

MULTILEVEL CARE DESIGN GUIDELINES

**Facilities Planning and Construction Division
Care Services
Ministry of Health and
Ministry Responsible for Seniors**



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The Facilities Planning and Construction Division, Care Services, is responsible for the planning and construction of care facilities for residents who require either Extended, Intermediate and Special Care or Discharge Planning.

These guidelines have been developed in conjunction with representatives from the Continuing Care Division, Hospital Care, Mental Health, and special care facilities. These guidelines provide design standards for the planning of combined or separate facilities within which one or all levels of care may be provided.

The recommendations contained herein are not to be regarded as mandatory regulations or as a building code, but rather as a design aid. The requirements of the National Building Code, British Columbia Building Code and Municipal Building Codes take precedence.

Facility capital construction funding is provided singly by the Ministry of Health or jointly with the Regional Hospital Districts. Optional methods of funding may be considered.



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The object of these guidelines is to provide standards for design of a health facility for people who qualify for multilevel care in the Province of British Columbia.

The guidelines will be amended and updated from time to time in the light of experience gained. Recommendations for improvements or revisions should be addressed to the Facilities Planning and Construction Division, Care Services, Ministry of Health, 1515 Blanshard Street, Victoria, British Columbia, V8W 3C8.

The guidelines are based on an independent freestanding facility, providing all of its own services, which may or may not include the following optional specialized services:

- (a) laundry may be done commercially or at a regional health facility laundry. Resident personal laundry will be done internally.
- (b) sterilizing of instruments and utensils may be done by arrangement with an acute health facility. (Note that the facility may find that cost for sending out materials or for purchasing pre-sterilized materials is prohibitive.) When the volume is small, consideration should be given to installing a small countertop sterilizer in the Clean Utility Room. If this is the case, a copy of the cost analysis should be submitted for approval of the funding agencies.
- (c) pharmacy and bulk drug storage, where applicable, may have drugs provided from an associated acute health facility or a local pharmacy.

The requirements may be modified if the multilevel care facility is built close to a health facility with which arrangements can be made to provide certain services.

If arrangements are made with other health facilities for bulk purchasing or if other services are provided elsewhere, space requirements for services shall be reduced accordingly.

Diagrams which offer suggestions for care facility planning are located at the back of this manual. The diagrams should not be confused with technical drawings required for construction but only as examples of a few of the many ways that the functional design may be approached.

The various flow diagrams reflect suggested circulation and supply streams, as well as guides to departmental work patterns. Consultants should be encouraged to prepare flow diagrams for their own projects and in turn relate them to initial conceptual studies.

Every care facility must be considered as a special project related to its own community and its own site, with careful regard to prevailing weather conditions, street access, desirable or undesirable views, topography, and other site considerations.



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1.1 Definitions of Multilevel Care

A person who does not require the resources of an acute, rehabilitation, or psychiatric health facility, is eligible for multilevel care benefits when there is a demonstrated need for daily care by nursing staff in addition to the services of a physician, pharmacist, occupational and physiotherapists, social worker, dietician, and others as available. This need is not related to specific disease classifications, but rather to a continuing physical and/or mental disability whereby the person may be unable to function in an independent manner. Although the majority of persons may reach this degree of functional dependence as a result of diseases associated with aging, a care facility may also be concerned with the provision of multilevel care to eligible children and young adults.

The introduction of multilevel care facilities permits the integration of the various levels of chronic care in one setting, enabling residents with deteriorating health to remain in the facility of their choice.

1.2 Program and Objectives in Care of Multilevel Facility Residents

It has been clearly demonstrated that putting elderly or disabled persons to bed, or locating them in an institution where they are the passive recipients of complete care, will very quickly lead to further physical and mental deterioration. Conversely, a program that provides training and practice in activities of daily living and mobility, makes available a variety of social, recreational and other types of activities providing stimulation and pleasure, can arrest or reverse such deterioration.

The staff of multilevel facilities are required to assess an individual's needs, and develop a program of activities that will assist in maintaining or improving the functional ability of each person, thereby permitting a more useful and fulfilling life.

The standards outlined hereinafter are intended to provide appropriate space to ensure the program will fulfil the stated objectives.

1.3 Floor Area

Net space requirements are listed in each section of the guidelines. The total net areas will be multiplied by a grossing factor of 1.4 to obtain the total building gross area. For special care units, the gross area is calculated by multiplying the total net area by a factor of 1.6.



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1.4 Space Summary

As a space guide, new facilities will not exceed the following allowances:

- 46 m² building gross per bed when the facility is freestanding and self-sufficient.
- 38.5 m² building gross per bed when the facility is serviced by a parent health facility.
- 52 m² building gross per bed when facility contains a special care unit.

Note: See suggested space programs for 75-bed facilities at back of guidelines.



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2.1 Preamble

There are many factors to be considered in the selection of a building site and it is recommended that the health society utilize the criteria listed in Section 2.12 of this section, "Suggested Site Evaluation Chart", to assist it in making a decision.

Location and site of facility must be approved by the funding agencies. Where Ministry funding is provided, Facilities Planning and Construction personnel will assist the providers with site evaluation.

2.2 Proximity to the geographic centre of the contributing population

Current Ministry philosophy allows that, where possible, elderly should have the privilege of spending their later days in a health facility located near their previous home environment, their friends and relatives, and public transportation.

Consideration should be given to proximity to commercial shopping for access by mobile residents.

2.3 Proximity to the geographic centre of the potential work force

A close relationship of the centre to public transportation is desirable for family, friends and staff. Automobiles are owned by a large proportion of the adult population, however, public transportation is the preferred access by friends and relatives unable to drive.

2.4 Proximity to other geriatric or related facilities

Current philosophy recognizes the validity of incorporating elements of housing for the elderly in a single complex to provide a continuum of care including elements such as seniors apartments, personal care, intermediate, extended and multilevel facilities.

2.5 Optional Shared Services

2.5.1 Administration

Most facilities will have an administrator or an assistant administrator if run by a related care facility. Proximity is not a factor. Smaller facilities may not require an administrator.

2.5.2 Accounting

Major elements of accounting may be centralized at a parent facility. With available mail, vehicular and telephonic communications, proximity is not a factor.

2.5.3 Bulk Purchasing

Bulk purchasing may lower the unit cost of items purchased. This does not prevent items so purchased being sent directly to the user by the distributor and items so purchased need not go through the major



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purchasers' or parent health facility's storage.

2.5.4 Laundry & Drugs

These services require transportation. The distance from the multilevel care unit to a parent acute health facility, or to a regional laundry is a factor, but travel time may be relatively minor when considering the total time of loading, travel, and unloading of these serviced goods.

2.5.5 Resident Transfer

Day to day multilevel care will usually be well served by the medical component of the facility. Transfer to an acute unit by ambulance or other form of transportation will be required for X-ray examinations, laboratory procedures, dental treatments, ophthalmological examinations, and when a person's condition necessitates admission to an acute, psychiatric or rehabilitation health facility.

Consideration should also be given to transportation for recreational purposes and to Short Stay and Assessment Centres.

2.5.6 Food Service

Freestanding facilities should be designed complete with a food service department. Facilities with a common administrative relationship may request food service be provided, but consideration must be given by the provider to the varied diet required by residents in a care facility.

2.5.7 Maintenance

Maintenance of plant and equipment may be carried out by maintenance personnel on site or by the personnel of a related facility. Maintenance personnel shall make periodic inspections to detect possible problem areas and make repairs before minor problems become major ones.

2.5.8 Mechanical

Units attached or adjacent to a parent health facility may be able to utilize engineering services from the main plant and thus eliminate the requirement for a separate boiler plant.



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2.5.9 Electrical

One financial advantage to locating the multilevel care facility on the same site of a parent health facility will be the application of a more economical electrical rate. There are also advantages of being able to run a single main service and incorporate an emergency supply.

2.6 Land Value

Land cost will be increased if service elements have to be brought to the site to make the land usable, such as sufficient water supply for consumption and fire protection, adequate sewer lines, and possibly road paving. On the site itself, the costs involved in clearing, soils investigation, and grade levelling must be considered. Only by assessing the total value of the land plus any additional costs can the owner make a reasonable cost comparison of sites. Funding for off-site services will not be provided by the Ministry of Health or the Regional Health District.

2.7 Site Contours

A sloping or heavily contoured site can have a serious impact on construction costs but it can also be enjoyable from a visual point of view. Care must be taken to ensure that the grade immediately around the building is level, particularly at entrances and patios, in order that residents in wheelchairs can move freely without restrictive encumbrances.

2.8 Observable Interest

It is more valuable to locate the building on a site where moving objects of interest can be seen, than to utilize a site which has attributes of "atmosphere" or "view". Residents appreciate dependable forms of moving objects, such as pedestrians or vehicular traffic. It has been observed that although given the most beautiful static views of trees, mountains and sea, some residents will turn inward for stimulation, to observe staff movement and activity.

The type of view considered undesirable would be one devoid of activity or interest.

2.9 Community Participation

There is no reason to suppose that all residents will be restricted to the building or grounds. Residents will retain contact with the surrounding community often by foot, bus or car trips.



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2.10 Parking

The required automobile parking for staff and visitors shall be 38 cars per 75 bed facility, or as required by local bylaws. Visitors and staff may use the same parking area. It is recommended that parking be situated close to the main entrance to preclude visitors from entering the building through unauthorized routes. It is advantageous to include several drop-off parking spots at the main entrance.

Parking areas where possible should be capable of some expansion to accommodate future variation in current parking trends.

2.11 Space Summary

A suitable site for a 75-bed facility will require a land area of approximately 1.0 hectare, i.e., 2.5 acres.

2.12 Site Evaluation Chart

The design may be suited to the area under construction with factors and weightings being adjusted accordingly. A suggested site evaluation chart follows.



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SITE EVALUATION CHART

| Factors | Score | Site A | Site B | Site C | Site D | Site E |
|--|----------|--------|--------|--------|--------|--------|
| Proximity to the geographic centre of the contribution population | 0 to 20 | | | | | |
| Proximity to the geographic centre of the potential work force | 0 to 10 | | | | | |
| Proximity to Acute hospitals and clinics, and proximity to routes between hospitals/clinics/doctors', residential neighbourhoods | 0 to 10 | | | | | |
| Proximity related to services | | | | | | |
| Accounting | 0 to 3 | | | | | |
| Bulk purchasing | 0 to 3 | | | | | |
| Laundry and Drugs | 0 to 5 | | | | | |
| Residents' transfer | 0 to 5 | | | | | |
| Food Service | 0 to 5 | | | | | |
| Maintenance | 0 to 8 | | | | | |
| Mechanical | 0 to 8 | | | | | |
| Electrical | 0 to 8 | | | | | |
| Proximity to other geriatric or related units | 0 to 20 | | | | | |
| Land value | 0 to 40 | | | | | |
| Site contours | 0 to 8 | | | | | |
| Observable interest | 0 to 15 | | | | | |
| Community participation | 0 to 15 | | | | | |
| Undesirable view | 0 to -10 | | | | | |
| Other uses | 0 to -10 | | | | | |
| Other costs ¹ | 0 to 10 | | | | | |
| TOTALS | 0 to 193 | | | | | |
| | 0 to -20 | | | | | |

¹ Where facility will be serviced from another health facility or a parent facility, then the cost of upgrading accommodations in the latter must be evaluated.



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3.1 Physician's Role

The health facility will ensure physician attendances for residents. The physician providing regular supervisory visits to determine the resident's progress in the program developed by the health facility, will also attend to the resident in the event of an acute illness or emergency, and will maintain required medical records. (See also Section 3.26 Treatment, below.)

3.2 Professional Health Care

Professional monitoring of the health care needs of the resident include nursing care on a 24-hour a day basis, as well as the services of a physician, occupational and physiotherapists, a dietitian, a social services worker, and a pharmacist on an as required basis.

3.3 Social Needs

Since a multilevel care health facility provides long term care, it should satisfy, as much as possible, the essential social needs of the resident. Residents should be encouraged to get out of bed, get dressed and move into the lounge, dining, and activity areas for part of each day. Within reasonable limits the multilevel care unit should act as an acceptable substitute for the security of the home and the friendship and support of the family.

The multilevel care health facility should endeavour not only to bring contact with the outside community to the resident, but also provide access for the resident to the community.

3.4 Activity Program

Although multilevel care activation programs will be different from the program in a rehabilitation unit, there still is a requirement to provide suitable professional direction by therapists to this part of the program, in order to assist the resident to maintain his maximum physical and mental functions as long as possible.

It is essential for multilevel care facilities to have sufficient space for physical exercise, social groups, and recreational activities.

The residents should be capable of participating in a program developed for the activity area, although it should be recognized that the majority will require some assistance to get to this area, or have to be moved via wheelchair or other mechanized means.



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3.5 Size of Facilities

The guidelines are based on a 75-bed facility with a central care centre. Facilities of lesser or greater number will be reduced or increased as required.

3.5.1 Resident Area Flow Diagrams

Figures I (A) and (B) are Resident Area Flow Diagrams.

3.6 Numbers and Sizes of Bedrooms

In a typical 75-bed facility the suggested bed mix may be 25 single rooms and 25 double rooms, 37 single rooms and 19 double rooms, or any other mix approved by the Ministry.

Health facilities that wish to incorporate four bed rooms, to a maximum of 10%, shall obtain agreement in principle from the Ministry.

3.7 Clearances

Without moving adjacent beds or furniture, except chairs, it should be possible to move any bed into or out of the room. A minimum 1200 mm wide passage for such movement shall be provided within all multiple-bed rooms.

At least 1200 mm clear space between beds is required for nursing care, to assist people into wheelchairs, and for operating person lifting devices and stretchers. This space shall be unobstructed by tables, etc. Wall-mounted cupboards between the beds cannot be accepted as they interfere both with management of the person and the person's freedom to manoeuvre into and from a wheelchair. The other side of the beds shall have a minimum of 900 mm clearance for manoeuvring room.

3.8 Views

It is desirable that every resident in a multiple bed room have a view of a window.

Certain architectural features can unnecessarily restrict the views of those confined to bed. Consideration of resident views must take priority over architectural aesthetics.

3.9 Bed Sizes and Types

The space allowance for residents beds shall be 2200 x 1000 mm. Bed heads should be constructed to allow for clamping on self-help devices such as a trapeze. Safety aides should be the sliding type, with clamp fasteners fastened to the bed frame, but some beds may be fitted with half sides for assisted transfers. All beds in a multilevel care health facility should be of the high-low type.

3.10 Windows



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It is desirable that long-term residents get a full view from their beds out of the window. Interior window sills should be low enough to permit a view out and down from a low bed or wheelchair position. A floor to sill height of 750mm is recommended. For sills lower than this, guard rails for safety must be provided. Window openings, specially on upper floors, must be restricted to open no more than 200 mm.

(For energy conservation measures see Section 14.1.1.)

All window openings shall be provided with close fitting fly screens.

Adjustable curtains, or other acceptable means of light control, must be provided to permit darkening the room to afford privacy, to protect from glare, and to increase inside light reflectance at night.

3.11 Curtain Tracks

In multiple bed rooms mounted curtain tracks shall be provided for privacy screening of beds. All curtain suspension devices must be well anchored, and wall hooks should be provided for tapes to hold curtains when folded out of the way. Moveable tracks should be considered between the beds. The curtains, if full height, shall be fitted with mesh at the top for air circulation.

A clear space of at least 300 mm should be provided between the foot of the bed and the privacy curtain, and the track must provide for the resident nearest the door to be screened from view from the corridor.

3.12 Resident Closets

In each bedroom provide individual resident lockers with built-in shelving and drawers. Provide a minimum closet space of 0.5 m².

3.13 Bedside Bureau

A free-standing bedside bureau with a pull-out shelf should also be provided for each resident's personal belongings, and may also be designed to contain the washbasin and bedpan. Alternative arrangements may be made for storage of the washbasin and bedpan in the bedroom or bathroom areas.

3.14 Bedroom Furniture

Figure 2 illustrates suggested furniture.



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3.15 Washbasins

Washbasins shall be provided in every washroom, for the control procedures required of the health facility personnel and for the occupant's use. Each basin should be equipped with a gooseneck faucet with aerator head, 100 mm blade handles, pop-up waste, and soap dispenser. Adjacent to each basin, mount a paper towel dispenser and waste container. The washbasin shall be installed in a counter or vanity; otherwise, a shelf shall be provided adjacent to the basin. Behind each washbasin there shall be a tilted mirror mounted for use by wheelchair and standing users.

3.16 Medical Gas

Piped gas is not necessary but may be permitted in some multilevel care facilities. Oxygen which may be required can be satisfactorily administered from portable equipment including concentrators. The equipment must be stored in well ventilated safety rooms. See Section 10.11.

Suction equipment of the portable electrically operated type is considered to be satisfactory.

3.17 Resident Room Layouts

- (a) Door openings from the corridor to the resident rooms shall be no less than 1150 mm wide.
- (b) Door openings from resident bedrooms to the resident en suites shall be no less than 900 mm wide.
- (c) Sliding or folding doors are not considered suitable for use by residents.

3.17.1 One-Bed Rooms

Figure 3 illustrates a layout for a one-bed room. This area to conform to current Ministry spatial requirements.

3.17.2 Two-Bed Rooms

Figures 4, illustrates a layout for a two-bed room. This area to conform to current Ministry spatial requirements.



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3.18 En Suite Washroom

An En Suite washroom within each resident bedroom shall be provided, and shall contain a toilet and a washbasin.

The washbasin, equipped with 100 mm blade handles, shall be mounted at 840 mm height with 770 mm clearance for wheelchair to be driven under the front rail of the vanity.

The hot water supply and waste pipes should be insulated if they are likely to touch the legs of a person in a wheelchair.

The en suite washrooms may have approved bedpan flushing facilities comprised of flexible hose connected to the adjacent washbasin via a diverter valve.

Bedpan lugs may be provided on toilets where applicable.

All resident toilets shall be floor mounted giving a floor to rim height of 460 mm.

Flush valve fixture shall have a backrest mounted in front of the flush valve to support the resident. This should not interfere with the proper functioning of the hinged toilet seat. Provision of toilet seat restraint belts will be approved.

The toilet flush handle shall, if possible, be close enough to be reached by a person in a wheelchair (approximately 600 mm reach).

An emergency pull cord connected to the nurse call system should be located in every washroom to enable a resident to summon help. These should be easily accessible from the toilets.

Unless swing-away or drop grab bars are provided, there shall be at least one grab rail, wall mounted, adjacent to the toilet, 850 mm from the floor, 30 mm in diameter and extending forward of the toilet at least 150 mm. See Figures 6 and 7. Grab rails must have a minimum of 30 mm diameter for use by residents who have arthritic hands.

Figure 5 illustrates a washroom arrangement. Note wheelchair turning radius requirement.

All walls in washroom should have a 19 mm fir plywood backing secured at different levels to enable firm securing of fixtures through the finishing wall members. As with basin installations, the swing-away grab-bars will require heavyweight fixings and suitably reinforced wall framing.



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3.19 Bathing Facilities

In a typical 75-bed facility there will be five bathing fixtures provided in one or more bathing areas. These will be as follows;

- (a) Three specialized raised bathtubs for residents that have to be lifted into the tub by mechanical means and with sufficient space provided, when necessary, for the workings of such apparatus. One of the above tubs shall be suitable for recumbent bathing.
- (b) Two showers designed to facilitate bathing residents in waterproof wheelchairs. The cubicle should be approximately 1200 mm square, without a curb at the entrance, and with a 800 mm grab bar both sides. Controls should be placed outside of the shower area and should automatically maintain water temperature. A low pressure telephone type hand shower spray should be provided. There shall be working space on one side of the shower stall, which shall be separated from the shower by a half wall; drain should be close to the back wall so operator's feet will be in a dry area.
- (c) A toilet facility shall also be provided in each bathing area. Toilets in this area shall meet requirements of the handicapped. See Figure 5.
- (d) Provide a ceiling heat lamp over the resident drying space.

3.19.1 Mixing Valve

A non-scald mixing valve of the pressure activated type shall be incorporated in both shower and bath fixtures.

3.19.2 Bath Facility Layouts

Figures 6 and 7, illustrate suggested layouts for the communal bath areas. Additional space off the resident corridor for storage, stretcher bay or some other utility may be required.

3.19.3 Privacy

To maintain dignified movement of residents, bedrooms and bathing rooms must be designed to prevent residents being exposed to the social and activity areas of the facility.



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3.20 Hairdressing Room

In a 75-bed facility provide a room or salon of approximately 10 m² for hairdressing. See Figure 9.

Provide sufficient space inside the room for three or four residents to congregate while awaiting their appointments. The provision of a pleasant atmosphere and a possible dual purpose use should be considered. Suitable ventilation must be provided.

The salon should be located near rooms which can provide waiting areas. Avoid locations near social and amenity rooms.

3.21 Soiled Utility Room

Provide soiled utility room to each group of 25 or more residents, which functions as a holding area for soiled linen, used equipment, trash and waste.

Provide space totalling not more than 33 m² in floor area (based on 11.0 m² per 25 beds). Each utility room shall contain:

- Counter top with counter sink (single compartment), elbow controlled mixing faucet, paper towel cabinet and soap dispenser.

- Flushing rim sink.

- Wall hung bedpan flusher-sanitizer. (Optional).

