment.

2.38 Floors should be single-level and made from smooth, easily cleanable, non-slip material. Where changes in floor level are necessary, grab rails should be provided and a clear demarcation indicated on the floor.

2.39 Excessive patterning on floors should be avoided as it may cause downward visual focus and precipitate forward falls. People with visual impairment may also interpret "busy" patterns as obstacles. Shiny floors should also be avoided, as they may be seen as hazardous and reduce confidence. Non-reflective finishes are therefore generally preferable. See HTM 61 – 'Flooring'.

2.40 Stairs and corridors require easy-to-grip handrails on both walls. Grab rails should also be provided alongside baths, WCs, beds and in other suitable locations. Unobserved areas, such as en-suite bathrooms, should be fitted with suspended alarm cords to allow users to call for help in the event of a fall.

2.41 Doorways and lift entrances should have smooth and congruent joints to avoid tripping. Access to lifts should be clearly marked. Consideration should be given to possible need for resuscitation equipment in lifts in case of power failure. For details on design of circulation areas see HBN 40.

WALLS

2.42 Smooth walls, rather than stippled finishes and exposed brickwork, represent less danger for those falling against them. Finishes should be easy to clean, able to withstand impacts from hoists or wheelchairs, and capable of patch repair. Finishes may need to be protected in strategic locations.

2.43 Grab rails should be provided at appropriate heights. Radiators should be clearly visible and be either covered or offer only low surface temperatures to avoid

Grab rails should be provided in suitable locations

burns. The use of contrasting colours and recessing can help to identify doors and destinations.

FURNISHINGS

2.44 Furniture should be hard-wearing, adaptable and made from fire-retardant fabric (see HTM 87 – 'Textiles and furniture'). Covers should be non-absorbent in order to avoid staining, easily washable, quick-drying, and able to withstand the effects of detergents and disinfectants.

2.45 A variety of chairs should be available, including chairs with full- or half-enclosed armrests to allow occupants to rise, chairs with foot-rests, chairs suitable for exercises, and reclining chairs. These chairs may then be arranged for different uses. All chairs should be high-backed and not too low or too soft for older people to use.

2.46 Blinds are efficient at reducing glare, and can provide privacy without totally obscuring views. However, curtains provide a domestic feel, offer maximum flexibility in choice of design, and represent a lower infection risk as they attract less dust build-up than blinds. Curtains in all but the lowest infection risk areas should be able to withstand disinfection temperatures in laundering; see HFN 30.

2.47 User groups should be consulted in order to inform local decisions regarding furnishings. Older people's bedrooms can be decorated with personal possessions to help create a domestic atmosphere. However, care should be taken, as excessive clutter can represent a fire risk.

Bedrooms can be decorated with personal possessions to help create a home-like atmosphere

LIGHTING

2.48 Lighting requirements vary according to area use, see BS EN 12464-1:2002, 'Light and lighting: Lighting of workspaces'. Examination rooms require lighting capable of allowing detection of changes in skin tone. Activities of daily living (ADL) testing rooms should be capable of achieving both bright light and light approximating to home environments. Particular attention to lighting will be required in reading areas, clinical rooms and in areas with signs.

2.49 Where possible, natural lighting should be used. Artificial luminaires should achieve spectra of lighting as close as possible to those of natural lighting, and these should be easy to maintain and clean in order to avoid build-up of dust. Where possible, domestic light fittings should be used to avoid institutional appearances.

2.50 Lighting of signs may be necessary in key wayfinding areas. However, excessive lighting may make signs more difficult for those with visual impairment, and matt finishes are preferable in order to reduce glare. Signs should not be positioned in front of light sources such as windows. Enhanced lighting should be used to encourage people to use circulation areas.

2.51 Windows should not have sills too high to allow access to views for wheelchair users or people in beds.

HAZARDS

2.52 Hot-water sources such as radiators are a potential hazard. Older people may use them as grips to aid mobility, and high surface temperatures could cause scalding.

2.50 Providing rails or grips nearby, fitting radiator covers and using low-surface-temperature fittings can all help reduce risk. However, some low-temperature radiators still have high temperatures on the top grille, and handrails should not be fitted above as they may get hot. Alternative heating sources, such as under-floor heating, may be considered.

2.53 Radiators can also be a source of infection; see HFN 30.

2.54 Taps and exposed pipework are also potential sources of scalds. Risks can be reduced by use of ducting. Clinical hand-wash basins have higher water temperatures than patient wash-basins, and should be clearly marked as hazardous. All taps should be set to non-scalding temperatures. Older people may prefer separate handles and taps to single-lever mixer taps; for details see HTM 2027 – 'Hot and cold water supply, storage and mains services' and HGN – '"Safe" hot water and surface temperatures'.

2.55 Tables, shelves, bedroom furniture etc should have curved edges to reduce risk of injury. Non-slip floor surfaces should be used. Carpets may be preferred by older people and can reduce fall impact, but they are hard to keep clean, and alternative floorings may therefore be preferable.

NEEDS OF PEOPLE WITH VISUAL IMPAIRMENT

2.56 Lighting in circulation areas should be enhanced to help with orientation. However, excessive glare and bright lights with sharply-defined edges should be avoided. Luminaires with gradually fading light at the edges are preferable.

2.57 Signs should provide minimal glare. Lift and wall signage should feature large print and clear design, with letters in a contrasting colour to the background. Braille signs may also be effective. Local decisions should be taken based on likely users of the space.

2.58 Patterned flooring and potential trip hazards should be avoided. See paragraphs 2.37–2.41, 'Wayfinding' (NHS Estates), and 'Building Sight' (RNIB, 1995).

NEEDS OF PEOPLE WITH HEARING IMPAIRMENT

2.59 People with hearing impairments typically find multiple noise sources unpleasant and distracting. The provision of single rooms, or individual interview/activity rooms, which are effectively sound-proofed can therefore aid conversation and therapeutic activities.

2.60 Sound-containing partitions and doors can also reduce sound transmission. Soft floor-coverings and acoustic treatment of surfaces can improve sound absorption. Devices to eliminate the transmission of sound through ductwork should be considered.

2.61 Induction loops may further aid conversation for people with hearing impairment. See paragraph 3.40.

2.62 Entrances should be clearly identifiable. Reception facilities should be approachable and, where not permanently staffed, clear instructions to visitors should be provided, with an explanation of how to access further assistance.

COMMUNICATIONS

2.63 Standard telephone systems are likely to be required.

2.64 Public telephones should be provided. At least one should be accessible and offer text phone or other assistive technology. See Foundation for Assistive Technology (FAST, http://www.fastuk.org) for guidance.

2.65 One telephone should be reserved for incoming calls for patients. This should be both wheelchair-accessible and located to ensure privacy. Access to the internet should be considered, as this is an effective method of communication for older people.

2.66 Facilities should be located at the nursing station to allow location of patients using alarm cord/button systems. Call points should be available in all places where patients are alone, including WCs, bathrooms and single rooms. Staff call points should also be considered in spaces where staff consult with patients. Further guidance is found in HTM 2015 – 'Bedhead services'. Some facilities may also require fast-response "bleep" facilities or personal alarm calls.

2.67 The use of assistive technology, such as a fall detector attached to clothes or a mobile call unit to alert staff in the event of a fall, may be considered appropriate for certain patient groups, see FAST.

ENGINEERING

2.68 The following should be borne in mind when designing facilities for use by older people:

- fire prevention (use of flame-resistant materials, restriction of kitchen use);
- fire detection (use of smoke alarms linked to a central address panel);
- fire retardation (use of flame-resistant materials, doors which shut automatically, smoke seals on doors);
- fire extinguishing (compliance with relevant regulations on apparatus to be provided);
- fire escape (installation of emergency lighting, avoiding rooms on upper floors which may only be accessed through other rooms, door design).

2.69 A fire escape strategy appropriate for the user group should be agreed with the relevant authorities; see HTM 81 – 'Fire precautions in new hospitals', HTM 85 – 'Fire precautions in existing hospitals' and 'Firecode – policy and principles'.

2.70 Self-closing devices on fire doors may render doors too heavy for older people to use. As an alternative, free-swing door closers are available which only operate in the event of fire.

2.71 For water supply regulations see HTM 2027 – 'Hot and cold water supply, storage and mains services'. For infection control for water supplies see HTM 2040 – 'The control of legionellae in healthcare premises – a code of practice' and HFN 30.

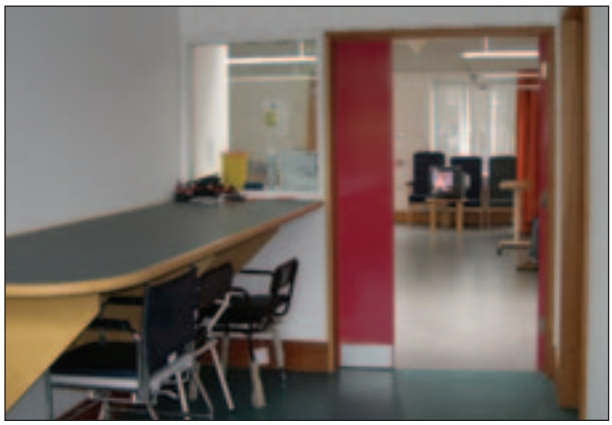
2.72 Electrical supply should comply with BS7671 and HTM 2007 – 'Electrical services: supply and distribution'.

2.73 Piped medical gases may be required in community hospitals. These may include vacuum, oxygen, medical and surgical gas and possibly nitrous oxide (which requires a waste anaesthetic gas system) or other anaesthetic gases. If medical gas cylinders are to be stored, specific storage facilities are required. Decisions on provision should be made locally and based on users' needs. Details are available in HTM 2022 – 'Medical gas pipeline systems' and Model Engineering Specification (MES) C11 – 'Medical gases'.

STORAGE

2.74 Provision of sufficient spaces for storage of linens, dirty utility, clinical equipment, bulky equipment such as wheelchairs and hoists, and cleaning equipment is essential. Inadequate storage may lead to equipment being either under-utilised or presenting a direct hazard.

2.75 Consultation with users regarding the specific storage needed in each facility is necessary at the design stage. Some rooms, such as physiotherapy exercise rooms, should be designed with storage as a key feature. Some under-used spaces and recesses may also be used for storage.



Storage space provided beneath a work surface

2.76 Consideration should be given to storage facilities for specific items commonly used by older people. These may include bedside lockers and wardrobes for personal possessions, space for electric wheelchairs (which require more space than manual wheelchairs for storage and recharging batteries) and space for motorised buggies that may require dedicated parking/recharging bays.

2.77 Storage for patients' personal effects within en-suite or assisted bathrooms and shower rooms may be designed to be as domestic as possible.

2.78 At least one controlled drugs cupboard is required. Such cupboards should have a lamp and audible alarm link to a communications base, to alert staff to unauthorised entry. Further details may be found in HTM 63 – 'Fitted storage systems'.

2.79 In stand-alone facilities a clean and a dirty utility room, facilities for clinical waste secure storage and a laundry may also be required.

3 Room spaces

3.1 Adjacencies of rooms should be considered at design stage. If the facility is located within a hospital, facilities such as kitchens, laboratories and pharmacies need not be adjacent. Therapy and staff areas may also be shared; see Figure 2.

ARRIVAL AND DEPARTURE AREAS

3.2 Arrival and departure areas should be large enough to allow safe and comfortable transfers of patients. In facilities where significant day services are provided, access for several ambulances at once is likely to be necessary.

3.3 In a hospital setting, parking is likely to be shared with other departments and therefore at a premium. Hence, policy regarding arrival and departure is of maximum importance.

3.4 Entrances should be welcoming and clearly identifiable. A canopy should be provided in order to protect patients from the elements when getting in or out of vehicles.

3.5 Reception facilities should be approachable. Where receptions are not permanently staffed, clear instructions should be provided, with an explanation of how to access further assistance. All facilities should be fully accessible. See also 'Improving the patient experience: Welcoming entrances and reception areas' (NHS Estates, 2004).

SANITARY FACILITIES

3.6 An accessible WC should be provided in waiting areas.

3.7 In all facilities, an appropriate proportion of en-suite and "general access" WCs, bathrooms and shower

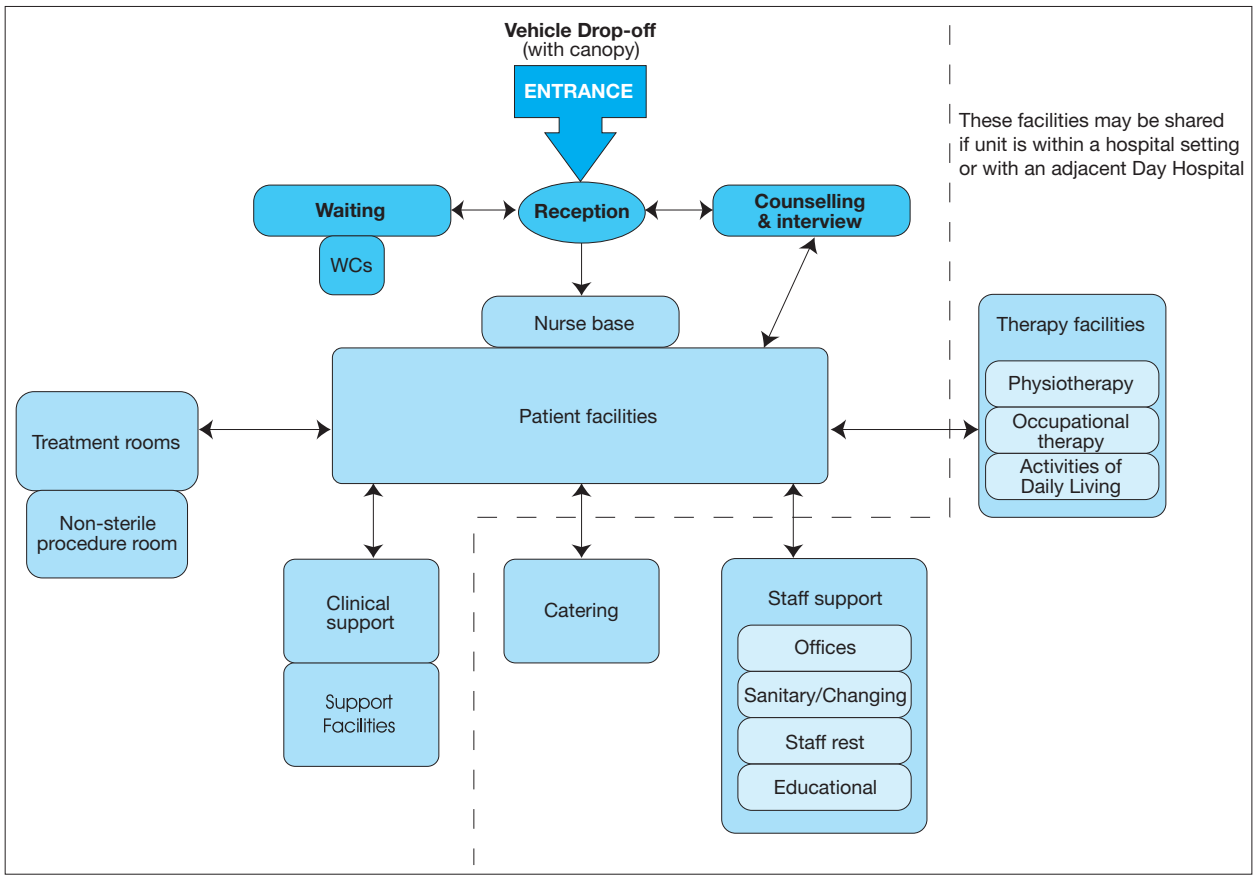


Figure 2 Adjacencies of rooms should be considered at design stage

rooms should be accessible. Local decisions should be made regarding numbers and locations.

