



# High-tech, high-touch HEALING

VCUHS Critical Care  
Bed Tower launches  
a new era of treating  
seriously-ill and critically-  
injured patients

By Kim Bruffy and Pam DiSalvo Lepley  
Photography by Ed LaCasse

EVERY MEDICAL CONSTRUCTION project has at its core the desire to make better spaces for patients. On some projects, however, that goal takes on even greater importance, leading to projects that break new ground in patient care.

That just might be the case with Virginia Commonwealth University Medical Center Critical Care Bed Tower in Richmond, Va.

Virginia's only hospital devoted solely to critical care, VCU Critical Care Hospital treats the highest acuity patients in the area balancing high-tech with high-touch patient care, incorporating key healing design elements inside and out.

Six major intensive care specialty units will be housed in the healthcare facility including the neurosurgical intensive care unit, the burn unit, surgical trauma intensive care unit, medical respiratory intensive care unit, neonatal intensive care unit and a cardiac surgical intensive care unit. The hospital also houses two patient bed floors for oncology and acute care specialties and one floor for a high-tech surgical suite.

### Distinctive, evidence-based design

The \$184 million hospital is the largest capital construction project in the history of the VCU Medical Center. The

368,000-square-foot, 15-story bed tower provides 272 acute, critical care, neonatal intensive care unit and isolation beds.

"The facility combines our staff and faculty's decades of experience and research with the newest technology," said Eugene P. Trani, Ph.D., VCU president and chair of the VCU Health System. "This is an enormous addition to medical and surgical care offered to the citizens of the commonwealth."

Each intensive care patient floor is designed to accommodate the daily rounds of physicians, residents and caregivers to promote the teaching hospital environment. To support collaboration and interaction, physician and resident workrooms and alcoves are located strategically throughout the hospital.

An exterior view  
of Virginia  
Commonwealth  
University  
Medical Center.



## Innovations at VCU Medical Center Critical Care Bed Tower

Some examples of innovative safety and critical-care features at VCU Medical Center Critical Care Bed Tower in Richmond, Va., include:

- > Acute care medicine floor rooms with specially designed negative pressure ventilation systems to prevent cross-contamination of airborne particles.
- > A new surgical suite with 10 large (650 square feet), high-tech operating rooms.
- > Neonatal intensive care units that accommodate overnight stays for parents. Unique

headwall design provides caregivers easy access to bassinets, monitors and medical gasses. Rubber floor tiles, acoustical ceiling tiles, and plastic privacy curtain track and rollers reduce noise and enhance the developmental care for each neonate.

- > The Evans-Haynes Burn Center, the region's only resource for the care of acute burns and reconstructive needs of burn survivors, features a large procedure room for wound care that previously required movement

to an operating room, specialized hose reels mounted in the ceiling to deliver purified water for wound care, and high-intensity lighting to allow better visualization during wound care.

- > Surgical trauma rooms with movable headwalls, referred to as booms, which provide caregivers with 360-degree access to the patient. The availability of these specially equipped rooms means patients stay on the surgical trauma floor for routine wound care instead of being moved to another floor.

the medical center's ratio of private to semi-private beds from 37 percent to 70 percent.

"Studies have shown that patients in private rooms have shorter hospital stays than those in semi-private rooms, which is clearly advantageous to patients, and also reduces costs for hospitals," Means said.

Hospitals can benefit, too, from higher occupancy rates with private rooms, as beds need not remain empty due to incompatibilities in patient cases. Properly ventilated single-bed rooms help isolate pathogens and reduce the potential for hospital-acquired infections.

### Safe, specialized care

The private rooms are large enough to accommodate patients' families and multidisciplinary medical teams. The rooms also provide specialized features, such as built-in, ready-access dialysis portals and mobile headwalls, which reduce the need for patient moves, therefore lessening exposure to infection and risk of injury.

