

## COMMERCIAL REAL ESTATE

# Decade After Big Quake, a Hospital Building Boom

By TERRY PRISTIN

SANTA MONICA, Calif. — When the Northridge earthquake devastated Los Angeles County in 1994, St. John's Health Center, a private Catholic hospital in this seaside community, suffered such extensive damage that an entire wing had to be torn down. The most severely damaged of the 23 hospitals that had to suspend some or all services after the quake, St. John's was forced to close for nine months.

In early December, however, St. John's will begin admitting patients to a sleek new arc-shaped building that is designed to withstand an earthquake with twice the force of Northridge, which had a magnitude of 6.7. The new four-story North Pavilion, expected to cost more than \$315 million, is part of a 15-year construction program that is intended to modernize the 62-year-old hospital, give it a more efficient layout that will be easier to navigate, and provide patients with some of the comforts of an elegant hotel.

The new building has light-filled private rooms equipped with 42-inch plasma television sets and upholstered window seats that allow visitors to nap or stay overnight. Nurses' stations are scattered throughout the floor to be closer to the rooms.

A multibillion-dollar hospital construction boom is under way in this state, a response to new seismic safety building codes and deadlines established in the aftermath of the earthquake. In 2001, state officials found that 40 percent of the state's 479 hospitals were in danger of collapsing in a major earthquake and 75 percent did not have adequate bracing to keep their mechanical and other systems operating.

In the 1994 earthquake, most of the serious damage occurred at hospital buildings constructed before 1971, when an earthquake centered in Sylmar, Calif., destroyed a newly built hospital and led to the first tightening of seismic standards.

Initially, the seismic legislation required all acute-care inpatient buildings that would be at risk during a strong earthquake to be rebuilt, retrofitted or closed by 2008, but hospitals may now apply for extensions up to 2013, and about one-third have already done so, said Kurt A. Schaefer, a deputy director of the Office of Statewide Health Planning and Development, which has approval power over the building plans. By 2030, however, all hospitals in the state must be not only structurally sound



J. Emilio Flores for The New York Times

The new building for St. John's Health Center in Santa Monica, Calif., is designed to withstand severe earthquakes. New seismic safety requirements have prompted many hospitals to modernize.

but also be able to care for patients after a disaster.

Rather than embark on costly retrofitting, many hospital administrators determined that it made more sense to rebuild from scratch, particularly if federal disaster help was available. Officials of the California Healthcare Association, the hospital industry's trade organization, once estimated that the state's rebuilding program would cost \$24 billion. Now the group says the price tag will be much higher, in part because of the rising cost of building materials.

To some extent, the frenzied pace of hospital construction in California mirrors a national trend. "This is the strongest health care construction market I've ever seen," said Robert D. Levine, the manager of the Turner Construction Company's national health care group; Mr. Levine has spent 40 years in the business. Turner is currently engaged in 125 medical projects — including a \$400 million joint venture with URS, a construction services company with headquarters in San Francisco, for work at U.C.L.A. — twice the volume of five years ago. Mr. Levine said health care projects are helping to offset the nationwide slowdown in office construction and accounted for 17.2 percent of his company's business in 2003, compared with 8.8 per-

cent in 1999.

Low interest rates and the aging stock of hospital buildings have helped fuel this growth spurt. Many well suited to today's technology. Today's operating rooms, for example, have to be one-third larger than they were before, Mr. Levine said. With baby boomers also aging, many new hospitals are anticipating a growing demand for health care. And many are also moving to the suburbs from urban neighborhoods.

No state is building as many replacement hospital buildings as California, where architecture and design firms, construction companies and subcontractors are being stretched to the limit, real estate specialists say.

Construction companies are teaming up to minimize the risk that goes with developing complex projects costing hundreds of millions of dollars. Steve Mynsberge, a senior vice president for health care for the McCarthy Building Companies, said his company, which is based in St. Louis, is involved in 10 hospital projects in California. Among them is a \$498 million joint venture with the Clark Construction Company of Costa Mesa and Hunt Construction Group of Phoenix to construct four buildings at the Los Angeles County and

University of Southern California Medical Center.

