CMHC Nursing Home and Hostels Design Guidelines Study:

Working paper no.6

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DRAFT #1

WORKING PAPER #6

Physical Aspects of Designing Nursing Homes and Hostels With Care Services for the Elderly

CMHC NURSING HOME AND HOSTELS

DESIGN GUIDELINE STUDY

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This Working Paper contains ideas about designing certain aspects of nursing homes and hostels for the elderly. These ideas have been compiled from the gerontological literature and do not necessarily represent the views of the author or of A. W. Cluff and P.J. Cluff, Architects. They will serve as baseline information on the state of the art with regard to design guidelines in this field.

Topic areas covered include:

- site selection
- interior circulation
- social and activity areas
- bedrooms
- bathrooms
- dining areas
- interior design
- outdoor areas

Format is:

- Topic area
- Discussion of issues
- Recommendations

Topic areas which are not covered in this paper, but which will be covered in the final report of this project include:

- administrative areas
- housekeeping areas
- laundry areas
- maintenance areas
- mechanical areas
- other

TOPIC: SITE SELECTION

DISCUSSION OF ISSUES:

There is a concensus among gerontologists that in order to avoid the isolation usually associated with institutionalization, that community integration is desirable. The idea of an "open" long term care facility is that the community (relatives, friends, volunteers and others), use and interact with the facility as well as patient-residents using community resources. (Koncelik) Community integration not only provides access to community but enables residents to cope with environmental and social stresses in the world outside the facility. (Lawton, 1974) Community integration will also provide incentive for staff, by expanding their sphere of interaction.

Recommendations:

- Choose a central location, not necessarily in a downtown area but still part of the community. (Rapelje & Papp, Lawton, 1974)

- Provide access to public transportation, shopping, community facilities, entertainment, etc. (Associated Senior Executives, Rapelje & Papp)

TOPIC: INTERIOR CIRCULATION

DISCUSSION OF ISSUES:

Accessibility and orientation are major issues involved in horizontal circulation, while elevator issues (vertical circulation) merit separate discussion.

Circulation areas may provide a number of architectural barriers to handicapped patient/residents. These include thresholds (Lawton 1975), door widths, corridor lengths, level changes (stairs, or steep, ramps), absence of handrails, and corridor width (not wide enough for two wheelchairs to pass).

Disorientation can be a major problem among elderly residents of long term care facilities. Many corridors tend to look alike (shapes, colors, location of doorways) and usually lack visual or physical landmarks. (Weiner, 1975) Many residents report not knowing which floor they are on when the elevator doors open. (Koncelik) Problems associated with elevators include: lack of seating in waiting areas and in elevator cab, call buttons out of reach of elevator passengers, bumpy ride, door timing set too fast for residents to comfortably get on and off, cab too small to accomodate wheelchairs, and lack of emergency communication system inside the elevator. (Associated Senior Executives, Lawton, 1975, Rapelje & Papp)

Recommendations:

Accessibility

- Avoid level changes. Where these are necessary provide ramps and elevators as well as stairs. (Koncelik, C.M.H.C.)
- Since many users of handrails are non-ambulatory (e.g. wheelchairs) patient-residents who pull themselves down the corridor using the handrail as an ambulatory assist, many handrails are too high for the people who actually use them and are poorly designed for gripping. (Koncelik)
- Provide a bumper strip at the low wheel level to prevent the wheelchair from turning inward far enough to hit the wall. (Koncelik)

ORIENTATION (within the building)

- Provide colour, graphics, supergraphics or other means of redundant cuing. (Pastalan, 1971) from elevators (Koncelik) from elevators (Koncelik)
- Identify and personalize patient-residents' rooms by using different color schemes. (Lawton, 1974)
- Use distinctive design features (e.g. graphics) to designate staff offices, elevators, toilets, dining rooms, etc. (Lawton, 1974)
- Clocks and calendars should be large and clear, and special care should be taken to denote the days of the week, special holidays and seasons of the year. (Lawton, 1974)
- Use multi-sensory channels (e.g. announcements) in addition to usual stimuli. (Lawton, 1974)
- Handrails may be of different shapes and arrangement, in different wings or sections of the building. (Lindsey, 1967)
- "Street" names and/or color coding can be used in corridors. (Associated Senior Executives)
- Door numbers, room names, residents names, etc. should be large and low enough to be read from a wheelchair. (Associated Senior Executives)
- Design corridors of varying (reasonable) lengths and materials. (Koncelik)

