

Insights

FACILITY

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Elder-friendly, Earth-friendly

BY ROBERT C. PFAUTH, AIA

In recent years, a movement known as sustainable design or green building has been gaining momentum in the design and construction field. Not to be confused with Dr. Bill Thomas' Green House Project[®], the green building approach advocates design strategies and construction technologies that strive to minimize the adverse impacts on our *natural* environment attributable to the acts of creating and inhabiting our *built* environment. Though this approach is not new, it is steadily becoming more prevalent in the architectural profession.

Sustainable design can be ideally suited for environments in which housing and care for frail seniors is provided. While the advantages of green buildings extend to all users and inhabitants, they may be especially beneficial to elders and long-term care providers. These benefits fall into four principle categories: air and climate, light and views, community and nature, and cost control.

AIR AND CLIMATE

With the heightened sensitivity to temperature extremes, seniors must be able to control their indoor climate. At certain times of the year, this may actually call for heating one side of a building and cooling the other, depending on sun exposure. Such variable requirements dictate that a facility's heating, ventilating and air conditioning system provide maximum

flexibility and be equipped with sophisticated yet user-friendly thermostatic controls. Natural ventilation should be available to residents, and heat recovery devices that extract energy from exhaust air prior to discharging it can further enhance system performance.

Another critical area is that of indoor air quality. More than simply a matter of controlling odors, this requires careful attention to the selection of a wide range of products, both before and after a building is constructed or remodeled. Concern for the increased sensitivity of elders to environmental and airborne toxins means that products must be specified which minimize emissions of volatile organic compounds (VOCs) and other contaminants. When selecting interior finish materials, consideration should be given to products incorporating recycled content and/or rapidly renewable materials. Likewise, the materials and methods used to maintain a facility must be selected and applied using the same strict criteria. Even the most healthy indoor environment will be compromised by the indiscriminate use of noxious chemical cleaners or other pollutants.

LIGHT AND VIEWS

Vision impairments such as glaucoma, cataracts, and macular degeneration are often common among seniors, thereby complicating the task of creating visually comfortable eldercare environments. Generally, indoor illumination levels should parallel those of the outdoors. This can help mitigate the phenomenon of "sundowning" among those suffering from Alzheimer's disease and related dementias. Diffuse daylighting can help lower

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HarleyEllis Corporation

26913 Northwestern Hwy.
Suite 200
Southfield, Michigan
48034-3476 | USA
Contact: Judy Little

248.262.1500 (telephone)
248.262.1515 (facsimile)
www.harleyellis.com

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utility costs while proving more therapeutic for residents. As with HVAC systems, the greater the level of flexibility provided by the controls, the more likely it is that appropriate light levels can be achieved. It should be noted that even the most “state-of-the-art” switching and dimming systems are of little avail if staff members are not trained in their use. Greater energy efficiency can be achieved through the use of fluorescent light fixtures throughout, many of which are now dimmable.

In addition to admitting natural light, windows are critical for providing views of the surroundings, which serve to reinforce orientation in space and time for frail elders who may seldom have the opportunity to venture outdoors. Consider the use of exterior sun-control devices such as overhangs and trellises to minimize solar heat gain during summer months, thereby reducing cooling demand. The selective use of fenestration can also be used effectively to redirect dementia patients away from avenues of elopement such as exit doors and toward safe areas such as secure interior courtyards.

COMMUNITY AND NATURE

The threat of isolation among seniors, with the attendant danger of depression, is as great in a congregate setting as at home. It is incumbent upon providers to offer ample opportunity and indeed inducement to foster socialization, a sense of community, and a connection with the natural world. The built environment can facilitate these goals by means of design strategies that also promote sustainability.

This process begins with site selection and preliminary planning. When developing rural or suburban greenfield sites, try to protect and preserve as many existing natural features as possible, including mature trees and wetland areas. The use of native plant materials in landscaping can conserve water and reduce the burden on maintenance staff, while helping ensure continued enjoyment for residents.

On the other hand, redevelopment of urban infill sites and adaptive re-use of existing structures are both ways to capitalize on established physical and social infrastructures. Nearby access to existing neighborhood amenities such as shops, parks, libraries, and cafés may encourage elders who are

ambulatory to be less sedentary. Whether out in the country or in the inner city, environmentally-friendly practices are available to help ensure that your residents stay connected.

COST CONTROL

The therapeutic and operational advantages of “green” senior living and care settings are abundantly clear. But how much of a premium does one pay to reap these benefits? The impact of sustainable strategies on the first cost of a facility can vary widely depending on how aggressive an approach is taken. Generally, it has been observed that an increase in initial development costs of from three to five percent is to be expected. This can be addressed in part by carefully considering certain choices early on in the process.

The most notable economies associated with building green are to be realized in the area of operations. The skillful application of sustainable design strategies and construction techniques can result in significant life-cycle cost savings which can more than offset any additional first cost.

Just as the philosophy underlying the burgeoning pioneer network is rooted in a recognition of the need for “deep system change,” so, too, is the fundamental impetus for “green building” in architecture. The application of sustainable design principles is especially appropriate in residential care settings for the elderly in that a healthy physical environment can promote healthy aging and effectively serve as a partner in care.

ABOUT THE AUTHOR

Rob Pfauth is a registered architect and Associate-in-Charge of the Senior Living group within the Life Enhancement Studio of HarleyEllis. He received his Master of Architecture degree from the University of California at Los Angeles, and is registered in several states in addition to being certified by the National Council of Architectural Registration Boards. His concentration has been in the design of senior care and living environments for well over a decade. He can be contacted at rcpfauth@harleyellis.com.