Orienting the Architect to Nursing Home Design

S. D. DOFF, M.D., M.P.H., E. RUSSELL JACKSON, M.A., JAMES T. LENDRUM, M.S. Arch., and WILLIAM C. GROBE, M.A. Arch.

NURSING HOMES have a relatively short history as specialized medical facilities. Like hospitals, they appear to have developed haphazardly in the beginning. More recently, however, they have undergone significant modifications as a consequence of awakened public and professional interest in seeing that the aged receive proper care.

The Social Security Act of 1935, which provided for modest monthly payments to employed persons and their dependents upon the employee's retirement and for old age assistance to persons over 65 in need, improved the economic lot of the aged in the United States and resulted in an increased demand for boarding homes for the elderly. As the occupants of these homes became older, more feeble, and oftentimes ill, a demand grew for facilities offering professional nursing service.

The 1950 amendments to the Social Security Act providing old age assistance benefits to residents of tax-supported nursing homes and requiring the establishment of a State licensing authority, combined with the availability of investment capital for construction, stimulated creation of new facilities or rehabilitation of existing buildings for nursing homes. Such "new" homes, however, were often substandard from the outset or came to be considered so as the States learned more about the functions of nursing homes and began to apply rules and regulations to assure an acceptable standard of care.

Dr. Doff, currently director of the department of preventive medicine and outpatient services, Duval Medical Center, Jacksonville, Fla., at the time of the projects described was assistant State health officer of Florida and director of the bureau of special health services, State Board of Health, Jacksonville; Mr. Jackson is a health program analyst in that bureau's division of hospitals and nursing homes. Mr. Lendrum heads the department of architecture, College of Architecture and Fine Arts, University of Florida, Gainsville, and Mr. Grobe is an assistant professor in the department.

Need for Nursing Home Standards

Florida's problems in providing for the aged do not differ in type from those in other States, but they differ in extent. There is a steady influx of older persons into the State. In 1960 Florida held fourth place among the States in population 65 years of age and over; 11.2 percent of its population was in this category. In 1970, according to Bureau of Census projections, Florida will rank second; 12.8 percent (963,000 people) of the population will be 65 and over.

The demand for beds in nursing homes and homes for the aged caused the establishment of large numbers of unsuitable facilities operated by unqualified persons. The danger to the health and safety of aged residents came to public notice. The result was the adoption of a nursing home licensure law by the Florida State Legislature, effective July 1, 1953, in which the Florida State Board of Health was designated as the administrative authority.

To encourage construction of acceptable facilities to meet the increasing needs of the aged, the board of health in the next 10 years (1953–62) intensified educational efforts among nursing home owners, operators, and professional staffs. Despite organization of frequent meetings and

courses for such persons, however, the licensing agency continued to receive drawings for new facilities all too often incorporating poor concepts of design. It was apparently not generally accepted that nursing homes require special design and that many buildings, such as hotels, motels, family dwellings, and stores, may be basically unsuitable for conversion.

Need of Architects for Orientation

In the early days of Florida's nursing home licensure program, sponsors, contractors, carpenters, and draftsmen frequently prepared plans for proposed new nursing homes and for additions or alterations to existing structures. The rules for licensure were revised in 1955 to require registered architects or engineers to prepare all plans for new construction, remodeling, alterations, renovations, or additions submitted for review. Nevertheless, plans incorporating misconceptions into design continued to be submitted. Lack of understanding by many architects and engineers of the functions of nursing homes was obviously adversely affecting the planning and construction of these facilities.

In 1962, staff of the Florida State Board of Health reviewed the situation described with representatives of the department of architecture of the College of Architecture and Fine Arts, University of Florida, the Florida Association of Architects of the American Institute of Architects, and the Florida Engineering Society. The conferees agreed that contributions to the evolution of minimal design standards for nursing homes had been made almost entirely by individual architects and engineers rather than by their professional organizations. Architects and engineers employed in Federal programs were responsible for most of the contributions. State licensing agencies also had given individual architects and engineers opportunities to participate in developing standards through the exchange of ideas during conferences in which the individual architect or engineer presented proposals for nursing home construction.

The reviewing group concluded that, as a long-range objective, prevalent misconceptions of nursing home functions and the incorporation into design of defects arising from these misconceptions could be overcome by including principles of nursing home design in the curriculums of engineering and architectural schools. Organization of specialized courses and activities to establish a sound academic foundation for the future responsibility of architects and engineers in nursing home design was also recommended.