3.8 In facilities for people with dementia, consideration should be given to the fact that some patients will require assistance with managing continence and when using sanitary facilities.

3.9 Grab rails should be provided in all WCs – see BS 8300. Vertical grab rails should allow users to rise from the WC without using the washbasin as a lever. As stroke patients may have loss of use of one side of the body, toilet roll holders and/or grab rails may need to be provided to both sides of the WC.

3.10 Grab rails should be fitted in bathrooms and shower areas. Grab rails should be located adjacent to shower seats, and one may also be used to take the shower head attachment, as it will be more robust than regular fittings should a patient use it for support.

Grab rails should be fitted in bathrooms and shower areas

3.11 All grab rails and sanitary ware should be in contrasting colours to walls, tiles and floors in order to allow easy identification for people who have a visual or mental impairment.

3.12 Wall construction should be suitable for grab rails and other fittings.

3.13 Alarm cords should be provided in all WCs, bathrooms and shower rooms. These should be of a clearly identifiable colour and accessible from the floor. Consideration should be given to provision of more than one alarm cord, as some older people may be unable to reach a single cord.

3.14 Doors should open outwards. Where this is not possible, as the door may cause a hazard, mechanisms may be fitted which allow staff to open the door outwards in an emergency. All door locking mechanisms should allow staff to open the door from the outside in an emergency.

3.15 Thermostatic controls should be fitted to all taps to ensure temperatures are not hazardous; see HGN '"Safe" hot water and surface temperatures'.

3.16 Consideration should be given to fitting curtains in assisted bathrooms and some assisted WCs to ensure users cannot be seen when doors are open.

3.17 Occupational therapists, nurses, users and other appropriate groups should be consulted at design stage.

WCs

3.18 WC provision will depend on the type of accommodation provided. However, even in facilities where single rooms with en-suite WCs are available, some general access WCs will still be required. Access to these should not require people to pass through accommodation occupied by members of the opposite sex.

3.19 All centrally-located WCs should be no more than 12 metres away from bed and day areas; see HBN 4.

3.20 An appropriate proportion of both en-suite and general access WCs should be accessible. Some assisted WCs, which allow users to be assisted by up to two people, will also be required. Local decisions should be made regarding numbers and locations.

3.21 Assisted WC cubicles should have enough space for a wheelchair user and two enablers, one on either side of the WC (see BS 8300), and for users to transfer from either side of the WC.

3.22 Users of accessible WCs should be able to wash their hands from the WC seat. Vanity units under basins are not suitable unless adequate clearance is provided underneath for a wheelchair.

3.23 WC handles should be easy to identify and operate. Mechanical flush devices are physically more demanding but may be more easily understood by people who are confused.

BATHROOMS AND SHOWER ROOMS

3.24 Bathroom and shower room provision will depend on the type of accommodation provided. However, even

in facilities offering single rooms with en-suite sanitary facilities, some "general access" bathrooms and shower rooms will be required. Access to these should not require people to pass through accommodation for members of the opposite sex.

3.25 An appropriate proportion of both en-suite and general access bathrooms should be accessible. In addition, some assisted en-suite and general access bathrooms and shower rooms will required (where users may be assisted by up to two people). Local decisions should be made regarding specific numbers of accessible and assisted facilities and ratios of showers to baths.

3.26 All bathrooms and shower rooms should include a WC and hand-wash basin. All showers should be level-access; see HTM 64 – 'Sanitary assemblies'. Shower controls should be located adjacent to the edge of the cubicle so that they are accessible from both inside and outside the shower space.

3.27 Accessible bathrooms should have space for a wheelchair to be lined up beside the bath and for its user to operate it independently. Assisted bathrooms and shower rooms require space for hoists and two enablers beside the bath or shower, a washbasin, a WC (with space on either side for transfers) and a wheelchair turning area. See BS 8300.

3.28 Flooring should be easily cleaned and slip-resistant for bare feet. Taps should be easily accessible and located on the long side of the bath.

BEDROOMS

3.29 Decisions regarding the proportion of single-bedded rooms and multi-bedded bays should be made at local level.

3.30 All rooms should be large enough to accommodate access for patients, carers, visitors and equipment. For specific recommendations on equipment access see paragraphs 2.10–2.20.

3.31 Single-bedded rooms are strongly recommended for people with severe dementia, as they may experience insomnia and night-time restlessness and this can be disturbing to roommates. The ability to personalise a patient's bedroom may also help to reduce confusion in people with dementia. For example, a personal photo pinned to the door may help people to identify rooms. However, confidentiality issues need to be considered.

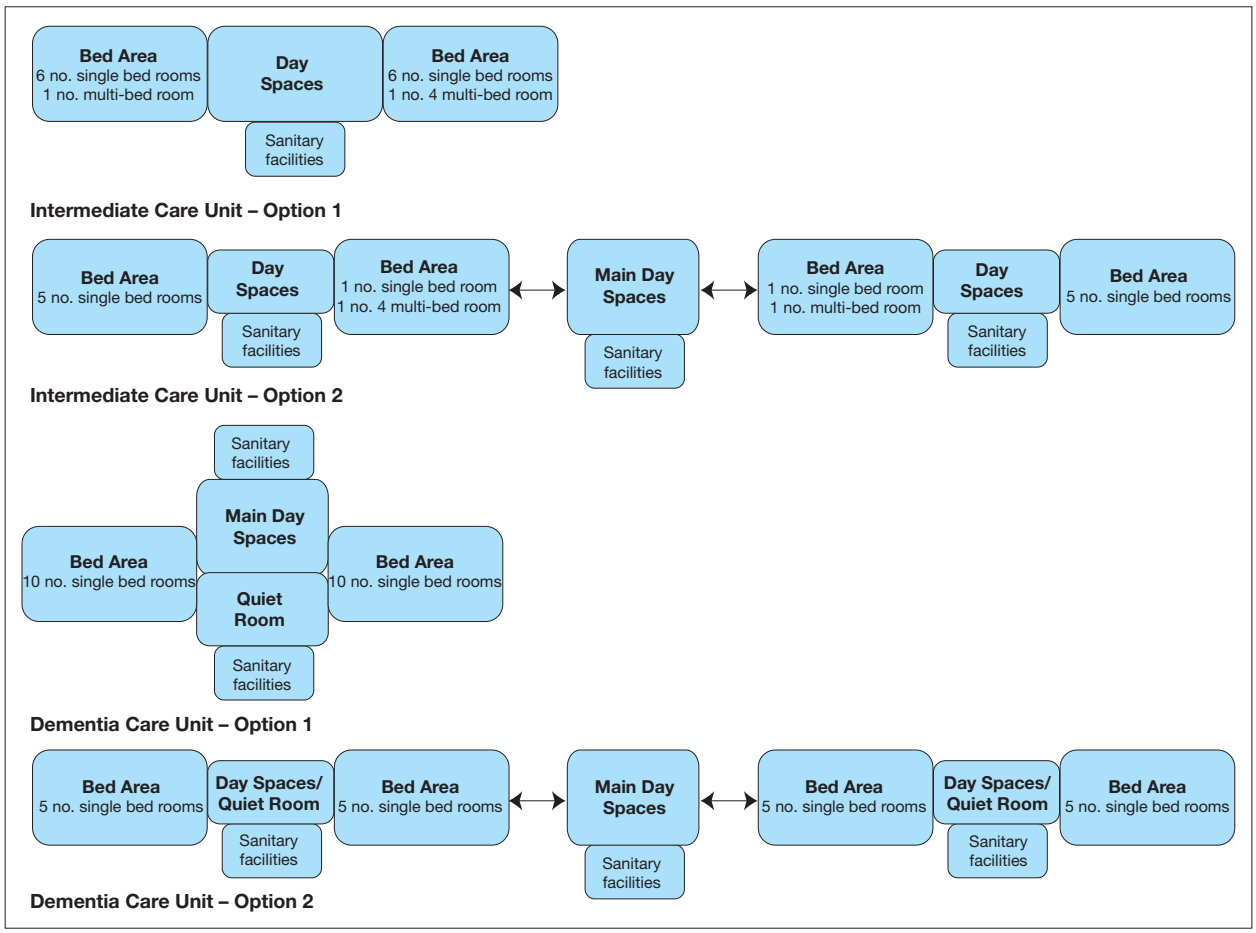


Figure 3 Relationship of rooms and areas within an intermediate care or a dementia care unit

Day/visiting areas are particularly important in facilities where patients do not have their own room

3.32 It may sometimes be necessary for staff to observe people with dementia to prevent them from harming themselves. Good design and the use of assistive technology, such as fall detectors, can provide this whilst maintaining patients' privacy and dignity. Decisions regarding observation arrangements should be made at local level.

3.34 Some multi-bed ward layouts may enable observation from a central point but encourage a lack of interaction with patients. A clear line of sight from the nursing station should always be ensured.

3.35 Single-room accommodation may be beneficial in the event of a death. A private room should always be utilised when allowing a family to view the body. If a mortuary is not available on site, removal of the body to a mortuary should avoid patient areas.

DAY/VISITING AREAS

3.36 The importance of day/visiting areas to older people is emphasised in the NSF for older people. Such areas are particularly important in facilities where patients do not have their own room.

3.37 Day/visiting areas should be as "domestic" as possible and large enough to accommodate any planned activities and expected numbers of patients. Care should be taken with the design of facilities for people with dementia in order to avoid an institutional feel.

3.38 Chairs should be arranged in small clusters in order to reduce any institutional feel and enhance privacy. Where dedicated rooms are not available, chairs should be provided in communal and circulation areas and/or side rooms where conversations cannot be overheard. A general access WC should be situated nearby.

3.39 Consideration should be given to the provision of women-only day/visiting areas in order to maintain privacy and dignity.

3.40 Induction loops for people with hearing impairment should be provided. Privacy in conversations using induction loops should be equal to that of conversations for those with full hearing. For details see Royal National Institute for Deaf People (RNID) publications (see References). Decisions regarding access to tea-making facilities etc should be made at local level.

DINING AREAS

3.41 A communal dining room, capable of seating all anticipated patients at once, should be provided. This area should be as non-clinical and "domestic" as possible.

3.42 Table heights and circulation spaces should allow access for wheelchair users and other disabled people; see HBN 40. Space should be available for assistants to help with dining, if required. Furniture and/or screens may be arranged to allow smaller groups to eat together more naturally. Local consultation with patient/user groups should be sought.

3.43 Smooth, easily cleanable surfaces may cause reverberation and acoustic interference. Sound-absorbent materials should therefore be incorporated into the design of finishes to minimise discomfort to those with hearing impairments.

3.44 Patients may sometimes remain in their beds to eat, and over-bed tables will therefore be required.

3.45 Local decisions should be made regarding space for independent kitchens or hot trolleys. Food hygiene regulations should be considered at design stage; see HFN 30 and the Food Safety Act 1990.

3.46 People with advanced dementia are likely to need significant additional observation and assistance during mealtimes. Open areas may help facilitate this. However, a portable screen or separate quiet dining area may provide greater privacy and dignity as well as being less institutional.

THERAPY ROOMS

3.47 Requirements for individual facilities vary, especially if day services to the community are provided. Consultation with staff and users at design stage is essential. Also see HBN 8 – 'Facilities for rehabilitation services'.

3.48 Physiotherapy exercise rooms should be large enough to allow the use of large equipment such as exercise tables, benches and parallel bars. Some equipment will require sufficient space for assistance

Patients may sometimes eat from over-bed tables

from two, three or even four sides. Sufficient wall space will be required to allow storage of unusual items, such as long timber lengths.

3.49 A room for speech therapy activities is also likely to be required. Speech therapy can usually take place in flexible rooms that are quiet.

3.50 Facilities for occupational therapy (OT) will be required. OT group activities not requiring specialist equipment may take place in general activity rooms. Such rooms should normally have adjacent storage areas for equipment, be adequately lit, and have minimal sensory distraction.

ACTIVITIES OF DAILY LIVING (ADL) FACILITIES

3.51 ADL facilities are used in intermediate care facilities to imitate the home environment and to allow patients to acquire and practise relevant skills before they are discharged. These rooms should therefore aim to replicate domestic spaces as much as possible, whilst providing sufficient space for assessment and/or assistance when required. ADL facilities need to be flexible and offer a variety of equipment and layouts to suit individual patients; see HBN 8.

3.52 At least one ADL bathroom is required in each facility. A shower will also be required, either in the same room or in a separate shower room. Space should be provided for staff to assess patients using specialist equipment, and for wheelchair users to approach baths/showers from the same direction as they would in their own home. A fixed hoist and space under the bath for a mobile hoist may also be required. See Figure 4.

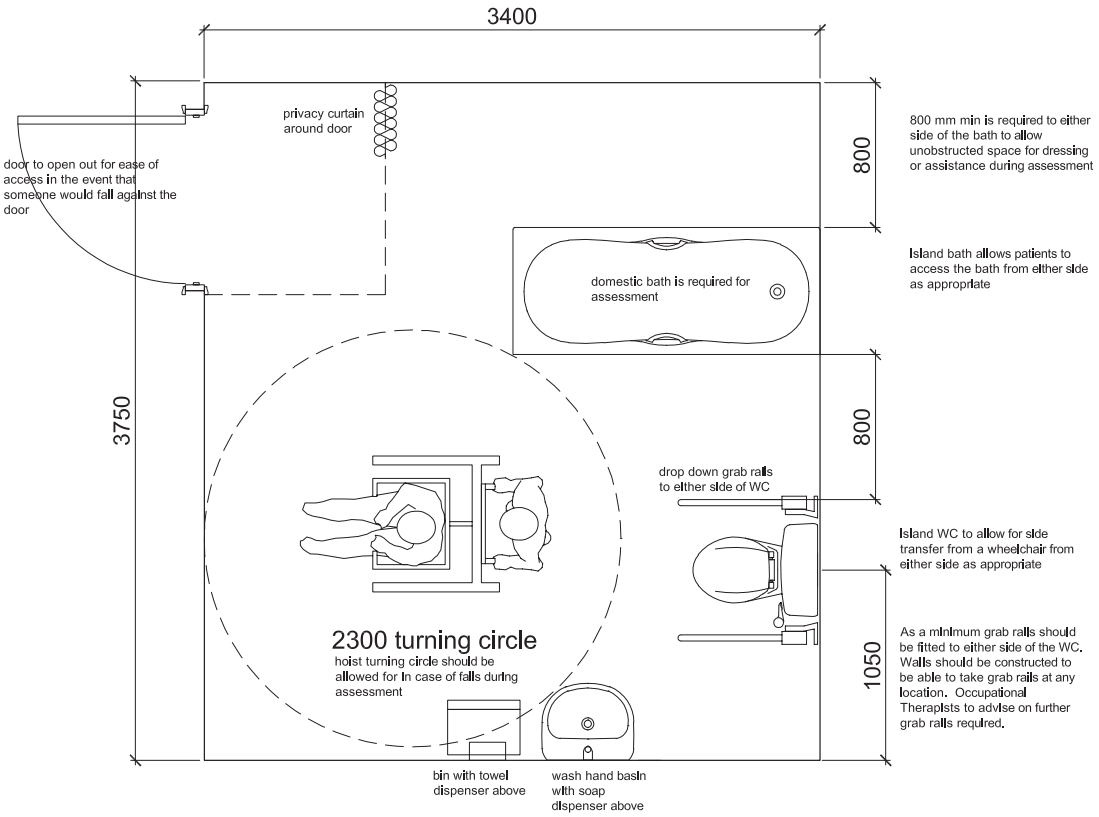


Figure 4 Activities of Daily Living (ADL) assisted bathroom

3.53 WCs should be accessible for wheelchair users from both sides, but otherwise of domestic type.

3.54 ADL kitchens should contain a gas cooker, an electric cooker (or hobs with a separate oven) and a microwave. The gas and electric ovens should be at opposite ends of the workspace. Some sections of worktops should be accessible for wheelchair users, with clear space underneath. An adjustable worktop, or a selection of worktops at different heights, should be provided to allow OTs to make recommendations for individual patients. A table simulating the domestic setting and usual kitchen storage space are also required. See Figure 5 and Figure 6.

