



# PATH OF INNOVATION

Henry W. Bloch Executive Hall for Entrepreneurship and Innovation  
University of Missouri - Kansas City



BNIM + MRY Architects





PROJECT TEAM

*Architect and Co-Design Architect* **BNIM**

*Co-Design Architect* **Moore Ruble Yudell Architects & Planners**

*Contractor* **JE Dunn Construction**

*Structural Engineer* **Structural Engineering Associates**

*MEP/Fire Protection Engineer* **M.E. GROUP**

*Civil Engineer* **SK Design Group**

*Landscape* **BNIM**

*Environmental Signage/Graphics* **BNIM**

*Visioning* **Brightspot, DEGW**

*AV/IT/Acoustics* **The Sextant Group**

*Code Consultant* **FSC, Inc.**

*Lighting Consultant* **Derek Porter Studio**

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**HENRY W. BLOCH EXECUTIVE HALL**  
for Entrepreneurship and Innovation



## SUMMARY

Henry W. Bloch has built a legacy of making Kansas City a better place. A co-founder of H&R Block and long-time benefactor to his city, Mr. Bloch recently presented a generous gift to the University of Missouri-Kansas City's Bloch School of Management for the creation of the next generation of business school facilities—the Henry W. Bloch Executive Hall for Entrepreneurship and Innovation.

For the new facility, BNIM and Moore Ruble Yudell worked closely with the Bloch School of Management and the University to develop a unique program that reinforces the School's core values. Leading the design efforts, BNIM and Moore Ruble Yudell integrated the two firm's complementary strengths to form a powerful design collaboration. BNIM's design approach brought three primary tenets to the process: Generous Pragmatism—a design ethic focused on balancing beauty and function; high-performance integrated design; and vision-driven design. With their extensive campus experience, Moore Ruble Yudell's design approach brought a commitment to creating places that nurture community, collaboration, and creativity and celebrate the culture of the institution.

Bloch Executive Hall creates an unprecedented model for business schools—one that encourages innovation, entrepreneurship, dialogue and a mind-set of future thinking. Steve McDowell, principal at BNIM, said, "Henry Bloch represents the highest level of philanthropists. He creates opportunities for elevating individuals and institutions through business, academic and philanthropic enterprises. This new building for the Bloch School is one more example of Henry in action."

Dr. Teng-Kee Tan, then dean of the Bloch School of Management, expressed an idea in the early stages of design that shaped the team's process and the final design: The path of innovation is never a straight line. McDowell said, "The building and landscape embody that idea, inside and out. The inside has curvature and flow that allow people in the building to plainly see each other, and the design nurtures the unique pedagogy and research taking place within the Bloch School." The exterior embodies innovation via a unique insulated concrete wall system clad in poly chromatic terra cotta panels that connects the new facility with the existing buildings and context of the campus. The design process, too, was not a straight line. It was iterative and interactive, involving UMKC, BNIM, MRY, JE Dunn and the larger team of collaborators.





The Bloch Executive Hall was completed from design through construction on a fast-track schedule within a 24-month period. The building respects the traditions of the past and celebrates the present and future Bloch School community. Daylight enters the building in many ways to optimize learning conditions, and spaces are easily adaptable to accommodate changing needs and active uses. The Hall is a tribute to the vision of Dean Tan, with a wide range of programs that support the School's mission. Buzz Yudell, partner at Moore Ruble Yudell, said, "The building is shaped to nurture choreography of movement and social interaction leading to creativity and innovation."

**This is the business school model of the future.**

Early on, Bloch Executive Hall was described as, "...not your parent's business school." It is anticipated that the pedagogy of Bloch Hall will be emulated nationally and globally. Mr. Bloch is certain to see his legacy grow through the work of each student studying in the unique environment of Bloch Executive Hall.

The Bloch School of Management employs active learning styles of teaching, group teaching methods and design-based thinking and learning. In response, the new Bloch Hall houses a design-led innovation laboratory, space for prototyping entrepreneurial concepts, and incubator space for creating new companies. In

the spirit of Henry Bloch and entrepreneurialism, the building is fresh, progressive and a step into the future. The state-of-the-art building provides an innovative model for business schools across the country and globally to support the future of entrepreneurship education. The Bloch School curriculum is recognized as one of the top in the world. Driven by Bloch entrepreneurship faculty research, the Bloch School is nationally and globally ranked in innovation management, entrepreneurship, accounting executive and public affairs programs. The Bloch School curriculum is recognized as one of the top in the world. Driven by Bloch entrepreneurship faculty research, the Bloch School is nationally and globally ranked in innovation management, entrepreneurship, accounting executive and public affairs programs.

The design of the 68,000 square foot building is intentionally simple and elegant. It includes a 200-seat auditorium, multiple flexible and experiential learning classrooms, seminar rooms, behavioral research labs, finance lab, and staff offices. The upper three floors of the building are connected by an open, light-filled lobby that includes an amphitheater that serves as an important student gathering area for the entire school.

The project is on track to achieve Leadership in Energy and Environmental Design (LEED) Gold certification.



## **DESIGNING BLOCH HALL**

What a building does matters as much as how it looks. This philosophy, which the project team calls Generous Pragmatism, guided the design of the new Bloch Hall.

The building's design is based on a specialized pedagogy specific to the educational philosophy of the school. The Henry W. Bloch School of Management has been recognized as the top-ranked school in the world for Innovation Management and Entrepreneurship. This focus on teaching students to become entrepreneurs and to innovate new products has yielded a new business school model that requires environments more akin to design schools than traditional business school facilities.

### **What makes the Henry W. Bloch School a truly unique Business School?**

- The unique pedagogical scenarios of the School in nurtures the next generation of entrepreneurs and innovative leaders in a manner that is consistent with the mission and vision of the Bloch School.
- The new building encourages the community of learners to collaborate and participate enthusiastically in a learning and discovery environment conducive for creative and innovative work.
- The new building synthesizes with the existing traditional Bloch Building to accentuate the importance of maintaining the School's heritage and tradition while seeking to create and shape an exciting future.
- The new building is vastly different from other business schools in its forward-thinking features and functionality (technology and classroom applications) capable of nurturing students to compete globally in the next 20-30 years.
- The design of the new building itself is an inspiring story of an entrepreneurial and innovative exercise, where the collaborative, interdisciplinary teaching and learning that take place within the spaces are a continuum of the design process.

**VISION**

The Bloch School develops purposeful, entrepreneurial, and innovative leaders to meet changing global demands, and advances knowledge and practice through excellent teaching, scholarship, outreach, and service.

## DESIGN PROCESS

BNIM has a saying: No one knows as much as everyone. Our project team shared a belief that the best ideas emerge from a process that identifies needs and fosters creative solutions. Bloch Hall is the product of many collaborators providing intuitive and scientific contributions that have shaped the architecture and infrastructure. The users and designers collaborated to define the pedagogical and facility needs. The designer's work continued to refine programmatic needs as the design collaboration evolved.

