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A POST CONSTRUCTION EVALUATION OF WESTSIDE RETIREMENT HOME: THE IMPACT OF DESIGN AND THE PHYSICAL ENVIRONMENT ON BUILDING USERS

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A POST CONSTRUCTION EVALUATION OF WESTSIDE RETIREMENT HOME: THE IMPACT OF DESIGN AND THE PHYSICAL ENVIRONMENT ON BUILDING USERS

by

Arvid Eric Osterberg

A dissertation submitted in partial fulfillment
of the requirements for the degree of
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Doctoral Committee:

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Although it is understood that doctoral committee members are instrumental in the production of the dissertation, the nature of their roles may not be evident to the reader. In my case each committee member played an important role in the fundamental development and choice of subject matter for the project. I am particularly indebted to Leon A. Pastalan for his guidance and encouragement as committee chairman. He and Robert Marans, Linda Davis, and Rudolf Arnheim all served as models of professional excellence by way of example. Their greatest impact on my development dates back to the course work and/or research work I experienced with each of them before embarking on my dissertation. These earlier experiences laid the groundwork for the study of Westside.

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Instrumental in conceiving many of the ideas and in the typing

of the dissertation was my wife, Gayle. Studying an institutional setting such as a nursing home is often a disheartening experience. Many a day I would return to my home from the Westside Retirement Home discouraged or depressed. It was my wife, more than anyone else, who was able to maintain my spirits and momentum throughout the almost four year period from project conception to completion of this document.

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The acknowledgments would not be complete without gratitude being given to the elderly residents themselves. In the final analysis, the residents of Westside deserve the greatest thanks. I sincerely hope that the sharing of their experiences can help others in creating better alternatives to nursing care settings for older Americans.

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INTRODUCTION

> "Reinventing the wheel for each problem is bad enough, but reinventing a square or lopsided wheel is even worse. It is in the institutional field -- the construction of schools, hospitals, post offices, and airports -- where one finds the most flagrant examples of successive replications of bad solutions." Robert Sommer, Chapter Seven, Design Awareness, 1972.

A Need For Post Occupancy Evaluations

The lack of knowledge concerning good and bad design features in buildings might be corrected if post construction evaluations were to become a standard procedure. As Sommer points out in Design Awareness (1972)* the lack of evaluation data not only causes bad design features to be repeated through ignorance in new architectural designs, but also results in good design features being overlooked. Brill (1974) describes two basic outcomes of evaluations as 1) information about the usefulness of buildings and 2) the feeding of that information back into the design of new buildings. Building designers traditionally receive little or no feedback from their completed buildings regarding building performance.

In 1965 the Royal Institute of British Architects began supporting a research effort to develop building appraisal techniques. The research attempted to produce a package of techniques which could be used by architects in evaluating their own buildings. The project

* References, cited by author and date of publication appear in the Bibliography.

led to a movement in Britain towards conducting post construction evaluations for many new buildings, especially institutional buildings. The majority of the British studies, however, have concentrated on technical performance and not on user needs (Markus et al., 1970). Many of the studies in Britain and the U.S. to date have concentrated on mechanical or convenience problems such as toilets that don't work properly, difficulties with ventilating systems, or roofs that leak. While these are perhaps "important to the comfort of the consumer or client, (they are) perhaps secondary to the larger questions of functional success both in terms of the designer's conception of the way his building would be used, and the occupants' needs within the new structure" (Rivlin and Wolfe, 1972, p. 33).

There are times when mechanical or convenience problems affect the functional success of a building and in such cases these problems deserve recognition and discussion. An example of this is in the case of frequent elevator breakdowns that can trap or frighten building users and result in behavioral changes. This issue will be discussed in more detail in Chapter Four.

Masterson (1978, p. 9) believes that "post occupancy evaluations (the term is accepted synonymously with post construction evaluation) are, quite simply, judgements about the quality of architectural environments from a human perspective, from the viewpoint of their occupants." Masterson goes on to reinforce Sommer's position by stating that a post occupancy evaluation is an opportunity to learn from experience.

Eberhard (1978, p. 17) says that "we (architects) need an instrument to tell us how well buildings work in terms of human satisfaction, an instrument we can understand." Eberhard points out that "The essence of good architecture is human satisfaction, and it is ironic, in this connection, that most of us (architects) see the work of our peers and our predecessors not firsthand, but through photographs in the pages of architectural publications. Rather than experiencing the architecture of the day, we experience photographs of that architecture, two-dimensional representations that show us nothing of the way people use and appreciate the buildings they live and work in." While he believes that post occupancy evaluations need to be done, he also believes that the practice "is still in its formative stages; we have no real common understanding of what it is or how it should be used."

Evaluations can provide valuable feedback both to the designers and the owners and managers of a building. When an evaluation of a building's performance is done while the building is in use, it can give information about changes in behavior patterns of users once the users have become accustomed to their new facilities. Evaluation data can then be used to identify areas of good or bad fit between users and their new building.

A post construction evaluation can be useful in assessing a building's performance as measured against the original program used for its design. It can also increase the efficiency of use in a building by facilitating proper management of space. An evaluation

can also point out previously unforeseen potentials as well as limitations of a facility. And most importantly, it can provide designers and clients with feedback that can be beneficial in planning and designing other similar facilities.

Documenting User Needs

Two recent post construction evaluation studies conducted in the United States, Cooper (1975) and Zeisel (1975) were actually field studies of housing projects. These in-depth case studies were useful in pointing out important variables and interactions of variables which deserve more extensive study.

A major emphasis in both the Cooper and Zeisel evaluations was in the area of user needs. Zeisel's study of Charlesview Housing assessed the effectiveness of the designed environment for users. Through a multi-method approach which relied primarily on direct observation and extensive interviewing, Zeisel concluded from his study that in order to decrease coincidence and increase the probability of successful matches between design assumptions and user needs, new methods of feedback from evaluation to programming must be developed (Zeisel, 1975, p. 101).

A recent book by Friedman, Zimring, and Zube entitled Environmental Design Evaluation, 1978 reviews fourteen case study post construction evaluations which emphasize various user groups and their needs. The authors point out that "The major problems in an evaluation are often defining these user groups, understanding the characteristics which describe them (such as age, income, and

organizational position), and understanding the distinct needs of each group" (Friedman, Zimring, & Zube, 1978, p. 9).

In discussing the nature of environmental design evaluation research, Friedman, Zimring, and Zube (1978, pp. 195-196), observe that "Rather than manipulating environments the way experimental studies do, evaluation usually seeks to describe what is going on." They go on to note that most evaluation research involves multiple information gathering methods. "This strategy of using converging techniques allows the weakness of one method to be partially compensated by the strength of another." The authors then describe the five categories of evaluation study methods as 1) direct observation, or the use of various techniques to record user activities directly, 2) interviews, where users are asked to give reactions to settings, 3) unobtrusive measures, where indirect measures for studying user activities are used, 4) simulation, where users react to representations of environments (such as photos) rather than to the environments themselves, and 5) pencil and paper tests, that is, written instruments such as logs employed to understand user activities. A more detailed discussion of a methodology for post construction evaluation research will appear later in Chapter Three.

Evaluating A Retirement Home

The environmental quality of retirement living facilities in the United States today is of great importance to our society. With the dramatic increase in the number of older Americans, 3 million in 1900 to 22 million in 1975, (Facts about Older Americans, 1976), has come an accompanying increase in the number of nursing and long term care facilities. In fact the number of long term care facilities rose from 6,538 in 1954 to 24,996 in 1973. And while the number of long term care facilities tripled in that period of time, bed capacity of those facilities increased eight-fold. Today there are almost as many beds in the nations long term care facilities as there are in the nations hospitals (Long Term Care Facts, 1975, p. 7).

The design of the nations long term care facilities can therefore affect the lives of an increasing number of older Americans. While long term care is the subject of extensive gerontological research few studies have taken a close look at the physical design features of long term care facilities.

The evaluation of Westside Retirement Home* which follows is an attempt to study the effects of the designed environment on building users. The study has two purposes: 1) to evaluate the success or failure of Westside as a building, and 2) to evaluate the success or failure of the architect's programming attempts.

* In order to protect confidentiality, the name of the retirement home studied has been changed to "Westside." The names of residents and other individuals referred to throughout the text have also been changed for the same reason.

In order to orient the reader to the subject of long term care facilities for the aged, Chapter Two will begin with a brief historical account of dependent care settings in the United States.

CHAPTER TWO

RETIREMENT HOME DESIGN: AN HISTORICAL ACCOUNT AND DESCRIPTION OF WESTSIDE

Brief Historical Account of Dependent Care Settings

The rapid growth and development of nursing homes in the United States has been a relatively recent phenomenon. Until the 1930's nursing homes as we know them now were nonexistent. Instead, there were county infirmaries, convalescent homes, sanitariums, poor farms and workhouses whose populations varied greatly in age, mental and physical health, and dependency levels. The residents of these institutions had several things in common: they were all cast-offs or poverty-stricken or chronically ill. Poor farms, for example, were typically filled with those unfortunate poor who had been rejected by the community as examples of "the evils of idleness" (McArthur, June 1970, p. 29).

During the early twentieth century, the almshouse remained the place where disadvantaged old people were sent, while orphanages and other specialized institutions took over much of the rest of the disadvantaged population. Then, with the return of wounded soldiers to the United States during World War I, a movement towards convalescent care and rehabilitation began which was accompanied by social indignation at the miserable conditions for the unfortunate occupants of poor houses. Eventually these movements and others led to the passing of the Social Security Act of 1935. Shortly there-

after, poor houses began to disappear and today's style of nursing homes came into being.

The earliest nursing homes continued to serve a predominantly disadvantaged elderly population. During the years between 1935 and the present, however, elderly people from a variety of socio-economic levels made up the population of nursing homes. As the population changed to include people from varied backgrounds, the size and number of homes began to increase rapidly. This change in population makeup was due, to a large extent, to the passing of Medicare and Medicaid legislation. In the ten year period from 1963 to 1973 there was a 20 percent increase in the number of facilities and a 100 percent increase in the number of beds (Long Term Care Facts, 1975). Accompanying this increase has been an increase in the proportion of the American population which is over 65 years of age. Currently, about five percent of the elderly population or one million older Americans live in nursing homes or other institutions (Facts About Older Americans, 1976).

The Design of Today's Nursing Home

The architectural design of today's nursing home is often based on providing convenience and efficiency for the staff who operate them. Tile floors are used because they are easy to clean. Nursing stations are located in places which give a maximum amount of surveillance and control to the nurses so that resident movement on and off the floors can be monitored. The typical image which comes to mind when one thinks of a nursing home in this country is often

quite similar to that of a hospital. Structures which are frequently outdated and overcrowded have wheelchairs lining the hallways and nursing residents are seen parked in groups in front of television sets. Residents are allowed little or no privacy as doors to their rooms are seldom closed. Wall and floor surfaces are usually pastel colors with poor acoustical properties. Monotony often prevails because rooms, corridors, building wings, and floors all look alike.

The institutional image of such an environment may actually reinforce the low morale of many of the residents. A common reaction by elderly people being admitted to these homes is one of disappointment. The environmental setting facing them for the rest of their lives is contrary to the kind of settings they have always lived in. The transition from one's home or apartment, where one has had the freedom to add possessions and furnishings and maintain control over one's environment, to a setting which allows for little or no personalization and control is not easy for an individual of any age. Anyone who has stayed in a hospital knows what the experience is like. Routines of daily living are regimental and impersonal. But individuals in hospitals can at least take comfort in the fact that the situation is short-term and temporary. They know they will soon be out of the hospital and back in their homes again. But what does the elderly nursing home resident have to look forward to? For most, it is a one-way trip, with little or no hope of ever getting out. As a result, many individuals fear and resist going into a nursing home and would often rather suffer where they are than be "admitted."

The problem of designing an appropriate supportive living

setting for elderly residents who must have continued nursing care is no easy task for the architect. The architect's role, as usually conceived, is limited to the physical manifestation of space and does not include the shaping of morale and behavior patterns. Thus, the following questions arise: Can the architect, by providing a better, supportively-designed nursing home environment, justifiably expect to improve people's lives? Will such an environment cause the morale level of individuals to go up and activity patterns and social interaction among residents to increase? And will accompanying staff attitudes improve, resulting in a more therapeutic environment?

The challenge to the architect is to design a living environment which meets the needs of older people who, because of their physical limitations, are more dependent on environmental supports than the rest of the population. The difference these environmental supports can make in individuals' lives can be expected to be greatest for those individuals with the most severe limitations.

In order to study this interaction of environment and behavior and identify architectural variables which can result in increased usage by an elderly population, a case study of Westside, a newly designed retirement home, was chosen for the focus of this dissertation.

Description of Westside Retirement Home

Westside Retirement Home was chosen for the case study because the architecture represented a thoughtful approach towards the creation of a supportive physical environment. The building project

represents an attempt to provide innovative design solutions responsive to special needs of an elderly user population. This thoughtful programming is important because if it is found to be successful, it can serve as a model for designers of other retirement homes.

Westwide is a newly renovated multi-use structure. The original building was constructed in 1927 and consisted of a church, a classroom wing, and an attached nine-story apartment structure with shops which were open to the street on the ground floor. Westside Retirement Home began in 1963 when three of the apartment floors were converted to nursing floors and the remaining five were designated as apartment floors for the independent elderly. At that time, all of the shops on the ground floor (except for a small bank which was allowed to remain) were converted to administrative offices, a lounge, a dining room and other support facilities for the home.

After 1963 the retirement home quickly filled to a capacity of 115 elderly residents, 55 in apartments and 60 in nursing rooms. The average population of the home then varied only slightly from year to year, until the advent of a major remodeling project, which occurred in 1976 (Figures 1, 2, and 3). Through those years from 1963 to 1976, all of the residents of the home were served meals three times a day, the apartment residents in the first floor dining room and nursing residents in their own rooms. Other than meals, there were few additional services or structured social activities for the residents.

During the early 1970's the Board of Trustees of the home considered abandoning the then out-of-date facility and moving to a

Figure 1. Looking North at Apartment Wing

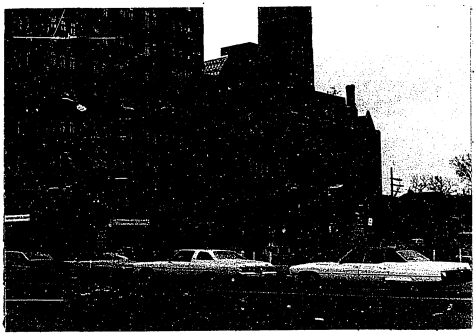


Figure 2. Looking West at Maple Street Side At Old Church Wing

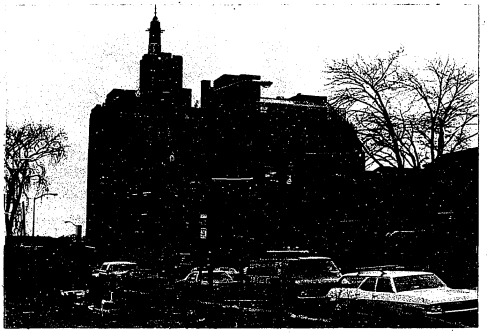


Figure 3. Looking South

suburb to construct a more modern building. The population makeup of the neighborhood had changed over the years and attendance at the attached church had fallen off to the point where it was impractical to operate it for only a handful of Sunday worshipers. Additionally, the three nursing floors no longer met city and state building code requirements and were considered inadequate.

When the elderly residents of the home learned of the impending move to one of the suburbs, many became upset and voiced their disapproval. A number of long time residents claimed that the city was their home and they didn't want to move out of it. They reportedly liked the idea of staying where they had always lived and said they could tolerate the increased risk of crime and other inconveniences

characteristic of a large industrial city. In response, the retirement home hired an architect to do a feasibility study in order to explore the possibility of recycling the old church and educational wing into a modern nursing facility.

After considerable deliberation it was decided to go ahead with remodeling the old church building and in May of 1976 the nursing residents on the three nursing floors in the old wing of the building were moved to new rooms in the newly renovated wing of the building (the old church). The old nursing floors have since been renovated into apartments bringing the capacity of the retirement home to 214, (94 independent apartment residents, 30 semi-dependent or "home for the aged" residents, and 90 dependent or nursing residents).

The Architect's Concerns

The special needs of the elderly population are largely a result of age-related sensory perception diminution which include losses in sight, hearing, taste, touch, smell, and temperature sensitivity (Pastalan, 1973). Of particular concern to the architect of Westside was the vision loss, which is typical of the elderly nursing home resident. Utilizing several principles, the design of the new nursing wing was formulated to increased overall visual legibility (see Figures 4 through 10).

By introducing certain design features (to be described in detail later in Chapter Four) the architect expected that residents could be drawn from their rooms to engage more frequently in planned or unplanned social activity. The architect was, in essence, imposing his

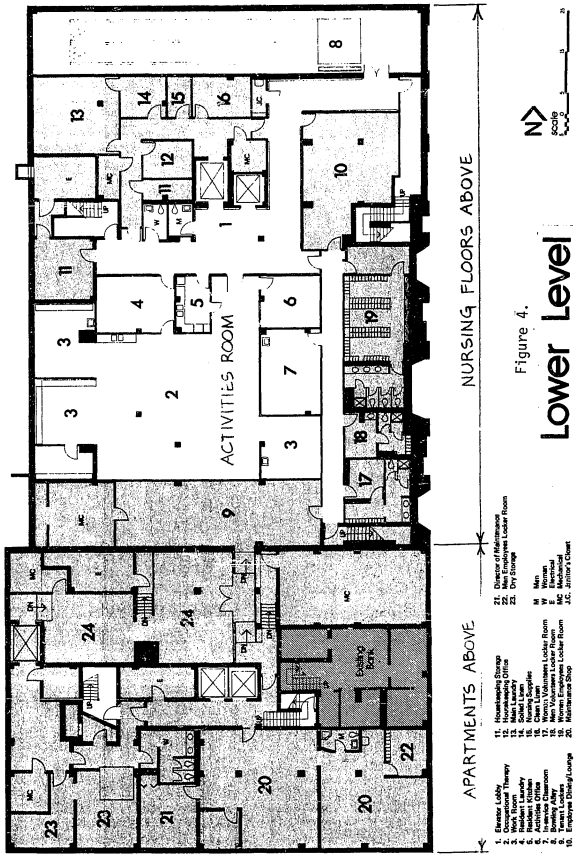
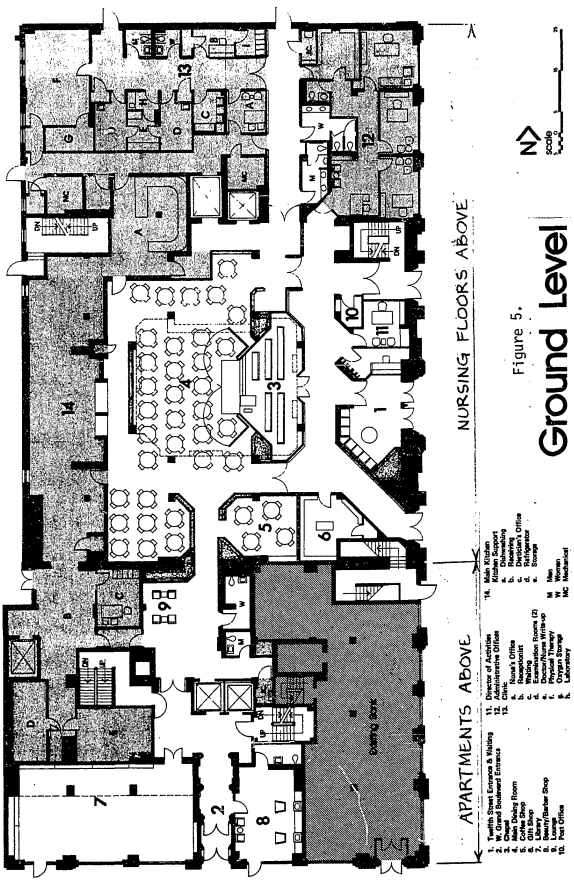
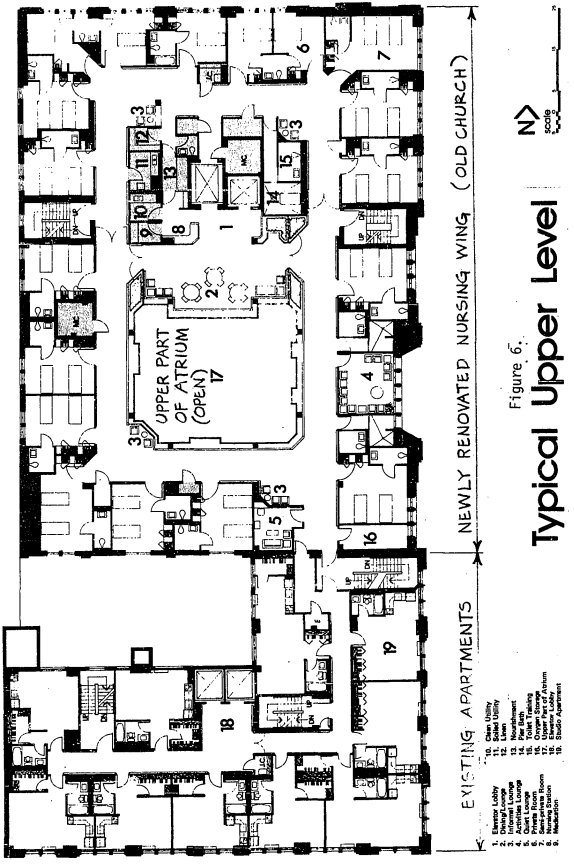


Figure 4.

Lower Level





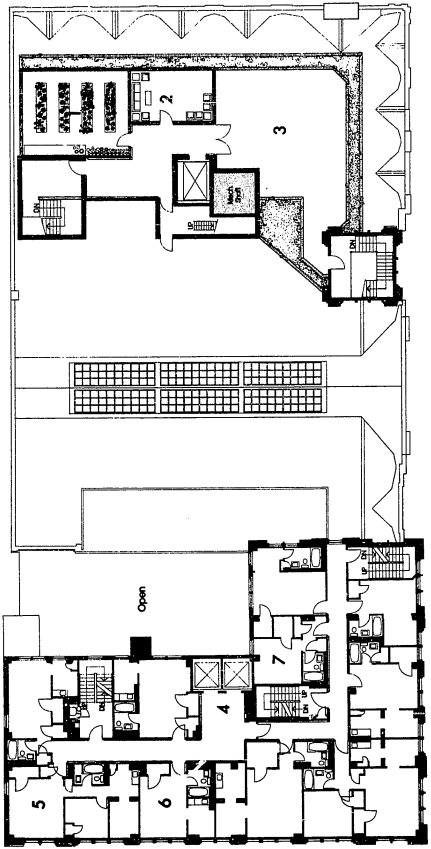


Figure 7.

