HEALTHCARE IN TRANSITION: A LEADERS ROUNDTABLE ON HEALTHCARE FACILITIES PLANNING AND DESIGN

BY GAIL GREET HANNAH

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We are going through an evolution in healthcare. We have been through changes before, but this is different. In this new era of "Value-Based Care" there is tremendous focus on reducing costs and becoming more efficient — in clinical processes and the way we deliver care, in the way we operate our facilities, and in the way we design and construct them.

Joseph Strauss, Director/ Planning and Design, Cleveland Clinic

With that introduction, moderator Joseph Strauss set the theme for a roundtable discussion of key issues in current healthcare facilities planning and design. The event, hosted by Cleveland Clinic in early April 2014 and sponsored by Landscape Forms, brought together twelve distinguished design professionals to share insights, learning and best practices. Participants included directors and administrators of three of the country's largest medical centers, architects from international firms, and architects and landscape architects from regional practices.

Strauss summed up the major drivers of change: the Affordable Care Act; an unsustainable rise in healthcare costs; the proliferation of technology in medicine, communications, and facilities; and rising expectations among patients who enjoy unprecedented access to information and are highly engaged in their own care. The challenge for healthcare facilities nationwide, he said, is to develop solutions that deliver high quality care more efficiently at lower cost.

Model of Cleveland Clinic campus used for planning
Master Plan: Foster + Partners

Photo: Kirt Martin

You need a master plan, an overview of every building and how it is integrated into the bigger picture to make thoughtful decisions or you're in trouble.

William Blunden, Principal, William A. Blunden Architecture

At Parkland Health & Hospital System, the primary healthcare facility for Dallas County, Texas, siting was the initial challenge for its new hospital now under construction. Walter Jones, Parkland's Sr. Vice President, Facilities Planning and Development explained that Parkland is identified as part of a medical district housing two additional medical institutions with which it has enjoyed decades of physical adjacency and functional connectivity. The new Parkland towers on a corner across the street from its current location were oriented to create a "view alley" from the corner to the front door to preserve continuity with its medical partners and will be connected to them by a bridge across the main thoroughfare that now lies between them. Although the main entrance to the new facility faces Parkland Boulevard, a new internal roadway that runs through the campus, the facility worked with government agencies to retain Parkland's historic street address.

The success of any plan depends on the players, noted Jerry Smith, a landscape architect and Principal, Smith/Green-Health Consulting. "It's important to have the right people at the table at the right time. You can't really impact design if you are joining the process in the schematic or conceptual stage because so many of the critical decisions about how the space can function are already set in stone." Planning for vertical growth and building infrastructure up front has helped Mayo Clinic flex over time and lowered costs,

according to Douglas Holtan, Vice Chair, Dept. of Facilities and Support Services at Mayo. “We start with functionality because building costs are a fraction of the human resources costs of an inefficient building. That means broad involvement, from doctors and patients to people in operations, to help us design for optional efficiency.” Paul Strohm, Director of Healthcare Global, HOK said his firm uses an envisioning processing in programming to develop exact definitions of what concepts like flexibility really mean and to “test the temperament” of clients for what they are willing to spend to achieve their goals. “That helps the project team know how to apply resources, as opposed to having individual engineers, architects and landscape architects trying to decide how to use the space.”

While most healthcare facilities face similar challenges, at major medical centers they are magnified by scale. Peter Van Vechten, Design Director, Skidmore, Owings & Merrill, noted that the population on the Cleveland Clinic campus is bigger than many American cities, and the complexities of cities are mirrored in the hospital. “In healthcare I observe a tendency to try to make improvements in incremental steps,” he said. “But at times you need to step back and ask, are we using the right model? Thinking like a city is really critical.”

As designers we always have our eye on the initial costs of a structure, but the biggest savings are in operational efficiencies. The decisions we make that result in a building that is efficient, flexible and operationally sound are huge.