The Bloch School, UMKC, BNIM, MRY, JE Dunn and other members of the project team worked very closely, sharing knowledge and expertise to ensure that what was being designed and built would meet the pedagogical goals. Through the process, it was determined that the new building would break the mold. The design would raise the bar for business schools as well as for other academic facilities. It would be like no other building.

It was clearly articulated during the vision process for Bloch Hall that the new building would be a good steward of human health, nature and the economic resources of the university, achieving a balance among these triple-bottom-line considerations. Collaboration, as a key element of the design process, created an open dialogue among all team members that shepherded these and other significant goals through design iterations, rigorous testing and analysis, negotiations and, finally, to successful execution.

### HPID – An Integrated Approach

High-performance integrated design (HPID)—BNIM's approach to achieving generous pragmatism and triple-bottom-line results—guided the entire team throughout the process of designing and constructing Bloch Hall on a fast-track schedule. Through this process, each team member discipline collaborates to achieve all project goals elegantly, efficiently and sustainably. The design process relies on intuition and scientific and experiential modeling tools to predict building experiences and behaviors. In doing so, each layer of design—site, program, structure, comfort systems, envelope, lighting, etc.—is understood and integrated into the whole.

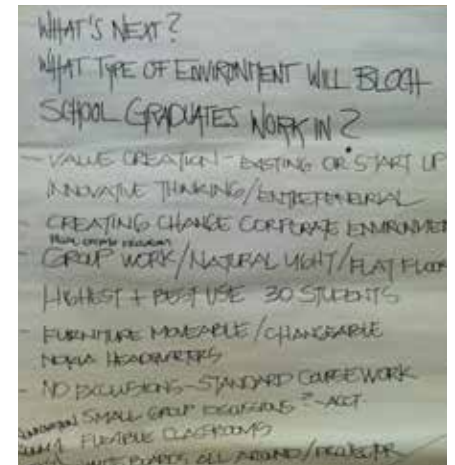
### Innovation and Replication

This approach is also rooted in understanding past innovations and the continuity of how new ideas build upon previous ideas to create a unity of beauty and performance. The process of innovation and replication is characterized by: a building structure that is beautiful and conveys the stature of the innovation that will happen within; an exterior envelope that is both beautiful and reduces energy demands; building mass that is utilized to reduce the size of the mechanical system and creates a quiet environment for learning; windows that increase daylight and reduce heat loss or gain; open flexible spaces that provide “long life loose fit” for evolving pedagogy and authentic durable materials that evoke spirit of tradition and contemporary innovation. Bloch Hall embraces each of these aspirations and more.



# "No one knows as much as everyone."

UNKNOWN





CONTEXT

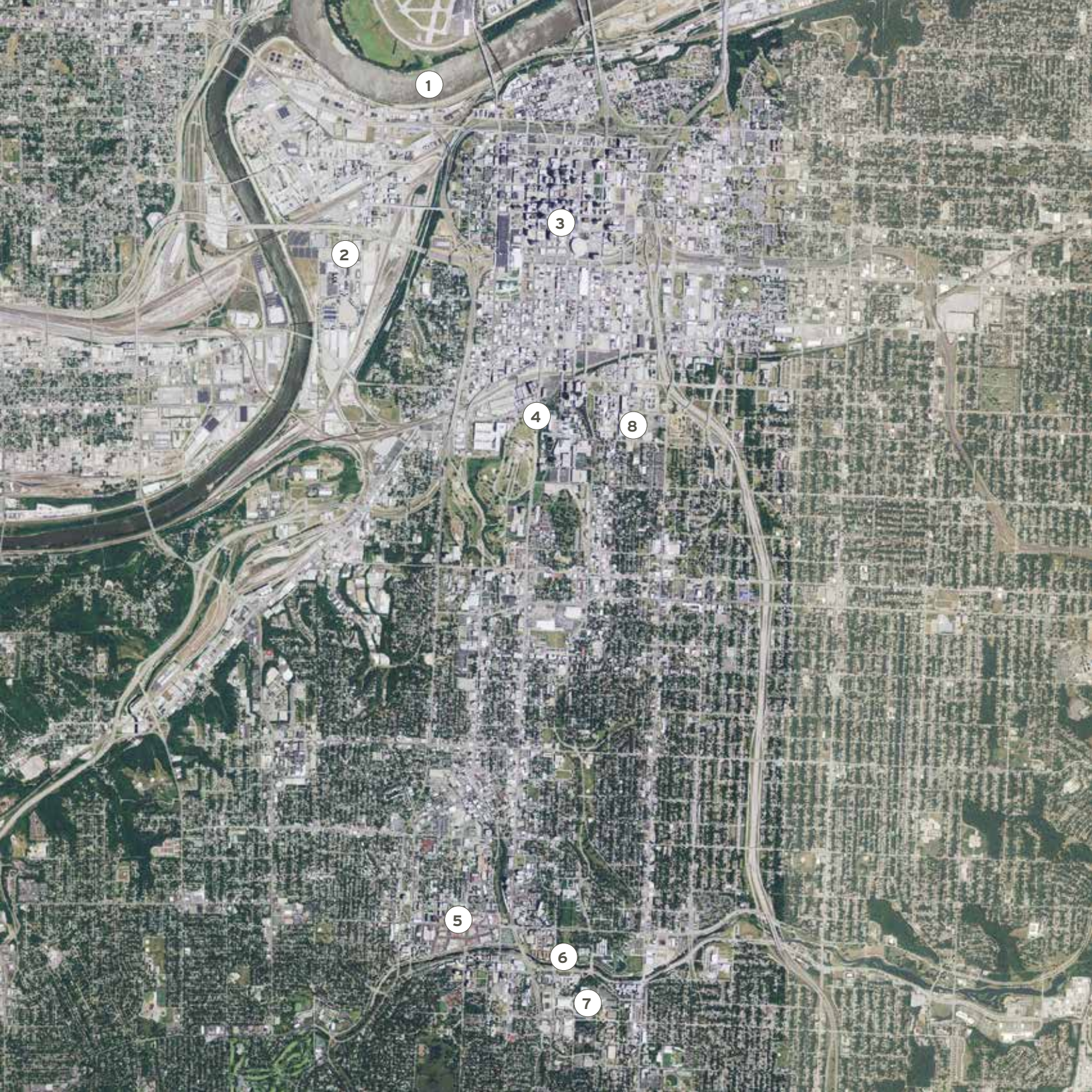


above University of Missouri - Kansas City, Volker Campus; opposite Kansas City



- Kansas City Map >
- 1 Missouri River
  - 2 West Bottoms
  - 3 Downtown
  - 4 Midtown
  - 5 Country Club Plaza
  - 6 Brush Creek
  - 7 UMKC Volker Campus
  - 8 UMKC Hospital Hill Campus