Roof Level

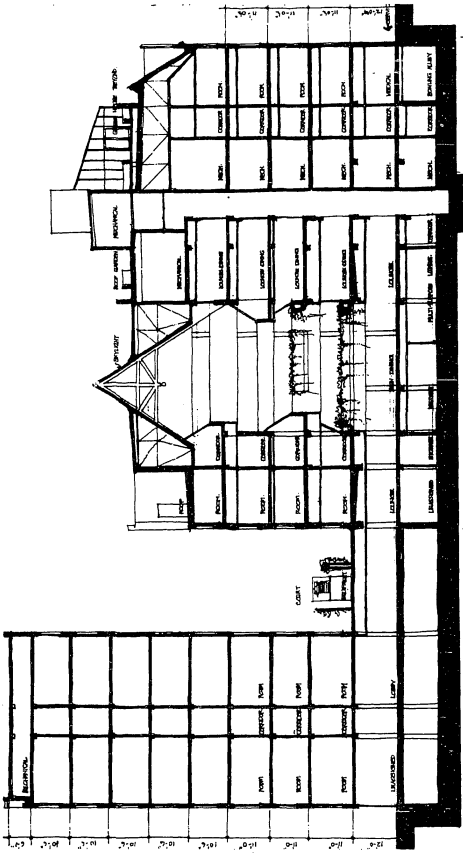


Figure 8. **Building Cross Section**

Figure 9. Old Nursing Floor

Figure 10. New Hallway

values concerning socialization on the residents by using certain design features. One of these design features, for example, was to include pocket lounges in each corner of each loop hallway. (See typical upper level floor plan, Figure 6.) These were intended as extended living areas where residents could get away from their roommates. It was intended that over time residents would think of the pocket lounges as their living rooms and would begin to personalize them. The architect also saw the pocket lounges as a stopping place for residents who were strolling around the hallways. Other spaces on each floor which were designed to draw residents from their rooms included: 1) a T.V. lounge, 2) a private meditation lounge, and 3) a large elevator lounge. The hallway system was to act as a pedestrian street to these various places of activity (Figure 10). Through proper programming these spaces would enhance the independence and autonomy of nursing residents.

The architect also intended that individuals from all levels of care within the building be allowed to interact freely with each other as they wished. Because the layout of the four new floors was identical from one floor to another (Figure 6, Typical upper level plan), he hoped residents living on different floors would socialize freely with each other, rather than separating into social groups by floors. He envisioned the vertical circulation system of the building as facilitating this goal because an assumption was made that residents would be granted the freedom to leave and enter the various floors at will. This assumption was critical to the

success of the design.

Because of the projects location in a high crime area of a large midwestern city, movement of people in and out of the building had to be carefully monitored. An inwardly oriented, self-contained community resulted from this location. By including many spaces for activity throughout the building, the architect hoped to promote independence among residents. He assumed residents would be free to come and go to the activity spaces at will and in an autonomous manner. In addition to the activity spaces on each floor many other activity spaces were included on other floors to "invite" residents out of their rooms. Activity spaces on the first floor included a heritage library room (Figure 11), a chapel (Figure 12), and a gift shop (Figure 13).

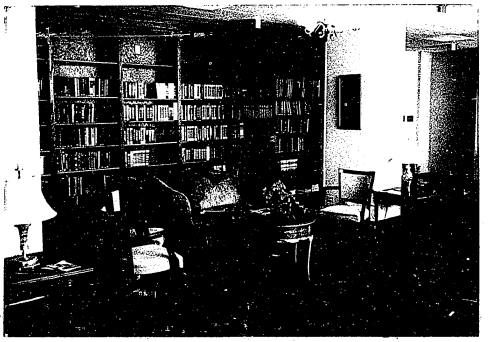


Figure 11. New Heritage Room-Library

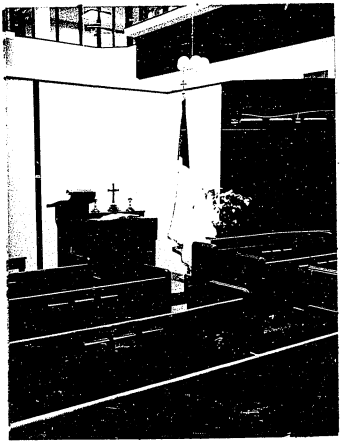


Figure 12. New Chapel

Figure 13. New Gift Shop

CHAPTER THREE

METHODOLOGY FOR POST CONSTRUCTION EVALUATION RESEARCH

Strategy For Research

In developing a methodology for the post construction evaluation of Westwide, several different considerations had to be carefully thought out. One of the primary considerations was deciding the proper time frame for conducting the evaluation. It was thought that user reaction to the new building might vary considerably throughout the post construction occupancy period. Immediate reaction following the move into the new building might in part reflect attitudes about the move itself rather than attitudes about the new physical and social environment. It was later found, as will be illustrated in Chapter Four, that the effect of relocation to a new living environment can result in a very difficult adjustment period for residents. Initial user reaction to the new environment was an important part of the study however, and therefore the effect of the relocation trauma had to be recognized.

A possible confounding variable during the initial period of occupancy was the reaction to "newness" or the "novelty effect." When a buyer picks up a new car from the showroom floor he may be so infatuated with his new automobile that he fails to see any of its faults. Instead, he beams with excitement as he plays with all the new controls and begins to manipulate his new machine. Until this novelty effect begins to give way to familiarity and habituation,

questions to the new owner may yield interesting responses, but biases will prevail and will be hard to sort out. A similar phenomenon may occur with the new building user. The period of discovery is worth documenting, but the research must reach beyond that point and into the habituation period, in order to show the full picture.

Determining the correct time intervals to do the research at Westside necessitated an examination of existing research findings from other evaluation studies. Gutman and Westergaard (1974) reported a major difficulty with evaluation research was in determining the best point in time for conducting the studies. They also reported that most buildings such as institutions have a turnover of occupants from the time of programming to the time when the construction is completed. Gutman and Westergaard point out that what satisfied one group of users may not necessarily satisfy the next group of users.

It was decided that the Westside study could not be effectively executed at any one point in time, instead it required continuous research over a period of time. It was also decided that the research should span a full one year period in order to allow for differing seasonal, climatic, and behavioral changes to be exposed. A year also would allow for behavior patterns of users to stabilize beyond the novelty stage. The primary time-intervals used for data collection in the study at Westside were: the month just before the move, the first month after the move, the sixth month after the move, and the twelfth month after the move.

Multidimensional Approach

A multidimensional approach was selected to study user response to the building over the one year period. Three basic procedures were used to collect data for two primary user groups of the building, the elderly nursing residents and the buildings staff members. The three procedures used were: 1) interviewing, 2) observation, and 3) consulting the retirement home's records (Table 1).

Table 1. Methods For Obtaining Data*

Data on Residents	Data on Staff
1. Formal interviews with residents	1. Formal interviews with staff members
2. Informal visits with residents	2. Informal visits with staff members
3. Consulting nurses and aides about residents' behavior	3. Observing staff members' behavior (mapping, field notes, and photography)
4. Observing residents' behavior (mapping, field notes, and photography)	
5. Consulting records	

* See Appendix for sample instruments

Interviewing the Architect

In order to serve as a basis for evaluating the success or failure of programming attempts, the architect who was responsible for designing the renovation of Westside Retirement Home was interviewed extensively by the author. The inverviews were conducted in the

architect's office at the time of the construction of the project. The purpose of the interviews was to document the architect's program objectives as well as the expectations he had for the eventual use of the facilities. The architect not only outlined what these objectives were, he also toured the project while it was under construction with the author to point out first hand how the objectives were being implemented through design. These objectives and their implementation will be fully described in Chapter Four. Interviews with the architect also yielded an account of how the architect had researched the user needs of the elderly residents and staff members who were to live and work in the retirement home.

While the author's interviews with the architect were conducted as an early first step in the post construction evaluation, a better time to document program objectives and user needs would have been earlier during the actual programming phase of a project.

In order to evaluate the success or failure of Westside as a building, interviews with residents and staff members were deemed necessary.

Formal Interviews with Residents

Since the degree of alertness and memory of nursing residents can vary from day to day, it was necessary to establish procedures for obtaining reliable measurement of residents' responses.[1] The researcher at first concluded that an interview was reliable if responses from a second interview completed a few days later closely matched responses from the resident's first interview. But this

correspondence was not always a true determination of reliability. For example, one resident reported being very happy about her new room during an interview. When she was given the same interview two weeks later she gave the same response. During informal visits in the same two week period, however, the resident said she was actually quite disenchanted with her new surroundings. It was clear she was being guarded during her interviews and had a positive response "for the record." Without the additional informal visits the interview data would thus have been accepted at face value. A problem in using structured questionnaire interviews (formal interviews) with nursing residents is that respondents tended to respond very favorably when asked to give satisfaction levels. While this generally favorable response level may reflect an intentional projection of satisfaction, it may also reflect another attitude. Residents often feel indebted to the charitable, religiously founded retirement home for caring for them, especially those residents who have little or no ability to pay the high cost of their care. As a result, they feel it would be unfair or even dangerous to register complaints. They are happy just to be cared for.

Informal Visits with Residents

A common problem found in giving structured questionnaire interviews to nursing residents was that they often wandered off the subject and told stories from their past. Another tendency was to answer a question inappropriately without clearly understanding it. Visiting residents informally, on the other hand, without asking pre-planned

questions was found to yield a variety of resident attitudes about the retirement home, its staff members, and its other residents.

Informal visits with residents were also found to provide a wealth of information concerning the issues of relocation and reaction to the new environment. The case studies cited in Chapter Five illustrate the usefulness of the informal visit approach. When a resident was visited repeatedly over a period of months a bond of friendship and trust developed between the interviewer and the resident. While initial visits gave the visitor the intended projected image of satisfaction, successive visits sometimes revealed deep signs of stress and dissatisfaction. Relying on interview data alone might have resulted in a distorted assessment of user satisfaction.

Interviewing Nurses and Aides About Residents' Behavior

Resident behavior was primarily documented through structured interviews with nurses and nursing aides (hereafter referred to as "aides"). A questionnaire was developed and used as an interviewing format. Nurses and aides were asked a series of questions about particular residents. Completed interviews documented a resident's activity range both within and outside the building. The questions covered where and when the resident left his room and with what degree of assistance. The number and frequency of visits from other residents, outsiders and relatives were also determined.

To validate nurse and aide interview data, questions about the same residents were given to different nurses and aides. In other

words, two nurses and/or aides were asked at different times (and unknown to each other) about the same residents. Most information obtained from nurses and aides concerning residents was found to be reliable.[2]

Behavior Observation

Resident behavior was further determined through observation. A behavior mapping technique was considered for use in observing resident behavior, but was not employed in the study primarily because of the limited resources in both time and research personnel. Other considerations were: 1) the fact that the presence of an observer can affect spontaneous behavior, and 2) it was not possible to observe behavior in different parts of a building continuously for any length of time.

Because of the extensive amount of time necessary to carry out an observational study, various areas of the building were observed periodically to determine which spaces were generally being used and which ones were not. Latent evidence of use was often found and recorded. A corner lounge, for example, was observed to be continuously used as a storage corner for walking aides (see Figure 14). It thus did not function for its intended use as a social gathering space. Still photography supplemented observations by recording the use and non-use of spaces as they appeared to the observer.

Figure 14. Corner Lounge Being Used for Storage

Consulting Records

In order to describe the overall demographic and health characteristics of the population of nursing residents at Westside, records of the home were consulted with the approval of the home's administrator. Each resident was assigned a number and names were not used in order to assure confidentiality. All the references to residents by name which appear throughout this dissertation are done with the use of fictitious names. The accounts of residents' experiences are all factual, but the names have been changed to protect their

identity.

Retirement home records which were consulted included admission interviews which had been filled out by staff members with information from residents themselves, or in some cases with information from admitting relatives. Nurses' charts were also consulted as were log books which contained names of residents who moved from one room to another, the dates of those moves, and the dates of all hospital visits.

Interviewing Staff Members to Obtain Staff Attitudes

In order to explore the reaction of various employee user groups (nurses, aides, administrator, etc.) to the new building, employees were given structured questionnaire interviews. Staff members were found to wander off the subject less often in formal interviews than did nursing residents.

Informal Visits With Staff Members

As was the case with the nursing residents, staff members became trusted friends and accurate reporters after repeated visits. A danger in using this type of repeated visit approach is that interviewer bias is likely to occur after a number of discussions because the interviewer and the person being interviewed are likely to begin agreeing with each other. Field notes of informal visits with staff members were made by the researcher on each day that a site visit was made (a total of 120 days over a fifteen month period). Much useful information was obtained through this method of notetaking that otherwise might have been lost.

Research Procedures

Reliability of Interview Responses

Information gained in one procedure was often cross checked with information gained in another. An example of this is in the case of Cora Jones. Mrs. Jones said she loved the roof garden, went there on her own, and used it at least twice a week. However, nurses in Cora Jones' area of the nursing floor reported that she never ventured to another floor unattended, primarily because of her mental status. Records of planned activities were consulted and they showed a once a month visit to the roof garden by Cora as part of a regular activity program. This information was then validated with periodic visits to the roof garden area and discussions with staff members who reported that Mrs. Jones had not been seen in the roof garden except as part of a planned group activity. In the case of conflicting data which could not be validated, the data were discarded. Though few situations of this nature arose during the study, one method of data collection, the resident interview, consistently presented problems of the type discussed.

Pre-testing

Following the development of the resident interview, nurse and aide interviews concerning nursing residents, and staff interviews, were pre-tested and subsequently revised before being actually used to collect the data.[3] Initial pre-testing of the resident interview led to 1) an abbreviated checklist approach which was

appropriate for a greater number of nursing residents, and 2) the adoption of informal visiting to a number of residents. Pre-testing of observation and photographic techniques also resulted in revised procedures.

Conducting the Research

The multi-method approach used in the research offered the primary advantage of providing a broad data base for analysis. Each method provided a data set which could be used to validate information obtained from another method.

Because of the nature of the population the researcher had no control over group size. There were 71 nursing residents being studied at the beginning of the research, but twenty died at various points in the year leaving voids in the data. Of the 71 residents, no control was possible over the size of the subgroups as shown in Table 2.

Table 2. Resident Population

	Group A Residents who moved to new nursing wing from old nursing wing	Group B Residents who moved to new nursing wing from outside the home	Group C Residents who moved to new nursing wing from old apartment wing	Group D Residents who moved to new "Home for the Aged" from old nursing wing
One month after move to new building	N=53	N=11	N=2	N= 5
Twelve months after move to new building	N=37	N=7	N=2	N=3

Notes

[1]Mabel Ray, who completed an interview before the relocation to the new building, is a case in point. Mabel responded well to questions and gave in-depth answers without hesitation. She even offered many comments beyond those asked for, including a lot of personal history. As part of the visit, she was shown the room she would occupy in the new building. Two days later the author returned to discover he had become a complete stranger to her. She had forgotten completely about the trip she had taken. On that second visit, stories came out differently than the first time, with facts now mixed with fantasy. A talk with the head nurse following the visit revealed that Mabel had been suffering from advanced cancer that was affecting her mind. She had her alert moments but her memory lapses were frequent. Often she was reported to walk the hallway and look for her room, while not recognizing her room or her roommate.

[2]An example of an unreliable question left out after pre-testing was one on resident diagnosis. Nurses and aides were found to be generally unaware of, uncertain about, or even mistaken about a resident's diagnosis of health, even though a typewritten statement of diagnosis appears on the cover sheet in each resident's chart. This diagnosis statement filled out by the admitting physician, covers such diverse conditions as cardiovascular disease, diabetes, respiratory ailments and arthritis. Pre-testing the interviews also showed nurses and aides had an accurate conception of the elements which make up a resident's home range. They were found to have a very thorough knowledge of where residents go and what they do with their time. They were also found to have a good knowledge of visits by friends and relatives. And as might be expected, they were found to have an accurate knowledge of resident's dependency and mobility levels.

[3]Instruments used in the research are in the Appendix.

CHAPTER FOUR

EVALUATING THE SUCCESS OF PLANNING AND DESIGN

The evaluation of Westside which follows consists of two parts. The first part, evaluating the success of planning and design of Westside as a building will be contained in Chapter Four. The second part of the evaluation of Westside, which deals with the process of relocation, will be presented in Chapter Five.

In developing an understanding of planning and design features which were used in Westside it is beneficial to first look at the population characteristics of the retirement home. A description of the nursing resident population of Westside as it compares with other nursing home populations nationally will therefore precede a discussion of the architecture of Westside.

Description of Population at Westside

Comparison with National Averages

A national survey of nursing homes found that 22 percent of the nursing residents in those homes were under the age of 65 and that octagenarians represent the largest proportion of nursing home age groups.[1] At Westside, no one is permitted to enter the home unless he or she is 65 years of age or over. The average age at Westside is 85.2 years, higher than in the national survey (Table 3).

Length of stay at Westside is unusually high with 19 of the residents (26.7 percent) having been on nursing floors in the home for five years or longer, while the national figure is only 1.3 percent

Table 3. Demographic Characteristics of Respondents

	At Westside	Nationally*
AGE		
over 90	30.8%	11.2%
80-89	47.2	38.0
Under 80	22.0	50.8
	100.0	100.0
SEX		
Males	17.0	25.0
Females	83.0	75.0
	100.0	100.0
RACE		
White	95.0	90.5
Non-white	5.0	8.5
	100.0	100.0
MARITAL STATUS		
Widowed	69.0	60.6
Never married	19.7	20.7
Married	5.6	13.3
Divorced or separated	5.7	5.4
	100.0	100.0
Number of respondents	70	4,300

* Source: Long Term Care Facts, 1975.

of residents having a five year plus tenure nationally (Table 4). Westside's tenure record when compared to both metropolitan area and national studies, is very favorable and perhaps justifies Westside's reputation as a respectable retirement home that cares about the lives of its nursing population.

Although education and employment experiences of nursing residents was not documented in the study, the population at Westside appears to compare fairly closely with the nation as a whole with the exception of slightly more retired professional people at Westside. Economically, residents at Westside also parallel the national image. Westside is a charitable institution which does rely on large

Table 4. Lengths of Stay in Nursing

	At Westside	In the Metropolitan Area	Nationally*
Under 1 year	21.1%	36.5%	29.9%
1-2 years	14.1	26.5	23.5
2-3 years	12.7	14.9	14.6
3-5 years	25.4	12.4	16.7
5 years and over	26.7	9.7	1.3
	100.0%	100.0%	100.0%
Number of respondents	70	865	4,300

* Source: Barney, Jane, Patients in Michigan's Nursing Homes, 1973.

endowments from entering residents as its primary means of support. Partly because Westside is a charitable religiously-founded home, many residents are admitted with little or no assets or income. Most other retirement homes in the surrounding communities that are considered to provide high quality care do not admit residents with little or no assets. Unfortunately, the long tenures typical of many residents adds to the financial problem of the home which has been operating in the red for several years. Even with medicaid and medicare support for most residents, the home still loses money; the difference is paid by private donations.

In terms of health status of the population, diagnoses recorded on admission forms at Westside show that cardiovascular related diseases lead the list of chronic conditions with 46 of the residents (64.8 percent) afflicted. This compares with a nationwide 87.1 percent of nursing residents who, at admission, are reported to have a cardiovascular related disease. Diagnosis recorded at admission to Westside indicates that arthritis or musculoskeletal disease is present in 36.6 percent of the population, as opposed to 21.4 percent nationally. The fact that the population at Westside has less cardiovascular disease than nationally perhaps explains to some extent the longer survival at Westside because those with cardiovascular disease are dead at younger ages. By the same reasoning the older population at Westside also has a higher incidence of arthritis (Table 5).

Chronic brain disease and neuroses or psychoses are present in 16.9 percent of the population at Westside as opposed to a 32.7 percent national figure. This difference can be explained to some degree by

Table 5. Leading Diseases

	At Westside	Nationally*
Cardiovascular	64.8%	87.1%
Musculoskeletal (includes Arthritis)	36.6	21.4
Chronic Brain Disease Neuroses and Psychoses	16.9	32.7
Number of respondents	70	4,300

* Source: Long Term Care Facility Improvement Study, 1975.

the tendency of admitting staff members (office personnel who filled out admission forms) to describe residents as "slightly confused," rather than labeling them "senile" or victims of "chronic brain syndrome." The comparison of the Westside population to the national figures in respect to chronic brain disease, neuroses and psychoses is, at best, speculative since no definitions of these conditions were available from the national survey.

In terms of the vision impairments of nursing residents at Westside, nurse and aide interviews indicate that 19 of the residents (28.4 percent) were judged to have no impairment (good vision), 45 residents (67.2 percent) were judged to have some degree of impairment, and 3 residents (4.5 percent) were judged to be blind. This quite closely compares to national percentages of 29.6, 67.8 and 2.6 respectively (Table 6). Hearing impairments also follow the national profile closely with the exception that no residents at Westside were

Table 6. Visual Impairments

	At Westside	Nationally*
Good vision (no impairment)	28.4%	29.6%
Fair to poor vision (some degree of impairment)	67.2	67.8
Blind	4.5	2.6
	100.0	100.0
Number of respondents	70	4,300

* Source: Long Term Care Facility Improvement Study, 1975.

considered to be completely deaf as opposed to 1.5 percent deaf nationwide.

A review of the activities of daily living (Katz, 1963) for the population at Westside reveals a resident's dependency level in terms of his or her capacity to function alone versus functioning with assistance. The most dependent of activities at Westside was found to be bathing. Of sixty-seven nursing residents only four individuals (6.0 percent) were permitted to bathe themselves without assistance as compared to 6.6 percent nationally. Assistance in dressing at Westside (4.3 percent of the residents needing assistance) was found to be considerably less than nationally (74.3 percent of the residents receiving assistance). The activity of eating required assistance for only 20 percent of the residents at Westside as compared to 51.7 percent nationally (Table 7).

Table 7. Activities of Daily Living

	At Westside	Nationally*
Eat themselves	80.0*	48.3%
Eat with assistance	20.0 } 100%	51.7 } 100%
Dress themselves	50.7	25.7
Dress with assistance	49.3 } 100%	74.3 } 100%
Bathe themselves	6.0	6.6
Bathe with assistance	94.0 } 100%	93.4 } 100%
Number of respondents	67	4,300

* Source: Long-Term Care Facility Improvement Study, 1975.

The percentage of nursing residents at Westside who are fully ambulatory is 25.4 percent compared to 13.2 percent nationally (Table 8). Only 3 percent of the residents at Westside are considered to be completely non-ambulatory ("bedridden"). The remaining 71.6 percent of nursing residents at Westside need some kind of ambulatory assistance (help of another person, mechanical aid, or both). Of that group 23.9 percent are ambulated in "Geri chairs" with help of nurses and aides. Walkers are used by 16.4 percent of the nursing residents without the assistance of nurses and aides. The mobility status of 46.3 percent of the nursing residents restricts their free movement. In other words, almost half of the 70 nursing residents are at the mercy of others to get from one place to another. One quarter of the residents can get around by themselves with various mechanical aids, and the remaining one quarter of the residents can ambulate freely

Table 8. Means of Ambulation

	At Westside	Nationally*
Fully ambulatory	25.4%	13.2%
Not fully ambulatory	74.6	86.8
Walkers	16.9	(not broken down on national survey)
Other (crutches, cane, or walk with assistance)	14.4	
Wheelchairs	16.4	
Geri Chairs	23.9	
Bedridden (completely non-ambulatory)	3.0	
	100.0	100.0
Number of respondents	65	4,300

* Source: Long Term Care Facility Improvement Study, 1975.

without mechanical aids or assistance.

