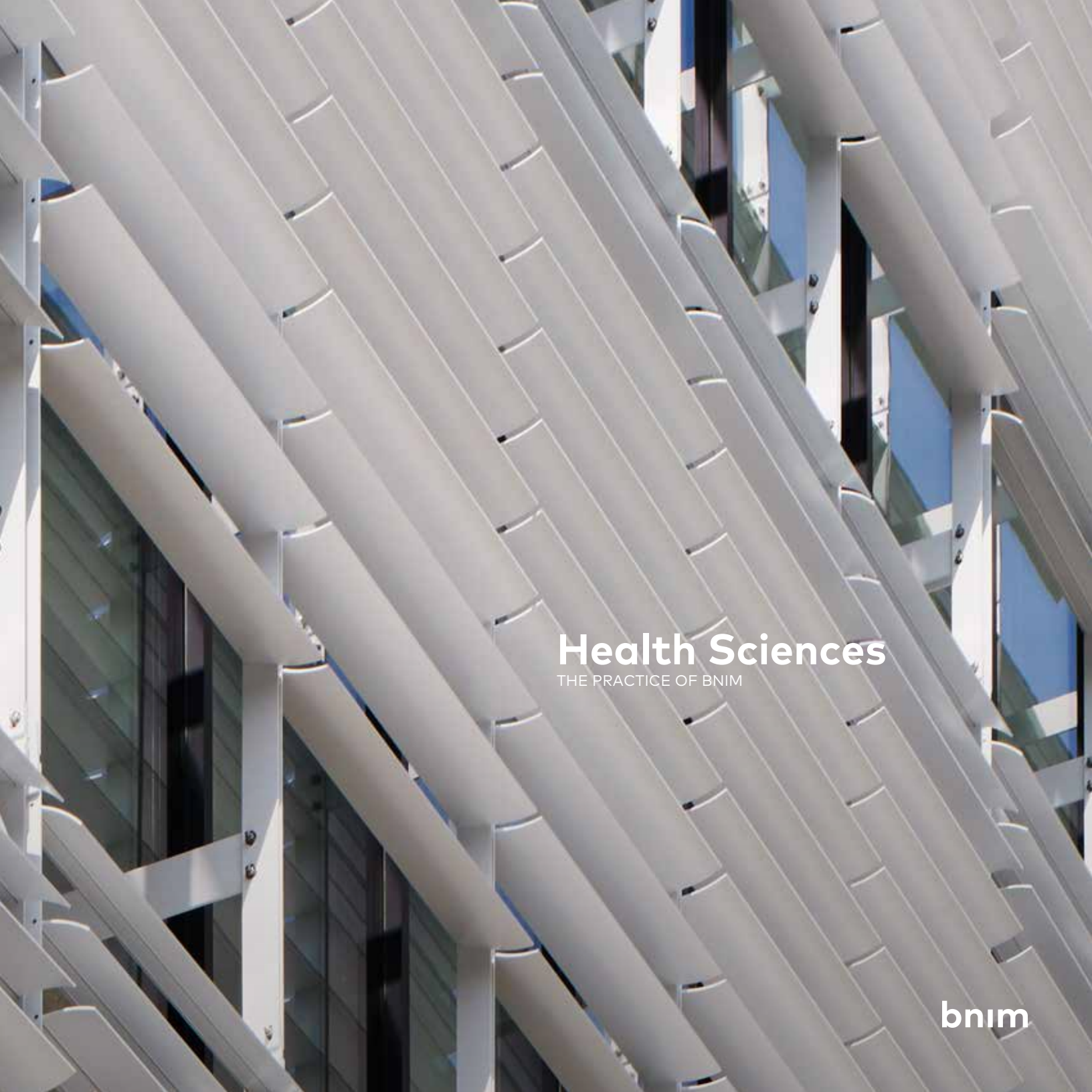


# Health Sciences

THE PRACTICE OF BNIM

bnim

## ABOUT BNIM

BNIM is an innovative leader in designing high performance environments. BNIM's instrumental development of the USGBC, LEED, and the Living Building concept, combined with projects, methods, and research, shaped the direction of the sustainable movement. Through this involvement, the firm has redefined design excellence to elevate human experience together with aesthetics and building performance. In practice, this multifaceted approach to design excellence has yielded national acclaim, including the AIA National Architecture Firm Award, and consistent design recognition nationally and internationally. BNIM is **Building Positive**, a notion that describes how our practice leverages its collective capacity for design thinking to solve issues at every scale in a way that is focused on building the positive attributes of community and the built environment. Through an integrated process of collaborative discovery, BNIM creates transformative, living designs that lead to vital and healthy organizations and communities.

# Health Sciences

THE PRACTICE OF BNIM

bnim

# Creating Common Ground for Interdisciplinary Research and Collaboration

The emergence of precision medicine over recent years is dramatically changing the way professionals approach health and healthcare. The concept of individual healthcare, customized to the unique needs of each patient, has garnered support and momentum from notable physicians and public figures, as well as the National Institute of Health. With these changes comes the need to rethink the way we approach health science education.

Although we understand the interdependencies among the practices that nurture human life, many campuses lack the space necessary to support multidisciplinary collaboration among allied health professionals. Those who are studying to become doctors, nurses, lab technicians, occupational and physical therapists, pharmacists, and psychologists are often relegated to individual siloes.

As architects and designers, we recognize the important role that we have in creating facilities that elevate the work of individuals and teams of professionals. For decades, health science facilities were often designed with little regard for elevating the human condition and nurturing those who spend countless hours in search of the next innovation.

In the pursuit of creating communities of health science scholars, the key to making these highly collaborative, interdisciplinary environments is to establish common ground. When it comes to health science facilities, implementing a human purposed design approach has tremendous impacts on the collaborative and exploratory nature inherent within research and learning. Once it was complete, the Fayez S. Sarofim Research Building, which creates a dynamic, interactive environment conducive to collaboration, saw a 10 percent increase in research staff.

Human purposed design draws strong parallels to evidence-based medicine and patient-centered care, two leading principles in health sciences.

David Sackett, OC FRSC, is regarded as a pioneer in evidence-based medicine. In the early 1990s, Sackett and colleagues defined evidence-based medicine as the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of patients. Similarly, human purposed design is conscientious in its consideration of the potential impact of each design decision; explicit through its transparent process that brings all voices to the table; and judicious in ultimately making choices that support human health and vitality.

Like patient-centered care, human purposed design is a coordinated effort between multiple disciplines to ensure a process and spaces that are respectful of users' needs and focuses on physical comfort, which significantly enhances the experience.

There are several ways to address these needs and create these communities of health science scholars:

**Learning by doing**

As part of the evolving pedagogies, a higher emphasis has been placed on cross-disciplinary, hands-on experiential learning centers that bring allied health professionals into one environment, behaving as they would after graduation. At the Patient-Centered Care Learning Center *(left)* at the University of Missouri, students engage with each other in problem-based learning classrooms, clinical simulation rooms, and an active learning classroom. As students often spend long hours in these environments, the rooms offer plentiful natural daylight and views to the surrounding campus.

**Variety of learning environments**

Design and research are both iterative processes — cycles that revolve around learning, doing, testing, and building. This process requires an understanding of the spectrum of spaces necessary for the variety of work. The University of Iowa Informatics Initiative (UI$^3$) brings in brain scientists with engineers, nursing faculty, arts faculty, and more, in the study of big data to produce collaborative research proposals. The space offers large classrooms with integrated technology, private meeting and study rooms, and common areas that creates opportunities for researchers to interact in a casual environment.

**Long life, loose fit**

As technology and advancements in the health sciences rapidly change, so must the environments in which allied health professionals learn. Originally, the College of Nursing *(left)* building at the University of Iowa was not designed for cross-disciplinary collaboration. BNIM is reorienting how the building is organized to allow for more interaction between students and faculty and meet the needs of the evolving pedagogy. It is creating open classroom space and areas along main corridors for students to come together.

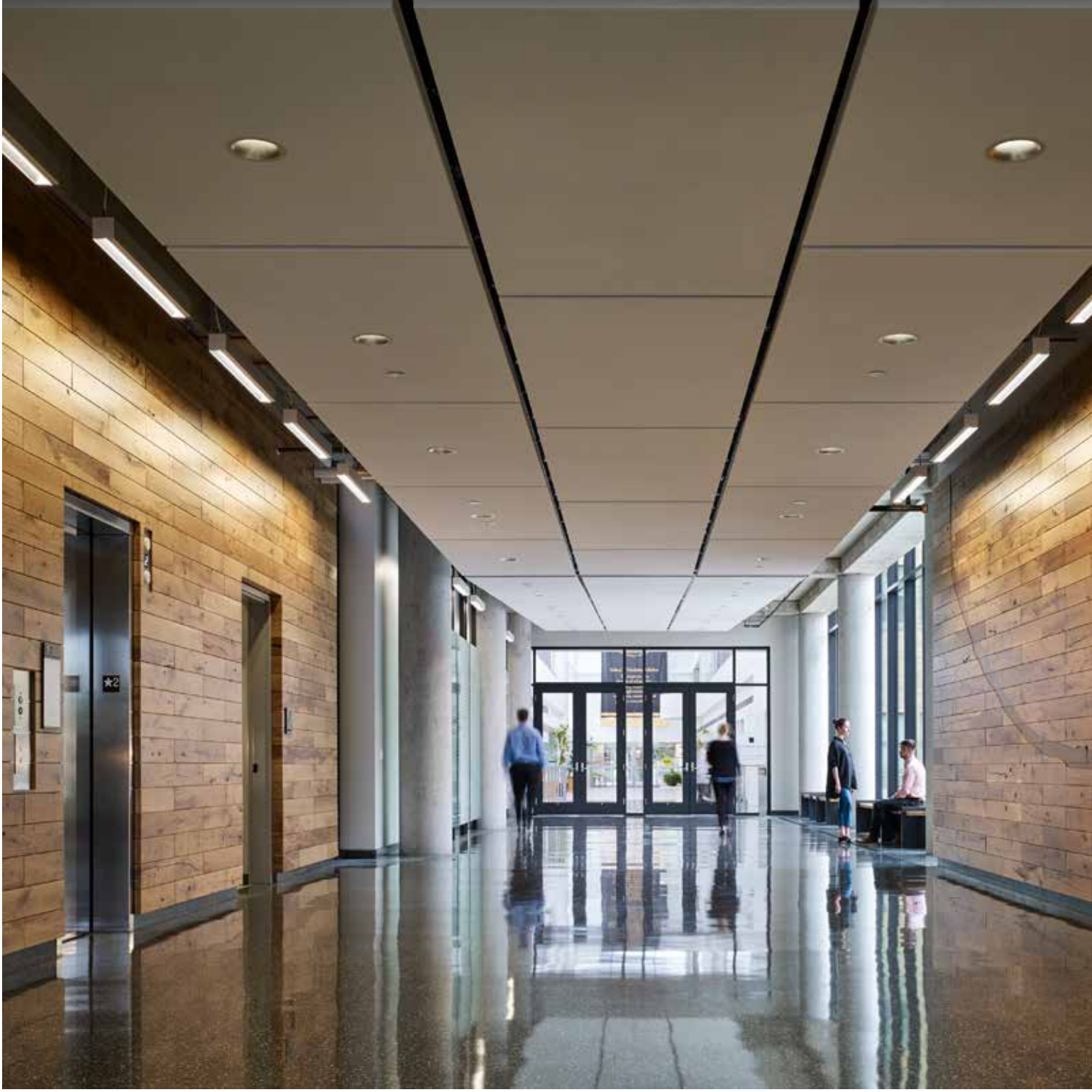
# Patient-Centered Care Learning Center

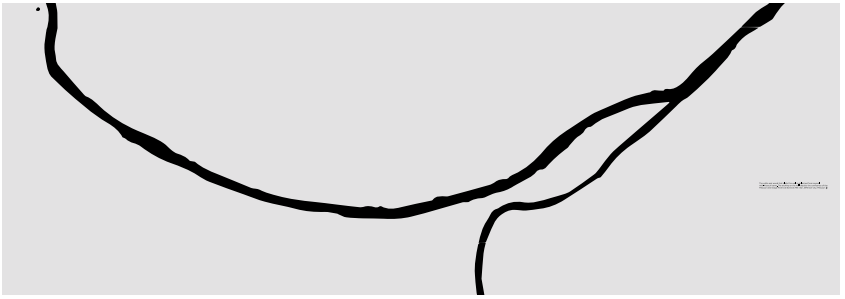
UNIVERSITY OF MISSOURI
COLUMBIA, MISSOURI

The University of Missouri School of Medicine (SOM) was tasked with expanding its enrollment in response to a call from the Association of American Medical Colleges (AAMC) for all medical schools to increase enrollment by 30%. The SOM has partnered with CoxHealth and Mercy health systems out of Springfield, MO to create a clinical campus in Columbia, which will help meet a critical need for more physicians. This public-private partnership will bring transformational change by ultimately providing more than 300 additional physicians for the state, adding more than $390 million annually to Missouri's economy and creating 3,500 new jobs.

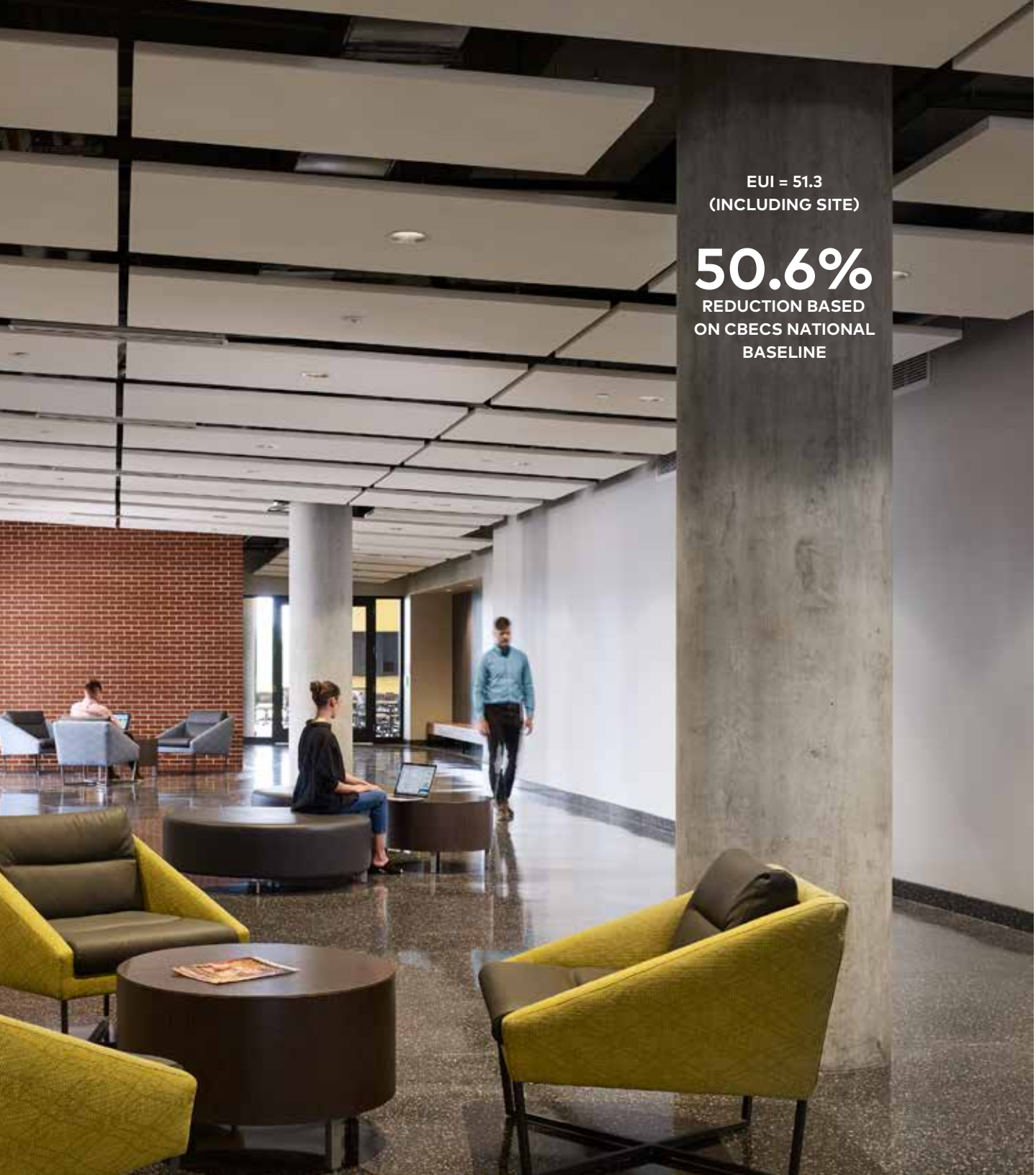
The SOM's focus on patient-based care defined the ultimate design, which includes improved daylight quality, access to views of campus, more generous amenities for students, and an enhanced focus on providing a facility that promotes collaboration among students, faculty, and staff. By improving its technology, increasing lab sizes and providing additional space for first- and second-year medical students, the new SOM will become a recruiting tool.

98,888 SF
Completion in 2017





As the interior design of the building progressed in late 2014, the need to include a feature element at each of the six elevator lobbies became clear. Thinking that some warmer wood elements could meet that need, BNIM contacted brokers who collect and market reclaimed construction materials. We were able to identify and procure wood products that were salvaged exclusively within Missouri: walnut from Knox City, hickory from Palmyra, pine from Hannibal, and on. After consideration of how the wood could be detailed, we proposed to the Medical School that Missouri rivers be incorporated into the wood walls. Representing rivers from a variety of regions within Missouri, the rivers were carved into the wood with a computer-controlled router, and carefully pieced together like a jigsaw puzzle. What resulted are six beautiful, artistic feature walls that express Missouri's close connection with its waterways, and tell a story about how and where the wood was salvaged.