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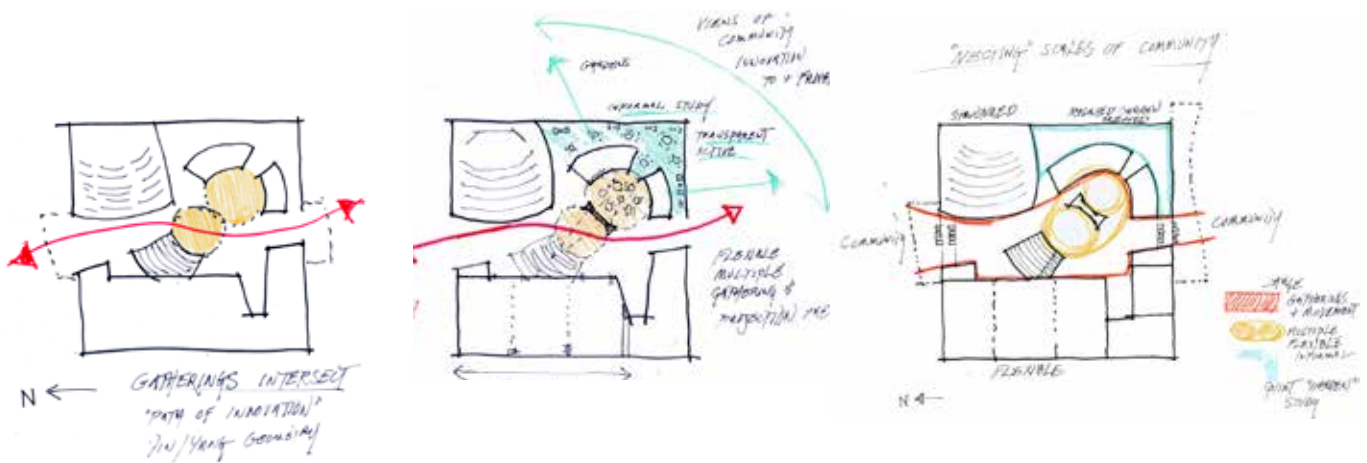




## DESIGN CONCEPT

The team referred often to Dean Tan's early statement, "The path of innovation is never a straight line." Not only did this statement resonate in each designer's intimate familiarity with how circuitous design can be, but it also embodied philosophies related to how innovation and entrepreneurialism are taught, particularly at the Bloch School. Dean Tan encouraged the team to work outside the box. He did not want a business school building that replicated the past; his vision was of a building that understood the past but was shaping the future. He challenged the design team to create space that would empower new pedagogies and highly productive experiences for teachers and students in pursuit of innovation, entrepreneurship and management.

The diagrams below illustrate how the building form evolved along this idea of the Path of Innovation being one of experimentation—learning by doing. The design process was the same. Many distinct concepts were explored with intention of creating an innovative pedagogy, architecture and technological solution to ensure that the needs of the future are being served.

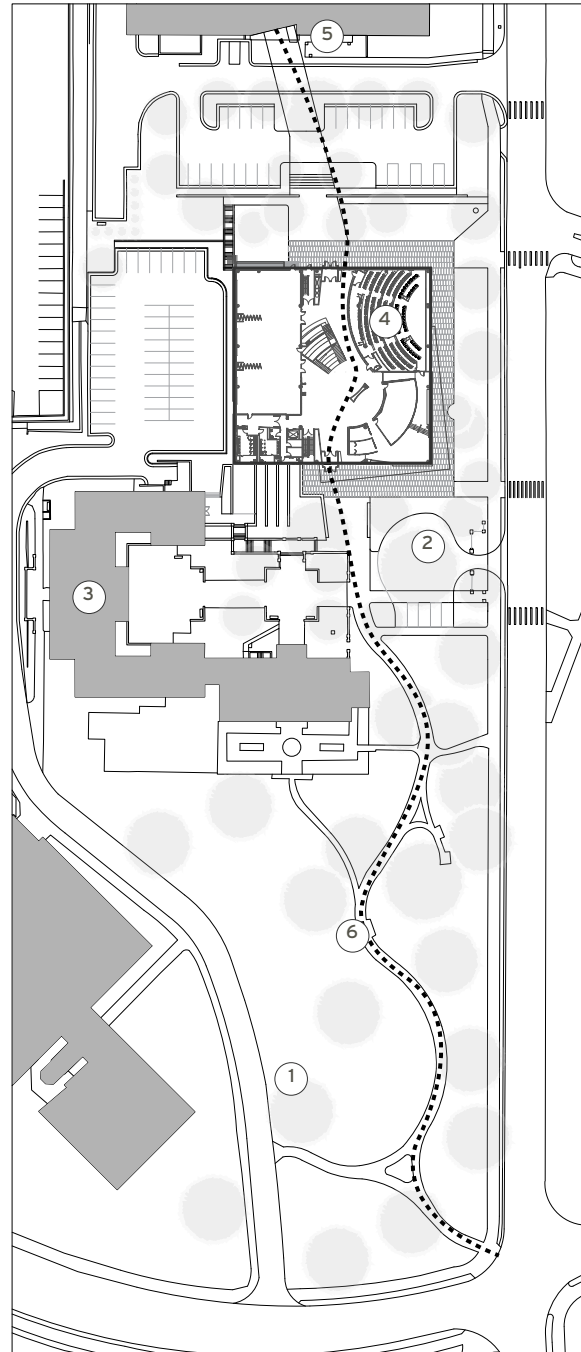




An important layer of the building's design involved connecting the new building to the campus and immediate surroundings of the existing Bloch School, the Student Union and a garden dedicated to Mrs. Marion H. Bloch. As the diagrams indicate, the Path of Innovation became an important pathway for defining the interior organization and connection to the campus.



