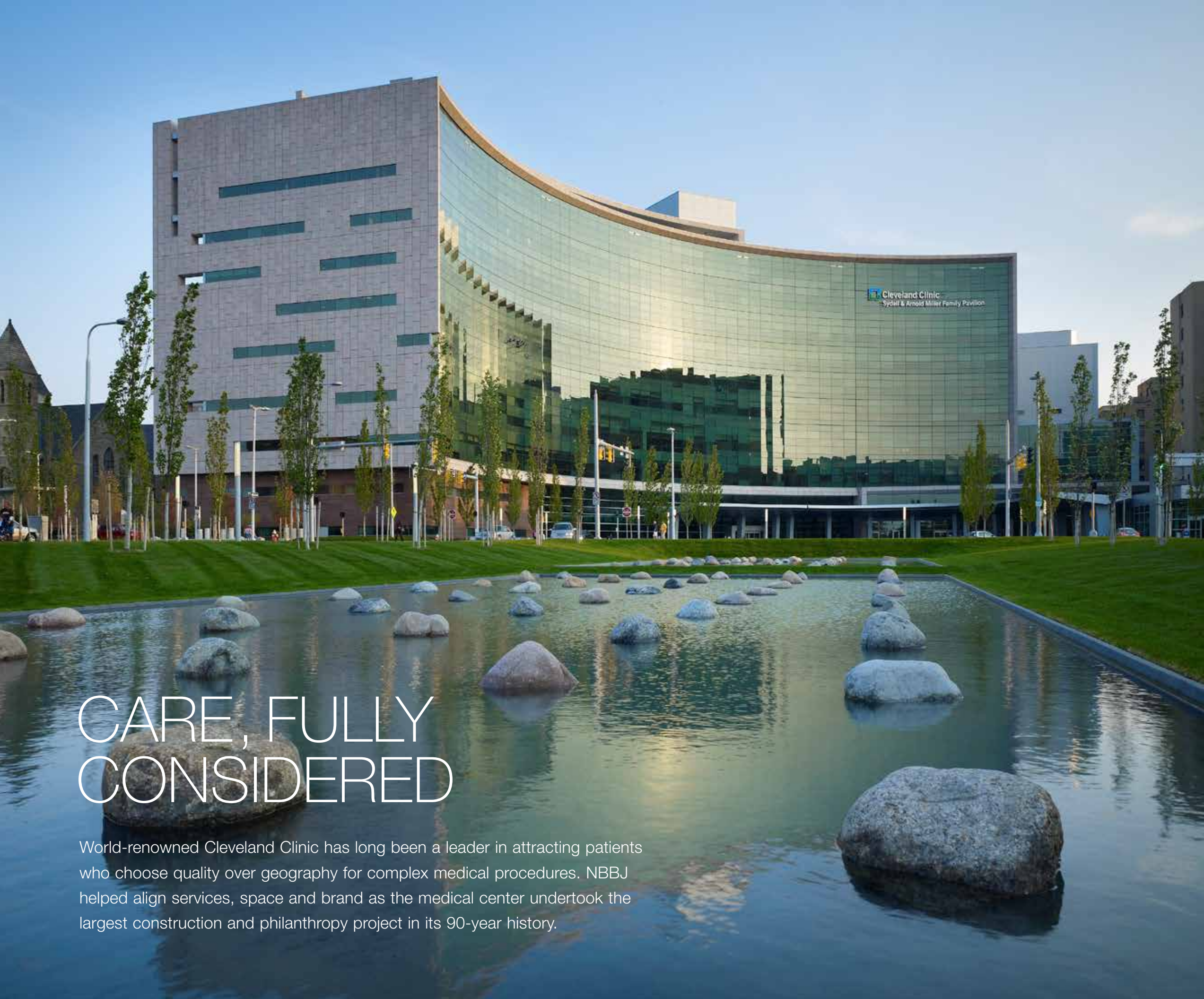


# THE CLEVELAND CLINIC

MILLER FAMILY PAVILION  
AND GLICKMAN TOWER

CLEVELAND, OH



# CARE, FULLY CONSIDERED

World-renowned Cleveland Clinic has long been a leader in attracting patients who choose quality over geography for complex medical procedures. NBBJ helped align services, space and brand as the medical center undertook the largest construction and philanthropy project in its 90-year history.

## THE CLEVELAND CLINIC

Miller Family Pavilion and Glickman Tower  
Cleveland, Ohio

### Vision

Each year more than 3.2 million people receive care at the Cleveland Clinic. The hospital frequently operated at 92% capacity, well over the industry norm of 85%. To meet demand and upgrade outdated facilities, the Clinic embarked on a 1.3 million square-foot, two-building expansion.

