

Privacy meets safety in hygienic healthcare design

Creating a safe, hygienic and private patient environment

Privacy is a patient's right as much as it is a courtesy. While much has been made of protecting a patient's medical information and files, a patient's physical privacy during exams, consultations and hospital stays is also of utmost importance.

Physical privacy provides the comfort of dignity at a time when those in medical need can be at their most vulnerable. Curtains and blinds come to mind most frequently as ways of controlling vision and some privacy levels. However, these do not typically meet adequate guidelines for either hygiene or safety, nor do they provide any acoustic privacy. In all medical facilities, privacy solutions need to be easy to clean and maintain. Both blinds and curtains gather dust and require frequent cleaning, making them a less than ideal solution.

In addition to hygiene, privacy solutions must also consider safety – especially fire safety. According to the National Fire Protection Association, an average of five fires break out per day at US healthcare facilities and more than 8,000 hospital fires occur each year. Neither curtains nor blinds provide any mitigation to potential fire hazards.

The ideal patient privacy solution should therefore be both hygienic and fire-resistant.



...continued

Issues and design considerations

Architects have often struggled with the issue of specifying hygienic privacy control solutions that meet stringent hospital fire-rating requirements. When designing healthcare facilities that seek to optimize privacy, safety and hygiene, the following considerations will have an influence:

1. Health Insurance Portability and Accessibility Act of 1996 (HIPAA) regulations are most often related to the protection of personal health records and information. However, HIPAA guidelines are also relevant to both visual and acoustic privacy. In terms of facilities, the design of work stations needs to consider the visual privacy of both paper and digital patient medical information. The design of patient accommodations, operating and examination rooms needs to consider acoustic and visual privacy. Windows and doors should provide adjustable visibility and privacy levels.
2. Hygiene is critical to any healthcare environment. From a design perspective, this entails easy-to-clean finishes and features. Detailing, framework and moldings should avoid crevices and joints that can accumulate dust and dirt and pose barriers to effective cleaning. While curtains and blinds can provide adjustable privacy, these are far from ideal in terms of hygiene and maintenance.
3. Compartmentation – the use of fire walls and fire-rated glass to create physical barriers – is an effective design technique for helping to contain the spread of fire and smoke. According to the NFPA 1994 Life Safety Code Handbook (section 6-1.1.1), “lack of compartmentation and rapid fire development have been primary factors in numerous multiple-fatality fires.” Compartmentation design considerations require products and materials that are fire-rated by independent laboratories. An example of this would be UL Classified fire-rated glazing for windows and doors. In many modern healthcare facility designs, fire-rated glass supports compartmentation needs while meeting other goals such as improving patient well-being with access to natural light.
4. In-hospital fire protection is further underscored by Daniel J. O’Connor, chair of the NFPA Technical Committee on Health Care Occupancies, as follows: “Because some occupants are incapable of movement or slow to evacuate, a healthcare facility resembles a ship at sea: it is better to keep the fire from the patient than to remove the patient from the fire. Thus, occupants must be defended in place. As a result, healthcare facility design and operation must incorporate methods by which a fire can be detected early, contained, and fought rapidly and successfully.”¹

Approaches to privacy

A patient’s physical privacy is essential to their wellbeing and dignity. The need for visual and acoustic privacy for patients also needs to be balanced with the need for medical personnel’s visual access to patients. Current market options for privacy include:

1. Curtains can provide visual privacy. However, they are also a very limited and often problematic solution. Curtains provide no acoustical privacy – conversations behind curtains can be easily overheard. They gather dust and dirt and are difficult to clean, and do not provide adjustable levels of visibility
2. Blinds offer adjustable levels of vision control, but accumulate dirt and dust making them unhygienic and difficult to maintain.
3. Venetian blinds-in-glass are more hygienic, but can be prone to damage. Their exterior cord approach can lead to entanglement and other maintenance issues.
4. Sandblasted glass that mimics the lines of blinds can offer only partial privacy. Visibility is limited, but not adjustable. The translucent lines do not fully block light – either from the sun or bright hospital lights – which significantly inhibits patient rest.