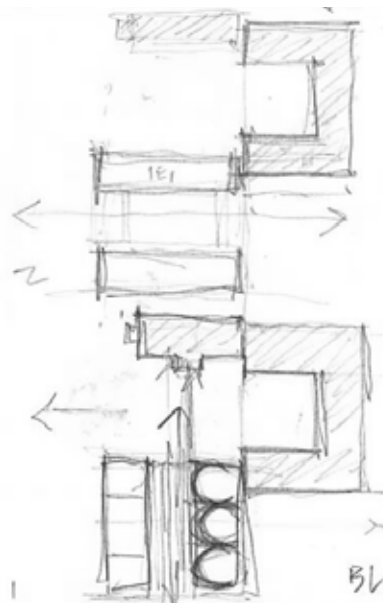
- 1 Marion H. Bloch Park
- 2 Bloch School Courtyard
- 3 Henry W. Bloch School
- 4 Henry W. Bloch Executive Hall
- 5 Student Union
- 6 Entrepreneur's Hall of Fame / Path of Innovation



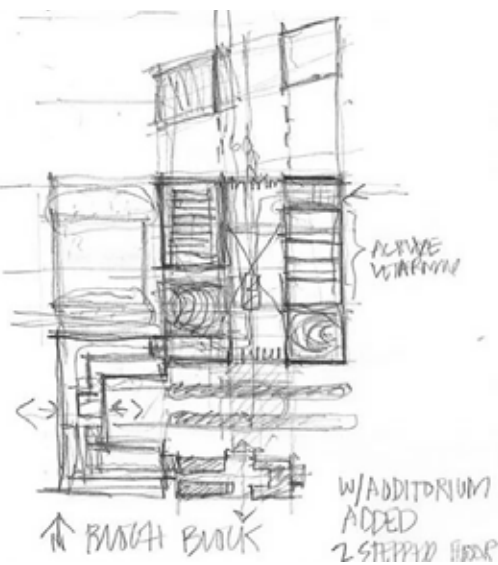
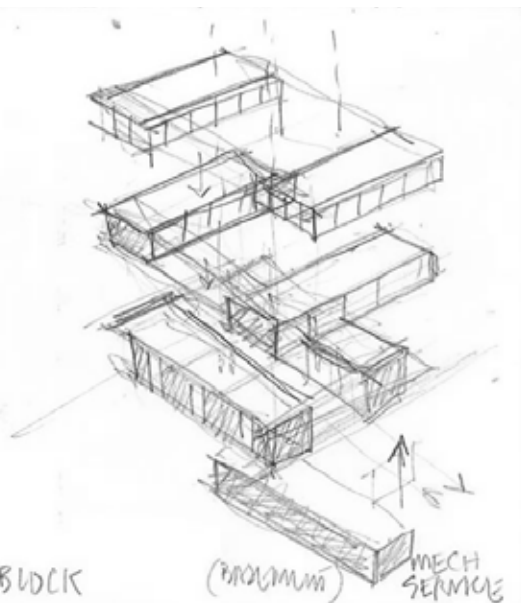
The interior amphitheater space surrounded by a three-story atrium is central to the design concept and parti. Classrooms, the Design-Led Innovation Lab, auditorium and other support spaces are stacked in flanking north-south masses on the entry level and east-west volumes on the levels above. The decision to rotate the organization at each level was very intentional. The main floor alignment created an open pathway directly between the Bloch School and the Student Union. Rotating the organization on the upper floors optimized solar orientation for daylight utilization and reduced overall energy demands for the building. As is often the case, these decisions resulted in unintended benefits such as a very generous glass frontage that opens student study areas to Cherry Street; a cantilever of the Design-Led Innovation Lab, which provides a shaded respite along Cherry as well; and exterior voids on the top floor between the programmatic spaces that create a roof garden and provide access from outdoors directly to the atrium.

Campus design and internal organization were considered in parallel to ensure that the design improved the context while also creating strong connections to the outdoors. Bloch Hall is both a place and a portal. It utilizes space very efficiently to serve the programmatic needs of the school and the connectivity needs of the campus. The amphitheater provides a venue for informal student gathering as well as for teaching and major school gatherings. The atrium serves as public passage between the Bloch School and the Student Union and indoor gathering place. This space is also home to the Entrepreneurs Hall of Fame. Curved forms in the heart of the building juxtapose the straight lines of the building's exterior form.





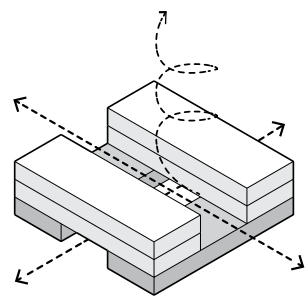
BLOCH BLOCK



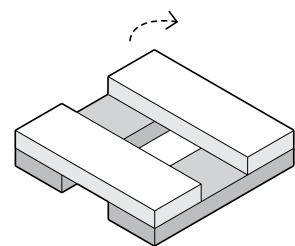




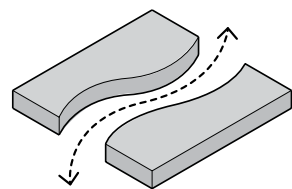




spatial connections



solar orientation



path of innovation



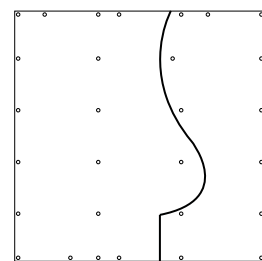
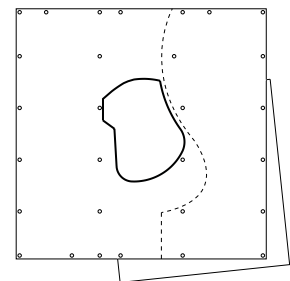
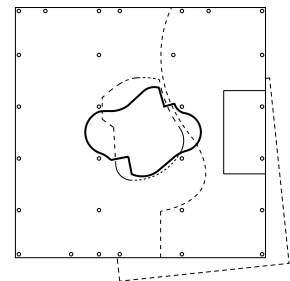
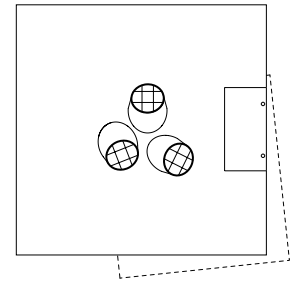




**HENRY W. BLOCH EXECUTIVE HALL**  
for Entrepreneurship and Innovation







atrium progression





Welcome Bloch  
EXECUTIVE HALL

Block: 100, 100, 100  
on the 100th floor, 100th floor, 100th floor

100 100 100 100 100 100 100 100 100 100

100 100 100 100 100 100 100 100 100 100









The buildings surrounding Bloch Hall have been constructed over a century-long span of time. The most memorable and oldest is a large brick and limestone manor house, and the newest is the Student Union. In general, the collection of buildings exhibits a lack of continuity in architectural unity in overall campus design. This is due to the architecture, incremental development of this part of campus without clear vision, and the ever-present impact of surface parking. The design needed to heal this part of campus through the architecture, planning and landscape design. The design team's strategy: a simple well-proportioned, elegant building form, robust landscape extending Mrs. Bloch's garden to the Student Union, and materials that aesthetically connect contextual masonry colors that range from dark red, orange, maroon, charcoal, tan and yellow.

The idea of building on our past to innovate our future—continuity with history and a vision for the future—played an important role in the architecture, urban design, landscape and materiality of Bloch Hall.

