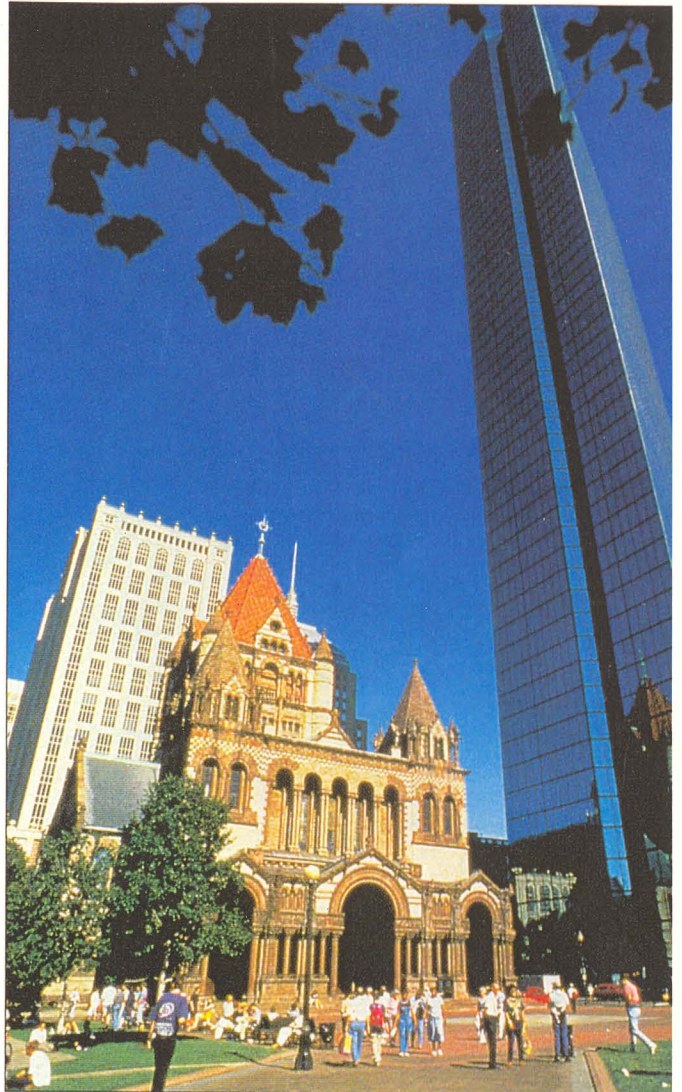


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Design for Behavior

Planning for Alzheimer's Residents

[by Brian K. Tracy]

The shape and finish of a space will influence the behavior of people in it. Light renders a space to make its perception possible. So how do we design for a person whose cognitive abilities are being progressively diminished by disease?

When the disease will eventually cause a person to become paranoid and look to isolate himself or herself, how can designers create environments that encourage residents to leave their rooms, prolonging independence and helping caregivers to maintain contact with residents?

The goal of architects working with people who care for Alzheimer's patients should be to create environments that respond to the residents' unique needs and to develop designs that facilitate efficient staff response to patients.

To create the appropriate environment for Alzheimer's patients, designers must first understand the disease and its effects. The symptoms of Alzheimer's Disease (AD) most often appear after age 60. By 2050 the number of Americans aged 65 and older is expected to be 70 million, twice the current number. The U.S. Census Bureau estimates the number of Americans over 85 will reach 19 million during the same period. In normal aging, most cells in the brain that are important to learning do not die. In contrast, Alzheimer's causes many nerve cells in the brain to stop functioning, resulting in the degeneration of the brain itself. Initially, Alzheimer's destroys areas of the brain that control short-term memory. The effect of this is that a person loses his or her ability to perform simple tasks such as dressing and eating.

Later, Alzheimer's attacks areas of the brain responsible for language and reasoning, diminishing a person's ability to make judgments. As the disease progresses, a person may become agitated,

suffer a loss of equilibrium and become prone to wandering and emotional outbursts. Eventually, sufferers of Alzheimer's will be bedridden according to "Progress Report on Alzheimer's Disease 2000" a report by the National Institutes of Health (NIH), National Institute on Aging.