- Janitors' curb sink.

- Soiled linen hampers.

- Housekeeping/utility cart.

- Local housekeeping equipment.

- Garbage container (or cart).

In addition to the above, one room shall contain a utensil washer-sanitizer.

3.21.1 Soiled Utility Layout

Figure 8 illustrates a typical soiled utility room arrangement.

3.22 Care Centre

Provide a care centre for each unit of 75 beds. This is the point from which residents health care planning is carried out. It should be located close to the centre of the multilevel unit. The activity area should be observable from this location.



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It is desirable that the care centre command the best view possible of the facility corridor(s) and the entrance(s) to the facility. Close proximity of the care centre to the entrance(s) is an advantage as it facilitates observation and direction of persons entering or leaving the facility by the staff.

Observation and control, nurse call system and telephone, and main work area should be concentrated so that all functions can be carried out when necessary by one person. A gate may be provided to prevent non-staff from wandering into this area.

Considerable variation in the arrangement of spaces is possible for the care centre. Figure 10 shows a room grouping which illustrates the relationship of the basic control suite to the clean utility room. The medicine preparation room may be situated off the care centre or the clean utility area. A glass panel with a view into the medicine preparation room will provide additional supervision. Medicine preparation room will have a locked built-in narcotics cabinet. The door to this room must have an alarmed warning.

A washroom with a washbasin, paper towel and soap dispenser, mirror and toilet shall be provided for staff in this area.

3.22.1 Typical Equipment and Furniture

Typical equipment and furniture to be accommodated includes:

- Counter or desk space for clerical work with storage drawer built in for stationery supplies.
- Storage of old charts of current residents shall be kept in a central storage space in another location.
- Storage cabinet, approximately 900 mm x 900 mm x 300 mm deep.
- Battery wall clock.
- Bulletin board 600 mm x 900 mm or larger.
- Bookshelf space for reference manuals, etc.

3.23 Clean Utility and Medicine Preparation

Adjacent to, and easily accessible from the care centre, provide a clean utility and medicine preparation room fitted with counter space that includes a counter sink with a gooseneck faucet. Space shall be provided to accommodate a clean supply trolley. Depending upon the nursing procedure for medication administration, the room will be required to accommodate one to three medication carts approximately 700 mm x 500 mm x 1000 mm high. The carts are not to obstruct the work areas in the utility medication room. Cupboard or cart storage space shall be provided for medical and surgical supplies, dressings, sterile trays, etc.



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Provide a medicine cabinet with adjustable shelves. As the monitored dosage system requires storage for 16 to 20 medication cards, storage cupboards or wall racks must be provided. The medicine cabinet shall include a separate locked compartment for narcotics, controlled drugs and liquor. Space shall be provided for a small refrigerator for biologicals.

3.24 Office

In the same general area of the care centre there shall be one room to serve as the head nurse's office.

3.25 Total Floor Areas

The total floor areas for rooms listed above in Sections 3.22 to 3.24 inclusive, will not exceed 66 m².

3.26 Treatment

There will be no major surgical, clinical laboratory, or radiology services. Residents who require this type of service should be transferred to or receive them as outpatients at an acute general hospital.

3.27 Examination and Treatment Room

For each 75 beds, provide a room for medical examinations, minor surgical and dental procedures, of approximately 18 m².

The equipment and furnishings to be accommodated in the examination and treatment room are as follows:

- Counter sink with elbow operated controls, gooseneck faucet, soap or detergent dispenser, paper towel dispenser, and waste towel container.
- Examination table.
- Small surgical lamp which may be pedestal type.
- Mobile utility table.
- Work counter approximately 600 mm x 1500 mm long, with storage cupboards over, and space under for mobile cart, trash container, etc.

The room providing dental service shall contain, in addition to the equipment listed, a non-hydraulic, movable dental chair. Experience indicates that dental service for multilevel care facilities will not require the provision of separate plumbing and dental x-ray equipment but will require services for suction equipment, generator for air pressure operated hand drill and dental examination light.



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3.27.1 Examination and Treatment Room Layout

The basic layout for this room, suggested in Figure 9, shows furniture and equipment arranged to serve the clinical function for a 75-bed facility with a dental chair. Diagram (A) shows how the arrangement can, by moving major equipment behind a draw curtain, become a separation room for the critically ill or in which a noisy person that is disturbing the sleep of others may be placed.

3.28 Linen Supply

Space shall be provided to house a cart containing clean linen. The linen cart is 1,500 x 600 x 1,500 high. There should also be shelf space for extra blankets and pillows for each 25 beds. See also Section 6.4.4.

3.29 Wheelchair and Stretcher Storage

Ample wheelchair and stretcher storage should be provided. A room to accommodate wheelchair charging should also be provided.

3.30 Net Bedroom Floor Areas

The floor areas of bedrooms, inclusive of en suite washroom, will be as follows:

One bedroom 20 m² Two bedroom 30 m²

3.31 Space Summary

Bedrooms

1-bedroom 25 rooms @ 20.0 m² 500.0 m²

2-bedroom 25 rooms @ 30.0 m² 750.0 m²

Resident Bathing 48.0 m²

Care Centre 66.0 m²

Clean Utility

Medicine Preparation Room

Head Nurse's Office

Linen Supply 12.0 m²

Soiled Utility 33.0 m²

Examination/Treatment 18.0 m²

Hairdressing Salon 10.0 m²

Housekeeping 6.0 m²

Wheelchair Storage 7.0 m²

Wheelchair charging room 12.0 m²

Total Net Space 1462.0 m²



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4.1 Group Activities

Group activities have a therapeutic function. It is expected that 80 percent of a multilevel care facility will make use of these areas. Some residents will require assistance and/or mechanical aids to reach group activities and the areas must therefore be located so that they are easily accessible.

A toilet facility should be provided in this area which shall meet the requirements for the handicapped, see Figure 5.

The following areas are included in this description and relate to a 75-bed multilevel care facility.

4.2 Lounge and General Activity Area

The space allocated for lounges and activity area is the total area which will be divided into multiple rooms, if required, to suit specific resident programs. Storage space for activity needs and appointments for religious services must be considered. Part of the area may also be used as a quiet room. Total floor areas to be provided as follows:

Lounge area: @ 1.4 m²/bed

Activity area: @ 1.4 m²/bed

4.3 Dining Area

Preferably situated adjacent to washroom facilities and the group activity area, but not necessarily incorporated into one large space. Consideration should be given to grouping residents in a dining room that may be separated into smaller spaces by moveable dividers to attain homelike surroundings.¹

The tables should seat a maximum of four people due to increased space taken up by residents in wheelchairs. Total floor area to be provided as follows:

Dining Area: @ 2.0 m²/bed

¹ See Section 7.5 Dining Room Service to Residents



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4.4 Resident Kitchen Facilities

Included in the activity area shall be a residential style kitchen that residents, who are not cognitively impaired, will be able to cook, bake, make coffee, etc. for themselves. All counters and appliances, ie. sink, oven, range top etc., must be designed for wheelchair access and handicap use.

The staff in the facility must have good visual supervision and control of these activities.

Suggested equipment as follows:

Countertop, at 800 mm height with open areas under range, sink and work area for wheelchair access. Provide scratch resistant finish to all surfaces including lower cupboards and drawers.

Sink, a two compartment 150 mm deep with a minimum of 650 mm clearance under, and 100 mm lever handle faucets. Insulate bowl and pipes to protect residents' legs.

Rangetop, electric. Large childproof front mounted controls with raised markings to aid residents with diminished vision. Range hood with domestic type exhaust fan connected to duct work required.

Oven, electric. A side hung oven door with glass panel with controls designed for wheelchair access.

A lock-out switch to control the on/off operation of the rangetop and oven should be provided and in a location accessible to staff only.

Fridge, suitable domestic type.

The above kitchen services will also function as an emergency night nourishment centre for the resident facility. A dishwasher is not required for these areas.

4.5 Occupational—Physiotherapy Area

Should be adjacent to but may be separated from the main activity area by a folding partition. It will be equipped with bench and table areas for occupational therapy with a small area containing parallel bars and basic physiotherapy equipment. This area shall include suitable shelves and storage cupboards. A suggested arrangement for occupational therapy is as illustrated in Figure 11 (B).



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4.6 Patio Space

There shall be an adequate, safe, sheltered outside patio or deck space directly accessible from the interior activities area, for utilization by both the confused and mentally competent. Location of this should not obstruct interesting views from the interior areas. See also Section 6.4.15.

4.7 Room Layouts

Wide variations in design are possible in the layout of resident group activities, and furniture for these rooms may be arranged in a flexible manner.

4.7.1 Resident Group Activities Flow Diagram

Figure 11, Resident Group Activities Flow Diagram.

The diagram is self-explanatory, but attention is drawn to the desirability of breaking up the group activity areas into more intimate subspaces. For example, large, open, rectangular or square dining halls should be avoided. The diagram indicates this notion by its undulating perimeter. The dotted lines indicate optional closure of some spaces with folding doors. While daylight is an obvious amenity, some areas used for television viewing, can be "inside", allowing greater flexibility of furniture placement.

4.8 Corridors

Avoid use of materials that will cause glare on the floors from interior or exterior lighting, or that will impede easy movement of residents in wheelchairs. Consider inclusion of small recessed areas where residents can rest or sit and talk, without impeding the flow of traffic. Corridors for resident use will be 2,400 mm wide.

4.9 Total Floor Areas

Allow 4.8 m² per bed as a design guide for lounges, activity and dining areas, with a total area of 360 m².

4.10 Space Summary

| | |
|--|--------------------------|
| Lounge/s @ 1.4 m ² per bed | 105.0 m ² |
| Dining Room/s @ 2.0 m ² per bed | 150.0 m ² |
| Activity Room/s @ 1.4 m ² per bed | 105.0 m ² |
| Resident Washroom | <u>4.0 m²</u> |
| Total Net Space | 364.0 m ² |



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5.1 Principal Entrance

The principal entrance shall be protected by a canopy extending a reasonable distance to the far edge of the side walk and large enough to cover the passage of persons in wheelchairs to or from vehicle transport.

The entrance should be so located and designed that it can be readily identified. Excessive use of glazed canopies shall be avoided.

5.2 Access

Level and easily negotiated access is essential for the use of handicapped persons. Curbs, steps, steep ramps, thresholds, unduly heavy or operationally difficult doors, cramped vestibules, and rough or slippery floor surfaces are not acceptable. Electronically operated entrance doors should be considered.

5.3 Reception Room or Public Lobby

The reception room or public lobby, under visual observation from the Care Centre, should be located at the building entrance, convenient to the administration offices and to corridors leading to the resident areas. Access to these areas should be visually controlled from the care centre.

5.4 Public/Staff Toilets

Shared washrooms for public and staff shall be convenient to the lobby area and, if possible, have their entrances screened for privacy. Washrooms of approximately 4.0 m², will contain a toilet, a washbasin and mirror, and designed to be wheelchair accessible and complete with handicap hardware.

5.5 Administration Suite

The administration suite shall be located adjacent to the front entrance. In a multilevel health facility of 75 beds there shall be:

Reception

An administrator's office.

A coordinator's office.

A staff office(s) for therapist, volunteers, social worker.

A general office for reception and clerical functions.

A quiet room where relatives may hold private discussions with staff.

A team conference room.



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5.6 Volunteers

Provide a gift shop with ready access by residents and operated either by residents or volunteers.

Space shall be provided in this area for the storage of a mobile library and shop, and a clothes closet for Volunteer Auxiliary, and a concession work area and storage.

5.7 Team Conference Room

Provide a room, or rooms, not exceeding total space of 20 m², for staff/team conferences. Preferred location for this room is adjoining or within the care centre.

5.8 Administration and Admitting Facilities Flow Diagram

Figure 14 (A), Administration and Admitting Facilities Flow Diagram.

5.9 Administrative Unit Layout

A room arrangement for this department is shown on Figure 14 (B).

5.10 Total Areas

Total areas provided for the functions described in Section 5, but excluding the entrance and waiting space, shall not exceed 120 m².

5.11 Space Summary

| | |
|----------------------|--------------------|
| Reception | 12 |
| Administrator | 10 |
| Coordinator | |
| Staff Offices | |
| General Office | |
| Quiet Room | |
| Team Conference Room | 20 |
| Toilets | 8 |
| Total Net Space | 120 m ² |



Section: **SPECIAL CARE**

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6.1 Introduction

A number of residents in intermediate and extended care facilities will have severe mental health and behaviour management problems. Some residents with such problems exhibit behaviours which place them, and other residents, at risk. These residents present special care requirements and are a challenge to the providers of health care.

It is essential that the numbers of such residents be identified with the facility catchment area and special provisions made for these residents when designing multilevel facilities.

These special care guidelines will provide a framework for design consultants and facility operators to plan and design units for residents who have dysfunctional behaviours and cannot be cared for in regular facilities. These guidelines recognize that environmental design is one of the factors that influences extreme behaviour. Other factors for managing dysfunctional behaviour include proper medical evaluation, multi-disciplinary care planning and judicious use of medication.

Space requirements outline features of each room, design factors, space allocations, and engineering considerations. Diagrammatic layouts for the unit and specific rooms are included.¹

6.2 Background

6.2.1 Types of Disorders

Disorders affecting the elderly are primarily disorders that affect cognitive ability (organic brain syndromes) and mood (e.g., depression). Organic mental syndromes can be subdivided into acute (delirium) and chronic (dementia). Dementia is by far the most prevalent condition especially among the institutionalized elderly. It is usually a degenerative brain condition, however, dementia associated with specific medical condition, drug or alcoholic toxicity, is reversible.

The two major causes of dementia are Alzheimer's Disease which is estimated to account for 50 to 60 percent of the cases, and multi-infarct dementia (strokes) which account for 20 percent of the cases.²

¹ See Drawings

² Sub-Committee on Institutional Guidelines, 1989: Gutman, 1989



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6.2.2 Prevalence of Disorders

The resident population afflicted with mental health disorders in long term care facilities in British Columbia varies from 27 percent³ to an estimate of 40 percent by McKewan based on a Canadian survey of institutionalized elderly and a U.S. National Nursing Home Study, 1989.

The prevalence of mental health disorders increases with age. B.C. Association of Community Care, Guidelines for Special Care Units, 1988, includes statistics that illustrate an increasing percentage of the population in British Columbia will be over 65 and a significant number will be over the age of 85.

Most estimates on the prevalence of dementia in persons aged 65 and over range from 5 to 10 percent with rates rising from 10 to 20 percent in the 80+ population.⁴ It has been estimated that there were approximately 20,000 persons with dementia in British Columbia in 1986 and that the number of persons with dementing illness will double by the year 2006.⁵

6.2.3 Special Care Resident

A small section of special care residents with severe mental health disorders suffer behaviour management problems.

The resident population is assessed by the amount of care and assistance required for their particular mental and/or physical disabilities as follows:

- IC2, intermediate care level 2
- IC3, intermediate care level 3
- EC, extended care

The amount of nursing care increases to a maximum for extended care. The IC3 classification is primarily used for clients who have moderate to severe behavioral problems that require professional supervision. Extended care clients who may have severe behavioral problems must have additional physical disability which limits mobility.

³ B.C. Association of Community Care; Special Care Report, 1987

⁴ Continuing Care Division: Services for Psychogeriatric Clients, 1990

⁵ McKewan, 1989



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Assessment, professional care plans and supervision including special programs and an environment to help reduce aggressive and dysfunctional reactions are provided to modify resident behaviours.

Stressors that may worsen behaviour are fatigue, change of routine, excessive demands, overwhelming stimuli and the physical impact of acute pain or illness. Once the stressors are removed or controlled, dysfunctional behaviour declines. It is the objective of special care to return such residents to their regular environment when their dysfunctional behaviour reaches manageable levels.

6.2.4 Characteristics

Behaviour:

- . disorientation, confusion, agitation at times
- . short attention span
- . speaking, acting inappropriately
- . abusive behaviour to other residents or staff
- . non-cooperative
- . inability to recognize family members
- . sensitive to environmental stimuli

Physical:

- . mobile, wandering
- . difficulty in dressing, eating, bathing without assistance
- . may void in public
- . misappropriation of others' possessions
- . disruptive at meal times

6.2.5 Environmental Design

Basic Requirements:

A physical arrangement which enables residents to function at the maximum level of their ability.



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A properly designed environment can help residents with dysfunctional behaviours function more effectively and will contribute to their quality of life.⁶ Prosthetic elements provide added information about the environment. It is difficult for many residents to find their way in the building and identify their surroundings. Architectural detail that may cue memory such as special definition of doorways and rooms, changes in colours and of patterns, should be used. Special attention to these elements can maintain or increase functional capacity. Safe surroundings for the resident is an integral part of the design and protective arrangements to guard against personal injury.

Creation of a residential, home-like and non-institutional setting.

The residential quality enhances familiarity and resident's ability to understand and cope with the new surroundings. The transition from the home where the resident lived prior to the onset of illness is thus less traumatic.

6.3 Design Principles

6.3.1 Location

The special care units will normally be annexed to extended or intermediate care facilities. Although connected to the main facility, some physical separation is required. The unit should be in close proximity to share the amenities in the main facility such as the kitchen, laundry and occupational/physiotherapy.

It is recommended that special care residents be housed at ground level with access to outside activity areas designed for the use of wandering residents. The outside space must be observable, be securely contained at the perimeter, and may include some sheltered, walking and sitting space.

6.3.2 Separation/Integration

Physically separate units dedicated to meeting special needs are appropriate for residents with severe mental health and behaviour management problems.⁷ People with behavioral problems require special programs and environments to function effectively. Mixing of impaired and non-impaired residents places stress on both

⁶ M. Calkins, Health and Welfare Canada

⁷ Draft Design Guidelines for the Cognitively Impaired Elderly, Health and Welfare Canada, 1989



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parties. The impaired have difficulty functioning in the non-specialized environment and the unimpaired find it difficult to cope with the behaviour of the impaired residents. For staff, difficulties lie in trying to minister to the needs of people with mixed levels of ability, and the time and energy required to sort out tensions between the residents could be more positively directed toward creative interaction with them.

Integration of the residents with behavioral problems into the general programs and activities in the residence may be appropriate. The unit should be connected to the long term care facility to facilitate this interaction.

6.3.3 Unit Size

The recommended unit size is 25 beds broken into smaller pods of 8-12 beds.⁸ Existing units vary in size from 15-30 residents. Residents with dementia who exhibit dysfunctional behaviour function best in small groups. Residents in large numbers cause noises and movements which will distract and cause discomfort. While the ideal group size is 4 to 8 people, 8 to 12 may be more realistic for economic considerations.⁹ Therefore a unit of 25 beds is recommended, with an option to accommodate smaller sub groups of 8 to 12 beds.

6.3.4 Room Size

Single bedrooms are recommended for each resident. Single rooms allow maximum flexibility in placement requirements, allow residents privacy with visitors, and help prevent misappropriation of other's belongings. Sleep patterns vary between individuals who suffer from dementia, and shared rooms cause disturbances.

6.3.5 Walking

Wandering, pacing, and gait impairment are three aspects of walking that are common among people with cognitive impairment. The physical design of the building and the grounds can minimize the associated difficulties.

Wandering/pacing can occur at night as well as during the day. Consideration should be given to avoid disturbing the other residents. The impetus for the wandering is not known. Changes in the brain among people with dementia can cause difficulty in walking which when coupled with difficulties in depth perception can result in an increased likelihood of falls. Resident safety is the major concern with respect to walking. Safe accommodations consistent with the dignity of residents must be provided in a manner which will promote independence and optimum functioning.

A secure unit will provide multiple loops for residents to walk at will in safe and familiar surroundings, both indoors and outdoors. An interesting and stimulating space can be provided to allow wandering/pacing to occur. The preferred approach is a loop in which the resident does not come to a

⁸ B.C. Long Term Care Guidelines for the Development of Special Care Units, 1988

⁹ Health and Welfare Canada, Design Guidelines for the Cognitively Impaired Elderly



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dead end. Each pod of 8-12 beds should have separate wandering and activity spaces.

Inside the unit there should be interesting spaces, lounge, nooks and appealing wall decorations. Outside, the wandering loop can be integrated with the landscaping and seating areas. Boundaries, defined by plants or configuration of the building must be unobtrusive and have the potential for being effective as fences. Fences hidden by plants should also be considered.

Security measures such as door buzzers, video monitoring cameras, if necessary, etc. should be selected to provide for optimal security in the least intrusive manner. The observation capability of the staff should be maximized in the design of the unit, particularly at access points to the unit and to the outside.

Control of exit doors is essential. These may be electrically locked doors provided they are tied into the fire alarm system for automatic release opening. Code requirements should be confirmed.

6.3.6 Way Finding/Memory Cues

A variety of cues and landmarks can assist residents with dysfunctional behaviour problems to understand and manage day-to-day life. A heightened awareness and orientation to a more negotiable environment can be provided. In a design guide prepared by the University of Wisconsin¹⁰, a more negotiable environment is addressed with the following comments:

- Objects in the environment can be designed to compensate decreased capability (lever action handles instead of door knobs, pressure plate light controls). Evaluation of the effectiveness of orientation needs and special design features will constitute ongoing research activity.