In the national survey, approximately 40 percent of the nursing patients had no problems with incontinency of the bladder, while approximately 60 percent had bladder control difficulties. At Westside, 45 of the residents (67.2 percent) had no problems with bladder control while 22 of the residents (32.8 percent) did have problems. In the national survey 50 percent of the nursing residents had bowel function control difficulties while 50 percent did not. At Westside, however, only 25.8 percent had bowel control difficulties while 74.2 percent did not (Table 9). These differences in continency levels

Table 9. Continency

	At Westside		Nationally*	
Continent - bladder	67.2%	100%	40.0%	100%
Incontinent - bladder (includes catheter)	32.8		60.0	
Continent - bowels	74.2	100%	50.0	100%
Incontinent - bowels	25.8		50.0	
Number of respondents	67		4,300	

*Source: Long Term Care Facility Improvement Study, 1975.

between Westside and the National Survey are interesting in light of the older population at Westside. Again there may be a definitional problem in making this comparison.

Regarding mental status, the proportion of the population at Westside who were considered by nurses and aides to be mentally "alert" was 38.8 percent, with 32.8 percent termed "semi confused," 22.4 percent termed "confused," and 6.0 percent termed "totally disoriented." These figures are difficult to compare with the figures of the national survey, which defined 45.8 percent of the nursing residents as "oriented" and 54.2 percent as "disoriented" (Table 10).

Table 10. Mental Status

	At Westside	Nationally*
Oriented	71.6% (38.8 alert) 32.8 semi confused)	45.8%
Disoriented	28.4% (22.4 confused) (6.0 totally disoriented)	54.2
	100.0	100.0
Number of respondents	67	4,300

*Source: Long Term Care Facility Improvement Study, 1975.

Summary of Westside Characteristics Compared to the National Survey

In summarizing the characteristics of the population of elderly nursing residents at Westside as compared to the national scale, both similarities and differences are found. Demographically, the population at Westside is quite similar to the national population, with the major differences appearing in age and length of stay, both of which are higher at Westside. In terms of health status, and sensory-loss, the nursing population of Westside again closely approximates the national profile. Since the average length of stay at Westside is over 5 years it is reasonable to expect that the health status of individuals which is primarily based on admission diagnosis often changed during that period of time. This makes a close comparison with the national profile difficult. In activities of daily living the Westside population appears to be far less

dependent than the national population, in spite of the fact that there is a higher percentage of individuals over 80 years old at Westside. These differences may reflect institutional differences between Westside and the care facilities used in the national study. At the same time, however, mobility is an important factor because almost half of the nursing residents at Westside cannot ambulate without assistance from others. Incontinence levels of both bladder and bowel functioning are statistically lower at Westside than nationwide. Mental status among residents of Westside was difficult to compare to the figures in the national survey.

The major differences between the population at Westside and the populations represented in the national survey are in average age, length of stay, activities of daily living, and continency levels. Each of these major differences would appear to suggest that Westside has an unusually supportive living environment but may also be explained by institutional differences which are not measured in this study. In addition to the supportive living environment a healthier and better educated resident population could explain the longer survival.

The Effectiveness of Architectural Program Objectives in Design

The following discussion will be a presentation of the findings in regard to the success or failure of the architect's programming objectives. Each major objective will first be explained in order to clarify the architect's intent. The following subsection will state

the findings for each objective.

A Self-Contained Community

The designer attempted to create an inwardly oriented self-contained community, partly because of the worsening community links to the outside of the building and partly because of the limited abilities of nursing residents to go places and do things. As elderly nursing residents get older they tend to go fewer places and do fewer things. Consequently the near environment becomes increasingly important to them.

Through the process of working within the structure of the old building, certain problems precluded some design decisions. The architect, for example, had a limited amount of square footage on each floor of the building to work with. He found himself faced with a decision about the placement of activity spaces. Rather than duplicate activity spaces on each floor, he chose to provide one large activity room in the lower level of the building which was to serve all residents of the home.

Findings

The research results show that in terms of planned activities, the choice of one large activity space seems to be appropriate. The space is used almost daily for planned activities. However, in terms of unplanned activities and the free movement of residents to and from various activities throughout the building, one large activity space is not adequate. It was found that only a very few nursing residents

have the initiative and/or are given the permission to freely enter and leave nursing floors without assistance. Since assistance is seldom offered, or granted for individuals to go to other places off their floors, the result is that most residents very seldom go to other floors to do anything. The decision to use one large activity space was made long before construction in the programming phase of the project. The author was not able to ascertain the basis for the decision or who was responsible for it. Normally, a program is given to the architect which specifies which spaces are to be included in the building. That program, however, usually does not clarify where the spaces are to be located or how they relate to each other. That responsibility is normally left up to the architect.

Regardless of who shares the responsibility for deciding where to put activity spaces, research conducted during the first year of occupancy demonstrates that the large activity room on the lower level of the building is used almost exclusively for planned activities. These planned activities involve the recruiting of residents on the various nursing care floors by volunteers and the homes' activity director. In other words, residents do not stop by or participate in any way unless they agree to go to the activity when they are first asked to participate.

The fact that residents cannot be recruited in large numbers to participate in activities on another floor appears to have several underlying reasons. First, there is a problem in soliciting people for activities as opposed to letting the activity attract people. It seems that many residents will wander out and watch an activity or

participate in one when they hear something going on. This is less likely to happen when the activity is on another floor. It takes less of a commitment to wander past and look than to go to another floor where one can get "stuck" for an hour or so. Those who just watch often seem to benefit from the activity as much as those who participate. Another factor is that the individual's right to choose is limited when the planned activity such as crafts, games, and exercises are on another floor. A person can not think over his participation without making a commitment.

While the location of the main activity space is one issue which affects usage, the role of management is another. The fundamental question which can be raised is "does the management of the home really want to encourage resident participation in planned and unplanned activities?" To answer this question, we must break down the term "management" into three categories, the administration, the nurses and nurses aides, and the activity director and her volunteers.

The administrative policy of the home is that a large diverse activity program is both desirable and necessary. The administration believes that residents should be given a choice as to whether or not they want to participate in activities. The administration feels that if a diverse enough activity program is implemented, then residents who have not participated in the past may begin to get more involved. The administrator has instructed the nursing staff of this and has asked for their cooperation in working with the activity director and her volunteers.

The nurses and nurses aides, on the other hand, believe that their role is primarily to keep the nursing residents clothed, bathed, fed, and given proper medical attention. They don't object to activities for the nursing residents, but they don't consider it their duty to encourage activities either. Underlying this attitude is the fact that nurses and nurses aides consider it their responsibility to keep track of the residents whereabouts at all times. Naturally, their job is easier if residents are simply left in their rooms. Many of the nursing residents simply can't be trusted on their own and are therefore not permitted to leave the floor unescorted. Escorting nursing residents to activities is thus the only procedure allowed by nursing staff when activities are held on another floor. Leaving the nursing floor, therefore, becomes a very important stumbling block for most of the residents as only two nursing residents are allowed to leave their floor unescorted for any reason.

While the problem has been solved to some extent by the homes' volunteer program, the problem has not been solved completely. Volunteers work closely with the activity director whenever a planned activity such as bingo or crafts is taking place. The nursing staff cooperates and allows the residents to be escorted by volunteers to and from the activities. But many residents resist the idea of being escorted to and from other parts of the building. It is difficult to measure the effect of the escorting on resident behavior. It would seem reasonable to conclude that some residents

are benefitting because they are getting to activities when they otherwise would not, but at the same time, the other residents are discouraged from coming and going on their own and choose not to participate on the terms established by "the management".

When asked why they did not go to planned activities such as crafts, plant potting, concerts, etc., several nursing residents responded that they did not want to get caught there. When asked to explain, they reported they might get tired or bored with this activity and want to leave. Or they would get to the activity and discover it wasn't what they thought it was going to be. In any event, they were discouraged from leaving because the volunteers were busy with helping other residents on projects and did not want to break away to escort them back to their rooms.

Another activity which has been kept on the individual nursing floors is that of eating meals. The design was programmed so that every nursing resident who was able could eat his meals in the main dining area on the first floor (Figures 15 & 16).

Of those who remained on their floors, a few could be brought out of their rooms to eat in the dining lounge area on their floor. The remaining group, those who were simply unable to leave their rooms, would remain in their rooms for meals. During the year since the renovation, however, only two nursing residents were allowed to go down to the first floor dining area for meals on a regular basis. The primary reasons that more nursing residents

Figure 15. New First Floor Dining Area

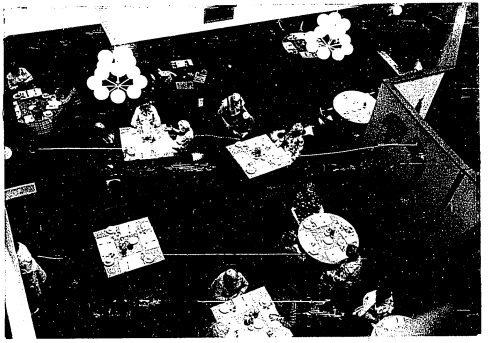


Figure 16. New First Floor Dining Area

aren't allowed to eat in the first floor dining area are: 1) aides do not want residents to leave the floors, and 2) the majority of apartment residents who eat in the area do not wish to have nursing residents eat with them.[2] Of 67 nursing residents, 35 (52.2 percent) eat most of their meals in the dining lounge area on their floor (Figure 17), 27 residents (40.3 percent) eat most of their meals in their rooms and 5 residents (7.5 percent) eat in the first floor dining area. By introducing the idea of serving meals to individuals on their own floors and not in their

Figure 17. New Dining Lounge Area

rooms, aides really started a trend. Instead of serving a few meals in those dining lounge areas, the staff chose to serve as many as they could there.

It should be noted that while only two nursing residents eat with the apartment residents on the first floor, most of the nursing residents are getting out of their rooms for meals. The primary reason for this is that it is easier for the staff to serve meals right off carts when they come out of the elevator than to serve meals in the residents' rooms. It is somewhat ironic that the generous lounge space across from the elevators turns out to be a very successful dining area. In terms of getting out of their rooms residents are benefiting not because of something forseen in the architectural or administrative program, but because of a staffing decision based on convenience.

It was also found that sometimes residents preferred not to use spaces for their designed purpose. An example is that the residents all have comfortable T.V. "lounges" in their rooms. Anyone who wants a T.V. nowadays can have one. In fact, there are many extra ones not being used throughout the home. By making the resident rooms as homelike, livable, and comfortable as they are, the architect has, to a great extent, eliminated the need for separate T.V. lounges. The functions that T.V. lounges in nursing homes served in the past, when televisions were expensive and not many residents owned them, are perhaps no longer appropriate.

Residents now watch T.V. in their own rooms, so why should they go

way down the hall and perhaps be forced to watch a different show on another channel? Interview data from nurses and aides taken just before the relocation showed that 86 percent of 57 residents did not use the T.V. lounge in the old wing of the building, 10 percent used it once or twice a day and only 4 percent used it more than twice a day. In the new nursing wing non-usage went up to 88 percent one month after occupancy and up again to 91 percent five months later. In other words, use of the T.V. lounges has been dropping off steadily and the very limited usage at present does not justify continuing to use them for T.V. viewing only.[3]

Breaking Down the Institutional Image

Owing to imposed staffing regulations, the segregation of residents was deemed necessary. This resulted in programming the new fifth floor to be a "home for the aged," a minimal care setting. The third and fourth floors were to be for basic nursing care, and the second floor for skilled nursing care. By having the same architectural design on each floor and within each room regardless of level of care, the architect hoped that residents would not live in fear of having to be someday moved to a floor which provided a greater level of care. It was hoped that by not having a drastic environmental difference between floors (i.e., hard floors, shining institutional appearance) residents would not feel a drastic change when moving into a nursing care setting.

Findings

Within individual resident rooms several things were done through design to improve the quality of the spaces compared to the old nursing rooms. No new room has more than two beds. The managers of the retirement home preferred to have only single bedrooms, but budgetary constraints precluded this choice. Still many residents moved to smaller rooms with fewer people as opposed to the three- and four-person rooms on the old nursing floors (Figure 18). The new rooms were also designed to be more home-like than the old ones by means of the use of brighter wall colors, carpeting, and greater allowance for personalization (Figure 19). Greater rights to privacy were manifested in "privacy curtains," better sound control, smaller room sizes and adjoining toilet rooms.

Figure 18. Resident's Room, Old Nursing Wing

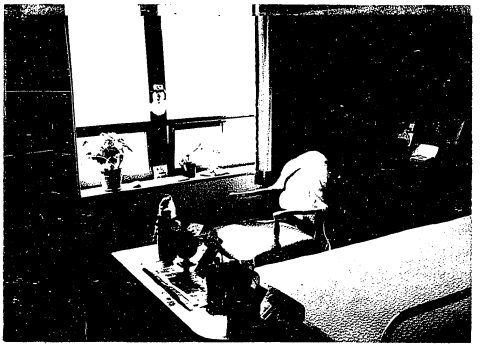


Figure 19. Resident's Room, New Nursing Wing

Rooms were also designed with different color schemes to obtain visual variety from one room to the next. Resident rooms were also sized to facilitate social interaction.

Glare Reduction

In response to the problem of increased glare, which older people often experience, the building was fully carpeted. In order to further reduce glare, non-glare vinyl wall coverings and low-reflectance paints were used instead of highly-reflective glossy wall surfaces.

By using the simulation model developed at the University of Michigan through research under the direction of Leon Pastalan, Ph.D., the architect was able to simulate the visual world of an older pseron. The empathic model (Pastalan, 1973) included a set of eyeglasses having

specially coated lenses which have been precisely treated to simulate the increased opacity of the lens of the human eye which is characteristic of aging. When the special eyeglasses are worn by a person with good vision, the visual field roughly simulates that of a person in his later seventies who is experiencing normal age related visual losses. Although losses vary in severity from one individual to another as he ages, everyone can expect to experience similar losses as he continues to age beyond the seventies. It should be pointed out that many older people are not aware of the fact that they are experiencing a decline in visual abilities because the process is gradual. And although this condition cannot be corrected through corrective eyeglasses, the environment to a certain extent can be made more legible and visually-responsive to offset the condition (Figures 20 and 21).[4]

Figure 20. Typical Residents Room in the Old Nursing Wing

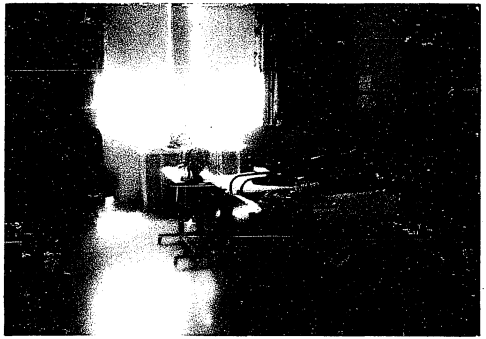


Figure 21. Same Room as Photographed With Simulation Lens

Findings

By using a low pile, tight weave carpeting throughout the new nursing wing the architect took a major step towards reducing the visual problems caused by glare. When comparing floor surfaces in a residents room in the old wing (Figure 22) to a room in the new wing (Figure 23) on this dimension it appears that the use of carpeting does cut down on glare. It also appears that the textured vinyl wall covering cuts down on glare compared to the smooth painted walls in the old nursing room. These improvements don't completely solve the problem of glare, however. Furnishings in certain rooms such as smooth plastic laminated topped bed stands can also be a cause of glare.

Figure 22. Typical Room on Old Nursing Floor

Figure 23. Typical Room on New Nursing Floor

Glare is more of a problem when highly reflective surfaces are used. When those types of surfaces are replaced with matte or textured surfaces, glare becomes less of a problem. However, another type of glare does not involve reflective surfaces. That type of glare is source glare and is often caused by windows. Curtains can be used to cut off the source of glare but at the same time the view outside is also cut off. In the example below (Figure 24), notice that although reflected glare in the room is not a problem, the glare from the window is.

Another problem with totally covering windows is that illumination is reduced in the process. This creates a dilemma because elderly people need increased illumination levels but are bothered by glare. In the old wing, window shades could be pulled down by the residents or staff members to control this type of source glare. In the new

Figure 24. Window Glare

wing no window shades were provided; only draperies are present. The problem of controlling the glare could have been solved by having a combination of shading devices, draperies, thin venetian blinds, or by having roman curtains (which lower down like shades, and do not close like conventional draperies). Without such devices residents in the new wing find themselves with a glare-free environment in one respect (floor and wall surfaces) but not in another respect (point source from windows). It should be noted that this type of point-source window glare can be a problem regardless of room orientation. Even windows facing North can have the problem, depending, of course, on outside lighting and sky conditions. While various shading devices help solve the problem of glare, they also cut down on the amount of illumination in the room. More study in this area of illumination levels and glare is needed.

Color Selection

To compensate for the decreased color perception of elderly residents, the architect introduced stronger color stimuli. Brighter than normal hues were used in the carpeting, the draperies, and the wall coverings. Specially selected furniture provided additional color. These color selections were based on previous work completed by the architect.

Findings

The architect's use of brighter colors inside the building has been very well received. Informal visits with residents and staff members show that reaction to the brighter colors was very favorable. When asked whether or not they liked the colors on the old nursing floors, several residents responded, "What colors? There weren't any, were there?" These residents either did not remember or never perceived the light pastel colors. This reinforced the contention that increased color stimulus is necessary for older people with age-related vision loss. Pastalan's extensive research and use of the empathic model (Pastalan, 1975) also indicates that the architect's use of brighter colors in this project is justified. The reaction of residents at Westside Retirement Home adds credence to Dr. Pastalan's findings.

Resident and staff interviews did reveal a high preference for the warm colors used and a not so high preference for the cold colors, especially blue. It seems a certain amount of one color is fine but the same amount of another color is too much. Perhaps the interviews were really saying, "Blue is fine, but these particular blue resident rooms have too much blue."

Redundant Cueing

Another major principle used by the architect in the design was that of redundant cueing, which is the reinforcing of an environmental response through more than one sensory modality. Redundant cueing helps compensate for vision, hearing, smell, taste, and tactile losses by

strengthening the environmental message. One example of this is in the elevator lobby. When an elevator cab arrives there is both a visual and auditory cue given at the same time. A loud bell goes off as a legible light flashes on.

A second application of redundant cueing is in the main dining room on the first floor. The kitchen is open to the dining room by way of a large pass-through window at the serving line. In this case the sights, sounds and smells of food preparation were allowed to penetrate the dining space. The idea was to enrich the sensory experience of meal time for the residents.

An example of an increased sensory experience is in the area of the roof garden green house. The inclusion of that space allows the elderly nursing home residents' four senses of sight, sound, smell and touch to work together. It was intended that the plants and flowers of the roof garden would be brought down to the rooms by the residents in order to continue the sensory experience even further.

Findings

Measuring the success of the concept of redundant cueing is much more difficult than measuring the success of increased color stimulus. In the case of the colors, resident and staff reactions were easily solicited and recorded. But how does one go about measuring the success of redundant cueing? Because individuals could not be asked to give their reactions, unobtrusive observation was used in an attempt to measure the success of the redundant cueing. By sitting in the elevator-lobby areas and watching a resident's response when an elevator

cab arrived, the observer-researcher attempted to discover whether or not the visual and auditory cues of the arriving cab brought responses from residents. Observations of this nature showed both quick responses to audio and visual cues on the part of some residents in certain situations and an apparent complete unawareness of cues on the part of other residents in other situations. Reactions were observed to be more frequent for residents who were waiting for the elevator doors to open in anticipation of people arriving on the floor than for residents sitting in the space for other reasons. In order to more fully study this behavior, an observational experiment should have been set up. However due to time restrictions and other priorities such an experiment was not conducted.

One of the main attractions of the elevator lounge areas is being able to sit and wait to see who arrives next from another floor. Even the arrival of nurses and aides who are seen many times every day brings delighted reactions from waiting residents. Often their eyes light up, smiles break out, and greetings are made. Though it is still difficult to determine to what extent the lights and bells of the elevators are working to redundantly cue-in sensory information, observations do tend to support the success of the cueing in the elevator lobby areas.

Redundant cueing was also included in the planning and design of the main dining room on the first floor. Here, however, the sensory input to dining residents was supposed to include an olfactory response in addition to the auditory and visual responses. Again, the success or failure of the cueing was difficult to measure. In this

case the cueing seems to have created more problems than it solved. The opening up of a large pass-through window from the kitchen to the dining room has caused noise to find its way through. Residents complained frequently of the clanging of dishes, and loud noises which rang out from the kitchen through the opening. In addition to the fact that a kitchen of this nature is noisy to begin with, kitchen staff members add to the problem by shouting to each other over the clatter of pots and pans and the noise of operating equipment.

It was intended that the pleasant aromas and bustling sounds of food preparation would filter in and permeate the dining area before mealtime. Since the majority of residents usually arrive in the area ahead of mealtime, it was hoped that the sensory anticipation of the meals would become part of an enjoyable activity. Again, it is difficult to prove to what extent this concept is working. When a few residents began complaining about the noise level from the kitchen being too great, other residents quickly agreed. Soon residents were all repeating each other in their complaints in what seemed to be a snowballing effect. As a result of these complaints the administrator of the home attempted to solve the problem by installing a rolling door over the opening. The benefit of redundant cueing in this case seems to have been more than offset by the problems it created.

Another example of redundant cueing was in the roof garden (Figures 25 and 26). In this case the smell of flowers, the touch of working with pots and plants, together with the sights and sounds of the roof garden activity was to enrich the sensory experience of

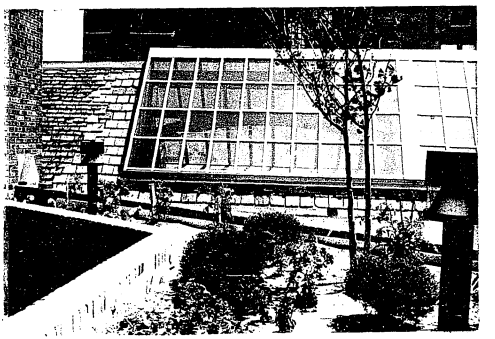


Figure 25. New Roof Garden

Figure 26. New Greenhouse

residents. In this case it clearly does happen, however, but not to the extent that the architect had hoped. One of the goals of the horticultural program he had envisioned was the removal of flowers and plants from the garden for use in individual floors and resident rooms. Although many plants are finding their way to the individual nursing floors, not many end up in resident rooms. Volunteer workers who assist in the horticultural therapy program have attempted to encourage this but residents have resisted. Excuses heard often include, "Oh, that's not my plant, that belongs to the home," or "Leave it out where others can enjoy it," or "I'm allergic to plants," or "It would die if I watched over it." Part of the problem seems to be in getting a horticultural therapy program going on a regular basis. Three days a month (which is the present schedule of use) seems hardly enough for developing plant ownership and pride in the activities of the roof garden. The home's administration blames financial problems for the limited schedule of horticultural therapy.

Thus, while redundant cueing does seem to be working it is hard to see how this particular architect, although he was consciously aware of the concept while designing, used it to the benefit of the home. In the case of the elevators, the situation would have happened anyway, even if he hadn't thought about it. In the dining area it works, but causes problems in the process. In the case of the roof garden, the increased sensorial experience provided there can and does add meaning to nursing residents lives.

The above research findings in regards to measuring the success

of the concept of redundant cueing are based on an impressionistic analysis of observational data. The researcher found it difficult to study redundant cueing and suggests that better research methods are needed to measure the successful or unsuccessful use of redundant cueing.

