

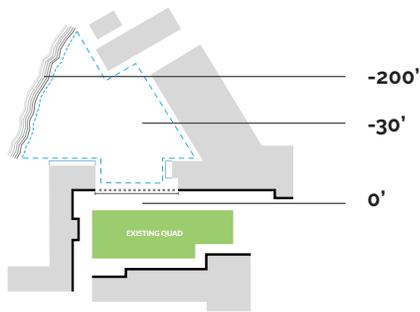


A NEW CAMPUS HEART

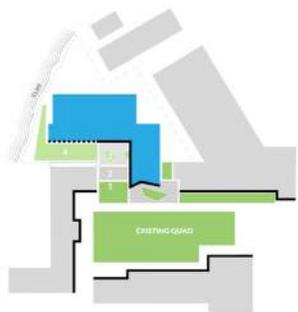
This LEED Platinum Certified Integrated Sciences Center, perched on a steep hill and nested between existing buildings at Lafayette College, provides visual proximity and intimate connections between science departments within. Conceived as an “inside-out” building, the new Rockwell Integrated Sciences Center is integrated into the campus fabric and revolves around the building’s heart, a vibrant four story vertical commons.

THE MISSING TOOTH

Located on a tight triangular site on the edge of the campus core, the new science center completes a previously unfinished quad by infilling an existing "missing tooth" site. The building quietly announces itself as an important academic destination through an appealing and dignified face with modest frontage to campus. The restrained and strikingly crisp composition relates to its classical neighbors through scale, proportion and materiality.