### Breakthrough

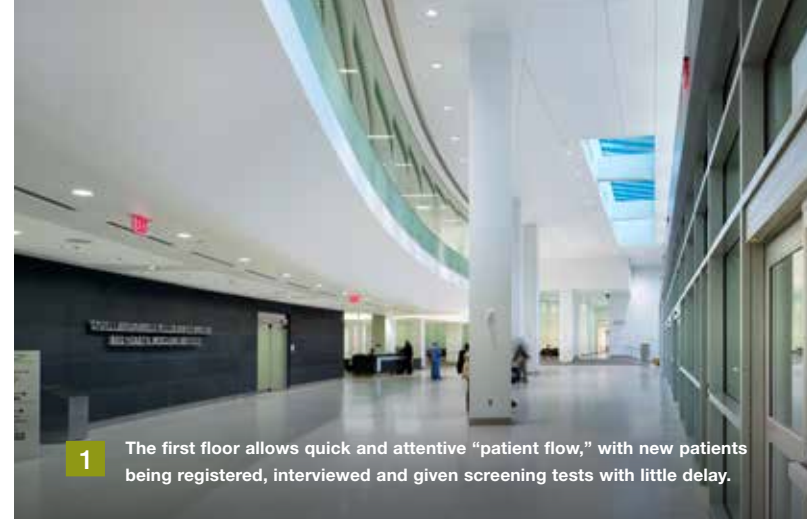
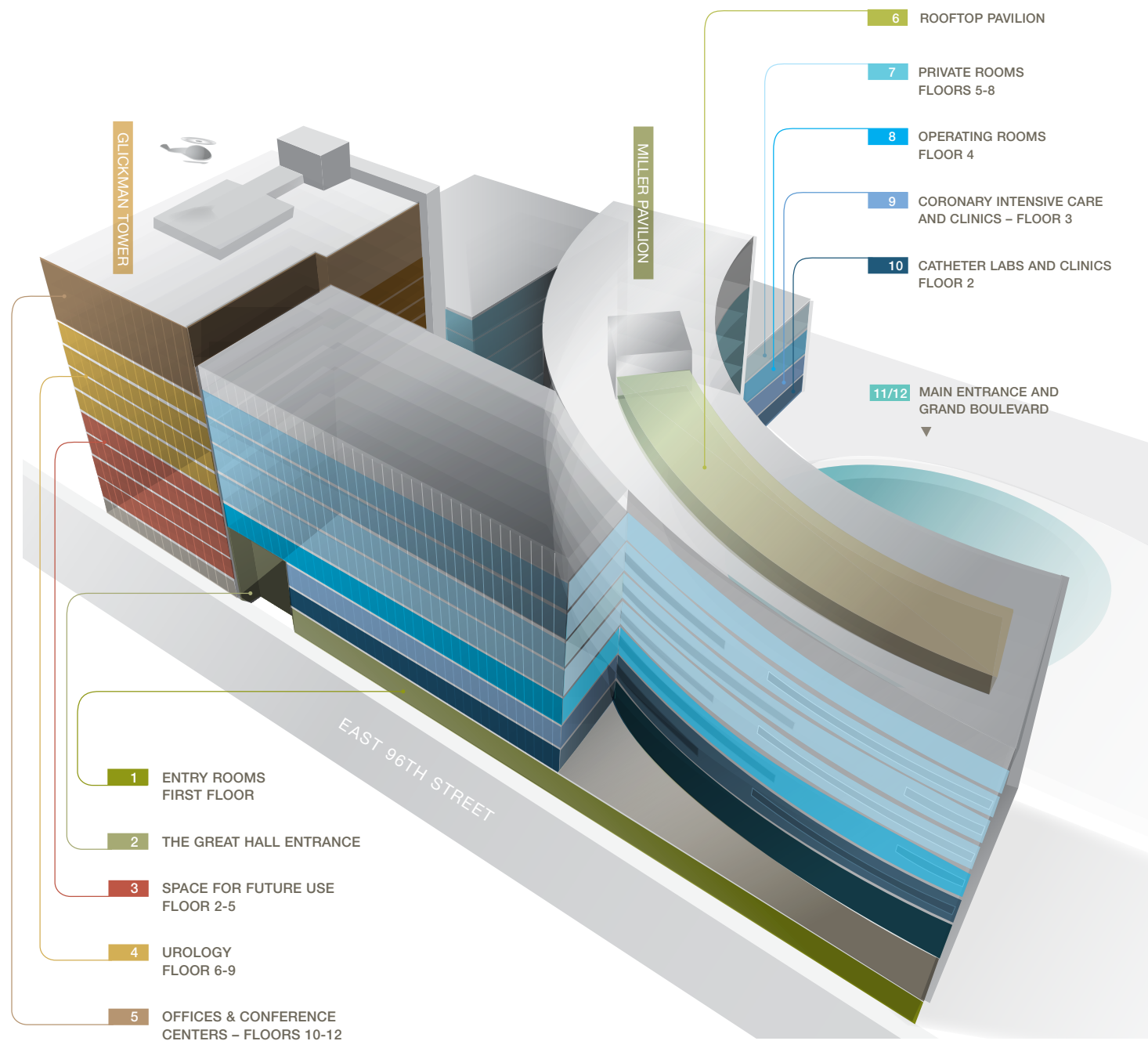
Hospital floors are organized around the Clinic's new "Institute" model, which organizes medical care around organ and disease systems, rather than physician-specific departments. While the buildings' four components each addresses an independent set of needs and requirements, the integration of these units allows them to function as a single, comprehensive entity.