It appeared to the conferees that any program for correction of the deficiencies in professional preparation should also seek to meet the immediate needs of practicing architects and engineers for instruction about the persons using nursing home services, the staff required, and the services that must be provided.

Program for Practicing Architects

To inform the practicing architect and engineer, the First Seminar for Architects and Engineers on Nursing Home and Hospital Functional Design was held. The Florida State Board of Health sponsored the meeting in cooperation with the Florida Association of Architects and the Florida Engineering Society. Fifty-six architects and engineers attended. Representatives of the Florida Nursing Home Association, the Florida Hospital Association, and the Public Health Service participated as observers.

The Florida Association of Architects and the Florida Engineering Society were invited to share in planning and presenting conferences on fire protection. Associated in this activity were the State's Fire Marshal's Office, Florida Fire Chiefs Association, Florida State Firemen's Association, Florida Nursing Home Association, Florida Hospital Association, State Civil Defense Agency, and the Association of County Health Officers. In these conferences on fire protection and others in which general design and construction were major topics, practicing architects and engineers were invited to participate and speak.

Student Traineeship

In 1962 a graduate student of the department of architecture of the University of Florida was assigned for 2 months as a trainee to the division of hospitals and nursing homes, bureau of special health services, Florida State Board of

Health. The student selected, Grobe (author), was a member of the American Institute of Architects and had been a practicing architect. The traineeship program provided for orientation at the Florida State Board of Health, in county health departments, and in nursing homes; then, an evaluation of the trainee's field experience; and finally, an assignment to design a nursing home on a limited budget.

Orientation at the State board of health. The directors and staff of the bureau of special health services, the division of hospitals and nursing homes, and of the division of chronic diseases, Florida State Board of Health, shared with the trainee their experiences in administration of the nursing home program and in the field of chronic diseases. He was supplied a bibliography and publications for reference. He worked with the nurse consultant, nutrition consultant, environmental health specialist, and hospital consultants in reviewing plans submitted to the board of health.

Orientation in county health department. To learn the problems of local health departments in carrying out their responsibilities under the nursing home licensing program, the trainee consulted with staffs of four county health departments.

Orientation in nursing homes. Eight days of the 2-month program were devoted to orientation in nursing homes. The trainee visited approximately 20 of these, observing, asking questions, and collecting pertinent data for study and analysis before attempting to solve his assigned design problem. He was able to note design features of the homes, compare these with acceptable criteria, and ascertain architectural misconceptions incorporated into the constructed facilities. Problems of administration and service and problems of construction were given equal emphasis.

Evaluation of field experience. Following these orientation sessions, the trainee conferred informally with members of the staff of the division of hospitals and nursing homes. The purpose of these conferences was to evaluate the depth and breadth of the trainee's experiences and, where necessary, to fill in gaps. Attention was given to the amount of reading he had done and the references used. About 7 working days were spent in these professional exchanges, which proved to be one of the most profitable elements of the traineeship program.

Preliminary design preparations. As scheduled, the trainee undertook to develop a design for a 30-bed nursing home for a small Florida community. The prospectus was deliberately conceived to represent a type of proposal commonly submitted by inexperienced sponsors and consulting architects; namely, a design which, although meeting minimum standards, would result in the construction of a facility seriously limited from the standpoint of the patients' health, safety, and comfort and which would result in a difficult operation for the administrator and his staff in terms of service to patients. The simplest method to stimulate the planning of such a hypothetical facility appeared to be to provide an unrealistically low budget in the prospectus, $3,000 per bed (1962 cost), excluding furnishings, equipment, land cost, and fees.

As expected, because of the low budget, difficulties were experienced immediately in translating requirements into detailed design. The trainee found the budget so restrictive as to be almost incompatible even with the functional design demands of a minimum-care facility. His repeated efforts to rework schemes to meet specifications in one given area always resulted in considerable sacrifice in another. For example, while the designer recognized the implications of what seemed from the start an unreasonable cost limitation, he endeavored to conceive an adequate design solution by organizing spaces into a low-perimeter, rectangular volume. It became apparent to him, however, that without air conditioning, which the budget would not permit, such schemes were not desirable in Florida because they would not provide cross-ventilation.

The trainee reluctantly concluded that to maintain the budget and to take account of the climate, the building's size would have to be reduced to a minimum.