Existing: "Missing Tooth" Site

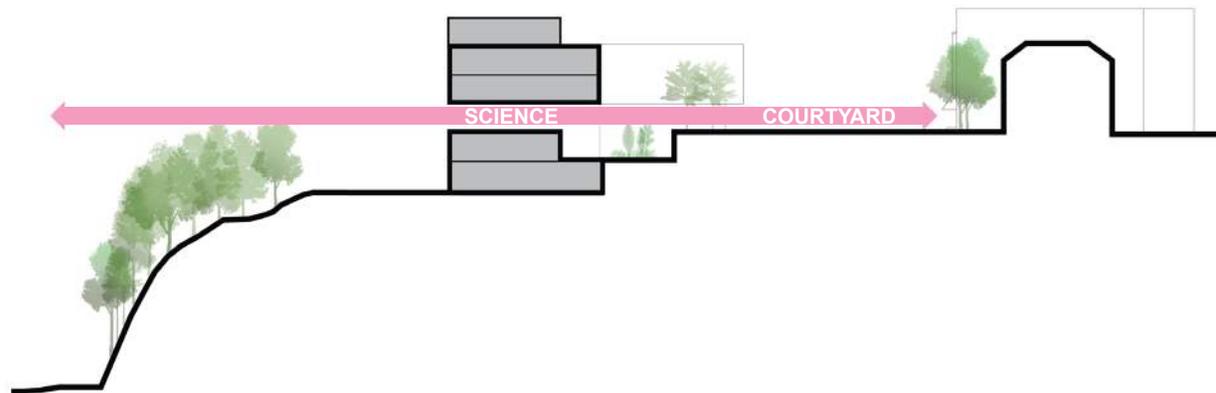


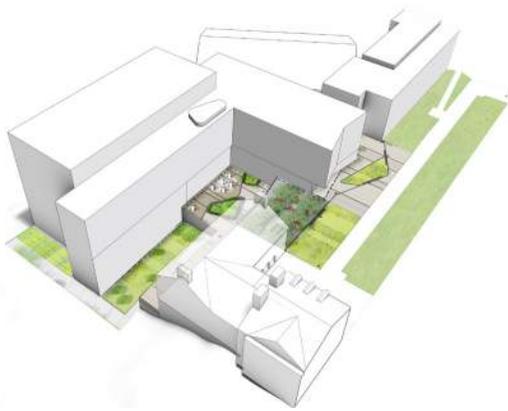
Solution: Completing the Outdoor Room



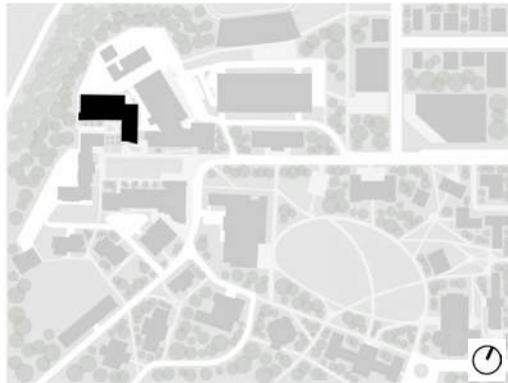


Capitalizing on existing topography, the building nests itself into grade and hides the mass of what is now one of the largest academic buildings on campus. In section (as in plan) the building presents a modestly scaled expression, consistent with the cherished intimacy of its more historic neighbors.