### Value

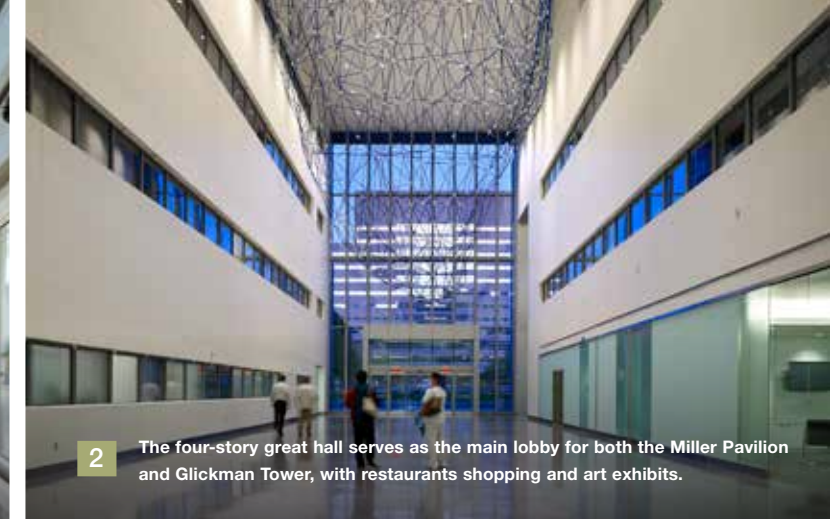
The new buildings bring clarity, serenity and a distinctive new "front door" to the medical center's difficult to navigate, 166-acre campus. Physician productivity is optimized, and staff travel and patient transfer distances are greatly reduced by consolidating all programs under one roof. Building Information Modeling (BIM) allowed for a 33-month fast track delivery of the Glickman Tower. Despite breaking ground one year after the Miller Pavilion, both buildings were completed and opened at the same time.

### Insight

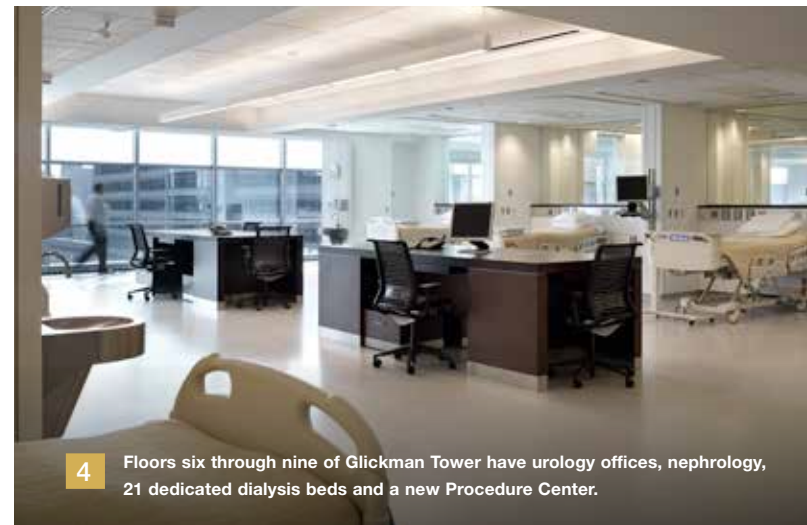
Conventional thinking has long held that patients base their choice of hospital on clinical reputation, location or physicians' recommendations. Hospital executives are now recognizing that patients also consider non-clinical factors, such as room comfort, when choosing where to seek treatment. Creating a "total experience" where space supports the service approach has resulted in a significant competitive advantage for the hospital.



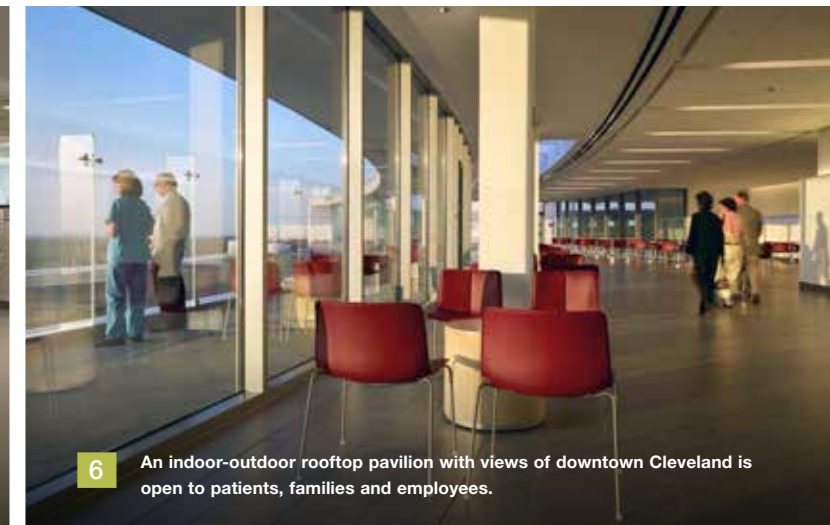
1 The first floor allows quick and attentive “patient flow,” with new patients being registered, interviewed and given screening tests with little delay.



2 The four-story great hall serves as the main lobby for both the Miller Pavilion and Glickman Tower, with restaurants, shopping and art exhibits.



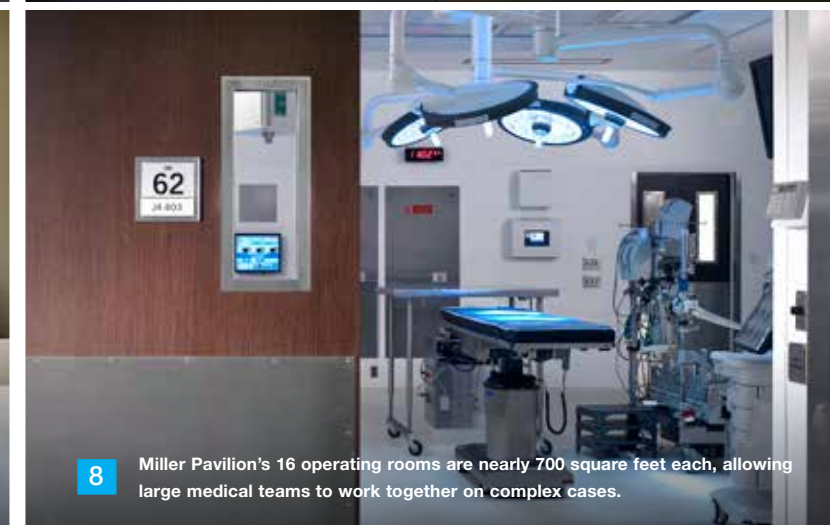
4 Floors six through nine of Glickman Tower have urology offices, nephrology, 21 dedicated dialysis beds and a new Procedure Center.