ELEVATORS

- Call buttons should be within reach of wheelchair passengers (not more than 4'8" above the floor). (Associated Senior Executives, C.M.H.C.)
- Seating space should be provided for those waiting for the elevator and a fold-down seat should be provided in the cab. (Associated Senior Executives)
- Ride should be as smooth as possible and door opening and closing should be set for a longer than normal period (at least 10 seconds). Elevator equipment should be chosen which permits regulation of the speed of the elevator, of the time

the door remains open, and of the door-closing speed as required to suit the needs of the residents. A quick-response photoelectric sensor and rubber bumper guards should be used. (Associated Senior Executives, C.M.H.C.)

- Cab should be large enough to accomodate at least two wheelchair residents as well as mobile passengers or an attendant. (Associated Senior Executives, C.M.H.C.)

- There should be an emergency two-way audio communication, (placed at a height suitable for wheelchair users), between the elevator, and a central location, (Lawton, 1974).

- Provide a lighting level in the cab of a minimum of 50 foot canldes, but in no case lower than that on the adjacent corridor space.

TOPIC: SOCIAL AND ACTIVITY AREAS

DISCUSSION OF ISSUES:

Although an almost unlimited variety of social activities can occur in a long term care setting (e.g. recreational, educational, rehabilitative, spiritual), facilities providing a rich program of activities are rare. (Aging in Manitoba) Restorative or rehabilitative services can include: physical therapy, occupational therapy, speech therapy, psychological therapy, reality orientation, and life-skills re-training. Recreational programs include a variety of arts and crafts, films, speakers, community groups, entertainment, etc. Spiritual programs and activities may be determined by administrative policies and the background of residents. Day care programs are based on the conception of the long term care facility not as a self-contained system, but as a resource for the community. Their purpose is to allow elderly people to remain in the community as long as possible (an alternative to institutionalization which is psychologically and economically preferable in many cases) while offering programs and services available in the long term care facility on a part-time basis. There is reason to believe that elderly people in the future:

> "will be less tolerant of crafts, cards, picnics and square dancing. They are more interested in such things as travel, meditation, creativity and higher education..."
>
> (Schwenger, 1967)

A major social activity which presently occurs in long term care facilities is conversation. Snyder (1973) postulates that three phases are involved in this social interaction:

1) bringing people together (congregation)
2) having an appropriate physical and social setting for them to center around, and
3) promoting conversation.

Factors involved in influencing congregation are: spaces which may be a source of certain services, spaces which may have certain attributes which make them inherently appealing or unappealing (e.g. no bathrooms nearby). An individual may be placed in a space by a staff member. Furniture and its arrangement may promote or inhibit social interaction. Various "props" (such as newspapers, puzzles, view of activity or action going on nearby) may aid in stimulating conversation.

Social activities may take place in numerous areas of the long term care facility from the patient-resident's room, to more formal socializing areas such as lounges, dayrooms, dining areas, or activity rooms, to unofficial socializing areas such as corridors, alcoves, entrance lobbies, elevators, or bathrooms. Design features can strongly influence where social interaction occurs.

Entrances and lobbies are one type of social area worthy of further exploration. The attraction of coming and going activities for patient-residents and the importance of the building entrance to residents, staff, and visitors requires sensitive design responses.

Recommendations:

- Provide space directly adjacent to the corridor (maintaining visual access to it) for patient-residents to sit and talk or watch activity. (Koncelik) (Lawton, n/d)
- Protected alcoves off corridors are preferable to isolated lounges. (These should be close to bathrooms) (Koncelik)
- Socializing spaces should have a minimum of furniture, since most users will be wheelchair - bound. (Koncelik)
- Socializing areas should have some focus of interest (e.g. TV, plants, birds, fish) (Koncelik, Snyder& Ostrander, 1974)
- Avoid sofas which seat more than two people as side-by-side seating inhibits eye contact. Tables tend to draw people together, focus attention on the more animated parts of the older person and to provide a variety of activity options. (Snyder & Ostrander, 1974)
- Provide social areas which allow for continuation of certain activities (e.g. jigsaw puzzles, sewing, table games). (Snyder & Ostrander, 1974)
- Private consultation rooms may be necessary for talks with social workers, clergy, physicians and/or family. (Associated Senior Executives)
- A range of social spaces is desirable from private to semi-private, to semi-public to public. (Novick)

