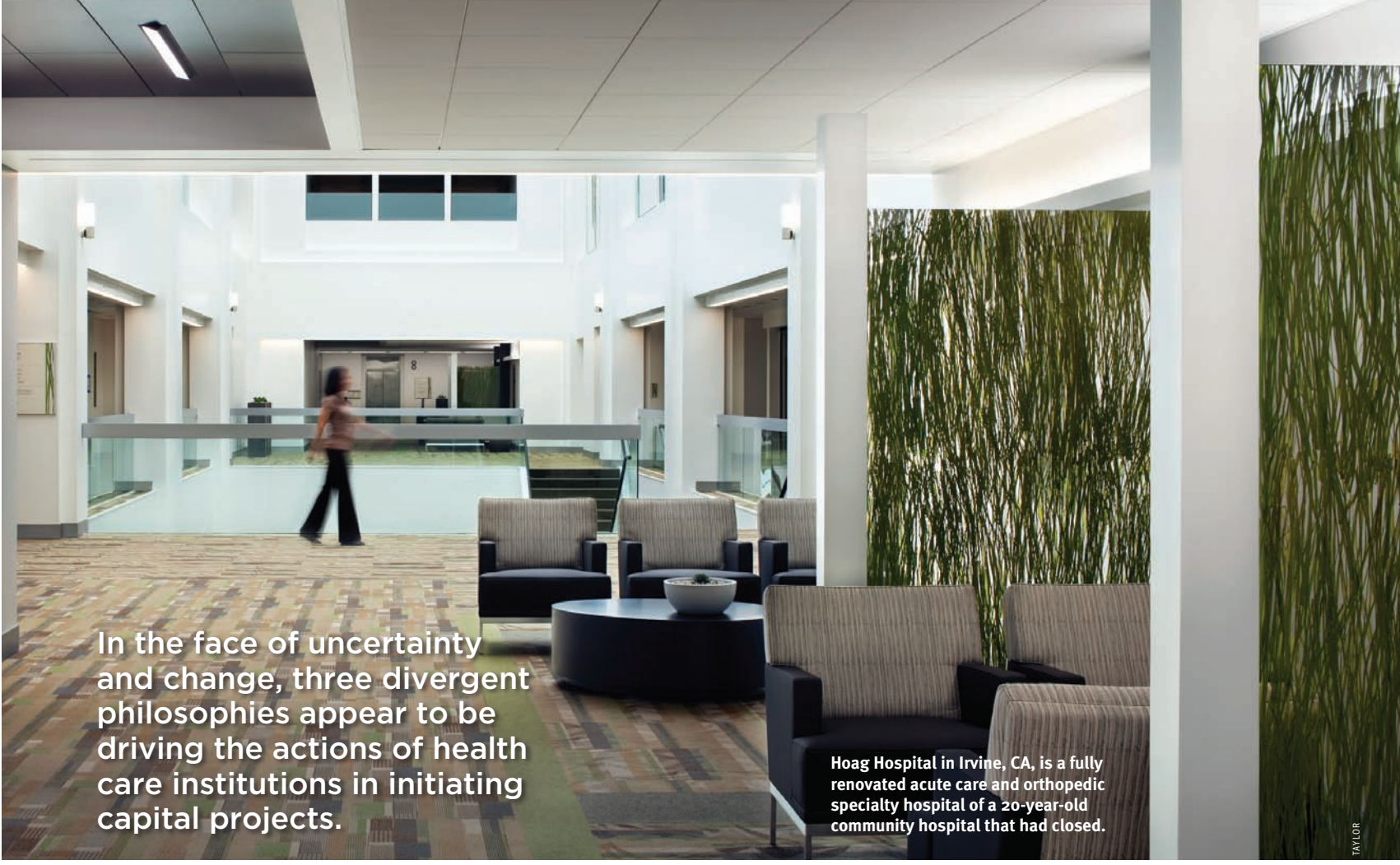


In the face of uncertainty and change, three divergent philosophies appear to be driving the actions of health care institutions in initiating capital projects.

Hoag Hospital in Irvine, CA, is a fully renovated acute care and orthopedic specialty hospital of a 20-year-old community hospital that had closed.