6 An indoor-outdoor rooftop pavilion with views of downtown Cleveland is open to patients, families and employees.



7 The fifth and sixth floors of Miller Pavilion include 278 private rooms, 12 designated VIP rooms and 76 cardiovascular surgical ICU beds.



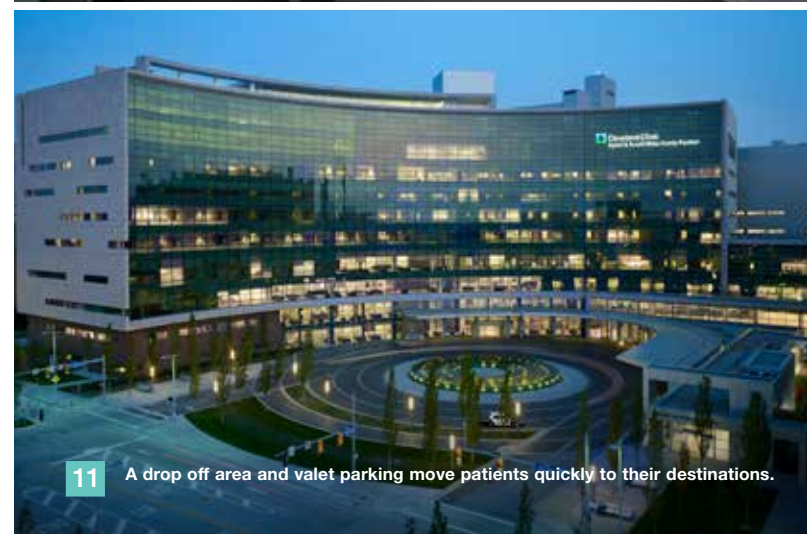
8 Miller Pavilion’s 16 operating rooms are nearly 700 square feet each, allowing large medical teams to work together on complex cases.

## A SMARTER MODEL OF HEALTHCARE

The nation’s #1 heart and vascular institute—previously spread throughout the campus—is now consolidated in Miller Pavilion. The new 10-story facility features 128 exam rooms, 79 procedure rooms, 16 operating rooms, 110 intensive care beds and office space. The adjoining Glickman Tower houses the Urological and Kidney Institute, which is the clinic’s largest surgery center and one of its fastest growing programs.

The clinic’s new “Institute” model allows patients to better access the care they need. Multidisciplinary, disease-specific

centers integrate the expertise of multiple medical experts into the comprehensive care of a single disease. By consolidating all programs—including outpatient clinics, inpatient beds, technology and procedure suites, and physician offices—under one roof, physician productivity is optimized and staff travel and patient transfer distances are greatly reduced.



11 A drop off area and valet parking move patients quickly to their destinations.

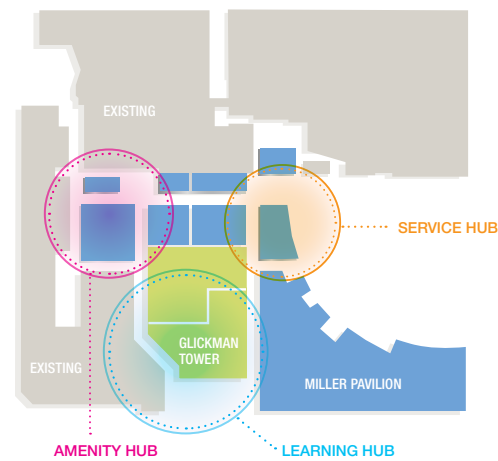


12 A landscaped boulevard ushers patients and families into the new complex.



25,000

Every day, 25,000 patients, visitors and caregivers pass through the front doors of the Cleveland Clinic.

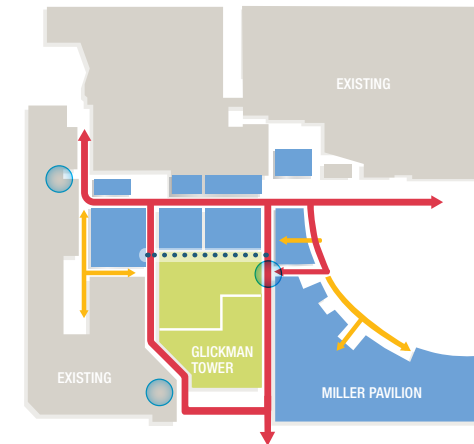


- **SERVICE HUB:**  
welcome, check-in, services, discharge
- **LEARNING HUB:**  
education, resources, conference center
- **AMENITY HUB:**  
food, retail shops, services

## EPICENTERS OF ACTIVITY

Designed to reduce redundancy and the impact of large amounts of traffic, Miller Pavilion and Glickman Tower share the same ground floor. The circulation patterns are designed to flow around three epicenters of activity: a Service hub, an Amenity hub and a Learning hub. The hubs accommodate distinct user groups and disperse them across the main floor, reducing overlap and crowding.

The Service (entry) hub welcomes new patients. A staff of red-coat-wearing greeters answers questions and guides patients to their destination. The Learning hub accommodates medical professionals attending conferences and educational courses. The Amenities hub houses a café, bank and retail outlets. It provides a pleasant distraction for patients and caregivers who spend extended periods of time on the campus.