Architects must work with caregivers to develop designs that respond to these symptoms, creating buildings that are easy for residents to understand so that they are comfortable leaving their rooms.

Design Response

Designs for Alzheimer's patients must consider the resident and the caregiver. Neurodegenerative disease makes the patient population especially challenging to provide for, and most patients have other illnesses typical to an older population. Wandering and behavioral problems brought on by Alzheimer's often are combined with heart disease and other age-related illnesses.

Facilities must be designed to minimize travel distances for staff and maximize visibility. Staff lounges, med rooms and other facilities should be located convenient to resident activity areas so that staff can maintain contact with residents. The building environment should be therapeutic, providing spaces of a manageable scale. It's important to include staff in the planning process to ensure their commitment to the job and create an effective care environment.

While developing plans for a new facility at Deer Meadows, a nonprofit facility that provides independent and assisted living beds in Northeast Philadelphia, we first considered the site. There will be two residence buildings and a third building with activity areas, library, beautician, dining, medical functions and administrative uses. The administrative and community areas are separated from the

resident housing to create a sense of a broader environment, where residents have destinations outside of their units.

Buildings are positioned to take advantage of views of the surrounding landscape and to bring in sunlight, while avoiding views of parking areas where residents might see loved ones departing. Providing vistas from activity areas and corridors to courtyards creates an opportunity for residents to orient themselves and uses sunlight to draw patients from their rooms. The residents' rooms are grouped into communities with lounges and kitchens that are of a comfortable scale, to avoid overwhelming residents with expansive spaces. The lounges face a courtyard where residents may go for exercise and fresh air. The idea is to draw residents out in smaller steps, from room to hall to lounge to courtyard, so that the sequence is subtle.

A rotunda that is easily seen from the lounges and courtyard accentuates the community activity room. The prominence of the rotunda helps to make this important space familiar to residents who are having difficulty remembering. Landmarks such as this are used throughout the design. A large gazebo is planned at the center of the courtyard, connected to the resident wings by a breezeway. This space allows residents to relax in a room that connects them to the outdoors on rainy days. In our project, we grouped nurses' stations, stairs and elevators to create nodes of activity that are readily visible as residents leave their rooms.

Residents' lounges are close by to help staff maintain contact with patients. The corridors from residents' wings are angled from the nurses' stations to improve visual control for staff and avoid corridors that create tunnel vision.

Lighting is perhaps the most important element of the interior design. Individuals

with cognitive disabilities react more profoundly to their surroundings than healthy individuals, according to the NIH report. Glare can cause debilitating agitation in sufferers of Alzheimer's and shadows also can be perceived as holes in the floor. These misperceptions can prevent residents from leaving their rooms. Light distribution in facilities for Alzheimer's residents should be even, using task lighting as required. In addition, to compensate for normal aging of the eye, light levels in buildings for older populations should generally be brighter than in similar types of spaces for a younger population, according to "Designing for Alzheimer's Disease," a book by Elizabeth C. Brawley.

As designs move into a more detailed stage, other accommodations can be made to help patients and staff. For example, using finishes and materials to distinguish closet doors from room doors, staff areas from patient areas, etc. This will help residents stay in the appropriate areas, minimizing staff time directing patients. Stairs and railings can be designed to respond to the disease's effect on balance and equilibrium, and places for residents to lose their belongings will be minimized.