The idea of using redundant cueing in the design of buildings does, however, have merit. Elderly nursing home residents all suffer, to one degree or another, from age related sensory losses. Therefore, making the physical environment sensorially rich through design is an excellent goal to strive for because the increased sensorial input can offset the age related sensory losses to a certain extent. Those elderly residents who are of advanced age generally have the greatest sensory losses. Those individuals also tend to be the ones that have a minimal home range and spend the majority of their time on one nursing floor in the building. Therefore, making the portion of the building which is most accessible to those residents, the nursing floor, a sensorial experience will enrich the lives of those individuals.

Orientation

In response to the visual perception problems of older people, which often results in confusion about the relationships of spaces within a building, principles of orientation were used throughout the design. The atrium court of the new building provides an easily identifiable central point of reference for all its users. The glassed-in atrium carries through from one floor to another thus providing a visual point of identity to relate oneself not only to the

horizontal plane of the floor, but also to the vertical dimension of the building as well. Building users can thus begin to know their place at all times and how each place fits into the overall scheme of the building (Figure 27).

To aid the orientation of users in knowing where they are in space, other orientation points called "focal points" were used. Each of the four corners where the connecting "loop hallway" turns was defined as a focal point by the use of octagon shapes (see the floor plan in Figure 7). The octagon shape took the form of an inlayed piece of contrasting colored carpeting and a recessed ceiling above it (Figure 28). A loop hallway system was used to help residents in knowing where they are in relation to the atrium court. This was considered to be an improvement over the old nursing wing dead-end

Figure 27. View Through Glassed-in Atrium

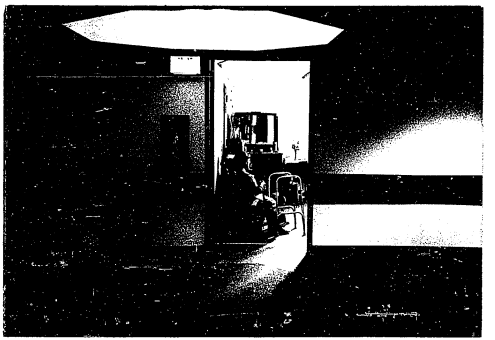


Figure 28. Corner Focal Point

hallway system. In addition to the use of the atrium, connecting hallways, and corner points, elevator-lounge areas on each floor were strategically located to facilitate orientation. By employing the principle of orientation in the design, the architect hoped to make it easier for residents to find their way and more difficult for them to get lost within the building.

Findings

The architect of Westside attempted to provide a greater sense of orientation in his design than is usually the case in retirement home design. He did so in order to provide an environment that is easy to figure out and map in a person's mind. Since many elderly nursing home

residents suffer from spatial-orientation problems (i.e. knowing where they are and how to get to various places within a building), he hoped a better organized group of spaces would facilitate nursing residents in finding their way and knowing their place within the structure.

Central Space. The architect's central theme for orientation is manifested in the atrium. The atrium space which is glassed in on all four sides at each floor area provides a central space which is visible from a multitude of different locations throughout the building (Figure 29). Not only does the atrium provide a central reference point on each floor, but it also provides a reference point between floors. By looking through the atrium court a resident can see the same floor he is on directly across from him. He can also see the floors which are above and below him. In this way the atrium court serves to define and reinforce the floor level the individual is on. Without the court the resident would not be given that very important vertical orientation and resulting frame of reference.

One criticism of the atrium is that residents have only one place on each of the four floors to get close to the glass to look down, and that place is usually blocked with furniture (Figure 30). The architect was justifiably concerned with vertigo or the fear of falling and the accompanying dizziness which can become a problem because of the chronic conditions of old age. Protrusions to the interior of the court (Figure 31) seem natural places to eliminate the interior counter and allow residents an opportunity to get close enough to the glass to look up or down without having to lean over. Without these places to

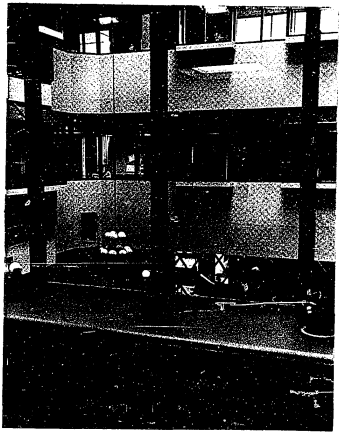


Figure 29. View Across Atrium

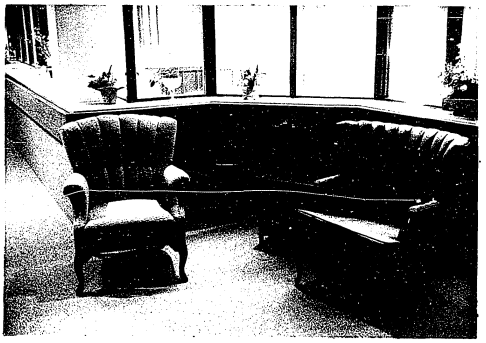


Figure 30. Corner Lookout Blocked With Furniture

Figure 31. Protrusions to the Interior of the Court

get close to the glass for a view, however, the potential activity of watching the movement of people on other nursing floors is quite limited. However, the atrium court does appear to be providing a central orientation point on each floor.

Loop Hallway. Another major way the architect achieved orientation was through the connecting or "loop hallway" system. The use of a central court naturally lends itself to the use of the loop hallway (Figure 32). By combining these two architectural features, a very strong sense of orientation results. The loop hallways offer several advantages. For one thing, the rectangular shape of the loop facilitates orientation. There are no building wings with dead-end hallways going off in different directions. Instead there are only four right angles. If a resident goes for a walk and makes four turns he ends up back

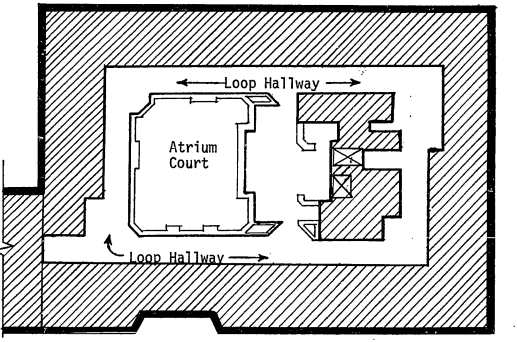


Figure 32. Plan of Loop Hallway

where he started. "Alert" residents soon discover that they can not really get lost with this system because they always end up back where they were. On the other hand, residents who are mentally confused may still have difficulties, but even they won't be forced to turn around and re-orient themselves at the end of a hallway. Reaching the end of a dead end hallway forces a person to convert from left to right. Rooms that were once on the left are suddenly on the right when one turns around to go in the other direction. In the loop system used at Westside, residents have a tendency to stay in one direction (counterclockwise) and as long as they do so their rooms remain on their right.

Responses to questions dealing with people getting lost in the

building support the argument for the loop hallway. It is true that some residents who are hopelessly confused about where they are can get lost anywhere in the building. These are the types of residents who can forget in five minutes who their roommates are. They are often found in other peoples rooms thinking they belong in those rooms. These very confused residents are a small minority and perhaps would have orientation problems no matter what kind of a layout the building had.

The management of the home might begin to deal with this problem on an individual by individual basis. But as was the case in the example of escorting nursing residents to activities, the administrator has very little influence in regulating the nursing staff in situations like this. It was the administrator's intention to help confused nursing residents in being able to recognize their individual rooms. He encouraged residents to personalize their doors and doorways to make recognition easier. The only significant personalization of this sort that took place during the entire first year of occupancy however, was during the Christmas season when reefs, cards, and decorations were added to doors and doorways giving each room a special identity. More research in this area or personalization is needed, but it would seem that this approach could aid confused nursing residents in identifying individuals with their rooms.

Confusing Areas. Discounting the group of very confused residents, interview comments with staff members, nurses, and aides showed a tendency for residents to get lost in certain areas on the first floor and on the lower level, but not in any areas on the four nursing floors.

To get to the medical clinic on the first floor, one must turn twice after leaving the elevator. Residents not only have difficulty finding the area (Figure 33) but have even more difficulty when they try to return to their rooms. It seems that the lack of orientation in this case contributes to people getting confused. In this example it is the apartment residents who get lost and confused about where they are since nursing residents are generally not permitted to leave their own floors. Nursing residents are instead visited by a doctor in their own rooms twice-a-month.

In the case of the lower level (Figure 34), a different hallway layout exists than on any of the other floors. When residents go down to the main activity space for crafts and other activities they also tend to get twisted around in their minds and lose their bearings. Even when assisted by volunteers or staff members, residents become visibly upset by the confusion of the spaces. Residents often try to leave planned activities unattended. When they leave the room to go to the elevators they frequently become noticeably upset by both not knowing where they are. A contributing factor here may be that both the first floor and lower level of the building are used less frequently by residents than other floors.

It is interesting to note that of all the employee interviews and

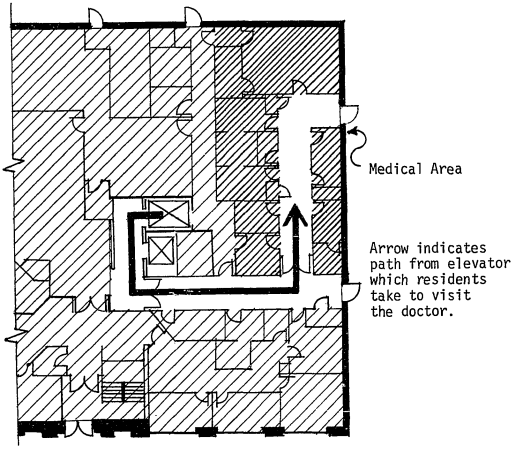


Figure 33. Plan of Medical Area on First Floor

of all the field notes taken over one years' time, no mention (other than the small group of very confused nursing residents discussed above) was ever made of anyone getting lost or confused about where they were on any of the four nursing floors, but many incidents were reported where residents got lost on the first floor and lower levels. It seems fair to conclude that the central atrium and loop hallway system on the nursing floors does contribute appreciably to effective mental mapping.

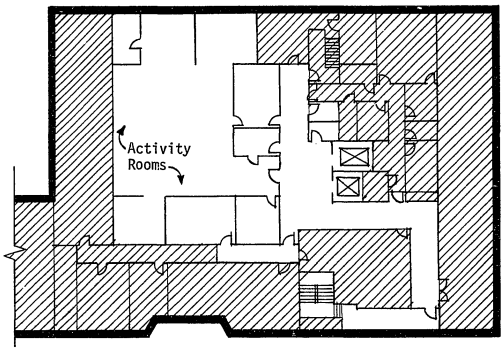


Figure 34. Plan of Lower Level

Floor Identification. Other comments expressed by employees concerning getting lost had to do with the identification of a particular floor. Because the layout of the four nursing floors is identical the architect decided to color-key each floor to make one distinguishable from another. He did this by introducing an accent or theme color on each floor. The fifth floor has a green theme, the fourth a blue theme, the third an orange theme, and the second floor a yellow theme. These various color themes are expressed by: 1) a large inlayed area of carpeting in the dining lounge areas across from the elevator, 2) inlaid octagonal shaped carpeting in each of the four corners of the loops, and 3) colored bulletin boards in the hallways of each floor.

Employee interviews demonstrate that these theme colors by themselves do not adequately project the message. In fact, 76 percent (N=13) of the employees interviewed admitted they did not know the color theme of each floor even after working in the new building for over six months. When asked how they knew which nursing floor they were entering when coming off of the elevators, employees cited other cues but seldom mentioned colors as a cue. A frequent response was "I watch for the number to light up in the elevator," or "I look for resident or staff faces that I know belong on that floor," or "I look for the plants, then I know its the fifth floor."

Because a great deal of confusion did exist concerning the identification of nursing floors, residents and staff members alike frequently ended up on the wrong floor. For example, once a resident was taken downstairs by an aide for a beauty shop appointment. When the two returned, they entered the elevator and the aide pushed the button for the floor they wanted. In the meantime, however, someone on the third floor pushed the call button and the elevator stopped on floor number 3. The resident and aide momentarily left the elevator thinking they were on their floor. They quickly realized their mistake and turned around to re-enter the elevator but the doors were already shut as the cab proceeded up to the fifth floor.

Another example of the problem of identifying floors is shown by the time volunteers, who had come into the retirement home to work with residents in planned activities, got lost. After the activities sessions that day were over, residents returned in groups to their respective floors. But because the floors were hard to distinguish

from each other and volunteers were less familiar with the building than regular staff members, they could not identify floors by resident or staff faces and confusion resulted. One volunteer said that she had once taken an elevator full of nursing residents back to their floor and got off the elevator only to find that when the doors closed behind her she was on the wrong floor. The residents got off on the next floor up which happened to be the right floor for all of them. The situation was quite embarrassing to the volunteer.

Many residents in high-rise buildings suffer from the same inability to identify a particular floor. This situation can be corrected as it eventually was at Westside. Nine months after the opening of the new building a volunteer went into the home to attempt correction of the problem. The volunteer, who was a person with graphic arts training, proceeded to paint large floor numbers in the elevator lounges on each floor (see Figure 35). The numbers met with immediate approval on the part of nursing residents, staff members, and visitors alike. Now when people leave the elevators they have a way of immediately confirming or denying if, in fact, they are entering the floor they want.

The above example of correcting a legibility problem brings up an interesting point. Traditionally, users are expected to adapt to their new building. But as illustrated in this example, post-construction design skills can be very useful in helping buildings adapt to people instead of the other way around. In order to offer this type of service designers will have to go back to their buildings

Figure 35. Numbered Floors

during occupancy to see whether or not their ideas are working.

Focal Points. Another way the architect attempted to facilitate orientation of the building was through the use of focal points. Four focal points were included on each of the nursing floors at the corners of the loop hallways. By inlaying an octagon shape of color (the theme color for that particular floor) the architect hoped to create points of identity. He further articulated the points by reflecting the octagon shape in a recess of the ceiling above (Figure 36). The idea was that nursing residents walking in the hallways could clearly see the corner points and would feel inclined to stop at them because each corner also has a small lounge or seating area. The focal point thus provided not only a visual point of identity but also a sense of

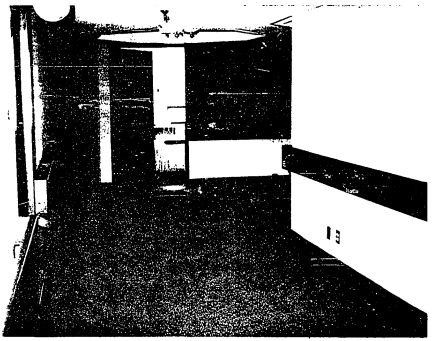


Figure 36. Typical Corner Without Pictures

a different space with a different use.

In evaluating the success of these corner focal points a review of staff and resident comments indicates a generally favorable response. The corners could begin to act as real points of interest, however, if selected pictures could be put up on the walls to act as goals for people walking the halls (Figure 36). The corner lounges could also be enlarged and personalized to reflect the pride and the ownership of the residents who use them. The trouble is these types of personalizations to a space do not just happen. They need to be initiated and encouraged by the administration and staff of the home. The administration and staff think that the architect should do it. Of course, the architect in this case did more than is usually done by

providing the corner lounges in the first place, but without his help and advice in setting them up and getting the personalizations started, nothing further happens and good design ideas go to waste.

In summary, the use of the concept of orientation, along with other concepts used in the design, definitely help make a complicated building such as this more negotiable. Residents and staff members both have a much easier time finding their way and knowing where they are when the concepts are applied correctly. The design could have been improved even further by architectural advice and help in establishing furniture layouts and in making the environmental setting more legible in the post-occupancy stage of the project.

Staff Reactions to Relocation

Discussion in Chapter Four thus far has centered around the reactions of nursing residents to relocation. There is another major user group, however, which is also affected by relocation. That group is made up of the employees who work in the retirement home.

Employee Response

Nineteen employees of Westside were interviewed during the 6 months following their move into the new wing of the building. Six of those employees interviewed were nurses or aides, 6 were administrative or office personnel, four were maintenance, housekeeping, or kitchen staff, and the remaining four were from the home's volunteer programs.

Interview responses indicate that, in the eyes of the staff, a

home-like appearance and atmosphere were achieved in the design. Staff reaction to the use of bright colors was also quite favorable. Employees interviewed had differing opinions on the issue of the carpeting. Seven employees responded that it is better overall to have carpeting on the nursing floors and 10 employees responded that it is better overall not to have carpeting on the nursing floors. When asked where it was a good idea to use carpeting and where it was not, the majority of respondents said carpeting was a good idea in the hallways and lounge areas. The majority of respondents also indicated carpeting did not belong in the dining areas or resident's rooms. Cleaning problems, spills, and incontinence were cited as the major reasons for not wanting carpeting in those areas.

Eighty-three percent (N=15) of the staff members interviewed preferred the connecting or loop hallway scheme to the more conventional double loaded corridor scheme which has rooms on both sides of the corridor (Table 11). Just over three-quarters of the respondents (N=3) said they thought the architecture of Westside compared "very favorably" to that of other nursing homes while one-quarter said it compared "favorably." None of the staff members interviewed responded "neither favorably or unfavorably," "unfavorably," or "very unfavorably" (Table 12).

Over the year's time which followed occupancy of the new nursing wing at Westside, comments by staff members reflected changing attitudes about the building. The examples which follow illustrate how architectural characteristics which are at first scorned by staff members, later become accepted.

Table 11. Staff Members Attitude Toward Loop Hallway vs. Double Loaded Corridor

Number of staff members interviewed that preferred double loaded corridor on the old nursing floor	16.7% (N=3)
Number of staff members interviewed that preferred loop hallway scheme on the new nursing floor	83.3% (N=15)
	100.0%

Table 12. Staff Members Attitude Towards the Architecture of Westside

Number of staff members interviewed that said the architecture of Westside compared "very favorably" to that of other nursing homes	76.5% (N=13)
Number who said "favorably"	23.5% (N=4)
Number who said "neither favorably nor unfavorably"	0% (N=0)
Number who said "unfavorably"	0% (N=0)
Number who said "very unfavorably"	0% (N=0)
	100.0%

One change made on the new nursing floors contrary to the old style, was the elimination of wash basins in residents' rooms. This exclusion was made to reduce the institutional appearance of the nursing rooms. Shortly after the move many staff members did not agree with the decision and complained that they had to walk "all the way down the hall" to a bath or shower room to wash their hands after cleaning up an incontinent resident. The only other choice for aides was to use the residents' toilet room. This intrusion of resident's space was understandably discouraged by the home's administrator.

A second characteristic of the new building, which was initially viewed as unfavorable by staff members following occupancy, was the extensive use of carpeting on nursing floors. The carpeted floors were reported to be harder to roll carts around on, and much more difficult to clean.

Nurses and aides also objected to the presence of shower rooms. The old nursing floors had had tub rooms only, not showers. The author was told by several aides that there were too many shower rooms and not enough tub rooms in the new part of the building. "These people won't want to take showers after taking baths for all these years," one aide reported.

Changes like the elimination of wash basins in resident's rooms, the use of carpeting on nursing floors, and the substitution of shower rooms for tub rooms, were all viewed by the nursing staff as changes which did more harm than good. But reaction to these same changes varied considerably 6 months after the opening of the new nursing wing. In fact, staff interviews at 6 months yielded no negative

comments about the elimination of wash basins in residents' rooms. Nurses and aides had either adapted to the new arrangement or had accepted it over time. Comments about the use of carpeting in nursing floors were now about evenly split between favorable and unfavorable remarks, instead of the vast majority of unfavorable reactions documented immediately after the opening of the new building (Table 13). Reactions to the use of showers instead of baths had also changed. Nurses aides now generally preferred showers to baths. A key factor on this issue was that showers are, by and large, much easier to give to nursing residents than baths are, therefore making the aides job easier. Every nursing resident who could be coaxed into taking showers, were now doing so twice a week. The aides resistance to change in this case had given way to an appreciation of the shower as a modern convenience. It is interesting to note, however, that no comments were made by any staff members which in any way gave credit or thanks to the architect for any of these design decisions.

The Physical Design Versus Staff Attitudes

Breaking down the medical model of the home has to include a change in attitude by the administration and staff as well as a supportively designed physical environment. Even with a cooperative administrator, the job is not easy. The administration at Westside has been trying to break down the verbal distinction between residents and patients for years. The administrator repeatedly tells the staff that all members of the home are to be referred to as residents and not "patients." In spite of his efforts, however, the distinction

Table 13. Staff Members Attitude Towards the Use of Carpeting

	When asked immediately after the new building opened	When asked 6 months after the new building opened
Number of staff members who favored the use of carpeting on the nursing floors	15.0% (N=3)	47.0% (N=8)
Number of staff members who were opposed to the use of carpeting on the nursing floors	85.0% (N=17)	53.0% (N=9)

still exists. Nurses and aides resist changes of this sort and go right back to their old ways when the administrator is not present.

Similarly, the architect of Westside encouraged the staff of the home to use new terminology in describing some of the new spaces. But following the move into the new building the staff members by and large still use the old terminology to describe the new spaces. They still refer to the "day room" even though the day room has been replaced with a T.V. lounge. They now refer to the elevator lounge areas on each floor as "the dining rooms," largely because that is the way they use them. The spaces were supposed to be primarily used as open lounges and not as dining rooms. Because they have been used as dining rooms by those residents who cannot manage to go to the first floor dining area, the author referred to these spaces as "dining-lounge areas" in an effort to recognize both functions, but the term has not caught on among staff members. The building's

privacy lounges are still referred to as "those rooms in the corners," and the pocket lounges or extended living areas are known only as "chairs in the hallway." Certainly an important part of breaking down the old imagery of nursing care involves changing the semantics used in the home.

Another suggested way of improving the imagery of nursing care is the elimination of staff uniforms. This procedure could present another problem, however, because with uniforms eliminated, nursing residents would have difficulty recognizing a staff member's role. As it is now, a resident knows that any employee in a white uniform is a nurse or an aide. When an employee is in a blue uniform he or she is recognized as being someone from the cleaning staff. This clear distinction helps the residents in quickly identifying staff members. If uniforms were eliminated completely, a confusion of staff roles would undoubtedly occur. Many times the author had been mistaken for the doctor simply because of his street clothes, even though he otherwise shared no resemblance to the home's doctor. A possible compromise solution to this problem is the introduction of a new set of uniforms for staff members which would be less institutional but still easily identifiable, as, for example, most airline uniforms are.

Other evidence of the medical model underlying staff attitudes is in the administrative decisions made in placing nursing residents in the new building. For example, incontinent individuals were purposely placed in rooms near the linen closets so aides would not have to walk as far in changing their bed linens. In several

cases, non-ambulatory residents were placed in rooms near the dining lounges because those residents would be easily rolled out of their rooms for meals. The prime consideration in making decisions about placing residents seems to have been the convenience of the nurses and aides and not necessarily the well-being of the residents. Similarly, residents that needed to be reached quickly were placed closest to the nursing station. All residents were placed according to how trustworthy they were considered to be. Because the new nursing floors have a glassed in court which allows nurses and aides to see through it, surveillance became a big issue in making room assignments. The nursing residents who needed to be watched were all placed in clear view of the nursing station. Only those "who could really be trusted" were placed on the north end of the floor (Figure 37) where visual surveillance is not possible from the nursing station. A common complaint of nurses after the occupancy of the new nursing floors was that they didn't have complete visual surveillance over all nursing rooms. This is true despite the fact that visual surveillance was made possible by the glasses-in court and was an unanticipated feature of the design that was not present in the old nursing floor at all.