TAYLOR

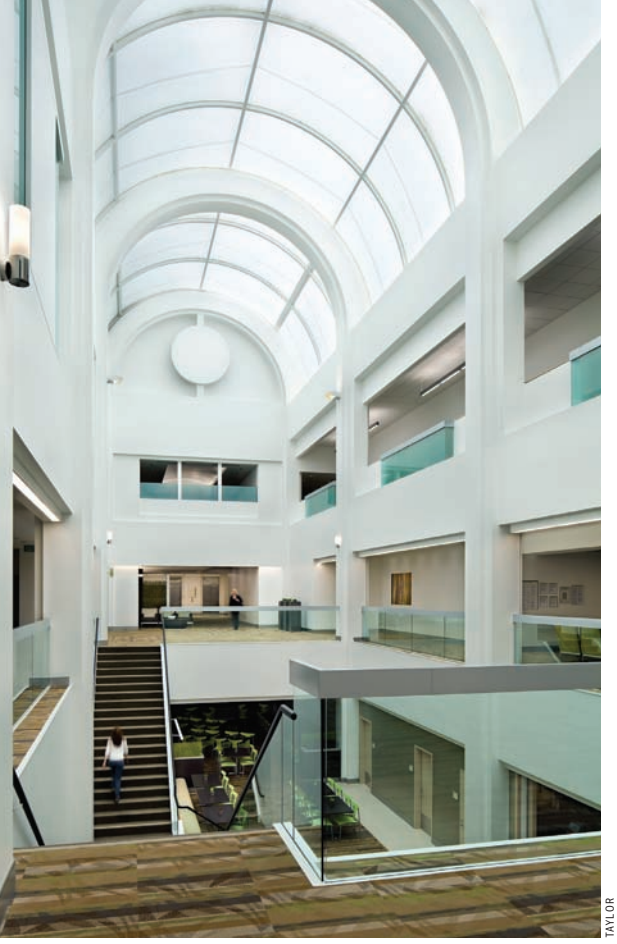
HEALTH CARE development

NANCY EGAN AND PAUL NAKAZAWA

LIKE THEIR COUNTERPARTS in nearly every business, health care providers are dealing with the effects of a disrupted economy that has diminished endowments at not-for-profits and slowed capital flows to a trickle for all institutions. These concerns are compounded by unresolved questions regarding the effects of health care reform. At the same time, there is an unquestionable need to expand capacity—whether with new or renovated facilities—as health care organizations face changing demographics, rapid technological advances, and the continuing demand for high-quality patient-centered care and improved outcomes.

Uncertainty regarding reform legislation is coloring decisions at health care organizations everywhere. "Currently, three divergent philosophies appear to be driving the actions of health care institutions relative to initiating capital projects," observes David Watkins, chairman of Houston-based WHR Architects. "The first approach is the most cautious: pause, hoard money if you can, and wait it out. The second is more measured, with institutions scaling back their initiatives—looking at interim, smaller projects that address their most pressing needs without overly compromising cash flow or taking on unnecessary debt. The last and most aggressive is based on the position that institutions, despite the current financial landscape, must be ready to meet the market when things settle down. They are willing to bet that the design and construction of their projects will consume more time than it will take for the uncertainty to be resolved."

In truth, most institutions have to move forward just to keep pace with current demand. Their choices, notes D. Randy Regier, president of architecture firm TAYLOR in Newport Beach, California, "will be based on careful evaluations of long-term operational costs versus first cost of the built environment." What gets built or reno-



TAYLOR

Hoag Hospital in Irvine is on track to achieve LEED accreditation for its "green" interiors.