3.55 Facilities with predominantly single rooms may not need a dedicated ADL bedroom. Where provided, this room should be domestic in scale and furnishing and provide adequate space for an electric hoist plus at least three people to observe and/or assist.

STAFF AREAS

3.56 Staff areas should comprise male and female staff changing, a staff WC/shower room, a nurses' station and office space. Staff in dementia care units do not always wear uniforms, but washing/changing facilities should still be provided.

3.57 A mixture of spaces will be required for secretarial and administrative work. Additional office spaces are likely to be required to support occupational therapy, physiotherapy, speech therapy and other rehabilitation activities. Local decisions should be made regarding extra spaces, such as seminar rooms, libraries and sleeping accommodation.

3.58 Rest rooms, if provided, should be equipped with chairs, telephone communications and facilities for drinks and light snacks.

3.59 Nurses' stations, or ward receptions, should be designed to encourage patients and visitors to approach staff, and should be clearly identifiable. However, the Data Protection Act requires that patient details should not be clearly visible to third parties. Ideally, therefore, patient records and other confidential material should be inaccessible when stations are unsupervised.

TREATMENT ROOMS

3.60 Non-sterile procedures such as enemas, which may be associated with some infection risk, should take place in a specialised room or in the privacy of a single-bed room. Provision of at least one individual treatment room, for activities such as respiratory therapy or ultraviolet light, is recommended. This room may also be used flexibly by different disciplines.

3.61 Some activities, such as traction, will require a room fitted with cubicles or screens around a bed or chair; see HBN 8.

3.62 Local decisions should be made about extra treatment rooms. These may include out-patient consultation rooms and waiting areas. Where these are included, consideration should be given to the needs of disabled patients.

Treatment rooms may be used flexibly for different purposes, including respiratory therapy

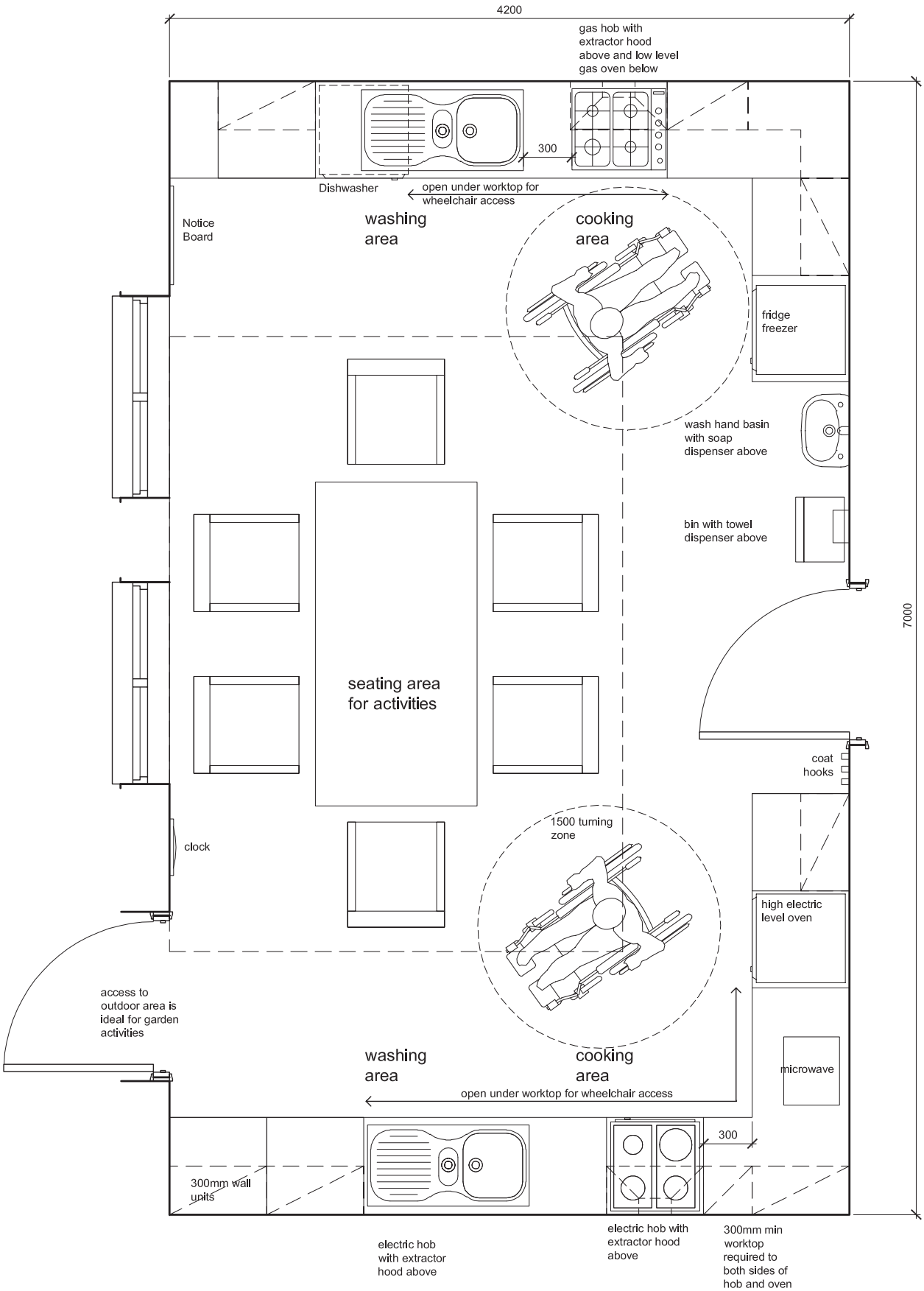


Figure 5 Activities of Daily Living (ADL) kitchen or small group activity room

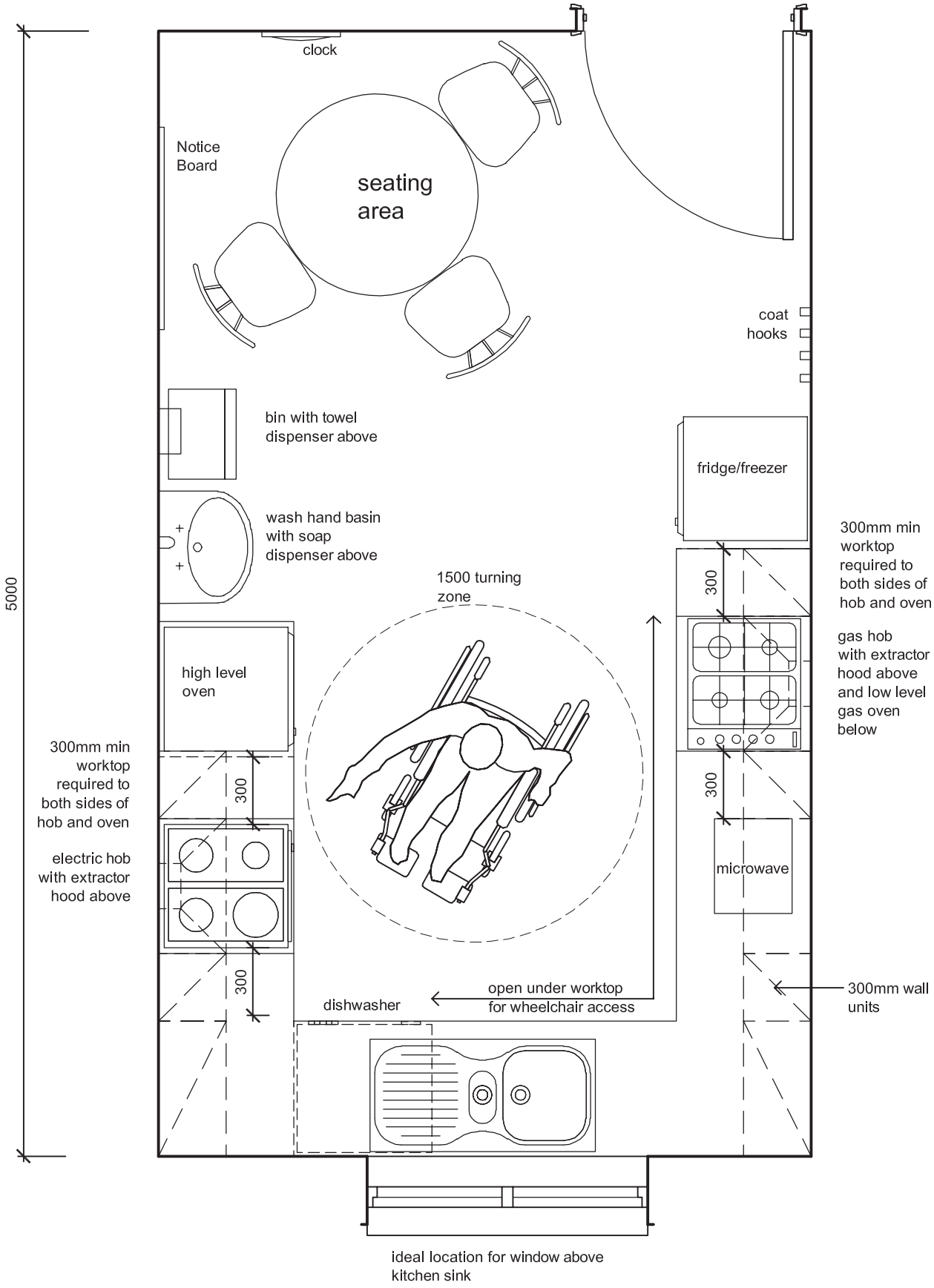


Figure 6 Activities of Daily Living (ADL) small kitchen

ROOMS FOR DISTRESSED PATIENTS WITH DEMENTIA

3.63 A number of rooms suitable for calming distressed and agitated patients should be provided. Rooms used for this purpose should be quiet and, if possible, sound-proofed. Rooms may be used flexibly so long as sufficient storage space is provided for equipment.

3.64 Some facilities providing longer-term care may also require rooms suitable for the provision of calming techniques such as Snoezelen, which use multiple sensory modalities of light, sound and touch for sensory stimulation.

GARDENS AND OUTDOOR AREAS

3.65 Gardens and other outdoor areas are greatly enjoyed by many older people and may represent their main opportunity for exercise and fresh air. Some healthcare facilities may only be able to provide limited outdoor space, and thus careful design is of particular importance.

3.66 Outdoor areas should be attractively landscaped, with as many natural features as possible. They should be well lit if accessible after dusk.

3.67 Paths should be clearly identifiable, with gradual, rather than steep, inclines (gradients above 1 in 20 are considered to be ramps and require handrails). To ensure access for wheelchair users, widths should be at least 1600 mm. Circular routes may enable confused patients to “wander” safely.

3.68 Surfaces should be solid and non-slip. Grass walkways, steps, uneven surfaces and gravel should be avoided, as they are hazards. Variable patterns in paving will appear as hazards to those with visual impairment and should be avoided.

3.69 Seating should be provided at various points in both sunny and shaded locations. A height of 450 mm, with firm backrest and armrests to allow easy rising, is appropriate in most instances. Seating arrangements may encourage social interaction, for example between wheelchair users and those sitting on seats.

3.70 Planting and sensitive landscape design can provide sensory stimulation and create a restful environment. Raised beds, at about 600–700 mm, can define paths, reduce the need for rails and provide access to plant life for wheelchair users and people who are visually impaired. Terracing can provide further interest, new views and variety of landscape within relatively small spaces, but should feature inclines with low gradients to ensure accessibility.

3.71 Plants with bold flower colours may be preferable as they are more easily seen by older people. Gardens with elements to smell, touch or listen to can be particularly stimulating for people with a sensory impairment. Poisonous plants and thorns should be avoided.

3.72 Water features are relaxing and attract bird life. However, consultation with local infection control teams is necessary at the design stage.

Gardens with circular walking routes are particularly suitable for older people

4 Engineering requirements

MECHANICAL ENGINEERING SERVICES

General

4.1 The mechanical services installation for in-patient facilities for older people includes the distribution of the following services:

- heating;
- hot and cold water;
- ventilation systems;
- refrigeration plant;
- environmental control and building management systems;
- medical gases;
- steam and condensate systems;
- sterilizing and washer-disinfector equipment.

4.2 This document gives details for a facility co-located within a community hospital setting and connected to the existing infrastructure. Installation, therefore, covers from the point of entry to the facility, to the final service outlets or specific equipment.

4.3 A "stand-alone" facility will require additional engineering infrastructure, including the supply and metering of gas, oil and electricity, water and drainage connections to the public utilities, and a boilerhouse.

Heating systems

4.4 A Building Management System (BMS) should be used to control the heating system in zones. The system will automatically set back or turn off when some zones are not in use. Heating throughout should be controlled to a minimum "set back" temperature of 10ºC during "out of use" hours. The BMS should be equipped with a manual override to permit restoration of the plant to full operational status at short notice.

4.5 Generally, space heating requirements can be met either by wall-mounted low-pressure hot water radiators or by ceiling-mounted low-pressure hot water emitters.

4.6 The surface temperature of wall mounted radiators should not exceed 43ºC. Ceiling-mounted radiant panels can exceed this surface temperature and will allow floor space savings. Exposed heating and hot-water pipework at temperatures above 43ºC and accessible to touch, should be encased or insulated. Further information is given in HGN '"Safe" hot water and surface temperatures'.

4.7 Radiators should be located under windows or against exposed walls. There should be space between the top of the radiator and the windowsill to prevent curtains reducing the output. There should be adequate space underneath to allow cleaning machinery to be used. Where a radiator is located on an external wall, back insulation should be provided to reduce the rate of heat transmission through the building fabric.

4.8 All radiators should be fitted with thermostatic control valves. These should be of robust construction and selected to match the temperature and pressure characteristics of the system. The thermostatic head should incorporate a tamper-proof facility for pre-setting the maximum room temperature. It should be controlled via a sensor located integrally or remotely. To provide frost protection, the valve should not remain closed below a fixed temperature.

4.9 Radiators should be used to offset only building fabric heat loss in mechanically ventilated rooms. All rooms should have local heating controls.