**EUI = 51.3**
**(INCLUDING SITE)**

**50.6%**
**REDUCTION BASED ON CBECS NATIONAL BASELINE**

**SUSTAINABLE STRATEGIES**

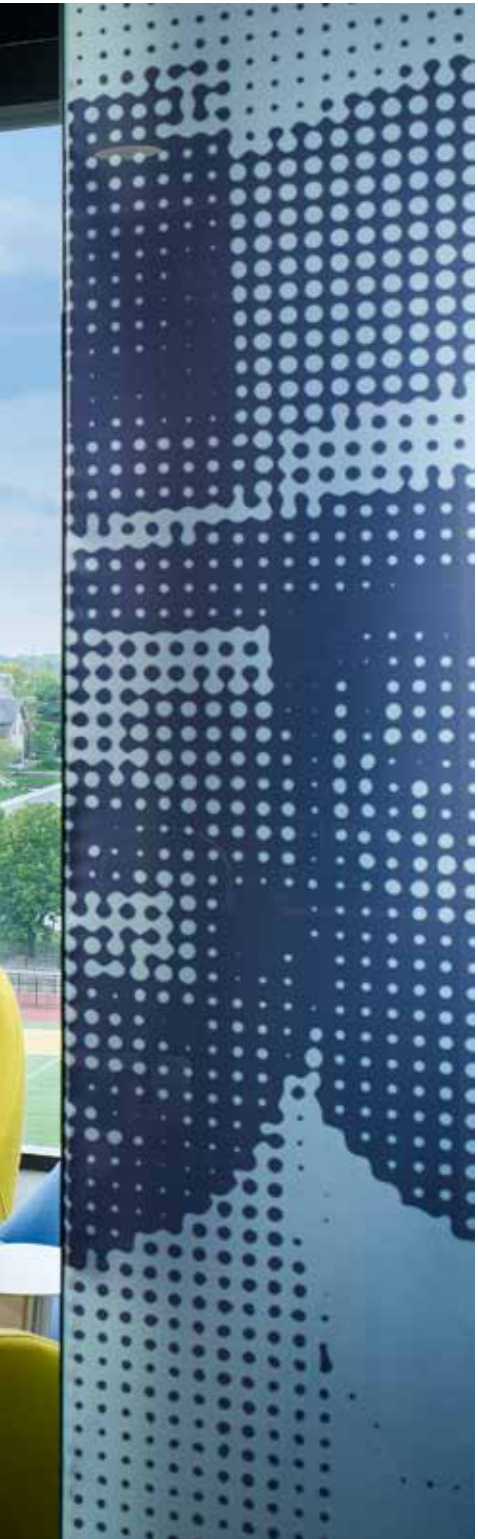
- Fixed horizontal and vertical louvers on the building's exterior reduce solar heat gain and glare.
- Designed glazing percentages based on combination of solar orientation and optimizing views.
- Reduced ventilation rate of anatomy lab when unoccupied


Anatomy Rounds

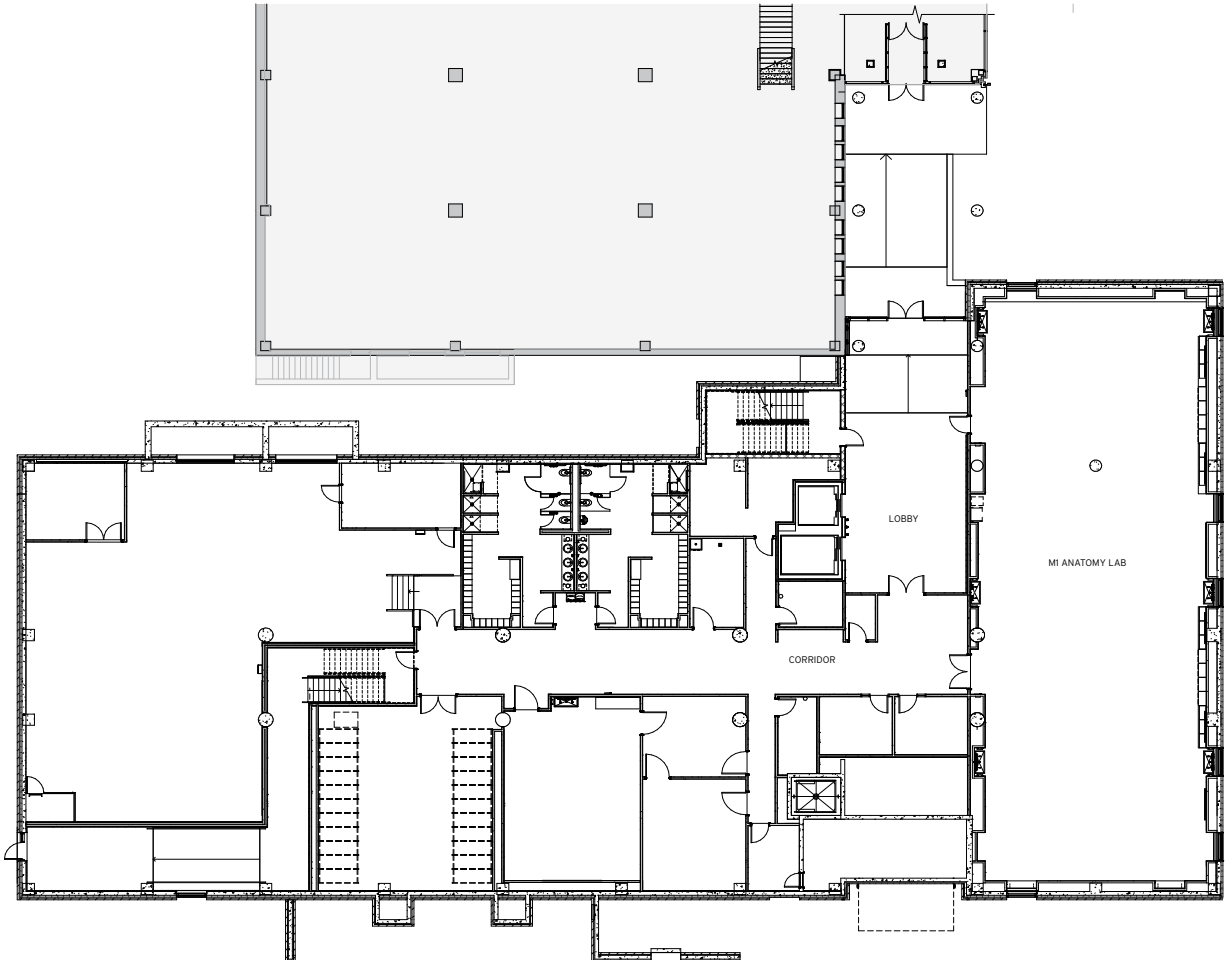
WATER

**38.1%**

SAVING COMPARED TO BASELINE



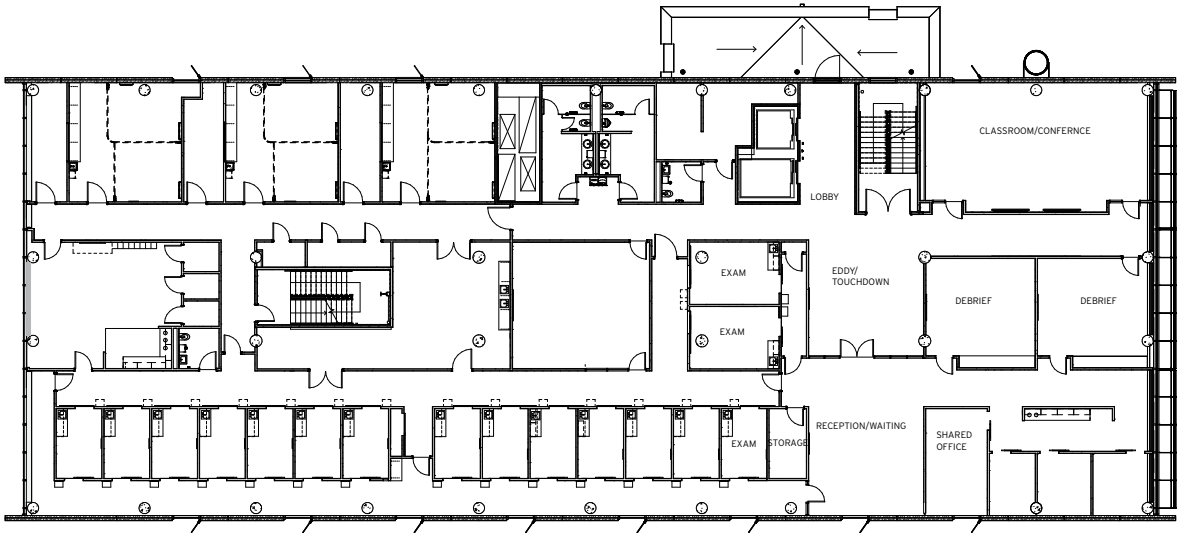
The mission to educate students to provide patient-centered care is realized in the 32 problem-based learning classrooms on levels 5 and 6. In each classroom humanity is emphasized with images of Missourians overlaid on the glass door, each with individual stories. The creative collaboration with the School of Journalism incorporated works of professional photojournalists from the Missouri Photo Workshop to create the artistic installation.



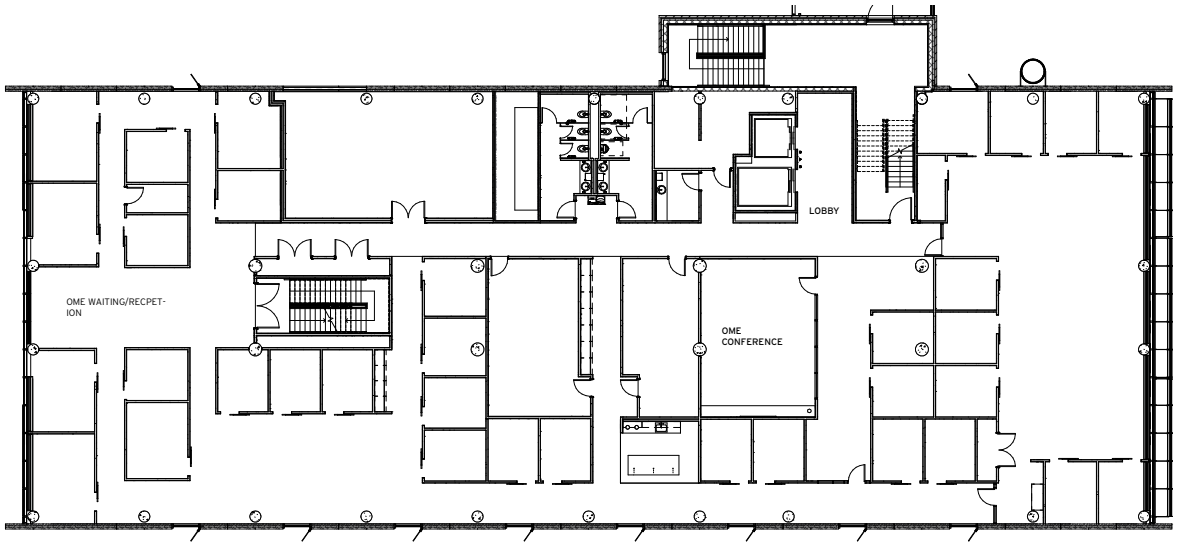

**LEVEL 1**


LINK
CORRIDOR
LOBBY
OME CONFERENCE
ROOM
OME ADMISSIONS
WAITING
CORRIDOR
OME WAITING

**LEVEL 2**




**TYPICAL UPPER FLOORS**




**LEVEL 3**

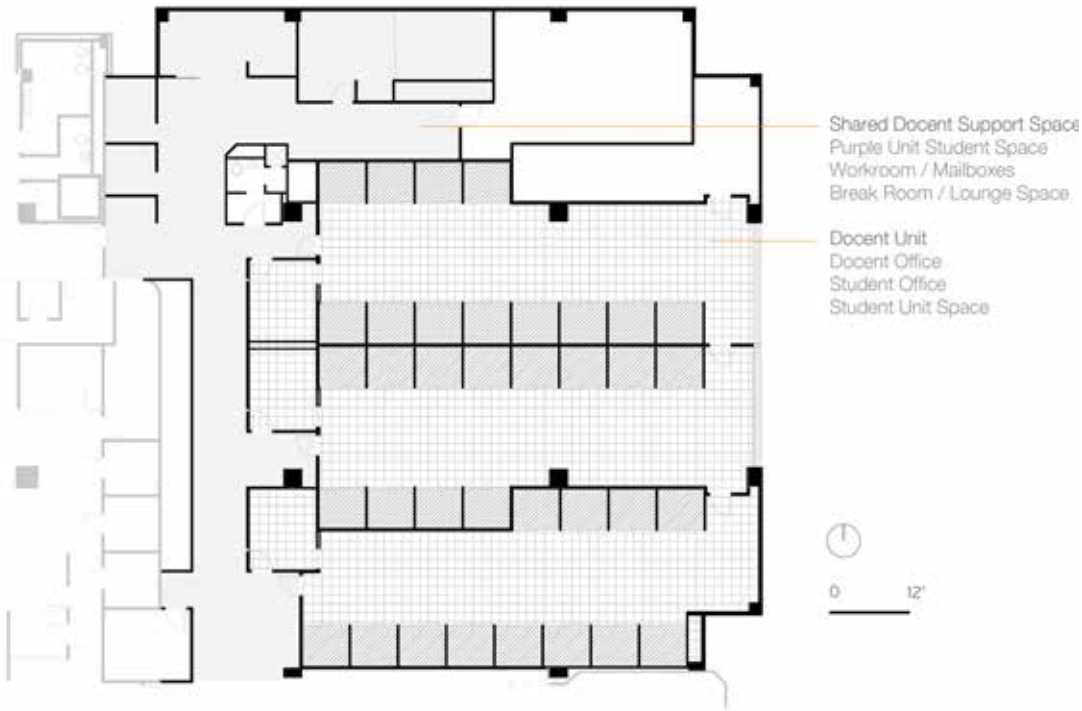
# School of Medicine Renovation

**UNIVERSITY OF MISSOURI - KANSAS CITY**
**KANSAS CITY, MISSOURI**

After completing programming and conceptual design services for the UMKC Hospital Hill Campus Health Sciences Education and Research Buildings, BNIM began a multi-phased renovation project on the 254,000 square foot School of Medicine building, scheduled to take place over the next several years. The first phase was comprised of approximately 11,000 square feet on the first and third floors. The primary program areas for the renovation were a Computer Test Lab and a prototypical design for a Docent Unit.

The Docent Unit design was developed as part of an overall planning study in creating 32 Docent Units on the third and fourth floors. This renovation provides four of those Docent Units, with the additional Units being constructed through future phases of renovation.

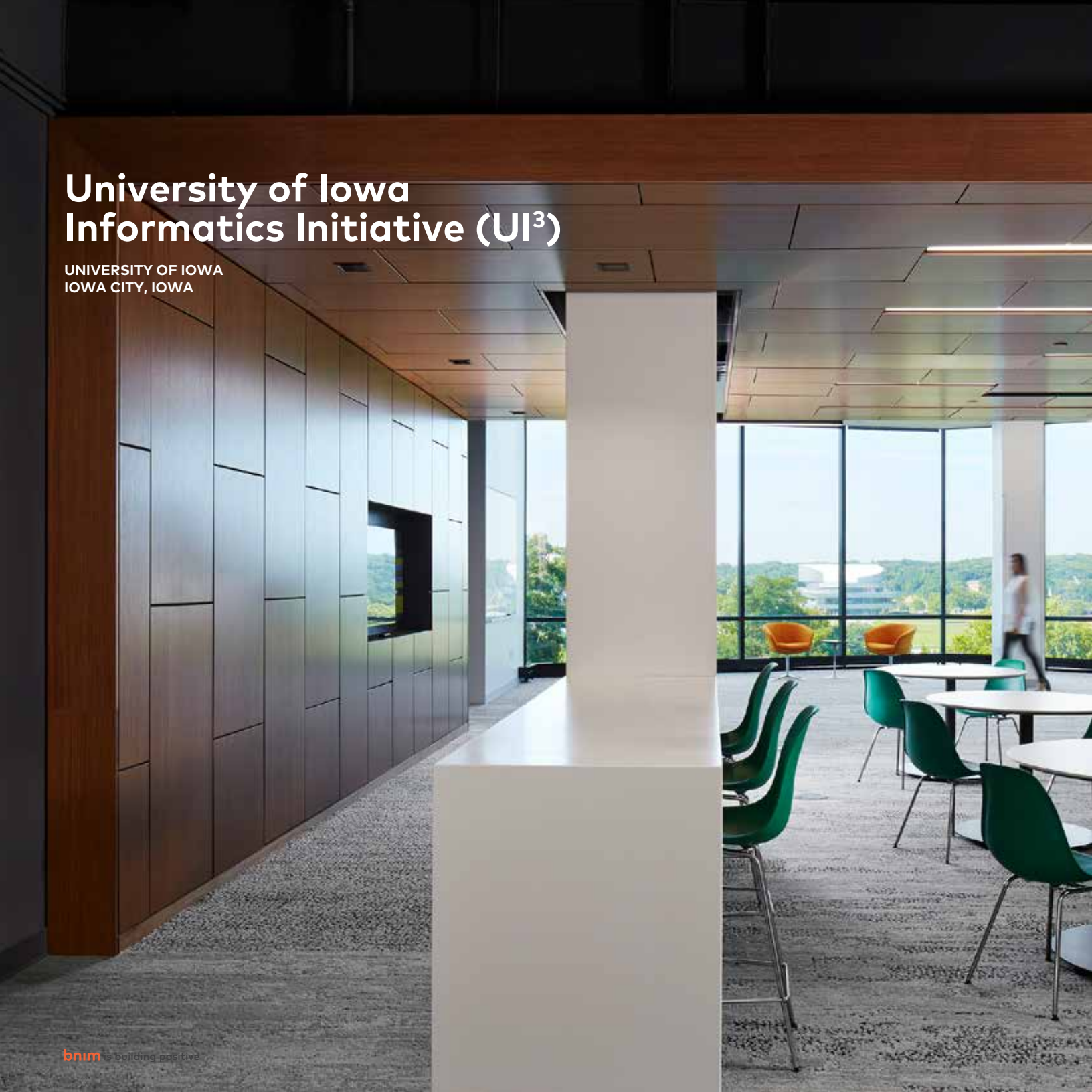
11,000 SF
Completion in 2012


Shared Docent Support Space
Purple Unit Student Space
Workroom / Mailboxes
Break Room / Lounge Space
Docent Unit
Docent Office
Student Office
Student Unit Space
0
12'