- MAIN CIRCULATION NODES
- PRIMARY/PUBLIC CIRCULATION
- SECONDARY/LOCALIZED CIRCULATION
- - - CLINICAL CIRCULATION

## DESIGNING THE FLOW

Clinic officials stressed that feelings of intimidation and confusion can accompany a visit to the hospital, so the NBBJ design team created an entry facility that processes patients without losing them in the shuffle. The first floor is dedicated to quick and attentive “patient flow,” with new patients being registered, interviewed and given necessary screening tests with the least delay possible.

The lobbies are uncluttered and spacious, with clear sight lines and legible way finding signage. Comfortable seating is available every few steps.



The Miller Family Pavilion triples the space previously available to the Heart and Vascular Institute.

Teamwork, collaboration and innovation are built into the design. Clinical areas are built for ease of use by patients and medical professionals. Flow is managed to minimize patient wait times, which results in more time for physicians to spend with their patients. The sheer number of clinical

facilities enhances the convenience and experience of patients and caregivers alike. Outpatient clinical areas are located along the curved glass façade to facilitate way finding and provide patients and families with continuous access to natural daylight and scenic views.



## HEALING HOSPITALITY

The sickest of the sick come here, so care of the body, mind and spirit is integral to the design of both the Miller Pavilion and Glickman Tower. The project's design concept—"healing hospitality"—minimizes the visual clutter that characterizes typical hospital

environments. Landscape elements take people from the world outside and move them gracefully inside the world of the clinic. A rooftop terrace overlooks the hospital's reflection pool, providing a tranquil place for patients and staff.





## A ROOM WITH A VIEW

Floor-to-ceiling windows offer an abundance of natural light and expansive views of nearby downtown Cleveland and Lake Erie.





SINGLE PATIENT ROOM



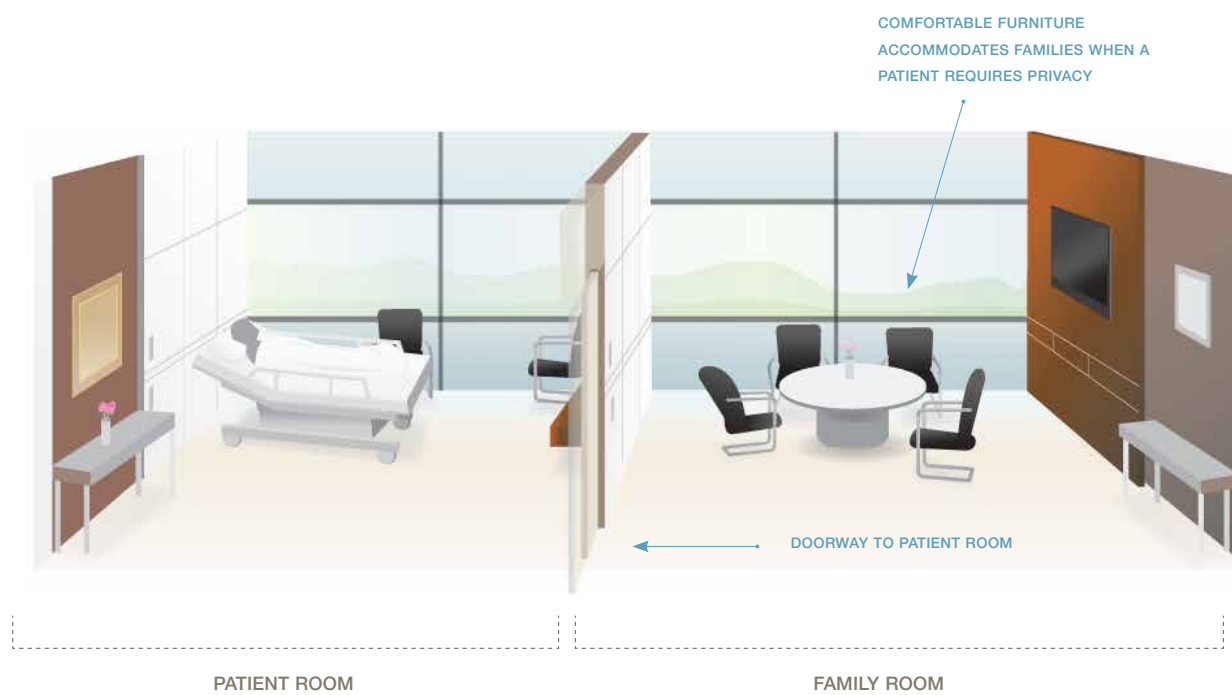
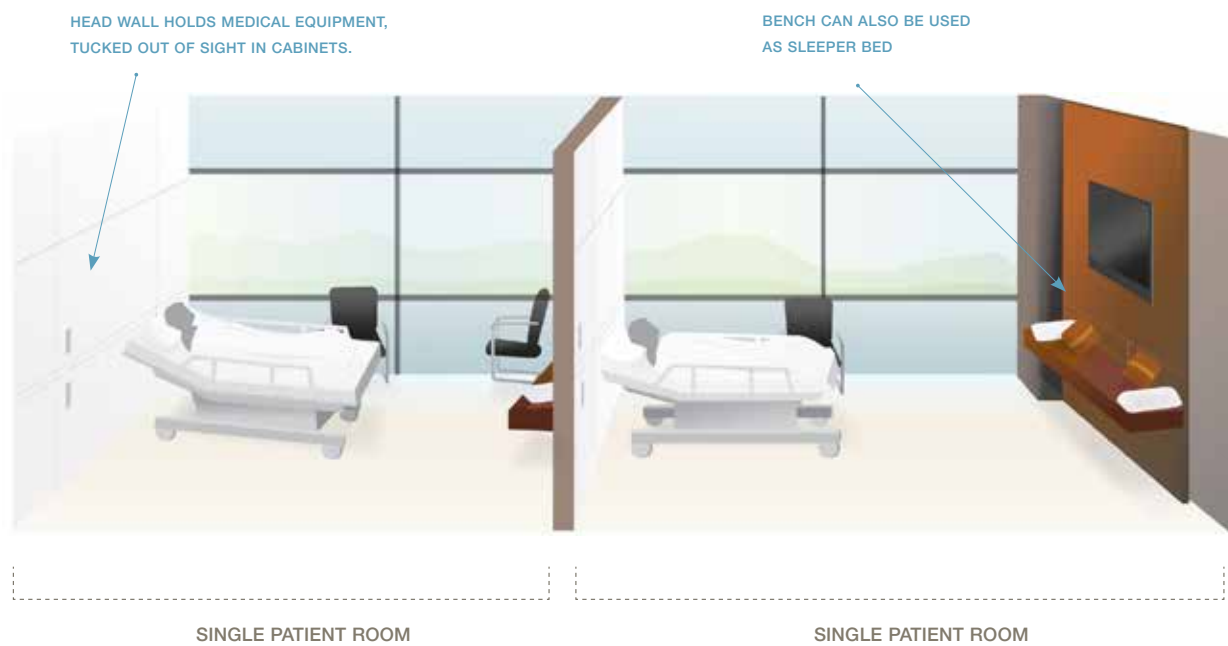
ADJOINING FAMILY SUITE