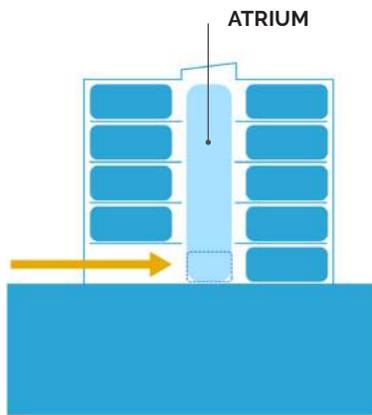


Cascading Landscape Rooms

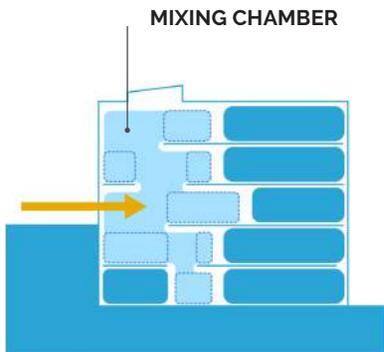


USING THE HILL

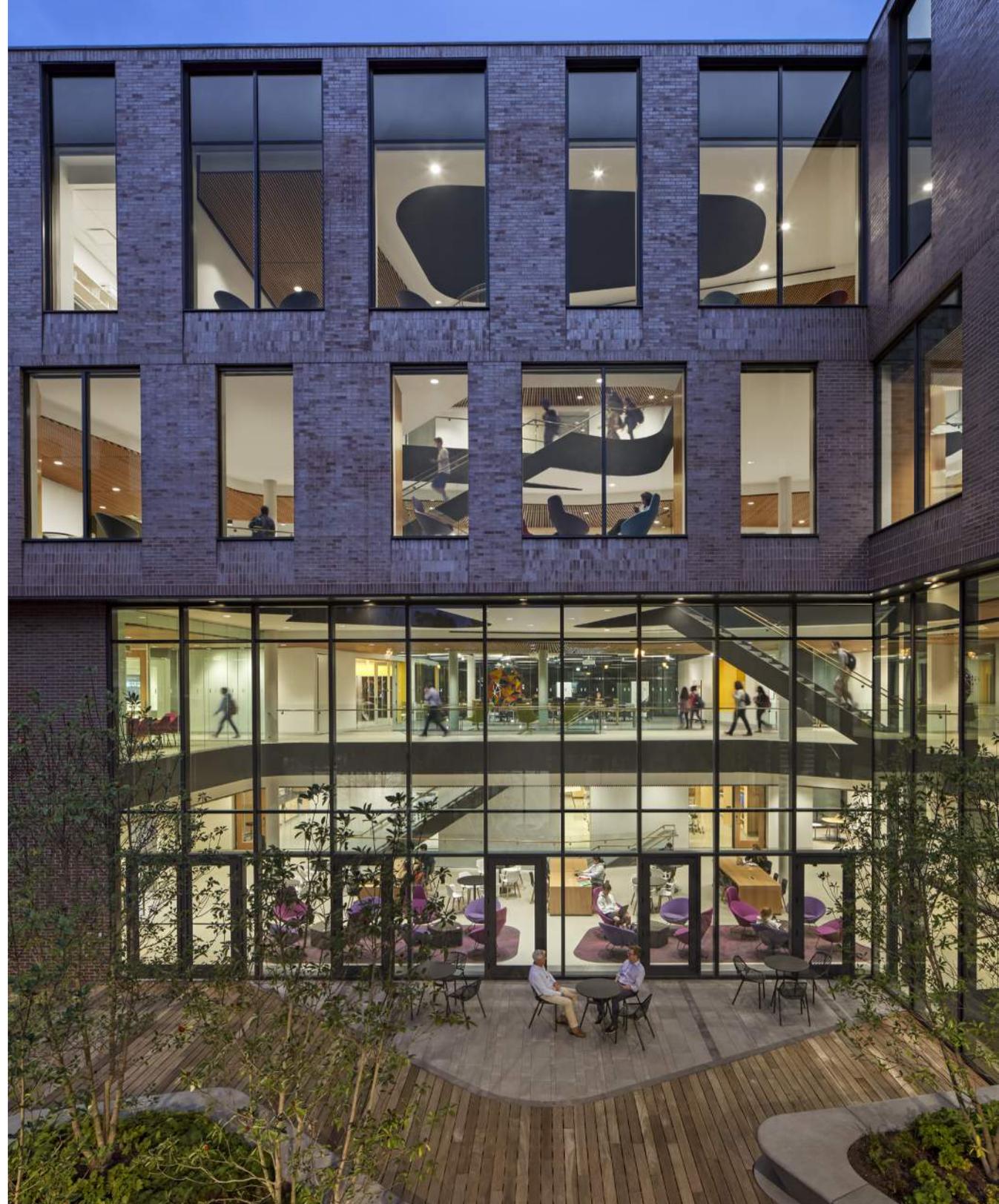
By entering the building on the third floor, visitors arrive in the geographic heart of the building. Using the hill to shift the building's social epicenter creates an accessible mixing chamber connected, visually and physically, across all five floors.



