



up an inpatient building, it should be a hotel with medical gases." That's how we built it."

After touring other facilities, Saint John's officials began researching technology companies to coordinate the advanced systems envisioned for the new hospital. They selected Alpharetta, Ga.-based Siemens Corp. "We entered a \$12 million contract with Siemens

to provide the technologies associated with deliberate healthcare," Muldoon says. "Our prime requirement was that Siemens serve as an integrator of these technologies. We knew we could buy the technologies, but we wanted them to work together."

For example, Saint John's telephones will be completely integrated with the nurse call system, so that the nurse call goes directly to a microcellular phone worn by the caregiver. The nurse can respond to the patient directly from the phone. Thus, nurses can spend more time communicating with patients from where the nurses are, instead of having to walk to patients' rooms first.

In addition, Saint John's officials wanted to ensure that if another major earthquake occurred, the hospital would be fully protected. So 192 base isolators weighing 2.5 tons each will enable the facility to withstand 27 inches of displacement, and dual water supplies from separate water mains, dual fuel systems for boilers and dual electrical feeds will keep the hospital operating at normal capacity for five days.

"This hospital will take a major earthquake as big as the one we had before and stay fully operational," Dr. Robertson says. "If all of Los Angeles was cracked and burning from an earthquake, this hospital will be here for the people. We consider ourselves a lifeboat for this community."

Advanced Features

Saint John's will employ technology using one "backbone" and one set of systems protocols, which enables data exchange between disparate technologies. Information will move seamlessly and transparently throughout the hospital beginning as soon as a patient arrives and continuing through all aspects of treatment.

Designed to facilitate communication and enhance patient care, here's a short list of the new hospital's technology features:

- A seamless wireless data network on each floor, coupled with the wired backbone of the technology system, gives physicians, nurses and other staff the use of the electronic devices, including PDAs, portable laptops, tablets or desktop computers.
- Mobile computers and telephone handsets give medical personnel access to information at the point of care.
- A picture archiving communications system allows a physician in one department to access a patient's medical charts and X-rays from all other departments.
- External telephone videoconferencing systems and Internet accessibility allow patients to stay in touch with friends and family.
- Large 42-inch plasma television monitors mounted on the walls in each room, including all patient rooms, permit teleconferencing among physicians.
- A sophisticated media distribution system enables patients to watch television or videos on demand and even browse the Internet using a wireless keyboard and mouse.

"Saint John's will change the way we think about hospitals," says Bruce Lamoreux, CEO of the hospital. "The technological

advances we've incorporated along with the unprecedented attention given to patient comfort in the design of the facility will benefit our patients—and the community—greatly."

Technology in Caring Hands

Although the goal is to become a 21st century hospital, Saint John's doesn't want to compromise its high-touch, patient-centered care, officials say. The medical staff wants the community to know that even though they are going high-tech, they will stay true to core values. Thus, hospital officials created the concept of "technology in caring hands," meaning that the medical staff is partnering with technology to promote a more healing, comfortable environment.

"We realized that we can build a facility that brings the patient closer to the caregiver," Dr. Robertson says. "We created short desks in the hospital so that the public can interface with the staff more closely. We also understood the importance of the environment in getting the patient well."

Innovative features of the hospital that combine technology with patient care include:

- Hotel-like patient rooms configured for comfort and healing, including oversized sofa beds for visiting family members;
- Easy-to-reposition medical equipment, making it possible to adjust rooms for a variety of medical needs and procedures;
- Extra large windows, soft colors on the walls and carpet in the halls;
- Indirect lighting down the sides of hallways, decreasing overhead glare for patients on gurneys; and
- Family kitchens on each floor, enabling families to cook for their loved ones who are patients.

"When you're sick, often times you're better off at home," Dr. Robertson says. "By cooking familiar dishes, families can help bring the healing environment of the home into the hospital."