ENTRANCE AND LOBBY

- Canopies are useful and should be high enough to accomodate busses. (Associate Senior Executives) (Koncelik)
- Signs and other orienting devices must be large and easy to read for the visually impaired. (Koncelik)
- The entry should be inviting and intriguing. (Koncelik)
- Provide benches with back support and handrails so that people can sit down to take off boots, wait for rides, etc. (Manitoba, n/d)
- Locate the lobby so that most building traffic goes through it. Provide with ample fixed and movable seating within location so that residents can see others come and go. (Lawton, 1974)

TOPIC: BEDROOMS

DISCUSSION OF ISSUES:

Three issues continually come up in discussions of patient-resident bedrooms in long term care facilities: single vs. multiple occupancy, personalization and storage.

The single versus multiple occupancy controversy is alive and well. Although experts vary on their specific recommendations, the general consensus is that long term care facilities should offer more single rooms, with some double rooms available for those who desire them. Lawton (1970) found:

> "perhaps the most interesting finding is that everyone is very quick to prescribe multiple bed accomodation for the other fellow, but is much more likely to think a single room best for himself." (p.49)

Problems with multiple occupancy rooms include: personality difficulties, territoriality problems (one resident "claims" the window, the other "claims" the closet, etc.), lack of privacy. Snyder & Ostrander (1974) state that Ittelson and Proshansky suggest that when the individual in a long term care facility is allowed personal privacy their range of choice and control over their own life is increased. Many older people are not accustomed to living with persons other than their spouses.

Some residents prefer multiple occupancy rooms, however. These people prefer to have a roomate(s) to combat loneliness and to aid them in case of an emergency. (Associated Senior Executives, Snyder & Ostrander). Multiple occupancy rooms may be preferable for brain syndrome (confused) patient-residents. (NIMH 1973)

Since the bedroom is the patient-resident's home, most gerontologists believe that opportunities to personalize the space with possessions and momentos is extremely important for the psychological well-being of the patient-resident. (Lawton, 1975, Koncelik, Rapelje & Papp, Lawton n/d, Snyder & Ostrander) This induces a more home-like atmosphere and provides opportunity for some continuity,for the resident.

Recommendations:

- Where most residents are fairly active most bedrooms should be planned for single occupancy. (Snyder & Ostrander) (80-90%) (Weiss, Koncelik)

- For those who wish to share a bedroom (e.g. couples) some units might be planned with a door between them. (Snyder & Ostrander)

- Double occupancy rooms should be designed so that each individual has access to and control over light and air.(window) (Snyder & Ostrander) (Lindsey) There should also be divider curtains or other means of visual privacy. (Associated Senior Executives)

- Room decorations and use of movable furnishings are other ways by which to identify individual areas in a multiple occupancy room. (Lawton, 1974)

- Display areas should be considered from the onset of room design so that residents will be less likely to damage wall surfaces or feel inhibited about personalizing their own living areas. (Snyder & Ostrander)

- Residents may wish to be consulted with regard to wall coverings, furnishings, and other room decorations. (Rapelje & Papp)

- Provide various means by which pictures can be displayed (pegboard, bulletin board, picture hanging rail). (Lawton, 1975)

- Provide shelf display space. (Lawton, n/d., Koncelik)

- Closets and a large amount of storage space is needed in patient-resident rooms. (Associated Senior Executives)

- Something (e.g. a drawer) which can be locked is desirable. (Associated Senior Executives)

- A range of storage types is needed: from drawers and cabinets for daily used personal effects to closets of in-season clothing and larger items, to dead storage for rarely used personal items and furniture (this does not have to be in the bedroom). (Koncelik)

- Ready access to closets may be provided by bifold, accordion, or sliding doors. The minimum clear opening should be 3'-0". Doors that require track or a floor-level guide rail are an obstruction. The clothes hanger rod should be adjustable in height from 4'-0" to 5'-0" above the floor. The shelf above the rod should be placed at a maximum height of 5'-3". Shelves may be built in at the side of the closet. This form of storage is convenient and reduces the amount of furniture required in the unit. These shelves should be adjustable or placed at heights up to 4'-8".