The design team studied many palettes for the exterior building skin and settled on one represented by the sketches shown below. The cladding material is terra cotta fabricated in four-foot-long planks using seven distinct colors that are blended to complement the adjacent context—yellow and tan on the north and dark reds and charcoal on the south.

*left column* Team studying the terra cotta panels against the dark reds and charcoal of the Bloch School; *middle column* Bloch School; *right column* Student Union



Achieving the many design aspirations within a modest budget required innovative solutions. When used traditionally, terra cotta is normally cost prohibitive in spite of its durability, low maintenance and potential for extremely high performance from energy and other perspectives. The material was clearly a good approach to meet the design goals, but installing the planks as a traditional rain screen was cost prohibitive. The team also explored innovative insulated precast concrete wall systems because of success on other BNIM building projects. The beauty of the insulated precast included its high-performance energy characteristics, speed of construction, durability and very low cost. Since the high cost of terra cotta is not in the material but in the installation process, a hybrid approach was proposed: combine low cost, high-performance insulated concrete panels with beautiful polychromatic terra cotta installed in the factory. This is the first time this system has been used. The collaboration included the general contractor, concrete panel fabricator and terra cotta manufacturer.

The landscape integrates student seating, study and classroom spaces, courtyards and native plantings intended to introduce vibrant ecological systems into the immediate surroundings and campus.







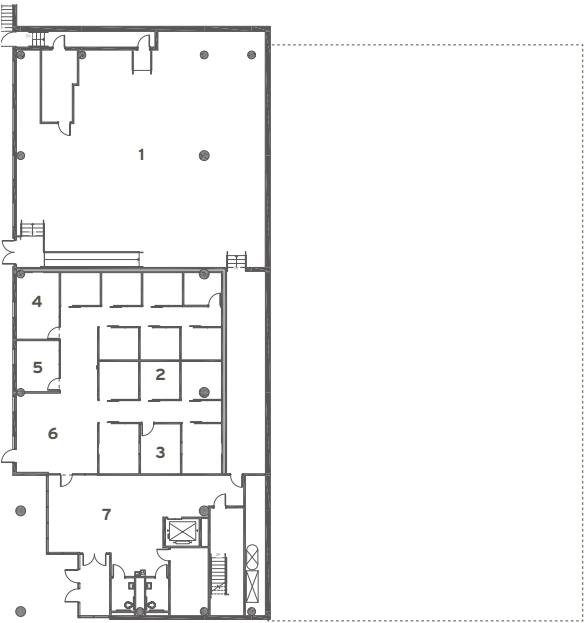




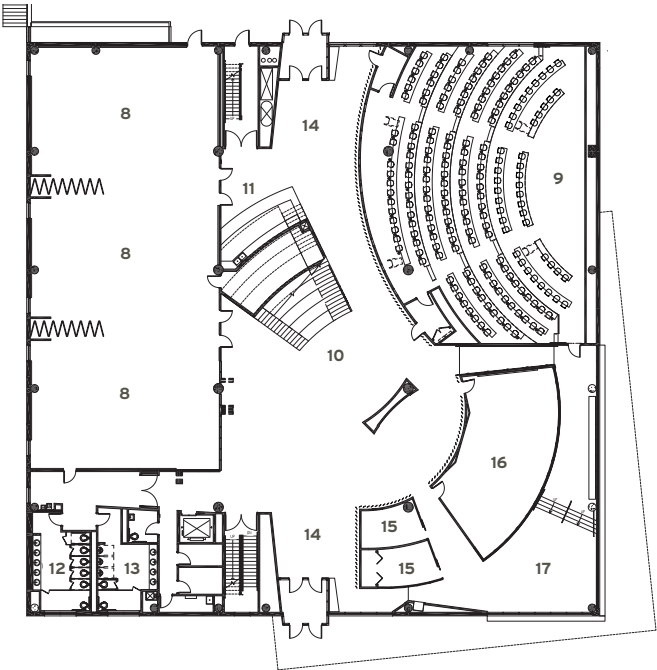


INSIDE BLOCH HALL

**Level One** connects with Level One of the existing Bloch School and has a west-facing, grade-level entry providing convenient access to the largest parking area of the Bloch School. This floor houses lobby space, the behavioral research lab and building support spaces for mechanical and other uses.



The main entries are on **Level Two**, which houses a 200-seat auditorium, three active learning classrooms, a finance lab, small group study rooms and informal student study areas. The spaces are organized along a north-south axial lobby space. At the center of the building on this level is an amphitheater connecting the three main levels of the building with a light-filled, three-story lobby.



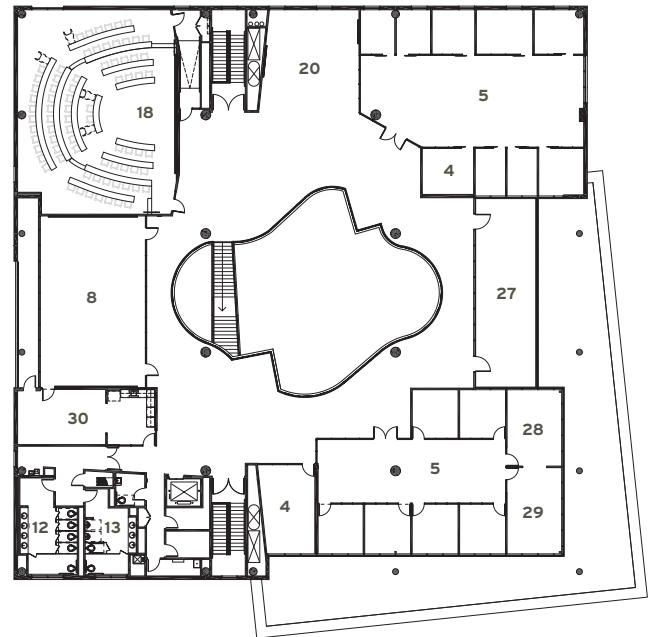
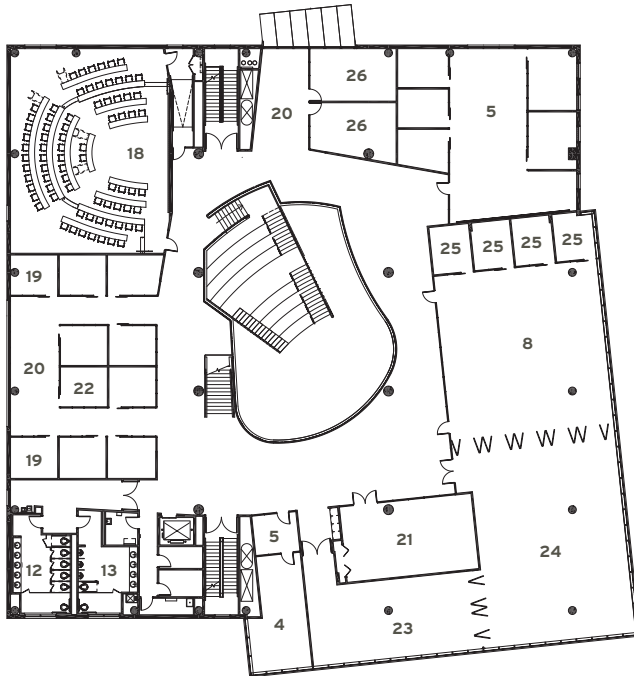
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- |                                   |                     |                              |
|-----------------------------------|---------------------|------------------------------|
| 1 Mechanical Room                 | 11 Cafe             | 22 Venture Accelerators      |
| 2 Individual Research             | 12 Women's          | 23 Brainstorming             |
| 3 Team Research                   | 13 Men's            | 24 Design-led Innovation Lab |
| 4 Conference                      | 14 Atrium           | 25 Break-out                 |
| 5 Office                          | 15 Group Study      | 26 Seminar                   |
| 6 Research Assistants             | 16 Finance Lab      | 27 Rooftop Patio             |
| 7 Lobby                           | 17 Quiet Study      | 28 Dean's Conference         |
| 8 Experiential Learning Classroom | 18 Tiered Classroom | 29 Dean's Office             |
| 9 Auditorium                      | 19 Executive Mentor | 30 Copy/Work/Break           |
| 10 Amphitheater                   | 20 Open Teaming     |                              |
|                                   | 21 Prototyping      |                              |