Conventional Approach



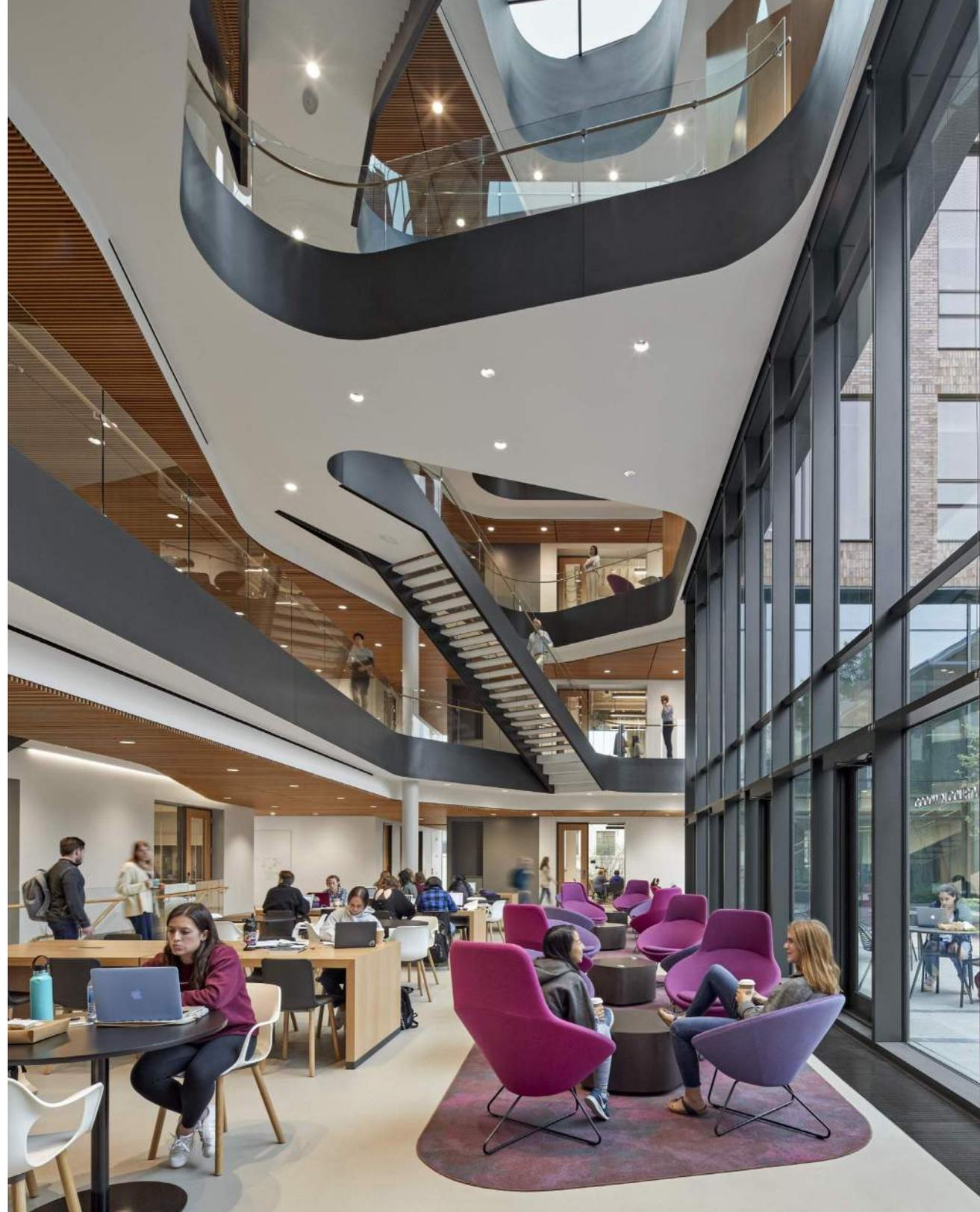
Design Solution

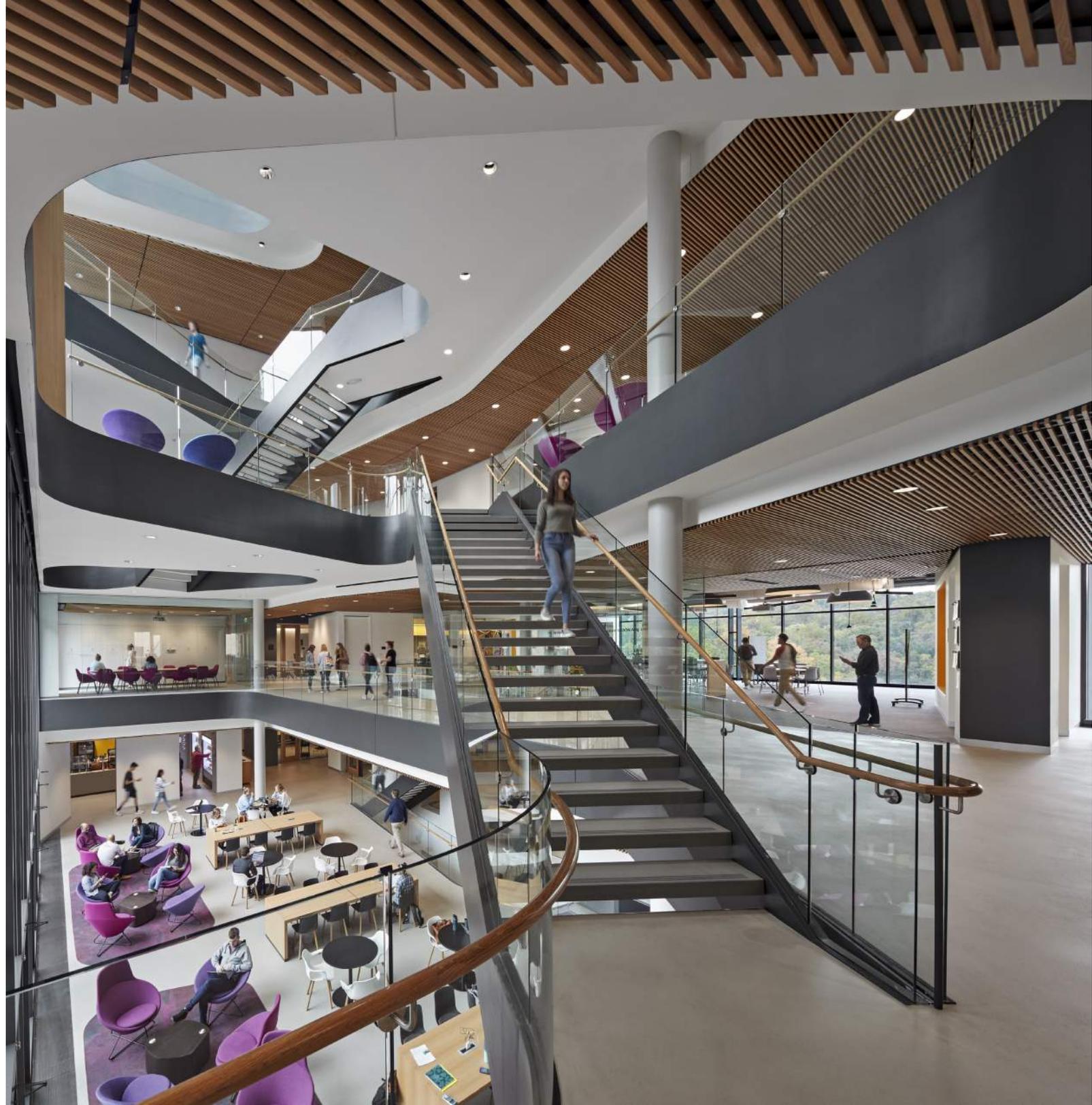




VERTICAL COMMONS

The “Vertical Commons” at the heart of the building welcomes the entire campus community to gather, meet and study. The spatial experience centers around a series of openings and stairways that meander vertically through the heart of the building, unifying the entire community while offering a variety of character and experience. While the first two floors have a large campus presence, the openings are reduced on upper floors, creating smaller, more intimate student areas as one moves up.