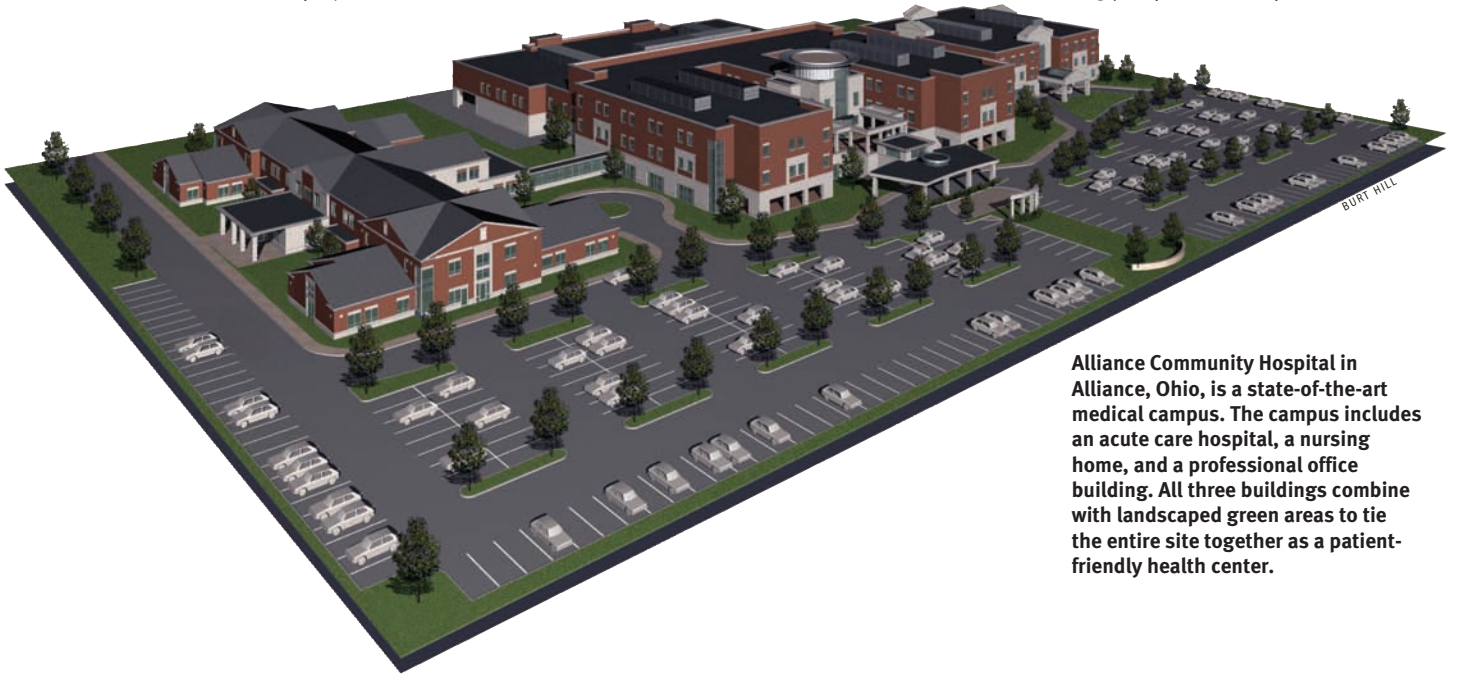
vated will vary depending on the location of the institution and the markets it serves.

The big are getting bigger, especially on large, urban campuses that are home to many of the country's finest academic medical centers. There, the original buildings, many of them built in the late 1940s and 1950s, are aging and unable to accommodate new technologies and the infrastructure they demand. Although space is incredibly tight on urban campuses, the need to colocate hospitals and research institutions pursuing translational medicine—translating basic research discoveries into clinical applications that benefit patients—is driving the design of high-rise medical towers.

In order to bring clinicians and researchers closer together, the Robert and Ann Lurie Children's Memorial Hospital is building a new 1.2 million-square-foot (111,000-sq-m) hospital on a 1.6-acre (0.6-ha) site on the Northwestern Medical Center campus in downtown Chicago, reports Hugh Campbell, a principal with ZFG Architects in Portland, Oregon, who is designing the project. "Given the site constraints, it is as if we turned the whole structure on its side—stacking the requirements to a height of 23 floors," he says. With the need for a smooth flow of vehicular traffic on the campus, the design puts the emergency room on the second floor with elevators to ferry patients from the first-floor drop-off underneath the tower. Nearly every large urban medical center has similar examples of the precision siting of a substantial facility on an already-dense campus.