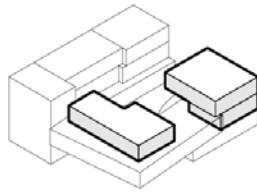
The Institute for Entrepreneurship and Innovation is the primary occupant of **Level Three**. The spaces include the Design-Led Innovation Lab, one 60-seat active learning classroom, an 80-seat tiered classroom, small group study rooms and institute offices wrapped around the generous mezzanine for circulation and interaction.

**Level Four** houses a second 80-person tiered classroom, the remaining active learning classroom/boardroom, small group meeting/office rooms for departmental use and the dean's suite. There is also a roof garden that opens to the central circulation mezzanine space that serves the entire building for small group study, relaxation and special events.

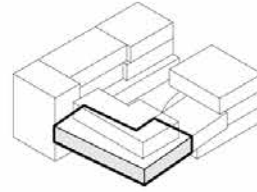


A photograph of a modern interior space, likely a museum or gallery. The ceiling is a large, circular, white, curved structure with a grid of dark lines. A large, circular skylight is visible in the upper right, showing a grid pattern. Below the ceiling, a curved balcony with a glass railing and a dark metal handrail is visible. A large, cylindrical concrete pillar stands near the balcony. The overall atmosphere is clean, minimalist, and architectural.

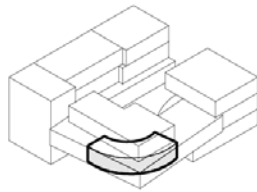
# Spaces for Design-Led Innovation



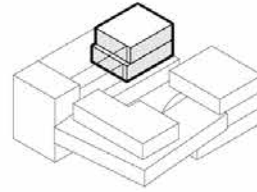
EXECUTIVE EDUCATION



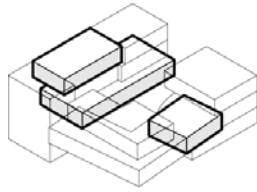
INNOVATION LAB



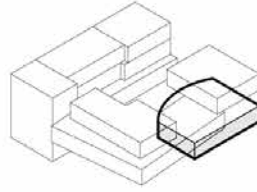
FINANCE LAB



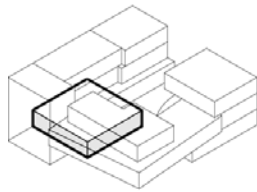
TIERED CLASSROOMS



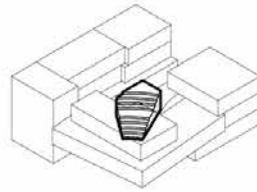
EXPERIENTIAL LEARNING  
CLASSROOMS



AUDITORIUM



BEHAVIORAL LAB



ATRIUM

## ATRIUM AND AMPHITHEATER

Fully accessible, flexible social spaces designed to encourage interaction, collaboration, informal learning and sharing

### ATMOSPHERE & CHARACTERISTICS

A variety of flexible and versatile spaces

The “heart” of the school

Entrepreneur’s Hall of Fame

### SIZE

4,000 nsf

### ADJACENCIES

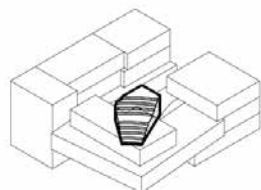
Adjacent to the “front door,” the active learning spaces, finance lab, and the auditorium

### ACCESS

Open at all hours to the Bloch community and visitors

### FURNITURE + TECHNOLOGY

Varies by space. Modular and mobile furniture promotes versatility and ease of reconfiguration







The Henry W. Bloch School of Business  
Executive Education  
Entrepreneurship  
Innovation is a must  
at a \$32 million  
Bloch School of  
Henry W. Bloch

Bloch Executive Education  
Innovation is a must  
at a \$32 million  
Bloch School of  
Henry W. Bloch

CITIGROUP INCORPORATED 46.92 +0.59







## TIERED CLASSROOMS

Learning, teaching and gathering spaces designed to accommodate larger assemblies and presentations

### ATMOSPHERE & CHARACTERISTICS

Configured to encourage discussion and small group interaction

### SIZE + SEATS

2,000 nsf

80 seats; 25 nsf/seat (tiered classrooms)

### ADJACENCIES

Adjacent to other formal and informal learning spaces with easy access to building entrance

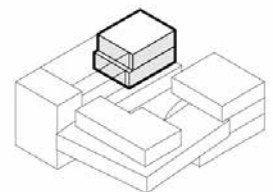
### ACCESS

Open at all times for students and conference/meeting attendees

Open after hours as potential work/study space for students

### FURNITURE + TECHNOLOGY

Multiple projection screens enables optimal viewing and simultaneous projection of presentation and remote participants  
Continuous counter (30" linear desk/counter space per seat) with power for laptop use



## AUDITORIUM

Learning, teaching and gathering spaces designed to accommodate larger assemblies and presentations

### ATMOSPHERE & CHARACTERISTICS

Configured to encourage discussion and small group interaction

### SIZE + SEATS

3,700 nsf

200 seats (auditorium)

### ADJACENCIES

Adjacent to other formal and informal learning spaces with easy access to building entrance