The designer frequently expressed his belief that the approach of starting with too low a budgetary limitation was wrong. Because, however, architects meet such situations in practice, the trainee conscientiously continued the effort, even though he considered his results unsuccessful. Attempts to economize by reducing the dimensions of the building space resulted in

plans largely undesirable for proper functioning of the handicapped patient and the nursing home staff.

Final designs and presentation. Preparation and presentation of the final design required the final 2 weeks of the traineeship period. In consultation with regular staff, the trainee tried to evolve a design that would reflect the functions, services, accommodations, furnishings, and equipment required for appropriate care of chronically ill, aged patients. The trainee gave an oral detailed account of his experience, the steps he had taken, reasons for altering his course in specific instances, the emphasis he had given to the functional aspects of his design, and particular difficulties encountered. For example, he had to establish priorities for space allocations related to (*a*) management and the public, (*b*) individual living for patients and residents, (*c*) group living for patients and residents, (*d*) nursing and supporting services, (*e*) staff facilities, (*f*) general services and storage, and (*g*) structural and mechanical flexibility to permit modifications for future expansion at a minimum cost.

The trainee recognized that he had been deliberately placed in a position to design, as an architectural innovation, a building type meeting modern nursing-home-care requirements, as opposed to a facility within prevailing structural concepts simply meeting various needs of enfeebled, ill persons. His final approach centered, insofar as possible, on achievement of a nursing home design based on total patient needs and developed so as to preserve individual dignity and provide for the social and spiritual needs of patients, as well as for their physical requirements.

The trainee's experience demonstrated that while the Florida State Board of Health's standards were not excessively high, construction of a 30-bed structure for use as a nursing home within the scope of the designated costs would not be advisable.

To round out the trainee's experience, a second problem in nursing home design for the same Florida community was assigned. The capacity of the nursing home was determined on the basis of prevailing recommended bed-population ratios. A 42-bed structure was planned at a cost in 1962 of $4,500 per bed. This assignment permitted more flexibility in design than the trainee's previous one and resulted in a plan in which the service units clearly reflected a harmonious union between design and function.

Undergraduate Program

The undergraduate program, for which planning began in 1962, was introduced during the 1963 spring trimester of the University of Florida's department of architecture as a fourth-year, 7-week design course on nursing homes and other medical buildings. The objective was to determine whether a more comprehensive formal teaching program would be justified. An intermediate architectural design section and the advanced architectural design section were combined for a nursing home study because of a small enrollment of five students.

The design problem of the undergraduate program was presented under the title, "A Religious Center for Total Concern." Each student was directed to assume the role of a practicing architect retained by a church organization. His simulated commission was to study the feasibility of planning a religious center, including facilities for care of the aged, in which the focus of design was the nursing home. The challenge was in the assigned competitive design problem, which each student had to organize in three phases: (*a*) master planning, (*b*) research, and (*c*) detailed planning. Master planning comprised a 2-week period encompassing site analysis, planning of the building group, and a critique of the master plan by the instructor.

One week of the 7-week program was devoted to nursing home research and orientation. Students were assigned reading with the request that they be prepared to discuss the content in an orientation seminar. The Florida State Board of Health provided the reading materials assigned. The students were asked to prepare a detailed list of the functions and activities of a nursing home for use in seminar discussions. The main purpose of the seminar was to acquaint the students with the characteristics of nursing home patients, with the services required to meet their needs, and with the components of a physical facility that would facilitate patient care and promote maintenance of

the patients' maximum health potential. Leading the conference were Jackson (author) and two other members of the licensing agency, representing professional nursing, administration of medical care facilities, and the specialty of environmental health. In the field of architecture, Grobe and four other faculty members of the department of architecture provided the leadership.

In the final phase of orientation, under the auspices of the Florida State Board of Health the students visited three different types of nursing homes in Miami, guided by representatives of the county health department. The students were supplied a descriptive sheet on each facility visited and a list of Dade County requirements for nursing homes. One facility visited had been constructed specifically as a church-related nursing home to serve the surrounding community. At one home the administrator had invited his architect to be present to answer students' questions on design. The tour of each establishment lasted 1 to 1½ hours. Students had free access to all areas of the home and received full answers to most of their questions.

The field experience concluded with a class discussion about the visit, at which students commented:

"The field experience helped us see the problem better. We felt we knew what we were doing before the tour, but now we appreciate the practical implications of the design problem we have at hand."

"The visits provided a better understanding of the real client in nursing home design—the patient."