Before

# University of Iowa Informatics Initiative (UI$^3$)

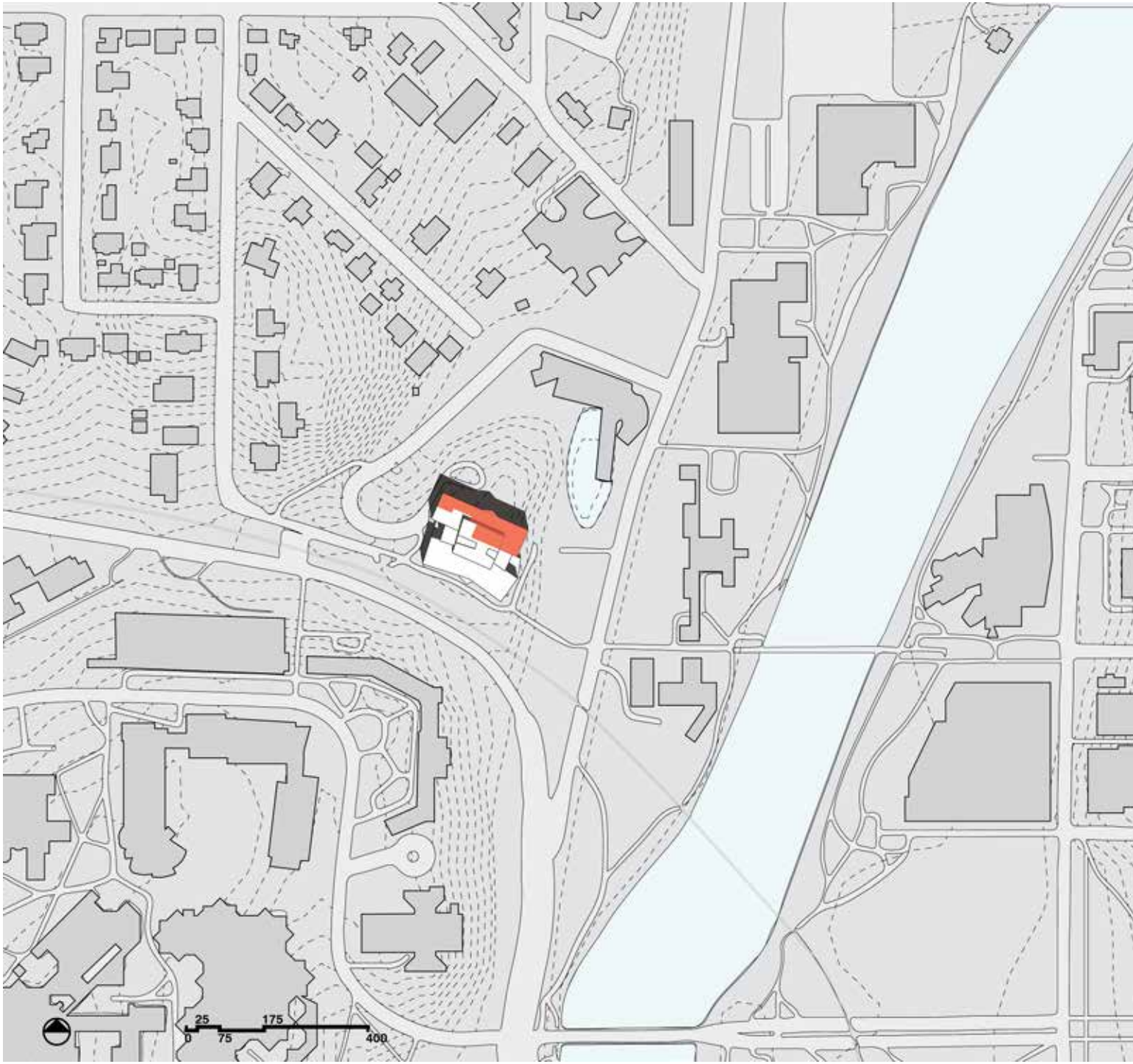
**UNIVERSITY OF IOWA**
**IOWA CITY, IOWA**



The University of Iowa introduced a campus-wide initiative designed to foster collaborations and cultivate research opportunities across disciplines. The initiative joins the computational discipline with the humanities, arts, natural, biological, health, and social sciences to identify and resolve current issues. Researchers and faculty who work within these different disciplines needed a place that would allow them to connect and collaborate, to work together, and to work privately.

The University of Iowa Informatics Initiative (UI$^3$) creates a physical and intellectual home for the initiative within existing building shell space at the university. Establishing a culture and identity for this new collaboration was an important goal of the project. While the individuals who are part of the program are dispersed across campus, a common ground is found in the work they do. By offering a rich variety of functional opportunities, the design ensures users are attracted to the space and utilize it regularly, regardless of where their departments are located. The space draws together these individuals, who share a common pursuit, creating opportunities that lead to academic collaborations and innovations.

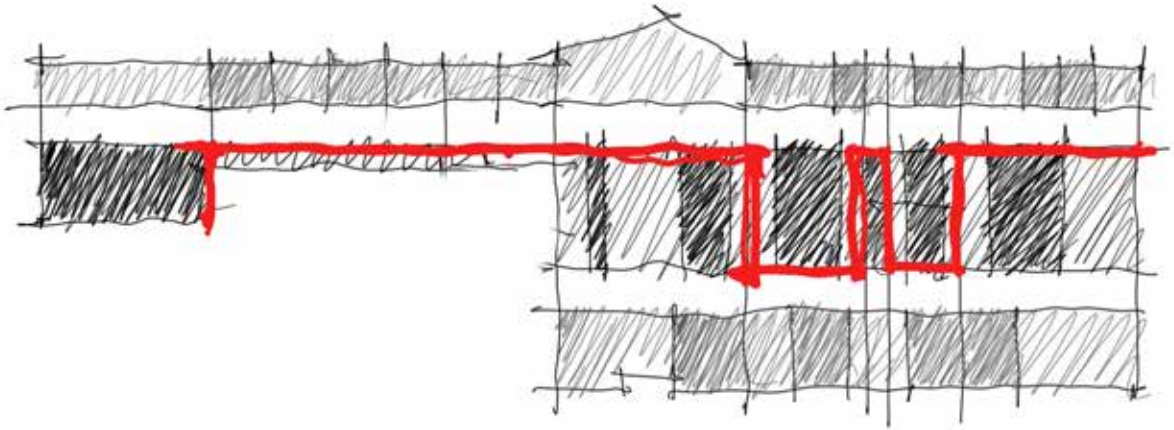
11,913 SF
Completion in 2016

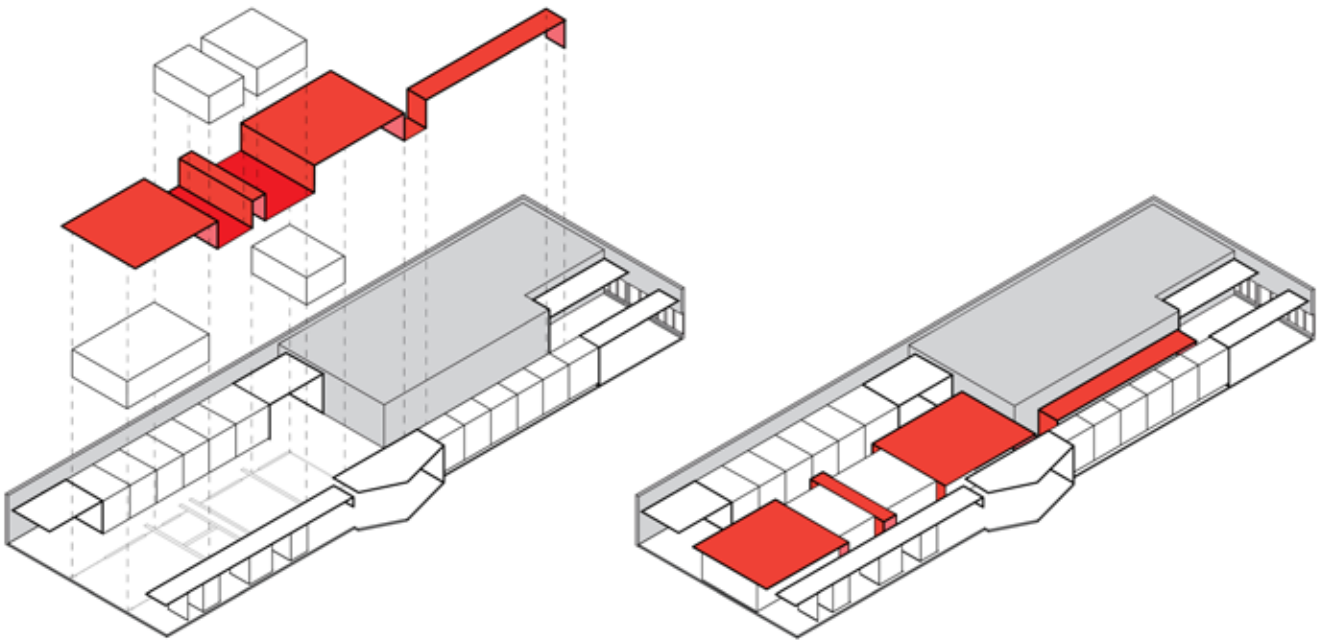

0
25
75
175
400

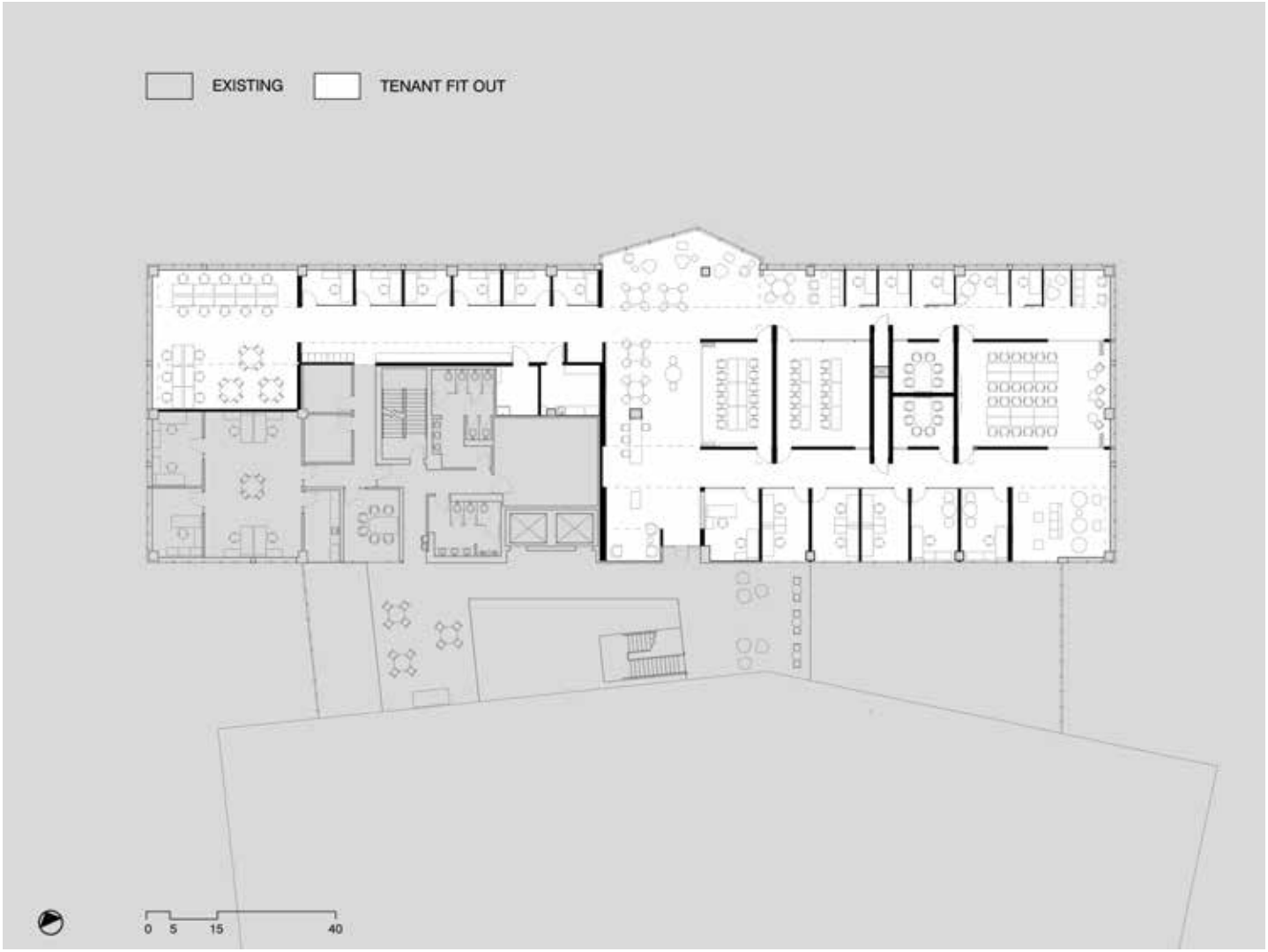
During the programming process, BNIM and the University of Iowa determined that people – and the connections between them – were the most important element that a space can offer. The design was shaped by organizing a spectrum of spaces to support various modes of work, optimize interactions, interweave relationships, and promote visual connections while respecting appropriate levels of privacy. The diverse disciplines and backgrounds within the initiative necessitated a single unifying element. Design cues were drawn from genetics – a human data element and common thread that binds these disciplines together. Visual connections through and across the entire space inspire curiosity and promote engagement.

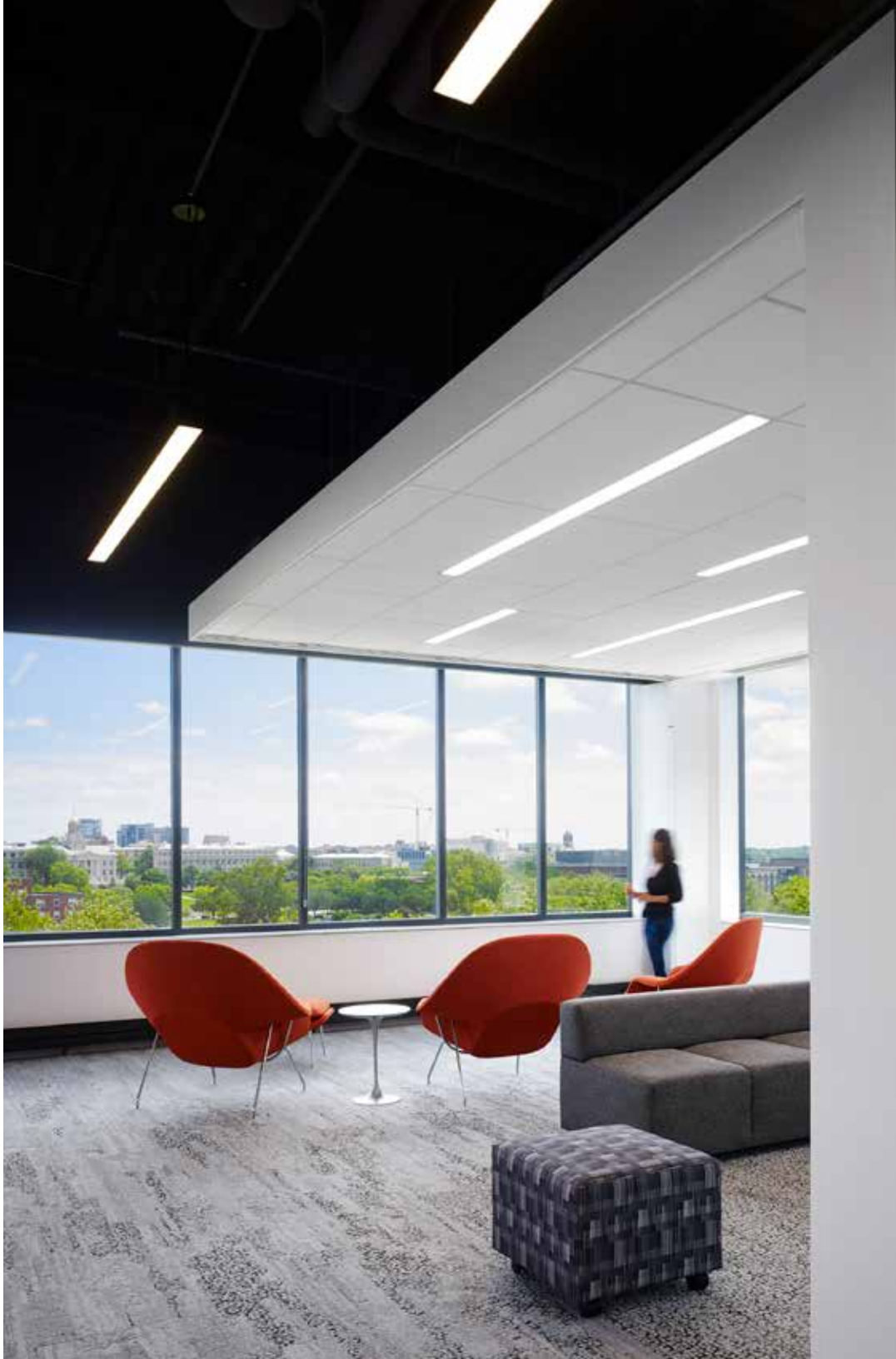
Bent linear ribbons, inspired by the graphic linearity of human genome mapping and the ribbon-like structure of DNA, serve as a spatial organizing device. This unifier was interpreted in various scales, from the organization of spaces united by contiguous bands, to surface treatment such as glazing frit patterns. The frit pattern, which provides privacy and writable space at key areas, was based on the pattern of the human genome and developed using digital algorithms. Within the pattern itself the coded message can be found, revealing the name of the initiative. This series of consistent gestures at various levels and scales establishes and reinforces a sense of place and identity unique to the program.