4.10 Ceiling heating panels may operate at higher surface temperatures than 40ºC as long as the surface is not readily accessible. Heating panels should ideally run around the perimeter of a building. Panels should not be located over beds or in other locations where they might radiate directly down on a healthcare facility user or staff member for a prolonged period.

4.11 Ceiling panels should be selected to blend in with the surrounding ceiling and should be sealed to the ceiling by means of a gasket or similar.

4.12 Heating loops of ceiling panels should be controlled by automatic valves located above the ceiling and actuated from room thermostats. In large spaces several loops should be provided, each controlled from

its own thermostat, to serve separate zones within the space.

Hot and cold water systems

4.13 Hot and cold water storage and distribution systems should be designed in accordance with the requirements of HTM 2027 – 'Hot and cold water supply, storage and mains services' and HTM 2040 – 'The control of legionellae in healthcare premises: a code of practice'.

4.14 Cold water storage will normally be at high level, but all equipment should also be capable of operation from an available static head. Where the static head is insufficient, a pressurisation set incorporating dual pumps should be installed.

4.15 All cold-water pipework, valves and fittings should be insulated and vapour-sealed to protect against frost, condensation and heat gain.

4.16 The domestic hot water supply should be taken from the domestic hot water calorifiers at a minimum outflow temperature of 60ºC ± 2.5ºC and distributed to all outlets in a manner that ensures a return temperature to the calorifiers of at least 50ºC. Mixer valves should be used to ensure that maximum hot water outflow temperature at the tap cannot exceed 43ºC. Exposed hot-water pipework, accessible to touch, should be encased or insulated. Further information is given in HGN '"Safe" hot water and surface temperatures'.

4.17 Where possible, automatic water conserving taps, actuated by proximity detectors, should be used.

Ventilation

4.18 For guidance on the design of ventilation systems see HTM 2025 – 'Ventilation in healthcare premises'.

4.19 Wherever possible, individual spaces should be naturally ventilated. Deep-planned spaces may need mechanical ventilation. In order to minimise the need for mechanical ventilation, core areas should be reserved for:

- spaces that require mechanical ventilation for clinical or functional reasons, irrespective of whether their location is internal or peripheral (for example sanitary facilities, dirty utility and beverage preparation areas);
- spaces that have only transient occupation and therefore require little or no mechanical ventilation (for example circulation and some storage areas).

4.20 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. However, such arrangements should avoid the introduction of untempered air and should not prejudice the requirements of Firecode or privacy.

4.21 Mechanical ventilation should ensure that both supply and extract systems are in balance, and take account of infiltration as appropriate.

4.22 Fresh air should be introduced via a low-velocity system and should be tempered and filtered before being distributed via high-level outlets. Diffusers and grilles should be located to achieve uniform air distribution within the space, without causing discomfort to patients or staff.

4.23 Particular attention should be given to the possible need for higher than normal ventilation rates in patient areas to ensure that odours are effectively controlled.

4.24 A separate extract system will be required for "dirty" areas, for example toilet facilities. It should operate continuously throughout working hours. A dual motor fan unit with an automatic changeover facility should be provided.

4.25 External discharge arrangements for extract systems should be protected against back pressure from adverse wind effects and should be located to avoid reintroduction of exhausted air into this, or adjacent, buildings through air intakes and windows.

Ventilation cooling systems

4.26 As requirement for cooling will be low, refrigeration loads for ventilation systems should be met either by the central water chiller plant or by packaged, remotely located, water chiller plant dedicated to the facility. Direct expansion systems are not advocated unless the refrigeration load is small, since direct expansion plant can only be controlled in steps, unlike chilled water which can be continuously modulated.

4.27 Heat rejection plant should consist of air-cooled condensers. Wet cooling towers must not be used.

Building Management System (BMS)

4.28 Where a pan-site BMS plant installation is available, in-patient facilities for older people should be connected to it. Where a local system is provided, it should be able to be integrated into a pan-site system in the future. See paragraphs 4.4–4.12.

4.29 Supply and extract ventilation systems should include local indicator lamps to confirm the operational status of each system.

4.30 The indicators for a system serving a particular space should be both immediately adjacent to the space and at a central staff base. Where manual

controls are available for staff use, they should be provided with labels that clearly define their function.

Piped medical gases and vacuum

4.31 Medical gases should be provided in accordance with HTM 2022 – 'Medical gas pipeline systems'.

Oxygen

4.32 The main facility's vacuum insulated evaporator (VIE) system should have capacity to satisfy the requirements of in-patient facilities for older people. Should this not be the case, consideration should be given to increasing the capacity of the VIE.

4.33 The provision of a local oxygen manifold should not normally be necessary except in the case of a "stand-alone" facility.

Medical vacuum

4.34 The main facility's medical vacuum system should be able to support in-patient facilities for older people.

4.35 If this is not the case, a separate medical vacuum plant consisting of two identical pumps, a vacuum reservoir with by-pass facilities, two duplex bacteria filters with drainage traps, appropriate non-return valves, isolating valves, gauges and switches, an operating and indicating system, an exhaust system and a test point should be provided. The plant should have good all-round access for maintenance and should be sited to allow for adequate flows of air to cool the pumps.

4.36 Due consideration should be given to the containment of noise from the plant. A suitable acoustic enclosure may be required to effect compliance with the noise levels deemed acceptable in HTM 2022.

Medical (400 kPa) compressed air

4.37 A limited requirement for medical compressed air may be met from cylinders.

Fire protection systems

4.38 Fire protection systems should comply with the requirements of 'Firecode'.

Drainage systems

Internal drainage

4.39 The internal drainage system should:

- use the minimum of pipework;
- remain water- and air-tight at joints and connectors;
- have sufficient ventilation to retain the integrity of water seals.

4.40 The facility should be provided with a system of soil and waste drainage including anti-siphon and ventilation pipe work in accordance with BS EN 12056-1.

4.41 Where plastic pipework materials are used, suitable intumescent collars should be fitted when breaching fire compartments. Acoustic wrapping should be applied when drainage runs above patient areas.

4.42 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, will normally limit the gradient to about 1:50 (20 mm/m). For larger pipes, for example 100 mm in diameter, the gradient may be less, but this will require high-quality workmanship if an adequate self-cleaning flow is to be maintained. Pipes larger than 100 mm diameter should not be required within inter-floor or ground-floor systems serving this facility.

4.43 Bedpan washers or macerators should discharge with a short branch to a vertical stack or horizontal drain. The waste pipe should not be installed above or close to heating or hot-water mains. If a bedpan washer or macerator discharges to a 100 mm drain, frequently-used large-volume appliances should be situated upstream of its connection to provide additional flushing.

4.44 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 facility.

ELECTRICAL ENGINEERING SERVICES

General

4.45 Electrical services should include:

- distribution board;
- emergency electrical supplies;
- small power distribution systems;
- lighting systems;
- IT cabling systems;
- telephone systems;
- security systems;
- staff call, public address and entertainment systems;
- lightning protection.

4.46 Electrical installations should comply with BS 7671 (IEE Regulations – 16th edition) and HTM 2007.

4.47 Mains-borne and electrical radio frequency interference, which may affect monitoring equipment, computers or other sensitive electronic equipment, should be avoided.

Distribution board

4.48 Access to electrical equipment rooms must be secure, and entry restricted to authorised and competent persons only.

4.49 Wherever possible, equipment should be mounted at a height that gives safe and easy access from a standing position. All switchgear should be lockable in the "off" position.

Emergency electrical supplies

4.50 Emergency electrical provision should comply with HTM 2011 – 'Emergency electrical services'.

4.51 If an existing generator is to be used, the extent of emergency coverage will be dependent on the spare capacity available and subject to a minimum provision. If this minimum requirement cannot be met, the existing generator should be replaced with a larger set, or an additional, dedicated generator provided.

4.52 Equipment and systems that cannot tolerate the delay inherent in bringing a generator supply on line, such as computers, should be further protected against outages by the provision of solid-state non-interruptible power supplies.

4.53 In the event of a main supply or local final circuit failure, escape routes should be illuminated by self-contained, battery-powered luminaires charged continuously from the main supply and capable of providing illumination for a period of three hours.

Small power distribution systems

4.54 Depending upon the available capacity of the emergency generator installation, it may be necessary to provide separate essential and non-essential small power distribution systems, as detailed in HTM 2011.

4.55 In accordance with the requirements of the room data sheets, 13-amp switched and shuttered socket-outlets, connected to ring or spur circuits, should be provided.

4.56 Where there is separation between essential and non-essential small power distribution, socket-outlets served by the essential distribution should be clearly marked with an engraved red capital letter "E".

4.57 Wherever possible, cables and cable containment systems should be concealed behind walls and ceilings.

4.58 The special requirements of BS 7671 (IEE Regulations – 16th edition) Guidance Note 7 (Special Locations) in respect of medical locations and associated areas should be adhered to. The electrical supply connections to all medical electrical equipment should comply with BS EN 60601-1-2.

4.59 For guidance on the power supply requirements for mobile radiodiagnostic equipment see HTM 2011. For guidance on engineering accommodation for this equipment see HBN 6 – 'Facilities for diagnostic imaging and interventional radiology'.

4.60 Where equipment is permanently installed, or where there is a possibility of equipment theft, switched double-pole 13-amp spur outlets should be used in preference to socket-outlets. The spur outlet should incorporate a red neon lamp indicating when the supply to the equipment is live.

4.61 Equipment requiring a three-phase supply should be permanently connected to a separate sub-circuit. The sub-circuits, incorporating a circuit breaker, should be fed from the distribution board and terminate in a local isolator.

4.62 Circulation areas, such as corridors and lobbies, should be large enough for the use of cleaning equipment with flexible cords of up to 9 metres long.

4.63 Isolation switches should be provided immediately adjacent to all engineering plant and equipment and clearly labelled to identify the equipment that they relate to.

4.64 Electric heating appliances and automatic equipment should be provided with red neon lamps indicating when they are energised. The lamps should be incorporated in the control panel of the equipment, in the control switch, or in the socket-outlet or spur unit from which the equipment derives its supply.

Lighting

General

4.65 To achieve energy efficiency, lighting systems should:

- maximise natural daylight;
- avoid unnecessarily high levels of illumination;
- incorporate efficient luminaires, control gear and lamps;
- incorporate effective controls.

4.66 See CIBSE Guide F – 'Energy efficiency in buildings' for further information.

4.67 For detail regarding illumination levels, designers should consult BS EN 12464, BS EN 60598-2-25 and IEC 60598-2-25.

4.68 Lighting should coordinate with architectural design and be sympathetic to the requirements for a non-clinical environment, where possible. Decorative finishes should be compatible with the type of luminaire and ensure that distribution of the light source is not adversely affected. See also 'Lighting and colour for hospital design – a report on an NHS Estates-funded research project' (Dalke et al, 2004).

4.69 Lighting switches should be provided in easily-accessible positions within each area, and at appropriate locations in corridors and general circulation areas. In areas with multiple luminaires, switching should permit the selection of luminaires appropriate only to that area requiring illumination.

4.70 Where local circumstances permit, the provision of time switches or occupancy controls using infrared, acoustic or ultrasonic detectors should be considered.

4.71 Generally, luminaires should consist of fluorescent lamps equipped with low-loss or high-frequency control gear. Compact fluorescent, LV or tungsten lamps may be used where design dictates a particular ambience.

4.72 Where necessary, general lighting should be supplemented with dedicated task lighting.

4.73 In areas where visual display terminals are in use, lighting should be designed to avoid any bright reflections from the screen. Generally, the lighting in such circumstances should comply with the guidance given in CIBSE LG3 – 'The visual environment for display screen use'.

4.74 Safety escape lighting should be provided on primary escape routes in accordance with the provisions of HTM 2011 and BS EN 12464-1: 2002 'Light and lighting: Lighting of workspaces'.

Special lighting (treatment rooms)

4.75 An examination luminaire should be provided over each treatment chair/couch. It should be adjustable in pitch and rotation to allow the beam to be directed locally. Reasonably shadow-free illumination, with negligible heat development, should be provided to avoid injury to patient and staff. The examination luminaires should be manufactured and tested in accordance with the requirements specified in the relevant sections of BS 4533.

Controlled drugs cupboard

4.76 Cupboards to contain controlled drugs in a secure manner should be provided to BS 2881 – 'Specification for hospital cupboards (wall fixing) for poisons and dangerous drugs'.

4.77 Each controlled drugs cupboard should be fitted with a red lamp indicating when the cupboard is unlocked. A repeater lamp should be sited outside the doorway of the room in which the cupboard is located. If appropriate, a secondary repeater should be taken to a permanently staffed station.

4.78 The normal supply for each cupboard should be backed up by a small UPS to cover the short period between mains failure and the generator supply becoming available.

Bedhead systems

4.79 Bedhead provision will depend on the needs of patients. Confused or distressed patients may inadvertently abuse nurse call and emergency call systems, with consequent waste of staff time. The incorporation of a commercial system that incorporates all entertainment functions including radio, television and telephone may be appropriate in some circumstances but not in others.

4.80 In general, each bedhead unit should provide the following:

- 13-amp switched and shuttered socket-outlets;
- oxygen and medical vacuum outlets;
- bedhead luminaire switch;
- nurse call button/indicator lamp;
- staff/staff emergency pull switch;
- socket for patient handset;
- IT connection(s);
- radio/TV headset connection;
- telephone connection;
- entertainment system (optional).

4.81 A handset control should also be provided, incorporating:

- nurse call button;
- reassurance lamp;
- luminaire switch/dimmer control;
- radio/TV selector switch;
- radio/TV volume control.

Fire detection

4.82 Fire detectors throughout the facility should generally be of the ionisation type.

Information technology (IT) and telephone systems

4.83 Provision of IT and telephone infrastructure will be conditioned by existing systems within the hospital. However, where possible, a structured wiring system as described in HGN 'Structured cabling for IT systems' should be provided. This will permit a unified approach to the provision of cabling for:

- voice systems;
- data systems;
- imaging systems;
- alarm systems.

4.84 This "universal" cabling system may be initially more expensive than separate voice and data systems; however, the long-term cost of ownership is less.

4.85 In determining the nature of the IT system to be provided it is necessary to identify:

- areas to be served;
- whether structured cabling will be used;
- what density of outlets is to be provided (not less than two per workstation);
- whether wiring will be on a "flood" or "as required" basis;
- what the special requirements of imaging and picture archiving systems may be.

Telephone systems

4.86 The extent and complexity of telephone equipment and associated infrastructure will be dependent on the size of the facility.

4.87 As stated above, it may be beneficial to integrate voice cabling with the structured wiring system for IT, if provided.

4.88 Incoming calls should be routed through the reception. However, depending on the size of the facility, a limited number of direct dial inwards (DDI) lines may be required.

4.89 A properly planned telephone system will provide prompt intercommunication facilities between all extensions. Abbreviated dialling can be used for a range of frequently called extension numbers. Consequently, reasons for providing a separate intercommunication system should be clearly shown.

4.90 Coin- and/or card-operated payphones should be provided in the main entrance, preferably in sight of reception, where any abuse of the equipment can be observed. Payphones should incorporate acoustic hoods to facilitate privacy. At least one payphone should be accessible to disabled people.

Closed-circuit television (CCTV) systems

4.91 Where required, closed-circuit television (CCTV) should be used to monitor movement within the facility. Monitors should be positioned in order to preserve patient privacy. Security CCTV may be required to interface to the whole hospital system.