Elliot Bonnie, Principal, Director of Healthcare Group, DesignGroup

Landscape architect, Craig Cawrse, CEO of Cawrse and Associates, explained “We’re always trying to think ahead in terms of utility locations, tunnels, anything that might be saved and brought into service to provide cost savings in the next phase of the master plan.” And while new facilities have energy efficient heating and cooling systems, existing buildings can be made more efficient by re-commissioning as the pattern and intensity of patient services change. William Blunden noted that designing for operational efficiency includes designing for maintenance. “One of the secrets of good maintenance is making it easy. Don’t create environments designed to hide dirt. You need to see it to keep it clean.” Healthcare productivity costs are more than one hundred times energy costs, asserted Virginia Burt, Principal of Visionscapes Landscape Architects. “When we look at how to make facilities more efficient and flexible, productivity is where the revolution is really happening.” And while staffing is the most expensive operating cost, Walter Jones explained, it is the least capable of being challenged in terms of need. “Anything that makes staff more efficient helps control costs.”

Major medical centers have internal resources to help them re-engineer and re-envision their facilities, but smaller hospitals also have to change to survive and they rely on consultants to guide them. Paul Strohm explained, “They can’t afford a dollar, they can only afford sixty cents. We try to help them eliminate waste that is built into the system. If we can do that, they can provide great care, perhaps better care, with fewer people in less space.”

Hospitals are among the most complicated building typologies that exist and that calls for a different way of thinking. If we think of infrastructure in terms of systems, we can achieve solutions that are clear, simple and repeatable, therefore more economic and maintainable.

Peter Van Vechten, Design Director, Skidmore, Owings & Merrill

Walter Jones described the strategy for Dallas's new Parkland hospital. All 865 rooms are the same, in size and wiring, he explained, so they have the capability to provide flexible services without changing physical configurations. A standard patient room can accommodate mobile equipment to become an ICU and, for less critical medical services, the hospital can change the service simply by changing the staff. Rooms are arranged in large blocks to enable ebb and flow in the size of a particular patient unit, enabling, for example, two 36-bed units to be broken down into smaller modules to meet the service unit's needs. And since all nursing is decentralized, nursing care can be distributed across the entire floor. "There are still unknowns in all of that," Jones said. "How much equipment are we going to need in the rooms? What will the technical requirements be? We tried to shell out space and provide conduits to accommodate that for the foreseeable future. With a new building you get to start from scratch, but you have to make sure you lay the groundwork to continue to evolve, because you're always being asked to do more for less."

Both Mayo and Cleveland Clinics have furniture standards that enable furniture items to be interchanged. Mayo Clinic maintains a 100,000 square foot furniture warehouse that enables it to mix, match and remodel without having to redo a whole floor. Abigail Clary, Vice President & Regional Director, HDR Architecture, reported that her firm is looking at other dimensions in flexibility, among them development of a movable wall, "so as the number of patient beds go down as they are expected to do, we can re-purpose space with as little renovation as possible."

For most patients and visitors the first experience of the healthcare institution is negotiating their arrival, navigation and parking at what are often very large and complex facilities. Clear, simple and repeatable systems can contribute to positive impressions before the first encounter with medical staff even occurs. Successful wayfinding design begins with the layout of buildings and is reinforced in landscaping, signage, and protocols for people-to-people assistance. Urban institutions may seek to locate facilities near public transportation. Planners at Parkland Hospital, a public institution that serves an inner-city population, worked with the city of Dallas to relocate a light rail station within the campus, at the entrance to the surgical/medical Outpatient Clinic. Craig Cawrse explained that the landscaping at Cleveland Clinic is designed to simplify view corridors, use tree placement to provide directional focus, and create an identity that is repeated along the main routes through the facility, "to make the campus stand out in a very simple, strong way." Architect and Landscape Forms President, Richard Heriford, praised the success of landscape Architect Peter Walker's scheme in achieving that goal. "I am really impressed by how Peter Walker has created an incredible sense of entry and intrigue," he said. "As you approach on Euclid Avenue you immediately see the rock garden and the big fountain and you know exactly where to go. It gives you a sense of comfort and Cleveland Clinic a sense of identity." Abigail Clary extolled the importance of light inside the facility for keeping people oriented: "Bringing some light into the space or creating a vista that relates the inside of the facility to elements on the outside can help a great deal in maintaining direction." Paul Strohm concurred. "Our concourses usually include at least one wall of glass for as long as we can get it, even if it passes through a building or two, emerging on the other side." And while many healthcare clients relegate

Entry Fountain at main entrance to Cleveland Clinic
Landscape Architect: Peter Walker and Partners

Photo: Kirt Martin

signage to the end of the design process, explained Clary, "it should be an integral part of the wayfinding design up front, not a placard at the end."