On the other hand, the move to decompress such tight environments is generating a range of decentralized solutions—what Campbell refers to as "the return of the hub and spoke model." Taking health care closer to the patients makes strategic sense, whether that means a health care system providing acute care; community hospitals providing care in edge-city locations, as the Memorial Hermann Healthcare System has done on Loop 610 around Houston; or the wholesale relocation of major medical facilities to an entirely new suburban site, as is the case for several institutions. Among these are the University of Colorado Hospital, Children's Hospital, the Barbara Davis Center for Childhood Diabetes, and the School of Dental Medicine, which have moved to the new Anschutz Medical Campus on the former Fitzsimons Army Medical Center site in Aurora, Colorado.

Satellite facilities—from tertiary care hospitals to ambulatory care and specialized and urgent care clinics—are increasingly important components in the



BURT HILL

Alliance Community Hospital in Alliance, Ohio, is a state-of-the-art medical campus. The campus includes an acute care hospital, a nursing home, and a professional office building. All three buildings combine with landscaped green areas to tie the entire site together as a patient-friendly health center.

delivery of health care services. "Between the need to reduce costs right now and the staggering realization that the baby boomers, some 77 million of them, will be eligible for Medicare in the next 20 years, health care providers have to look at alternatives to acute care," says Mitchel Levitt, national director of business strategies for the Pennsylvania-based Burt Hill engineering and architectural firm. "We are going to see a generationally driven migration from episodic to continuous care, with medical services being delivered from a variety of locations and facility types with an emphasis on ambulatory and urgent care."

Campbell concurs. "With an aging, not particularly healthy population potentially overloading Medicare, reform is going to have to focus on wellness and on access to clinics that are easy to get to and offer a number of services in one place," he says. With more "front doors" to health care, hospital admissions are expected to remain flat, offset by a projected growth in outpatient services at multiple facilities.

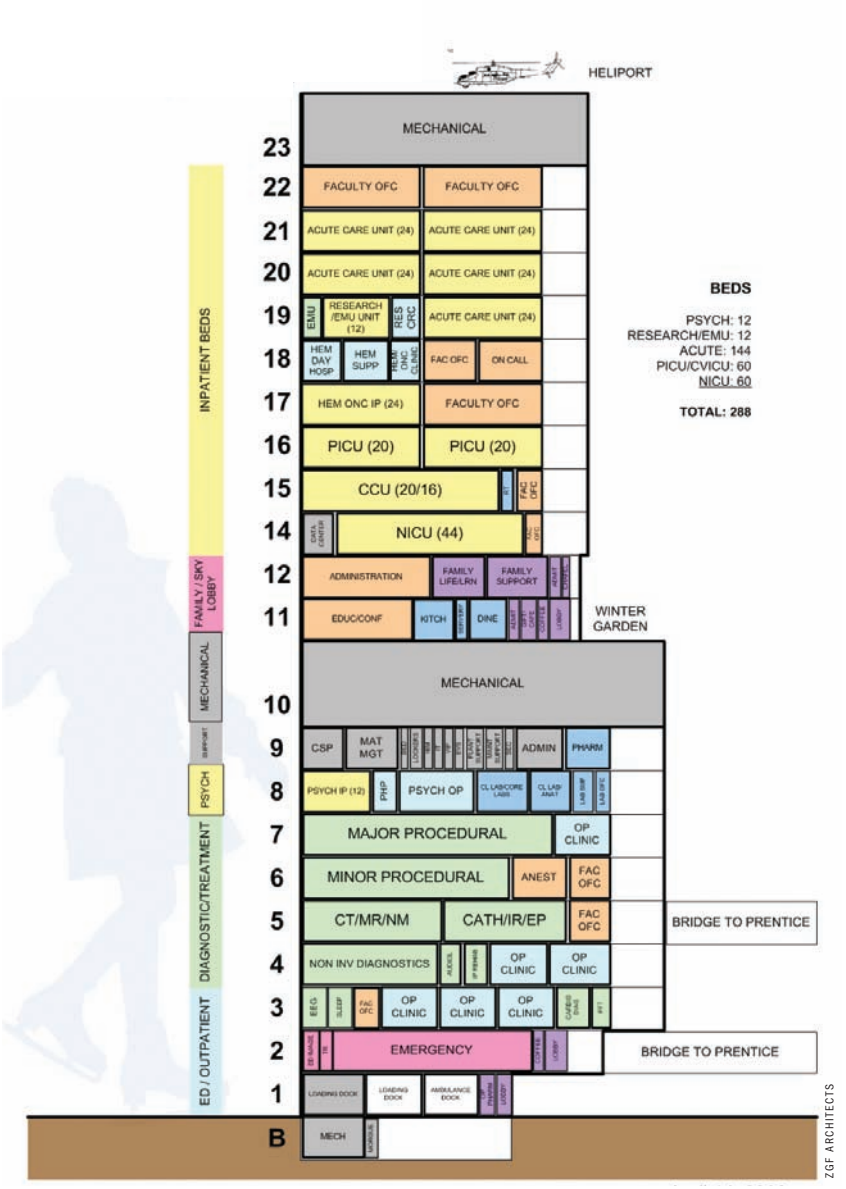
The advent of health care reform is also bringing attention to other populations who often have been underserved and uninsured, but now will have coverage. "One thing we have heard consistently from our clients is that they anticipate higher emergency department [ED] volumes because of the larger insured population," says Regier. "There may be a situation of an already-overcrowded ED becoming even more problematic. Perhaps this will lead to more effort to open more urgent care centers or even increase their ability to deal with more acute patients."