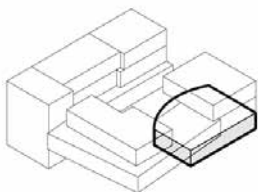
### ACCESS

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### FURNITURE + TECHNOLOGY

Multiple projection screens enables optimal viewing and simultaneous projection of presentation and remote participants  
Continuous counter (30" linear desk/counter space per seat)  
with power for laptop use













## EXPERIENTIAL LEARNING CLASSROOMS

Flexible classrooms enabling more active and collaborative learning experiences through projects and hands-on activities

### ATMOSPHERE & CHARACTERISTICS

Collaboration in groups, flexible arrangement  
Visible activity, idea sharing

### SIZE + SEATS

1,700 nsf  
64 seats; 30 nsf/seat

### ADJACENCIES

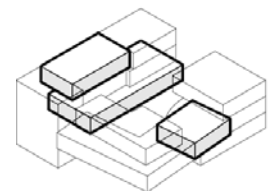
Placed adjacent to the Atrium and Amphitheater, which serves as a Prefunction Space

### ACCESS

Open at all times for students and conference/meeting attendees  
Open after hours as potential work/study space for students

### FURNITURE + TECHNOLOGY

Movable tables and chairs  
Distributed power outlets, data drops, video inputs in floor (raised floor)  
All walls enabled as whiteboards or projection surfaces





**THE DEAN'S SUITE**

Office space designed to encourage collaboration around a central, technology-rich open meeting space

**ATMOSPHERE & CHARACTERISTICS**

Configured to encourage discussion and group interaction

**SIZE + SEATS**

2,500 nsf

7 Offices

2 Conference Rooms

**ADJACENCIES**

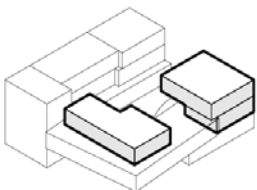
Adjacent to the Executive Education Suite as well as formal learning spaces and informal gathering spaces

**ACCESS**

Private

**FURNITURE + TECHNOLOGY**

Typical office layouts accommodate both sitting and standing postures and offer meeting space for multiple guests











## **DESIGN-LED INNOVATION LAB/PROTOTYPING + BRAINSTORMING SPACE**

Highly unique spaces designed to help students generate, “design,” cultivate and grow creative ideas into viable business opportunities

### ATMOSPHERE & CHARACTERISTICS

- Open, flexible
- Active, inspiring, energy
- An idea incubator space

### SIZE + SEATS

- 800 nsf

### ADJACENCIES

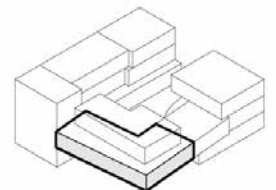
- Adjacent to Design Led Innovation Lab, Simulation Room, Brainstorming Room

### ACCESS

- Open to students and invited community and corporate participants
- Open during school operational hours

### FURNITURE + TECHNOLOGY

- Movable tables
- Wall storage for tools
- Appropriate power and ventilation for working with tools and various materials







## BEHAVIORAL LAB

Research spaces designed to test and analyze human behavioral conditions that impact business considerations

### ATMOSPHERE & CHARACTERISTICS

- Variety of furniture options
- Enclosed, private space

### SIZE + SEATS

- 9 individual research rooms
- 2 group research rooms

### ADJACENCIES

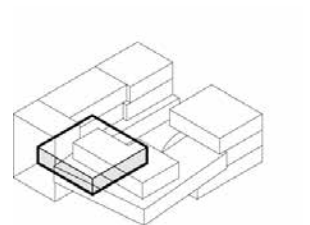
- Outdoor amphitheater

### ACCESS

- 8 - 5 pm

### FURNITURE + TECHNOLOGY

- Tables + chairs or lounge furniture
- Variety of technology options









## FINANCE LAB

Spaces incorporating state-of-the-art technology to facilitate teaching and learning stock trading methods and techniques

### ATMOSPHERE & CHARACTERISTICS

Daylight  
Enclosed, private space

### SIZE + SEATS

1000 nsf  
32 seats; 30 nsf/seat

### ADJACENCIES

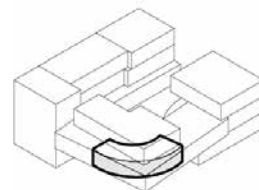
Auditorium; Atrium

### ACCESS

Only during class hours

### FURNITURE + TECHNOLOGY

Fixed tables + loose chairs  
Dual monitors; Stock ticker



Interior finishes are light colored and bright, in the spirit of optimism and innovation. Wood is used to add warmth to spaces including the connecting stairways in the lobby and amphitheater. Interior glass allows light to be shared between spaces and is the major material for the guardrail in the lobby area. Many surfaces have LED projection displays for educational use in classrooms, study areas and throughout the lobby.

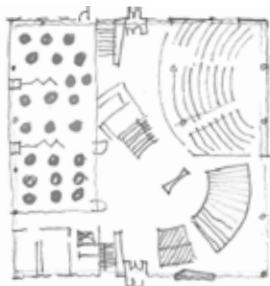
Interior comfort is achieved utilizing efficient lighting and HVAC systems. Daylight and electric lighting permeates the building, controlled by occupancy and daylight sensors. Comfortable interior temperatures, humidity and ventilation is achieved utilizing an under-floor displacement system. The building has an independent gas-fired boiler for heating purposes and utilizes the UMKC central chilled water service for cooling.

Vertical circulation through all four floors of the building is provided by one elevator and two enclosed stairs. The upper three floors house the second enclosed stair and feature the central open stair.

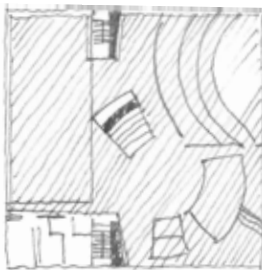








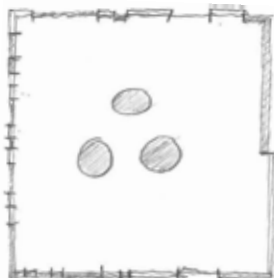
Program Species



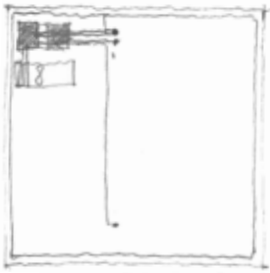
Underfloor Displacement



Cool Roof: Above



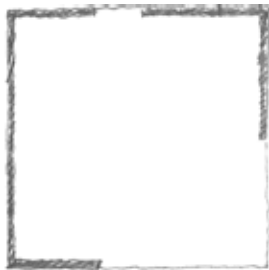
High-performance Glazing



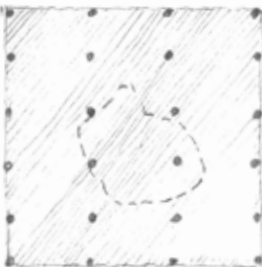
High Efficiency  
Boiler Distribution



Cool Roof: Below



Thermal Mass Insulated  
Precast Wall System



Thermal Mass  
Structure



Energy Efficiency  
Systems Management

## SUSTAINABLE ENERGY STRATEGIES

Energy Saving Strategies yielded a modeled energy reduction of greater than 30.2% (compared with ASHRAE 90.1 2009):