Progress Report

Part of Phase One of the reconstruction, the North Pavilion is scheduled to open for patients this fall. This four-story, 200,000-square-foot, 150-room inpatient facility will house critical care, labor and delivery, neonatal intensive care, orthopedics, oncology and general surgery, along with pharmacy, laboratory, food service and medical records. The official dedication of the facility took place Oct. 7, featuring special guest First Lady of California Maria Shriver.

The remaining parts of Phase One include a 540-car underground parking facility, the entry plaza for the new campus and the construction of the Keck Diagnostic and Treatment Center, a 275,000-square-foot, four-story building housing radiation oncology, imaging, emergency express diagnostics and the intervention center.

Phase Two of the reconstruction plan consists of a four-story, 275,000-square-foot diagnostic and treatment facility—including Dr. Kino's ER—to be built on the site of the original hospital. Both phases are scheduled to be complete by 2010.

Project costs will total about \$394 million, Muldoon says, which is more than originally planned. But Drs. Kino and Robertson say the new hospital is worth every penny.

"How many people in this environment, where medicine is so much under the gun financially, get an opportunity to build a brand new hospital from scratch?" Dr. Robertson asks. "It's a great opportunity that very few people get." ■

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Russ Kino, MD
Emergency Medicine
Santa Monica

FROM ADVERSITY TO ADVANTAGE

Ten years after the Northridge earthquake, Saint John's Health Center is rebuilding a state-of-the-art hospital, combining technology with patient care to create a more healing environment.

BY DINA L. BURWELL

With hospital closures running rampant in Southern California, the story of Saint John's Health Center in Santa Monica reads like a miracle performed by God. After suffering serious damage from the 1994 Northridge earthquake, the hospital, which is part of the Sisters of Charity of Leavenworth Health System, was forced to lay off 1,700 employees and close its doors. Today, Saint John's is well on its way to rebuilding with a design that will not only withstand another earthquake, but meet the technology needs of the future.

Russ Kino, MD, head of emergency services at Saint John's Health Center, is undoubtedly looking forward to the new hospital. He says the new technology in the emergency department will make his job much easier and emergency care more seamless.

"There will be bedside lab testing, a digital X-ray system that electronically sends X-rays from the emergency room to anywhere in the hospital, a central work station, a CT scanner located on the same floor, and a well-designed room double the size of the previous emergency department," Dr. Kino says.

When talking about the new hospital, Dr. Kino sounds like a kid in a candy store. Full of anticipation, he says, "I can't wait until the new facility opens."

Miracle on 22nd Street

After the tragic earthquake, Saint John's officials were discouraged about having to close the hospital, and Santa Monica residents wondered if it would ever reopen. Then came a sign.

"We were fortunate in that the Federal Emergency Management Agency came to the aid of the hospital and gave us \$143 million to rebuild," says John Robertson, MD, a cardiac surgeon and member of the planning committee.

But Saint John's still had to develop a capital campaign to bring in



LACMA member Russ Kino, MD, stands with a base isolator which will protect the hospital in earthquakes.

the remaining costs of the project. With Sister Marie Madeleine and Ruben Mettler at the helm, Saint John's ran a successful campaign.

"Because we got this opportunity, we want to do it right," Dr. Robertson says. "We are not going to build what everybody always builds, because that is a dinosaur. We want a hospital that's going to meet the needs of the 21st century."

The hospital formed a planning committee consisting of physicians, nurses, board members and administrators to research other technologically advanced hospitals. They toured Mid-Columbia Medical Center in The Dalles, Ore., and Sharp Coronado Hospital in San Diego, which both incorporate the Planetree Model of Patient-Centered Care. Founded in 1978, Planetree is a nonprofit organization dedicated to personalizing, humanizing and demystifying the healthcare experience for patients.

"Hospitals have been very clinical and very scientific," says Terry Muldoon, vice president of engineering and construction. "That has its place, but there's also a place for treating people well and making the ambiance as nice as you can. People say, 'When you put

Russ Kino, MD, head of emergency services at Saint John's Health Center, is looking forward to high-tech advancements in the emergency room, including bedside lab testing and a digital X-ray system.