¹⁰ University of Wisconsin, "Environments for People with Dementia"



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- Residents with cognitive impairment should be provided with associations from the past including artifacts, activities, to facilitate stimulation and social interaction thus enhancing the quality of life. The presence of things from the past also helps to create a more home-like environment and allows for personalization of individual spaces. Artifacts in resident rooms can contribute to recognition and become landmarks in wayfinding.
- Enclosed outdoor space shall be readily visible from communal living areas. Large open spaces can be disorienting for cognitively impaired persons¹¹. The outdoors should not only allow freedom of mobility but also assist residents to follow clear paths to desired destinations. Safe surroundings include plants which are non-toxic if ingested by residents.
- The same information can be presented via several modalities (redundant cuing), by means of colour, form, and texture. For example, light switches can be made conspicuous in both colour and form.¹² It is important that cuing be consistent, i.e., the colour red is associated with "hot". Consistent repetition can introduce an element of predictability into an environment. It is important to accentuate the cue and to dampen or moderate background stimulation.

6.3.7 Exclusion of Extraneous Stimuli

A discussion of factors in the physical environment has been presented in a Health and Welfare Canada publication.¹³ An effort must be made in the environment to include appropriate meaningful stimulation for residents while allowing extraneous visual and auditory stimuli to be excluded. Sound levels should be minimized by using textures and materials that absorb sound. Indiscriminate use of television and radio should be avoided. Intercom systems are not recommended and if used they should have the capacity to be turned down. It is suggested that the following extraneous stimuli be avoided:

- "busy" patterns on walls, floors, furniture
- colours that are not harmonious
- glare and reflection on floor coverings, windows
- white walls that increase glare
- uneven, inconsistent lighting either natural or man made
- unnecessary mirrors, or mirrored walls

6.4 Space Requirements

6.4.1 Single Bedrooms

Single bedrooms are recommended for all special care residents because of the often disruptive behaviour

¹¹ Draft Design Guidelines for Facilities for the Cognitively Impaired Elderly, Health and Welfare Canada, 1989

¹² Pastelan, 1979

¹³ "Services to Elderly with Mental Health Problems in Long Term Care Facilities"



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that characterizes this level of resident. Some residents may benefit from a companion in the rooms, and a double bedroom may be considered suitable. The single bedroom with its en suite wheelchair accessible washroom has the same requirements as other single bedrooms in Multilevel Care facilities. (See Figures 3 and 4).

Window openings must be strong enough to withstand abuse by residents and restricted to prevent egress. Window drapes need to be installed with quick-release fastenings so that they cannot be ripped. Use of draw cords must be avoided.

Door openings into bedrooms shall have a clear width of 1150 mm to allow for the movement of beds and, if designed with two opening leaves, should have a minimum opening width of 900 mm for normal usage. Locking hardware on resident bedrooms will not be approved.

Install bed-head bumper rails to protect walls against damage from bed movement.

6.4.2 En Suite Washrooms

The en suite washrooms shall be designed to fully accommodate wheelchair residents. (See Figure 5). Because the number of physically handicapped residents is far lower than in other long term care levels, consideration may be given to having removable swing-away grab-bars beside the toilets.

Redundant fixtures or fittings can trigger confusion in the resident. A simple and domestic environment is the objective and for this reason the familiar tank-back toilet is recommended instead of the flush-valve alternative. Where tank-back toilets are used, the tank lid must be tightly secured to prevent violent residents causing damage and injury.

Because it will create confusion, it is not recommended that residents share en suite washrooms.

6.4.3 Soiled Utility

There will be one Soiled Utility room in each 25 bed Special Care Unit, located central to the resident areas served with particular reference to the bedrooms, complete with service sink. Layout, fixtures and fittings for Soiled Utility will be as described for other levels of long term care (See Figure 8). Residents must not be allowed access to this room.

6.4.4 Linen Cart Storage

Linen should be stored on a cart in a lockable room, located centrally to the bedrooms. The linen cart is 1500 x 600 x 1500 high. There should also be shelf space for extra blankets and pillows. Alternatively, recessed areas in corridors may be used for the carts provided that they are covered.

6.4.5 Care Centre

The care centre is situated at the hub of the special care unit where, ideally, visual supervision is possible to all common areas of the residential unit, including the outside patio and garden but especially the



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dining/activity lounge areas and the bedroom corridors. Close proximity of the care centre to the unit's entrance is important for observation purposes and also to act as a point of reception into the unit. The nurse call system and main work area should be concentrated so that all functions can be carried out by one person when required.

Each resident will have a chart maintained at the care centre. Staff consultations will occur in the care centre so therefore an area where some acoustic privacy can be ensured is recommended. Larger staff conferences should take place either in the unit's Therapy room, if it is available, or in the team conference room elsewhere in the facility.

To prevent resident's wandering into the care centre, a gate with latch should be provided.

6.4.6 Clean Utility and Medical Preparation

Located adjacent to and easily accessible from the care centre, the clean utility and medication preparation functions can be combined. No resident or unauthorized access is to be allowed as strict control of drugs is very important. Allow space for one medicine cart.

6.4.7 Staff Washroom

Locate staff washroom adjacent to the care centre. If appropriate the same staff washroom can also be used as a visitor's washroom in which case it should be sized for wheelchair accessibility.



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6.4.8 Dining

Food service will originate from the parent facility's dietary service and arrive at the special care unit at meal time.

In the dining area, a kitchenette is provided for food service. This kitchenette may be used by residents under close supervision. The kitchenette will also provide hot and cold beverages as required either during or between meals. The kitchenette will be wheelchair accessible so that all residents will be able to use the equipment to prepare snacks as a recreational therapy. A lock should be provided for the fridge, to protect residents with eating disorders.

Dining will typically take place with four residents to 1200 mm x 1200 mm square table. Most residents will require assistance in eating. Some will be disruptive during meals and these residents will require separate dining spaces and may not eat in an open eating area.

6.4.9 Activity Lounge

The lounge is the primary social area within the unit where the residents will carry on most of their daytime activities and programs. Its location should be central to all areas and designed to integrate with the dining area if the combined space is to be used for larger social functions.

Again, provision should be made for small segregated sub groups.

Residents when resting in the lounge enjoy watching inside activities, and views of outside activities. Locating the care centre adjacent to the lounge is most convenient functionally and also allows staff/resident watching and interaction.

Programs for residents will include limited physical exercise, music therapy, reality orientation and forms of entertainment. Hobbies or artistic endeavour when possible will be encouraged.

Convenient storage of all equipment required for programs is essential so that when not in use items can be removed and kept in lockable cupboards or the main Storage room. Television and video equipment will also be treated in this way.

Fireplaces are not considered appropriate in the unit for safety reasons.

T.V. and video equipment should be available and provided in small activity rooms away from the central lounge space.

However, in appropriate cases, a double bedroom arrangement may be optional for those residents who might benefit from room sharing.

6.4.10 Activity Washroom

A wheelchair washroom is required to be immediately accessible to the dining/activity lounge. This



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washroom is to be designed with wheelchair access on either side of toilet. (See Figure 5)

Where conveniently located, the bathing area washroom can double as the activity washroom.

6.4.11 Bathing Area

Bathing activities will typically take place in and around the raised therapeutic tub. The bathing tub can be sized to suit supine or upright seated bathing. Allow sufficient space around the tub to accommodate a resident lifting device. (See Figure 6 & 7). One therapeutic tub and one shower can serve 25-35 residents.

A wheelchair accessible shower should be provided as an optional bathing facility.

A wheelchair washroom with access to either side of the toilet is provided in the bathing area. (See Figure 5). If appropriately located and enclosed, this washroom may also serve as the activity area washroom.

In the bathing area, a storage alcove is required for shower chairs and resident lifting device.

Adequate storage should be provided for commodes, laundry carts, heat lamps, warming cupboards, etc.

6.4.12 Therapy Area

The therapy room will be used for small group settings providing visual and acoustic privacy.

6.4.13 Storage

Storage for the unit should be located centrally and be readily accessible. Items required on a regular basis will be stored there (including additional residents' clothing, diapers, wheelchairs, and commodes). Bulk storage will be housed in the main general storage elsewhere in the parent facility.



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6.4.14 Corridors and Wandering Loops

Corridors for resident use will be 2400 mm wide. Floor finishes should avoid glare. This is particularly a problem for residents where sun shines onto a polished floor creating a strong contrast and a watery appearance. Carpeting may be preferred to vinyl in corridors; carpet helps to absorb unwanted sounds but can impede resident movement and poses cleaning problems.

The Wandering Loop Corridor is a desirable and important feature in the special care unit. In essence, this is an indoor walking circuit without dead-end spurs or side tracks that would halt and confuse the wanderer. To economize, the loop corridor must, as far as possible, form a natural route within the unit; for example, be developed from the bedroom corridors and/or form a perimeter margin to the activity lounge and dining areas. Handrails must be provided on both sides of the loop.

Corridor lengths should be kept as short as possible.

6.4.15 Outside Activity Areas

Residents must have direct access to a secure, level outside activity area at ground level which can be visually supervised from inside the unit. To secure the area, suitable fencing to a height of at least 2400 mm is required to deter the more active wanderers.

A patio area with shade and sheltered seating will form a required part of the outside area. Pathways should be designed as continuous circuits with defined landmarks placed to assist in orientation. All plants should be non-toxic because of the risk that some residents may unknowingly poison themselves.

Residents will have the opportunity to exercise, relax, practice gardening and interact with family members or visitors in the outside activity area. Each pod of 8-12 residents should have a separate wandering area.

6.4.16 Planning Considerations

The special care unit will be attached to, but physically distinct from, the parent long term care facility.

Entrance to the special care unit will be through the main entrance of the parent facility; however, a second entrance and exit directly from the special care unit should be designed for the admission of disturbed residents and as a pick up point for bus trips and outings to various locations in the community.



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Overall security and separation of the unit is an important factor in creating peace of mind in resident, staff and family members. Residents must not be allowed to leave the unit unattended nor must they be allowed access to staff or service areas. Locked exits will open automatically if the fire alarm is activated or manually from the control centre and locally at the door.

The unit should be planned at ground floor level to obtain direct access to a generous outside activity area containing a wide mix of garden stimuli for resident enjoyment.

Residents in special care have difficulty orienting themselves. Corridors should not be dead-end but designed to always lead the resident towards the dining and lounge areas. Keeping the corridor lengths as short as possible together with wayfinding signs, landmarks and recognizable views will assist the resident's orientation.

The wandering loop corridor which is an intrinsic and functional part of the special care unit may also be designed to include a circuit of the outside activity area in fair weather.

Residents function better in small groups. Consideration in planning should allow for this option. Sub-units can also be used to group these residents who are in the terminal stages of dementia separately from those in the earlier stage characterized by more disruptive behaviour. It is not expected that those experiencing dementia in the earliest moderate stage will be admitted to the special care unit until the later disruptive stage is reached. During the terminal stage residents may be confined to bed or have to use wheelchairs.

The physical environment of the special care unit should reflect the therapeutic aim of the facility which is to maximize the residents' independence, promote social interaction and provide stimulation in a safe and secure environment. The setting should be as home-like and residential as possible within the limits imposed by institutional care.

6.4.17 Special Design Considerations

Acoustics

Since residents can be dramatically noisy at times, where appropriate consideration should be given to finishing materials that absorb sound rather than reflect and to construction materials that reduce sound transmission in areas where quiet or seclusion is required. It is recommended that each residents' bedroom be separated from adjoining rooms by a Sound Transmission Class rating of 40.

Use of carpet in care facilities is discouraged. Where carpet is used, it must be a glue down hospital type which will allow ease of wheelchair movement and ease of cleaning; i.e., hot steam cleaning.



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Incontinence

Incontinence is a common problem associated with special care residents. Hard floor finishes must be readily cleanable. Floor fixtures will need to be carefully reviewed, and mounted clear of the floor to allow ease of cleaning. For example, baseboard heaters should be avoided completely in resident areas.

Wheelchair Accessibility

The special care unit is to be designed with wheelchair accessibility throughout the resident areas, including the outside activity area, main entrances and exits. Requirements for the protection of walls and doors from damage by wheelchairs (or carts), as well as handrails in long term care facilities also apply.

Floor Finishes

Floor finishes, in the resident areas, need to take into account the requirements for acoustics, incontinence, wheelchair use, gait impairment, glare avoidance, orientation cues, avoidance of strong contrasts in floor colours and the maintenance of a domestic nature.

Orientation

Since residents in Special Care will have a greatly reduced sense of orientation environmental cues must be located giving a sense of place and direction.

6.4.18 Shared Amenities

Moving confused residents from one place to another within a facility can be difficult and time consuming. Staff time can be used more efficiently if all amenities shared with the parent long term care facility such as physiotherapy, hairdressing, dietary, etc. are located in close proximity to the special care unit.

6.5 Engineering Considerations

Most engineering systems and equipment should meet the guidelines established for long term care facilities with further considerations as listed below:

6.5.1 Electrical Design

1. Receptacles in resident care areas should be tamper-proof type.
2. Fire alarm pull stations should be of the guarded type, and chimes should be installed rather than bells.



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3. Security systems can be utilized but should have the emphasis placed on exit door locking rather than monitoring. Alarming should be utilized also.

There are several types of wandering resident systems available but the total function and reliability of these systems need to be carefully examined. The design of the physical space should try to maximize control and supervision of residents and discourage any wandering away from the facility, thereby reducing the requirement for electric type controls. Code¹ regulations must be complied with.

4. Soothing background music systems can have a calming influence on residents. Intercom and paging systems are not recommended.
5. Nurse call system resident bedside stations should have geriatric cord sets and dummy plugs available.
6. Lighting systems should be capable of offering a range of different lighting levels to make use of available daylight and also take into consideration the different activities of the residents. Supplemental incandescent lighting could be provided in order to make use of any dimming requirements and help achieve a homelike appearance.

Generally illumination levels should be higher than recommended minimums in Section 11. Lighting levels should provide an even distribution throughout different areas to help reduce shadows and glare. The use of indirect and/or louvred fluorescent fixtures installed out of the normal field of view is also recommended for overall illumination. Supplementary lighting in the form of table or stand lamps may be utilized for task (reading) lighting. Fluorescent lamps should be warm white or daylight type.

7. Light switches for corridor lighting should be located at the care centre; night light switches in resident rooms may be of the illuminated type and should be located at the bed head and the entrance door.

¹⁴ British Columbia Building Code



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6.5.2 Mechanical Design

1. Sprinkler heads should be concealed and recessed type.
2. Radiant heating panels (ceiling mounted) should be used in lieu of baseboard heaters.
3. Thermostats and/or temperature sensor controls in resident areas should be tamper proof.

6.6 Space Summary

| | Total m ² |
|--|--------------------------|
| Single Bedrooms (25 x 20 m ²) | 500 |
| Resident Bathing | 20 |
| Care Centre | 20 |
| Medication Preparation | 4 |
| Clean Utility | 6 |
| Staff Washroom | 3 |
| Linen Cart Storage | 5 |
| Soiled Utility | 11 |
| Therapy Room | 15 |
| Storage | 20 |
| Dining | 50 |
| Activity Lounge | 70 |
| Resident Washroom | 5 |
| Net Total | 729m ² |
| Total Building Gross (1.6 Grossing Factor) | <u>1165m²</u> |

* Shared space located elsewhere in the parent facility includes: - Head Nurse Office, Treatment Room, Hairdressing, Physiotherapy, Dietary, Team Conference Room, Personal Laundry, Central Housekeeping, General Storage, Staff Change and Staff Lounge.



Section: **FOOD SERVICE**

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7.1 Requirements

Residents shall be provided with safe, nutritious, and attractive food which meets their individual physical and emotional needs.

Dining areas shall be of sufficient size and number, to preferably seat residents at one sitting (approximately 80 percent of the population). The design of this space shall be flexible enough to allow the capability of division into easily supervised areas suited to separate residents with differing capabilities; i.e., partial or total assistance. Consideration of utilization of sound reducing materials and/or barriers to achieve a more homelike atmosphere.

Meal service shall be flexible to accommodate variations in service method to provide mental and social stimulation, i.e., picnics, buffets, barbecues, family-style dining, special occasion parties. Consideration should be given to allow residents to select meals from a prepared menu, including size of portions.

The resident nourishment centre shall be conveniently located to provide emergency night nourishment for the residents.

Dietetic activities shall be as centralized as possible for economy of capital and operating costs.

The staff dining area shall be sufficient to seat day staff in two sittings, i.e., 20 seats.

There shall be a policy regarding the provision of beverages and/or food for night staff.

7.2 Necessary Areas

Work areas planned should include storage, preparation, service to residents and staff, clean-up areas such as pot washing, dishwashing, garbage disposal, and an office area.

7.3 Relationship Between Areas

Areas should be designed so the flow of work proceeds through receiving -- storage -- preparation -- service -- clean up. Equipment should be placed with this purpose in view.

Time and distance between preparation and distribution must be as short as possible.

Service areas should be near preparation areas.

Resident meal assembly area should be close to the preparation area.

Nourishments and special food requests will be prepared centrally for dispatch to residents.



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7.3.1 Dietetics Flow Diagram

Care should be exercised in arranging the dietetic work flow to follow the diagrammatic principles set out in Figure 13, Food Service Flow Diagram. Other flow patterns are feasible, but should produce similar results. Areas relating to the flow of food supplies such as Bulk Stores, Receiving and Garbage Holding are shown on Figure 14.

7.4 Space Requirements

7.4.1 Storage Areas

All storage areas should be lockable. Bulk storage is not included in the suggested gross square footage as it is normally a section of general stores. Day storage, including china, paper, and linen, located adjacent to the production area, shall be approximately 7 m². Refrigerated storage for fruits, vegetables, meat products, and dairy products, (adjacent to the production area) shall be approximately 8 m² in area. Frozen storage, adjacent to production, shall be approximately 6.5 m² in area.

7.4.2 Food Production Area

Food production, centralized and adjacent to storage and service areas, (approximately 55 m² in area) should provide for the preparation of the following: vegetables and fruits, salads and sandwiches, meats, cooking, baking, nourishments and special feedings.

Flooring in these areas shall be of non-skid content.

7.4.3 Sanitation Areas

Approximately 16 m² in area to accommodate pot washing, dishwashing should be located adjacent to service and production areas, (and convenient to janitor's closet).

7.4.4 Meal Preparation Area

Adjacent to production and sanitation areas, approximately 37 m² in area.

7.4.5 Office Area

Adjacent to department entrance, approximately 8.0 m².

7.5 Dining Room Service to Residents

Main resident dining area will be located adjacent to the meal service and sanitation areas. Refer to Section 4.3.

7.6 Staff Meal Service



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Adjacent to production and sanitation areas, allow 46 m² to accommodate a cafeteria service line and seating for 20 persons. This space may also be used between meals for staff conferences and should be designed with this in mind.

7.7 Staff Washroom

Adjacent to food service areas, provide two staff washrooms, about 3 m² each, containing water closets, washbasin, mirror, and shelf.

7.8 Miscellaneous

A professional food service consultant shall be selected by the Project Building Committee to plan the area for the best use of the available space and to specify the equipment required with particular attention to health and safety standards.

Equipment must be selected in accordance with menu, form of food purchased and meal service system selected.

Food service plans and specifications must be reviewed by Ministry of Health personnel prior to finalization of plans and tender call.

7.9 Space Summary

| | |
|----------------------|---------------------------|
| Day Storage | 7.0 m ² |
| Refrigerated Storage | 8.0 m ² |
| Frozen Storage | 6.5 m ² |
| Food Production | 55.0 m ² |
| Potwash/Sanitation | 16.0 m ² |
| Meal Preparation | 37.0 m ² |
| Dietician Office | 8.0 m ² |
| Miscellaneous | 5.0 m ² |
| Staff Meal Service | <u>46.0 m²</u> |
| Total Net Space | 188.5 m ² |

46 (staff)

142 m²



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8.1 Housekeeping

Housekeeping for the bedroom areas will be carried out from the soiled utility rooms where housekeeping equipment may be stored.

Provide a janitor's room to serve the group activity, dietary and service areas, sized to store the larger housekeeping equipment.

8.2 Laundry and Linen Service

The laundry service for the facility will usually be provided by an outside commercial laundry or by a regional health facility laundry where one is available with adequate capacity. Provide a clean linen cart storage accessible from the bedroom corridor. (One cart/25 beds or two carts/37 beds.) The carts will be returned daily to a central linen storage room and replaced by a full cart. Soiled linen will be collected in hampers and delivered to the soiled utility room.

8.2.1 Resident Clothing

In this same general area provide a small commercial quality washer and dryer where the facility staff can deal with residents' private linen and other small articles. Facilities for linen repair and the repair of residents' clothing shall be provided in the same area.

Combined floor area required is 18 m².

8.3 Central Linen Room

The central linen room will have a physically separate soiled receiving area where the soiled linen is gathered and bagged for dispatch to the laundry, as well as a clean storage area where the clean linen is received from the laundry and the carts replenished daily, all located close to the truck loading bay.

Required floor areas are:

For clean linen -- approximately 14 m²

For soiled linen -- approximately 12 m²

8.4 Receiving Area

Provide a loading area of 5.0 m² for receipt of all goods, adjacent to kitchen stores, general stores and linen holding area. Also provide a loading-bay at the service entrance of sufficient area to park delivery trucks and, in addition, a level access for an ambulance. The level access may also be useful for the movement of other wheeled equipment.