4.92 CCTV systems may also be installed in waiting areas and connected to monitors in staff circulation areas, such as processing and staff rest rooms, in order to observe people entering the department.

Security systems

4.93 Areas that are only used during the day, such as out-patient clinics, should be protected "out of hours" by an intruder alarm system complying with BS 4737, BS EN 50131 or BS 5979 as appropriate.

4.94 Walkways, car park areas and the main entrance should be well illuminated at all times. Points of ingress and egress from the facility, and departments within it, should be monitored by high-definition CCTV equipped with pan and tilt facility and capable of producing high-quality images at low levels of light. Positioning of cameras should give maximum field of coverage. Monitors should be sited at a location that is permanently manned whilst the building is in use.

4.95 Access to wards should be protected by an electronic access control system.

4.96 Personal attack alarms should be made available to vulnerable staff, preferably capable of identifying the location of a member of staff in difficulty.

Patient/staff call systems

4.97 Patient/staff call points should be provided in all spaces where patients may be left alone temporarily, such as rooms for consultation, examination and treatment rooms, and patient WCs. Each call unit should comprise a push button or pull cord, reassurance lamp and reset unit. The audible alarm signal should operate for one second at ten-second intervals, with corresponding lamps lit continuously until cancelled. Alarms should be accessible.

4.98 Particular care should be taken when choosing and siting call systems for use whilst a patient is undergoing treatment, for example within a linear accelerator.

4.99 Staff/staff call points should be provided in all spaces where staff consult, examine and treat patients. Call systems should generally comprise a switch (pull to call, push to reset) and reassurance lamp. The audible alarm signal initiated by the staff should operate intermittently at half-second intervals, with corresponding lamps flashing on and off at the same rate.

4.100 A visual and audible indication of operation of each system should be provided at the staff base to give responding staff unambiguous identification of the call source, with a repeater unit in the staff rest room.

4.101 Where patients may temporarily be left alone, a staff call system should be provided to permit the summoning of assistance if required. The alarm should be accessible.

Public address systems

4.102 Each waiting area may be provided with a simple, dedicated, public address system to advise patients of their turn for consultation. This audio system should, where appropriate, be supplemented by both a hearing aid loop system and a visual system to cater for the needs of persons with hearing impairment, or whose first language is not English.

Public area entertainment

4.103 Cabling provision should be made for television/ video and piped music/radio systems in waiting areas.

Lightning protection

4.104 Protection of the building against lightning should be provided in accordance with HTM 2007 and BS 6651.

5 Cost information

INTRODUCTION

5.1 Building costs and revenue expenditure for all types of healthcare facility should be kept as low as possible and consistent with requirements. In applying the guidance, the need for economy should always be of prime concern. Where appropriate, space should be shared between similar activities taking place at different times. However, this solution should not be detrimental to the proper functioning of the spaces involved nor to the needs of users.

5.2 This document provides a synopsis of the accommodation recommended by the Department of Health for the provision of in-patient facilities for older people.

DEPARTMENTAL COST ALLOWANCE GUIDES (DCAGs)

5.3 Departmental Cost Allowance Guides (DCAGs) related to this HBN are published in 'Quarterly Briefing'. For a full listing of all DCAGs see 'Healthcare Capital Investment', available from http://www.nhsestates.gov.uk.

5.4 The Business Case Guide section of the Capital Investment Manual (CIM) reflects recent changes in the NHS and in patterns of healthcare delivery. The processes outlined in the guide are designed to reduce planning work and encourage the production of sound business case support of both capital and revenue expenditure. Capital works estimates should be based, wherever applicable, on industry norms, such as DCAGs, plus a percentage to cover for on-costs.

5.5 The DCAGs for this HBN reflect the total building and engineering requirements and accommodation that in-patient facilities for older people will require when incorporated into a community hospital where the common use of services will be available. Costs are based on a typical two-storey new-build unit, on a greenfield site with no planning constraints.

5.6 DCAGs are exclusive of Value Added Tax (VAT), building and planning fees and all local authority charges, and are based on a location factor of 1.

ON-COSTS

5.7 An allowance for on-costs (such as external works, external engineering services and abnormals) should be added to the DCAGs. Abnormals will largely be determined by site characteristics (such as an inner-city location or poor ground conditions) and by the condition or type of an existing building to be refurbished.

5.8 Project teams should assess all likely on-cost implications of individual sites and schemes at the earliest opportunity.

LOCATIONAL FACTORS

5.9 Locational factor adjustments should be applied to the works costs. Works costs are the total of the DCAGs plus established on-costs, to take into account local market conditions. For further information, see 'Quarterly Briefing'.

SCHEDULES OF ACCOMMODATION

5.10 The schedules of accommodation at the end of this chapter show departmental examples, which highlight the scope for sharing accommodation.

5.11 Areas are given for guide purposes only and will alter depending on the design solution. DCAGs have been calculated using the example units as a cost base. The examples are not to be taken as ideal provision for any particular project.

5.12 Example 1, department comprising:

- external main entrance facilities;
- therapy facilities;
- 12 single and 2 x 4 multi-bed rooms in-patient accommodation;
- staff accommodation.

5.13 Example 2, department comprising:

- shared external main entrance facilities;
- 8 single and 3 x 4 multi-bed rooms in-patient accommodation;
- staff accommodation.

5.14 Example 3, department comprising:

- external main entrance facilities;
- therapy facilities;
- 20 single-bed room in-patient accommodation;
- staff accommodation.

5.15 Example 4, department comprising:

- shared external main entrance facilities;
- 20 single-bed room in-patient accommodation;
- staff accommodation.

DIMENSIONS AND AREAS

5.17 The critical dimensions of an area are determined by the spatial requirements of any activities to be carried out within it. Studies to establish dimensional requirements, in the form of critical dimensions, appear as ergonomic diagrams in HBN 40 Volumes 1–4.

5.18 Planning teams should have data available at the earliest stages of a project to enable the approximate assessment of sizes involved. Areas prepared for the purpose of establishing cost allowances are listed in the schedules of accommodation at the end of this chapter. Areas published do not represent recommended sizes and should not be regarded as specific individual entitlements.

5.19 Efficient planning of the building may also necessitate variation of areas. For example, in the refurbishment or conversion of older property:

- rooms tend to be larger than the recommended area;
- some rooms may be too small or in the wrong location for efficient use;
- circulation space tends to form a larger than normal proportion of the total area.

CIRCULATION

5.20 All internal corridors, small vertical ducts, spaces occupied by partitions and walls, and other space for circulation are costed in the DCAGs. Provision is also made for a 5% planning zone and a 3% engineering zone adjacent to the external walls.

5.21 Circulation figures included in the DCAGs are those anticipated for new-build facilities. Where constraints are encountered, for example in refurbishment or conversion of older types of property, this figure will increase and some adjustment may be necessary.

COMMUNICATIONS

5.22 Staircases and lifts are not included in the DCAGs. Costs related to these elements, along with a suitable space allowance, should be made in the on-costs.

LAND COSTS

5.23 DCAG costs are exclusive of all land costs and associated fees. However, costs associated with these should be included in business case submissions (as detailed in CIM), and could therefore be an important part of the overall cost viability of a scheme.

ENGINEERING SERVICES

5.24 The following engineering services are included in the cost allowances. Primary engineering services are assumed to be conveniently available at the boundary of the department.

5.25 Mechanical services:

- **heating** low-pressure hot-water system;
- **ventilation** mechanical supply to, and extraction from, all clinical areas and areas such as WCs and showers. Ventilation plant, such as air handling units or extract fans, is not included in the cost allowances;
- **cold water service** central supply to service points including drinking water. Storage tanks are excluded;
- **hot water service** supply from a central system. Storage and generation are excluded;
- **piped medical gases** oxygen, medical compressed air and vacuum. An emergency 2 x 1 oxygen manifold is included in the cost allowances; medical compressed air and vacuum plant are excluded.

5.26 Electrical services;

- departmental distribution boards;
- general lighting, as required by task;
- examination lighting (examination lamps);
- emergency luminaires, as appropriate;
- socket-outlets and other power outlets for fixed and portable equipment;
- supplementary equipotential earth bonding;
- UPS supplies and equipment;
- fire alarm system;
- TV/radio wireways only;

- telephone internal cabling distribution and outlets – handsets excluded;
- data wireways only.

5.27 Equipment (Group 1):

- water boiler in staff room;
- drugs cupboards.

SCHEDULES OF ACCOMMODATION

Example 1: In-patient facilities for older people; Intermediate care

Notes:
All multi-bed single bedrooms are provided with either general access, accessible or assisted bathroom/shower facilities
Additional treatment facilities for out-patients, as described in paragraph 3.62, are not included for in these schedules
Library and staff sleeping facilities as described in paragraph 3.57 not included in schedules of accommodation

Department comprising

External main entrance facilities	Included
Therapy facilities	Included
In-patient accommodation – single rooms	12 bedrooms (60%)
In-patient accommodation – multi-bed rooms	8 beds – 2 x 4 bed rooms
Staff accommodation	Included

Activity Space	Qty	Area	Total Area	Para Ref	Notes
Entrance, reception and waiting facilities					
Vehicle drop-off point	1	–	–	Para 3.2	Designated Project-specific Includes ambulance provision
Car parking spaces	–	–	–	Para 3.3	Project-specific External allowance
Car parking spaces for people with disabilities	–	–	–	Para 3.3	Project-specific External allowance
Main entrance draught lobby	1	11.0	11.0	Para 3.4	Includes entrance canopy area
Public telephone: single booth	1	1.5	1.5	Para 2.64, 4.94	–
Public telephone: single booth, accessible	2	2.0	4.0	Para 2.64, 4.94	–
Reception: 1 staff	1	4.0	4.0	Para 3.5	–
Waiting area: 5 persons including 1 wheelchair user	1	9.0	9.0	Para 3.6	–
WC and handwash: accessible, wheelchair-assisted	1	4.5	4.5	Para 3.6	–
In-patient facilities					
Single bedroom: Older people	12	19.0	228.0	Para 3.29	–
Bath, WC and wash: ambulant	4	5.0	20.0	Para 3.24	–
Shower, WC and wash: ambulant	4	5.0	20.0	Para 3.24	–
Bath, WC and wash: accessible, wheelchair-assisted	2	8.5	17.0	Para 3.24	–
Shower, WC and wash: accessible, wheelchair-assisted	2	7.0	14.0	Para 3.24	–
Multi-bed room: Older people, 4 beds	2	61.5	123.0	Para 3.29	–
Bath, WC and wash: accessible, wheelchair-assisted	1	8.5	8.5	Para 3.24	–
Shower, WC and wash: accessible, wheelchair-assisted	1	7.0	7.0	Para 3.24	–
Day and visiting facilities					
Sitting room: 20 patients	1	36.0	36.0	Para 3.36	–
Sitting room: 5 patients	1	10.0	10.0	Para 3.39	Optional women only
Dining room: 20 patients	1	30.0	30.0	Para 3.41	–
Pantry cook-chill/hot trolleys: serving up to 24 persons	1	12.0	12.0	Para 3.45	–
Beverage and snack preparation bay	1	6.0	6.0	Para 3.40	Optional
Clinical facilities					
Staff base: 3 staff	1	9.0	9.0	Para 3.56, 3.59	–
Treatment room: general and UVL, both sides couch access, 1 patient	1	16.5	16.5	Para 3.60	–
Treatment room: non-sterile procedures	1	16.5	16.5	Para 3.60	–
Clean utility	1	14.0	14.0	Para 2.79	–
Dirty utility: bedpan disposal and urine test	1	12.0	12.0	Para 2.74, 2.79	–

Activity Space	Qty	Area	Total Area	Para Ref	Notes
Therapy facilities					
Treatment room: Physiotherapy, traction, 1 patient	1	12.0	12.0	Para 3.61	–
Activity area: Physiotherapy, 5 patients	1	50.0	50.0	Para 3.48	–
Store: exercise equipment, activity area	1	6.0	6.0	Para 2.75	–
Treatment room: Speech therapy, 1 patient	1	15.0	15.0	Para 3.49	–
Light activity area: Occupational therapy, 5 patients	1	21.0	21.0	Para 3.50	–
Store: materials, equipment and on-going work	1	9.0	9.0	Para 3.50	–
Garden/outdoor areas	–	–	–	Para 3.65	Project-specific External allowance
Activities of daily living (ADL) facilities					
Activities of daily living: bathroom	1	13.0	13.0	Para 3.52	See HBN Figure 4
Activities of daily living: shower	1	8.0	8.0	Para 3.52	–
Activities of daily living: kitchen	1	29.5	29.5	Para 3.54	See HBN Figure 6
Activities of daily living: bedroom	1	15.0	15.0	Para 3.55	–
Support facilities: Sanitary					
WC and hand-wash: semi-ambulant	2	2.5	5.0	Para 3.18	–
WC dual access and hand-wash: accessible, wheelchair-assisted	2	5.5	11.0	Para 3.18	–
Bath, WC and wash: accessible, wheelchair-assisted	2	8.5	17.0	Para 3.24	–
Bath, WC and wash: assisted	1	13.0	13.0	Para 3.25	–
Staff support facilities					
Office: 1 staff	1	10.5	10.5	Para 3.57	Manager
Office: 2 staff	2	13.0	26.0	Para 3.57	Administration and secretarial staff
Staff changing room: with cubicle and handwash: 10 places	1	14.0	14.0	Para 3.56	Male staff
Staff changing room: with cubicle and handwash: 20 places	1	18.0	18.0	Para 3.56	Female staff
WC and wash: ambulant	2	2.0	4.0	Para 3.56	–
Shower: ambulant (non patient)	2	2.5	5.0	Para 3.56	–
Rest room with beverage and snack preparation bay: 10 staff	1	18.0	18.0	Para 3.58	Optional
Seminar room: 10 persons	1	20.0	20.0	Para 3.57	Optional
Support facilities					
Parking and recharging bay: electric wheelchair and electric buggies	1	9.0	9.0	Para 2.76	–
Store: ready-to-use medical gas cylinders	1	4.0	4.0	Para 2.73	Optional
Store: linen	1	6.0	6.0	Para 2.74	–
Store: clinical equipment	1	12.0	12.0	Para 2.74	–
Store: equipment and supplies	1	18.0	18.0	Para 2.74	–
Laundry room	1	8.0	8.0	Para 2.79	Optional
Hold: disposal	1	10.0	10.0	–	–
Cleaners' (Housekeeping) room	1	7.0	7.0	–	–
Switchgear room	1	4.0	4.0	–	–
Net Allowance			1051.5		
5% Planning Allowance			52.5		
Total			1104.0		
3% Engineering Allowance			33.0		
30% Circulation Allowance			331.0		
Total Allowance			**1468.0**		

Optional accommodation

Activity Space	Qty	Area	Gross Area	Para Ref	Notes
Sitting room: 5 patients	1	10.0	13.5	Para 3.36	–
Pantry: serving ward	1	12.0	16.0	Para 3.45	Option to cook-chill

Example 2: In-patient facilities for older people; Intermediate care

Notes:

Therapy spaces stated as elsewhere are deemed to be within the main hospital accommodation or an associated day care facility
All multi-bed single bedrooms are provided with either general access, accessible or assisted bathroom/shower facilities
Additional treatment facilities for out-patients, as described in paragraph 3.62, are not included for in these schedules
Library and staff sleeping facilities as described in paragraph 3.57 not included in schedules of accommodation