Another solution is to provide better care opportunities in the local community. As an example, Los Angeles County is rebuilding South Health Center on a site adjacent to the troubled Martin Luther King, Jr., Medical Center campus. The project is a gateway building that will help introduce the expanded public health service that will be offered at the facility and on the revitalized campus. It is also the first building to kick off the area's much-needed community redevelopment plan.

One of health care's greatest challenges comes not from external forces, but rather from the technological innovations that are transforming care. "There is a shift toward interventional medicine—which relies on the use of invasive procedures to relieve painful disorders—[and] to minimally invasive surgery, micro- and

WHR

The 26-storey Methodist Hospital Outpatient Center is the largest facility solely dedicated to patient care in the renowned Texas Medical Center.



Stacking diagram of the Robert and Ann Lurie Children's Memorial Hospital, which sits on a 1.6 acre site of the Northwestern Medical Center campus in downtown Chicago.

even nanosurgery, and robotics," says Carlos Amato, a principal with Los Angeles–based Cannon Design. "Advancement in imaging capabilities has changed the nature of the operating suite, where there are now five or six flat-screens delivering information to the surgeon and his team—images, lab reports, medical records, and more—all in real time." Such breakthrough technology puts additional pressure on health care organizations to determine what level of technology is appropriate for their facility and how to make certain they have the information technology infrastructure to support it.

"It's about connectivity and redundancy," says Phil Crompton, a principal with Vantage Technology Consulting Group, based in Los Angeles and Boston, which provides technology integration and management services. "Health care organizations are dealing with new levels of complexity—from data management to wireless connections to multiple facilities to 24/7 IT demand at 99.999 percent reliability." The good news is that the evolution of IT infrastructure continues to provide solutions to help health care providers keep pace, be it at large academic medical centers where research drives demand, or in emerging care models that offer a full spectrum of care on a single campus.

Health care development is clearly in dynamic flux as institutions grapple with change, uncertainty, and risk. Some may opt for more incremental steps, as Watkins suggests; some will focus on using what they have, renovating and improving as necessary, as Levitt and Regier see it. Others will push boldly forward seeking breakthroughs that depend on flexible facilities that can accommodate the changing programs, as Amato believes.

No matter the approach, the challenges of increasing demand and limited resources are being answered with innovation—with services delivered at multiple levels; with more adaptable, sustainable facilities; with technological advances; with greater efficiencies; and with increased collaboration among the extended teams of clinicians, researchers, and planning, design, and construction professionals.

Going forward, medical facilities will have an ever greater influence on the shape of the built environment, from the urban design issues presented by the megamedical centers in large cities to the mixed-use suburban campuses anchored by medical facilities, and to the finer-grain improvements that smaller clinics, medical office buildings, and other facilities bring to local communities. **UL**

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