8.5 Bulk Storage Area

Close to the loading bay provide a bulk storage area for mattresses, beds, wheelchairs and other



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equipment that is not in current use, as well as medical/surgical supplies, stationery, housekeeping goods, etc., and bulk food before issue to the kitchen day stores. Provision must be made for security and control. Residents' surplus personal possessions will also be stored in this area. The total floor space required is approximately 60 m².

Consideration shall be given to an annual review of inventory and out of date equipment that may be donated to other facilities, needy individuals, or charitable organizations.

8.6 Waste Disposal

Waste disposal will normally be carried out by municipal or contract service. A garbage holding room for waste of about 5 m² will be provided only when required.

8.7 Morgue Facilities

Basic requirement will be a small room without special refrigeration to accommodate a mobile stretcher for temporary holding, pending transfer of the body to a mortuary. An area of about 4 m² will be required.

A loading door screened for privacy from public or resident view should be provided for mortuary vehicles.

8.8 Pharmacy

With the increase in the number of health facilities using the monitored drug dosage system of medication, there may be considerable variation from facility to facility in the manner supplies are obtained from either a parent health facility or from an outside pharmacist. If a pharmacy is to be included, it must meet the requirements of the College of Pharmacists of B.C.

8.9 Staff Locker Rooms, Toilets and Lounge

Male and female locker rooms, with sufficient space for approximately 6 male and 60 female employees, should include space for staff lockers with washroom facilities and a small common lounge.

A total area of 1 m² per employee should be allowed for the above.



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8.10 Mechanical and Electrical Rooms

Mechanical rooms for heating, domestic hot water, air handling, electrical, communication services and generators will be required with access to the delivery or service yard.

8.11 Service Facilities Flow Diagram

Figure 14, Service Facilities Flow Diagram.

8.12 Space Summary

| | |
|------------------------------------|-------------------------|
| Housekeeping Room | 10 m ² |
| Linen and Sewing | 14 m ² |
| Soiled Linen | 12 m ² |
| Patient Laundry | 18 m ² |
| Bulk Storage | 60 m ² |
| Receiving Area | 5 m ² |
| Garbage | 5 m ² |
| Morgue | 4 m ² |
| Staff Lockers @ 1.0 m ² | <u>66 m²</u> |
| Total Net Space | 194 m ² |



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9.1 Data & Code Conditions

Building shall be designed to meet "Measures for Energy Conservation in New Buildings".¹

Calculations of heating and cooling capacities shall be based on the latest information and methods published by ASHRAE. Minimum ventilation air quantities shall be in general accordance with current ASHRAE data and CSA standard Z317.2M.

Careful consideration must be given to the selection of building and system components for effective utilization of energy in the operation of the facility. In this regard, the provisions of ASHRAE 90-75 should be considered for applicability.

The following codes shall be adhered to in the fabrication, installation and selection of equipment with regard to all mechanical services:

- (a) Local and Provincial codes
- (b) Provincial Boiler Inspection Department
- (c) The Provincial Gas Inspection Regulations
- (d) Workers' Compensation Board
- (e) C.S.A. Standards

9.2 Design Conditions

If meteorological data is not available for winter and summer design of the locality of the proposed facility site, code criteria will be used.²

Outdoor temperature (winter): temperature in January that is not exceeded for more than 1% of the hours of January, as required by code.²

A safety factor of 10% is applicable to radiation.

Outdoor air temperature (summer): warmest temperature of Wet and Dry bulb temperatures during June through September on 2-1/2% basis, as required by code.²

Indoor air temperature (winter):

| | |
|------------------|--------------------|
| General areas | 22 degrees celsius |
| Resident areas | 24 degrees celsius |
| Bathing stations | 25 degrees celsius |

¹ National Research Council of Canada #16574

² National and British Columbia Building Codes



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Indoor air temperature (summer): The recommended indoor design condition is 24 degrees celsius dry bulb in common areas and 27 degrees celsius dry bulb in resident rooms.

Where mechanical cooling is not presently required, space shall be left for the possible future provision of a cooling system.

9.3 Humidification

Where required, humidification shall be via an evaporative system or a steam injection system. High limit control should be incorporated. Treatment or periodic pump-down of the system to avoid incubation of bacteria shall be employed.

9.4 Heating

Heating requirements shall generally be met using hot water boilers with water circulated through radiant ceiling panels or floor radiant heating system.

Alternate systems and equipment shall be evaluated to provide an easily maintained and economical system, conforming to current concepts of energy conservation.

Individual room temperature controls shall be used in all rooms.

If convectors or wall mounted elements are used, they shall be selected on the basis that they do not constitute a heat hazard to residents and staff.

9.5 Ventilation

A complete system of ventilation shall include both air supply and exhaust to provide the air flows necessary to satisfy ventilation requirements and to maintain negative, positive or balanced pressure according to requirements of each space. The system shall provide air flow from clean to dirty area, e.g., corridor to soiled linen room, resident room to toilet area, etc. See also Table 1.

In smoking rooms, provide exhaust ventilation to emit smoke to outside.

Air distribution system shall be carefully designed to prevent drafts.

Constant fan operation is a requirement in systems serving resident bedroom areas.

9.6 Cooling

Mechanical cooling shall be provided in dining rooms, lounges, activity areas, administration spaces, corridors and resident rooms to meet the required design conditions. Space shall be left for future installation of cooling coils, if mechanical cooling is not provided due to budgetary considerations.

9.7 Automatic Controls



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DDC (Direct Digital Controls) shall be used in new construction. Systems shall be easy to operate and maintain, and shall use the energy conservation routines consistent with the purpose of the building.

9.8 Resident Unit Air Supply

Supply air shall be introduced directly into all bedrooms.

9.9 Special Areas

Residents' lounge, dining area, T.V. room, shall be provided with means of temperature control of the respective area.

9.10 Kitchen & Cafeteria

Air shall be introduced to provide comfort conditions consistent with cooling and exhaust requirements and elimination of odour escape from the cooking areas.

Heavy odour and heat producing areas shall be exhausted by means of canopies or hoods.

These areas shall generally be served from a separate air supply system to allow for shut-down after hours. Auxiliary heat may be necessary to maintain reasonable temperature conditions during the shut-down period.

9.11 Administration

These are classed as office areas with air circulation to maintain comfort conditions with shut-down capability during off hours.

9.12 Balancing & Maintenance Manuals

All air and water systems shall be balanced by a qualified agency. Chemical treatment of water systems shall similarly be undertaken by a qualified agency.

The necessary maintenance manuals covering the mechanical requirements of the systems shall be provided.

The above requirements shall be carried out by agencies acceptable to the consultant and the owner.



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9.13 Boilers

The design of boiler plant shall be the result of an analysis of both capital and operating economies. Double or multiple boiler installations are acceptable, consequent upon investigation. Where two boilers are provided, each shall be capable of sustaining 60% of full load.

The plant shall be capable of operating under control of the building's automatic controls system with a minimum of supervision.

9.14 Stand-by Fuel System for Boilers

Stand-by fuel system consisting of an underground oil tank and piping/pumping system shall be provided as back-up to natural gas fired boilers connected to interruptible gas service. Propane fired stand-by systems are also acceptable. Firm service natural gas, fuel oil and propane-fired boilers shall not be provided with stand-by fuel systems.

9.15 Chemical Treatment

Provision shall be made for adding water treatment to boilers, heating and cooling systems. Automatic injection is preferred for the latter system.

9.16 Domestic Hot Water Heating

Separate tank type heaters, natural gas or oil fired, shall generally be provided for the 43 degree Celsius domestic system and the 82 degree Celsius for the dishwasher and pot washing requirements. Storage tanks served by boilers not used for building heating are also acceptable.

9.17 Cold Storage

Refrigerator units shall be supplied and installed to cover the requirements of Refrigerated Storage spaces.

9.18 Accessibility

Due consideration shall be paid to the sizing of boiler, fan and maintenance areas. Good access shall be provided to service and maintain the various items of equipment.



Section: **HEATING, VENTILATION AND
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TABLE 1. GENERAL PRESSURE RELATIONSHIPS AND VENTILATION

| Area Designation | Pressure Relationship to Adjacent Areas | Min. O/A Air Changes per Hour Supply | Min. Total Air Changes per Hour Supply | All Air Exhausted Directly to Outdoors |
|------------------------------------|---|--------------------------------------|--|--|
| Resident Room | E | 2 | Note 1 | Optional |
| Examination Room | E | 2 | 6 | Optional |
| Treatment Room | E | 2 | 6 | Optional |
| Soiled Workroom or Holding | N | 2 | 10 | Yes |
| Clean Workroom or Holding | P | 2 | 4 | Optional |
| Non-Refrigerated Body Holding Room | N | Optional | 10 | Yes |
| En suite washroom | N | Optional | 10 | Yes |
| Soiled Linen Sorting & Storage | N | Optional | 10 | Yes |
| Clean Linen Storage | P | 2 (Optional) | 2 | Optional |

P = Positive N = Negative E = Equal

Note 1: As requested to provide adequate cooling.



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10.1 Codes

The following codes shall be adhered to in the fabrication, installation and selection of equipment with regard to all mechanical services:

- (a) Local and Provincial codes
- (b) Provincial Boiler Inspection Department
- (c) The Provincial Gas Inspection Regulations
- (d) Workers' Compensation Board
- (e) C.S.A. Standards

10.2 Site Services

Method and location of connection to main services for the facility requirements shall be decided following site allocation and evaluation. These services shall include sanitary sewer, storm and footing drainage, domestic cold water and fire lines and natural gas where necessary.

10.3 Sanitary Sewer System

A complete sanitary system including all wastes, drains and vents from plumbing fixtures shall be provided.

Kitchen wastes shall be intercepted by adequate grease trapping prior to discharge to the sanitary sewer.

10.4 Storm Sewer System

Full provision shall be made for storm drainage from rainwater leaders and footing drains.

10.5 Domestic Cold Water

A full domestic service shall be provided within the building, with connection to various items of equipment in kitchen, boiler room, hot water supply and refrigeration machinery, etc.

An analysis of water supply shall be arranged to determine the necessity or otherwise of water treatment.

10.6 Domestic Hot Water

A full domestic hot water piping system with means of recirculation or heat tracing of the supply pipe shall be provided. All required and necessary connections shall be made to items of equipment as supplied by others. Temperature of hot water must not exceed 43 degrees celsius. Non-scald mixing valve (pressure activated type) shall be incorporated in both shower and both facilities.

10.7 Natural Gas Service

Dependent upon availability and analysis of fuel costs, this service may be required for (a) prime fuel to boilers, (b) domestic water heaters, and (c) kitchen requirements. Interruptible service with a suitable back-up system shall be used, where applicable.



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Failing availability of this service, a propane supply may be required in lieu of item (c) and also boiler ignition.

10.8 Fire Protection

The facility shall be sprinklered. The sprinkler system shall meet the requirements of the current British Columbia Building Code.

10.9 Plumbing Fixtures

Plumbing fixtures shall be selected in accordance with various recommendations within these guidelines. They shall be of such design and adaptability so as to provide optimum utilization by aged and infirm persons.

10.10 Piping Materials

Piping materials shall be selected with due regard to economy and their proposed usage.

10.11 Medical Gases

Small piped oxygen system shall be provided in 10% of the bedrooms grouped near the Care Centre. Other piped medical gases are not generally required in this complex.

10.12 Energy Conservation

Energy conservation should be intrinsic to the plumbing systems design.



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11.1 Codes and Standards

The design and construction/installation requirements shall be in accordance with the latest editions of National, Provincial and Municipal codes and bylaws. The most restrictive of the following codes should be complied with:

- (a) British Columbia Building Code
- (b) Canadian Electrical Code, Part 1-C22.1, as adopted for use in B.C.
- (c) CSA-Z32.2, Electrical Safety in Resident Care Areas.
- (d) CSA-Z32.4, Essential Electrical Systems for Hospitals.
- (e) C22.2 No. 125, Electromedical Equipment
- (f) Standard for the Installation of Fire Alarm Systems, ULC Standard S524.

All equipment and/or materials selected shall be CSA approved.

11.2 Power Supply

The primary services and transformer locations can be predicated by any number of the following conditions:

- (a) utility power grid serving the site
- (b) site conditions
- (c) facility physical plan

Transformer sizing and system design should take into account load requirements, reliability, flexibility and continuity of service, environmental considerations, site space limitations and costs of equipment.

Design should consider service continuity, future expansion, flexibility of operation and, safety of maintenance personnel.

The engineer and utility company to consult and coordinate prior to any decisions regarding supply and feeder arrangements.

The utility may provide transformation to the utilization voltage depending on the size of the facility and reliability of the utility service. The facility should establish that the utility will have immediate access to spare transformers or other critical components for replacement or repairs.

11.3 Secondary Distribution

A 600 v or 120/208 v distribution system should be utilized. Large motor and equipment loads, etc. should be supplied at 600 v with lighting, receptacles and small appliances at 120/208 volts.



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Panel boards (this does not apply to standby power panels) 120/208 v should be located within the same area as the circuits they feed but located out of view of residents and in service rooms if possible. Panel boards should be sized in ampacity and circuit capacity to provide 25 percent spare capacity. Every effort shall be made to provide a system power factor of at least 90 percent, capacitors are not to be installed to achieve this end. A system review to be undertaken after one year of operation. Capacitors for large motors may be installed at the motor control centres.

Stub 2-25 mm spare conduits into ceiling space from each panel board, terminate in suitable junction boxes.

All switchgear to be of drip proof construction when electrical room is to be sprinklered. Switchgear connected to the standby power system to be painted blue.

11.4 Standby Power

On-site generator to be provided, preferably within the facility contained in a separate room, although outdoor units may be considered under certain conditions. A remote alarm should be located at the care centre.

Labels for equipment connected to standby power system should be red with white lettering.

The fuel supply shall be as per the C.E.C. C22.1 Section 24. The minimum loads which should be connected to the standby system are as detailed in CSA-Z32.4.

Emergency power should be provided to smaller cooking/warming equipment such as coffee maker, toaster, microwave, etc., and some heating in lounge or activity areas.

11.5 Wiring Methods

The use of wireway systems or conduits for all systems, in any type of construction, is preferred. Relaxation of this requirement may be given for power wiring horizontally in wood frame stud walls.

All building wire and cable to be copper conductors. Special consideration may be given for the use of aluminum conductors under certain conditions.

Conduits and wireways to be installed exposed in attic spaces or above suspended ceilings and in crawlspaces.

Flexible conduit to be used only for connections to equipment subject to vibration and final connections to recessed light fixtures.



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11.6 Mounting Heights

The following mounting heights are to be used as a guide; all wall mounted equipment should be coordinated with the architect in order to stay clear of bumpers, handrails, etc.

Wall receptacles - generally 450 mm

Resident bedhead receptacles - 900 mm

Motorized bed receptacles - 450 mm

Telephone - generally 450 mm (Wall) - 1500 mm

Television and Computer outlets - (Wall) 450 mm

Fire Alarm Pull Stations - 1200 mm

Fire Alarm Bells - 300 mm below ceiling and not more than 2900 above floor

End of line resistors - 1800 mm

Nurse Call System

Bed station - 1350 mm to 1500 mm

Emergency station - 1350 mm

Shower station - 1650 mm

Staff/Duty stations - 1500 mm

Intercom (Wall) - 1500 mm

Light switches - generally 1200 mm

- in resident washrooms 1050 mm

- at resident bedheads 1050 mm

Thermostats - 1200 mm - 1500 mm

11.7 Seismic Requirements/Earthquake Restraints

Major equipment such as standby generators, transformers, switchgears, major control panels are to be resiliently mounted and bolted to the basic structure.

Restraint cables should be connected to suspended equipment from the basic structure.

All seismic restraints are to be as required by the B.C. Building Code, local bylaws and regulations.

11.8 Wiring Devices

Receptacles:

Hospital grade non-locking receptacles (15A & 20A) are to be used in all resident care areas and specification grade may be used in non-resident care areas, e.g., administration and maintenance. Receptacles connected to the standby power system are to have red housing and/or faces. Power bars are not acceptable.



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Consideration should be given to the use of tamper proof receptacles within certain resident care areas. Generally, duplex U ground type receptacles should be provided in all locations of possible usage, specially rated receptacles for specific equipment requirements are to be provided for as required.

Consideration will be given to the use of special surge suppression receptacles in certain areas for specific uses.

Outlets are not to be installed back to back. Provide sound proofing where required to reduce noise transmission.

Receptacles in corridors for housekeeping purposes should be spaced at approximately every 15 m and sized to suit cleaning equipment.

Outdoor receptacles are to be protected by ground fault breakers. Where required, due to geographical location, a minimum number of receptacles for block heaters should be provided.

Resident bedheads should have a minimum of 2 duplex receptacles; in the case where 2 beds share a common wall this may be reduced to a total of 3. A receptacle may be required for motorized beds, if these are to be supplied. Resident bedhead receptacles may be combined with resident reference ground bus units. Receptacles are to be provided adjacent to vanity units in resident rooms and in resident en suite washrooms. A receptacle should be provided at each resident bed area for a television.

Provide a heat lamp in bathing rooms over the resident drying space.

Reference Ground Bus Units:

These are to be provided in each resident care area, and may be combined with duplex receptacles to provide integrated units.

Switches:

Lighting switches to be specification grade, quiet type throughout, toggle type with ivory handle. Generally, illuminated type toggle switches will not be acceptable, except to control resident room night lighting. The switch to operate the resident's reading light and/or night light should be accessible to the resident.

Toggle switches being used for motor disconnects to be HP rated.

Cover Plates:

Provide cover plates for all outlets. These are to be brushed stainless steel or high impact nylon.

11.9 Clocks

Battery operated clocks are facility provided equipment and not included in construction. Master clock systems are not recommended.



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11.10 Lighting

General:

The intent of this guideline is to point out specific and special requirements in this type of facility and not to inhibit creative sensible design.

While this is an institutional facility, it is also recognized that every effort should be made to avoid an "institutional" look, yet still provide efficient well-lit spaces. The lighting systems should be designed to meet the needs of the staff and the residents.

Generally, fluorescent lighting is to be utilized throughout the building and H.I.D.¹ sources for any site lighting (low efficiency mercury vapour lamps are not recommended). General illumination and night lighting in corridors should be provided from fluorescent sources with consideration given to specifying combined units. Control should be by three-position switching at locations adjacent to the care centre.

Illumination levels should be higher than I.E.S.² recommended minimums in resident areas such as en suite washrooms, activity, dining and recreation. Sometimes this may be achieved with reading lamps in some areas. At the same time, every effort should be made to reduce glare and the brightness ratio in different areas.

Lighting systems should be capable of offering a range of different lighting levels to make use of available daylight and a variety of space usages. Safety, efficiency and low maintenance must also be considered.

Incandescent lamps are to be kept to a minimum and will be considered in areas where frequency and duration of use are low or limited to a small number.

Fluorescent lamps should be specified as the standard imperial size and energy saving type. Consideration should be given to energy efficient magnetic or electronic ballasts.

Compact fluorescent fixtures are to be the high power factor type.

¹ High Intensity Discharge

² Illuminating Engineering Society



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Resident Rooms:

Given the geometry of resident rooms, finishes and accessories, there can be no single solution to the lighting. These guidelines, therefore, are to identify considerations and techniques to help designers in making their choice.

Fluorescent fixtures arranged in valences or incorporated in overbed fixtures should provide adequate ambient lighting. Matt finishes in conjunction with indirect lighting is especially effective in reducing glare. Durable, low maintenance sources, which can be cleaned and relamped easily should be considered. A single switch controlling the general lighting from the room entry should be satisfactory.

A wall mounted overbed fixture with a moveable or adjustable arm may be provided for the resident's use as a reading light. These should be controlled locally by the resident, an insulated pull cord may be used. When used, these fixtures may help provide a residential atmosphere.

A night light should be provided to assist the resident and staff. These should primarily illuminate between the bed and washroom entry and be directed to avoid glare in resident's eyes. They may be wall mounted or integrated in an overbed fixture.

Lighting should also be provided for vanities and washrooms, and controlled from local switches.

The ambient lighting should provide sufficient illumination for general examination purposes. Downlight fixtures do not usually provide uniform lighting over the entire bed, nor does the ambient lighting and therefore these should not be relied on for detailed examinations. Portable examining lights should be used for this purpose.

Emergency Lighting:

Emergency lighting is to be provided in compliance with all applicable codes and be provided for all corridors and exits, public and resident stay areas, some staff work areas, boiler, electrical and generator rooms. Normally this should be provided from emergency power circuits. Some areas should also be equipped with battery packs (ie. generator room, care centre).