Department comprising

External main entrance facilities	Shared
Therapy facilities	Elsewhere (ECA)
In-patient accommodation – single rooms	8 bedrooms (40%)
In-patient accommodation – multi-bed rooms	12 beds – 3 x 4 bed rooms
Staff accommodation	Included

Activity Space	Qty	Area	Total Area	Para Ref	Notes
Entrance, reception and waiting facilities					
Public telephone: single booth	1	1.5	1.5	Para 2.64, 4.94	–
Public telephone: single booth, accessible	2	2.0	4.0	Para 2.64, 4.94	–
Waiting area: 5 persons including 1 wheelchair user	1	9.0	9.0	Para 3.6	–
WC and hand-wash: accessible, wheelchair-assisted	1	4.5	4.5	Para 3.6	–
In-patient facilities					
Single bedroom: Older people	8	19.0	152.0	Para 3.29	–
Bath, WC and wash: ambulant	2	5.0	10.0	Para 3.24	–
Shower, WC and wash: ambulant	2	5.0	10.0	Para 3.24	–
Bath, WC and wash: accessible, wheelchair-assisted	2	8.5	17.0	Para 3.24	–
Shower, WC and wash: accessible, wheelchair-assisted	2	7.0	14.0	Para 3.24	–
Multi-bed room: Older people, 4 beds	3	61.5	184.5	Para 3.29	–
Bath, WC and wash: accessible, wheelchair-assisted	2	8.5	17.0	Para 3.24	–
Shower, WC and wash: accessible, wheelchair-assisted	1	7.0	7.0	Para 3.24	–
Day and visiting facilities					
Sitting room: 20 patients	1	36.0	36.0	Para 3.36	–
Sitting room: 5 patients	2	10.0	20.0	Para 3.36	–
Sitting room: 5 patients	1	10.0	10.0	Para 3.39	Optional women only
Dining room: 20 patients	1	30.0	30.0	Para 3.41	–
Pantry: serving ward	1	12.0	12.0	Para 3.45	–
Clinical facilities					
Staff base: 3 staff	1	9.0	9.0	Para 3.56, 3.59	–
Treatment room: general and UVL, both sides couch access, 1 patient	1	16.5	16.5	Para 3.60	–
Treatment room: non-sterile procedures	1	16.5	16.5	Para 3.60	–
Clean utility	1	14.0	14.0	Para 2.79	–
Dirty utility: bedpan disposal and urine test	1	12.0	12.0	Para 2.74, 2.79	–
Support facilities: Sanitary					
WC and hand-wash: semi-ambulant	2	2.5	5.0	Para 3.18	–
WC dual access and hand-wash: accessible, wheelchair-assisted	2	5.5	11.0	Para 3.18	–
Bath, WC and wash: accessible, wheelchair-assisted	2	8.5	17.0	Para 3.24	–
Bath, WC and wash: assisted	2	13.0	26.0	Para 3.25	–
Staff support facilities					
Office: 1 staff	1	10.5	10.5	Para 3.57	Manager
Office: 2 staff	2	13.0	26.0	Para 3.57	Administration and secretarial staff
Staff changing room: with cubicle and handwash: 10 places	1	14.0	14.0	Para 3.56	Male staff
Staff changing room: with cubicle and handwash: 20 places	1	18.0	18.0	Para 3.56	Female staff
WC and wash: ambulant	2	2.0	4.0	Para 3.56	–
Shower: ambulant (non-patient)	2	2.5	5.0	Para 3.56	–

Activity Space	Qty	Area	Total Area	Para Ref	Notes
Support facilities					
Parking and recharging bay: electric wheelchair and electric buggies	1	9.0	9.0	Para 2.76	–
Store: linen	1	6.0	6.0	Para 2.74	–
Store: clinical equipment	1	12.0	12.0	Para 2.74	–
Store: equipment and supplies	1	18.0	18.0	Para 2.74	–
Hold: disposal	1	10.0	10.0	–	–
Cleaner's (Housekeeping) room	1	7.0	7.0	–	–
Switchgear cupboard	1	2.0	2.0	–	–
Net Allowance			807.0		
5% Planning Allowance			40.5		
Total			847.5		
3% Engineering Allowance			25.5		
30% Circulation Allowance			254.5		
Total Allowance			**1127.5**		

Optional accommodation

Activity Space	Qty	Area	Gross Area	Para Ref	Notes
Pantry cook-chill/hot trolleys: serving up to 24 persons	1	12.0	16.0	Para 3.45	Option to above provision
Beverage and snack preparation bay	1	6.0	8.0	Para 3.40	–
Rest room with beverage and snack preparation bay: 10 staff	1	18.0	24.5	Para 3.58	–
Seminar room: 10 persons	1	20.0	27.0	Para 3.57	–
Store: ready to use medical gas cylinders	1	4.0	5.5	Para 2.73	–
Laundry room	1	8.0	11.0	Para 2.79	–

Example 3: In-patient facilities for older people; Dementia care

Notes: Additional treatment facilities for out-patients, as described in paragraph 3.62, are not included for in these schedules
Library and staff sleeping facilities as described in paragraph 3.57 not included in schedules of accommodation

Department comprising

External main entrance facilities	Included
Therapy facilities	Included
In-patient accommodation – single rooms	20 bedrooms (100%)
Staff accommodation	Included

Activity Space	Qty	Area	Total Area	Para Ref	Notes
Entrance, reception and waiting facilities					
Vehicle drop-off point	1	–	–	Para 3.2	Designated Project-specific Includes ambulance provision
Car parking spaces	–	–	–	Para 3.3	Project-specific External allowance
Car parking spaces for people with disabilities	–	–	–	Para 3.3	Project-specific External allowance
Main entrance draught lobby	1	11.0	11.0	Para 3.4	Includes entrance canopy area
Public telephone: single booth	1	1.5	1.5	Para 2.64, 4.94	–
Public telephone: single booth, accessible	2	2.0	4.0	Para 2.64, 4.94	–
Reception: 1 staff	1	4.0	4.0	Para 3.5	–
Waiting area: 5 persons including 1 wheelchair user	1	9.0	9.0	Para 3.6	–
WC and handwash: accessible, wheelchair-assisted	1	4.5	4.5	Para 3.6	–
In-patient facilities					
Single bedroom: Older people	20	19.0	380.0	Para 3.29	–
Bath, WC and wash: ambulant	7	5.0	35.0	Para 3.24	–
Shower, WC and wash: ambulant	7	5.0	35.0	Para 3.24	–
Bath, WC and wash: accessible, wheelchair-assisted	3	8.5	25.5	Para 3.24	–
Shower, WC and wash: accessible, wheelchair-assisted	3	7.0	21.0	Para 3.24	–
Day and visiting facilities					
Sitting room: 20 patients	1	36.0	36.0	Para 3.36	–
Sitting room: 5 patients	1	10.0	10.0	Para 3.39	Optional women only
Dining room: 20 patients	1	30.0	30.0	Para 3.41	–
Dining room: 5 patients	1	12.0	12.0	Para 3.46	Optional
Pantry cook-chill/hot trolleys: serving up to 24 persons	1	12.0	12.0	Para 3.45	–
Beverage and snack preparation bay	1	6.0	6.0	Para 3.40	Optional
Clinical facilities					
Staff base: 3 staff	1	9.0	9.0	Para 3.56, 3.59	–
Treatment room: general and UVL, both sides couch access, 1 patient	1	16.5	16.5	Para 3.60	–
Clean utility	1	14.0	14.0	Para 2.79	–
Dirty utility: bedpan disposal and urine test	1	12.0	12.0	Para 2.74, 2.79	–
Distressed patient room (Calming room)	1	12.0	12.0	Para 3.63	–
Snoezelen room	1	12.0	12.0	Para 3.64	Optional
Therapy facilities					
Activity area: Physiotherapy, 5 patients	1	50.0	50.0	Para 3.48	–
Store: exercise equipment, activity area	1	6.0	6.0	Para 2.75	–
Treatment room: Speech therapy, 1 patient	1	15.0	15.0	Para 3.49	–
Light activity area: Occupational therapy, 5 patients	1	21.0	21.0	Para 3.50	–
Store: materials, equipment and on-going work	1	9.0	9.0	Para 3.50	–
Garden/outdoor areas	–	–	–	Para 3.65	Project specific External allowance
Activities of daily living (ADL) facilities					
Activities of daily living: bathroom	1	13.0	13.0	Para 3.52	See HBN Figure 4
Activities of daily living: shower	1	8.0	8.0	Para 3.52	–
Activities of daily living: kitchen	1	14.5	14.5	Para 3.54	See HBN Figure 5

Activity Space	Qty	Area	Total Area	Para Ref	Notes
Support facilities: Sanitary					
WC and hand-wash: semi ambulant	2	2.5	5.0	Para 3.18	–
WC dual access and hand-wash: accessible, wheelchair-assisted	2	5.5	11.0	Para 3.18	–
Bath, WC and wash: accessible, wheelchair-assisted	1	8.5	8.5	Para 3.24	–
Bath, WC and wash: assisted	1	13.0	13.0	Para 3.25	–
Staff support facilities					
Office: 1 staff	1	10.5	10.5	Para 3.57	Manager
Office: 2 staff	2	13.0	26.0	Para 3.57	Administration and secretarial staff
Staff changing room: with cubicle and hand-wash: 10 places	1	14.0	14.0	Para 3.56	Male staff
Staff changing room: with cubicle and hand-wash: 20 places	1	18.0	18.0	Para 3.56	Female staff
WC and wash: ambulant	2	2.0	4.0	Para 3.56	–
Shower: ambulant (non-patient)	2	2.5	5.0	Para 3.56	–
Rest room with beverage and snack preparation bay: 10 staff	1	18.0	18.0	Para 3.58	Optional
Seminar room: 10 persons	1	20.0	20.0	Para 3.57	Optional
Support facilities					
Parking and recharging bay: electric wheelchair and electric buggies	1	9.0	9.0	Para 2.76	–
Store: ready to use medical gas cylinders	1	4.0	4.0	Para 2.73	Optional
Store: linen	1	6.0	6.0	Para 2.74	–
Store: clinical equipment	1	12.0	12.0	Para 2.74	–
Store: equipment and supplies	1	18.0	18.0	Para 2.74	–
Laundry room	1	8.0	8.0	Para 2.79	Optional
Hold: disposal	1	10.0	10.0	–	–
Cleaners' (Housekeeping) room	1	7.0	7.0	–	–
Switchgear room	1	4.0	4.0	–	–
Net Allowance			1079.5		
5% Planning Allowance			54.0		
Total			1133.5		
3% Engineering Allowance			34.0		
30% Circulation Allowance			340.0		
Total Allowance			**1507.5**		

Optional accommodation

Activity Space	Qty	Area	Gross Area	Para Ref	Notes
Sitting room: 5 patients	1	10.0	13.5	Para 3.36	–
Pantry: serving ward	1	12.0	16.0	Para 3.45	Option to cook-chill

Example 4: In-patient facilities for older people; Dementia care

Notes:
Therapy spaces stated as elsewhere are deemed to be within the main hospital accommodation or an associated day care facility
Additional treatment facilities for out-patients, as described in paragraph 3.62, are not included for in these schedules
Library and staff sleeping facilities as described in paragraph 3.57 not included in schedules of accommodation

Department comprising

External main entrance facilities	Shared
Therapy facilities	Elsewhere (ECA)
In-patient accommodation – single rooms	20 bedrooms (100%)
In-patient accommodation – multi-bed rooms	–
Staff accommodation	Included

Activity Space	Qty	Area	Total Area	Para Ref	Notes
Entrance, reception and waiting facilities					
Public telephone: single booth	1	1.5	1.5	Para 2.64, 4.94	–
Public telephone: single booth, accessible	2	2.0	4.0	Para 2.64, 4.94	–
Waiting area: 5 persons including 1 wheelchair user	1	9.0	9.0	Para 3.6	–
WC and handwash: accessible, wheelchair-assisted	1	4.5	4.5	Para 3.6	–
In-patient facilities					
Single bedroom: Older people	20	19.0	380.0	Para 3.29	–
Bath, WC and wash: ambulant	7	5.0	35.0	Para 3.24	–
Shower, WC and wash: ambulant	7	5.0	35.0	Para 3.24	–
Bath, WC and wash: accessible, wheelchair-assisted	3	8.5	25.5	Para 3.24	–
Shower, WC and wash: accessible, wheelchair-assisted	3	7.0	21.0	Para 3.24	–
Day and visiting facilities					
Sitting room: 20 patients	1	36.0	36.0	Para 3.36	–
Sitting room: 5 patients	2	10.0	20.0	Para 3.36	–
Sitting room: 5 patients	1	10.0	10.0	Para 3.39	Optional women only
Dining room: 20 patients	1	30.0	30.0	Para 3.41	–
Pantry: serving ward	1	12.0	12.0	Para 3.45	–
Clinical facilities					
Staff base: 3 staff	1	9.0	9.0	Para 3.56, 3.59	–
Treatment room: general and UVL, both sides couch access, 1 patient	1	16.5	16.5	Para 3.60	–
Clean utility	1	14.0	14.0	Para 2.79	–
Dirty utility: bedpan disposal and urine test	1	12.0	12.0	Para 2.74, 2.79	–
Distressed patient room (Calming room)	1	12.0	12.0	Para 3.63	–
Support facilities: Sanitary					
WC and hand-wash: semi ambulant	2	2.5	5.0	Para 3.18	–
WC dual access and hand-wash: accessible, wheelchair-assisted	2	5.5	11.0	Para 3.18	–
Bath, WC and wash: accessible, wheelchair-assisted	1	8.5	8.5	Para 3.24	–
Bath, WC and wash: assisted	2	13.0	26.0	Para 3.25	–
Staff support facilities					
Office: 1 staff	1	10.5	10.5	Para 3.57	Manager
Office: 2 staff	2	13.0	26.0	Para 3.57	Administration and secretarial staff
Staff changing room: with cubicle and handwash: 10 places	1	14.0	14.0	Para 3.56	Male staff
Staff changing room: with cubicle and handwash: 20 places	1	18.0	18.0	Para 3.56	Female staff
WC and wash: ambulant	2	2.0	4.0	Para 3.56	–
Shower: ambulant (non patient)	2	2.5	5.0	Para 3.56	–

Activity Space	Qty	Area	Total Area	Para Ref	Notes
Support facilities					
Parking and recharging bay: electric wheelchair and electric buggies	1	9.0	9.0	Para 2.76	–
Store: linen	1	6.0	6.0	Para 2.74	–
Store: clinical equipment	1	12.0	12.0	Para 2.74	–
Store: equipment and supplies	1	18.0	18.0	Para 2.74	–
Hold: disposal	1	10.0	10.0	–	–
Cleaners' (Housekeeping) room	1	7.0	7.0	–	–
Switchgear cupboard	1	2.0	2.0	–	–
Net Allowance			879.0		
5% Planning Allowance			44.0		
Total			923.0		
3% Engineering Allowance			27.5		
30% Circulation Allowance			277.0		
Total Allowance			**1227.5**		

Optional accommodation

Activity Space	Qty	Area	Gross Area	Para Ref	Notes
Dining room: 5 patients	1	12.0	16.0	Para 3.46	–
Pantry cook-chill/hot trolleys: serving up to 24 persons	1	12.0	16.0	Para 3.45	Option to above provision
Beverage and snack preparation bay	1	6.0	8.0	Para 3.40	–
Snoezelen room	1	12.0	16.0	Para 3.64	–
Rest room with beverage and snack preparation bay: 10 staff	1	18.0	24.5	Para 3.58	–
Seminar room: 10 persons	1	20.0	27.0	Para 3.57	–
Store: ready to use medical gas cylinders	1	4.0	5.5	Para 2.73	–
Laundry room	1	8.0	11.0	Para 2.79	–

Appendix 1 – Case studies

Front elevation, Pulross Intermediate Care Centre, London (Photo: copyright Marcus Peel)

PULROSS INTERMEDIATE CARE CENTRE, BRIXTON, SOUTH LONDON

Service

The Pulross Intermediate Care Centre provides in-patient, day and community care to residents of the south London borough of Lambeth, including older people. The centre opened in September 2000 and is part of Lambeth Primary Care Trust (PCT). Most referrals are directly from general practitioners (GPs), with the majority of in-patients admitted direct from the community.