A central core of collaboration rooms spans east-west in the space, woven together with a series of bent wood ribbons. Secondary ribbons rendered in white capture and organize smaller scale collaboration and focused workspaces adjacent to those contained by the central spine. These spaces take advantage of their proximity with connectivity to the central spine as well as views to the exterior.






EXISTING
TENANT FIT OUT
0 5 15 40



## AWARDS

2017 IIDA Mid-America Design Awards
Gold Award, Higher Education, Research

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"Working with BNIM was great. They were very collaborative and worked with us to help us better define our needs and vision, and then they came up with a wonderful design. We wanted to create a space that would help us bring the Informatics community together — from all corners of the University, from art to medicine — to foster collaborations, scholarship, and training."

**GREGORY CARMICHAEL**
Director
University of Iowa Informatics Initiative

# Psychological and Brain Sciences Building

UNIVERSITY OF IOWA
IOWA CITY, IOWA

The Department of Psychological and Brain Sciences has grown into the University of Iowa's largest undergraduate department, but it was housed in three separate buildings on campus. These buildings could no longer support the department's growth, both in students and faculty, nor did it provide adequate space for research.

The new Psychological and Brain Sciences building will be the new front door to the department and a gateway to the east side of campus. It will include flexible classrooms and cutting-edge labs for human research. Spaces for collaboration and interaction are strategically located throughout the building.

66,470 SF
Estimated Completion Spring 2018

The building contains spaces on the lower and ground levels, including a student learning commons, with generous natural daylight and views to the street. On the second floor, there will be office space for the department's faculty, and the third through sixth floors contain laboratories, collaboration space, and offices.

EUI = 50.3

**28%**

BETTER THAN UTILITY
BASELINE PROTOCOL

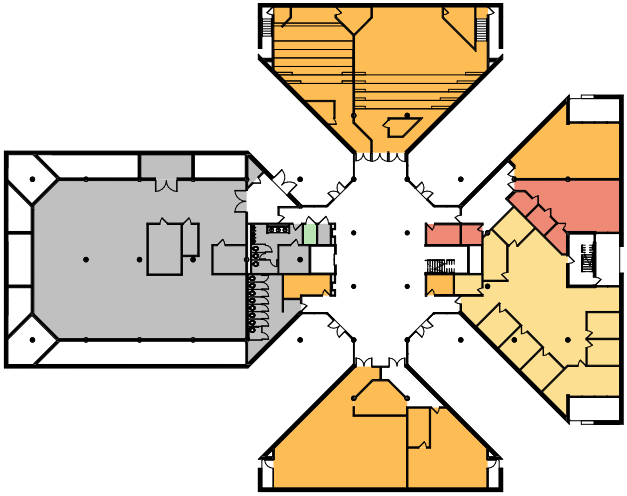
# College of Nursing Building Modifications

**UNIVERSITY OF IOWA**
**IOWA CITY, IOWA**

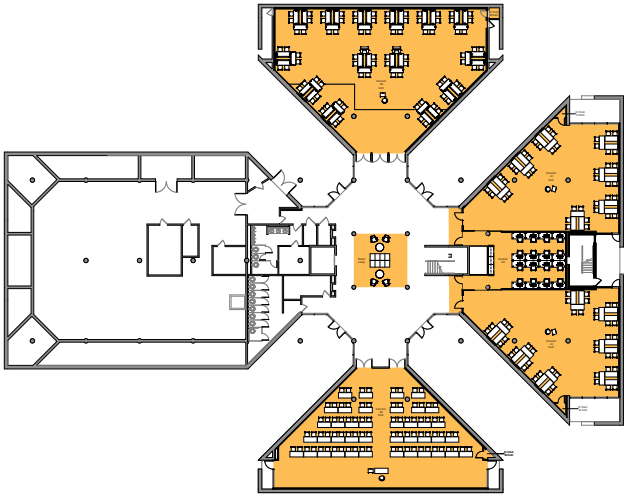
Due to emerging trends in healthcare and the critical role that nurses serve in patient-centered care, the College of Nursing at the University of Iowa — a highly regarded provider of nursing education in the region — expanded enrollment for its nurse practitioner programs.

The modifications to the building will enable the College to address the needs they foresaw for updated technology and state-of-the-art facilities, while also adapting to current pedagogical methods that emphasize active student learning. The renovation will address numerous issues, including: space quality, program adjacency, accessible technology, equipment requirements, and much-needed student commons space. It will also include completely new several hybrid learning interactive classrooms.

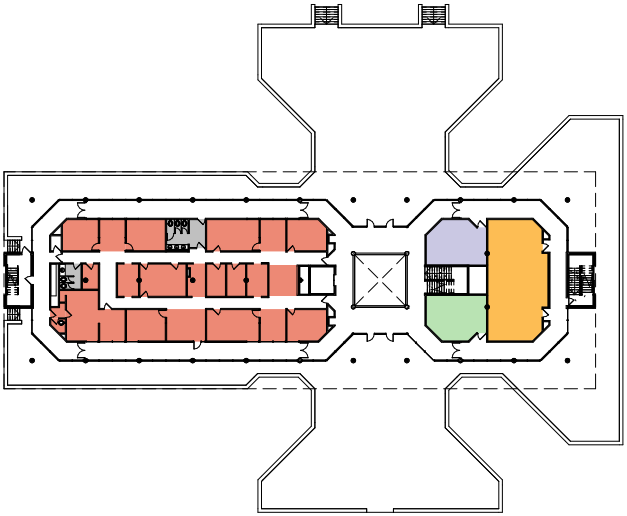
85,000 SF
Completion 2019



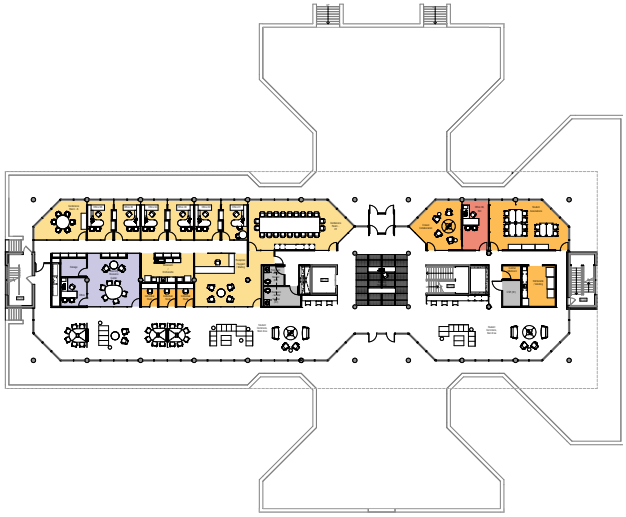
GROUND LEVEL - EXISTING DEPARTMENT PLAN



GROUND LEVEL - PROPOSED PLAN

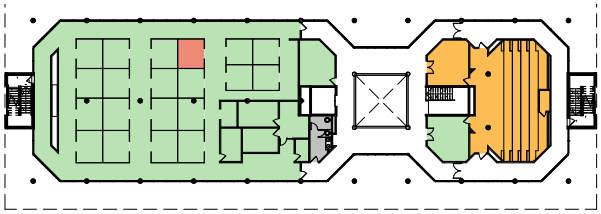


LEVEL 1 - EXISTING DEPARTMENT PLAN

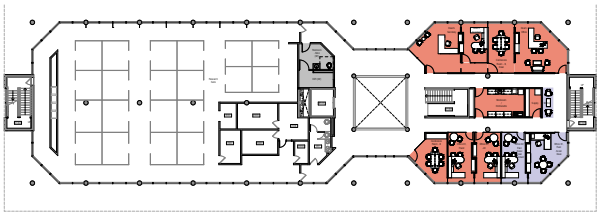


LEVEL 1 - PROPOSED PLAN

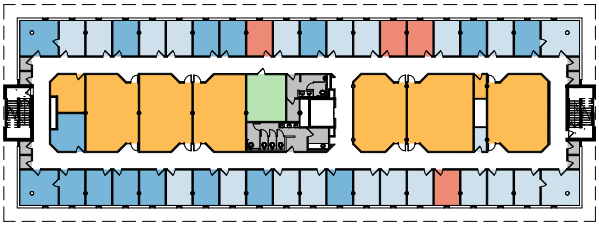
- Administration
- Student Services
- General Use
- Research
- NCEC
- Academics
- Centers
- Faculty Services
- Teaching Services
- Building Support



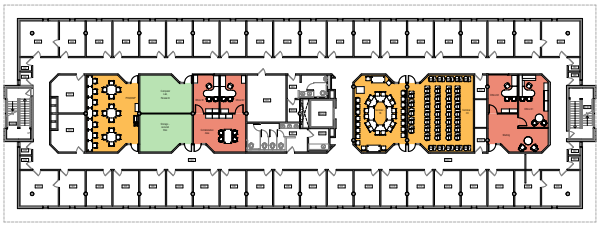
LEVEL 3 - EXISTING DEPARTMENT PLAN



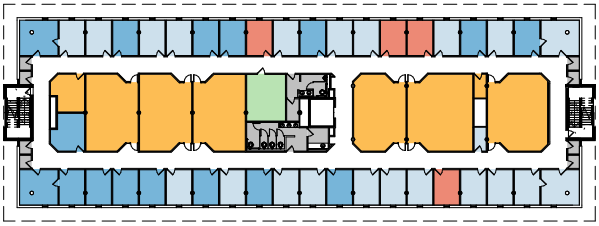
LEVEL 3 - PROPOSED PLAN



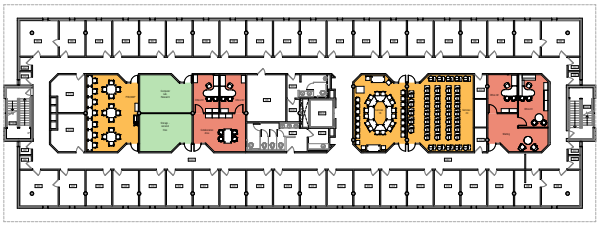
LEVEL 4 - EXISTING DEPARTMENT PLAN



LEVEL 4 - PROPOSED PLAN



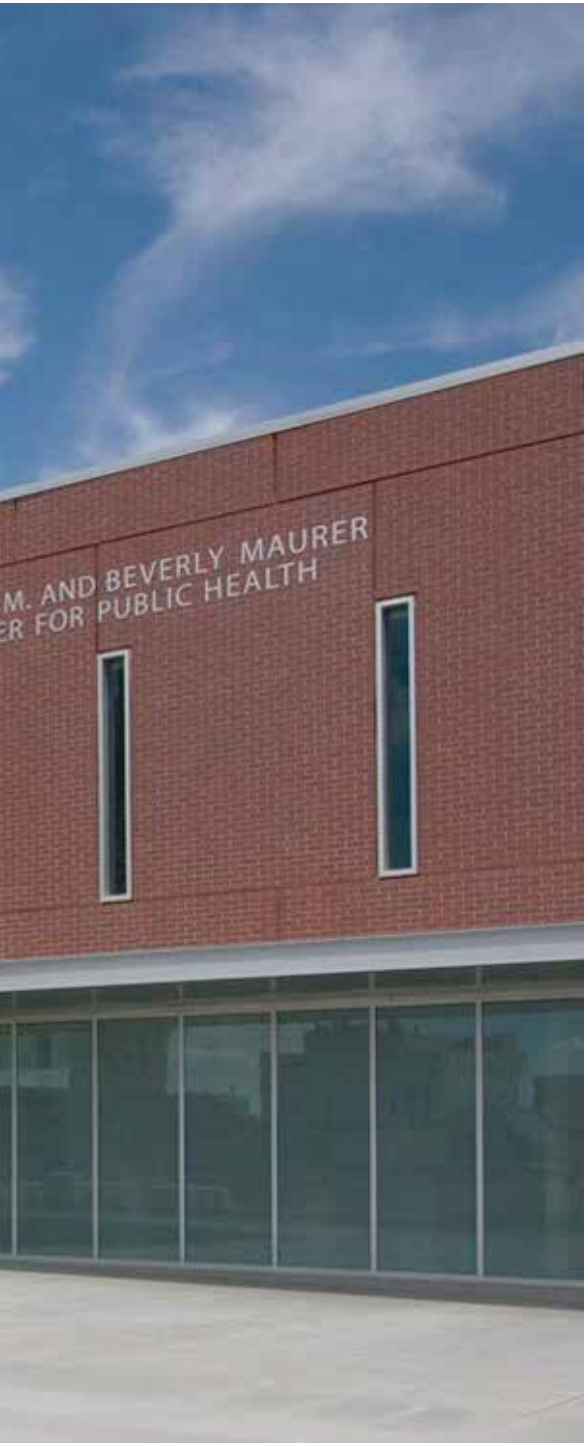
LEVEL 5 - EXISTING DEPARTMENT PLAN



LEVEL 5 - PROPOSED PLAN

# Harold M. and Beverly Maurer Center for Public Health

**UNIVERSITY OF NEBRASKA MEDICAL CENTER**
**OMAHA, NEBRASKA**




In collaboration with Alley Poyner Macchietto Architecture, BNIM's design of the Harold M. and Beverly Maurer Center for Public Health at the University of Nebraska Medical Center supports the college's goal of promoting healthy and productive communities. The center establishes a common identity and location for 11 academic departments. The organization and orientation of the building ensure plentiful access to daylight and views. The classroom wing fronts the public green, creating a highly visible edge to the campus. There are three 40-seat classrooms, as well as a multitude of smaller classrooms and collaborative spaces.

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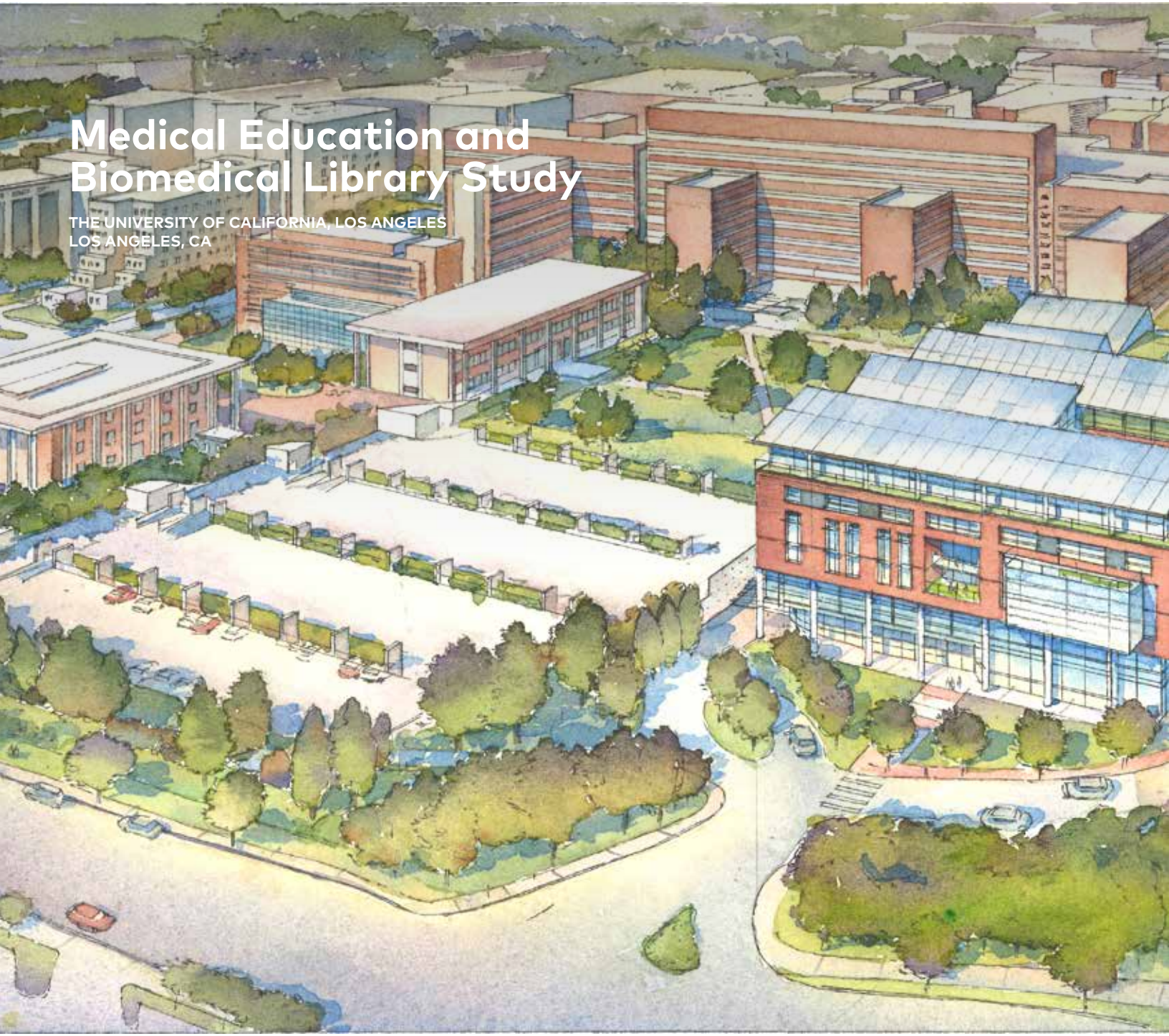
62,400 SF
Completion in 2011