Patient and healthcare provider safety were the overarching goal in the design and construction of the new hospital. The



**Artwork, a flat screen television, wireless connectivity, ample space for family members to store personal items and overnight sleep sofas and chairs are included in each patient room.**

The patient rooms range from 250 to 300 square feet, providing ample space for patients, their families and caregivers to interact while still allowing for space to accommodate portable equipment within the room.

The medical/surgical unit features acuity adaptable rooms. The fully-equipped units provide intensive care in every room — decreasing the need for in-hospital transfers.

"Acuity-adaptable rooms provide flexibility in patient care," said Chuck Means, principal designer for HKS Architects, Inc. "For example, if more intensive care rooms are needed, the hospital's progressive care rooms can be converted and vice versa."

In addition, the new facility increases

entire building is digitally wired to accommodate the intense communications of critical care units and environmentally constructed so help is just a step away.

"We're building on a culture that is focused on safety so that everything we do, from clinical care to support activities to housekeeping, is focused on achieving the highest achievable level of safety," said John Duval, chief executive officer of VCU Hospitals. "Patients and



The neonatal intensive care unit accommodates overnight stays for parents.

their families will immediately know that they are receiving great care from the region's most highly trained providers in a facility that ensures their safety."

### Designed to care

A multi-story entry lobby provides a calming, intimate setting with natural daylighting, views to the historic Court End district and clustered seating with comfortable chairs and love seats.

The first floor concierge area is flanked with historic images of the campus buildings — spanning from the early 1800s to the 1980s. Natural light and healing colors including blues, greens and tans are used throughout the space creating a soothing environment for patients and their families.

"Patient rooms are designed like a hotel with individual thermostats to regulate temperature and adjustable light levels as well as inviting, family-oriented rooms," said Laura Hild, senior interior designer for HKS Architects, Inc. "Large windows offer scenic views of Richmond.

"Chain restaurants and high-tech upgrades are counted among the amenities. Artwork, a flat screen television, wireless connectivity, ample space for

family members to store personal items, and overnight sleep sofas and chairs are included in each room," she said. "Visitors can choose from a full meal in the first floor cafeteria in the main hospital



The first floor concierge area is flanked with historic images of the campus buildings — spanning from the early 1800s to the 1980s.

— where a Chick-fil-A and Blimpie are located — or quick name-branded eateries on Gateway's ground floor."

According to Hild, the patient headwalls with warm wood laminate are custom-designed to meet the staff's ergonomic needs by placing power and gas outlets in strategic position to

reduce staff fatigue and promote safety.

"Waiting areas are situated outside the elevator lobby at each patient level. Each was designed to have views to the outdoors," she said.

The nurse stations, known to caregivers as interdisciplinary hubs, are warm and inviting, designed with a combination of maple and cherry wood laminates. A circular desk and ceiling design combined with yellow and caramel color accents create an aesthetically pleasing workstation and a means of wayfinding for staff and patients.

### A new front door — and image

"In addition to the healing design elements, the tower will serve as a new front door to the campus," Means said. "This front door will help organize the campus while introducing a new lobby entrance for patients, visitors and staff."

The hospital's design — classically styled of red brick for a sense of strength and permanency — blends with the surrounding Court End district.

"Expansive concourse glass allows ample natural light and beautiful views of the Museum and White House of the Confederacy," Means said. "Small details, such as the cornices, will be similar in style to the nearby historical district."

Hospital improvements already are being noted in less than six months after its opening in October 2008.

"It's hard to find anyone who thinks things are not better compared with before the Critical Care Tower opened," Duval said, citing preliminary patient-satisfaction data. "Patients indicate they are more likely to recommend us to friends and relatives, and perception of safety has increased as well as perception of the overall hospital experience." ■

**Kim Bruffy is associate/director of business development for the Atlantic states for HKS Architects Inc. She can be reached by e-mailing [kbruffy@hksinc.com](mailto:kbruffy@hksinc.com) or calling 804-644-8400. Pam DiSalvo Lepley is director of communications and public relations for Virginia Commonwealth University and can be reached by e-mail at [pdlepley@vcu.edu](mailto:pdlepley@vcu.edu) or by calling 804-828-6057.**