This attitude towards surveillance really has much deeper roots than one would gather from the outward appearance of the home. Visitors often comment, "My what a nice home, it is so clean and cheery and there's not that awful smell of urine everywhere like there is in other nursing homes." It is true this home is much cleaner and

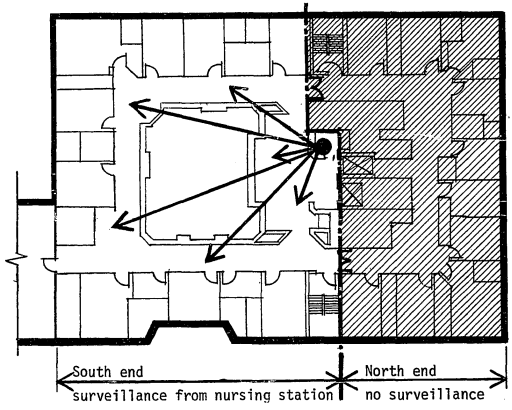


Figure 37. Plan Showing North and South Ends of Building

fresher smelling than most others, but the presence of cleanliness and comfort does not begin to meet all of the residents' needs. Aides consider it their primary obligation to keep residents clean, well fed, and comfortable, but that is where it stops. They seldom ask residents if they need anything. They usually don't initiate help to residents but instead wait until help is asked for. This attitude is somewhat understandable, as aides are usually underpaid and overworked. If aides kept offering help to residents (i.e. getting something down for them, taking non-ambulatory individuals to the lounge, etc.) they wouldn't have time to finish their work, or so they claim.

The administration at Westside has attempted to correct this situation by organizing a volunteer program under the direction of the social worker. The volunteers help primarily by providing planned activities on an almost daily basis, but for residents who will not or cannot participate in planned activities, little else is done. Unfortunately, even with an active volunteer program there are still approximately one-third of the nursing residents who very seldom or never leave their rooms except for bathing twice a week.

Even attitudes about death reflect the medical model. After visiting the retirement home many times over a period of several months, the author visited the home one day to find that a nursing resident whom he had gotton to know had died the night before. After expressing his sympathy, which seemed a natural thing to do, the author was told, "No, actually her passing was a blessing." "Was she suffering?" the author asked. "No, but she was very restricted in what she could do." "Wasn't she pretty alert and content, though?" the author continued. "I think she is better off dead than to live like that" was the answer. On the same day similar views were expressed by several other staff members. It seems that medically they did what they could for this person, but they were admitting their inability to meet her psychological needs.

Another common attitude of the nursing staff is that "senility" is an inevitable result of aging. Many of the nursing residents, though, who are thought to be senile, actually have long histories of depression, withdrawal, and other mental problems. But they are still

thought of as "old and senile." The administrator tried for some time to eliminate the word "senile" and instead refer to specific problems like "short-term memory lapses." Unfortunately, he has had little success in changing the attitudes of nurses and aides in this area either.

Often a staff procedure will inadvertently add to an already failing ego of a resident. One such problem arises when nursing residents have extended hospital stays. The retirement home cannot afford to hold rooms indefinitely for individuals who are in the hospital so at times relatives are called to remove the personal belongings from the resident's room. A threatening situation occurs if the hospitalized resident learns that his room has been taken over by someone else, his sense of worth and place may suffer, adding to his or her decline.

In a case of Mrs. Daley a rather long hospital stay of seven or eight weeks preceded her death. When the administrator realized that she was not likely to return he had Mrs. Daley's son called over to take away her personal possessions in order to free the room for a new arrival. Mrs. Daley survived only a couple of days after learning that her son had taken her possessions from the home.

Another administrative decision which greatly affected nursing residents' morale was the change in doctors. When the home's doctor, who has been greatly trusted and respected by most of the residents, was suddenly reassigned to another hospital, a new doctor took over his duties. Many of the nursing residents were anxious and distrustful

of the sudden replacement. "Where is Dr. Moore, why can't I have Dr. Moore?", they asked. The new doctor found it took weeks or even months to gain the confidence of the residents. The problem might have been alleviated to a large extent if Dr. Moore had not suddenly disappeared, but rather had worked with the new doctor at his side for a couple of weeks. Although doctors are usually thorough in meeting the nursing residents' medical needs, they are often unaware and unsympathetic to the nursing residents' emotional and psychological needs. The problems resulting from a change of doctors might be averted in the future if the administration required the physicians to make a smooth transition when replacement is necessary.

In summary, the role of management in creating a supportive environment for nursing care residents is a very important one. Without the cooperation of staff members, particularly nurses and aides, a supportively-designed physical environment is, by itself, inadequate. When, however, the staff members and administration policies of the home are supported in nature, they can work together with the architectural design in creating a total "milieu."

The Effect of Changing Staff

One difficulty the architect faced which complicated his task was the changeover in staff members of the building. The administrator who originally worked out the program for design with the architect has long since left the scene. His successor did not fully agree with the program for design which had been worked out. By the end of the

year following occupancy, a third administrator was on the job. He had even less knowledge and understanding about what went into the building's design. Additionally, key staff members such as the head of nursing and the head of housekeeping also left and were replaced.

The problem of staff changeover cannot be avoided and an architect has no control over it. But an architect can compensate for the changeover, to a certain extent, by including all levels of users in developing a program for design. In the case of Westside the architect went out of his way to study the environmental needs of the elderly nursing resident, but his concern for the full range of users from the administrator to the cleaning staff was not as apparent. Because the way that a building is managed affects the lives of nursing residents, as was illustrated earlier in this chapter, the staff which runs and maintains a building must also be considered in programming for users. At Westside, a limited attempt to get input into the design program was made early in the design process. However, this was done second-hand through the administrator and key staff members (heads of nursing, housekeeping, maintenance, etc.) and did not involve much direct contact between most staff members and the architect. Instead, the administrator relayed comments of key staff members to the architect. In the future, architects might become respectful of all levels of users and include all of them in the development of his design program. Fuller cooperation between the people who run and manage a building and the architect might thus be established. To compensate for a changing staff, and to help users adjust to a

building, the architect could hold periodic staff-training sessions. These sessions would serve to preserve his reputation among the employees of a building and at the same time assure proper usage of spaces.

Coping With Technological Problems

Any new building can be expected to have some technological problems which can only be realized as they develop, one by one, in the first few months of occupancy. A full year can pass before problems related to changing temperatures and seasons develop. Sometimes technological problems can greatly upset the lives of residents, as will be illustrated in the following set of examples.

At first, the staff seemed pleased with the architect's choice of windows in the new buiiing, but when winter came and the outside temperatures dropped, problems became apparent. The metal window frames were found to be cold conductors from the outside to the inside, especially on the north side of the building which receives no direct sunlight during the winter months. As a cold spell continued during the first winter in the new building, the problem got worse. Because the building's humidity was kept relatively high, condensation formed on many of the building's north and east windows, and since the metal window frames were extremely cold, ice formed on windows and frames. Adding to the problem was the fact that the windows were not double glazed. As temperatures went up during the daytime, the ice would melt causing water to drip over window sills.

The problem greatly upset many of the nursing residents, particularly those living on the north side of the building. Building staff members blamed the architect for the problem. He was contacted and went to the site to see what could be done about it. The architect insisted that humidity levels inside the building must be lowered during the very cold weather. While this helped, it did not solve the problem.

Another technological problem was the development of roof leaks. Unfortunately, the leaks were not discovered (or did not develop) until several months after the new building was occupied. During a period of heavy rains, water began leaking through the roof in various places and into resident's rooms on the fifth floor of the building. When the leaks became noticeable, buckets were put out and many residents, beds and all, had to be moved out into the hallways. In some cases all the furniture in the rooms had to be removed, causing quite a disruption to the fifth floor residents, turning their lives upside down. Although the problem was quickly solved by the roofing subcontractor who was responsible, the architect received a share of the blame.

A third and final example of a technological problem which disrupted the lives of nursing residents, is that of the elevator breakdowns. During the first several months of occupancy in the new nursing wing of the building the two new elevators which served the 6 levels and roof garden broke down numerous times. Although the breakdowns were nothing serious and resulted from minor maladjustments

of new, sophisticated elevator equipment, they did result in quite a disruption to the activities of the home. On several occasions residents and staff members were trapped in elevator cabs. Even though repair men were phoned immediately after each incident to correct the problems, people in the elevator cabs were trapped for twenty minutes or more. A growing fear of leaving the nursing floors followed each of these breakdowns.

One elevator breakdown resulted in a nursing resident being trapped on the roof in the greenhouse for two hours. She happened to be an individual with breathing problems who was using a portable oxygen tank at the time. The resident phoned the office downstairs for help and elevator repair men were on the scene in minutes, but the repair took over two hours and during that time the nursing resident became quite worried that she might run out of oxygen. After a long deliberation about what to do, two employees of the home put the resident in a wheelchair and carried her down a flight of stairs to the fifth floor so she could get on the other elevator to return to her own floor. The whole experience frightened the resident to such an extent that she seldom left her floor again. When asked if she would ever go back to the roof garden she said flatly, "No, definitely not!" She may or may not have changed her mind later after sufficient time had elapsed. The resident passed away shortly after the event, however, without ever seeing the roof garden again.

Adapting a Building to Meet Changing Needs

Although many of the problems which developed at Westside over the first year of occupancy in the new nursing wing could be coped with, there was another set of problems which required adaptation. Sometimes adaptation by staff members alleviated the problems but other problems required alterations to the building itself.

A problem which caused both changes in staff behavior and physical alterations to the building to occur was the security problem. Because Westside Retirement Home is located in a high crime area it has become a prime target for muggings. As illustrated in Figure 38, the parking lot at Westside does not have any direct access to the building. As a result, visitors must walk a distance of three

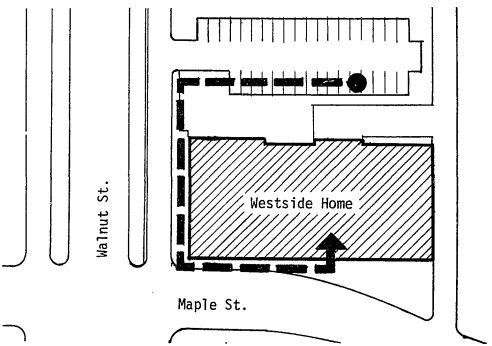


Figure 38. Site Plan

hundred feet from their cars to the entrance of the home which is on the other side of the building. After a one year period in the new building the administrator of the home reported that there had been 18 attacks on people walking to or from their cars or the drug store. A high level of fear and anxiety for people entering and leaving the building has come to affect nursing residents who fear for their visitors' safety.[5]

The problem of security goes beyond the egress situation outside of the building. The main entrance on Maple Street (Figures 39 and 40) was originally designed to open into a furnished lounge area which was supposed to be a comfortable space provided for residents

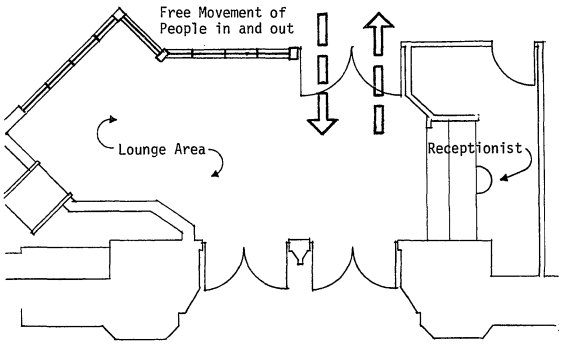


Figure 39. Plan of Entry Lounge

Figure 40. Main Entry

to sit and watch the activities of the day. Since all visitors had to enter and exit from the Maple Street doors, the lounge was envisioned by the architect as an exciting place for residents to be. Shortly following the opening of the new nursing wing at Westside, however, problems with the entry lounge began to develop. Once, while a resident was sitting in the lounge, a mugger walked in from the street and the resident became an open target for attack. Fortunately, he was scared away by the home's receptionist. But the

resident was quite frightened and never used the space again.

Soon after the incident, the home's administrator had a security system installed so that individuals entering the unlocked main entry doors would have to be cleared before a magnetic door lock would be released, permitting entry beyond the lounge (Figure 41). Though the main access to the home was now controlled by the receptionist who pushed a button to unlock the inner doors, the lounge was still unlocked to the outside. As a result, muggers could still enter the lounge from outside, in effect making the lounge unsafe.

Shortly after the installation of the magnetic door locking device a second incident occurred. This time the mugger could not go beyond the locked lounge area, and the receptionist was protected

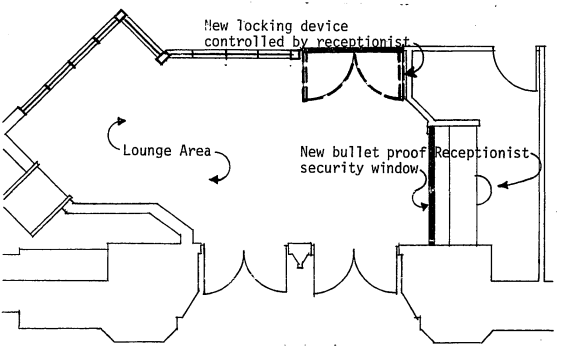


Figure 41. Plan of Entry Lounge After Modifications

by the new bullet proof security window which closed her off from the lounge area. An elderly resident who was sitting in the lounge area, however, was in effect locked out of the building at the mercy of the mugger who was also in the lounge. The mugger had a club in his hand and demanded money from the receptionist. She said she had no money and told him to leave. As he swung around he raised his club and motioned at the resident who was sitting in the lounge. She screamed with fright and fortunately, the man then fled. This second incident was enough to cause the receptionist to prohibit any residents from using the lounge space again (Figure 42).

The adaptation which took place in an effort to solve this problem involved first a modification of the physical space (security window and door-locking devices) and secondly, the passing of a rule

Figure 42. Typical Scene of Empty Lounge

prohibiting use of the lounge by residents. Further modification of the physical space as suggested by the author, (the addition of a wall, (Figure 43)) may be necessary to assure the return of the lounge to residents' use. An alternative solution to the problem would be for the home to employ a 24-hour security guard service.

Another security-related problem which required adaptation was that of the emergency exit doors. A month after the opening of the new nursing wing of the building, a confused nursing resident walked out of an emergency exit door unnoticed. Within minutes nurses and aides realized she was missing but had no idea how she left or where she had gone. A search was started immediately and the nursing resident was not anywhere in the building. The staff's concern was for the safety of the resident who was terribly confused and unpredictable. After several hours of searching, the police found the

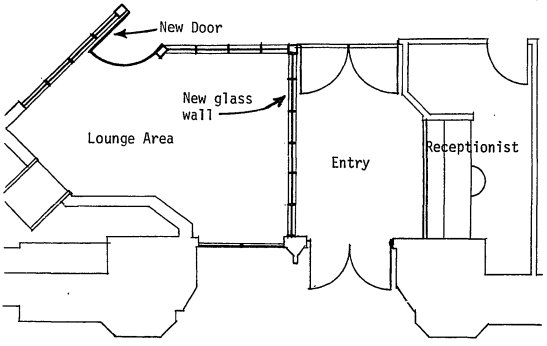


Figure 43. Plan of Entry Lounge With Wall Added

resident sitting in a restaurant several blocks away and quickly returned her to the home.

As a result of the incident the administrator of Westside arranged for an alarm to be added to each of the many emergency exit doors. Thus, anyone leaving the home by a door other than the main entry would set off an alarm. The system was installed immediately and seemed to solve the problem. Again, adapting the building was necessary in order to meet needs which were inadvertently not met in the original design.

A major area of the building which required adjustments and adaptation by staff members was the roof-garden greenhouse area. During the four-month period following occupancy of the new building, the roof-garden area was seldom used. Part of the reason for this was that a horticultural therapist, a person trained to help people do potting and growing of plants for the purpose of psychological therapy, was not employed. After a full summer had gone by, a volunteer began a once a week horticulture program for nursing and apartment residents.

An interview with the volunteer horticultural therapist which took place two months after she began working with residents, revealed a number of problems which she claimed were oversights in the design. She objected to the use of "astro-turf" on the floor of the greenhouse because it was difficult to clean and inhibited residents in potting plants, "because they are always afraid they will spill all over the carpeting." She believed a painted concrete floor would have been more appropriate. The volunteer also mentioned that having

no floor drains made "washing down" impossible. She reported that because no shading devices were included on the expanses of glass to the south and west, the midday sun was causing 110 degree temperature in late afternoon. The bright light also caused problems and bright spots.

Besides being a heat tank in the summer the greenhouse was reported to be a tremendous heat loser during the following winter. Heaters would run with the roof vents wide open and sub-freezing temperatures outside. Adding to the waste was the fact that residents seldom used the space except when the horticultural therapist held her regular sessions (3-4 times a month).

Learning to live with the new roof garden required both coping and adapting procedures. The eventual proper operation of heating and ventilation equipment by staff members led to a more comfortable and usable space. But because of infrequent use due to the lack of personnel to run the activities, the roof-garden greenhouse area did not reach its potential as a therapeutic program during the first year of occupancy. The sunlight problem will be corrected by shading devices to be added in the future.

Another major adaptation problem related to the controlling of temperature within the new building. Because the nursing floors were designed with zoned thermostatic controls, several nursing rooms were affected by a single thermostat. As some of the rooms heated up from direct sunlight and became too hot, other rooms in the same zone stayed too cold. A complicating factor was that different people

requested different temperature settings. Even roommates often disagreed on the too hot--too cold spectrum. As a result, some residents would try to control the temperature level by opening the windows in their rooms, thus disturbing the proper balance of the whole system. This resulted in even greater discomfort. The problem finally became so great that the head of maintenance began making daily announcements over the intercom system directing all nurses and aides and other staff members to prohibit any opening of windows.

Limitations of the Research Findings

A limiting factor with any case study is in generalizing the findings. The findings with regards to the success or failure of Westside as a building, therefore, may not be generalizable.

The residents at Westside are living in a building which is unique in many respects. The nursing wing of the structure is in a renovated church. The renovation imposed certain preconditions on the design in the way of exit requirements, fire doors, sprinkler systems and the use of wire glass surrounding the central atrium. There were also limits to room arrangements and floor plan layouts because of the requirement of staying within the outer walls of a building built in 1927.

Another factor limiting generalization from the findings is the fact that the project is in a high crime area within a high unemployment area of a large midwestern city. This location has the definite effect of restricting activity outside the building. The findings

regarding changes in home range and activity levels of residents in the study are affected by the physical location of the project and they may be generalized only to other projects with similar locational conditions.

Nevertheless, the findings with regard to the architect's program objectives (Elaborated in Chapter Four) can be generalized to the design of other retirement homes where similar program objectives exist.

The findings and implications in regard to post construction evaluations (Chapter Six) are largely subjective opinions of the author which need to be tested in future studies. Because the area of building evaluation is still only in its embryonic stage, the findings regarding evaluation research should be helpful to others in formulating future studies.

The case studies of individual residents (Chapter Five) reveals many different and varied reactions to relocation. While the close examination of individuals is useful in revealing environmental problems, it is difficult to generalize from individual cases. What is replicable is the need for recognizing individual differences of users in the design process. The case studies approach to studying individual users and their environmental needs is useful in identifying the spectrum of environmental problems.

Notes

[1]The source of all the nationwide data referred to in this chapter (unless noted otherwise) is Long-Term Care Facility Improvement Study, Introductory Report, July 1975, U.S. Dept. of HEW, Public Health Service, Office of Nursing Home Affairs. The study involved a national sampling of 228 nursing homes.

[2]The reason more nursing residents are not permitted to go to the main dining area on the first floor is because: 1) the nursing staff won't let them, and 2) the apartment residents who live in the home and eat all their meals in the room, won't let them. Even before the new renovation of the building took place nursing residents were discouraged from eating their meals downstairs. In fact, the resident council passed rules to make it difficult. No wheelchairs are allowed in the main dining room. No men are permitted to be seated at mealtime without a coat and tie, etc. The tendency of independent residents to disassociate with the more impaired and dependent nursing residents is a tradition that undermines many of the architect's ideals in creating a within-the-building community. Nursing residents know they are not wanted and seem to accept it once they are in nursing. What choice do they have? This right to interact and socialize with other more able residents at mealtime is a right which must be given up upon entering nursing. Perhaps this contributes to the great fear that many apartment residents have of someday ending up in nursing.

[3]Behavioral observations made during data collection periods of the project support the interview results and correspondingly show very limited usage of each of the T.V. lounges. During the observation periods over the first eight months in the new building, only four of the 29 different times and days sampled showed any usage of the rooms. No one was ever seen using the fifth floor lounge, the second floor lounge was seen in use only once, and the third floor lounge was seen in use only five times. (The observations were made on weekdays from 10 AM to 6 PM). Additionally, nurses and aides interviewed reported only a slight increase in usage after dinner and no increase on weekends.

[4]Glare has consistently been reported as a source of visual problems for elderly persons. In a recent study at the University of Michigan's Institute of Gerontology (Pastalan, et al., 1975) older drivers mentioned problems of glare again and again as being their biggest source of frustration. In the roadway environment certain things can be done to decrease problems of glare, but varying seasonal and weather conditions leave many of the intense glare situations unavoidable. In a more controlled interior environment, however, much can be done to alleviate problems of glare through the use of proper lighting, window screening devices, and non-glare surfaces.

Notes

[5]The fear of crime is evident not only from the comments of staff and visitors to the home, but also from the comments of residents. While most residents feel rather secure and sheltered in the home they fear for their visitors' safety. The author has been asked by residents on several occasions to accompany visitors and relatives to their cars. In recent months the home's administrator has had many residents ask him if they could be transferred to Westside's sister home in an outlying community of the city. The administrator has turned down their requests because of a six month waiting list at the sister home.

The crime problem tends to discredit the initial decision of Westside Home to stay in the city in the first place rather than relocating in a suburb.

CHAPTER FIVE

RELOCATION AND ENVIRONMENTAL ADJUSTMENT

The second part of the evaluation of Westside dealt with the process of relocation. As will be illustrated in the following pages, relocation can have a dramatic effect on the reactions of staff members and residents concerning their new physical setting. Developing an understanding of the complexities of relocation will help clarify how relocation can affect usage of and attitudes about a new physical setting. In order to study the effects of relocation, a description of the Westside relocation program, which consisted of counciling residents and site trips to the new facility, now follows.

Relocation Program

Being fully aware of the risks of relocation the author became involved in counseling the retirement home staff in the use of pre-relocation site visits and resident orientation sessions. During the two month period preceding the move to the new nursing wing the author worked with the administrator, the social worker, the nursing staff, and volunteers in preparing nursing residents for relocation. The administrator of the home was familiar with the work of the Institute of Gerontology at the University of Michigan, was aware of the necessity of pre-move orientation and site visits to the new wing, and he supported the effort.

Nursing residents were taken two by two to the new facility.

According to the head nurse, however, site trips with nursing residents to see the new wing of the building began too soon, four and five months before the date of the move. Unfortunately, the new wing was still under construction and building materials were scattered about. Rooms were not carpeted, furniture was not present, and curtains were not in place. Although the walls and floors were complete, the building was by no means finished. As a result the site visits upset many of the nursing residents. The head nurse reported several of the residents waking up in the middle of the night with bad dreams saying "I don't want to move to that place, I won't go, it's a terrible mess." Site trips which are made too soon can be counterproductive if the new space is unfinished and not easily visualized.