Officials of the Office of Statewide Health Planning and Development said they did not know just how many new hospital buildings were planned. "We're definitely at historic levels in terms of workload," said Paul A. Coleman, the deputy division chief for Los Angeles and Orange Counties.

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The officials estimated that hospitals across the state were spending \$4.6 billion to meet the seismic re-

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## Five hundred pounds of steel to support a 22-pound light.

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quirements, with Mr. Coleman's territory accounting for well over half of that. Construction companies estimate that seismic strengthening adds 10 to 20 percent to the cost of a building's structural frame, according to a 2002 report by the Rand Corporation, a research organization that is based in Santa Monica.

At the new St. John's building, for example, about \$20 million was spent on something called a base isolation system, in which 80 plates made of rubber, steel and lead sit between the support columns and U-shaped piers that are deeply embedded in the ground. The idea is to damp the effect of an earthquake and let the building sway gently over the energy waves instead of being whipped from

side to side. Similar technology is being installed at one of the four new buildings that Los Angeles County-U.S.C. Medical Center is building at the base of a hillside in East Los Angeles, just south of the existing Depression-era main building made famous by the soap opera "General Hospital."

But structural reinforcement is only one way a hospital must protect itself. At U.C.L.A.'s Westwood campus, where construction has started on a \$400 million, 1.3 million-square-foot hospital building designed by I. M. Pei, a portion of the highly complex latticework of pipes, ducts, tubes and cables that are required to brace all of the building's mechanical systems can still be seen.

More than 100 people were needed to coordinate the installation of systems to provide plumbing, medical gases, electricity, fire protection, pneumatic tubing and telecommunications, which occupy as much as seven feet of space above the ceiling, said the project director, Randall E. Hight, a vice president at Marelch Mechanical, a subsidiary of the Emcor Group. "We had to make sure we weren't running into each other," he said. "It took more than a year."

In the intensive-care unit, a light fixture weighing 22 pounds is secured by 500 pounds of steel bracing, said Bert Hurlburt, a construction manager.

Hospitals that were damaged in the earthquake, like County-U.S.C., U.C.L.A.'s two medical campuses and St. John's, were able to get significant financing from federal and state disaster agencies for their construction projects. And some, like St. John's, were able to draw on substantial reserve funds and raise big sums from celebrity patients and other private donors. The hospital's new nursery, named for Maria Shriver, was a gift from her husband, Gov. Arnold Schwarzenegger, said Bruce Lamoureux, the chief executive.

But for many hospitals, especially those in rural and poor urban neighborhoods that lack borrowing power, the seismic requirements — which did not have government funds attached to them — could not have come at a worse time, officials of the California Healthcare Association said. More than half the state's hospitals are operating at deficits, and nearly one-third are facing bankruptcy, said Jan Emerson, a spokes-

woman for the trade group.

Other mandates, like a prescribed ratio of nurses to patients, have further burdened a system that was already struggling with low reimbursement rates and one of the highest proportions of uninsured residents in the nation, she said.

The state has been grappling with its own severe budget shortfall, which has also interfered with the hospitals' rebuilding plans. The health planning and development office is financed by a tax on hospital construction, but it was subject to the hiring freeze that was imposed throughout state government. (The agency has recently begun hiring, Mr. Schaefer said.)

A shortage of inspectors and the high level of scrutiny imposed by the development agency has caused delays and added to construction costs, which are now estimated at \$450 a square foot or more, construction managers say.

Subcontractors are charging more because they do not know what to expect in the future, said Mr. Mynsberge, the McCarthy executive. "Everybody looks at these hospital projects as very high risk because of all the scrutiny and the consequences that brings," he said. "That risk could be a company killer."