Innovative Lighting Solutions for Senior Care Facilities

A study from the LRC illustrates how innovative lighting designs and advanced technologies—including LEDs, photosensors, and occupancy sensors—can help older adults in long-term care facilities increase sleep efficiency and be more comfortable.

Experiment

In a pilot demonstration study at Schuyler Ridge Residential Health Care, a 120-bed skilled nursing facility in Clifton Park, N.Y., LRC researchers installed automated LED lighting systems in four residents' bedrooms and bathrooms to determine whether these energy-efficient lighting solutions could:

- Improve the sleep efficiency and comfort of older adults
- Assist the nursing staff in their nightly rounds

The custom-designed lighting systems featured amber LEDs installed under bed frames, around bathroom door frames, and along the handrails and mirrors in the bathrooms. Photosensors and occupancy sensors turned the lights on slowly when a resident got out of bed or a nurse walked into their room at night.

Sponsors

Project: ASSIST (Boeing, GELcore, NYSERDA, Nichia, OSRAM SYLVANIA, Philips Lighting, U.S. Environmental Protection Agency)

Site: Schuyler Ridge – Seton Health

Equipment: OSRAM SYLVANIA

For more information

www.lrc.rpi.edu/programs/solidstate

Rensselaer

Results

Surveys conducted with residents and nursing staff before the LED lighting installation showed:

- Most residents were awakened at night by nurses turning on the overhead lighting for routine checks.
- The overhead lighting was considered too bright and glaring at night.
- Residents had difficulty reaching the bedroom lighting controls at night.

Two weeks after installing the new LED lighting, the residents and nursing staff reported:

- The LED lighting caused no problems with sleep disturbance or discomfort.
- The motion sensor activation was useful.
- The light levels in the bedrooms were sufficient for nurses to perform their rounds.

Lighting Research Center