Because the author got involved in the project three months after this first round of site trips took place, he must rely on the validity of the remarks made by the head nurse and social worker. One obvious problem was that the building was not finished enough for a complete image of a livable environment to form in the minds of the residents. It would have helped if two or three rooms could have been finished and completely furnished before the others, to act as model apartments. This is often done with great success at new housing projects by developers. This idea, unfortunately, was not thought of early enough in this case, but might be worth trying in future relocations.

Another problem with these early site trips was the issue of who should participate. The "alert" nursing residents can see through the annoying construction facade better than the "confused" residents.

However, it is just these "confused" residents, as will be shown later in this chapter, who are the most vulnerable to the relocation and who really need the visits most. The confused residents also are the ones who have difficulty imagining the finished spaces.

To solve the problem, one may conclude that if model apartments can't be set up for visiting, the site trips should logically be conducted only when the new building is very close to being finished and livable. The difficulty here, however, is that as soon as the space is finished, people are moved and it is too late to make site visits.

This dilemma can be partially solved by administering counseling sessions with individual nursing residents. Residents can at least begin to think about the move and prepare for it in their minds. Counseling should not be a one time effort, but should be done at regularly scheduled intervals so that residents have a chance to think over their fears and emotions regarding the move. During these sessions, misconceptions can be dealt with, reassurances can be made, and the positive qualities of the new environment can be stressed. Additionally, architectural drawings and models can be used to get residents thinking about the new spaces they will be occupying. Those site visits conducted in the one month period before the move, and with the author's assistance, began with Westside's social worker preparing note cards. Each card included a name, room number, and pertinent (although sometimes sketchy) information on a resident. Mr. White, for example, was said to be "mostly alert but quite old, with

very poor hearing and eyesight." Residents and their new roommates were then taken by the author and a volunteer to their new rooms in the new building. As the result of the difficulty the home's administration had in making room assignments (to be discussed in more detail in this chapter), roommates in the new wing were often not roommates in the old wing, and consequently often did not know each other until they met on the site trips. As a result, residents who were going to be roommates were often meeting each other for the first time, as well as seeing their new rooms for the first time.

Site Trips and Relocation Program: Case Studies

The case studies which follow are factual accounts of nursing residents' responses to the relocation program. They are representative of the range of problems nursing residents had in relocating to a new physical environment. While the accounts of all the case studies which follow are true, the names of the elderly residents have been changed to insure their confidentiality.

Case 1: Mr. James Russell and Mr. William Fanger

Mr. Russell and Mr. Fanger were living on different floors in the old wing, and knew each other only by acquaintance. Each was described to be "alert" but each suffered from various physical disabilities. When we picked up Mr. Russell, who was in a wheelchair, we told him the purpose of our visit. After talking for several minutes until the point where we felt at ease with him, we suggested that he go with us on a short visit to the new wing of the building

to see his new room. We told him that we would also like to take along the resident who would be his new roommate, Mr. Fanger. He responded, "Oh, don't bother to take him, he wouldn't know what's happening, anyway." Because of Mr. Russell's continued insistence we ended up taking him by himself to his new room. He liked the room except for the fact that it did not have a good view. It was a room with a view to an outside court space closed in by buildings. In fact, it was the worst view of any of the new rooms. When I visited him a few days after the site trip, he said he was quite worried about not having a good view to the outside from his new room. He was used to having a view of Maple Street and wanted to have a similar view. I expressed my understanding and later told the social worker about it. Later, when Mr. Russell was moved to the new building he was given a different room which did overlook Maple Street. On the day of the move, his brother and his sister-in-law came in to help him move his personal things. Though he was to have a room overlooking Maple Street, he had not been assigned the window side of the two bed room. In spite of that, however, his family members purposely set him up on the window side before his roommate had been moved in with him. Although he benefitted from the window, unfortunately it was at the expense of his roommate. His roommate, Mr. Fanger, had had a window position in the old wing and was supposed to get one in the new wing. But when he got to his new room it was too late; the window side was already taken. The staff of the home was aware of the problem but decided to leave it alone and Mr. Fanger appeared to accept it. So Mr. Russell went from a door side

position in a three bed room to a window position with a good view in a two bed room. At the same time Mr. Fanger went from a three bed room with a window position to a two bed room with a door side position. The benefit of a smaller room with fewer occupants was more than offset by the loss of his window and his view. It should be noted that the retirement home offers few if any activities which were geared towards men, and thus the most popular and important activity for many men seems to be window gazing. This was not the case with the women on the nursing floors who, for the most part, seemed just as content when they were away from a window as when they were near one. In the months that followed, Mr. Fanger, who lost his window and view when he moved, went through a difficult adjustment in his new room. He experienced a significant drop in his home range and activity level. He simply would not go anywhere or do anything. He was bothered by the way his roommate often closed the curtains by the window in an effort to block out light for T.V. viewing. Mr. Fanger, who is for the most part very dependent, yet alert, has his good moments, and his bad, with many ups and downs. His outward physical appearance can be very deceiving. Because of Parkinson's Disease, he sometimes shakes continuously, often dozes off and looks rather removed from the world, but when you take the time to speak with him, he responds intelligently. The result of his condition, however, is that others have given up on him. Because he has learned to take what comes his way without putting up much of a fight, he is extremely reliant on others. So when his window was taken away he accepted it, or so it seemed. After visiting Mr. Fanger

many times over a one year period, it is the author's opinion that the loss of a window and view and other factors associated with the relocation resulted in a long period of depression and withdrawal for him. Towards the end of the one-year period after the move he did start to pull out of his depression. He began to participate occasionally in planned activities and related events with other residents in the home with a consequent lift in spirits. He also slept less and seemed more responsive and happier, but it took almost one full year to get over the shock and aftermath of involuntary relocations for this individual. Although he eventually came to accept his new setting, the transition might have been easier if he had been given a similar window position with a similar view. The idea of keeping the environmental setting as similar as possible from an old room to a new room in order to aid an individual in adjusting to a new setting is a good idea. This can be done in part by setting up the individual's furnishings in the same way they were set up in the old environment. This can help provide an elderly resident with a somewhat familiar setting even through he is in new surroundings.

Environmental improvements accompanying his move (i.e. carpeting, smaller room, more home-like appearance, etc.) apparently made little difference to Mr. Fanger and did not appear to compensate for his frustration in losing his window and his view of street activity below.

It should not be concluded that windows and views are that important for all residents. Resident preferences and activities vary considerably. In fact, of 67 nursing residents, 58 percent (N=39) were said (through nurse and aide interviews) never to look out of a

window and only 15 percent (N=10) were judged to look out of a window often. Of that 15 percent half were found to be men. Considering that only 17 percent of the homes' population are men, a far greater proportion of men than women look out of their windows "often." The implications of this finding is perhaps more important for the nursing home administrator in the placement of residents than for the architect in the placement of windows.

Case 2: Mrs. Ida Noltry and Mrs. Mable Moyers

In this case, both ladies were already roommates in the old nursing wing. They were quite happy about living with each other in their old room and were scheduled to go in a new room together. After visiting them several times in the month before relocation to the new building, the author assisted a volunteer in taking the ladies to see their new room. Mrs. Moyers was alert and Mrs. Noltry was alert most of the time but did suffer from recent-memory lapses. Both were taken in wheelchairs to see their new room. As we arrived Mrs. Noltry immediately commented that the room was smaller than their present one, which it was. She expressed concern that she would not have room for all of her furniture. She had moved to the nursing floor from an apartment in the home several years before and was allowed at that time to take a considerable amount of furniture to her nursing room. (This is atypical, as most nursing residents have little or none of their own furniture). Among her things were a very large dresser and two T.V. sets. She asked if everything would fit in her new room. I said I thought we could manage but it would be

tight and that I would talk to the administrator about it. When I asked her why she had two television sets she said one stopped working so she got another one. I asked her if she was willing to give up the broken one. She said no, she needed that one for a spare. I let the problem slide, because I thought she might change her mind after thinking about it more. Other than the problem of space, the two ladies thought their new room was fine and thought they would be very happy there. On a return visit two days later, Mrs. Noltry asked whether or not she would be able to take all of her furniture. "How well would it fit? she asked and "was the room large enough?" In the meantime I had talked to the administrator who had agreed to let her take everything, but he asked me to try to see if she would give up her extra T.V. I soon discovered, however, that under no circumstances did Mrs. Noltry intend to give up that extra television. I tried to reason with her but got nowhere. That T.V. was very important to her whether it worked or not. And the fact that she had two T.V.'s did not matter. It perhaps represented another right being taken away and she was putting up a fight for it. During the month before the move I visited Mrs. Noltry several times and each time she expressed to me the same concerns. In fact, she was noticeably upset about the move but knew she must go through it. During the move I helped her and her roommate by assisting with organizing the new room. My presence at that time was a great comfort to them because they had come to know and trust me. All of the furniture did fit in the new room just as I had assured her many times that it would. The arrangement was a bit crowded, however, and

left little floor space free. Nevertheless, both ladies were happy with their new room and everything seemed suitable to them. During the one-month period following the move, Mrs. Noltry and Mrs. Moyers were noticeably proud of their room, but shortly thereafter, they both experienced a period of depression. They told me they wanted their old room back, that it was bigger and better. I asked them about their new room and they responded in unison "It's too small." They also offered comments like, "Its beautiful but not practical," "Its modern but not usable." They didn't understand why they had to be moved and said they were happier in the old room. They wanted everything back just the way it was before. This depression stage seemed to be quite prominent for about a month and then gradually gave way to a more normal state of mind for each of them. By eight months after the move, their desire for the old environment disappeared, and the ladies seemed to accept their new space.

Case 3: Mrs. Marjorie McGuire

Mrs. McGuire had been in the old nursing wing for eight years. I was told to visit her old room to try and prepare her for the move. I was also told that she would resist talking about the new building as she had with other staff members. After being introduced to her by the head nurse I spoke with Mrs. McGuire about the up-coming move to the new building. She responded by saying she didn't have to move. She said she had an agreement with the home that said that she could live there the rest of her life. Although this was true in a sense (she would be looked after by the retirement home for

life) she interpreted this as a life contract for her room and would not even consider moving. I didn't get anywhere trying to explain to her why everyone must move to the new part of the building. On my next visit I tried taking a set of photographs of the new building for her to look at. At first she told me she was blind and could not see anything so not to bother with pictures. Then when I said they were pictures of the new building she said, "That doesn't affect me, I'm not moving. I have a life lease on this room." Of course, she would not hear of visiting the new wing of the building at all. After several more fruitless attempts by myself and other staff members, the administrator began to be quite concerned about Mrs. McGuire. He said she would likely die before she would go into that new room. He said that they might have to physically carry her out of her room against her will. Finally, within a couple of days of the move, a relative visited Mrs. McGuire. Before she went in the room to see her, the relative was told of the problem and agreed to try and help. The relative enjoyed considerably more respect with Mrs. McGuire than the staff of the home and was able to gain her cooperation. In fact, the relative came back on the day of the move itself and helped her with the move. After the relocation Mrs. McGuire seemed to make the adjustment very quickly. To my surprise she showed no signs of depression or decline.

Case 4: Mrs. Ruby Daley

Mrs. Daley is a 76 year old lady in very frail physical condition but mentally alert and responsive. Her long history of respiratory illness following a bout with tuberculosis left her with much

difficulty in breathing. She was quite cheerful and talkative in spite of her failing condition. When I offered to take Mrs. Daley on a trip over to the new building to see her new room she reacted very favorably. She had been waiting for an opportunity to see it. She too was concerned about fitting things in her new space. In her case it was not furniture she was worried about, it was her special breathing equipment, oxygen tanks, breathing treatment systems, connecting hoses, etc. Mrs. Daley was quite excited about the upcoming move to the new wing of the building. She was fortunate to have been assigned a private room instead of a semi-private (two bed) room. Mrs. Daley had been frustrated by her present room and roommate. Her roommate was a pleasant lady but suffered from memory loss and was always forgetting what Mrs. Daley told her. Mrs. Daley found it difficult to talk intelligently with her and during recent months had become very anxious to move to another room. So the move to the new nursing floor represented a real step up for Mrs. Daley. She was gaining the privacy and autonomy of a one-bed room and getting off on her own "away from all those confused people." The site trip I took with her to her new space helped Mrs. Daley a great deal. She had been thinking and perhaps worrying about her new space for some time. I took along a tape measure and helped her get the dimensions of her new space. She knew exactly how she wanted it organized with various pieces of equipment carefully placed in relation to each other. She had been concerned that the wall space at the head of her bed was too short to accommodate the oxygen tank, her bed, her night table, etc. When I measured it all out before her eyes she

became convinced that the space was adequate and was quite relieved. Admittedly, she had special and unusual requirements of her new space, but Mrs. Daley's anxiety about the unknown in the new room of the new nursing floor was typical of a number of nursing residents. The site trip did a lot towards reducing that anxiety and building a mental image in preparation for the life adjustment of relocation. To help her further in this regard, I took several polaroid photographs of her new space. In fact, I asked her which views she wanted. I then gave her the photos so she could take them back to her old room and study them at her convenience. The technique of using instant photographs in this way was helpful in building confidence and in reducing the unknown about the new environment, not only for Mrs. Daley but for many other residents. With this technique, the individual can develop, and later refer back to and thus reinforce, a mental image of his/her new space. The technique deserves future exploration and testing.

Varied Reactions to Relocation

The involuntary relocation of nursing residents can lead to a number of counter-intuitive reactions as we have seen in the four preceding case studies. In the case of Mr. Russell and Mr. Fanger, being located near the window meant everything to each of them. Not having the window position resulted in frustration, withdrawal and relocation shock, whereas having it facilitated the transition to the new living space. In the case of Mrs. Noltry what mattered most was whether or not all of her furniture would fit in her new space. Even though some of the furniture was extraneous and unnecessary in the view

of the staff of the home, denial meant a severe loss to Mrs. Noltry.

In Mrs. McGuire's case, a reluctance to budge at all from her corner in her room caused staff members to wonder if she could survive relocation. Surprisingly, she did quite well with the transition once it inevitably took place.

Mrs. Daley had reservations about her new space, but when the unknowns were reduced and her familiarity with the new room increased, her anxiety was reduced and her relocation went smoothly.

The reactions to relocation often vary considerably. What bothers one person does not bother another. Although counseling and site visits help to make the transition smoother, many problems still exist. One problem is that the confused and frail who perhaps need the site visits the most tend not to take them because staff members and volunteers find it more difficult to talk to and move about those individuals. An additional problem is that nursing residents, who are often thought of as a dependent homogeneous group, are really residents with individual needs and concerns that have to be dealt with on a personal basis. Another problem is that an adequate pre-relocation program of counseling, site visits, and image building seldom takes place owing to a lack of time and money.

Environmental Adjustment Following Relocation

Even with a smooth transition from one living space to another, problems of adjustment can often take weeks or months to be resolved. The following three case studies will serve to illustrate some of the problems of adjustment which can be manifested despite a sound relocation program and the use of site visits.

Case 1: Mrs. Elma Johnson

Mrs. Johnson, an elderly resident who lived by herself, missed two meals without notifying anyone of her problem. One day at breakfast, friends missed her but assumed that she preferred to sleep in. When she didn't show for lunch, her friends notified the staff. The head nurse went up to visit Mrs. Johnson and found her lying on her bed and in very poor spirits. She had fallen the night before while getting out of her bathtub. Mrs. Johnson didn't think anything was broken but was severely bruised due to her frail condition. She didn't call for help, preferring instead to think she would recover quickly and would be up and around by the next morning. The previous night Mrs. Johnson had lain sleeplessly in pain. The thought of having to go to a nursing floor kept her from calling for help. There is no way of knowing how long she would have lain there if no one had come along to check on her. After carefully examining her legs and hips, the head nurse decided to move Mrs. Johnson to a nursing floor. She resisted, but the head nurse reassured her that it would just be for a couple of days until she got better. Upon leaving her apartment Mrs. Johnson became very upset about not being

able to keep the key to her apartment in her possession. Again the staff assured her that everything would be alright and her apartment would be well cared for. She was taken to the nursing floor in a wheelchair. Appearing quite shaken and visibly distraught, Mrs. Johnson explained she had never been on a nursing floor before but had seen many friends in recent years go to nursing and not return. After a week on the nursing floor Mrs. Johnson was informed that her condition was now complicated by pneumonia. She was told that if her frail condition did not improve in three weeks her apartment would have to be given up because the retirement home could not hold both her apartment and a private nursing room for her. Mrs. Johnson had been a long-time resident of the home and she had used up all her money and was living on social security benefits and medicaid with the difference paid for by the home. Although the home had agreed to take care of her for the rest of her life, she was told that they could not continue to hold both rooms for her.

Mrs. Johnson's life was abruptly and irreversibly changed following her fall in the bathroom. Even though no bones were broken, the inevitable trip to nursing which she had feared and resisted for so long, suddenly happened to her. If she had been younger and healthier or more ambulatory, she would have been allowed to return to her apartment. As it turned out, Mrs. Johnson remained on the nursing floor and was forced to give away most of her furnishings and possessions, as well as her apartment. Her friendship with other apartment residents remained, but she saw them less and less as time went on. Several of her good friends, in fact, never even came to

see her after she went to the nursing floor. She said she understood this because she had not liked to visit the nursing floors either.

Case 2: Mrs. Beatrice Parker

Mrs. Parker has been in and out of nursing no less than eight times over a two year period, but Mrs. Parker is 68 or twenty years younger than Mrs. Johnson and considered to be in a generally good state of health. Still, all those temporary stays for Mrs. Parker were not easy for her. She was forced to give up her own apartment some time ago when she had a rather extended nursing stay of several months. After that she was moved into a different apartment. Then, shortly before the opening of the new nursing wing of the building, Mrs. Parker lived in a crowded three bed room. Her remaining pieces of furniture made that room very cluttered, but she held on to them anyway, in hopes of returning to another apartment in the future. Although she was quite alert, Mrs. Parker had to contend with a rather confused roommate. Mrs. Parker put up with the situation because she knew it was only temporary.

When the new nursing wing opened Mrs. Parker was moved to a temporary nursing room until her new room on the fifth floor (home for the aged) was completed. After several weeks she was then moved up to the fifth floor where she still remains today. After a long series of moves from apartment to nursing room to other nursing rooms and so on, Mrs. Parker finally had her own place once again. With the help of her positive attitude, she had never really given up hope of having her own apartment again.

As it turned out, the "home for the aged" setting was a good solution for Mrs. Parker. It provided her with the minimal nursing care she needed and at the same time preserved some of her freedom. She was allowed to come and go freely off her floor, eat meals in the main dining room, and close her door for privacy, a privilege she could not have had on the nursing floor.

Case 3: Mr. Robert Agar

Mr. Agar is a long time resident of the retirement home but had only been on the nursing floor for two years. He had previously lived with his wife in an apartment in the home. Even after his wife's death he managed for several years on his own in an apartment, before finally going to a nursing floor. Mr. Agar was considered to be a very intelligent and alert 97 year old man. He had some difficulty walking but with the aid of a cane still managed to get around by himself. He too spent most of his time adjacent to a window overlooking at Maple Street traffic. My trip with Mr. Agar and his roommate to their new room was quite successful. He liked his new room very much and was happy with the new view which overlooked Maple Street. During follow-up visits Mr. Agar seemed to accept the move to the new wing. In fact, he even seemed to be looking forward to it. When the move itself came Mr. Agar was quite upset and uneasy. The confusion appeared to be too much for this very sensitive man. At the time, I could find no particular cause for his reaction other than the general state of turmoil which accompanies relocation, i.e. the commotion of people and the movement of furniture. A couple of weeks

after the move I went back to visit Mr. Agar in his new room. I found him in poor spirits with tears in his eyes. He told me he wanted his old room back and that they lost his coffee table during the move. My efforts to comfort him may have helped somewhat but did not change his general state of mind. After the visit I asked the administrator about his coffee table. He said "Oh, he hasn't had that table for years. He gave that away when he gave up his apartment." On my next visit to Mr. Agar a week later, he was still in a state of depression over the move. He again asked for his coffee table and his old room back. It was then that I realized that the old room he was referring to was not the old nursing room he had just moved out of. He was asking for the old apartment he had lived in several years ago. When I tried to describe his old nursing floor room he didn't know anything about it. That part of his memory had completely vanished. It seemed now that he not only wanted his old apartment room back, but he really wanted the life that went along with it. During the ensuing months Mr. Agar's mental state improved somewhat but never reached the level which he had had just prior to relocation. During a visit with him six months after the move he still did not have any recollection of the part of his life he had spent on the nursing floor. Yet in many respects Mr. Agar still seemed to be quite alert. The question arises, To what extent did the trauma of relocation trigger Mr. Agar's loss of memory and state of depression? Although we will never know the answer to that question I would speculate that the state of mind was brought on, to a great extent, by the shock of forced relocation. But since

measures were taken to orient Mr. Agar to his new space through counseling and site visits before the move, how could this problem be avoided? One possible answer in a case like this is to provide post relocation counseling as well. Perhaps this could include showing the residents photographs of the old space with them in it, and an explanation as to why they had to move.

Residents might also be given psychological counseling to help with their adjustment. Additionally, they should be taken out of their rooms frequently and familiarized with their new surroundings in order to let them re-establish and gain or regain a sense of belonging.

Recognizing Individual Differences

As illustrated in the three case studies above the period of environmental adjustment extends well beyond the time of relocation. Individuals respond quite differently from one to another. People are often affected in unpredictable ways and what works well for one person may not work well for another individual.

While the home for the aged setting worked for Mrs. Parker, it was out of the question for Elma Johnson, for one simple reason. Mrs. Johnson was non-ambulatory. If she could have recovered to the point where she could go places by herself, even with a walking aid, she could have "gone up" to the fifth floor. But because she was unable to walk (except occasionally and for short distances only) by herself, Mrs. Johnson had no choice in the matter.

Mr. Agar, who had shown no anxiety or reluctance before the

move, suffered immensely and perhaps irreversibly from the sudden "shock" of relocation. Mr. Agar who was expected to adjust to the move easily because of his alertness, was instead in for a long period of grief and adjustment which was apparently triggered by his relocation. As a sensitive individual he had a particular need for consolation following his relocation.

Resident Behavior and Home Range

The preceding case studies illustrated some of the difficulties individuals had in coping with both relocation and environment adjudtment in new living settings. On the following pages the aftermath of relocation will be examined in terms of changing activity patterns and home range. The purpose here is to examine the effect of architectural variables such as the new activity spaces in terms of the home range of residents.

Definition of Home Range

A study of chronically ill elderly nursing residents (Pastalan, 1975) showed a strong relationship between increased mortality rates and a reduced home range. Home range is defined as a composite of all the places where activities that are significant to the daily life of an individual take place. Activities may include visits to the individual by others, but primarily consist of the individual's trips to other places beyond his room. Home range generally tends to decline in size with increasing age. Changes such as reduced mobility, sensory losses and a general decline in energy levels all

tend to reduce home range. For elderly nursing home residents most of the daily activities take place within the walls of the building itself. Confined to a building, these individuals depend on staff personnel, friends and relatives who determine how often they go places. The lack of an appropriate physical environment without adequate spaces for activities may make a difference between an active, coherent, everyday life and an isolated, withdrawn and lonely life.