- Television outlets, connection to an aerial, and telephone outlets are needed in each room as are electrical outlets plus a nurse call system, (preferably talk-back). (Associated Senior Executives)

- Windows should be easy to open and close, be draft free and low enough to see out of when seated or when lying in bed. (Associated Senior Executives)

- Large window sills are needed for display. (Associated Senior Executives)

- Careful placement of the bed is important with respect to natural lighting (glare). (Koncelik)

- The bed should be wider and lower than a standard hospital bed. It should have rounded and/or "softened" corners to prevent accidents and the area around the bed should have a surface that provides stability when wet (since water from the bathroom may accumulate here). (Koncelik)

- The ceiling can be a source of visual stimulation. (Koncelik)

- Provide a social area in the bedroom (2 large chairs with arms and footrests, 30" high table, glare-reduced lamp).(Koncelik)

TOPIC: BATHROOMS

ISSUES FOR DISCUSSION:

There are two major issues involved in the design of bathrooms in long term care facilities: physiological considerations, and shared versus private bathrooms. Since the majority of long term care facility residents will be handicapped in some way (mental impairment or physical impairment such as osteo-arthritis, impaired vision, etc.) bathroom design should compensate for the individual's disabilities. Decisions on private versus shared bathrooms may largely be economic but either way the trade-off between privacy and need for assistance is a critical issue.

Recommendations:

- Toilet paper dispensers should be placed on each side of the toilet (to allow for "handedness") (However, this may interfere with grab rails) (Associated Senior Executives)
- There should be an emergency signal device in each bathroom or cubicle. (Associated Senior Executives)
- In shared bathrooms, some toilets and some basins should be of wheelchair height. (Associated Senior Executives)
- Where shared bathrooms are essential partitions from counter level up should be installed between wash basins (for privacy). There should be a single mirror over each basin. At least one mirror should be at a height usable by persons in wheelchair. (Associated Senior Executives)
- No storage or cabinet work should be placed below the lavatory since this may interfere with people who are partially ambulatory standing as close as possible. (Kira)
- Piping below lavatory should be insulated to prevent burns. (Kira)
- Adjustable height lavatories will accomodate different sized wheelchairs. (There may be a problem with availability.) (Kira)

- Provide adequate and accessible storage for the needed variety of hygiene equipment and supplies. (Kira)

- Door locks should be able to be opened (in an emergency) from the outside. (Kira)

- The basic criterion is that the bathroom be large enough to permit the individual to move from one piece of equipment to another with a minimum of effort and that the equipment be arranged so as to facilitate transfers in the easiest possible fashion. (Kira)

- There should be a direct line of travel between bedroom and bathroom. (Kira)

- The mirror (adjustable) should be able to be used from a sitting position. (Kira)

- Everything should be available in the approximately 72"x 36" reach of arms while seated. (Kira)

- Tub Versus Shower

  "The most basic issue is how to minimize the gross movements necessary in the assumption of a seated bathing posture.... it is generally simpler, easier and safer for aged and disabled persons to use the shower primarily because there are no problems of access and one can remain in a standing or sitting position. (Kira)

- Floor surface of tub or shower should be non-skid. (Lawton, 1975)

- A flexible shower head is useful in conjunction with a tub. (Associated Senior Executives)

- In shared bathrooms there should be privacy curtains around the tub. (Rapelje & Papp)

- If institutional tubs are used they should be on a raised platform with steps on one side. (Associated Senior Executives)

- Lever handles are necessary. (Kira, Brokenshire & Carr) Mounted at 8" o/c.

- Avoid wall mounted urinals for elderly men. Floor mounted urinals with a continuous drain are more appropriate. (Associated Senior Executives)

- There should be grab bars placed on both sides of the toilet. (Koncelik)

- Use white open front toilet seats in shared bathrooms. (If one user has an accident the user or staff can see it and clean it.) (Associated Senior Executives)

- In shared bathrooms, privacy should be available for toileting and undressing/dressing. (Snyder & Ostrander)

- Bathroom door should open outward if there is insufficient space for wheelchair user inside the room with the door in the open position. (Lawton, 1975)

- Full turning radius for wheelchair is required. (Lawton, 1975)

- Bathrooms should be located adjacent to lounges and dining rooms. (This may aid in diminishing incontinence) (Koncelik)

- The flushing mechanism should be easily found and usable by those with disabilities.