# Medical Education and Biomedical Library Study

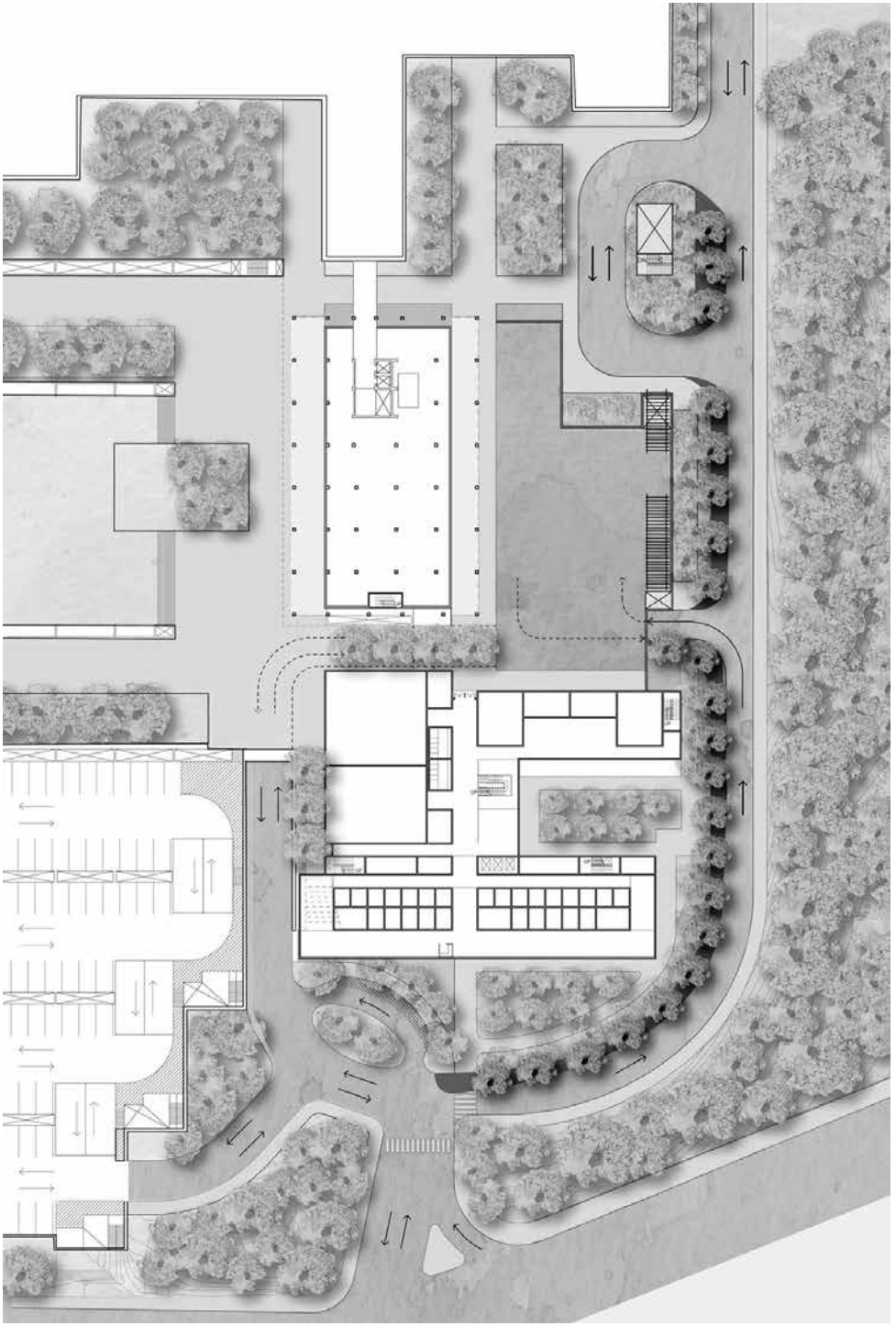
THE UNIVERSITY OF CALIFORNIA, LOS ANGELES
LOS ANGELES, CA

BNIM led a comprehensive design team to develop a new building for the David Geffen School of Medicine at UCLA, which will establish a new gateway for the Health Sciences campus, create a front door for the School of Medicine (SOM), and integrate the new building with existing facilities to provide greater campus connectivity and new outdoor spaces. The team developed a Design Brief that includes a space program for the School of Medicine and Library functions, a master plan for the Health Sciences campus precinct, and a conceptual design for a new building in conjunction with the repurposing of an adjacent, existing structure for the Biomedical Library, which will serve the entire campus.

The space program for the new SOM facility includes classrooms and seminar rooms, multi-purpose teaching laboratory space, study and amenity space for students, administrative offices and related building support space.

The plan creates new outdoor spaces to promote campus community and interprofessional activities, including a future Tiverton Health Sciences Commons, planned as a largely pedestrian outdoor space adjacent to the Botanic Garden, which will connect the front doors of the Schools of Medicine, Dentistry, Public Health and Nursing. The new commons relates directly to the newly renovated Court of Sciences due north in the heart of the main campus. The master plan includes a second new outdoor, public space north of the new building and east of the new library

| | |
|---|---|
| Size | 157,223 SF |
| Completion | 2011 |



# School of Nursing

**UNIVERSITY OF WISCONSIN**
**MADISON, WI**

To address the increasing demand in the nursing practice and the ever-advancing medical treatment technologies, the University of Wisconsin-Madison built a new School of Nursing facility on their West Campus. The existing School of Nursing on campus was landlocked within the Clinical Sciences Center. The inability to expand the facilities caused a shortage in research space and impeded on the School's ability to attract researchers. The new facility provides additional space for academic and research programs, as well as a visible statement about the value placed on nursing.

*BNIM worked as programming and conceptual design specialist to Design Architect Kahler Slater.*

*Photos: Todd Brown, Kate Joyce*

| | |
|---|---|
| Size | 162,000 SF |
| Completion | 2010 (program validation) |
| Sustainability | LEED Silver Certified |

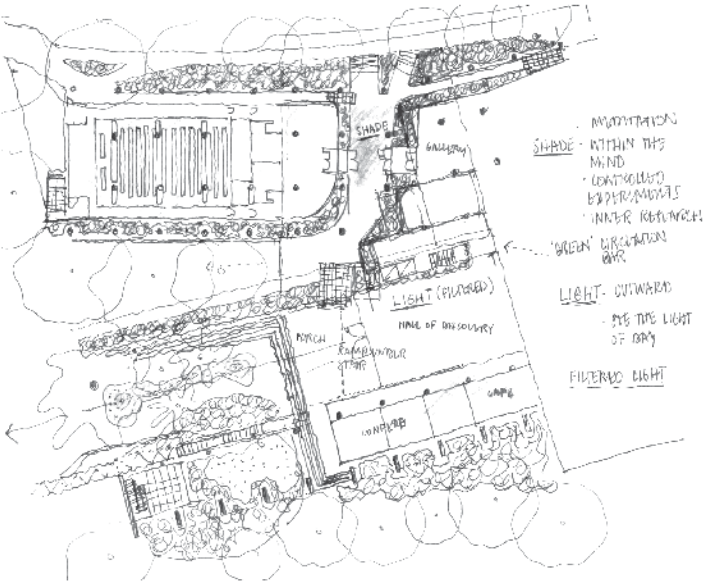
Floor Plan Studies

# Fayez S. Sarofim Research Building

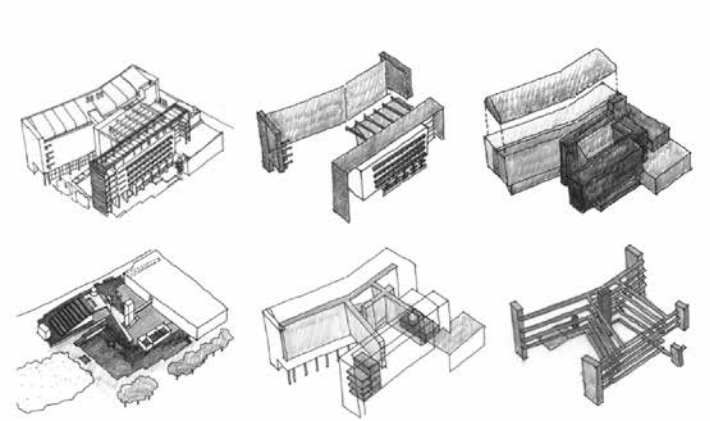
THE UNIVERSITY OF TEXAS
HEALTH SCIENCE CENTER AT HOUSTON
HOUSTON, TEXAS

The Fayez S. Sarofim Research Building, home of the Brown Foundation Institute of Molecular Medicine, is a comprehensive research facility on a tight urban site within the Texas Medical Center campus. This facility is designated to support research collaboration in the area of molecular medicine, particularly in genetics and proteomics and bioinformatics. The Sarofim Research Building houses dry and wet laboratories, offices, conferencing areas, a 200-seat assembly facility, and appropriate support spaces. The design creates a dynamic, interactive environment conducive to research and learning on multiple levels. From the relationship with the outdoors, to the architecture of the building, to the interior spaces, the approach considers form and function holistically, promoting the productivity and well-being of users.

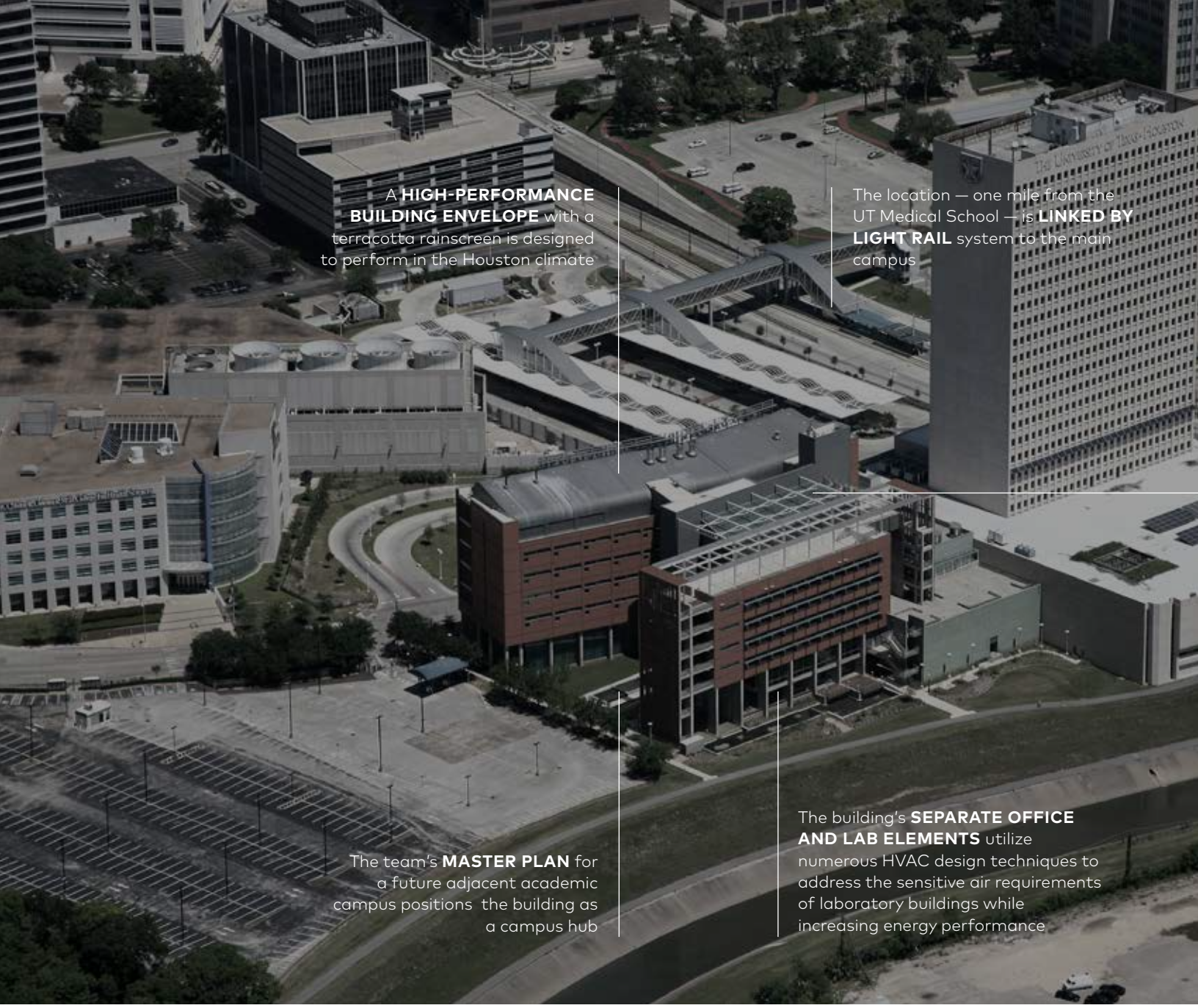
229,250 SF
Completion in 2005

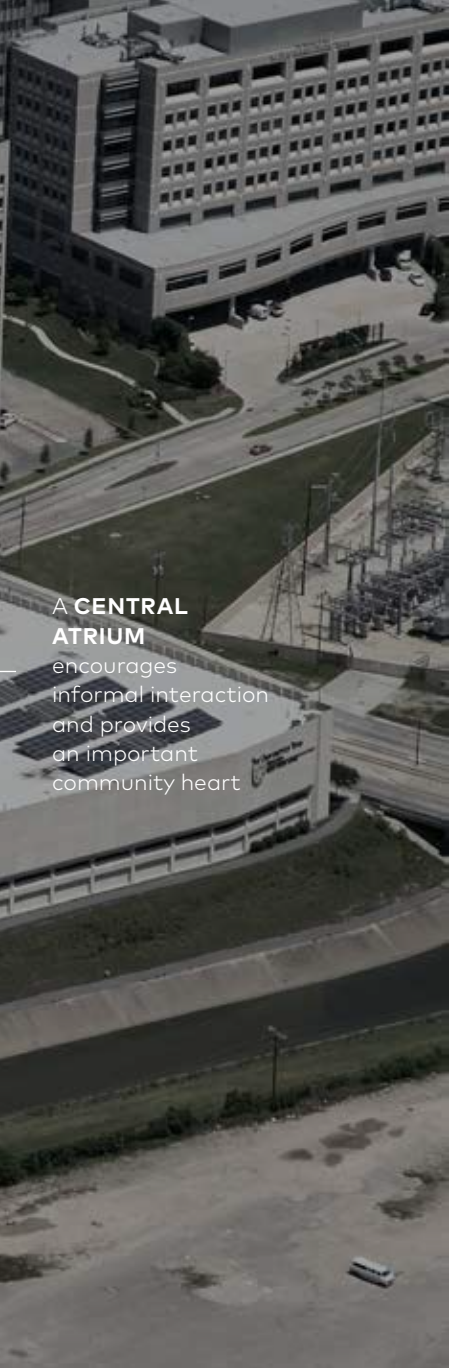


The building incorporates sustainable design strategies at many scales. Building orientation allows optimum penetration and control of natural light in relationship to the differing programmatic elements of flexible laboratory space, support laboratories, office and common areas. The separation of office and lab elements enabled the environmental control system to capture and reuse energy that would normally have been wasted. The reinforced concrete column and slab structure employs high fly ash concrete thus reducing the upstream environmental impact of the building. The building also has a specialized facade design that responds to the Houston climate.



The approach to the design was based on three underlying principles: place, collaboration and sustainability. The design focuses on creating a dynamic, interactive environment conducive to research and learning on multiple levels. The building is a composition of separate functional "species". Each species is designed as a unique typology fulfilling the specific needs of its function and use. These separate building elements are then connected by an atrium and circulation spaces. Distinction between the interior and exterior is blurred by the continuation of materials throughout.