## SINGLE PATIENT ROOM

All 278 private patient rooms include a wood-paneled accent wall with a flat screen television and a comfortable, pull-out sleeper sofa. Oxygen, suction and blood pressure equipment is easily accessible, but neatly hidden behind sliding panels. Bedside technology and wireless computer access gives the patient greater control over their environment. Workstations on wheels allow for efficient nurse documentation throughout each floor.

## SINGLE ROOM WITH FAMILY SUITE

The role of the family has changed from concerned bystander to a member of the care team, often with family members staying around the clock. Designing family zones in patient rooms results in fewer patient falls, reduced patient stress and depression, improved communication and increased patient satisfaction. Alternate patient room floors are arrayed so that adjacent rooms can be converted to family suites.





## IT TAKES A TEAM

During the same procedure, a patient may need an open cardiac surgical operation, thoracoscopy and coronary intervention, requiring operating rooms that are imaging intense. The nearly 700 square foot ORs in Miller Pavilion accommodate the large surgical teams necessary for the

most complex cases, while still leaving space around the operating table to facilitate the surgical team's movement and workflow. Each has its own cath lab for imaging, an air handling unit to minimize infection potential and terrazzo flooring to limit vibrations.



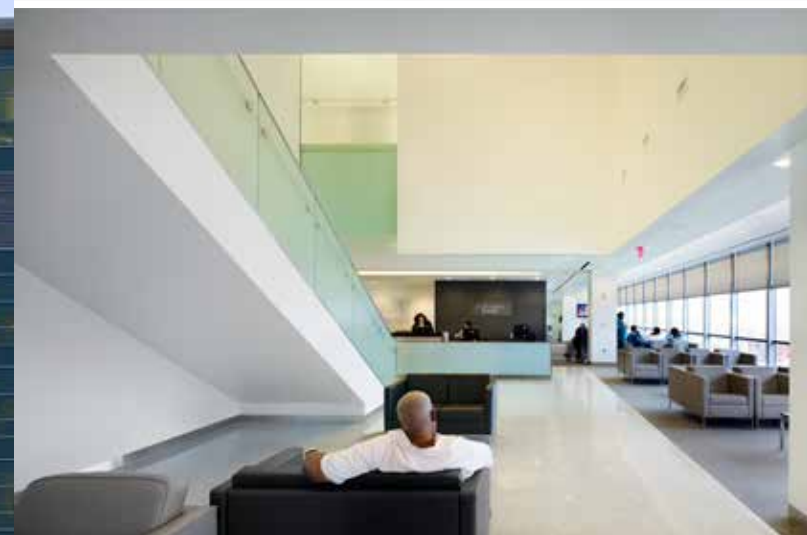
## CREATING ENGAGING PLACES TO HEAL

The Clinic's fine art collection is dispersed throughout the public spaces and patient rooms, with seven site-specific pieces commissioned for the new buildings. The artwork reflects key concepts such as innovation, teamwork and service—fundamental cornerstones of Cleveland Clinic's philosophy.

“The addition of Glickman Tower allows us to continue our momentum in pioneering new surgical techniques, incorporating the latest technology, and—most importantly—continuously improving outcomes for our patients.”