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Recommended Light Levels (LUX):

| Activity or Area | Average Ambient | Task |
|---------------------------|-----------------|------|
| Corridors/Stairs | 220 | |
| Corridors, night level | 35 | |
| Entrances, main | 220 | |
| Lobby | 320 | |
| General Office | 750 | |
| Staff Change Rooms | 220 | |
| Utility Rooms | 320 | |
| Resident Rooms | 220 | 420 |
| Maintenance/Service Rooms | 550 | 750 |
| Storage | 220-320 | |
| Lounge Activity | 220-540 | |
| Dining | 320 | |
| Multi-Purpose Room | 550-755 | |
| Kitchen | 320 | |
| Occupational Therapy | 320 | 540 |
| Care Centre | 320 | 750 |
| En Suite Washrooms | 320 | |
| Beauty Salon | 320 | 750 |
| Treatment Room | 320 | 750 |
| Site | 30 | |

11.11 Nurse Call System

The nurse call systems shall be CSA listed on a complete system basis and approved as Class 8711 01 Electromedical Equipment. The system should be a microprocessor controlled of modular design, audio/visual system. Components should be installed as follows:

- (a) each bed shall have its own station;
- (b) emergency stations with the pull cord in en suite washrooms shall be close enough to be pulled by a resident using the toilet, and reach to the floor;
- (c) staff stations shall be located in staff work areas, e.g., bathing, treatment, lounge, dining spaces;
- (d) duty stations in some staff work areas and in some corridors;
- (e) rooms with nurse call devices, except staff work rooms, will have corridor dome lights located outside the rooms and be clearly visible from the care station. Corridor intersections will have zoned directional dome lights. En suite washroom devices will not have a dome light;
- (f) staff emergency stations should not be provided in resident rooms;
- (g) tone stations should be provided near the end of a corridor.
- (h) the floor control station is to be located at the care centre.



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11.12 Fire Alarm System

This system to be installed as required by the B.C. Building Code and the Standards for the Installation of Fire Alarm Systems.

Smaller buildings requiring 20-30 input zones should be provided with a conventional hard wire, relay/transistor logic type system. Multiplex, microprocessor based systems are recommended for buildings requiring over 30 zones.

Systems are to be separate stand-alone with dedicated hardware and software. The controller may interface with building control systems in larger complexes.

Corridor smoke detectors are to be spaced at half the distance of that required by the Installation Standards.

Provide a graphic type annunciator at the main entrance and a remote annunciator at a 24 hour staffed location, as determined by the owner, this will usually be at a care centre. In multilevel buildings, a remote annunciator with reduced zoning should be considered for each floor level.

The annunciation of individual resident room smoke detectors may be through a separate annunciator located at the associated care centre or the nurse call system master station. It is desirable that the individual room dome light be activated also. Provide a few seconds delay for release of the door holder circuit.

Resident room doors should not have door closers/holder unless required by code.¹

It is desirable that the electrical room be provided with a heat detector in lieu of sprinklers.

11.13 Telephone

The system(s) should be closely coordinated with the owner with regard to their requirements.

Telephone outlets shall be provided in the following locations in addition to the switchboard.

- (a) General office
- (b) Administrator's office
- (c) Care Centre
- (d) Kitchen
- (e) Coordinator's office
- (f) Staff office(s)
- (g) Quiet room

Provision for telephone outlets shall be made at all bed locations. Usually resident rooms will have a residential type service that should be pre-wired by B.C. Telephone Co. The facility telephones may be a separate, facility owned system.

¹ British Columbia Building Code



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Provide for a wheelchair accessible payphone outlet in waiting areas.

Include back boxes, coverplates and conduits of suitable size.

Provision for access and interface to other communication systems such as overhead paging, pocket pagers and intercom should be evaluated.

11.14 Television

Outlets should be provided for each bed (on opposite wall to bed), in lounge/activity areas and team conference or staff room. Include back boxes, coverplates, conduits of suitable size complete with pull cords and closet space for possible subdistribution equipment. Coordinate the design with the cable company.

11.15 Voice Paging System

This system is optional and may be provided with the capability of paging individual zones or groups of zones and at different volume levels (day/night). This system may be combined with the telephone or the nurse call system. Paging should not be provided in the special care unit except in selected work and staff rooms.

11.16 CCTV

This system may be required and should be limited to one main entrance door monitored from one location. Smaller video intercom type systems may be acceptable in some facilities.

11.17 Security Systems

A door alarm system should be provided at street level exit doors to indicate unauthorized opening of doors. This alarm shall register at the care centre and be capable of deactivation during normal daytime working hours. Each door should have individual bypass control. This system may be interfaced with the nurse call system.

Buzzers may be provided at the activated door. This system should have simple disarming controls located near the entrance used by staff. Provide a drug cupboard alarm where required that will register at the appropriate care centre.



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11.18 Intercom System

A comprehensive stand-alone system is not recommended and any system considered should be a stand-alone master-slave station type.

General intercom requirements should be handled through the telephone or nurse call system.

11.19 Resident Wandering Systems

Residents in these facilities are sometimes inclined to wander outside of the facility or into areas that could jeopardize their safety. Concepts and new technology are rapidly changing in this area. New code requirements have altered and affected the ways of handling this concern.

The electrical contract should include roughing-in provision around exit doors to provide for future wiring of these systems.

11.20 Existing Facilities

Buildings undergoing upgrading and additions are to be reviewed on an individual basis for incorporating the requirements of these guidelines. Coordination and cooperation with the authority having jurisdiction and the owner are required.

Older cablevision installations may require rewiring; this should be coordinated with the owner and the cablevision company.



Section: **MISCELLANEOUS SPECIFICATIONS**

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12.1 Walkways and Ramps

All entrances and exits should be at the level of entrance walkways which must be designed for access of wheeled stretchers. Outside recreational areas shall be without curbs, and where necessary, ramps to wheelchair standards shall be provided.

12.2 Doors

Thresholds shall be flush for doors within the building, and 12 mm maximum height for doors to the exterior, and eliminated when a door is under adequate shelter.

Revolving doors are not permissible. Paired main entrance doors are difficult for individuals in wheelchairs to operate, unless automatic sliding doors are provided or unless each leaf is at least 900 mm wide. All door openings through which wheeled resident beds or stretchers may pass should be not less than 1150 mm clear width. Openings through which residents on wheelchairs may pass shall be at least 900 mm wide. All doors shall have a protective scratch resistant plate applied to the exposed face and a bang strip to the same height applied to the leading butt edge for a height of 900 mm.

Two-leaf combination doors, where used, must have the main leaf opening of 900 mm. For all self-closing doors, vertical pull-push handles are recommended as the most easily usable by impaired residents.

Door checks (closers) and friction holders, where required, shall be adjusted for the least amount of energy to operate and still perform their function.

Door knobs where required shall be large and at least 60 mm offset. Lever handles are preferred, similarly offset from the door jamb. Resident en suite doors which swing out shall have a combination pull handle towel bar on the inside as shown on Figure 5.

Pressed welded steel frames shall be specified for all interior door openings.

12.3 Corridors

Corridors for movement of beds and stretchers shall be 2400 mm wide to provide adequate clearances for normal health facility traffic, and to permit the movement of beds in a fire emergency.

A greater width shall be provided at elevator entrances.

Residents may be easily confused and disoriented by look-alike corridors and rooms. A definite system of identifying one's position in the building, such as colour coding, different details and furnishings is helpful.

No doors should swing into a main corridor except closet doors, which will normally be kept closed.

Wherever possible, natural daylight should be provided in corridors.

Material used for flooring shall be non-reflective in composition.



Section: **MISCELLANEOUS SPECIFICATIONS**

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Wherever there is traffic in wheelchairs, trolleys, stretchers, etc., the walls and doors should be protected. Continuous protection up to 400 mm above the floor is advisable. Materials such as sheet vinyl, aluminum, wood, glass fibre reinforced panel (FRP), etc., can be used.

There shall be access to one full length mirror for resident use located between resident rooms and the activity area.

12.4 Grab Bars and Handrails

Grab bars and handrails shall preferably be of tubular sections, sized at 45 mm outside diameter for hallway and corridor handrails and exercise bars, and at least 30 mm outside diameter for grab bar installations for bathtubs, showers, water closets, and hand washbasins.

Handrails shall be mounted 850 mm from the floor with a minimum clear space of at least 40-50 mm between a grab bar or handrail and the wall, to permit the resident to release his grip without danger of catching his hand, wrist or arm behind the rail. Handrails must have warning tactile inserts to indicate rail ends and rail breaks at doors.

Colour coding of handrails is recommended for resident way finding.

12.5 Bathtubs

Therapeutic tubs, sit-in or supine complete with lifting devices are recommended.

Non-therapeutic tubs should be provided with horizontal grab bars mounted at 960 mm, 1,200 mm long, centrally located over the tub and 35 mm from wall, with floor stanchions each side.

Towel bars and bathrobe hooks shall be provided.

Refer to figures 6 and 7.

12.6 Carpets

Carpets may be used in selected spaces, corridors, lounges and administrative spaces. Consideration shall also be given to use of sheet vinyl in most areas.

12.7 Fireplaces

The use of wood burning fireplaces is not recommended.



Section: **MISCELLANEOUS SPECIFICATIONS**

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12.8 Smoking Area

Consideration should be given to providing a room adjacent to or within sight of the care centre with a burn proof floor surface (e.g., ceramic tile) where residents who smoke can do so without damaging the floor. Additional ventilation to exhaust to outside must be provided.

12.9 Sound Transmission

When designing the overall layout of the facility and when preparing detailed plans and specifications, careful consideration should be given to the control of sound transmission between certain areas of the building.

Noisy areas such as soiled utility, group activities, dietary and administration, where possible should not directly flank resident rooms. Where this is not possible (for example, resident bath facilities may adjoin bed rooms) the dividing walls should be designed with a Sound Transmission Class rating of 45.

Single rooms, and the treatment rooms which are to be used for separation, should be isolated from adjacent areas with partitions, floors, and ceilings producing a Sound Transmission Class rating of 45.

12.10 Mechanical Work Bench

Provide a 600 mm metal-topped work bench complete with cupboards underneath and a vice in mechanical and boiler rooms. Minimum lengths of benches 1800 mm and 900 mm respectively.

12.11 Building Components

Prefabricated or standard units of building materials shall be specified wherever possible, e.g., door components, window units, plumbing fittings, etc. with comparable manufacturers specified in the contract documents. British Columbian and Canadian products should be specified in preference to imported materials.

12.12 Wheelchair Dynamics

Figure 16 illustrates the dynamics of residents in wheelchairs and essential design dimensions.

Additional space is recommended for battery charging rooms and the storage of scooters and electric wheelchairs.



Section: **COMPOSITE PLANNING**

Section No: 13

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13.1 Composite Diagrams

The following diagrams represent an attempt to unify the major departments.

Figure 15, Composite Flow Diagram.

The task of arriving at good solutions for each project will require expert analysis. However, it is anticipated that the content of this program will offer a basic guide to those charged with the responsibility of coordinating and producing the design of a unique type of health facility, the multilevel care health facility.

Layouts and diagrams shown in these guidelines indicate suggested arrangements but are not intended to be design solutions.



Section: **ENERGY CONSERVATION**

Section No: 14

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14.1 Minimum Standards

The building shall be designed in accordance with the current code requirements¹ but with the following exception:

14.1.1 Maximum Glazing Area

Article 3.3.4 (shall read as follows): Except as provided in Articles 3.3.5 and 3.3.6., the total area of glazing, including glazing for doors and skylights, that separates heated space from unheated space or the exterior shall not exceed 10% of the Perimeter Floor Area of the "storey" served by the glazed areas.

The Perimeter Floor Area, in this context, shall be taken as band of floor area 7 m deep continuous to the external wall.

¹ "Measures for Energy Conservation in New Buildings 1978", issued by the Associate Committee on the National Building Code, National Research Council of Canada, Ottawa



Section: **REFERENCES**

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5. Hospital Space Requirements, Food Service Layout and Equipment Planning; L.H. Kotschevar, Professor, School of Hotel, Restaurant and Institutional Management, Michigan State University, and Margaret E. Terrill, Professor, Institutional Management, School of Home Economics, University of Washington, Seattle.
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| MULTILEVEL FACILITIES SPACE PROGRAM 75-BED UNIT | | | | | |
|--|----------|------------------------|------------------------|--|--------------------------|
| | | UNIT m ² | AREA m ² | | TOTALS m ² |
| 1. RESIDENT UNIT | | | | | |
| Bedrooms | | | | | |
| 1-bed | 25 rooms | 20.0 | 500.0 | | |
| 2-bed | 25 rooms | 30.0 | 750.0 | | |
| Resident Bathing | | | 48.0 | | |
| Care Centre | | | 66.0 | | |
| Clean Utility | | | | | |
| Medicine Preparation | | | | | |
| Head Nurse Office | | | | | |
| Linen Supply | | | 12.0 | | |
| Soiled Utility | | | 33.0 | | |
| Examination and Treatment | | | 18.0 | | |
| Hairdressing Salon | | | 10.0 | | |
| Housekeeping | | | 6.0 | | |
| Wheelchair Storage | | | 7.0 | | |
| Wheelchair Charging Room | | | <u>12.0</u> | | 1462.0 |
| 2. RESIDENT GROUP ACTIVITIES | | | | | |
| Lounge(s) | per bed | 1.4 | 105.0 | | |
| Dining Room(s) | per bed | 2.0 | 150.0 | | |
| Activity Room(s) | per bed | 1.4 | 105.0 | | |
| Resident Washroom | | | <u>4.0</u> | | 364.0 |
| 3. ADMINISTRATION | | | | | |
| Reception | | | | | |
| Administrator | | | | | |
| Coordinator | | | | | |
| General Office | | | | | |
| Quiet Room | | | | | |
| Team Conference Room | | | | | |
| Toilets | | | | | 120.0 |
| 4. FOOD SERVICE | | | | | |
| Day Storage | | | 7.0 | | |
| Refrigerated Storage | | | 8.0 | | |
| Frozen Storage | | | 6.5 | | |
| Food Production | | | 55.0 | | |
| Potwash, Sanitation | | | 16.0 | | |
| Meal Preparation Area | | | 37.0 | | |
| Office | | | 8.0 | | |
| Miscellaneous | | | 5.0 | | |
| Staff Meal Service (Seat 20 staff) | | | <u>46.0</u> | | 188.5 |



| MULTILEVEL FACILITIES SPACE PROGRAM 75-BED UNIT | | | |
|--|------------------------|------------------------|--------------------------|
| | UNIT m ² | AREA m ² | TOTALS m ² |
| 5. SERVICE FACILITIES | | | |
| Housekeeping | | 10.0 | |
| Linen and Sewing | | 14.0 | |
| Soiled Linen | | 12.0 | |
| Resident Laundry | | 18.0 | |
| Bulk Storage | | 60.0 | |
| Receiving Area | | 5.0 | |
| Garbage | | 6.0 | |
| Morgue | | 4.0 | |
| Staff Lockers | 1.0 | <u>66.0</u> | 195.0 |
| 6. TOTAL NET AREAS | | | 2329.5 |
| TOTAL GROSS AREA (1.4 grossing factor) | | | 3261.3 |
| 7. SERVICE AREAS | | | |
| Laundry: | As required | 55.0 | |
| Mechanical: | As required | 110.0 | |
| Electrical/Tel: | As required | 15.5 | |
| Generator: | As required | 15.0 | |
| Maintenance: | As required | <u>20.0</u> | 215.5 |
| 8. TOTAL BUILDING GROSS | | | <u>3476.8</u> |



| | | UNIT m ² | AREA m ² | TOTALS m ² |
|---------------------------|--|------------------------|------------------------|--------------------------|
| 1. | RESIDENT UNIT <u>50-Bed: Multilevel</u> | | | |
| Bedrooms | | | | |
| 1-bed | 30 rooms | 20.0 | 600.0 | |
| 2-bed | 10 rooms | 30.0 | 300.0 | |
| Resident Bathing | 2 rooms | 22.0 | 44.0 | |
| Care Centre Area | | | 47.0 | |
| Linen Supply | 2 rooms | 4.0 | 8.0 | |
| Soiled Utility | 2 rooms | 11.0 | 22.0 | |
| Examination and Treatment | | | 18.0 | |
| Hairdressing Salon | | | 10.0 | |
| Housekeeping | | | 5.0 | |
| Wheelchair Storage | | | 6.0 | |
| Battery Charging | | | <u>12.0</u> | |
| | | | | 1073.0 |
| 2. | RESIDENT UNIT <u>25-Bed: Special Care</u> | | | |
| Single bed rooms | 25 rooms | 20.0 | 500.0 | |
| Resident Bathing | | | 20.0 | |
| Care Centre Area | | | 33.0 | |
| Linen Supply | | | 5.0 | |
| Soiled Utility | | | 11.0 | |
| Therapy Room | | | 15.0 | |
| Storage | | | 20.0 | |
| Dining | per bed | 2.0 | 50.0 | |
| Activity Lounge | per bed | 2.8 | 70.0 | |
| Resident Washroom | | | <u>5.0</u> | |
| | | | | 729.0 |
| 3. | RESIDENT GROUP ACTIVITIES | | | |
| Lounge(s) | per bed | 1.4 | 70.0 | |
| Dining Room(s) | per bed | 2.0 | 100.0 | |
| Activity Room(s) | per bed | 1.4 | 70.0 | |
| Resident Washroom | | | <u>5.0</u> | |
| | | | | 245.0 |
| 4. | ADMINISTRATION | | | |
| Reception | | | | |
| Administrator | | | | |
| Coordinator | | | | |
| Staff Office/s | | | | |
| General Office | | | | |
| Quiet Room | | | | |
| Team Conference Room | | | | |
| Toilets | | | | |
| | | | | 120.0 |



| | UNIT m ² | AREA m ² | TOTALS m ² |
|---|------------------------|------------------------|--------------------------|
| 5. FOOD SERVICE | | | |
| Day Storage | 7.0 | | |
| Refrigerated Storage | | 8.0 | |
| Frozen Storage | | 6.5 | |
| Food Production | 55.0 | | |
| Potwash, Sanitation | | 16.0 | |
| Meal Preparation Area | | 37.0 | |
| Office | | 8.0 | |
| Miscellaneous | | 5.0 | |
| Staff Canteen | | <u>46.0</u> | |
| | | | 188.5 |
| 6. SERVICE FACILITIES | | | |
| Housekeeping | | 10.0 | |
| Linen and Sewing | 18.0 | | |
| Soiled Linen | 12.0 | | |
| Clean Laundry | | 14.0 | |
| Bulk Storage | 60.0 | | |
| Receiving Area | | 5.0 | |
| Waste Disposal | | 6.0 | |
| Morgue | | 4.0 | |
| Staff Lockers | 1.0 | <u>66.0</u> | |
| | | | 195.0 |
| 7. TOTAL NET AREAS | | | 2550.5 |
| TOTAL GROSS AREA (1.4 Grossing Factor) | | 3570.7 | |
| 8. SPECIAL CARE UNIT | | | |
| ADDITIONAL TO GROSS 20% x 729.0m ² | | <u>145.8</u> | |
| TOTAL GROSS | | | 3716.5 |
| 9. SERVICE AREAS | | | |
| Laundry: As required | | 55.0 | |
| Mechanical: As required | | 110.0 | |
| Electrical/Tel: As required | | 15.5 | |
| Generator: As required | | 15.0 | |
| Maintenance: As required | | <u>20.0</u> | |
| | | | 215.5 |
| 10. TOTAL BUILDING GROSS | | | <u>3932.0</u> |

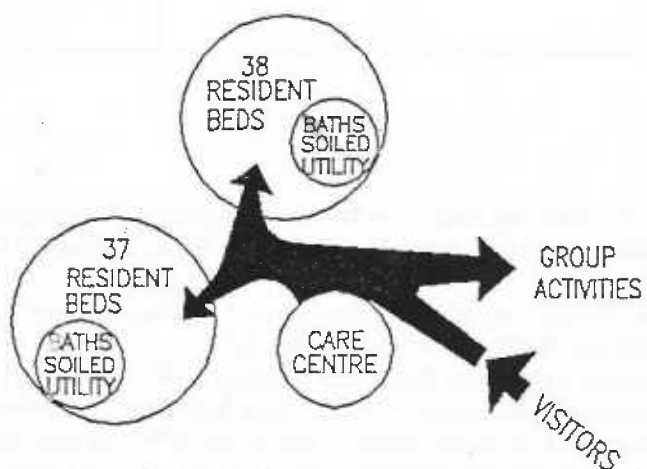


DIAGRAM A:

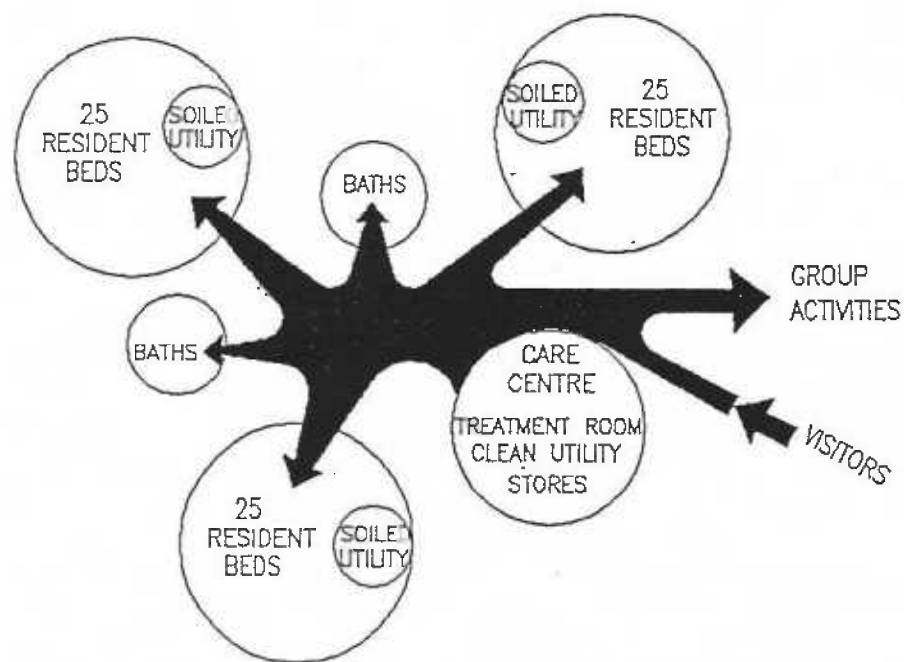
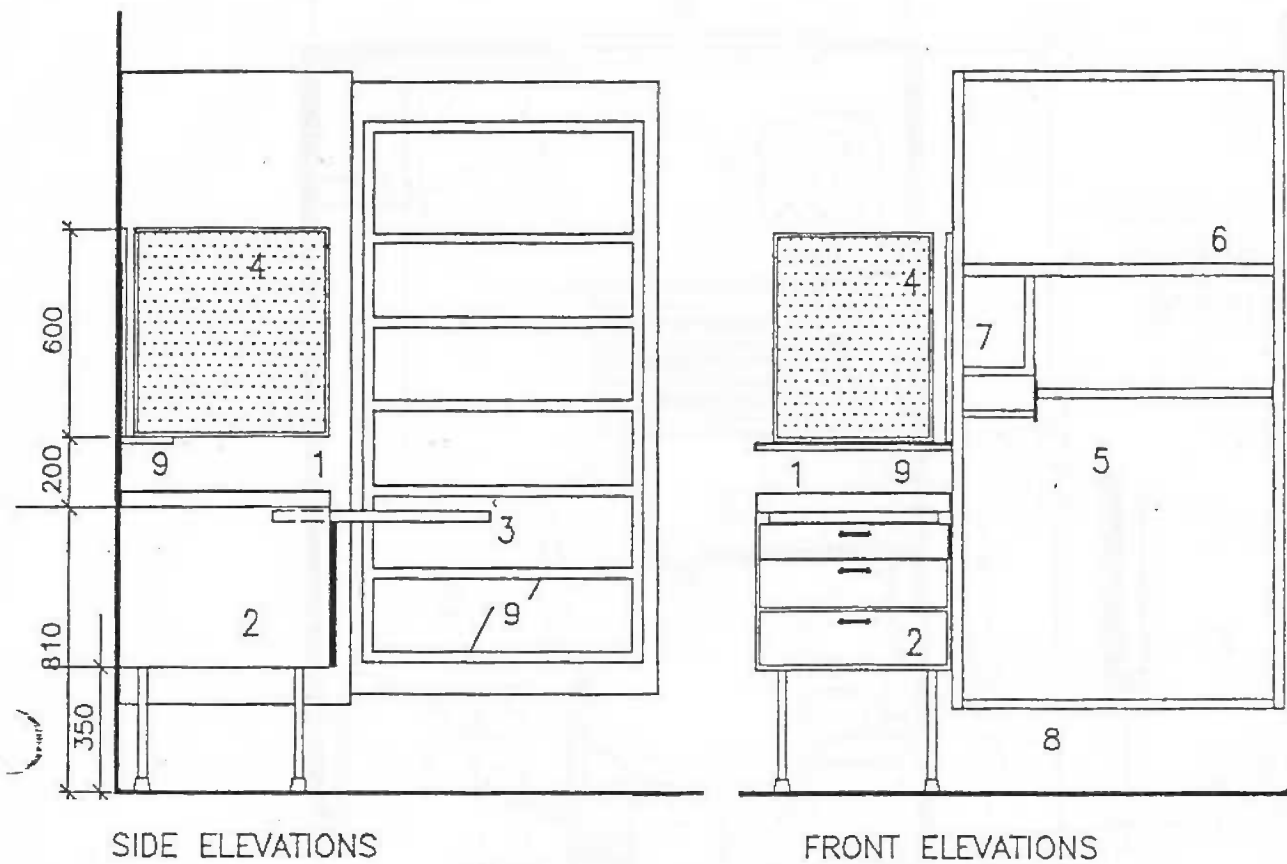


DIAGRAM B:

FIG 1. RESIDENT AREAS — FLOW DIAGRAMS



1. Bureau top
2. Drawers (one lockable)
3. Pull-out writing top
4. Pinboards
5. Hanging space with adjustable rails
6. Slatted shelf
7. Adjustable shelf space
8. Toe room for cleaning and ventilation
9. Fixed shelf

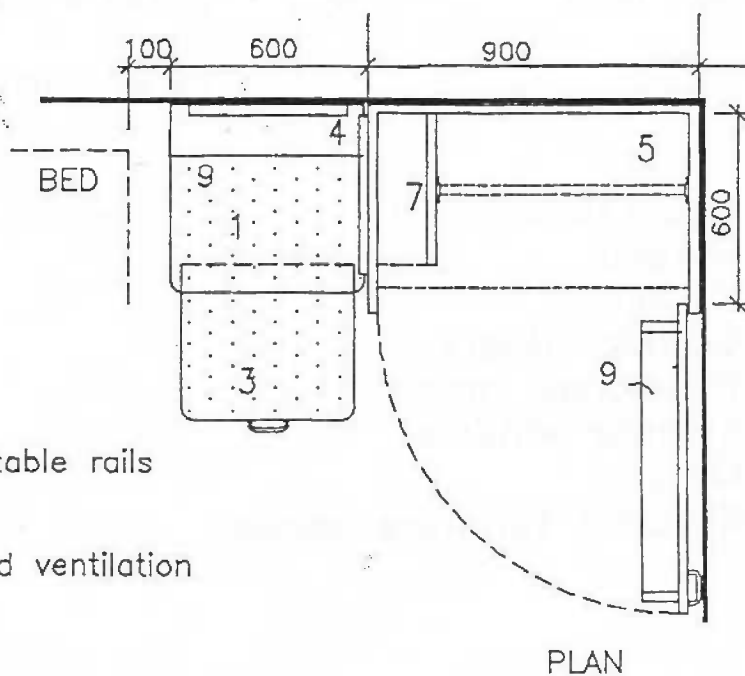
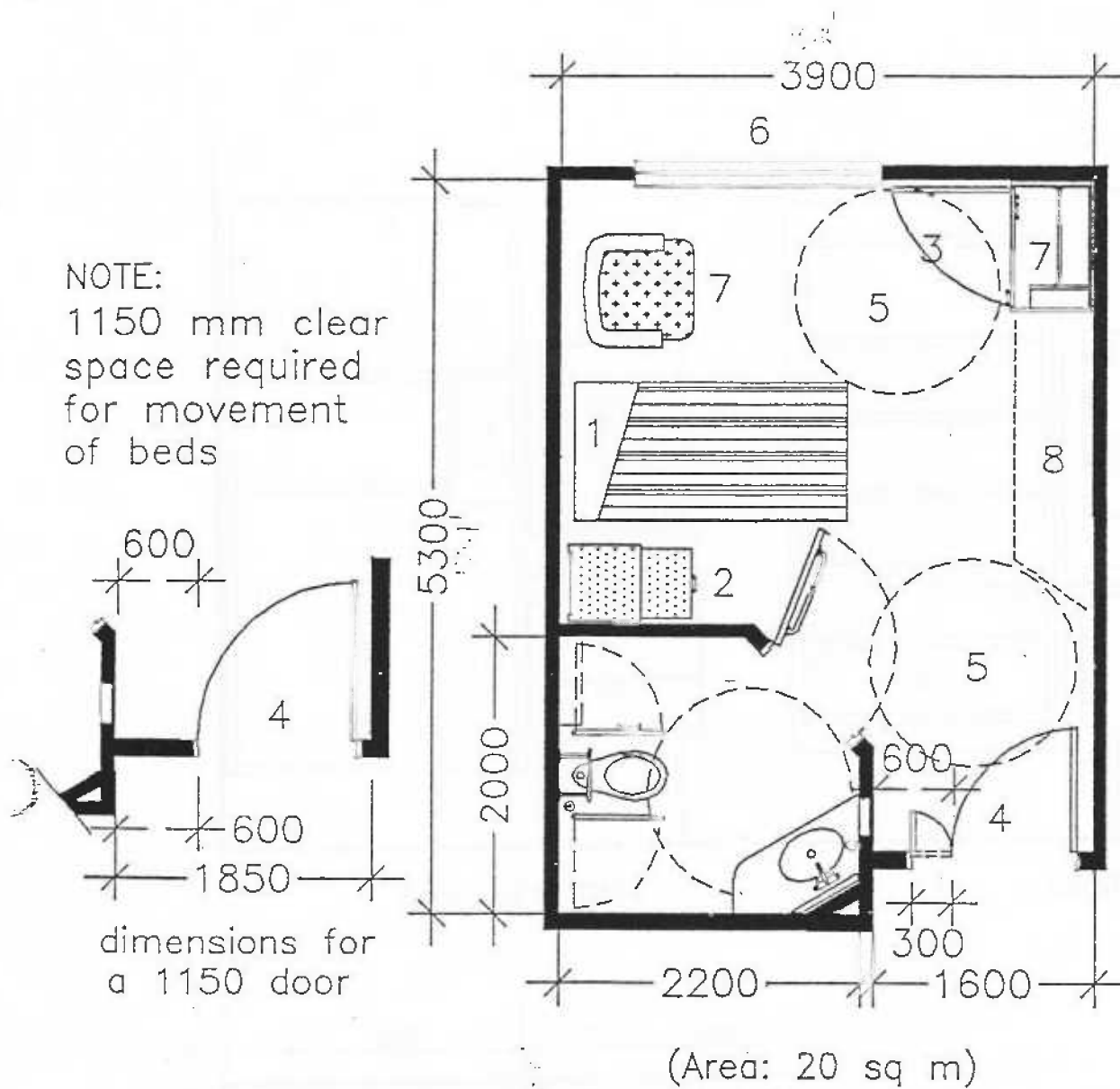
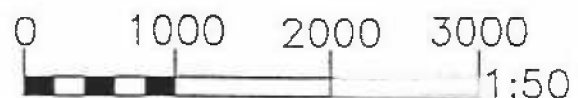


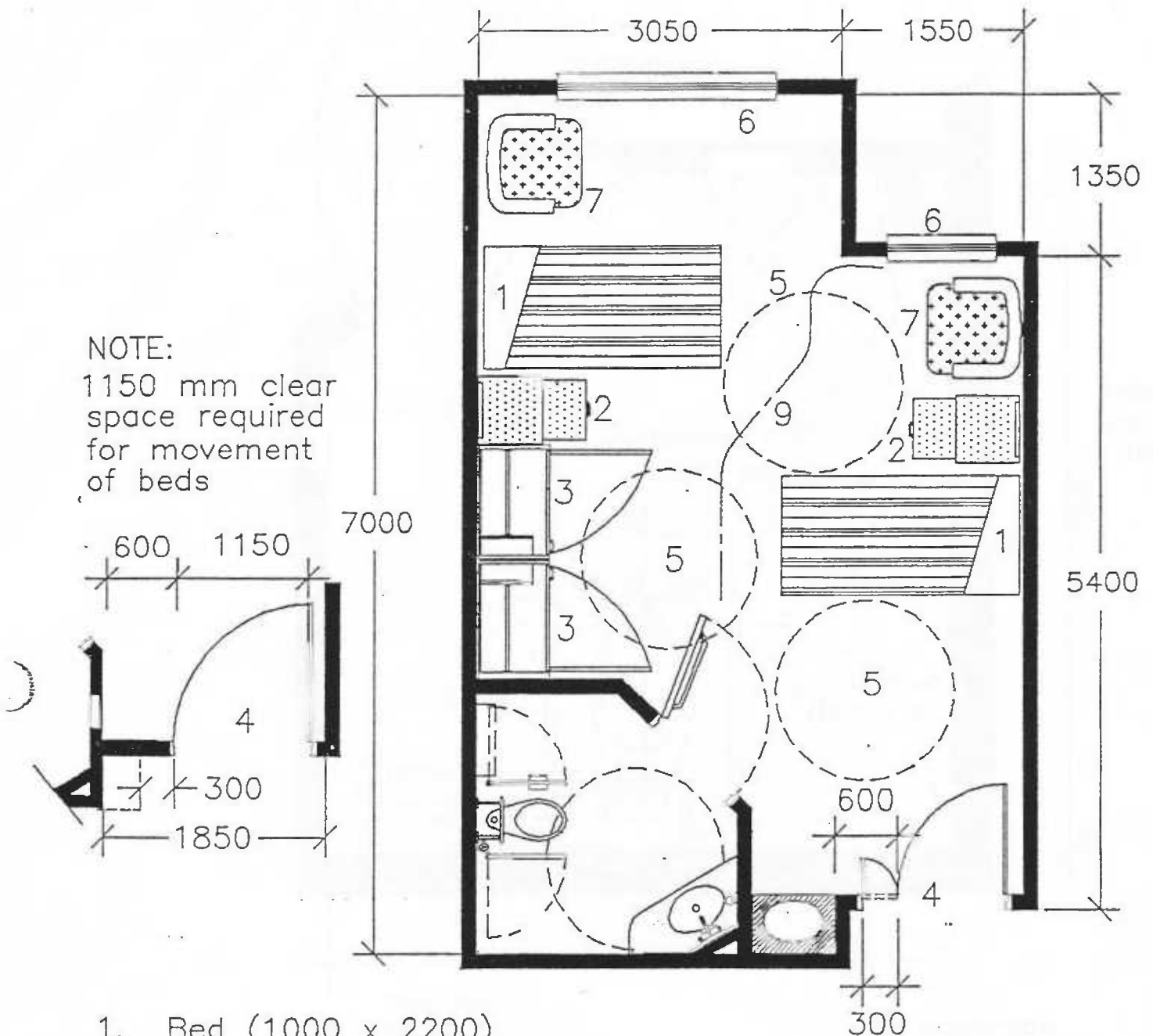
FIG 2. BEDROOM FURNITURE



1. Bed (1000x2200)
2. Bureau
3. Locker
4. Corridor doors
5. Wheelchair area
6. Exterior window
7. Chair
8. Resident furniture space

FIG 3. SINGLE BEDROOM

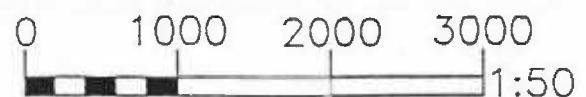




1. Bed (1000 x 2200)
2. Bureau
3. Locker
4. Entry doors
5. Wheelchair area
6. Exterior window
7. Chair
8. Washbasin in vanity
9. Privacy curtain

(Area: 30 sq m)

FIG 4. DOUBLE BEDROOM



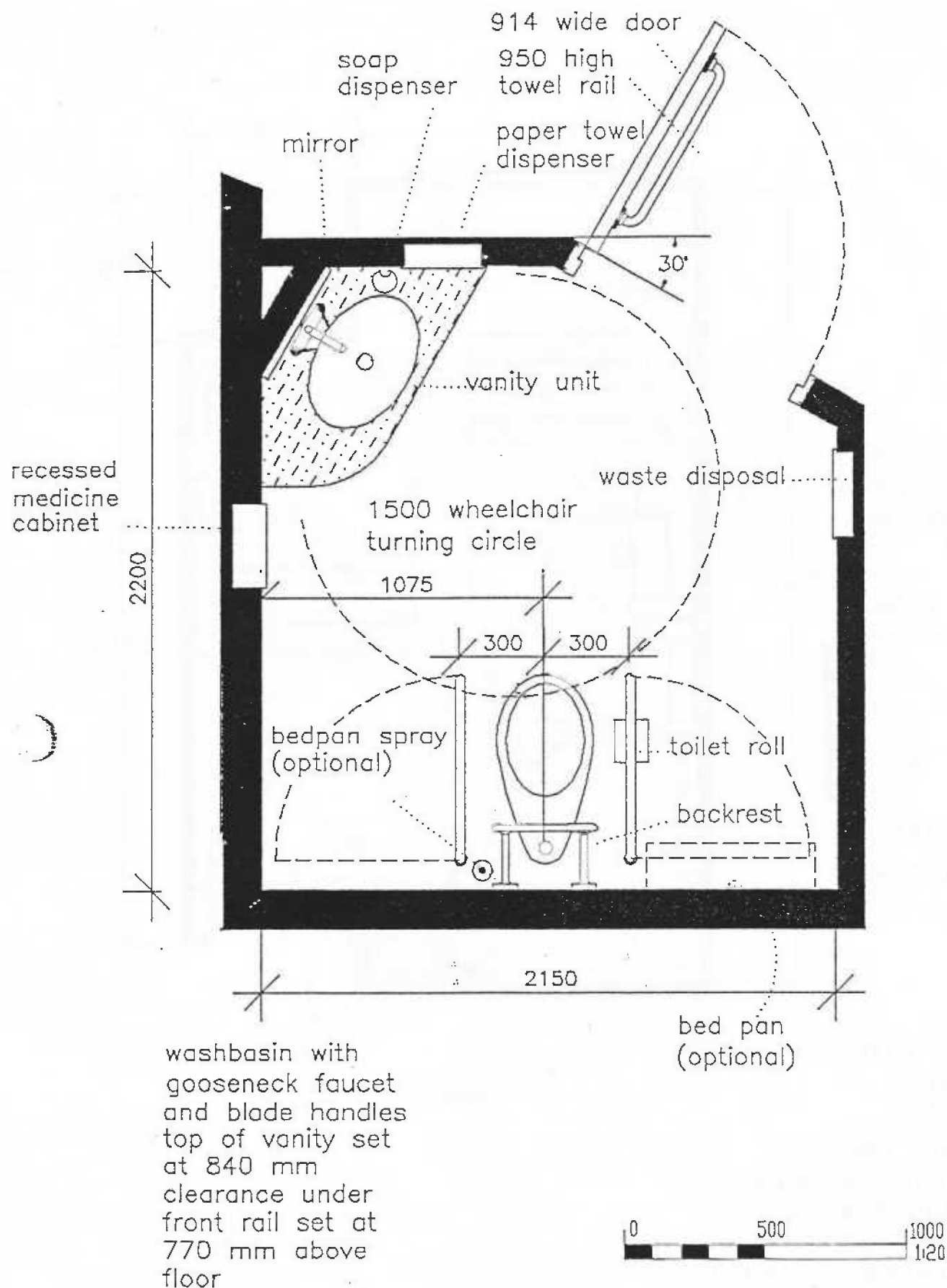
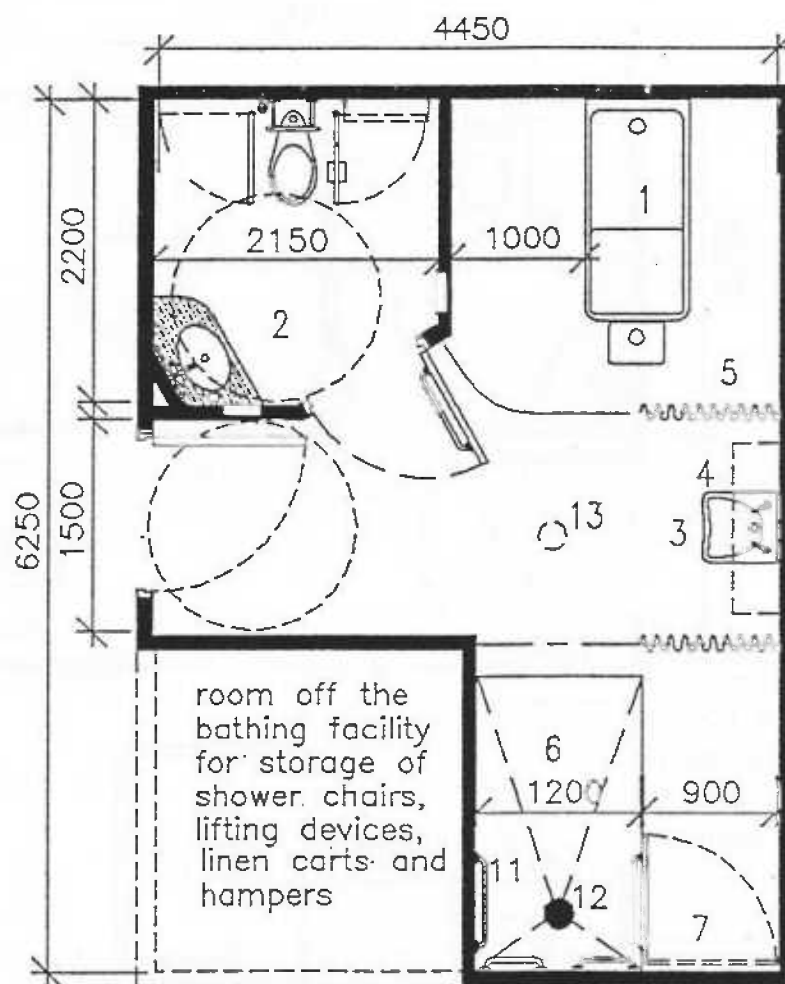
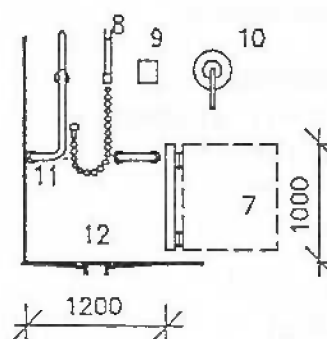