Twenty beds are available in the facility. Four beds are for respite care, two for palliative care and 14 for rehabilitation. Ward stays average about five weeks, and occupancy rates of over 80 per cent are normal. The rehabilitation beds primarily house patients requiring therapy such as physiotherapy and occupational therapy. Two beds are allocated to patients recovering from hip surgery. The in-patient service is nurse-led, and medical services are provided by visiting GPs.

Day rehabilitation services are also provided for Lambeth. Physiotherapy, occupational therapy, speech and language therapy, podiatry, foot care, and specialist clinics for problems including tissue viability, falls and stroke are available. Administrative space for community therapy staff is also provided, allowing continuity of care. Rooms within the centre are used outside regular hours for community education and other activities.

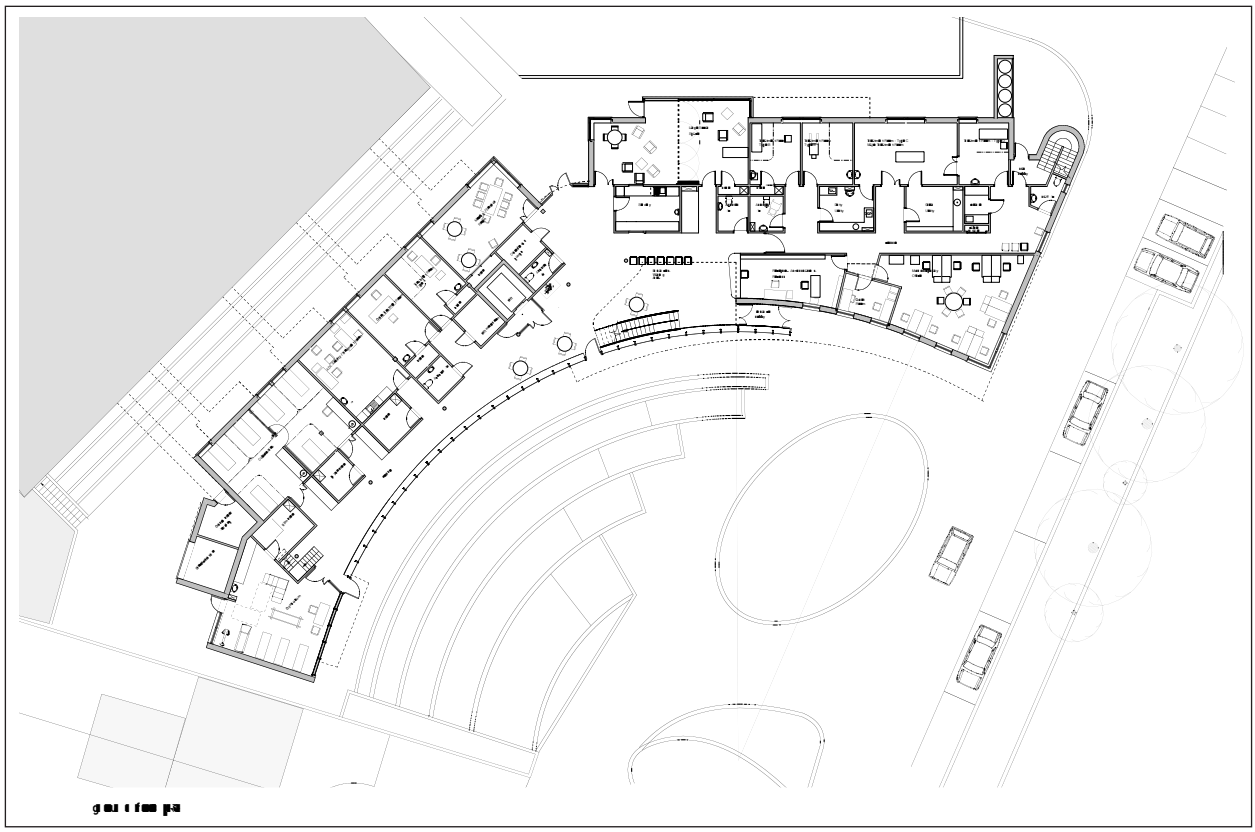


Figure 7 Pulross Intermediate Care Centre, ground floor plan

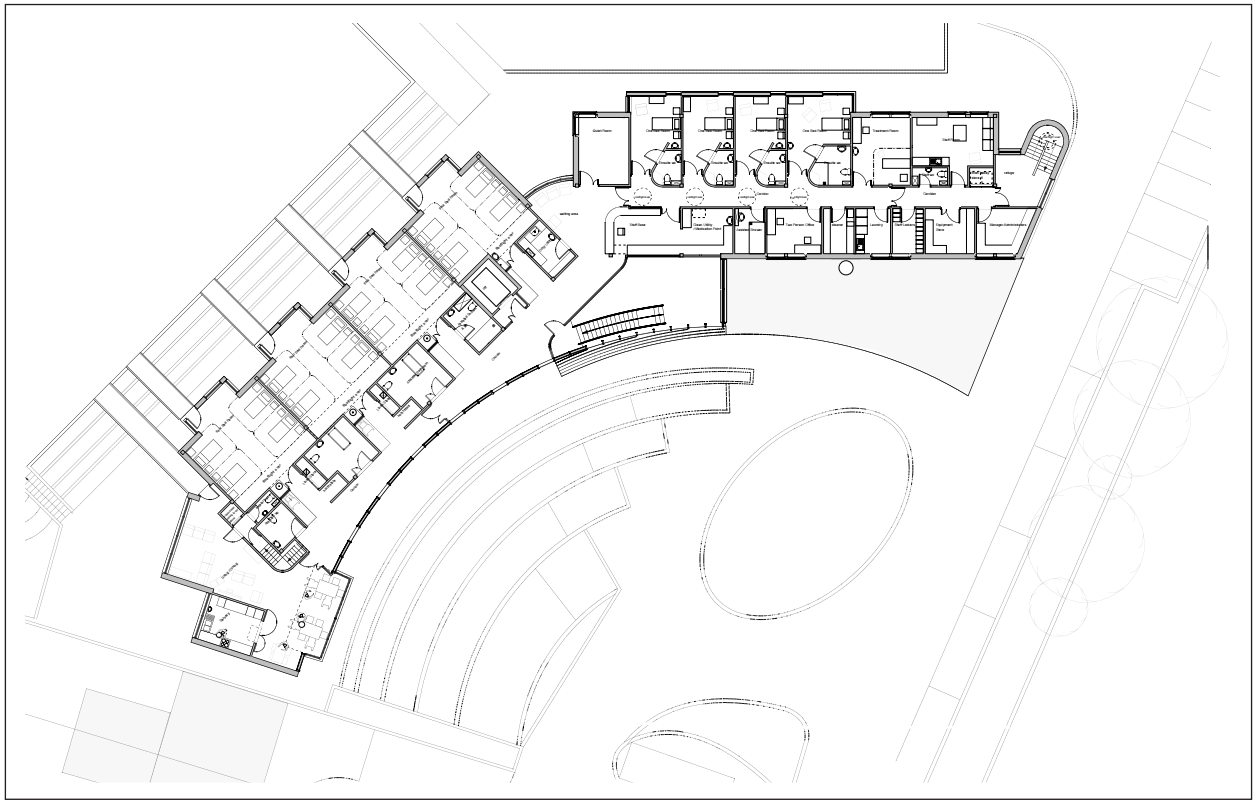
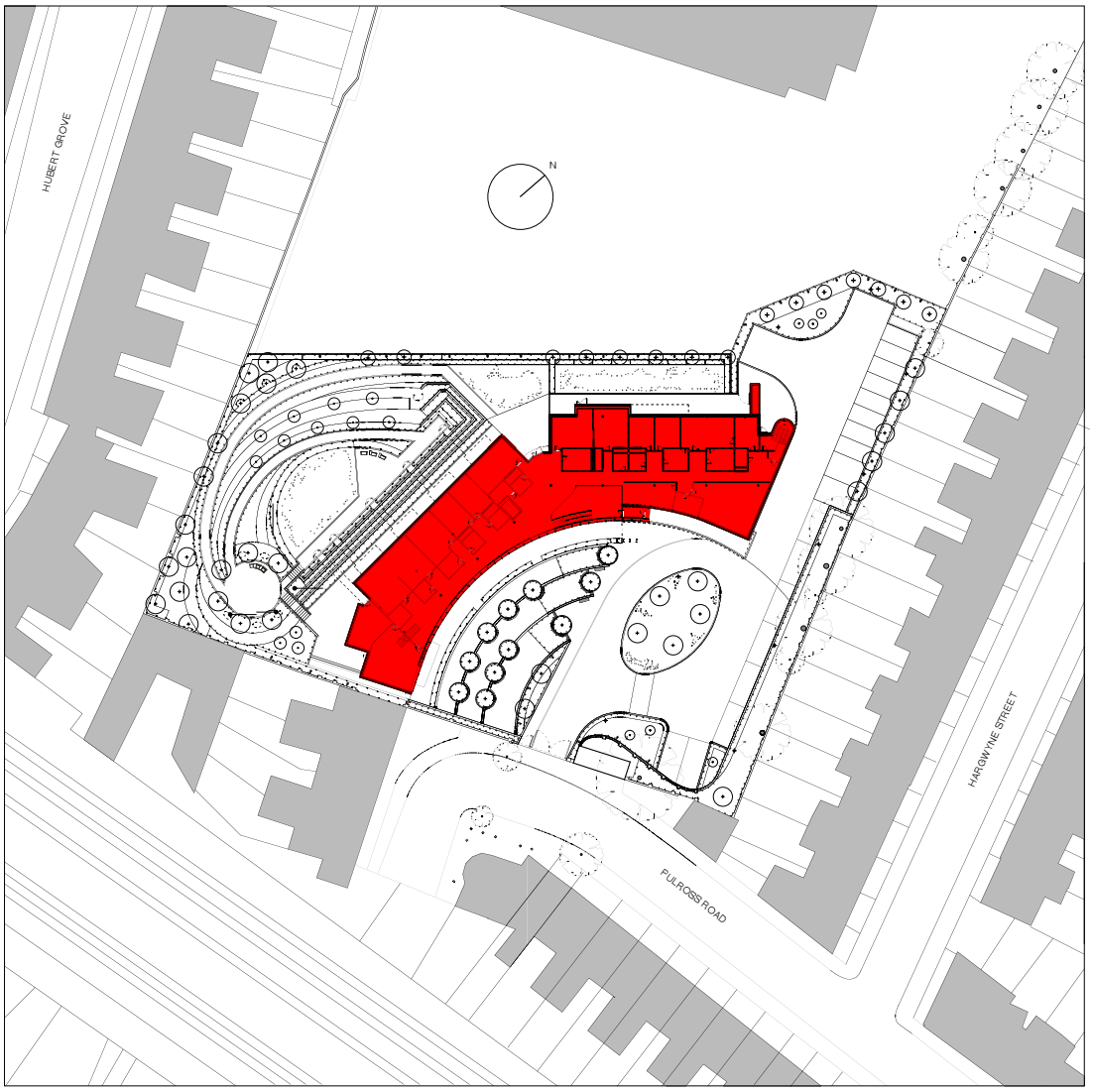


Figure 8 Pulross Intermediate Care Centre, first floor plan



location / site plan - not to scale
O/S map reference: TQ30581,75600

Figure 9 Pulross Intermediate Care Centre, site plan

Facility

The building is located in Brixton, south London, close to public transport links. It is on a quiet residential street with no through traffic. The building abuts onto residential property, with the most distinctive local feature being an intercity train track within 50 metres.

The architects for the design of this award-winning building were Penoyre and Prasad. It has a distinctive curved sweep and two-storey design, approached through a generous forecourt, which affords spaces for multiple ambulance traffic. Timber and glass dominate the front façade, and the interior of the downstairs day areas are clearly visible. The reception area is large, bright and airy with a double-height ceiling, and is flooded with light by the mainly glass wall. This lofty space allows immediate understanding of this public space by the users of the building. An open timber stair with glass balustrade leads to the in-patient areas on the upper floor.

Each floor of the building has two distinct blocks at shallow angles to each other. On the upper floor one block houses four four-bedded bays, each of which has the striking feature of a walking bridge leading to a raised garden behind the building. The other upper block houses single-bedded units (en-suite) and staff areas, including an open nursing station, utility rooms and offices.

On the ground floor the very large lobby, equipped with many seats and tables, allows access to a suite of therapy rooms including physiotherapy cubicles,

Rear garden, Pulross Intermediate Care Centre, London

physiotherapy exercise room, occupational therapy rooms, other rooms for speech and language therapy, podiatry and an operating theatre. Further rooms provide administrative space for staff.

The walkways from the four-bedded rooms provide access to a raised garden area with flower beds framed by recycled railway sleepers. A gentle slope leads down to the lower garden area, which is framed by planting and has an outdoor area accessible to day service users.

Comment

This building has been described as "that rare sighting in the UK: a public building of excellence, commissioned via competition" (Shonfield, 2001) and as "another jewel in the display of works of architecture of which the NHS can be truly proud" (Scher, 2001). The details of the building have made it suitable for its purpose, and it is generally popular with patients and staff.

The building is on a human scale. It blends in with local housing and connects well with the local area. It is well-lit and attractively furnished, and features a series of striking design features such as use of colour to identify particular circulation/clinical areas. Storage has been maximised by the use of redundant circulation areas. Outdoor spaces are well designed and arranged to encourage use by patients – which is particularly useful in rehabilitation. Access for ambulances is particularly well-organised, and finishes such as barriers on walls mean that equipment use need not degrade the environment.

The building is not without problems. Space, as in many facilities, cannot keep pace with increasing demands. Despite innovative design solutions, storage for large pieces of equipment is often limited. Absence of cross-ventilation has meant that the vast expanse of glass in the front curve can lead to high temperatures being a problem.

PRINCESS LOUISE OF KENSINGTON NURSING HOME

Service

The Princess Louise of Kensington Nursing Home is a 52-bedded facility which provides continuing care for frail older people (26 beds) and people with dementia (26 beds). It opened in August 2003 and is operated by Kensington and Chelsea PCT. Patients were transferred from a local continuing care facility and will be admitted from a variety of sources in the future. Continuing care is provided for patients with severe dementia and/or marked frailty. Services are nurse-led and two units, one for dementia patients and one for frail older people, are housed on separate storeys of the building.