ANDREW C. NOVICK, M.D., CHAIRMAN  
GLICKMAN UROLOGICAL & KIDNEY INSTITUTE





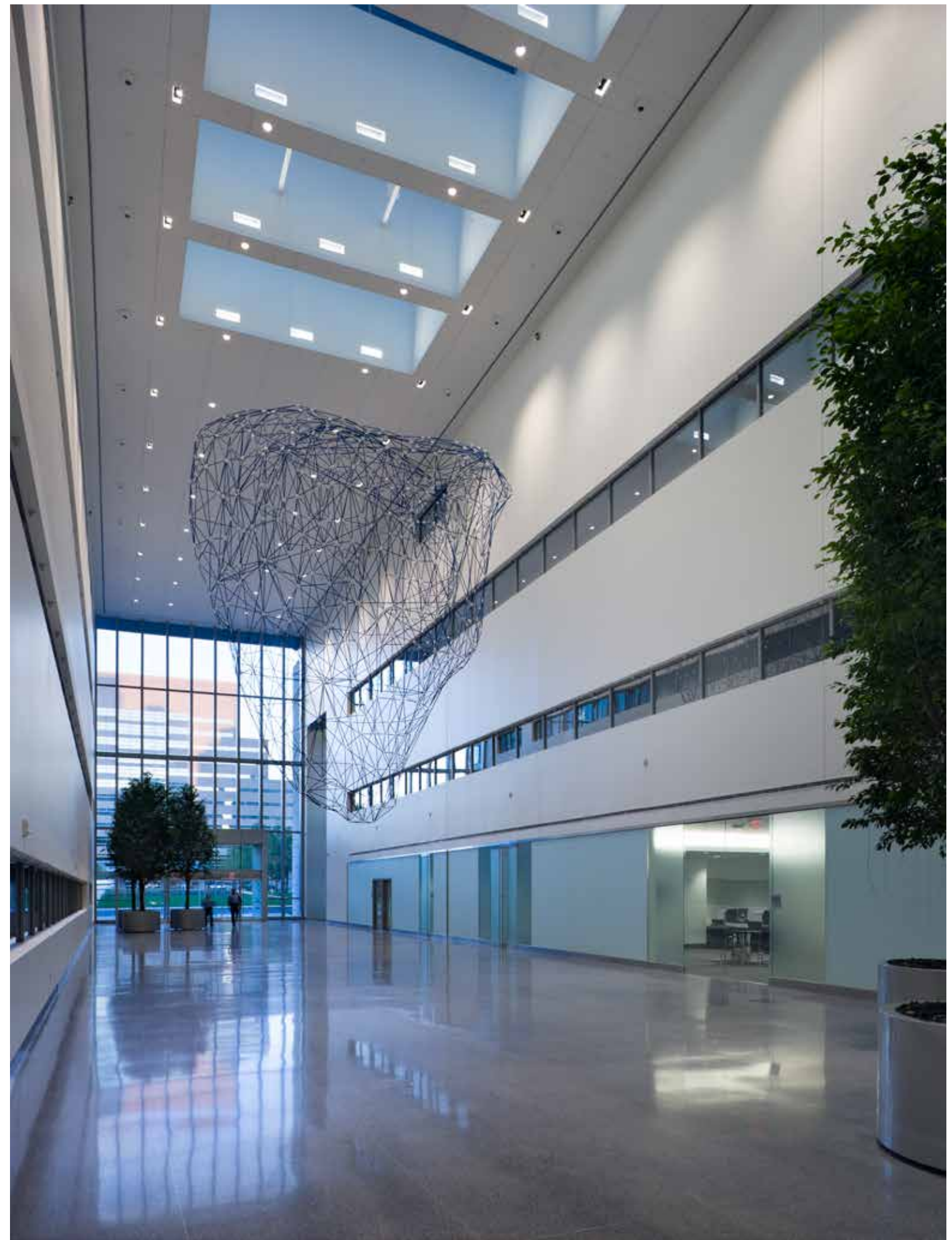
## GLICKMAN TOWER

Glickman Tower houses the hospital's Glickman Urological and Kidney Institute, which is the clinic's largest surgery center and one of its fastest growing programs. The 12-story building is comprised of 74 exam rooms, 16 procedure rooms, a 21-bed dialysis unit and a chapel and meditation room.

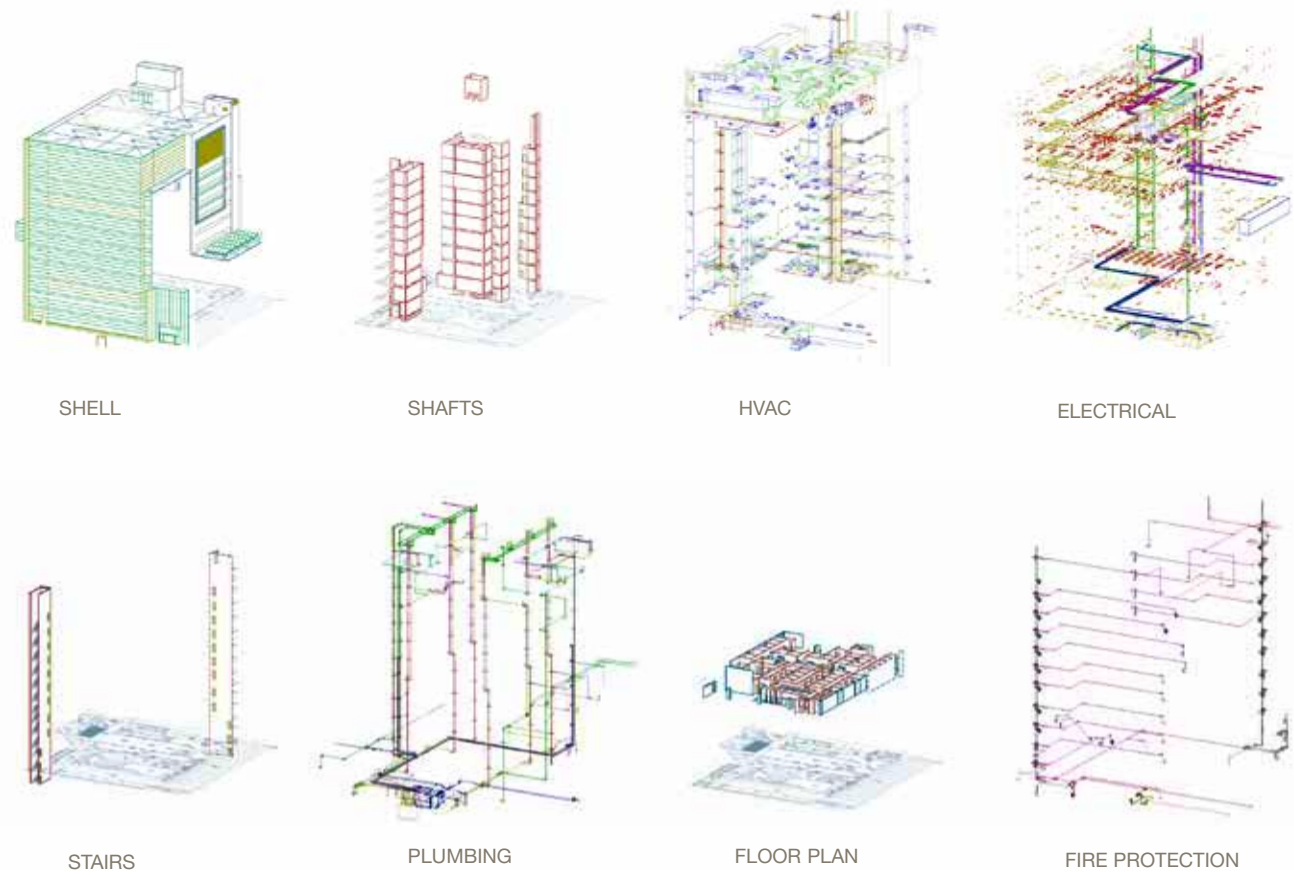
The dialysis unit provides treatment for 42 patients at 21 treatment stations in two shifts. Four additional stations in the bed staging area and one additional station in the new Procedure Center can also be used for dialysis. The Center is comprised of two large open areas, each with a panoramic view of 10 or 11 treatment stations. The open layout contributes to greater functionality, safety and efficiency. The increased capacity results in a reduction of operating hours and an increase in the number of patients treated.