FIG 5. WHEELCHAIR WASHROOM



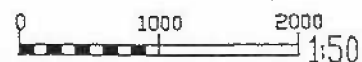
(approx 22.00 m²)
SUGGESTED LAYOUT

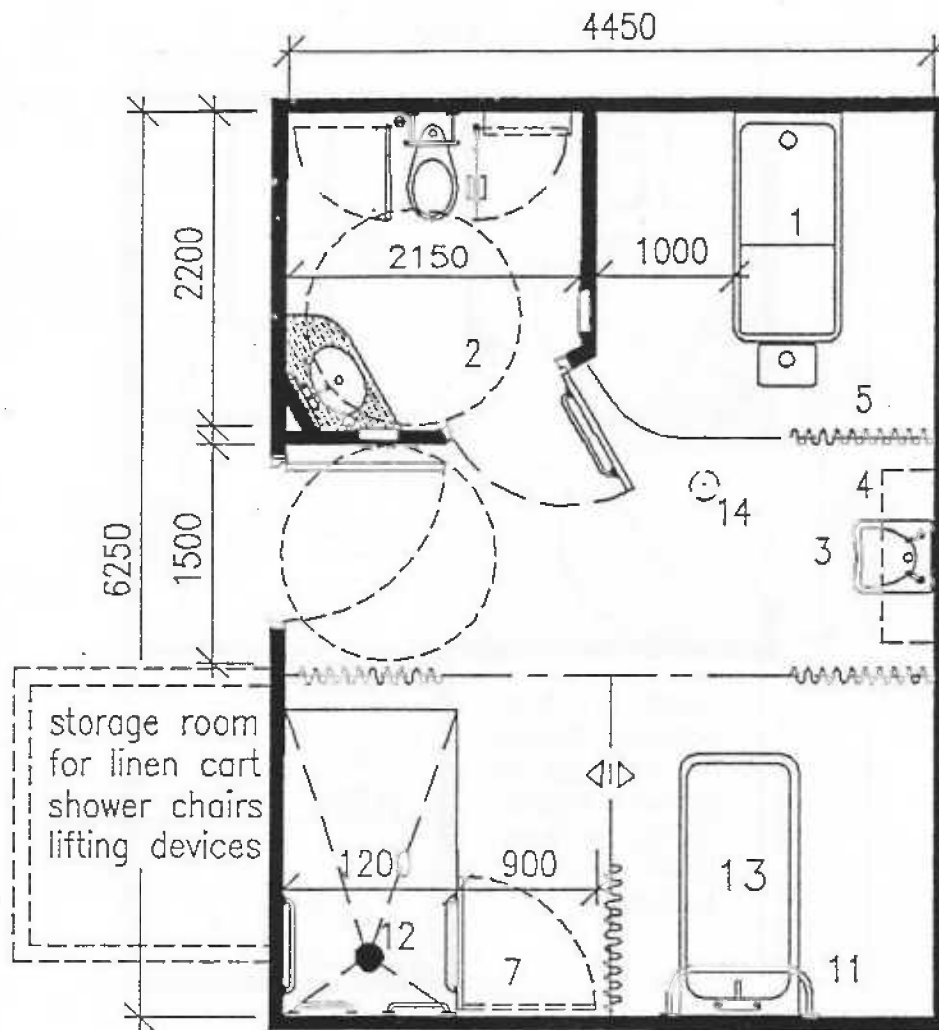
1. Therapeutic tub, sit-in or supine
2. handicap washroom, see Fig 5.
3. Handicap washbasin
4. Adjustable towel shelves
5. Movable curtain
6. Handicap shower
7. Hinged screen
8. Hand shower
9. Soap dispenser
10. Shower control
11. Grab bar
12. Shower drain outlet (150mm)
13. Ceiling heat lamp



SHOWER DETAIL

FIG 6. BATHING FACILITY - LAYOUT

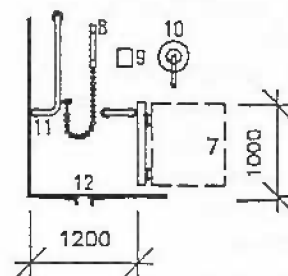




(approx 26.00 m²)

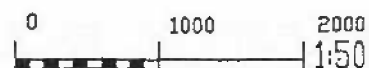
SUGGESTED LAYOUT

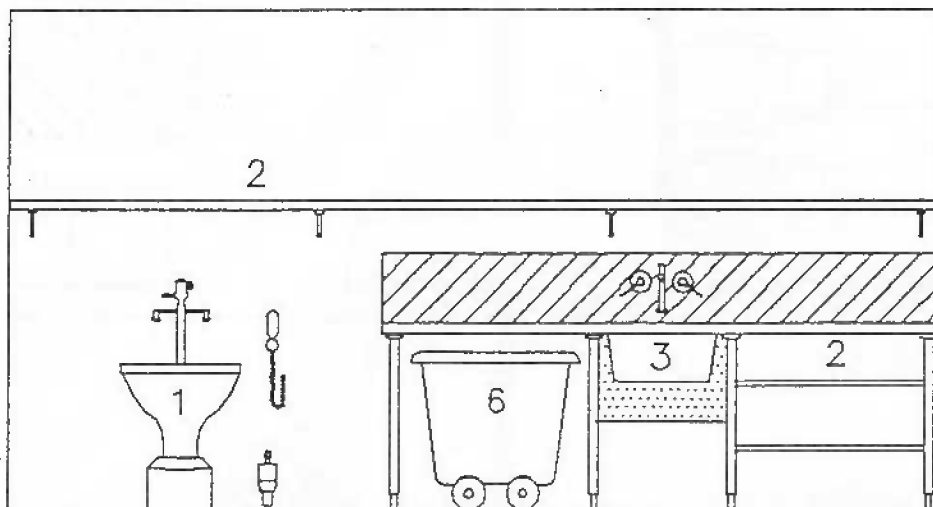
1. Therapeutic tub, sit-in or supine
2. Handicap washroom, see Fig 5.
3. Handicap washbasin
4. Adjustable towel shelves
5. Movable curtain
6. Handicap shower
7. Hinged screen
8. Hand shower
9. Soap dispenser
10. Shower control
11. Grab bar
12. Shower drain outlet (150mm)
13. Raised recumbent tub
14. Ceiling heat lamp



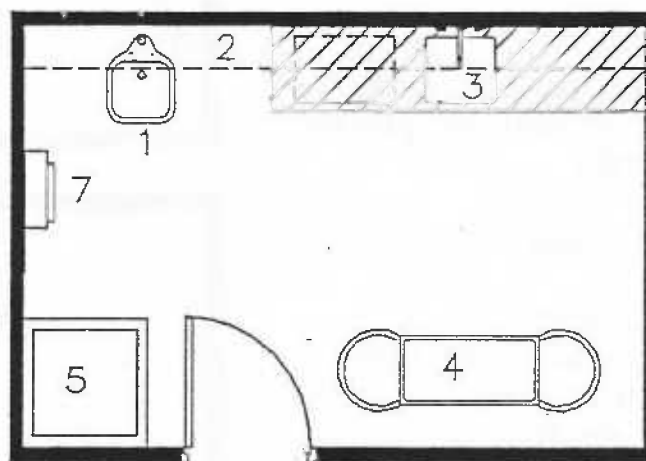
SHOWER DETAIL

FIG 7. BATHING FACILITY - LAYOUT





ELEVATION

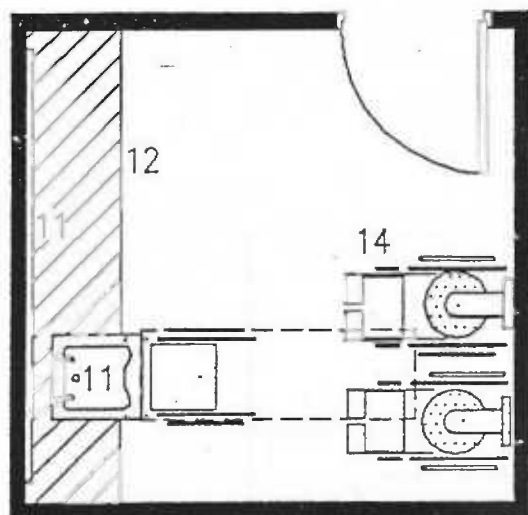


PLAN

1. Flushing rim sink
2. Plastic laminate shelves
3. Stainless steel sink in plastic laminate counter top
4. Housekeeping utility cart with soiled linen hampers
5. Janitor's floor trough sink
6. Garbage cart under counter
7. Bedpan flusher/sanitizer, wall hung (optional)

FIG 8. UTILITY ROOMS





HAIRDRESSING ROOM

DIAGRAM A:
EXAMINATION - TREATMENT
SET UP FOR SEPARATION

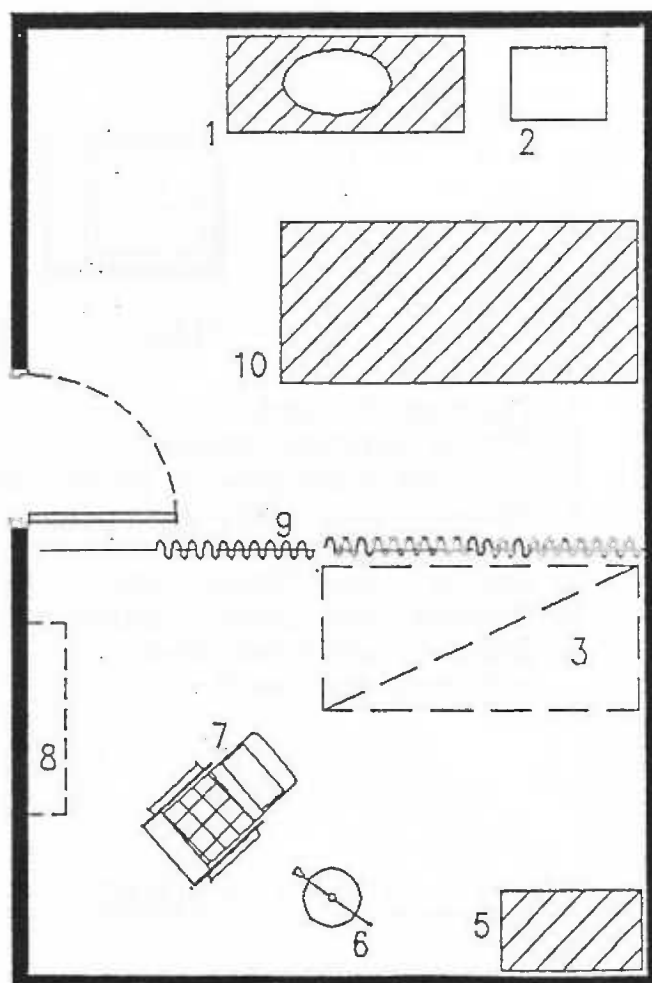
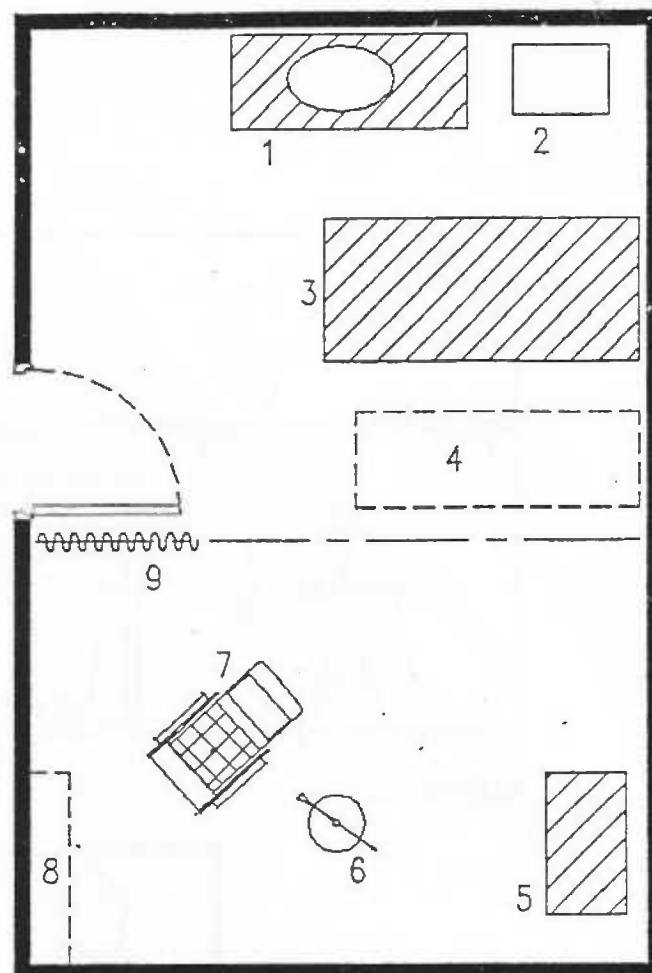


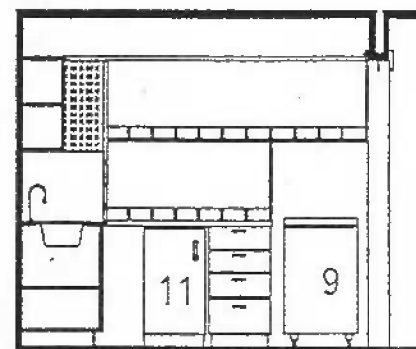
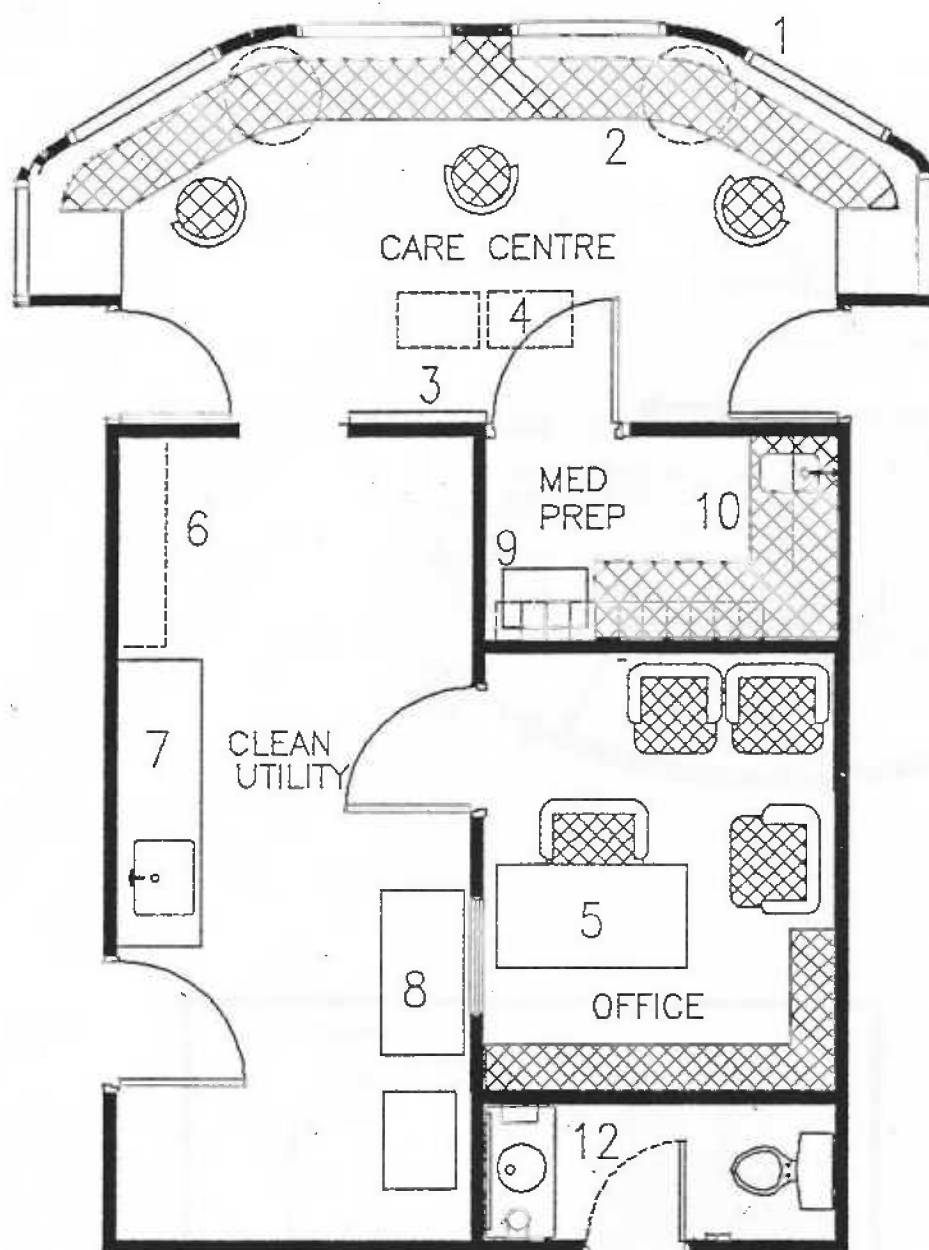
DIAGRAM B:
EXAMINATION - TREATMENT
SET UP FOR EXAMINATION

1. Stainless steel sink in plastic laminate vanity
2. Mobile cart
3. Examination table
4. Stretcher
5. Mobile utility cart
6. Pedestal type surgical lamp
7. Movable dental chair
8. Shelves for dentist
9. Cubicle curtains
10. Resident bed
11. Shampoo basin suitable for wheelchair and stretcher
12. Vanity unit with cupboards
13. Wall mirrors
14. Hair dryers

FIG 9.

EXAMINATION-TREATMENT DENTAL AND HAIRDRESSING

0 1m
1:50



MEDICATION PREPARATION ROOM

- | | |
|-------------------------------------|---|
| 1. Counter (with glazed partition) | 8. Mobile cart (clean supplies) |
| 2. Revolving chart racks | 9. Medicine cart |
| 3. Bulletin board with clock above | 10. Medical preparation counter with sink, cupboards and medication files |
| 4. Mobile chart racks (alternative) | 11. Refrigerator |
| 5. Office desk | 12. Staff washroom c/w vanity, basin, mirror and soap dispenser |
| 6. Shelves | |
| 7. Worktop with sink | |

FIG 10. CARE CENTRE — TYPICAL LAYOUT

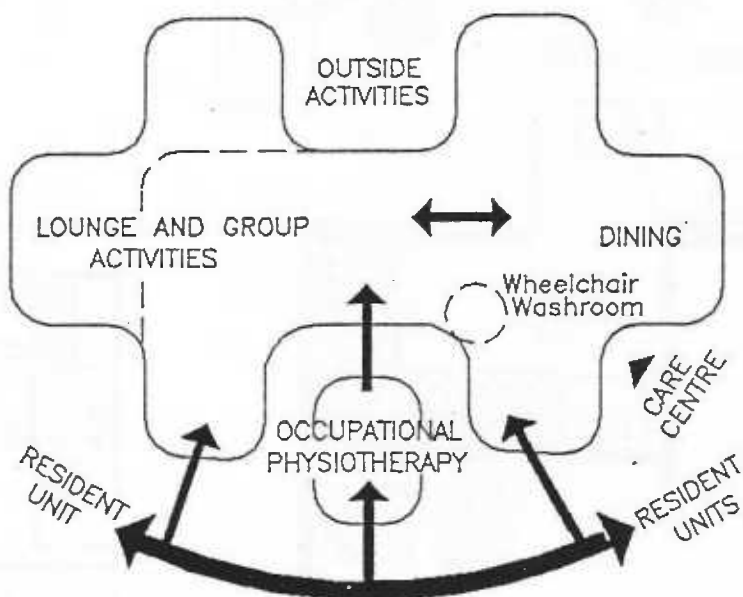


DIAGRAM A
FLOW DIAGRAM

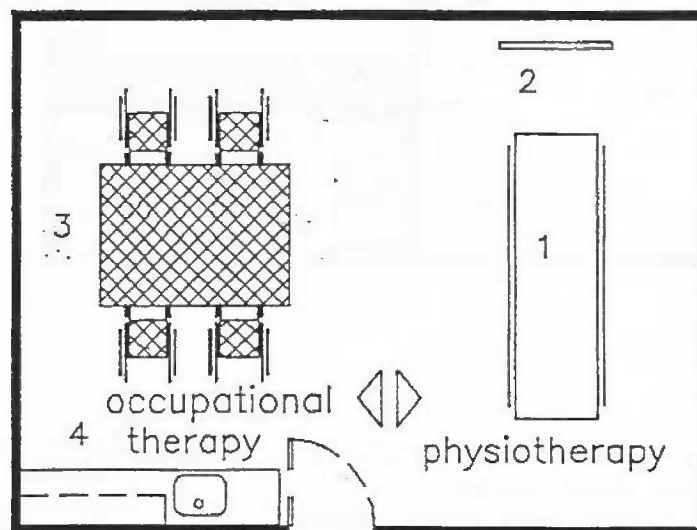


DIAGRAM B
THERAPY ROOM

1. Physiotherapy area
2. Movable mirror
3. Occupational therapy area
4. Counter with sink, shelves cupboards



FIG 11. RESIDENT GROUP ACTIVITIES

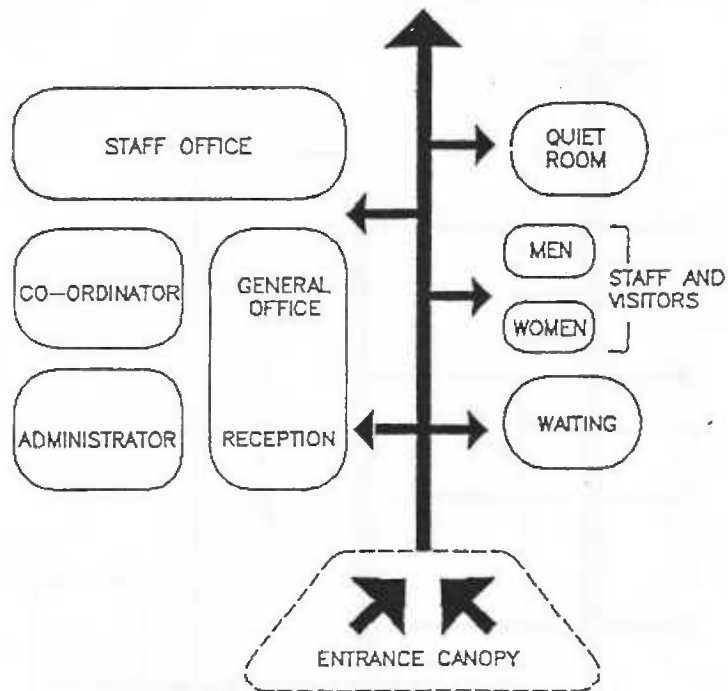
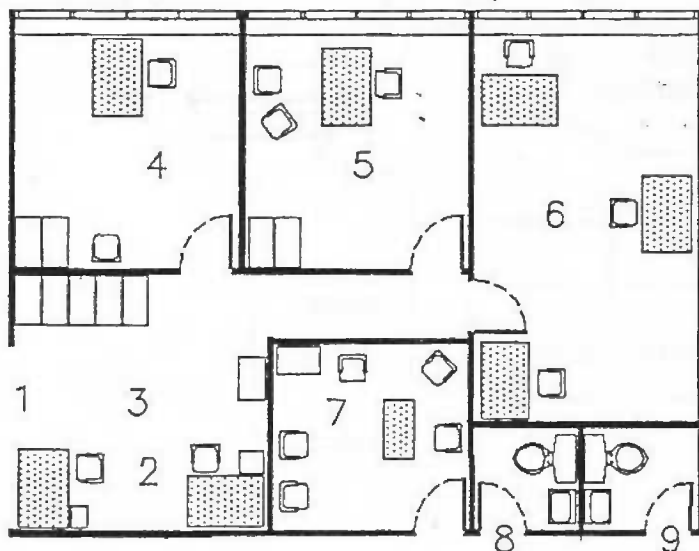