- Staff members should be able to give shower assistance without getting themselves wet. (Snyder & Ostrander)

- Adequate lighting should be available in grooming areas, since many people will not be wearing corrective lenses while caring for personal hygiene. (Snyder & Ostrander)

TOPIC: DINING AREAS

ISSUES FOR DISCUSSION:

In a long term care facility, meals can be thought of as special events:

> "For most residents nothing is more important than the quality and service of their meals. These are the only specific social events of their day. For some, the time between meals is spent simply waiting for the next one." (Associated Senior Executives)

Critical issues include: accessibility, table groupings, food choice, meal timing, comfort, ease of conversation, location and size of dining area, meal delivery, waiting areas, and kitchenettes. (Snyder & Ostrander)

Recommendations:

- Dining should be developed as a social function. There should be space in dining areas for those who need assistance. Tables should accomodate different sized groups. (Snyder & Ostrander)
- The dining area should accomodate the needs of the physically disabled. Space should be provided for wheelchair users. Bathrooms should be located nearby. Dining areas should have a call system and be free of glare and background noise. (Snyder & Ostrander)
- The dining area should be as home-like as possible. Table service is preferable to a cafeteria line. Kitchenettes should be available for snacks or for an occasional group meal. (Snyder & Ostrander)
- A seating area should be provided for waiting outside the dining room since residents may come to meals early. (Snyder & Ostrander)
- Chairs for ambulatory elderly must have arms, be stable, and fit under the table. (Koncelik)
- Confused/brain syndrome residents should have a separate eating facility. (Associated Senior Executives)
- Dining tables should be widely spaced to allow for wheelchair access. (Lawton, 1975)

TOPIC: INTERIOR DESIGN

DISCUSSION OF ISSUES:

Relevant interior design subjects for elderly people in long term care facilities include: furnishings and product design, lighting, communication systems, and materials. These should be designed around the physiological needs and safety of the patient-residents, as well as with consideration of psychological impact and maintenance.

Recommendations:

- Seating should provide good body support and adequate leverage, (Laging, 1966), and seating choice should be based on: ambulatory status, general physiological problems, seated durations and posture, function of the specific seating type, applications of new available technology, problems in manufacturing and distribution. (Koncelik)

- Carpeting should be selected with care. It contributes to noise and glare reduction and a home-like atmosphere.

- Lighting should be chosen and placed so that glare is avoided. (Koncelik)

- Avoid white fluorescent lighting (so that everyone and everything isn't given a greenish haze.) (Koncelik)

- Make use of indirect and balanced lighting. (Koncelik)

- Textured material can be used as orienting aids. (Koncelik)

Colour and Decoration

- Floor finishes, carpets and other furnishings should not have heavy patterns. They may be mistaken for obstacles or objects lying on the floor and may cause accidents if people try to avoid them. Patterned surfaces also may conceal real obstacles that can be seen clearly on unpatterned surfaces.

- Public telephones should be accessible to wheelchairs. (Weiss, 1969)

- There should be a monitoring device on all exterior doors where there is some risk of residents wandering outside. (Manitoba, n/d)

- Bulletin boards should be lit, placed no higher than 5'6", and located in circulation areas. (Snyder & Ostrander)

TOPIC: OUTDOOR AREAS

DISCUSSION OF ISSUES:

Since people in long term care facilities spend a great deal of time inside, outdoor areas are desirable to provide opportunities for visual stimulation , fresh air, exercise, the pursuit of hobbies. (C.M.H.C.)
In nice weather, residents may wish to go outdoors in order to walk or be wheeled around, enjoy nature, feed squirrels or birds, picnic, draw, read, think, sleep, etc. Patient-residents may be constrained in their desire to use outdoor spaces due to architectural barriers or lack of protection from the elements. (Snyder & Ostrander, Associated Senior Executives, Lawton, 1975)

Recommendations:

- Seating should offer protection from sun (glare), shade, wind and rain. (Lawton, 1975) (Associated Senior Executives)
- Seating should be placed so that it offers views of nature, people, and traffic. (Lawton, 1975)
- Benches should have backs and accomodate two persons. (Lawton, 1975)
- Seating should offer a variety of light and shade. (Associated Senior Executives)
- Provide access to the outside without having to exit the facility. (Koncelik)
- Both screened and open porches may be desirable. (Snyder & Ostrander, 1974)