¹ O’Connor, Daniel J., “NFPA Fire Protection Handbook,” 20th edition, Section 13, Chapter 8, Healthcare Occupancies, NFPA, 2008.

...continued

5. Liquid crystal glass solutions can provide instant privacy with the click of a button. They can also easily infringe on patient privacy when the switch is turned off to reveal clear glass. These solutions don't provide adjustable levels of privacy, and are further unwieldy for healthcare environments where their on-or-off only options do not permit discreet observation of patients by medical staff.
6. Aluminum louvers between glass feature a hermetically sealed structure and cordless approach. The louvers may be positioned such that vision is permitted from one area to another, but is limited in the opposite direction. They offer superior control over vision, daylight, heat and sound, with a sturdier construction that ensures longevity, durability and long-term cost savings.

Developing an optimal solution – privacy meets safety

When considering all the factors and building guidelines, an optimal solution for patient privacy, hygiene and safety would combine adjustable louvers within fire-rated glass.

For example, Unicel Architectural and Technical Glass Products (TGP) recently partnered to combine Unicel's Vision Control® louvers-in-glass with Pilkington Pyrostop® glazing from TGP to create the first such product assembly to achieve Underwriters Laboratories (UL) fire protection classification with fire-ratings of 45, 60 and 90 minutes.

By combining hermetically sealed, adjustable louvers with fire-resistant glazing, this approach provides an ideal solution to address both safety and privacy concerns with the following advantages:

- Multi-purpose: The combined assembly has been UL fire-rated for doors, windows, transoms and sidelights.
- Flexibility: The fire-rated glazing systems greatly expand design flexibility with clarity and aesthetics similar to

regular window glass, while providing protection from the scorching heat of building fires.

- Customizable: The sealed glass unit combining louvers within glass can be customized to virtually any shape for interior or exterior glazing applications.
- Safety: The fire-rated and impact safety-rated glazing material blocks radiant heat, helping protect people and valuables on the non-fire side of the glass where heat transfer might be a concern.
- Hygiene: The louvers are hermetically sealed for optimal hygiene conditions.
- Low maintenance: The cordless design makes the solution easy to use and virtually maintenance free.
- Vision control: The louvers offer completely adjustable privacy and visibility levels.
- Daylight control: Louver positioning ensures optimal light distribution and prevention of unwanted glare and a measure of protection from heat and UV rays
- Heat control: For exterior applications, the louvers provide a solar heat barrier for optimal thermal performance.
- Sound control: The product assembly offers sound wave barriers for tranquility in any setting.

For additional information, contact:
unicel@unicelarchitectural.com



Healthcare Case Study Banner Thunderbird Medical Center

Banner Thunderbird Medical Center is one of the leading healthcare providers in the state of Arizona. To pursue growth opportunities and reinforce its leading position in the region, Banner undertook the development of a new facility in Glendale and commissioned NTD Architects to design the new bed tower and expansion project. Walters & Wolf Construction Specialties were selected as glazing contractors.

The challenge

For the new facility, the patient, exam rooms and operating rooms had exacting requirements for hygiene, indoor air quality and privacy control to meet the highest healthcare design standards.

The solution

Unicel Architectural's Vision Control® insulated glass with integrated louvers was selected to provide adjustable privacy, minimize maintenance and create a germ-free environment. The project required over 300 Vision Control® units - half of which were installed in third-party lites and half in doors using Unicel's proprietary trim kits. The units were manufactured with white blades and fan-shaped thumbwheel operators to better accommodate the facility's demands.

Next steps

As a result of the first Banner project, Unicel was called upon to provide an additional order of Vision Control® units for the Children's Hospital of the Banner Desert Medical Center in Phoenix, AZ, a member of the same health care system.

Key parameters	Location:	Glendale, AZ
	Gross square footage:	470,000 square feet (43,665 square meters)
	Completion:	2010
	Program:	Eexpansion, new patient tower, expanded emergency department

Team	Owner:	Banner Health
	Architect:	NTD Architecture
	Glazing Contractor:	Walters & Wolf, Inc.
	Vision/Privacy Control:	Unicel Architectural