"From seeing nursing homes in operation I conclude that the architect has a responsibility similar to a medical doctor in assuring the physical means for appropriate patient care."

"Part of the problem appears to be the lack of a program of planned activities for patients in nursing homes. What can an architect do to help solve the problem?"

"I did not see anything that appeared to be built for people."

After this field experience a 4-week period was devoted to detailed planning of a 44-bed, church-supported nursing home. This phase was carried out in two stages: (*a*) development of preliminary plans during 2 weeks, and (*b*) refinement of these plans for final presentation during another 2 weeks. After the first 2 weeks an evaluation seminar was held at the department of architecture, University of Florida. The discussion leaders who attended the orientation seminar were present. Each student was given 20 to 30 minutes to explain his design and the concepts he had incorporated into execution of its functional details. At the evaluation seminar, public health and faculty participants provided a professional critique of each student's work. In the final 2 weeks of the detailed planning period, individual conferences were held with each student.

The nursing home design course concluded with a 2-week evaluation session. Each student had to submit a site plan of his entire master plan and comprehensive drawings of the nursing home he designed. The public health staff and faculty members again comprised the evaluating jury.

Plans were made to assign to the 1965–66 fourth-year architectural students at the University of Florida the design of a teaching and research nursing home for the university's medical center.

Discussion

The lack of knowledge about nursing homes that is reflected in many designs of these facilities demand the consideration of State nursing home licensure agencies, professional organizations charged with the continuing education of their architect and engineer members, and of architectural and engineering schools responsible for training and educating the persons who plan to practice in these fields.

The architectural educators who participated in the efforts described in this paper concluded that the experience in nursing home design provided the architectural students was of real benefit to them and that, in the future, design projects concerned with a variety of medical building types would be offered in university architectural courses.

One student who completed the undegraduate course on nursing homes and other medical buildings subsequently designed a small psychiatric center as his final school project. Another student associated with Grobe designed a university infirmary. Both of these projects

were byproducts of the initial experience Not enough time has lapsed and not enough members of the target group have been reached for evaluation of the educational efforts described. Moreover, the approach was an initial step which requires refinement. We believe, however, that there is general agreement on the importance of orienting practicing architects and engineers and students of architecture and engineering to the functions of the modern nursing home.

The initial design developed by the graduate student trainee adhered to minimum regulatory standards but at some sacifice of flexibility in the application of functional design principles. The trainee created innovations in order to incorporate dual-function areas into his nursing home design, but space limitations prevented him from providing sufficient room for other desirable functions, for example, physical and occupational therapy. Also, the very low cost allowed for the facility inhibited the trainee. Even if a small facility might be feasibly constructed in Florida within the given budgetary limitation, the cost of a similar home would vary from section to section of the country.

Students in the department of architecture at the University of Florida accepted the undergraduate instruction on nursing homes with interest; the faculty considered it a logical approach to meeting the needs of architects for information about an important health facility.

Summary

Despite prolonged educational efforts of the division of hospitals and nursing homes of the Florida State Board of Health and a licensure requirement that nursing home plans be prepared by registered architects or engineers, the board continued to receive plans revealing misconceptions about nursing homes and their functions.

Therefore, with the help of the Florida Nursing Home Association, the State's department of welfare and board of nursing, and the University of Florida, the Florida State Board of Health initiated several planned education projects on nursing homes. In one project, meetings for practicing architects and engineers were organized. In another, a graduate student of the university's department of architecture was assigned for 2 months of 1962 as a trainee in the State's division of hospitals and nursing homes. After orientation, he was assigned two simulated problems of nursing home design. On a trial basis during the 1963 spring trimester, five undergraduates were provided background for such designing in course curriculums of the university's department of architecture.

It was planned in 1965–66 to assign to 22 fourth-year architectural students the design of a teaching and research nursing home for the university's medical center.

Counseling for Medical Rejectees

Contracts, totaling $4,048,929, have been negotiated with 48 States, Puerto Rico, and the District of Columbia to establish and operate counseling and referral services for Armed Forces medical rejectees.

Administered by the Public Health Service's Division of Community Health Services, the program is in conjunction with the Vocational Rehabilitation Administration, Department of Health, Education, and Welfare.

A State agency, designated by the Governor, screens and evaluates Armed Forces Examination Station medical records of men rejected for military service for medical reasons. The men are counseled concerning their health needs and referred to health and rehabilitation resources for services. Services have already been provided to approximately 5,000 medical rejectees.