The building was designed with a 30-foot structural grid. Vertical distribution of infrastructure systems is located in the corners, leaving a very open floor plan that can accommodate anything from an office to an operating room to a laboratory. Exam floors feature dual corridors to separate medical traffic from the public, providing patients with increased privacy.

Glickman's design accommodates flexibility and changes on demand. Outpatient office space was built on the same module as exam rooms, allowing for easy transitions. When the building was completed, the heart center was able to expand across buildings and make efficient use of previously unassigned space.



## BIM Model Breakout by System



## CHANGE IN MOTION

When it came time to address facilities for the Urology and Kidney Institutes, it became evident that the existing 1970s “F” building could not meet the needs of a state-of-the-art practice. CEO Dr. Toby Cosgrove challenged the team to devise a new solution. Although programming began more than a year after construction of the adjacent cardiac center was started, the hospital targeted the same completion time frame for both buildings.

Building Information Modeling (BIM) helped the project team meet the aggressive design and construction schedule on Glickman Tower. From the start, three-dimensional, integrated models were used to communicate with the client leaders, user groups, consultants and

contractors to facilitate rapid understanding of the building design options and coordinate systems and details.

During construction, BIM and a cost/manpower scheduling program allowed for fast-track responses to major project changes without additional staffing. When an additional elevator needed to be added to the building after the contractor had started construction of the foundation, the design team was able to update the model in less than two days. Despite a one-year difference in start dates, Miller Pavilion and Glickman Tower were completed at the same time.

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“These buildings have a real presence. They stand for something. What they stand for is the highest ideals of medicine, expressed in the mission, vision and values of Cleveland Clinic. They are solid and commanding, like our four cornerstones of quality, innovation, teamwork and service.”

— DELOS M. “TOBY” COSGROVE, M.D.  
CEO AND PRESIDENT, CLEVELAND CLINIC

CLIENT  
The Cleveland Clinic Foundation

SIZE  
1.3 million SF

COMPLETION DATE  
2008

NBBJ SERVICES PROVIDED  
Full architectural design,  
interior design, landscape  
design, lighting design, medical  
equipment planning, cost  
estimating

AWARDS  
Citation of Merit, Healthcare  
Design Awards, 2009

Citation, Modern Healthcare  
Magazine, 2009

Best of Year Winner, Interior  
Design Magazine, 2009

Honor Award, AIA, Columbus  
Chapter, 2009





## ABOUT NBBJ

NBBJ is an award-winning global design and architecture firm focused on helping clients capitalize on the relationship between people and the design of physical space to enhance organizational performance.

The world's leading healthcare providers trust NBBJ to deliver measurable and sustainable improvement in performance and care. Our teams have partnered with some of the leading healthcare institutions worldwide, including nine of the top 14 *U.S. News and World Report* Honor Roll hospitals. Within the architecture industry, NBBJ has been hailed as "Most Admired" by peers in *Interior Design's* annual Healthcare Giants survey, and ranked as the second largest healthcare design practice in the world by BD World Architecture.

NBBJ's network of offices enables us to deliver quality projects that are regionally and locally appropriate. It allows us to act as a single creative force, leveraging the latest thinking from our NBBJ colleagues in other locations, bringing a rich blend of expertise to each project.

## NBBJ SERVICES

Healthcare Consulting	Space Planning
Master Planning	Programming
Architecture	Land-Use Planning
Interior Design	Construction Administration
Financial Analysis	Retail Planning and Design
Project and Cost Management	Facility Planning
Graphic Design and Signage	Change Management
Lighting Design	Workplace Consulting