A **HIGH-PERFORMANCE BUILDING ENVELOPE** with a terracotta rainscreen is designed to perform in the Houston climate
The location — one mile from the UT Medical School — is **LINKED BY LIGHT RAIL** system to the main campus
The team's **MASTER PLAN** for a future adjacent academic campus positions the building as a campus hub
The building's **SEPARATE OFFICE AND LAB ELEMENTS** utilize numerous HVAC design techniques to address the sensitive air requirements of laboratory buildings while increasing energy performance



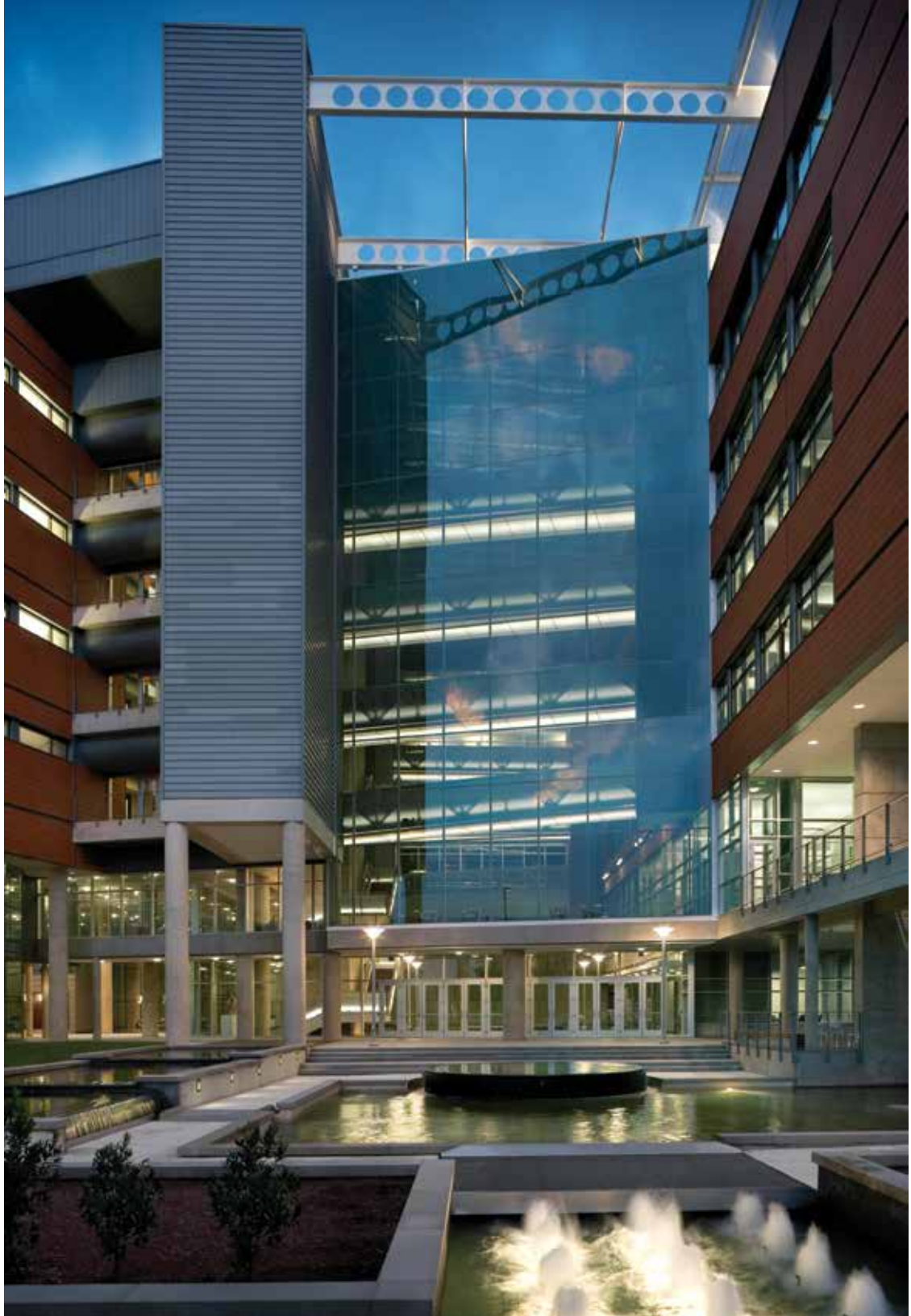
A **CENTRAL ATRIUM** encourages informal interaction and provides an important community heart

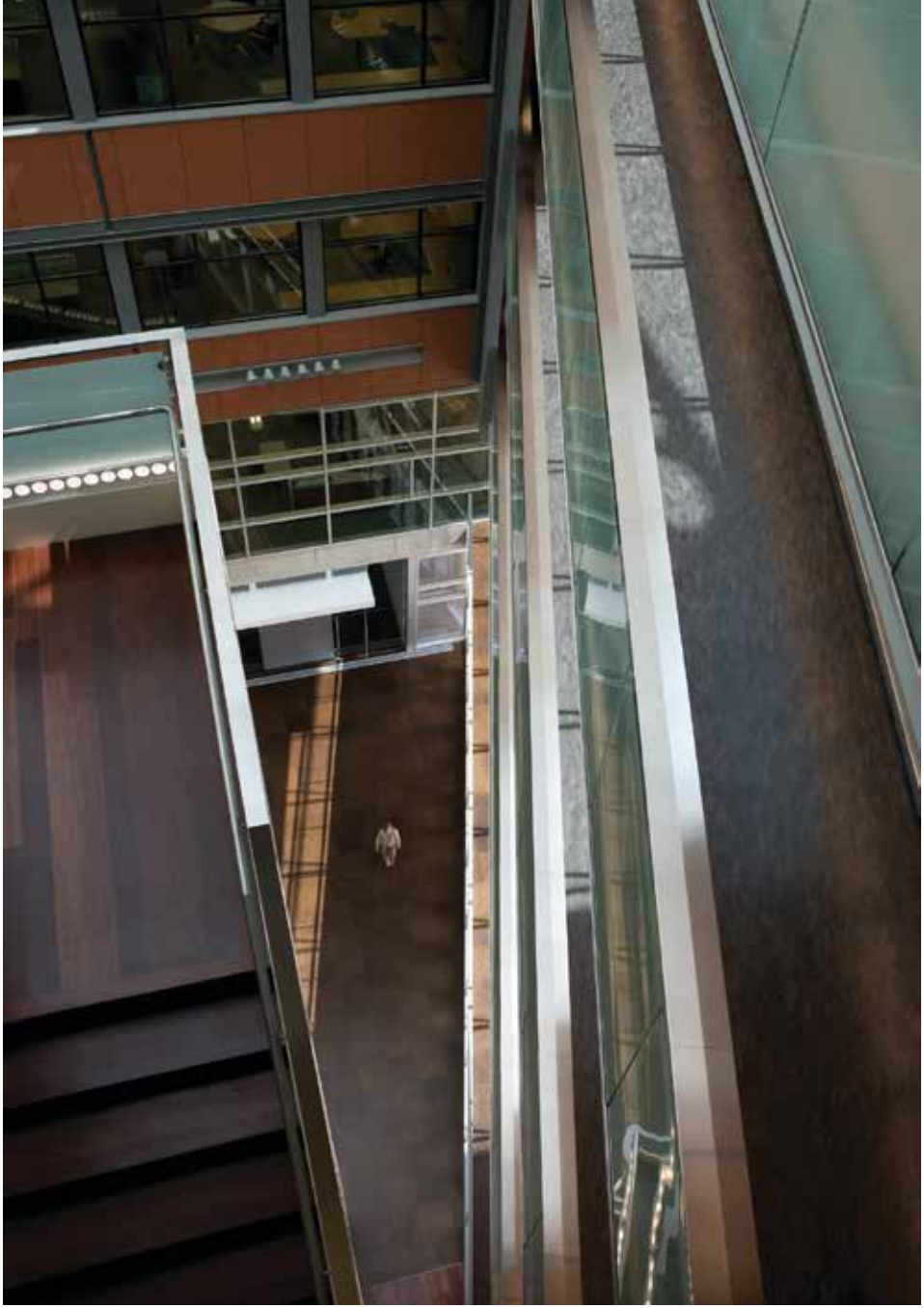
## SUSTAINABLE / NOTABLE FEATURES

- 229,250 SF facility
- 101,000 SF Laboratory Space
- 22,367 SF Offices, Support
- Prominent site along Bray's Bayou in the Texas Medical Center
- Recipient of 9 Design Awards
- Designed to LEED Standards
- Conceived as a 100-year building
- Building orientation allows optimum penetration and control of natural light
- The building envelope is a terra cotta rain screen — a pressure-balanced system that reduces moisture penetration
- The reinforced concrete structure employs high fly ash concrete reducing the upstream environmental impact of the building
- The concept for this building is an "academic village" where a community of researchers, faculty, and students are engaged together in biomedical research and study
- Unique two-bar design that separates laboratory and office functions in to separate wings for energy optimization and promoting interdisciplinary collaboration
- Apex of two bar design enables informal exchange
- The Sarofim building was conceived as an organism with discrete parts or species. Each species is designed for individual functions with appropriate spatial configuration, mechanical system, lighting, furnishings, and other qualities to ensure the highest levels of health, comfort, productivity and innovation
- The Sarofim building houses dry and wet laboratories, offices, conferencing areas, a 200-seat assembly facility, vivarium and appropriate support spaces
- This facility is at once both an entire community to itself, complete with a sense of place, and an anchor for inviting future development within the planned campus
- The building is designed for long term flexibility, accommodating program changes and varying research parameters over time
- Lab spaces are open with custom designed overhead carriers to provide ventilation and a movable wall system to provide physical separation as needed
- Houses the IMM's 10 research centers: Human Genetics, Cardiovascular Genetics, Diabetes and Obesity, Cell Signaling, Neurodegenerative Diseases, Stem Cells, Immunology and Autoimmune Diseases, Proteomics and Systems Biology, Molecular Imaging, Senator Lloyd Bentsen and B.A. Bentsen Center for Stroke Research

"The community has embraced the building as an ideal spot to host events and lectures. The water feature has been the greatest 'discovery' for many within the building and within the TMC campus. The south decks are now a daily place of interaction for staff during breaks."

**IRMA GIGLI, MD**
Director Emeritus, Brown foundation Institute of Molecular Medicine





## AWARDS

2007 Merit Award, Architecture
AIA Kansas

2007 Honor Award
AIA Houston

2007 Texas Society of Architects
Honor Award

2007 Design Award, Smooth Metal Walls
Metal Architecture

2006 Texas Construction Magazine
Best of Higher Education Award

2006 Merit Award
AIA Kansas City

2006 Merit Award, Architecture
AIA Central States Region

2005 Merit Award, Unbuilt
AIA Houston

2004 Excellence in Architecture, Unbuilt
AIA Kansas

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"The building is a tremendous asset in the recruiting process. With BNIM's leadership we were able to achieve a new paradigm for collaborative science and research."

**IRMA GIGLI, MD**
Director Emeritus, Brown foundation Institute of Molecular Medicine

# School of Nursing and Student Community Center

THE UNIVERSITY OF TEXAS
HEALTH SCIENCE CENTER AT HOUSTON
HOUSTON, TEXAS

As one of the premier teaching institutions for health-related professions in Houston, the University of Texas Health Science Center identified a critical need: create an environment that speaks to living health-centered lives and also creates a connection between the Health Science Center campus and the Texas Medical Center.

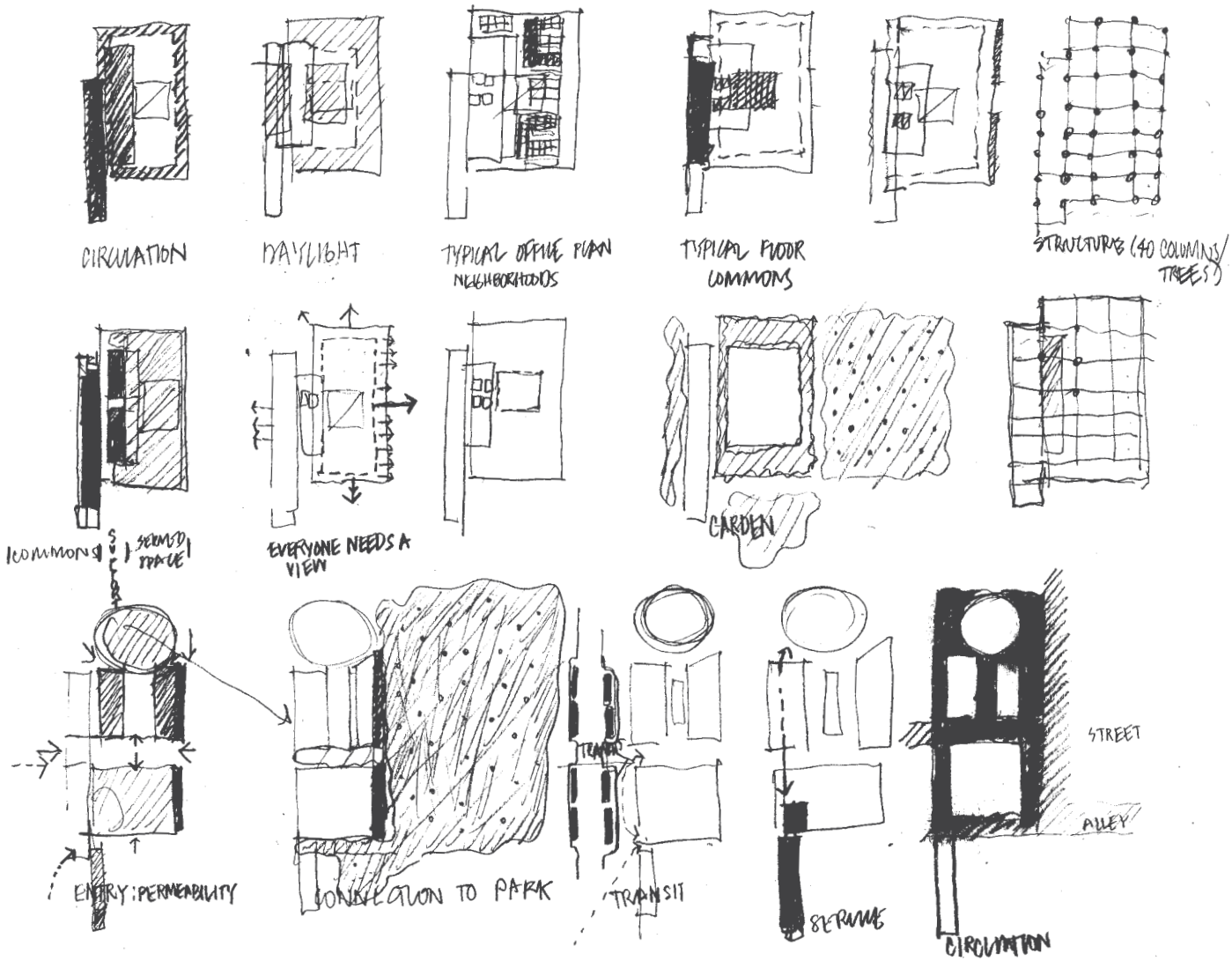
The School of Nursing and Student Community Center was designed to integrate seamlessly with its site and impart a sense of place that would become a heart for the campus. It utilized a holistic design approach to serve as a pedagogical model of wellness, comfort, flexibility, environmental stewardship, and fiscal responsibility. The building includes approximately 20,000 square feet of state-of-the-art classrooms, a 200-seat auditorium, cafe and dining room, bookstore, student lounge, student government offices, research laboratory, and faculty offices.

With Lake|Flato

195,000 SF
Completion in 2005
LEED Gold certified

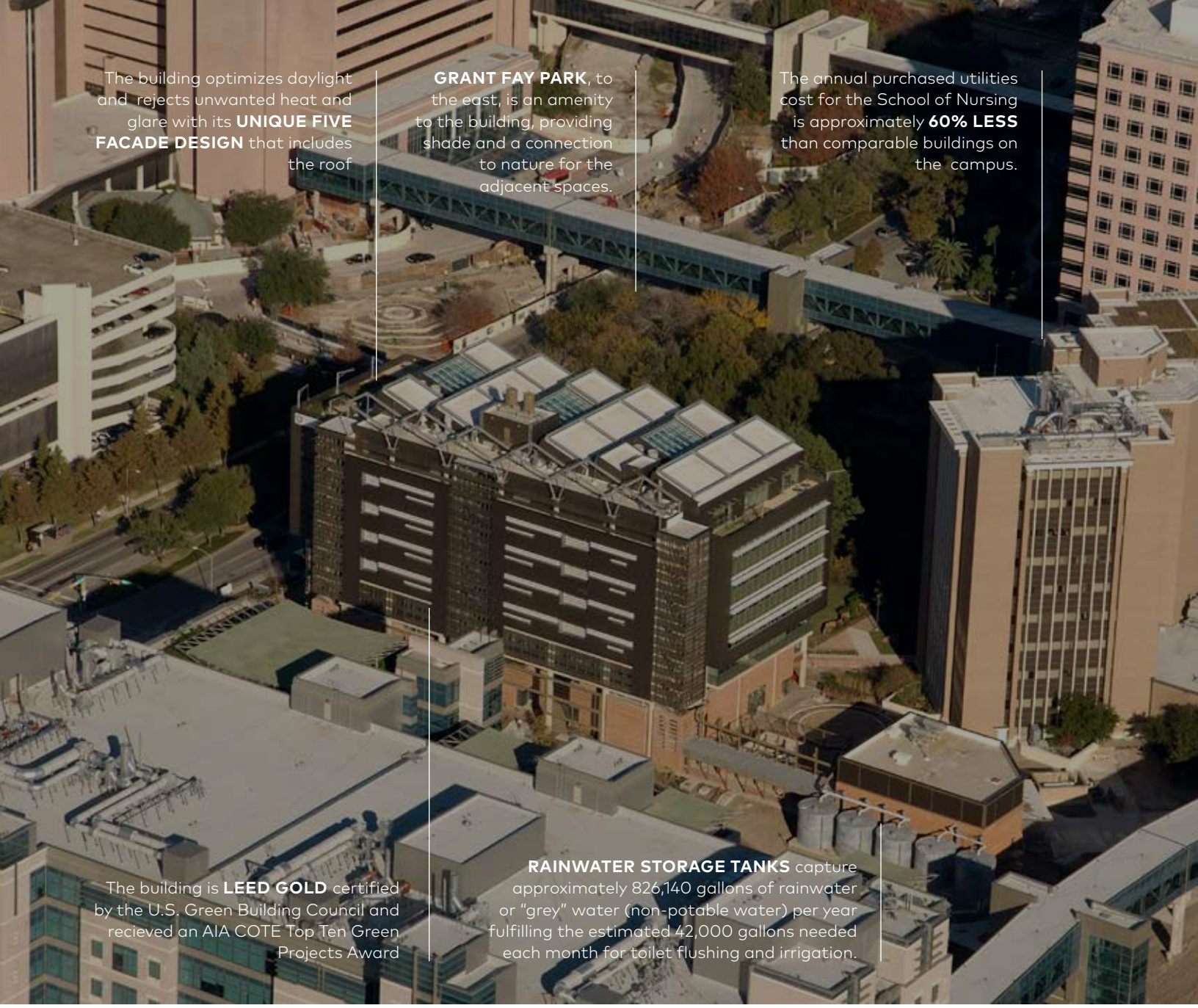
The School of Nursing utilized a holistic design approach that unites façade design, building systems, resource conservation and materials reclamation in creation of a high-performing, integrated educational and academic workplace facility. The strategies have a quantifiable return on investment: the annual purchased utilities cost for the School of Nursing is approximately 60% less than comparable buildings on the campus. In addition, rainwater storage tanks capture approximately 826,140 gallons of rainwater or "grey" water (non-potable water) per year fulfilling the estimated 42,000 gallons needed each month for toilet flushing and irrigation.Because of the limits of the available site, the building is oriented with its long axis in a north-south direction. A breezeway connection—a two story open air space carved from the lower levels of the building—runs east to west allowing the entrance and the main public spaces to be oriented toward Fay Park. Each façade of the building was designed with unique fenestration and sun screening strategies, all of which were computer modeled by BNIM to maximize building performance.