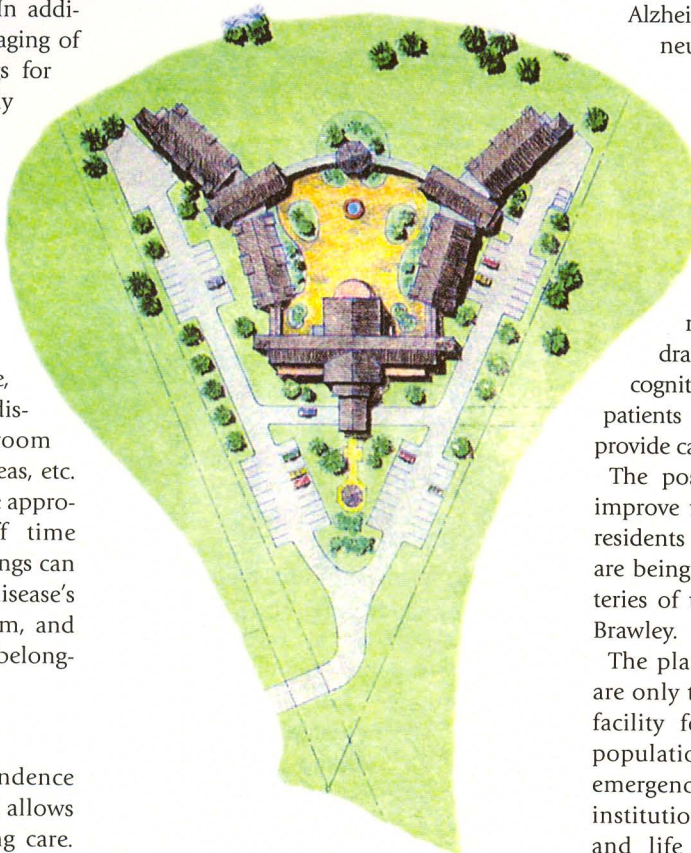
Effective Care-Giving

Prolonging residents' independence improves their quality of life and allows staff to concentrate on providing care. A population that is able-bodied but not capable of caring for itself, creates special staffing needs. Administrators assembling a staff for such a facility "should expect to have less care staff and more restorative nursing, helping residents recall how to perform their basic daily activities," says Curtina Heckman, R.N., the COO at Deer Meadows. "Many residents can continue doing things like brushing their teeth and dressing themselves for much longer if prompted on occasion," she says. The independence residents gain by taking care of themselves improves their self-esteem.

Because family involvement is important for dialogue and patient comfort,

Deer Meadows will have intimate scale spaces where patients and family members can talk discreetly, away from the resident's room. Creating spaces that appeal to family members may encourage their return.

Administrators, nurses and physicians agree that family involvement is a very important element in caring for



Deer Meadows has planned a large gazebo at the center of the courtyard, which is connected to the resident wings by a breezeway.

Alzheimer's residents. The building environment must be comfortable for visitors, comforting to residents and supportive of staff.

Providing the specialized facilities, staffing and programs for Alzheimer's residents can be challenging. Directors of these facilities must consider the cost of delivering care. It can cost up to \$47,000 per year to care for a patient with advanced Alzheimer's, according to Brawley.

"We are trying to meet the challenge of making the financials work while maintaining excellent care," says David A. Smiley, executive director at Deer Meadows. "The up-front costs of providing an appropriately scaled environment with multiple points of service (dining, activities, etc.) can be higher than in a traditional nursing care facility."

Alzheimer's Disease is a progressive, neurodegenerative disease that causes memory loss, disorientation, behavioral problems and eventual incapacitation, according to the Iowa Geriatric Center's "Facts About Alzheimer's Disease." Millions of Americans are affected by the illness and the numbers are expected to increase dramatically. The age and reduced cognitive abilities of most Alzheimer's patients make it a unique challenge to provide care for these residents.

The possibilities for using design to improve the way of life for Alzheimer's residents and help staff work efficiently are being better understood as the mysteries of the disease are unraveled, says Brawley.

The planning issues touched on here are only the beginning when creating a facility for this uniquely demanding population. Resident safety, security, emergency response plans typical to institutional settings, building codes and life safety are other issues the architect must consider during the design process.

When planning facilities for Alzheimer's patients, architects should learn about the disease, understand the resident's needs and include caregivers in the planning. The ultimate goal should be to design buildings that help residents maintain their independence and make it possible for staff to provide effective care. ■

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