DIAGRAM A
FLOW DIAGRAM



1. Entrance Lobby
2. Reception desk
3. General office
4. Co-ordinator office
5. Administrator office
6. Staff office
7. Quiet Room
8. Male Toilet
9. Female Toilet

DIAGRAM B
ADMINISTRATIVE UNIT - LAYOUT

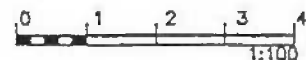


FIG 12. ADMINISTRATION AND ADMITTING - LAYOUT DETAILS

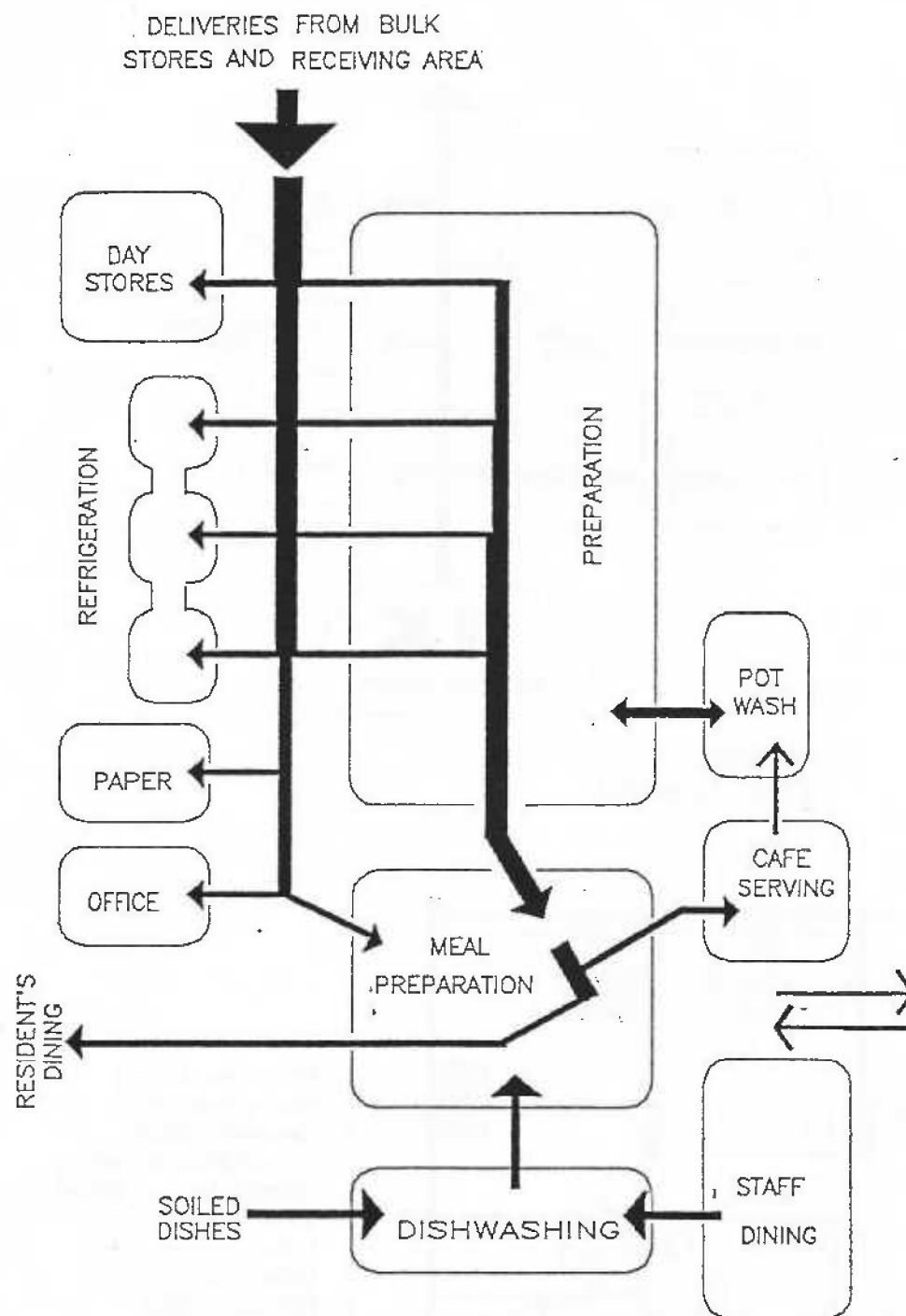


FIG 13. FOOD SERVICE — FLOW DIAGRAM

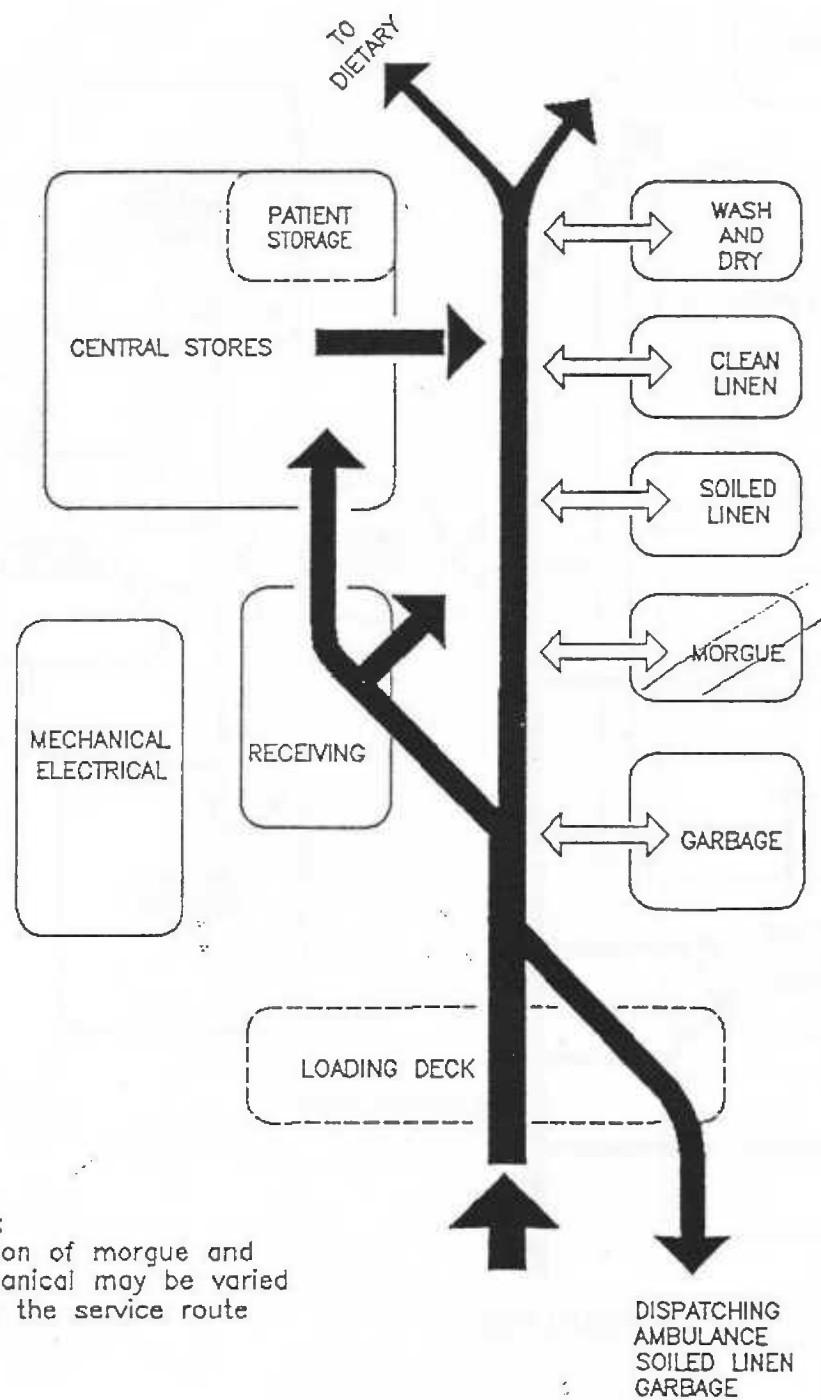


FIG 14. SERVICE FACILITIES — FLOW DIAGRAM

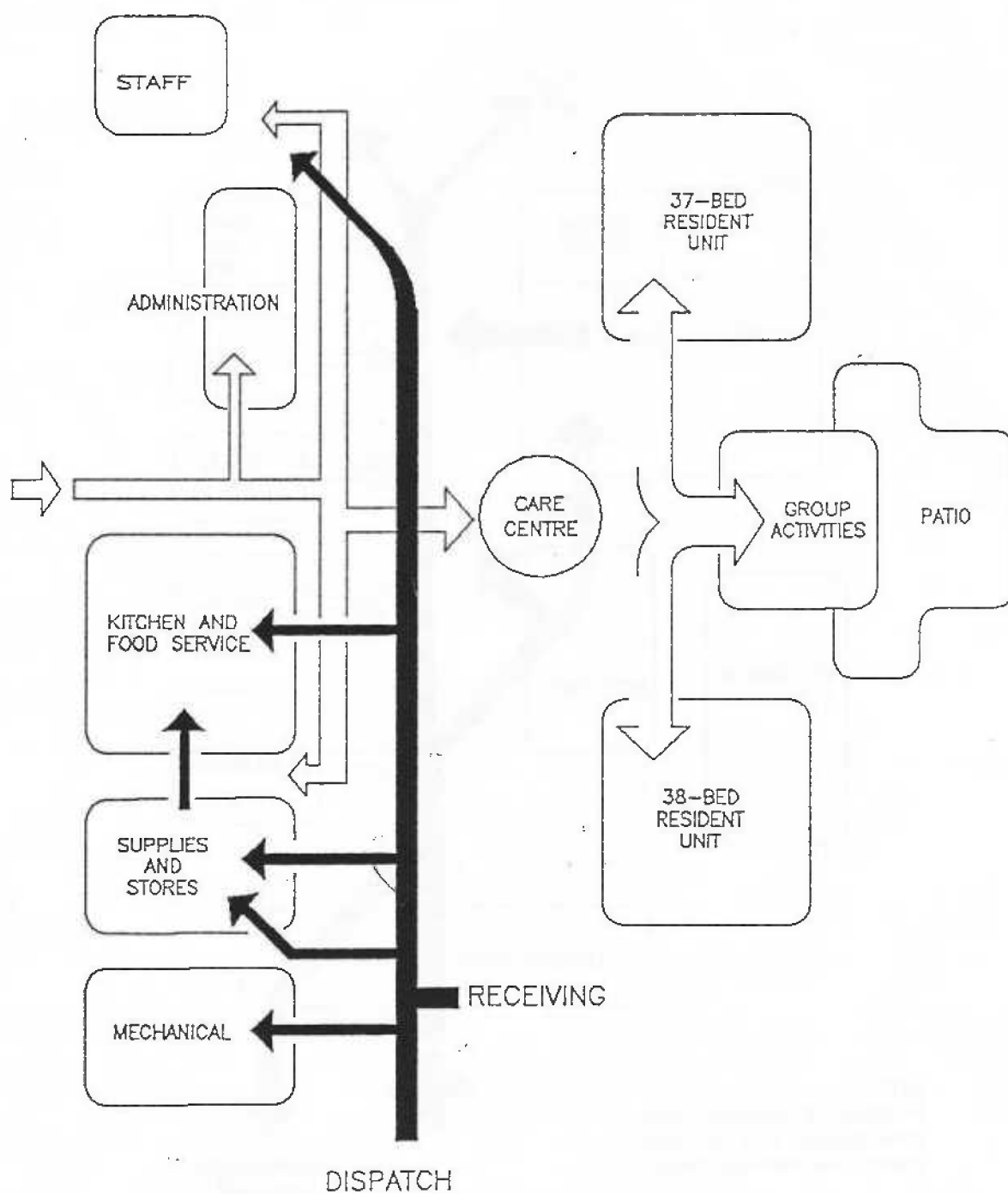


FIG 15. COMPOSITE FLOW DIAGRAM

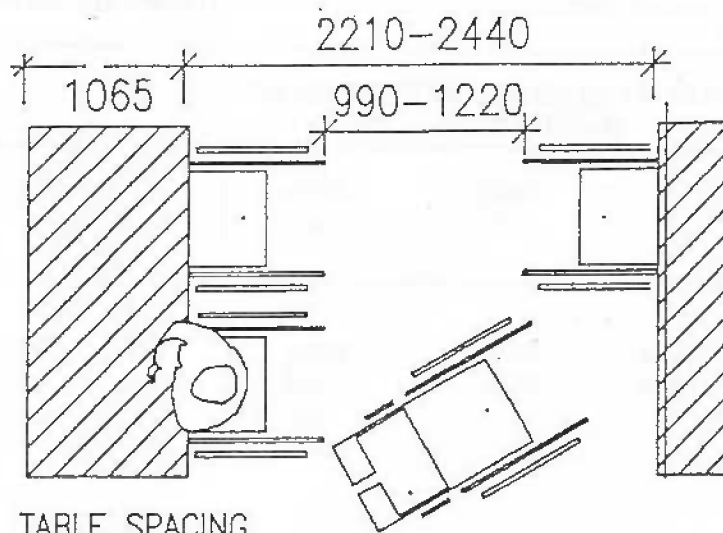
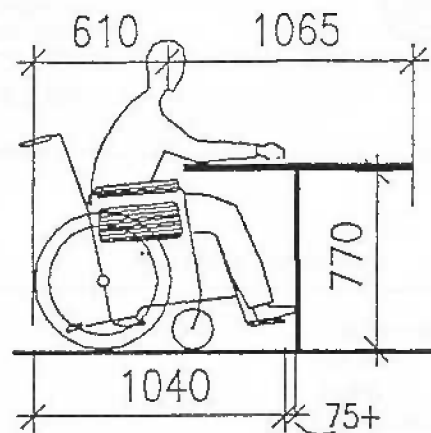
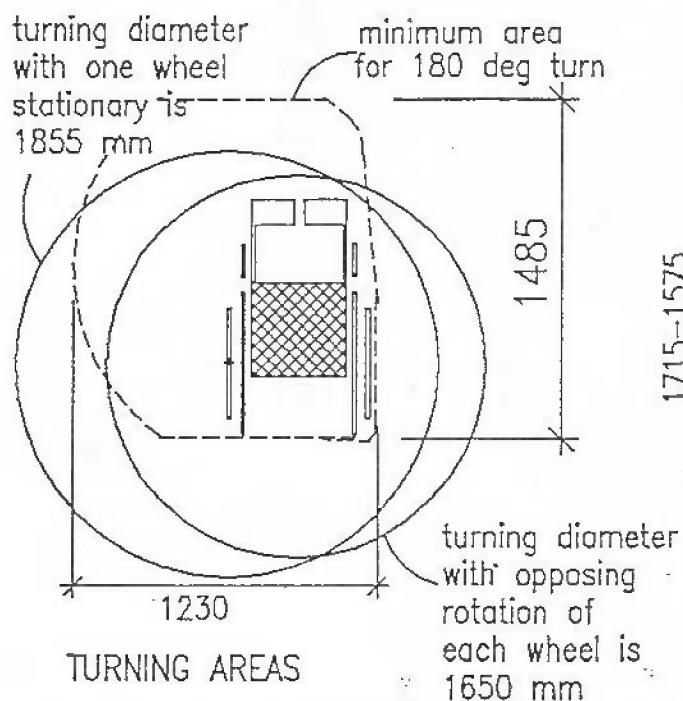


TABLE SPACING

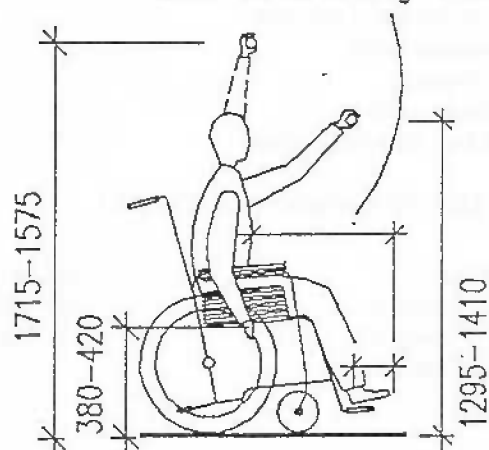


DINING-WORK TABLE

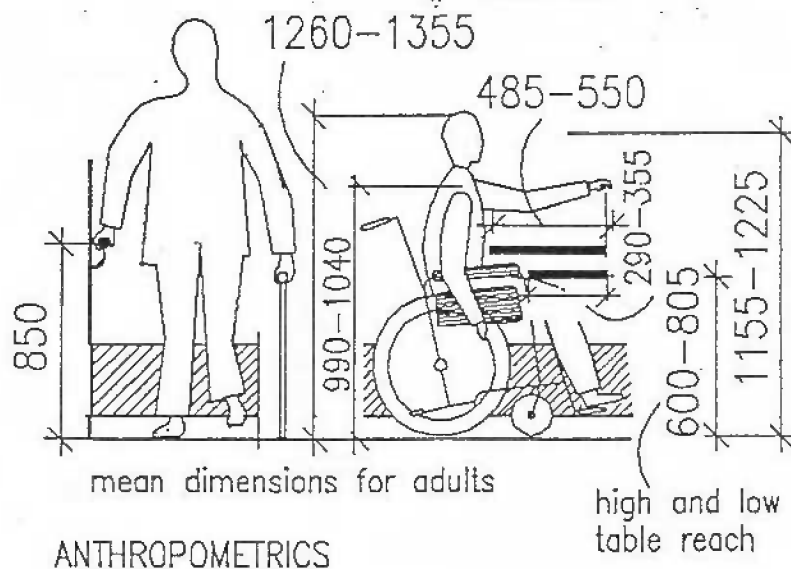


TURNING AREAS

530-595: sitting erect
610-670: sitting back



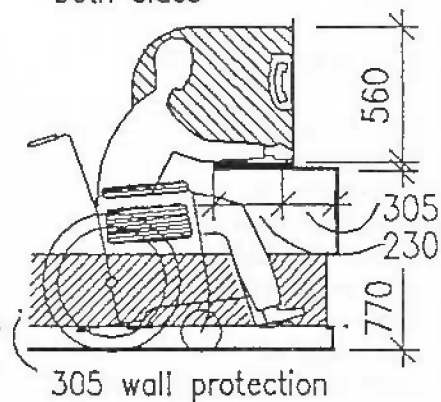
mean dimensions for adults
ANTHROPOMETRICS



mean dimensions for adults
ANTHROPOMETRICS

high and low
table reach

acoustic shields
both sides



TELEPHONE

FIG 16. WHEELCHAIR DYNAMICS