Parking is a priority for patients and visitors and charging fees to park can be a charged issue for the institution. Douglas Holtan said a proposal at Mayo Clinic to levy a fee for parking generated considerable push back from caregivers who argued, "We need to have free parking for our patients or they may choose to go somewhere else."

Paul Strohm observed that, "Parking garages are often the front doors to our healthcare facilities." He described strategies that his firm employs to integrate parking into the wayfinding scheme to make it a more humane and less stressful experience, which include aligning the main portico from the garage to provide entry into the lobby at the same point as the drop-off at the front door; getting 75% of parking spaces on flat areas; installing speed ramps; and, following a cue from airports, using technology to provide information on where open parking spaces can be found.

Hospitals typically position staff near entries to check people in and direct them to where they need to go. This is often the first opportunity for the institution to personally communicate its commitment to care, but it's not always simple. People present a wide range of needs and questions complicated by language and cultural barriers, and systems to address them are required. Cleveland Clinic has trained red-coated concierges at its front entry and most facilities provide some form of personal greeting and guidance. Institutions are also exploring ways to help people access information and get directions using smart phone apps.

From the master plan to the design of patient and treatment rooms, and from green spaces to food and beverage services and the wayfinding that guides you there, healthcare facility design helps institutions create integrated environments that express identity. "We have tried to make wayfinding as simple and intuitive as possible, and to provide consistency so people anywhere within the boundaries of the facility feel a sense of place," said Parkland's Walter Jones. At Cleveland Clinic, design consultant William Blunden explained, "We try to set the tone from the top down. It's not about brand and it's not about style, it's about following principles to create a calm, quiet, professional environment that reflects the quality of care you are going to receive."

Our patient app for smart phones and tablets lets patients get their notes and lab results and using secure messaging ask questions of their caregiver, wherever they are. That's a concept of care delivery we call 'Here, There, Everywhere.'

Douglas Holtan, Vice Chair, Dept. of Facilities and Support Services, Mayo Clinic

Technology made decentralized nursing possible. Now personal technology is taking treatment to the community, the home and the counter at Wal Mart. At facilities around the country physicians now have access to patient data and the ability to communicate with patients on-screen, taking the treatment to patients wherever they are. Monitoring technology is making it possible to release patients from the hospital sooner and require fewer follow-up visits. All this has implications for the types of facilities being designed, their location and scale. Douglas Holtan described a continuum of care offered by Mayo Clinic in which some patients are seen at the medical center and some go to local doctors and other caregivers, with treatment directed and monitored through personal apps that enable the exchange of information and provide patient education that makes it possible to "work on wellness" before people get sick. Elliott Bonnie's firm is designing more outpatient facilities for large medical centers as they try, in response to the Affordable Care Act, to keep some of their more acute patients out of the hospital in ambulatory settings. "Many of these facilities are combining community centers and outpatient care, creating a new wellness center model," he declared.

The use of technology for aggregating meta-data makes it possible for medical districts within cities and metropolitan areas to develop strategies for treating populations as well as individuals, "so you have this big, over-arching view at the same time healthcare is moving toward a very personalized approach," Peter Van Vechten observed. Some facilities are investigating technologies embedded in the building to track every aspect of patient care. But as access to patient data puts the focus on information-based care, patients are asking, is this better care? Paul Strohm believes the healthcare industry faces a big educational challenge to make the case. "Patients are used to what they've been getting and they think that anything less than a doctor visit, in a particular space, is somehow compromised. The idea that I didn't see the doctor but I'm going to give a good HCAHP (Hospital Consumer Assessment of Healthcare Providers and Systems) score is a struggle right now."

Doctor, the patient will see you now.