Spivak (1973) describes "archetypal" places for life-tasks which must be available to a person at all times. These places are necessary for survival and encompass the activities of sheltering, sleeping, intimacy with spouse, grooming, eating, bodily function, defending territory, playing, going to places, meeting, competition, and work. For nursing home residents though, fewer archetypal places often serve multiple functions. In fact, some individuals spend the vast majority of their lives within the walls of one room. Severe reduction in the accessibility of archetypal places (or a reduction in the fundamental, minimal home range) can make it difficult to maintain interpersonal relationships, and maintain the ability to relax and sleep. As a nursing resident becomes more and more dependent on other individuals and on his environment it becomes increasingly difficult for him to maintain an extended home range.

Documenting Home Range

At Westside, nursing residents' home ranges from before and after relocation were documented through nurse and aide interviews (Table 14).

Table 14. Components of Home Range at Westside

On Individual Floors
Walks in hallway
Visits to hallway lounges
Visit to T.V. lounge
Visits to dining lounge
Visits to nursing station
Trips to meals in dining lounges
Trips to bath or shower room
Trips to other residents rooms
Visits from others to residents room
Beyond the Individual Floors but Within the Building
Visits to other three nursing resident floors (identical spaces on all four floors)
Visits to roof garden-green house
Visits to main floor (main dining room, chapel, receptionist, administration offices, medical clinic, gift shop, hair dresser-barber shop, library heritage room)
Visits to lower level (large activity room with work alcoves, resident's kitchen)
Outside the Building
Visits to drug store (within one block walk)
Visits to grocery store (within one block walk)
Planned trips with friends, relatives, or volunteers
Visits to hospital or doctor's office

The single most important change in home range for many of the residents related to meal time activity. While only 16 percent of the residents (N=10) left their rooms regularly for meals in the old wing, 60 percent of the residents (N=40) left their rooms regularly

for meals in the new building (Table 15).

The reason behind this change is the inclusion of intermediate dining rooms on the new nursing floors which are used to serve 52 percent of the residents two or more meals a day. In the old wing, which had no dining rooms on individual floors, residents had no choice but to eat in their rooms. In the new wing, however, residents are encouraged by staff to leave their rooms for meals. The staff of the home believes group meals promoted socialization among residents. Resident reaction to the change is mostly favorable. Most of them enjoy having a place to go to two or three times a day. Many of them ambulate to the dining areas on their own well ahead of mealtime. Observations show that some residents socialize while others stay quietly to themselves. A few residents prefer not to eat in the dining areas because they reportedly "don't want to be with those other confused people."

Table 15. Where Nursing Residents Regularly Eat Their Meals

	Old Nursing Floors	New Nursing Floors
In own rooms	83.6% (N=51)	40.3% (N=27)
Dining-lounge area on nursing floor (New wing only)		52.2 (N=35)
First floor dining area	16.4 (N=10)	7.5 (N=5)
	100%	100%

The number of times per day residents left their rooms changed from the old building to the new. Table 16 shows that while more individuals left their rooms just after the move as opposed to just before the move, six-month levels indicate a leveling off in activity. Six months following the move, the number of residents who usually didn't leave their rooms closely approximated the pre-move levels, while the number of residents who left their rooms four or more times a day remained considerably higher than before the move. These percentages include meals in the dining area and the increase over pre-move levels reflects the change in dining behavior discussed above which was brought on by staff decisions based on convenience.

If most of the increase in trips out of a resident's rooms came about because of meal time activity, then what other effects did the

Table 16. Percent of Nursing Residents and Number of Times a Day They Usually Leave Their Rooms

	Old Wing Just Before Move	New Wing Just After Move	New Wing 6 Months After Move
Usually leaves room 0 times a day	36.8% (N=21)	18.6% (N=11)	31.3% (N=21)
Usually leaves room 1-3 times a day	31.6 (N=18)	32.2 (N=19)	22.4 (N=15)
Usually leaves room 4 or more times a day	31.6 (N=18)	49.2 (N=29)	46.3 (N=31)
	100.0	100.0	100.0

new supportive environment have on individuals in terms of home range? The architect's idea was to create activity settings that would attract nursing residents out of their rooms. Discounting for a moment the "draw" of mealtime, how successful was this approach?

Some individuals who typically did not leave their rooms in the old wing began to explore their new environment after the move. By six months after the move, however, the novelty effect of the new environment had worn off. Mrs. Noltry's behavior following the move is an example of novelty behavior.

Case 1: Mrs. Ida Noltry

On the old nursing floor Mrs. Noltry seldom left her room except to go to the first floor dining area twice a day for meals. Observations showed that she was seldom seen in the hallways or lounge areas. Immediately following Mrs. Noltry's move to the new nursing floor, however, she was seen frequently walking the hallways. Although her vision was quite poor, her arthritis severe at times, and her ambulation hindered, Mrs. Noltry would embark on several walks a day. With the help of her walker she would stroll all the way around the large loop of connecting hallways. Sometimes she would even keep going for a second trip around the loop without stopping. But as the weeks went on Mrs. Noltry's trips became less regular for no apparent reason. By six months after the move she had returned completely to her before-move pattern of behavior, leaving her room only for meals. When the author asked Mrs. Noltry why she had dropped her walking she said "Oh, I get plenty of walking just by going to the dining room."

Case 2: Mrs. Mimi Sanders

While Ida Noltry's behavior following the move was typical of four or five individuals, Mrs. Sander's case was quite atypical. Mrs. Sanders was an active person on the old nursing floor. Though she could ambulate fully without mobility-aides she had become dependent on a walker as a sort of "crutch" and was seen carrying her walker most of the time. Because there were only a few places to go on the old nursing floor, Mrs. Sanders mostly sat in the hallway lounge waiting for activity to pass her by. Her walking consisted primarily of trips from her room to the hallway lounge and back again, a total distance of only a few feet. When Mrs. Sanders was moved to the new nursing floor, however, her activity level changed abruptly. She began exploring the entire nursing floor on a regular basis several times a day. Mrs. Sanders would usually stay out of her room for most of the day. She would take a walk around the loop and stop in the dining lounge to rest. Mrs. Sanders would only sit for a couple of minutes, however, before embarking on another walk. In the weeks that followed Mrs. Sanders walking increased to such an extent that the nurses became concerned about her health because she was getting so tired out and exhausted by the end of the day. Mrs. Sanders' walking behavior did not change in the months that followed. She continued to walk almost constantly around and around the loop. The nurses explained her behavior by saying she had memory problems. She would quickly forget she had just taken a walk so she would go ahead and take another one. Perhaps she was also a person with a high level of anxiety.

Case 3: Mrs. Amy Attenberg

The case of Mrs. Attenberg is also atypical, but serves to illustrate how the home range of an individual can suddenly increase: Mrs. Attenberg was one of the few nursing residents who was allowed to leave her nursing floor unattended. It is interesting to note that she was not considered to be an alert resident. In fact, she frequently got confused and lost, often forgetting where she was going. The nurses and aides had come to accept the fact that they could not keep her down. She was always allowed to come and go as she pleased. And because she was one of only three residents of the entire home who smoked, she had to leave her nursing floor regularly because by law, smoking was not permitted on the nursing floors. In the old wing Mrs. Attenberg would typically go downstairs to smoke two or three times a day. She also left her floor for meals twice a day. She was the only nursing resident who was off the nursing floor more than she was on it. In the old building she was limited because there weren't very many places to go. When she was moved to the new nursing wing, however, her home range expanded considerably. She quickly discovered many more places throughout the building where she could wander. Her activity level out of her room and off of her floor remained high in the months that followed.

While Mrs. Sanders increased her activity level and home range on her own floor, Mrs. Attenberg increased her activity level and home range throughout the entire building. Both residents experienced increased activity because of their own initiative and the "draw" of the new environment. While this kind of self-initiated increase in

home range in the new environment is typical of only a few residents, staff initiated activities increased the home range of many residents.

Case 4: Mr. James Barton

Sometimes architectural characteristics can also contribute to a decline in activity levels and home range. The following example will illustrate the point:

Mr. Barton, a nursing resident of advanced age who was limited by poor vision and hearing, still managed to ambulate on his own with a walker through the old nursing floor. Mr. Barton would frequently be seen pushing his walker along the tiled floors of the hallway. Owing to Mr. Barton's limited bladder control, he continually pushed his walker down the hallway to the toilet room and back again. When relocated to the new nursing floor, however, two architectural characteristics helped change his behavior. The carpeting, which was used throughout the new nursing floors, made it imposssible for him to slide his walker ahead of him as he had in the old wing. Nurses and aides tried in vain to teach him to overcome the resistance by lifting his walker and walking with it. Also contributing to the reduction in Mr. Barton's activity was the fact that his new room had an adjoining toilet room. The two architectural characteristics helped reduce Mr. Barton's home range to virtually nothing as he never left his room. Without participating in any activity he withdrew to his chair and his condition declined. Though his physical and mental decline may have been to a certain extent coincidental to his reduced home range, he nevertheless "went down" rapidly. Within two months

of the move to the new building Mr. Barton passed away. Though there is no way of determining for sure whether or not a sudden and drastic reduction in home range related to Mr. Barton's decline and death, these problems could have been compensated for. Aides could have brought Mr. Barton out of his room despite his adjoining toilet room and the walker could have been modified (with wheels on the front two legs) to roll over the more resistant carpeted floor.

When an individual loses the ability to ambulate by himself or with mechanical aids, nurses and aides could take measures to try to correct the situation if they are aware of the importance of ambulation and the sustaining of minimal home range levels.

Activity Levels and Home Range

Staff initiated activities include trips to the dining lounge, beauty shop, bath or shower rooms, and various planned activities such as arts and crafts sessions, the horticultural therapy program and exercise sessions. While the number of trips to the beauty shop and the bath and shower rooms remained relatively constant during the year of the study, the planned activities took a sharp rise in frequency with the move to the new part of the building. A far greater number of nursing residents participated in planned activities in the new wing than the number who participated in the old wing of the building (Table 17). One reason for this increase is that the new facility offered many more places to hold the planned activities than the old facility did. Also, a more active volunteer program and a newly employed crafts director solicited more and more nursing

residents for activities as the months progressed.

While resident initiated activities increased home range in the new environment for only a few residents, staff initiated activities (meals and planned activities) increased home range for many residents.

In spite of the success of the planned activities program in the new building, it did exclude 15 nursing residents who did not want to participate or for health reasons could not participate. These 15 residents would perhaps participate if activities were brought to them. The 15 individuals all had rather restricted home ranges.

Table 17. The Number of Activities Attended by Nursing Residents

	During the one month period before the relocation (old nursing floor) (of 5 activities available)	During the first month after relocation (new nursing floor) (of 7 activities available)	During the eighth month period after relocation (of 30 activities available)
Number of residents who attended 0 activities	51.6% (N=32)	59.4% (N=38)	24.6% (N=15)
Number of residents who attended 1-5 activities	48.4% (N=30)	31.2% (N=20)	24.6% (N=15)
Number of residents who attended 6-10 activities	0 (N=0)	9.4% (N=6)	19.7% (N=12)
Number of residents who attended 10 or more activities	0 (N=0)	0 (N=0)	31.2% (N=19)

As described in Chapter Four, being restricted to a floor presents a problem for most nursing residents. Instead of having access to the total community of the building they only have free access to spaces on their individual floors. This limits social interaction and discourages extended friendship networks. With the only activity spaces on each nursing floor being lounge areas, residents have little to draw them out of their rooms. The social worker and crafts director were quite aware of this problem throughout the first year of operation of the new building and made several attempts to correct it. One time they held an exercise session in the T.V. lounges on each floor in an effort to bring the activity to the residents. The T.V. lounges were not an appropriate place to try to hold exercise sessions because it was necessary to move the furniture, people bumped into one another in the crowded space, and the lounges became too hot and uncomfortable. But the sessions did succeed in getting many more participants than they had the week before when they were held downstairs. The social worker and her volunteers tried again two weeks later. This time they held the sessions in a larger space, the main dining lounge areas across from the elevators on each nursing floor. This time the nursing residents felt as though they were on display and resisted participating, making the event even less successful. From that day on the exercise sessions were held downstairs where they continue to attract only a handful of residents.

Other more passive activities such as making Christmas Bazaar items were also tried in spaces on the individual nursing floors. They too were given up and returned to the lower level because similar

problems had developed with the duplication of uses of space. Use of dining tables interfered with mealtimes and the T.V. lounges were too small.

Home Range and Survival

In an analysis of nurse and aide interview data concerning nursing residents, it was found that of seventeen residents who died within one year following relocation, none experienced an increase in home range in the new nursing wing. Five of the seventeen deceased residents had a significant drop in home range in the months prior to death and the remaining 12 had relatively stable but very low home ranges at the time of death. This is not surprising since one would expect those near death to be less active. The contention that a supportive environment encourages an extended home range and may be beneficial to nursing residents cannot be verified or discounted on the basis of these findings. The creation of a more supportive environment to facilitate extended home range does appear to be an appropriate goal in the design of dependent care settings.

Unfortunately, the work-therapy programs which the architect had planned for never materialized. The idea had been that residents would be free to leave their floor to go down to the lower level and work on assembling small items in return for a modest hourly income. Residents would then be free to spend the money they earned on the first floor in the gift shop and the coffee shop. This dream of having free movement of nursing residents throughout the building was perhaps unrealistic for this retirement home and there is no

evidence to suggest it will ever become a reality. The view that the home might rehabilitate nursing residents and bring meaning and responsibility back into their lives is an admirable approach to nursing care, but the largely medical model that the home's administration presently operates on does not seem to have room for this type of treatment.

In order for an architectural design program to work effectively after completion of a building, it must be adhered to by the administrative policies of the home. Presumably the home's administrator who worked out the program for design with the architect had fully intended to create a work-therapy program and allow the free movement of nursing residents. But the home's administration changed twice in a two-year period, and the current administrator is understandably concerned with what he considers to be more pressing issues, such as returning the home's financial picture to the black, and filling vacant apartments. Financial problems have resulted in a reduction in the number of staff members which were programmed for in the design.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

The reader will recall that the two purposes of the study were 1) to evaluate the success or failure of Westside as a building and 2) to evaluate the success or failure of the architect's programming objectives. The findings in respect to these purposes will follow under the heading of "Retirement Home Design."

Retirement Home Design

The reason that Westside Retirement Home was chosen for the case study was because the architecture represented an unusually thoughtful approach towards the creation of a supportive living environment. Because of the location of the project within a high crime area of a large midwestern city, an inwardly oriented, self-contained community resulted.

By including many supporting activity spaces throughout the building, the architect of Westside hoped to promote the independence of residents and an active community. The success of this strategy, however, was found to hinge to a great extent on management of staff regulations. It was found that the physical separation of spaces by floors tended to affect the activity levels of residents. Further study should be made of the various strategies for increasing the activities of residents from floor to floor. Another suggestion is to adapt various spaces on the residential floors to be reused for

activities.

Residential Character

A recommendation of the author is that nursing rooms be designed to be residential in character. The design of Westside succeeded in this regard. The management of this home and the management of other nursing care settings, however, must be continually reminded of the importance of personalization by residents. Residents rooms should also be as individual as possible.

Creating a supportive residential environment for nursing care was one of the program objectives of the architect who designed Westside. As Koncelik states in his book Designing The Open Nursing Home (1976), "a dominant health care atmosphere" can cause a facility to be overly institutional. Koncelik proposes that architects design "openness" into health care facilities for the aged by focusing upon the needs and desires of the elderly population. He emphasizes designing a residential atmosphere and playing down health care in order to prevent institutionalization from becoming a predominant theme.

Getting away from the hospital-like character of resident nursing rooms by creating more of a residential character will contribute to the "openness" of a nursing home. An open nursing home as Koncelik defines it is one in which free movement in and out and free movement between the differing levels of care are possible. To achieve this openness he believes the architect must design a setting which maximizes the independence of residents and minimizes

dependency supports. In order for these dependency supports to be reduced though, the effort to create an open design must go beyond the physical space and carry into the administrative management of a nursing home. Identifying architectural features which contribute to this openness, or free movement in and out of nursing care environments, should be the subject of further research. The identification of such features will aid designers in setting the stage for changing attitudes towards nursing care.

In defining the typically closed-ended or one-way careers of nursing residents, Morgan (1977) explores in detail the notion of the medical model on which most nursing homes operate. In Morgan's medical model, nursing staff members deal with the preservation of life as the highest priority. The extension of biological functioning of individuals is what is considered to be important, not their psychological and social well-being. Morgan sees most nursing residents as progressing through one-way careers of ever-increasing institutional dependency, moving gradually from independent settings to dependent settings and ending up with continuous round-the-clock supervision. While the author found this type of career to be typical of many residents, he also found that it was not true for many other residents. Often residents die suddenly while still independent and fully alert or after only mild setbacks.

In addition to the architectural characteristics which can contribute to nursing residents' well-being or decline are the policies of the retirement homes' staff and administration. At Westside, residents move from independent apartments to "Home for the

Aged" (new 5th floor) or to various nursing floors. As long as residents remain in their own apartments, they can lead relatively independent lives and preserve their rights of autonomy, privacy, and personalization, but as soon as apartment residents miss more than three days of meals in the dining area, they are automatically moved to nursing floors. All apartment residents are normally expected to eat at least two meals each day in the first-floor dining room. When residents suddenly do not appear for meals, the staff investigates immediately. Staff members will then send meal-trays to the resident's apartment, but only for a maximum of three days. Residents all know this and consequently many of them live in constant fear of a physical setback. Regulations like this one can be stress producing. Returning to one's apartment after a stay on a nursing floor is, of course, possible after a resident has recovered from a setback, but often one setback leads to another and the resident never returns to his apartment.

The architect of Westside thought there was an advantage in having four identically designed floors. This was done to break down the aura of nursing (home for the aged and three nursing floors). After one year in the new building, however, apartment residents still live in fear of ending up in nursing. Apparently similar physical features were not sufficient to "wash-out" the distinctions in function. Apartment residents have a tendency to dissassociate with friends who go to nursing. The stratifying of residents by the staff according to the residents' physical abilities still takes place.

Residents on the second floor are more dependent and thus worse-off than residents on the third floor and so on up. Although the nursing floors are designed in a way that reduced the institutional, hospital-like imagery including an increased residential feeling, this architectural treatment alone is not enough. In a sense, the architect did all he could in trying to break down the nursing care image. But the image goes beyond the physical manifestation of space and the use of architectural treatments such as carpeting and colors.

Although this could have implications for other architects in designing for elderly people, caution and control should be exercised in color selection. Too much color can be just as bad as too little. The designer must avoid being garish. In fact, the best way to study the colors is with the aid of Pastalan's empathic eyeglasses and the consulting services of a first rate interior designer or color specialist.

Another caution in the use of vivid colors is to beware of first impressions and unfinished rooms. When staff and residents saw the new rooms before moving into them, many reacted negatively. Some commented that there was too much color, too many combinations of wall colors with curtain colors, etc. But when rooms became furnished they looked much better than when they were empty.

Breaking down the nursing care image, however, can only happen with an accompanying change in attitude by the staff of the retirement home, it is difficult to see how the new residential image has helped. Certainly people are more comfortable than they were in their old nursing rooms, but what most residents need and want is <u>not</u>

comfort, but a return to the fuller, more independent lives which have been lost to them.

Glare Reduction

Another program objective of the architect of Westside was to reduce or eliminate problems of glare. In terms of achieving glare reduction, the use of carpeting and vinyl wall covering, together with a more even light source, is very effective. Windows must be carefully placed and screened or shaded in order to reduce glare.

Bright colors can be used effectively to cheer up residents and increase their responsiveness. It was found that pastel colors are often not perceived as colors at all by residents. Designers must be careful not to overuse bright colors, however, especially in the colder blue and green end of the spectrum.

Redundant Cueing

Another objective of the architect of Westside was to employ the concept of redundant cueing in his design. Being aware of redundant cueing in design is the first step towards achieving a sensorially rich environment. Measuring the success of the concept of redundant cueing was found to be extremely difficult. Better techniques to test the successful use of the concept are needed. Increasing sensorial experiences in a building, however, can add meaning to the day to day lives of nursing residents especially those residents who are restricted to their nursing floor most of the time. Designers should continue to explore ways of increasing the sensorial experience of their buildings.

Orientation

The architect of Westside attempted to employ in his design an application of the concept of orientation. The success of the application of the concept of orientation was also found to be difficult to measure. The central point of reference, the atrium space, does appear, however, to aid resident users in keeping a frame of reference. Focal points which were consciously employed by the designer through the use of color and the design of spaces offered another method of aiding residents in orienting themselves in physical space.

Individual floors, when of the same design in plan, should be clearly distinguishable from one another to aid orientation. This cannot be done by simply changing floor and wall colors from one floor of the building to another. Floors need to be clearly and unmistakably numbered across from elevators in order to facilitate orientation.

The configuration of hallways was another factor found to affect orientation. The loop hallway system which was used on each of the four nursing floors was found to facilitate orientation because residents walking around the loop have a tendency to stay in one direction and end up back where they started. In the case of the first floor and lower level of the building, however, dead end hallways have bends and are not organized around the loop. On both of those floors residents got lost or confused about where they were more frequently. It was found that retracing ones steps through a series of turns, even when those turns are all in the same direction, can

result in users getting lost or confused about where they are within a building.

Post Construction Evaluation

The study of Westside demonstrates that post construction evaluation can be useful in gaining an understanding of building performance. An architect can never expect to make all the right predictions about usage. A hidden assumption in the program for design, as with most programs, was that the inclusion of certain spaces insures that they will be used. But it was found that merely providing spaces does not insure that they will be used properly.

In a study of a psychiatric hospital for children, Rivlin and Wolfe (1972, p. 71) found that "the unexpected will always occur especially in a new building, and constant review of ongoing events in terms of long-range goals seems essential. More particularly, in terms of the physical form, the use of the potential of the building is limited if it and perhaps the designer are not given an opportunity to continuously participate in the program. It is regrettable that the architect's role ends just at the point when it is most crucial to have his active participation. It would seem that ongoing contact between designer and occupants is essential, to use a facility to its maximum, to meet new crises and changes, and to effect modifications where events suggest that they are needed."

There is nothing wrong with changing the usage of a space after a building is built if it works better that way. In fact, an

architect's reputation with his clients would be enhanced if he helped counsel the users of new buildings after they move in. At Westside, exercise on the nursing floors was not programmed into the original design but was later considered to be important. How can the activity be accommodated architecturally? Can a room that is not working for one activity be converted in order to be used for another activity? Could, for example, a T.V. lounge, which is being used very little for its intended purpose, be used for exercise? Why not make post construction changes such as eliminating furniture, adding pads to floors, and putting in a separate fan and temperature control for that room? If an architect is not aware of the user behavior in the building he designs, he will not know what changes are needed. Otherwise, users will, in all likelihood, go right on not using spaces for their designed purpose.

An architect is less likely to make a mistake or oversight in the design of another building if he has gone back to evaluate his previous works following their construction and occupancy. As Masterson (July 1978, p. 7) states, "The flow of information from completed projects to those still on the drawing board is the essence of post occupancy evaluation, not simply the fine-tuning of an existing environment."