### Under-floor Air Distribution (displacement air) system

- System improves thermal comfort because the supply air is delivered at a more comfortable temperature (64 degrees vs. 55 degrees when cooling is required) and at a lower velocity.
- Energy use is reduced because of lower fan speed and, in cooling, the delivered air temperature is higher than in a conventional overhead system. This allows for more run hours in economizer mode for 'free cooling.'
- Displacement air strategy of an under-floor air distribution system allows natural stratification of the air so that conditioned air stays in the lower, occupied part of the room. Heat sources such as people and equipment generate thermal plumes that naturally rise above the conditioned air stratum to be exhausted through the return air ducts.

### Thermal Mass

- Thermal mass from cast-in-place concrete structure and exposed interior wythe of precast concrete walls helps to even out temperature fluctuations within the building by absorbing thermal energy when the mass is cooler than the heat being generated by occupants and equipment and by giving this thermal energy back into the space when the surrounding objects are cooler.

### Insulation

- A continuous line of thermal insulation wrapping the building is designed to carefully eliminate thermal bridging and to place it in the correct arrangement within the wall.

- Thermal bridges are points in the building envelope that allow heat conduction to occur without being interrupted by thermal insulation. By avoiding thermal bridging, the building envelope will perform better and problems that can be caused by condensation are avoided.
- By placing the thermal insulation in the appropriate location within the wall (located on the exterior side of the air/vapor barrier) it prevents condensation within the wall cavity. In the case of the insulated precast concrete exterior walls, it allows for more thermal mass to be captured on the interior side of the building.
- High-performance curtain wall system uses Low E double pane insulated glass with argon gas to increase performance

### "Cool" Roof

- The building uses a white TPO roof (with some areas of the Level 4 roof covered with vegetation) which reflects sunlight and absorbs less heat than traditional dark-colored roofs. This results in reduced building heat-gain, energy savings during times of the year that require air conditioning, and extended service life of the roof.

### Daylight

- Skylights and ample glazing provide daylight to the building.
- Daylight sensors and controls limit the need for lights during daylight hours.

### Heating and Cooling

- High efficiency condensing boilers and hot water heater to reduce gas consumption during heating mode.
- Monitoring capabilities have been added to mechanical systems to allow the measurement of energy usage for life of building.







**Sustainable Materials**

- Reduction in materials used by allowing interior face of exterior precast walls to remain exposed, allowing concrete finish of access floor system to remain exposed in many locations, and using the access floor to hide many building services to allow the structure above to remain exposed in many locations in lieu of continuous ceilings.
- Use of recycled materials in as many products as possible such as recycled glass counter tops which are fabricated from recycled glass collected locally by Ripple Glass.
- All wood is FSC certified.
- Limestone reclaimed from site retaining walls is re-purposed for use as limestone seating benches around the exterior of the building.
- Unique hybrid precast cladding system, incorporating terra cotta , is implemented for increased energy performance.

**Water-Saving Strategies**

- Efficient plumbing fixtures save 42.14% compared to the LEED 2009 baseline.
- Water efficient landscaping.

**Indoor Environmental Quality**

- Increased Ventilation provided through mechanical systems to ensure fresh air is provided within building.
- Low-emitting (low VOC) materials used throughout.
- Access to daylight and views throughout building.







UMKC

# HENRY W. BLOCH EXECUTIVE HALL

for Entrepreneurship and Innovation





### **Integrated Learning Technology**

In response to the growth of online learning resources and the digital-native expectations of the post-millennial student, the design of Bloch Hall departs from traditional lecture-based learning spaces to incorporate more student-centric, project-based collaborative environments. Flat-floor, flexible classrooms combine with 'sandbox' entrepreneur lab and case-study spaces provide the new building with a foundation for continued growth of active and blended learning approaches.

Bloch Hall's learning technology includes infrastructure to support the long-term growth of electronically enabled small-group learning cohorts combined with flexible, moveable furniture in each of the classroom spaces. A series of similarly equipped small-group team/breakout rooms provides for collaboration outside of the classroom setting.

All technology is based on contemporary digital standards and anticipates continued advances in image resolution of display devices and the importance of capture, distribution, and switching of rich media. In public and circulation spaces, technology is also used to provide a platform for sharing the work of undergraduate and graduate student research with visitors to the building.



SCHEDULE/PHASING/CONTINUED OPERATION

Design (SD)	September 2011 - February 2012
Documentation (CD)	November 2011 - September 2012
Construction	March 2012 - August 2013

The construction schedule needed to deliver the Bloch Hall building by fall of 2013 was impossibly short, leading the Owner to eliminate the traditional bidding phase, retain a Construction Manager at Risk during the design phase, and move straight into construction. The Owner then changed to a Design/Build scenario with the design team working for the contractor to deliver the project based on a Guaranteed Maximum Price.

To accelerate the schedule, three construction packages were issued: an excavation/foundations package, a structural/shell package and an interior fit-out package. In order to maintain an aggressive schedule for the various packages, it was necessary for the entire project team to make good decisions quickly. For instance, the decision to employ a cast-in-place structure allowed the contractor—who executes their own cast-in-place concrete work—to control the scope and schedule more nimbly than with structural steel. In addition to a schedule benefit, going with cast-in-place concrete also allowed more creative freedom for the design team without dramatically complicating the structure, particularly with the building’s three-story atrium opening and cantilevers.

These and other decisions were critical to creating a facility that supports the vision of the Bloch School of Management.

















“No shortcuts.”

HENRY W. BLOCH



















## ABOUT BNIM

We deliver beautiful, integrated, living environments that inspire change and enhance the human condition.

BNIM is one of the most important design firms working to redefine practice in the realm of green architecture today. As early pioneers in the arena of sustainable design, BNIM continues to shape the national and global agenda for responsible architecture and design excellence. Established in 1970, the firm has emerged nationally as a leading resource for established methodologies, innovative technologies and cutting-edge research in architecture, planning, landscape, workplace and institutional design. BNIM's process is deeply rooted in the concept of integration, where clients and collaborators work together to create buildings and spaces that embrace the Triple Bottom Line—a balance of people, planet and prosperity. BNIM's body of work maps the evolution of sustainable design process and thinking: from early pilot projects that defined the USGBC's LEED rating system, to the first LEED Platinum state office building, to current work that goes beyond LEED's highest standards to achieve Living Building and regenerative status.

BNIM people. innovation. design.

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