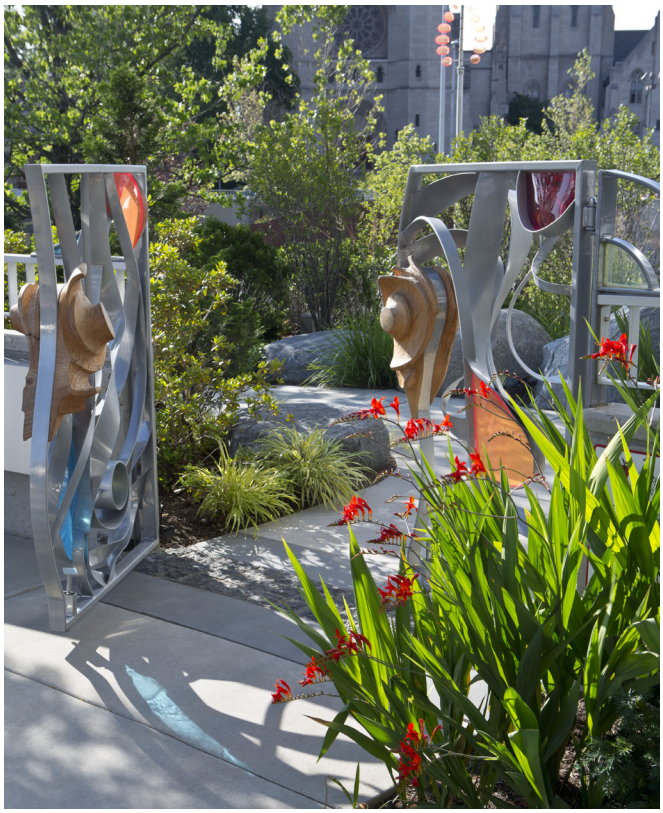
Virginia Burt, Principal, Visionscapes Landscape Architects

That, Burt recalled, is how a leading healthcare CEO recently characterized the changing landscape of patient care. Healthcare providers are turning their attention to delivering patient-centered care based on the patient experience because it's good medical practice and good business. Patients have choices and through HCAHPS, are able to report on the quality of their experience and influence incentive payments to healthcare providers. Cleveland Clinic hosts an annual Patient Experience Conference to share up-to-date information and expertise.

Participants employ various techniques to help them identify needs for patient-centered care, most commonly group conferences with physicians, nurses, patients and family. Peter Van Vechten recalled, "At many user group meetings there is a hierarchy under the surface. One of the most powerful experiences I've had was at a meeting with a family advisory group where everybody in the room, physicians, nurses, facilities staff and patients, were equal. It was eye-opening to see how much people learned by listening carefully to others talk about what they were going through." Most healthcare institutions have some sort of family advisory council, Jerry Smith said, and for a project at Phoenix Children's Hospital, his design team presented directly to the kids. "They have children for whom this is a second home and they gave us very good information." That included thumbs down on a Xeriscape plan because it looked hot and hard. Driven back to the drawing table, the landscape architects came up with a new plan to wrap the building with a green berm. "It looks like a ribbon within the Xeriscape and it is beautiful," Smith said. "The kids can look out the window at that green mound and picture laying on it. Out of the mouths of babes."

For a project at Duke University Hospital's eye program, HOK worked with an advisory group that included people with a variety of vision issues to identify their special needs, which it turned out, included different light intensity levels within the same waiting room to provide the necessary contrast for a range of sensory perception. Paul Strohm explained, "We think we know a lot about this stuff, but we don't. We can do a better job as designers in treating space if we put ourselves in the patient's shoes." His firm employs a formerly sighted, now blind architect as a consultant. "You have to find the right resources who can contribute in innovative ways to the process."

A big part of patient-centered care is creating an environment for patient comfort, Walter Jones declared. "Is your family able to be with you for support? Do you have a comfortable chair to sit in? Can you control the lighting, heating and noise in your space? It's not so much a particular aesthetic as it is the de-stressors that put a person at ease." The landscape architects at the table put green spaces high on that list, noting that research supports the value to physical, mental and emotional health of access to green spaces, including green views and healing gardens. Healthcare facilities are making serious efforts to create more — and more varied — green spaces and green vistas. "We talk



Project: Fractal Gate at Schneider Healing Garden
Landscape Architect: Virginia Burt Designs

Photo: Brad Feinhnopf

about providing access to nature within buildings," Jerry Smith explained, describing a scheme at Dublin Methodist Hospital in which buildings were pulled apart with light wells and courtyards located at different levels of the facility. Greg Mare, Senior Principal, Architecture, Stantec, reported that as the building for Dublin Methodist was being planned, his firm created opportunities for thirteen different healing gardens for patients, families and staff, even though there was no budget to outfit them. "It was all done through philanthropy," he said. "People who weren't going to contribute to the big capital campaign would give to create a garden. Sometimes you have to think about things a bit differently." Parkland Hospital has created a "Wellness Park" that it considers the town center of its new campus. The acre-plus space, which is available to anyone with business in the hospital, offers internal access only from the cafeteria and is visible from the train carrying people to and from the complex. Paul Strohm reported on a project in Indianapolis for which his firm designed a Sky Bar, a twist on green space where food is grown for consumption in the cafeteria. "It's a place for patients and staff to go but it also serves the purpose of reinforcing good nutrition and healthy living," he explained. Virginia Burt described a project in which the facility is keeping bees, using the honey in their cooking and promoting it as a brand. Cleveland Clinic, among others, hosts a Farmer's Market that is well attended by patients (some trailing IV poles), staff and people from the community.