Post construction evaluation results can be utilized to strengthen the basis for subsequent planning and design decisions. In order to provide a mechanism for post construction evaluations and additional services which are necessary to make a building work

successfully, a larger architectural fee might have to be charged. If clients can be convinced that post construction evaluations will lead to a more successful usage of a building they will be willing to pay for the additional time needed to perform the service.

As discussed in Chapter One, relatively few construction evaluations have been conducted, and the field is in an embryonic stage. No single model will ever be appropriate for all evaluations but at the same time the development of a model is useful to help others in setting up evaluation procedures. Some of the lessons learned in the Westside study can be applied in the development of a model. A few summarizing points regarding post construction research methodology are now in order.

The Timing of Post Construction Evaluations

The question of the timing of the research seems to be a difficult one to answer. The longitudinal type of study, like the one used at Westside, offers the researcher an opportunity to understand user reactions to a building in the context of time. The problem with conducting the research in the first month of occupancy is that the users are often grieving for the old environment which has been left behind. The grieving often results in negative feelings on the part of users because the new setting is unfamiliar and different from the old. Another initial reaction of users seem to be a reluctance to recognize environmental changes of any sort, even when these changes are definite improvements. This novelty effect must also be given a chance to wear off.

The question that arises is, why not ignore initial user reaction to a new building when the responses may be biased. The answer is that without documenting the initial reaction the researcher misses some valuable insights which could help in the programming of future projects. For example, some of the lounge areas at Westside were being used by nursing staff when they were intended for resident use. Only by observing usage during the initial period of occupancy can the intended use be insured in accordance with previous program decisions. The longer one waits to discover if programmed usage is being followed, the more it can upset the lives of the users. The longer they misuse spaces, the harder it will be to change usage.

Collecting the data after a period of time has passed following occupancy offers the advantage of allowing the users to get over the grief or adjustment period where they objected to changes of any kind. Initial negative responses often give way to habituation and acceptance. This habituation, though, can also affect the evaluation findings. In this situation the users might like the new setting simply because it is familiar, and not necessarily because it is better. Thus, the habituation period may not be an appropriate time for evaluation solely by itself. It is the opinion of the author that a one year period after occupancy is necessary to allow adequate time for adjustment.

A reasonable approach to conducting a post construction evaluation would be to make periodic checks every few months following occupancy rather than trying to do it at any one point in time following the

habituation period. This type of a longitudinal approach can be expected to yield different user reactions at different points in time and can help in the fine-tuning of a building.

Personnel for Post Construction Evaluations

The main problem with having an architect conduct a post construction evaluation of his own building is that he may tend to find the results he is looking for because he has a vested interest. An architect naturally wants to think he has done a good job and the tendency is for him to walk through his new facility and say, "Don't you like this wonderful building I created for you?" With that attitude he will obviously not get honest answers from users. Even when the questions are asked fairly, they may bring slanted answers because the respondents know they are talking to the architect. An independent evaluation team should therefore be brought in to work with the architect in conducting the evaluation. Both technological expertise with respect to architecture and social science expertise are needed on the evaluation team. When problems and shortcomings of the new building are documented by the evaluation team, solutions can then be worked out between the evaluators, the client, and the architect. The evaluators could be hired as consultants with their services and fees being included in the original architect-owner contractual agreement. Consulting evaluators could serve as outsiders in a similar way to that of professional independent real estate appraisers. A problem with this idea is that objective evaluators are not yet readily available. Educators should begin to stress the

importance of this emerging area to the field of architecture.

Evaluators need to be trained and skilled in observation and interview techniques by the social scientist members of the team. They also need to have a thorough knowledge of architectural services.

A Methodology for Post Construction Evaluation

A recent article in Research and Design entitled "Post Occupancy Evaluations" (July, 1978) reports that Robert Bechtel believes that an evaluation must be limited to the elements of greatest importance. Bechtel has developed an eleven step process model for conducting post construction evaluations. The process, which is to be carried out by a team made up of both architects and social scientists, is an ideal one which starts off with a literature search to find earlier evaluations of similar projects and ends with entering the results into what he calls an archive for post occupancy evaluation information.

Information gathering methods should be selected from a range of methods depending on their appropriateness for what is being studied. The range of methods available includes questionnaires, structural interviews, unstructured visits with users, behavioral mapping, direct and indirect observation, still photography, time-lapse photography, and motion pictures and video tape. Bechtel recommends that methods chosen be pre-tested to insure that they "neither lead or mislead users to predetermined conclusions."

The problem of relying on any one method in evaluation is that it will only tell part of the story. Surveys cannot be used to

"directly observe, measure, and analyze ongoing processes" (Marans, "Survey Resaerch", 1975, p. 124). Surveys can be supplemented by observations and photographs which yield additional evidence of use and non-use. Another major method of collecting data which can be used in evaluations is that of visiting and revisiting users over a period of weeks or months. These individual users often reveal insights which would not be gained through surveys and/or observations alone. This technique is especially beneficial in documenting changes which users make in an effort to adapt to a new building environment. The continual modification of a building by users is an important factor which influences user response. For example, a resident at Westside continually complained about being uncomfortable. Her discomfort was due to drafts which were eliminated after several periodic adjustments were made to the heating vents in her room. If she had been surveyed only once, the researcher might have concluded that the resident was dissatisfied with her new environment. The resident was found to be fully satisfied on subsequent visits after the vent problem had been corrected. Visiting and revisiting a resident several times during the year also allows for seasonal variations to be documented. In the case of the vent adjustment, drafts did not become a problem until the winter, six months after occupancy.

Meaningful evaluations then, need to be multi-method to allow for the cross checking of information. "While each method has its own problems and biases, these weaknesses can be somewhat countered by the use of multiple approaches" (Friedmann, Zimring and Zube, 1978, p. 106). Evaluations should also be conducted intermittently

over a period of time rather than at any one point in time. They must also include an investigation of all levels of users. In the case of the retirement home, the designers intentions can only be realized if the staff members and management of the building facilitate certain pre-conditions of use. For example, when residents are not allowed to come and go freely from individual floors, the use of activity spaces is greatly affected. This problem of understanding resident behavior in relation to management rules calls for better and more thorough programming on the part of the architect and the management. It also calls for a better training procedure to be established for all levels of building users. The training procedure might include periodic explanatory tours by the architect to acquaint users with their new building. The procedure might also include simplified schematic plans and a guidebook which could be prepared by the architect or consultants.

Future Roles of the Architect: Some Implications

Westside Retirement Home presented some unusual challenges to the architect. He faced a difficult task in refitting an old church to become a nursing facility. The problems involved in recycling an old building for another use was not the subject matter of this dissertation so the author has resisted criticizing the building on this basis. Instead the post construction evaluation herein attempted to focus on the building's successes and failures (adequacies or inadequacies) in terms of usage, regardless of the re-

cycling as well as the successes and failures of the various aspects of programming.

What Rivlin and Wolfe (1972, p. 34) found to be true in their study of a psychiatric hospital for children, the author found to be strikingly similar in his study at Westside Retirement Home. "Success or failure, or more realistically, a position somewhere in between, can only be evaluated from the vantage point of a set of goals. The complex question, when looking at the completed building, is whose goals - the designers, the administrators, the staff, the persons served within the building? Unhappily, these are rarely identical and less often are they explicit. Yet we are convinced that considering each set of goals and attempting to understand them from the very first moment of a building's life history can be vital to any evaluation process."

Better Programming

In addition to the post contruction services which are necessary to fine tune a building to make it work successfully, better programming services are needed at the beginning of the design process. Design programs, especially for large complex buildings such as retirement homes, should be done with all levels of users in mind. Architects need to work closely with clients, management, and professional consultants in developing comprehensive programs for design.

Programming consultants are currently available to architects and clients but few architectural firms rely on outsiders to do their programming on a regular basis. Instead, most firms traditionally do their own programming "in house." A problem with this practice

is that most architectural firms do not have highly-skilled individuals employed to do the programming. There is the problem of paying for this service. Since most clients are uneducated to the long-term value of a well-thought-out program, they are often unwilling to pay extra for it. When the client does not want to pay for the service, the architect often includes some programming services at no extra cost in order to satisfy the client. This can result in superficial and inadequate programming.

Traditional architects may at first resist the suggestions of programming and evaluation team consultants, but as successful projects which utilize these services begin to be appreciated by clients and users, the word will spread. Architects will become known for their thoroughness and clients will pass on recommendations to other potential clients.

Recommendation for Future Care Settings

The author suggests eliminating the term "nursing home" when programming and designing living settings for the elderly population. The attitude towards older people thus far in the twentieth century has hastened the growing popularity of nursing homes. The trend towards creating more and more dependent environments is a difficult one to reverse. The attraction of older people to environments which assure a life lease of full care has resulted in the development of retirement homes which include nursing care. The mixing of independent and dependent facilities does not appear to work, however.

Residents in independent settings often live in continual fear of "going down," literally and symbolically, to nursing floors. Independent residents by and large do not choose to continue friendships with their peers once they disappear into the "other world" of nursing care.

Though designing more supportive and less institutional settings will help, breaking down the image of nursing homes will require some fundamental changes. Incentives will have to be changed so that elderly people are encouraged to remain as independent as possible. Nursing care might be substituted with temporary-stay rehabilitation centers which are separated from independent living settings. Residents in the centers could be rewarded with privileges and freedoms as they progress step by step toward more independent lives. All stays could be considered temporary, without guarantees given for a passive, restful end to life.

Most older Americans can expect to live full and satisfying lives without ever ending up in nursing homes. But for five percent of the elderly population (Facts About Older Americans, 1976) the end of life represents a one-way trip to a nursing home, as only a small minority of residents are ever discharged. By reversing the trend towards creating more dependent care institutions in this country, Americans could help restore dignity and independence to the lives of millions of elderly people.

APPENDIX

NURSE OR AIDE INTERVIEW 11/76

(about Nursing Resident)

Date of Interview_____

INTRODUCTION

I'm a student at the University of Michigan who is doing a study. I've talked with the administrator and director of nursing and both have agreed to my conducting these interviews.

I am an architect and am interested in both the positive and negative effects of the new part of this building on the nursing residents. In order to study these effects, I need to ask you some questions about some of the nursing residents that you work with. First, I would like to ask you about:

Nursing Resident's I.D. Number _____

1) At present, how would you describe (name)'s vision?

Good _____
Fair _____
Poor _____
Blind ____

2) Would you say (name)'s ability to get around is limited by his (her) vision

To a great extent _____
Somewhat _____
Not at all _____

3) Would you describe (name)'s hearing as being

Good _____
Fair _____
Poor _____
Or is he (or she) deaf? _____

4) Has (name)'s hearing
   - Improved _____
   - Stayed about the same _____
   - Declined somewhat _____
   - Or gotten much worse _____

   over the last 8 or 9 months?

5) Has (name)'s vision
   - Improved _____
   - Stayed about the same _____
   - Declined somewhat _____
   - Or gotten much worse _____

   over the last 8 or 9 months?

6) How would you describe this individual's ability to speak with you? Would you say he (she):
   - Speaks freely and coherently and initiates conversations _____
   - Speaks coherently but only when spoken to _____
   - Seldom speaks coherently _____

   Or never speaks coherently _____

7) Would you describe (name) as being incontinent with either bladder or bowel movements; or does he (she) use a catheter?
   - Incontinent bladder Yes _____ No _____
   - Incontinent bowels Yes _____ No _____
   - Has a catheter inserted Yes _____ No _____
   - Uses a catheter independently Yes _____ No _____

NURSE OR AIDE INTERVIEW ABOUT NURSING RESIDENT 3

8) Does (name) every make efforts to have his (her) curtain drawn; his (her) door closed, or attempt to gain privacy in any other way?

Yes _____ No _____.

If yes, explain _____

_____

CARD 9) Is (name) usually able to

Get up in chair by self	Yes _____	No _____	only with assistance ___
Dress self	Yes _____	No _____	only with assistance ___
Feed self	Yes _____	No _____	only with assistance ___
Bathe self	Yes _____	No _____	only with assistance ___
Go to toilet by self	Yes _____	No _____	only with assistance ___

CARD 10) Is (name) fully ambulatory or does he (she) use mechanical aids and/or assistance to move around?

Fully ambulatory	_____	Walks with cane and assistance	_____
Walks with cane by self	_____	Walks with crutches and assistance	_____
Walks with crutches by self	_____	Walks with walker with assistance	_____
Walks with walker by self	_____	Moves around with wheelchair and assistance	___
Moves around with wheelchair by self	_____	Moves around with a Gerichair and assistance	_____
		Is completely bedridden	_____

11) How would you generally classify (name)'s mental status?

Alert	_____
Semi-confused	_____
Confused	_____
Totally disoriented	_____
Other term (explain)	_____

12) Has (name)'s mental status

Improved	_____
Stayed about the same	_____
Declined somewhat	_____
Or gotten much worse over the last 8 or 9 months	_____

NURSE OR AIDE INTERVIEW ABOUT NURSING RESIDENT 4

13) Does he (she) exhibit any behavior problems?
Yes _____ No _____
If yes, describe _____

14) In a word or two, how would you describe his (her) personality?

CARD 15) Now I would like to ask you a few questions about the activities (name) normally encounters in his (her) life here.
Within his (her) room, would you say that (name) is usually:
Very active _____
Somewhat active _____
Tends to be inactive _____
Is very inactive _____

CARD 16) Some of the nursing residents spend many of their daytime hours napping or sleeping while others remain awake. During a typical day, would you say that (name)
Sleeps very little (0 to 1 hour) _____
Sleeps a fair amount (1 to 3 hours) _____
Sleeps a great deal (over 3 hours) _____

17) While in his (her) room, does (name) spend most of the time in bed or in a chair? Bed _____ Chair _____

NURSE OR AIDE INTERVIEW ABOUT NURSING RESIDENT 5

CARD 18) And while in his (her) room, how does he (she) spend the time there?

	Often	Sometime	Seldom	Never
Reading	____	____	____	____
Writing	____	____	____	____
Watching T.V.	____	____	____	____
Listening to the radio	____	____	____	____
Talking or visiting	____	____	____	____
Resting	____	____	____	____
Looking out the window	____	____	____	____
Other (specify)	____	____	____	____

19) Would you say (name) spends his (her) time differently now than before the move to the new building?

Yes ____ No ____

If yes, please explain _____

_____

CARD 20) How often would you say this individual receives visits from relatives from outside the home?

At least once a week ____
About once or twice a month ____
Once every 3 or 4 months ____
Once or twice a year ____
Never ____

CARD 21) How often would you say (name) normally receives visitors other than relatives from outside the home?

At least once a week ____
About once or twice a month ____
Once every 3 or 4 months ____
Once or twice a year ____
Never ____

NURSE OR AIDE INTERVIEW ABOUT NURSING RESIDENT 6

CARD 22) Does (name) get more or fewer visitors from outside the home now than before the move to the new part of the building?

Gets more visitors now _____
Gets about the same number of visitors _____.
Gets fewer visitors now _____

CARD 23) How frequently does (name) get visits from other residents in the home?

At least once a day _____
Once or twice a week _____
Less than once a week _____

24) Has the frequency of this type of visit

Increased _____
Decreased _____
Or remained about the same _____

since moving from the old wing of the building?

CARD 25) Where does (name) usually have breakfast?

In his (her) room _____
In the dining area on this floor _____
In the first floor dining room _____
In someone else's room _____

CARD 26) Where does he (she) usually have lunch?

In his (her) room _____
In the dining area on this floor _____
In the first floor dining room _____
In someone else's room _____

CARD 27) Where does he (she) usually have dinner?

In his (her) room _____
In the dining area on this floor _____
In the first floor dining room _____
In someone else's room _____

NURSE OR AIDE INTERVIEW ABOUT NURSING RESIDENT 7

CARD 28) Do you remember where (name) usually ate meals in the old nursing wing?

In his (her) room _____
In the first floor dining room _____
In someone else's room _____

CARD 29) During a typical day how many times would you say (name) leaves the room on his (her) own without assistance?

Not at all _____
1 to 3 times per day _____
More than 3 times per day _____

CARD 30) During a typical day, how many times would you say (name) leaves the room with assistance?

Not at all _____
1 to 3 times per day _____
More than 3 times per day _____

CARD 31) Now could you tell me what these daily trips out of the room are for?

To walk around in the hallway _____ times per day
To visit a lounge area _____ times per day
To visit the meditation rooms _____ times per day
To go to a meal _____ times per day
To visit a friend's room _____ times per day
To go to another floor _____ times per day

CARD 32) In terms of these types of trips out of the room, would you say that (name) has become

More active _____
Less active _____
or is about the same _____

as before the move to the new nursing wing?

33) To your knowledge does (name) ever leave the building for any reason

Yes _____ No _____

If yes, what is the nature of these trips?

NURSE OR AIDE INTERVIEW ABOUT NURSING RESIDENT 8

34) Have you ever heard of or seen (name) getting lost anywhere in the building?

Yes _____ No _____

If yes, would you please elaborate (place and circumstances)

_____

_____

_____

35) Do you know of any time(s) (name) might have gotten lost in the old nursing wing of the building?

Yes _____ No _____

If yes, would you please elaborate (place and circumstances)

_____

_____

_____

EMPLOYEE INTERVIEW 11/76

(For Nurses, Aides, & Housekeeping Staff) Date of Interview_____

INTRODUCTION

I'm a student at the University of Michigan who is doing a study, I've already talked with the administrator, and he has agreed to my conducting these interviews.

I am an architect and am interested in getting your reactions, both positive and negative, to the new nursing wing of the building. I'd like to begin by asking you a few questions about some of the new ideas the architect used in designing.

1. One of the primary goals of the architect was to give the building a warm and comfortable, home-like feeling. Do you think the new part of the building is very home-like, somewhat home-like, not very home-like, or not at all home-like?

Very home-like _____
Somewhat home-like _____
Not very home-like _____
Not at all home-like _____

2) The architect thought that the use of carpeting offers many advantages. Some of the people who now use the building, however, have told me some of the disadvantages of the carpeting. Considering all the advantages and disadvantages of carpeting, would you say that overall it is better to have carpeting, or not to have carpeting?

Better to have carpeting _____
Better not to have carpeting _____

3) Some people have suggested that the carpeting is nice to have in some areas, but not in other areas of the building. I'm interested in knowing which areas you think should be carpeted and which areas you think should not be carpeted.

Do you think there should be carpeting in the hallways? _____

EMPLOYEE INTERVIEW PAGE 2

Do you think there should be carpeting in the dining areas? _____
The TV lounges _____
all the resident rooms _____
Only some of the rooms _____

4) (If any of the above were no)
Why do you favor not having carpeting in those areas?

5) What do you think of the use of bright colors in the new part of the building?

6) Many activity spaces have been included in the building. Do you think these activity spaces are in the right locations? For example, should there be more activity spaces on the individual floors and fewer in the lower level, main floor, and roof garden?

7) Do you like the way the nursing floors are designed with connecting hallways or did you prefer the old wing which had dead end hallways?

EMPLOYEE INTERVIEW PAGE 3

8) From your viewpoint (as a nurse, nurses aide, or member of the housekeeping staff, what are the things you especially dislike about the new building?

_____

_____

_____

9) What would you say are the things you especially like about the new building?

_____

_____

_____

10) Have you ever worked at another nursing home?

Yes _____ No _____

11) In terms of the architecture, how do you like this nursing home compared to other nursing homes?

_____

_____

_____

12) Is there anything else about the new building that you would like to tell me about?

_____

_____

_____

13) Do you know of any cases where nursing residents have gotten lost or confused about where they were in the new building?

During the week following the opening of the new nursing floor?

Yes _____ No _____ (If yes, explain) _____

_____

How about during the month following the opening of the new nursing floor?

Yes _____ No _____ (If yes, explain) _____

_____

How about within the last month? Yes _____ No _____ (if yes, explain)

_____

EMPLOYEE INTERVIEW PAGE 4

14) Do you find it easy when coming out of the elevator to know which floor you're on?

Yes _____ No _____

15) How do you recognize one floor from the other?

_____

16) Do you think nursing residents are less likely, just as likely or more likely to get confused about where they are in the new wing than in the old wing of the building?

Less likely to get lost _____

Just as likely to get lost _____

More likely to get lost _____

(If answered less likely or more likely, why is that true?)

_____

17) How about employees? Are they less likely, just as likely or more likely to get confused about where they are in the new wing than in the old wing of the building?

Less likely to get lost _____

Just as likely to get lost _____

More likely to get lost _____

(If answered less likely or more likely, why is that true?)

_____

18) Are there any types of spaces that you feel should be in the building, but aren't?

_____

_____

19) Do you think the staff in this building needed any training on how to use the new facilities when they first moved in?

Yes _____ No _____

(If yes, please explain) _____

_____

EMPLOYEE INTERVIEW PAGE 5

20) What do you think the corner privacy lounge is supposed to be used for?

_____

_____

_____

21) How many months or years have you been working here?

_____ Years _____ Months

22) Now I would like for you to walk around this floor with me so that I can get your reactions to a few things. It should just take a couple of minutes, OK?

(While on the walk try to get reactions to the following things)

Nursing Station _____

_____

_____

Dining Lounge area _____

_____

_____

Elevator _____

_____

Corner Lounges _____

_____

_____

Bath _____

_____

_____

EMPLOYEE INTERVIEW PAGE 6

Back hall closets (north) _____

_____

Back hall closets (South) _____

_____

Resident rooms (enough space?) _____

(enough storage) _____

(toilet room layout good) _____

(other, explain) _____

(other, explain) _____

(other, explain) _____

Front hall closets (north) _____

_____

Front hall closets (south) _____

_____

Privacy Lounge _____

_____

Shower _____

_____

TV Lounge _____

_____

Other (explain) _____

_____

Other (explain _____

_____

HEALTH STATUS FORM 11/76 Date form Filled out_____

(From Admission Form and Nurses' chart)

Resident's I.D.# _____

Date of Admission to Nursing _____

List moves within the home -

Apartment to nursing _____ Date _____

Apartment to 5th floor to nursing _____ Date _____

Other moves _____ Dates _____

Sex: M F

Date of Birth: _____

Marital Status at Admission: S M W D

Marital Status at Present: S M W D

If Widowed, year of Spouse's Death: _____

Diagnoses of Physical Health at Admission:

_____

_____

_____

At Admission - Vision: G F P Blind _____

Hearing: G F P Deaf _____

Speech: Speaks freely (initiates conversation) _____

Speaks only when spoken to _____

Seldom speaks coherently _____

Never speaks _____

Other, explain _____

Incontinent/bladder _____ Comment _____

Incontinent/bowels _____ Comment _____

Gets up in chair by self	Yes ___	No ___	Only with assistance _____
Dresses self	Yes ___	No ___	Only with assistance _____
Feeds self	Yes ___	No ___	Only with assistance _____
Bathes self	Yes ___	No ___	Only with assistance _____
Goes to toilet by self	Yes ___	No ___	Only with assistance _____

HEALTH STATUS FORM PAGE 2

Fully ambulatory _____
With cane by self _____
With crutches by self _____
With walker by self _____
With wheelchair by self _____
With cane and assistance _____
With crutches and assistance _____
With walker and assistance _____
With wheelchair and assistance _____
With gerichair and assistance _____
Completely bedridden _____

Alert _____
Semi-confused _____
Confused _____
Totally disoriented _____
Other term (explain) _____

Behavior problems mentioned: _____
_____
_____

Description of personality mentioned: _____
_____
_____

Other comments from records: _____
_____
_____

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