School of Nursing & Student Community Center


CIRCULATION
DAYLIGHT
TYPICAL OFFICE PLAN
NEIGHBORHOODS
TYPICAL FLOOR
COMMONS
STRUCTURE (40 COLUMNS/
TREES)
COMMONS
SECOND SPACE
EVERYONE NEEDS A VIEW
GARDEN
ENTRY: PERMEABILITY
CONNECTION TO PARK
TRANSIT
SERVICE
STREET
ALLEY
CIRCULATION

"The building showcases a philosophy that if we're teaching about health, we're also operating in a healthy way... We believe we're now the most technologically advanced school of nursing in the country. And with an entire floor dedicated to nursing research, the school now has the kind of equipment and laboratories that will attract world-class researchers."

PATRICIA STARCK
FORMER DEAN OF THE SCHOOL OF NURSING



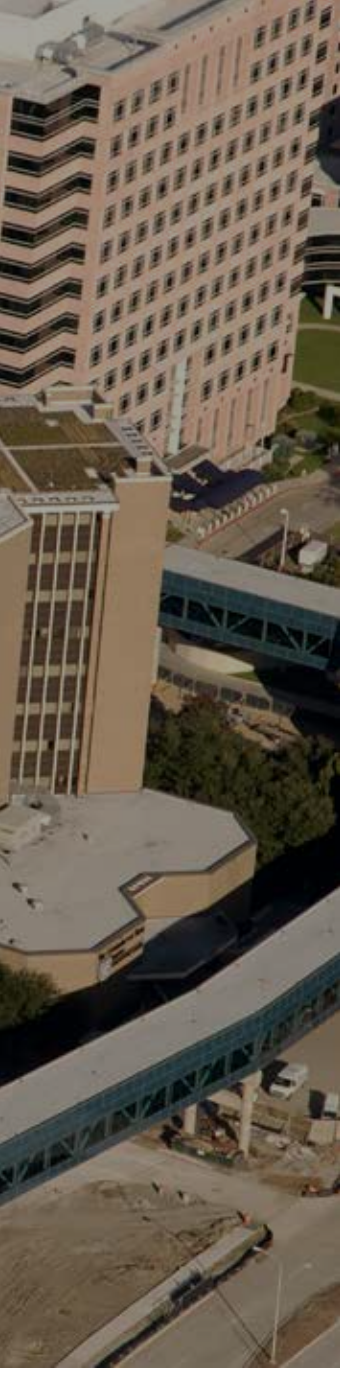
The building optimizes daylight and rejects unwanted heat and glare with its **UNIQUE FIVE FACADE DESIGN** that includes the roof

**GRANT FAY PARK**, to the east, is an amenity to the building, providing shade and a connection to nature for the adjacent spaces.

The annual purchased utilities cost for the School of Nursing is approximately **60% LESS** than comparable buildings on the campus.

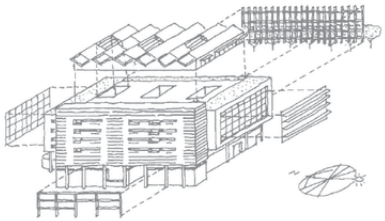
The building is **LEED GOLD** certified by the U.S. Green Building Council and recieved an AIA COTE Top Ten Green Projects Award

**RAINWATER STORAGE TANKS** capture approximately 826,140 gallons of rainwater or "grey" water (non-potable water) per year fulfilling the estimated 42,000 gallons needed each month for toilet flushing and irrigation.

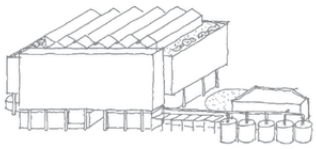


## SUSTAINABLE / NOTABLE FEATURES

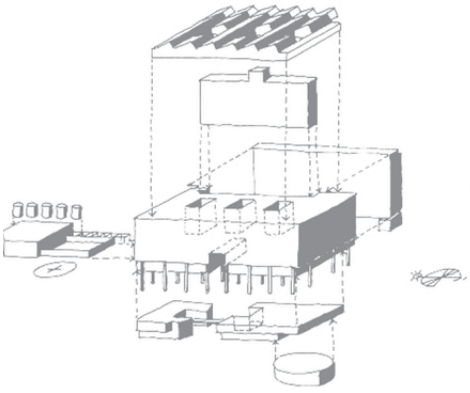
- LEED Gold
- 195,000 square foot, 8-story facility in the Texas Medical Center
- This classroom and academic office building contains 20,000 square feet of classrooms and skills labs, a 200-seat auditorium, a cafe and dining room, bookstore, student lounge, student government offices, a research laboratory and faculty offices.
- This facility was designed using three guiding principles:
  1. Provide physical and visual connections to the park to the east;
  2. Express the interior functions with the design of the exterior massing and materials;
  3. Maximize human health and productivity and minimize the impact on the environment.
- This signature facility creates an identity for the University by providing an important sense of place for students and visitors within the UT Health Science Center at Houston campus.
- The building was designed to save 33% more than a similar ASHRAE 90.1 1999 compliant building.
- The building was designed to easily install photovoltaics on the roof structure for further emission reductions and self-reliance.
- Daylight penetration was a key strategy so that all occupants have access to natural light. Vertical atria and a horizontal atrium provide additional controlled daylight.
- Operable windows are installed throughout the building and could be open approximately 134 days or over 1/3 of the year.
- Indoor air quality has been improved with healthy interior materials such as agri-fiber board and low VOC paints, adhesives and sealants.
- For teaching and offices spaces, an under-floor air distribution system is used to increase energy efficiency and provide increased thermal comfort for building users by providing user controls.
- Flexible building elements such as raised floor and demountable partitions will accommodate building changes over time.
- Water reduction strategies amount to a 93% total reduction of potable water through the reuse of collected rainwater for flushing and irrigation, as compared to a LEED baseline case.
- Efficient plumbing fixtures such as waterless urinals, low flow lavatories and low flow showerheads are installed throughout.
- 75% of the building's total construction waste was recycled or salvaged—including waste from the deconstruction of the building that had previously occupied the site.
- Building materials were chosen to minimize environmental impact and include recycled brick from a 19th century warehouse in Texas, wood siding from reclaimed cypress logs, aluminum panels specially fabricated with 92% recycled material, and structural steel specified to have more than 80% recycled content.
- The building used 48% fly ash in its concrete mixture, saving approximately 1,808 tons of carbon dioxide that would have been released into the atmosphere.
- Designed in collaboration with Lake | Flato and a consultant team that represented 17 disciplines and specialties.



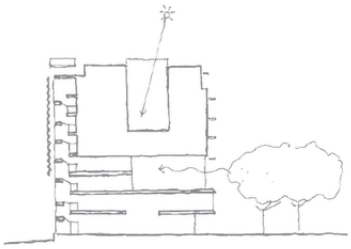
FIVE FAÇADES



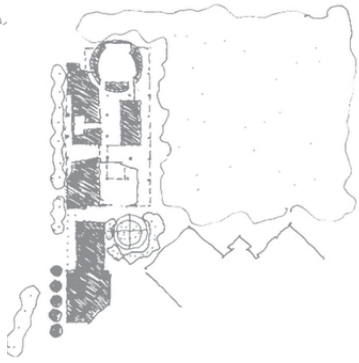
RAINWATER COLLECTION



ARCHITECTURAL COMPONENTS



DAYLIGHT PENETRATION



GROUND-FLOOR PUBLIC SPACE


St. Luke's Episcopal Hospital

## SELECT AWARDS

2006 Top Ten Green Projects Award
AIA Committee on the Environment (COTE)

2006 Honor Award
Texas Society of Architects

2006 Region IV Energy Project of The Year
Association of Energy Engineers (AEE)

2005 Honor Award, Architecture
AIA Houston

2005 Honor Award, Sustainable Architecture
AIA Houston

2005 Award For Innovative Schools
Recognized Value Award
Designshare International

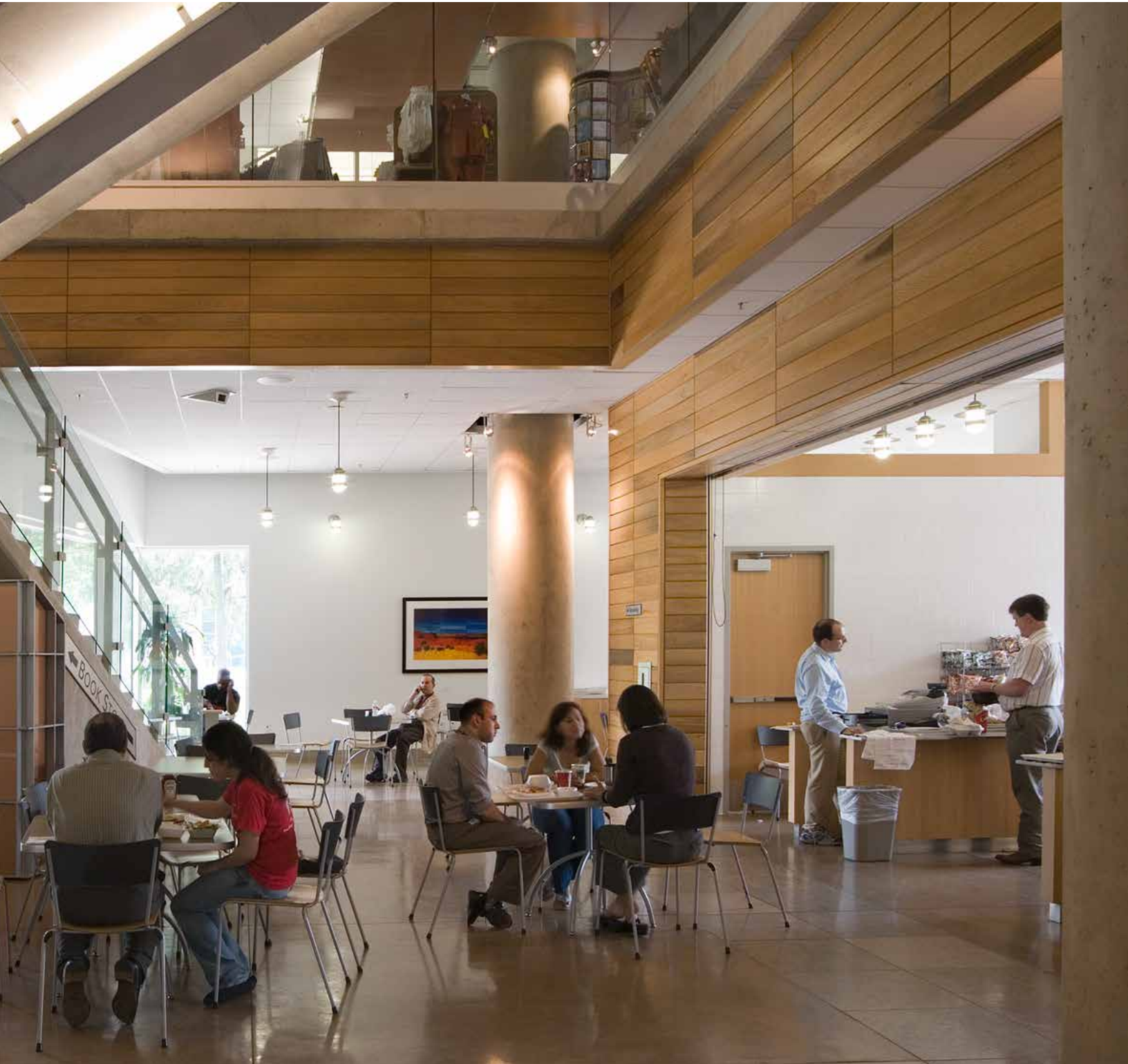
2004 Honor Award
AIA San Antonio

2004 Honor Award, Excellence In Architecture
AIA Kansas City

2004 Honor Award
AIA Kansas

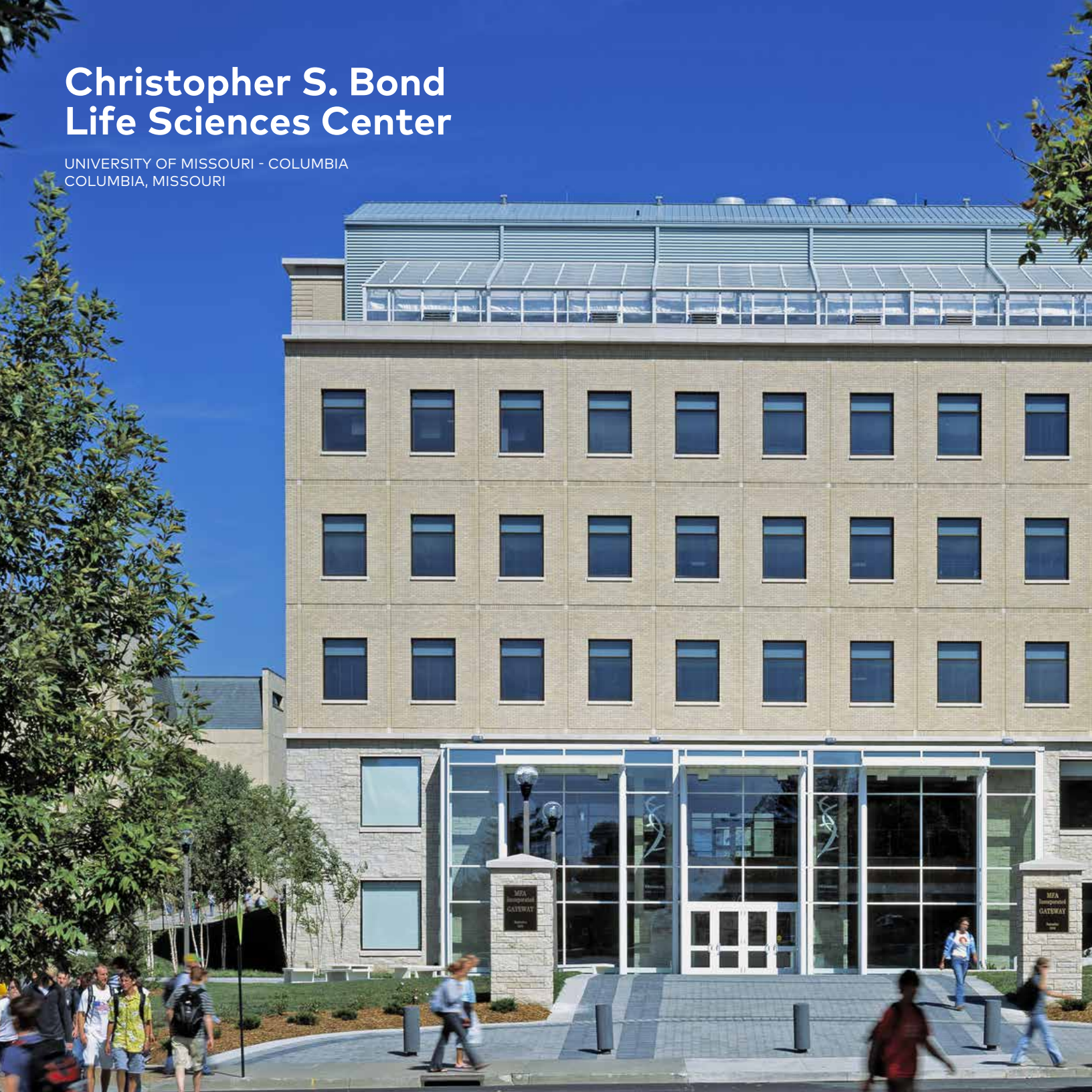
2004 Honor Award, Excellence In Sustainable Design
AIA COTE Kansas City