Positive patient experience is supported by taking care of the caregivers. Amenities like green space help attract and retain good staff, Virginia Burt declared, and providing places for reducing stress makes staff happier and leads to better care. She pointed to research by environmental psychologist Clare Cooper Marcus showing that 60 percent of green space users are caretakers and advised providing a choice of social seating in multiple locations so spaces are readily accessible to staff with a pressing need but limited time for breaks.

Project: Phoenix Children's Hospital
Landscape Architect: Smith/GreenHealth Consulting
Architect: Karlsberger

Photo: Gary Knight

Sustainability must be completely integrated into the design, not a plug-in or add-on. If sustainability initiatives are broken out of the budget, they will be the first things on the chopping block.

Walter Jones, Sr. Vice President, Facilities Planning and Development, Parkland Health & Hospital System

Achieving LEED certification brings benefits to the environment and an institution's standing in the community. Some design professionals warn, however, that a focus on earning points can overshadow planning and design for a higher purpose. "Rather than thinking about sustainability as a check list, we should think about creating buildings that make generations of people live healthier lives and be more productive," Paul Strohm declared. Walter Jones explained that Parkland used LEED as a meter to tell the public about how sustainable it is, "but basically we did things I would consider sensible design: the right orientation, the right materials, recycling, disposing of materials properly, a very high-efficiency mechanical plant and energy efficient equipment." Peter Van Vechten advocated participation in the AIA 20/30 Challenge that sets performance sustainability standards, asserting, "We're not going to solve global warming by achieving LEED Silver. We're irresponsible if we don't design a high-performance building."

There is work to be done. Elliott Bonnie regretted the reliance on air conditioning in U.S. facilities and the inability to open windows and use natural ventilation, but extolled the advantages of HVAC systems that use chilled water, which holds 3,400 times more heat than air and cools buildings with much less energy. Peter Van Vechten observed that in many parts of Europe workers have a legislated right to

Healthcare Roundtable, Cleveland Clinic, April 2014

Photo: Kirt Martin

natural light while “in healthcare we sidestep that and think it’s okay to have spaces where a nurse or doctor never has a clue what time of day it is.” Paul Strohm noted that codes in the U.S. do not allow natural ventilation, rather “We seal up our buildings like they’re mausoleums.” But more humanizing models do exist. In Germany natural ventilation is common and low-tech facilities, such as a recent award-winning hospital in Rwanda, provide examples of flexibility and innovation with very limited resources. Strohm’s firm has designed a project in which outside air is provided for 1.3 million square feet, “in spite of the fact that we can’t ventilate. There are ways to do it if you put your mind to it,” he declared.

Green spaces in healthcare can result in more sustainable facilities, but as the world gets warmer and water scarcer, appropriate landscaping strategies become ever more critical. “We have to address the desire for ubiquitous lawns that require a huge amount of energy to maintain and the fear of dandelions that make us need to spray them,” Virginia Burt said. Designing sustainable landscapes often means confronting entrenched values and even when clients commit to putting in more natural and environmentally appropriate landscapes, education is essential. “Xeriscapes are deserts and wildflower meadows are wild,” Burt explained. “They don’t look like manicured lawns and if facilities people are not educated, they will mow them down.” Burt’s strategy is to create layers, using plants next to the building that are different from those on the outskirts, relaxing as the landscape goes further out and blurring the edges so people can adapt to the change.

William Blunden is resolutely optimistic about the entire changing healthcare landscape. “Change seems like an overwhelming challenge, but it must be embraced,” he declared. “That’s where the innovation will come from. It’s an adventure.”

List of Participants

Moderator

Joseph J. Strauss, AIA
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William A. Blunden, FAIA
William A. Blunden Architecture

Elliott Bonnie, AIA, LEED
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