Facility

The facility was designed by architects PRP and is housed in an established Victorian residential area at the intersection of two relatively quiet through roads in west London. The building is three-storey and has been thoughtfully designed to be sympathetic to the predominant local architectural style. The building is surrounded on four sides by a garden area. This includes a distinct pathway leading around and back to the main building. On one side is an old hospital building, still in use, and behind the rear garden is a children's playground. The building has views over a park area to the distinctive tower of St Charles's Hospital to the rear, and overlooks leafy residential streets on all other sides.

The ground floor of the building houses staff areas including kitchens, changing areas, rest rooms, laundry, spiritual room, private telephone, lift and patients' hairdressing salon.

The dementia care units on the ground and first floors are arranged in clusters of eight and nine beds. En-suite shower rooms are available in all rooms. Each cluster has its own dining area and sitting area. Dining and sitting areas are clearly visible through glass partitions in central areas of each cluster. One assisted bathroom is provided in each cluster, while an en-suite shower is available in each bedroom. Unassisted bathing is not available due to the care needs of the patients. Each single room has a ceiling-mounted hoist, allowing transfers to the en-suite without bulky storage of hoists. Arrangements on the unit for older frail people are similar.

Recessed doors to patient rooms, with use of distinctive colours to indicate the nature of the room, are included. Clusters of chairs are provided in bays in order to remove the impression of corridors without clear destinations. Colours are used to enable people with dementia to distinguish key areas, such as WCs and showers. People with dementia may require some

The Princess Louise of Kensington Nursing Home, London

The Princess Louise of Kensington Nursing Home, ground floor plan

The Princess Louise of Kensington Nursing Home, first floor plan

The Princess Louise of Kensington Nursing Home, site plan

nursing observation, and discreet observation hatches in doors provide this whilst respecting privacy – that is, the observer needs to go up to the door before the inside may be seen.

Comment

The facility opened in 2003, and it may be too soon to understand fully how it will work. The facility provides architecturally sympathetic housing and allows an unusual degree of connection with street activity – human traffic and children's play areas are visible at all times. The units are quiet and designed to maximise legibility, and also to encourage staff interaction with patients. The architectural detailing responds to the specific needs of people with dementia, making the environment easier to understand.

Appendix 2 – References

ACTS AND REGULATIONS

Food Safety Act 1990. The Stationery Office (HMSO), London.
http://www.hmso.gov.uk/acts/acts1990/Ukpga_19900016_en_1.htm

National Health Service and Community Care Act 1990. HMSO, London.

The Building Regulations 2000: Approved Document M: Access to and use of buildings, Department of the Environment. TSO, London, 2004.

Disability Discrimination Act 1995. HMSO, London.
http://www.hmso.gov.uk/acts/acts1995/Ukpga_19950050_en_1.htm

The Construction (Design and Management) Regulations. SI 3140:1994. HMSO, 1994.
http://www.legislation.hmso.gov.uk/si/si1994/Uksi_19943140_en_1.htm

The Control of Substances Hazardous to Health (COSHH) Regulations. SI 2002: 2677. HMSO, 2002.

The Gas Safety (Installation and Use) Regulations. SI 1886:1994. HMSO, 1994.
http://www.hmso.gov.uk/si/si1994/Uksi_19941886_en_1.htm

The Health and Safety at Work etc Act 1974. HMSO, 1974.

The Health and Safety (Safety Signs and Signals) Regulations. SI 341:1995. HMSO, 1995.
http://www.legislation.hmso.gov.uk/si/si1996/Uksi_19960341_en_1.htm

The Management of Health and Safety at Work Regulations. SI 3242:1999. HMSO, 1999.
http://www.legislation.hmso.gov.uk/si/si1999/19993242.htm

The Noise at Work Regulations. SI 1790:1989. HMSO, 1989.
http://www.legislation.hmso.gov.uk/si/si1989/Uksi_19891790_en_1.htm

The Pressure Systems Safety Regulations. SI 128:2000. HMSO, 2000.
http://www.legislation.hmso.gov.uk/si/si2000/20000128.htm

The Pressure Equipment Regulations. SI 2001:1999. HMSO, 1999.
http://www.hmso.gov.uk/si/si1999/19992001.htm

The Provision and Use of Work Equipment Regulations. SI 2306:1998. HMSO, 1998.
http://www.legislation.hmso.gov.uk/si/si1998/19982305.htm

The Workplace (Health, Safety and Welfare) Regulations. SI 3004:1992. HMSO, 1992.
http://www.legislation.hmso.gov.uk/si/si1992/Uksi_19923004_en_1.htm

DEPARTMENT OF HEALTH PUBLICATIONS

The NHS Plan: A plan for investment, a plan for reform. Department of Health, 2000.
http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4002960&chk=07GL5R

National Service Frameworks for Older People 2001. Department of Health
http://www.doh.gov.uk/nsf/olderpeople

Securing our future health: taking a long-term view. Wanless, D, 2002.
http://www.hm-treasury.gov.uk/wanless

NHS ESTATES PUBLICATIONS

Sustainable development in the NHS. TSO, 2002.

Lighting and colour for hospital design. TSO, 2004.

National Health Service Model Engineering Specifications. HMSO, London, 1999 (available in Mechanical and Electrical volumes or as separate parts).

Firecode – policy and principles. HMSO, London, 1994.

Wayfinding. TSO, London, 2005.

Enhancing privacy and dignity – achieving single-sex accommodation. TSO, London, 2001.

Improving the patient experience – The art of good health: a practical handbook. TSO, London, 2002.

Improving the patient experience – The art of good health: using visual arts in healthcare. TSO, London, 2002.

Health Building Note (HBN) 4 – In-patient accommodation: options for choice. HMSO, London, 1997.

HBN 8 – Facilities for rehabilitation services. TSO, London, 2004.

HBN 40 – Common activity spaces:
Vol 4 Circulation areas. HMSO, London, 1995
Vol 3 Staff areas. HMSO, London, 1995
Vol 1 Public areas. HMSO, London, 1995

Health Facilities Note (HFN) 30 – Infection control in the built environment: design and planning. TSO, London, 2002.

Health Guidance Note (HGN) "Safe" hot water and surface temperatures. HMSO, London, 1998.

HGN – Structured cabling for IT systems. HMSO, London, 1995.

Health Technical Memorandum (HTM) 57 – Building components: Internal glazing. TSO, London, 2005.

HTM 58 – Building components: Internal doorsets. TSO, London, 2005.

HTM 59 – Building components: Ironmongery. TSO, London, 2005.

HTM 60 – Building components: Ceilings. TSO, London, 2005.

HTM 61 – Building components: Flooring. TSO, London, 2005.

HTM 63 – Building components: Fitted storage systems. TSO, London, 2005.

HTM 81 – Fire precautions in new hospitals. HMSO, London, 1996 (under revision).

HTM 82 – Alarm and detection systems. HMSO, London, 1996 (under revision).

HTM 85 – Fire precautions in existing hospitals. HMSO, London, 1994.

HTM 87 – Textiles and furniture. HMSO, London, 1999.

HTM 2005 – Building management systems. HMSO, London, 1995.

HTM 2007 – Electrical services supply and distribution. HMSO, London, 1993.

HTM 2009 – Pneumatic air tube transport systems. HMSO, London, 1995.

HTM 2011 – Emergency electrical services. HMSO, London, 1993.

HTM 2014 – Abatement of electrical interference. HMSO, London, 1993 (issued in 4 parts).

HTM 2015 – Bedhead services. HMSO, London, 1995 (issued in 4 parts).

HTM 2020 – Electrical safety code for low voltage systems (Escode – LV). HMSO, London, 1998 (issued in 2 parts).

HTM 2021 – Electrical safety code for high voltage systems (Escode – HV). HMSO, London, 1994 (issued in 2 parts).

HTM 2022 – Medical gas pipeline systems. HMSO, London, 1997 (issued in 2 parts).

HTM 2023 – Access and accommodation for engineering services. HMSO, London, 1995.

HTM 2025 – Ventilation in healthcare premises. HMSO, London, 1994.

HTM 2027 – Hot and cold water supply, storage and mains services. HMSO, London, 1995 (issued in 4 parts).

HTM 2040 – The control of legionellae in healthcare premises: a code of practice. HMSO, London, 1994 (issued in 5 parts).

BRITISH STANDARDS

BS 2881:1989. Specification for cupboards for the storage of medicines in health care premises. TSO, 1989.

BS 6651:1999. Code of practice for protection of structures against lightning. TSO, 1999.

BS 7671:2001 Requirements for electrical installation. BSI, 2001.

BS 8300:2001 Design of buildings and their approaches to meet the needs of disabled people. BSI, 2001.

BS EN 12056-1:2000. Gravity drainage systems inside buildings. TSO, 2000 (issued in 5 parts).

BS EN 12464-1:2002. Light and lighting: lighting of workspaces.

BS EN 60598-2-25:1995, IEC 60598-2-25:1994. Luminaires. Particular requirements. Luminaires for use in clinical areas of hospitals and health care buildings. TSO, 1995.

FURTHER GUIDANCE

Building sight: a handbook of building and interior design solutions to include the needs of visually impaired people. Barker P, Barrick J and Wilson R, RNIB/TSO, London, 1995.

Enhancing the healing environment. King's Fund, NHS Estates, MARU, 2003. http://www.kingsfund.org.uk/Grants/Enhancing_The_Healing_Environment.html

Foundation for Assistive Technology http://www.fastuk.org

Royal National Institute for Deaf People (RNID) http://www.rnid.org.uk/html/information/technology/home.htm

Office of National Statistics http://www.statistics.gov.uk/CCI/nscl.asp

OTHER PUBLICATIONS

Barker P, Barrick J and Wilson R, **Building sight: a handbook of building and interior design solutions to include the needs of visually impaired people.** RNIB/TSO, London, 1995.

Building Services Research and Information Association, **TN 9/92 Space and weight allowances for building services plant – inception stage design.** BSRIA, 1992.

Building Services Research and Information Association, **TN 10/92 Space allowances for building services distribution systems – detail design stage.** BSRIA, 1992.

Chartered Institution of Building Services Engineers, **Guide F: Energy efficiency in buildings.** CIBSE, 2004.

Chartered Institution of Building Services Engineers, **Lighting Guide LG3: The visual environment for display screen use.** CIBSE, 1995.

Dickinson JI, McLain-Kark J and Marshall-Baker A, The effects of visual barriers on exiting behavior in a dementia care unit, *The Gerontologist*, **35(1)**, 1995, pp 127–130.

Health and Safety Executive, **Occupational exposure limits (EH40).** HSE, updated annually.

Hughes JC and Louw SJ, Electronic tagging of people with dementia who wander: Ethical considerations are possibly more important than practical benefits, *BMJ*, **Oct, 325**, 2001, pp 847–848.

Institute of Healthcare Engineering and Estate Management, **Guidance to engineering commissioning.** IHEEM, 1995.

Institution of Electrical Engineers, **Guidance Note 7: Special Locations, 2nd Edition.** IEE, 2002.

Judd S, Marshall M and Phippen P (Eds), **Design for dementia.** Hawker, London, 1997.

Price JD, Hermans DG and Grimley Evans J, Subjective barriers to prevent wandering of cognitively impaired people (Cochrane review). In: *The Cochrane Library*, **Issue 2**, 2003. Oxford: Update Software.

Scher P, Local Hero: The Pulross Centre, London. *The Journal for Healthcare Design and Development*, 2001, pp 16–20.

Shonfield K, Special treatment. *The Architect's Journal*, **22**, March 2001, pp 31–35.

Waller S and Finn H, **Enhancing the healing environment. A Guide for NHS Trusts.** King's Fund, 2003. http://www.kingsfund.org.uk/Grants/Enhancing_The_Healing_Environment.html

USEFUL WEBSITES

Foundation for Assistive Technology http://www.fastuk.org

Royal National Institute for Deaf People (RNID) http://www.rnid.org.uk/html/information/technology/home.html

Office of National Statistics http://www.statistics.gov.uk/CCI/nscl.asp

Appendix 3 – Glossary of terms and abbreviations

Accessible

Environments and facilities that are suitable for use by both disabled and non-disabled people.

Assisted

Facilities designed to allow a person or persons to assist the user. For example, an assisted bathroom.

Cognitive impairment occurs in people who, through the processes of aging and/or diseases common in older age, experience a reduction in general mental abilities. In severe form, this clinical syndrome is called **dementia**. People experiencing milder symptoms may be described as "**confused**".

Domestic

Used to describe healthcare rooms designed, finished and furnished to create a domestic setting.

Legible

"Understandable", used to describe environments which are easily understood by those using them.

Long-term care

Permanent residential/nursing homes, usually provided outside the NHS,

Longer-term

Care provided by some NHS units for particularly vulnerable patients.

"Wandering"

Persistent walking, often undertaken by people with dementia. Traditionally seen as aimless but now recognised as often meaningful for the participant (hence used in quotation marks).

ADL	Activities of Daily Living
BS	British Standard
DDA	Disability Discrimination Act
DH	Department of Health
HBN	Health Building Note
HCAI	Healthcare Associated Infection
HTM	Health Technical Memorandum
NSF	National Service Framework
OT	Occupational Therapy
PCT	Primary Care Trust
TSO	The Stationery Office
WC	Water closet

About NHS Estates guidance and publications

The Agency has a dynamic fund of knowledge which it has acquired over 40 years of working in the field. Our unique access to estates and facilities data, policy and information is shared in guidance delivered in four principal areas:

Design & Building

These documents look at the issues involved in planning, briefing and designing facilities that reflect the latest developments and policy around service delivery. They provide current thinking on the best use of space, design and functionality for specific clinical services or non-clinical activity areas. They may contain schedules of accommodation. Guidance published under the headings Health Building Notes (HBNs) and Design Guides are found in this category.

Examples include:

HBN 22, Accident and emergency facilities for adults and children
HBN 57, Facilities for critical care
HFN 30, Infection control in the built environment: design and planning

Engineering & Operational (including Facilities Management, Fire, Health & Safety and Environment)

These documents provide guidance on the design, installation and running of specialised building service systems and also policy guidance and instruction on Fire, Health & Safety and Environment issues. Health Technical Memoranda (HTMs) and Health Guidance Notes (HGNs) are included in this category.

Examples include:

HTM 2007, Electrical services supply and distribution
HTM 2021, Electrical safety code for high voltage systems
HTM 2022 Supplement 1
Sustainable development in the NHS

Procurement & Property

These are documents which deal with areas of broad strategic concern and planning issues, including capital and procurement.

Examples of titles published under this heading are:

Estatecode
How to cost a hospital
Developing an estate strategy

NHS Estates Policy Initiatives

In response to some of the key tasks of the Modernisation Agenda, NHS Estates has implemented, project-managed and monitored several programmes for reform to improve the overall patient experience. These publications document the project outcomes and share best practice and data with the field.

Examples include:

Modernising A & E Environments
Improving the Patient Experience – Friendly healthcare environments for children and young people
Improving the Patient Experience – Welcoming entrances and reception areas
National standards of cleanliness for the NHS
NHS Menu and Recipe Books

The majority of publications are available in hard copy from:

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