2004 Merit Award
AIA Central States Region



# Christopher S. Bond Life Sciences Center

UNIVERSITY OF MISSOURI - COLUMBIA
COLUMBIA, MISSOURI



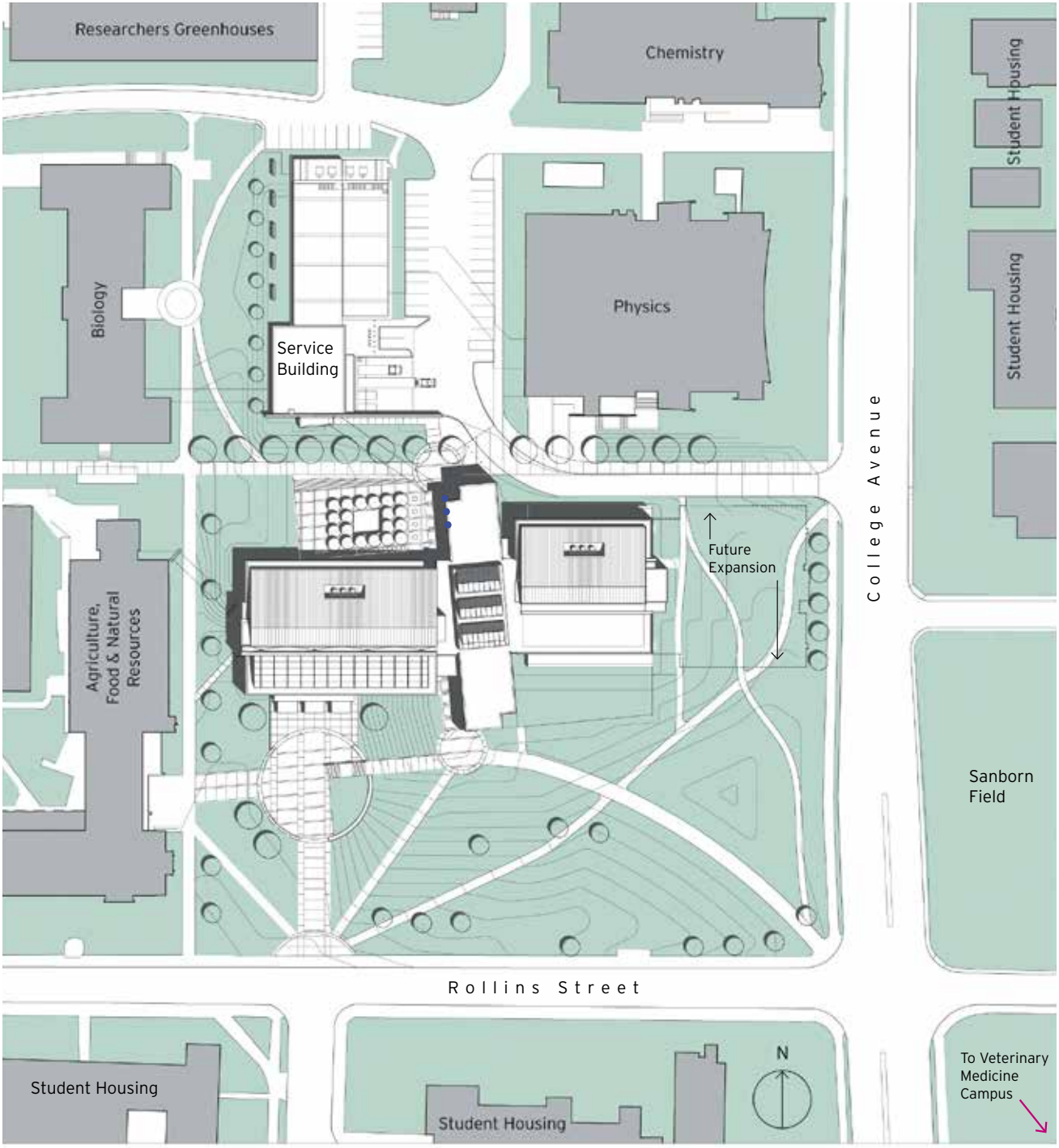
The Life Sciences Center at the University of Missouri - Columbia unites faculty and students from several schools and programs into one, collaboratively focused research center. The Colleges of Agriculture, Food and Natural Resources, Arts and Sciences, Veterinary Medicine, Human and Environmental Sciences Engineering, and the School of Medicine engage in joint research into genomic and biomolecular structures. State-of-the-art laboratories, shared meeting areas and public spaces provide unsurpassed opportunities for interdisciplinary biomedical science and agricultural biotechnology research.

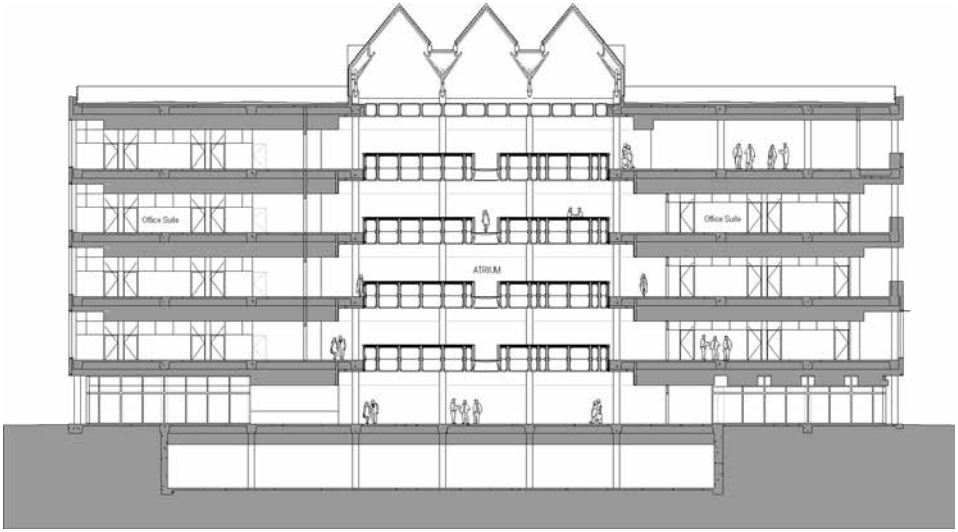
239,714 GSF
Completion in 2004

With the idea that a healthy building illustrates the principles that life sciences embody, research, teaching and education converge in naturally daylit laboratory spaces, generous meeting areas, and informal teaming areas located off of the primary circulation spaces. The building features a central daylit atrium, strategically connecting the wings in an east-west direction to create a lively corridor called 'Main Street.' The naturally lit atrium, which centralizes faculty and research offices, a café and one of the reading rooms, encourages and facilitates interaction among users.

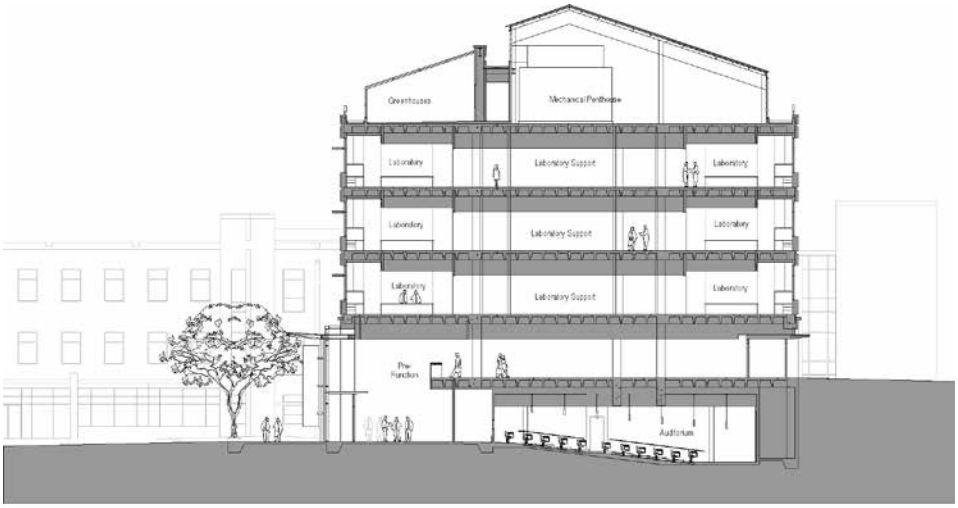
"The Center is kind of a catalyst that brings people together doing such different things."

MANNIE LISCUM
BIOLOGICAL SCIENCES PROFESSOR AND
ASSOCIATE DEAN OF GRADUATE STUDIES


Researchers Greenhouses
Chemistry
Student Housing
Biology
Physics
Service Building
Student Housing
College Avenue
Future Expansion
Agriculture, Food & Natural Resources
Sanborn Field
Rollins Street
Student Housing
Student Housing
N
To Veterinary Medicine Campus



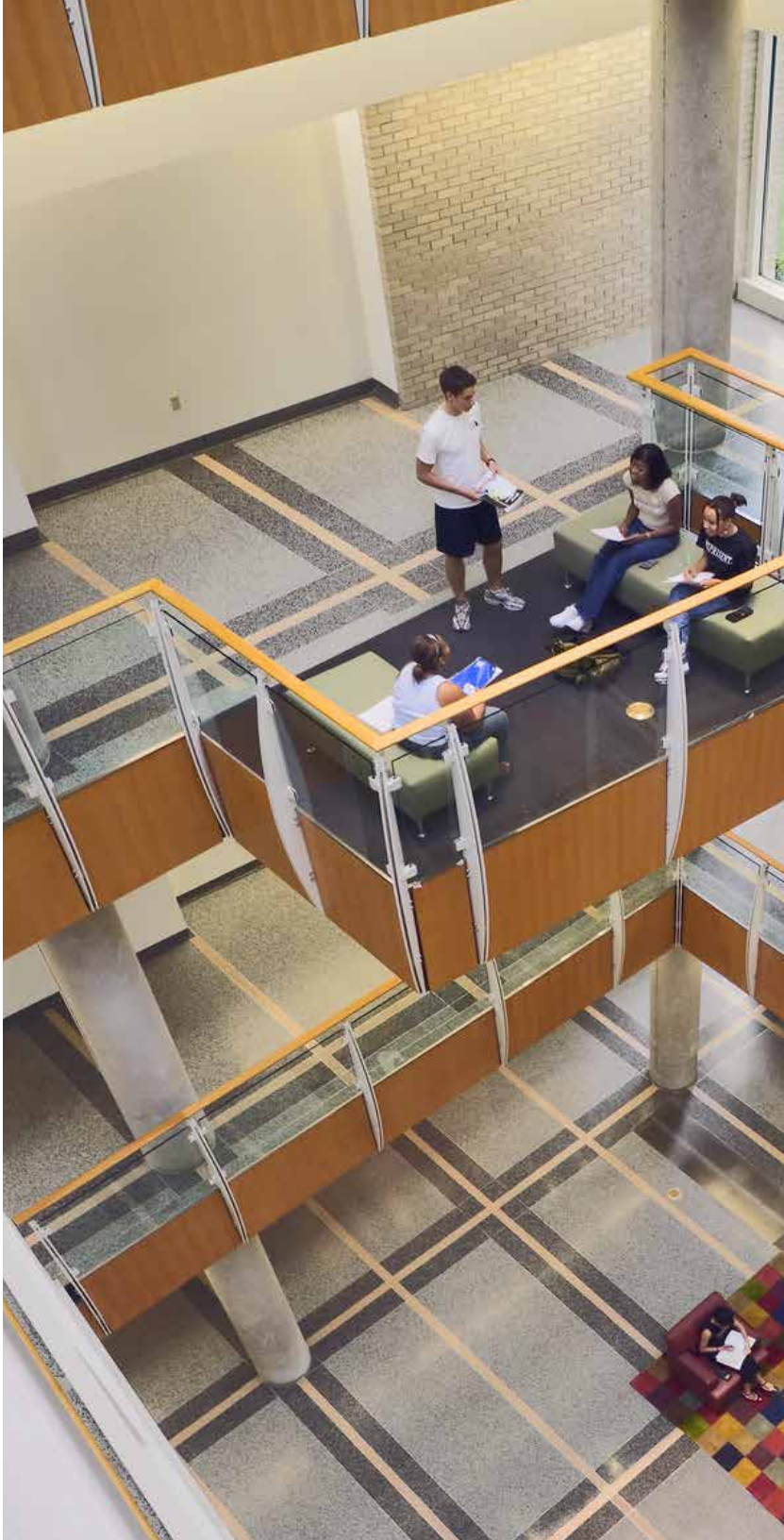

**SECTION - ATRIUM**




**SECTION - LABS**

"The Building has been set up with lots of what we call 'collision zones.' In Chemistry, when things collide you get a reaction. When two people can interact in a hall or corner and discuss an idea, that's when you get new ideas and new things happening. Students see how this happens and they grow and thrive under this."

DR. G. MICHAEL CHIPPENDALE, PH.D.
PROFESSOR EMERITUS
DIVISION OF PLANT SCIENCES



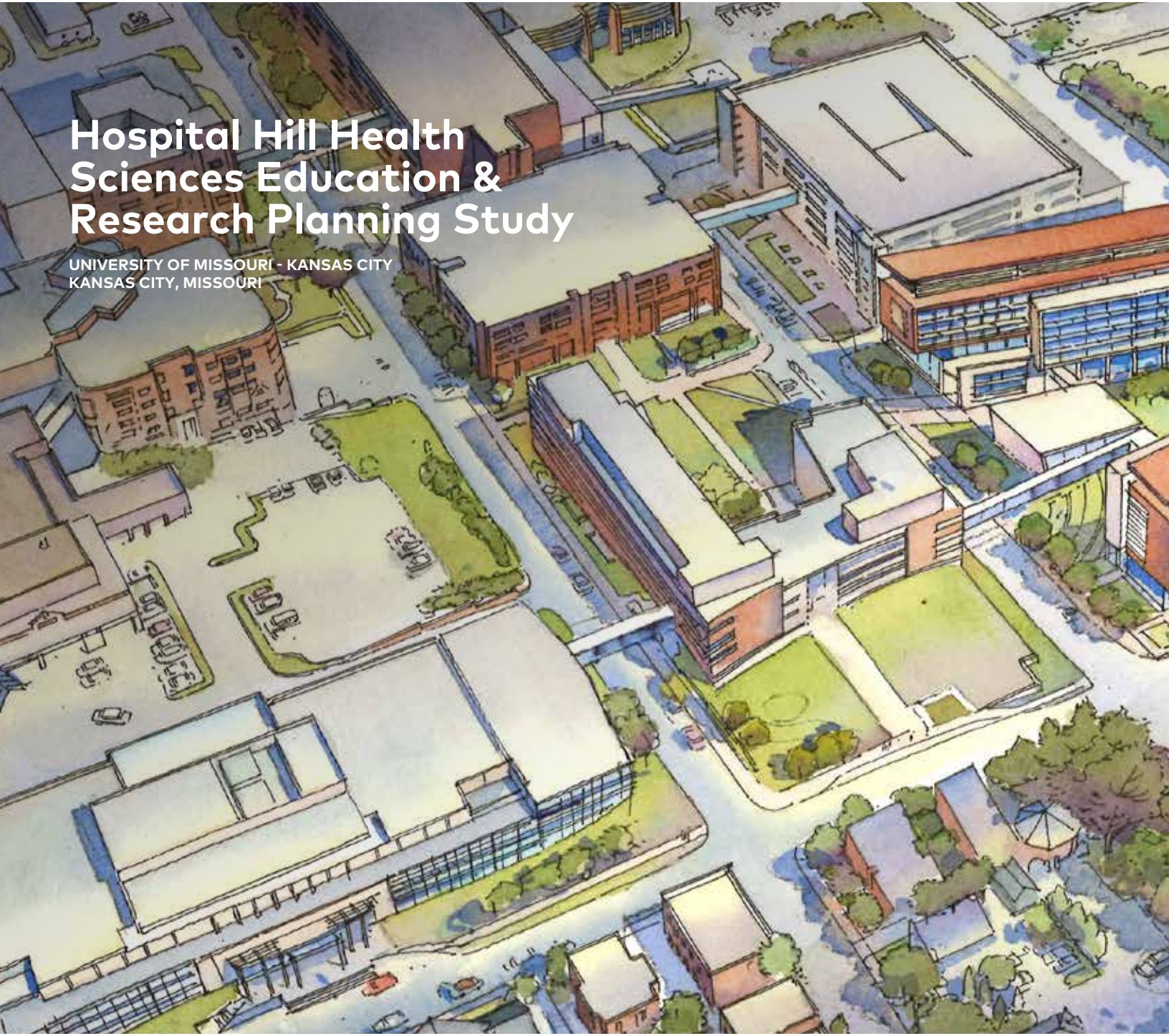
## AWARDS

2005 Honor Award, Excellence in Architecture
AIA Kansas

2005 Merit Award
AIA Mid-Missouri

# Hospital Hill Health Sciences Education & Research Planning Study

**UNIVERSITY OF MISSOURI - KANSAS CITY**
**KANSAS CITY, MISSOURI**



The project site is very unique in its location, character, topography and relationship to the future campus growth. The campus master plan study was conducted to inform the new building organization on the site to balance functionality, energy efficiency, daylighting and campus design. The fundamental planning approach is one that is intended to result in buildings and outdoor spaces that are ideally suited to the climate and environmental conditions and make strong connections to existing and future neighboring buildings.

The team worked with the University's project committee to finalize the study that includes exploring the programmatic needs for all space types, the appropriate placement of spaces within the buildings, phasing concepts, circulation concepts, benchmarking of similar institutions, classroom utilization and the project cost profile.

663,000 SF
Completion in 2010

**bnim** is building positive


2460 PERSHING RD
SUITE 100
KANSAS CITY
MO 64108

816 783 1500

317 6TH AVE
SUITE 100
DES MOINES
IA 50309

515 974 6462

797 J ST

SAN DIEGO
CA 92101

619 795 9920

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