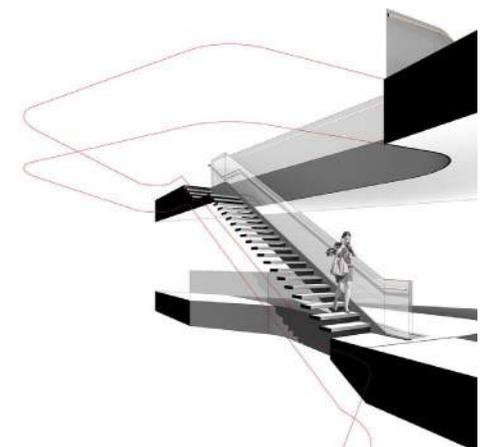
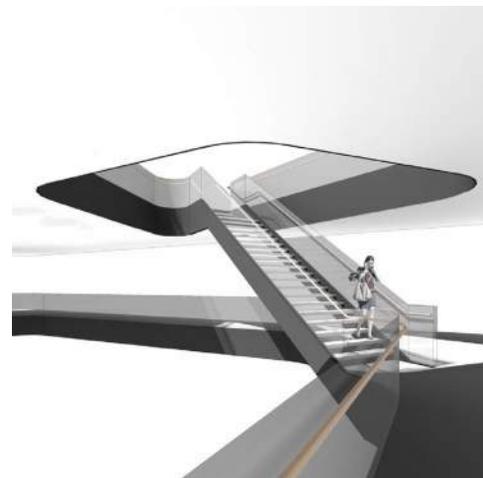






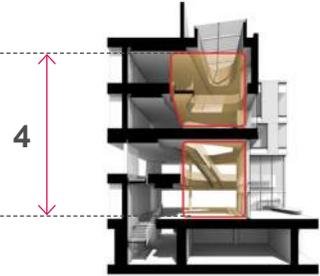
RIBBON AS CONNECTOR

Deliberately avoiding stacked repetition and spatial monotony, the vertical commons uses a distinct organic ribbon to drive and define the variety of spatial experiences. Each of the openings are stitched together by continuity in stair and balcony edges, highlighting the integration of space and program as one moves through the floors.

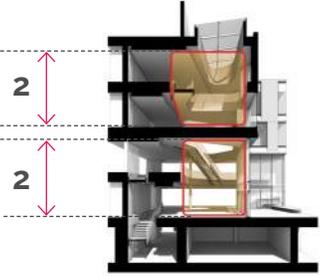


Stair landings concealed in continuous ribbon

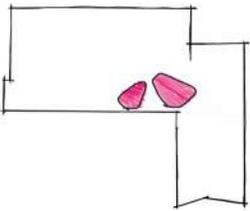
SCALES OF INTIMACY



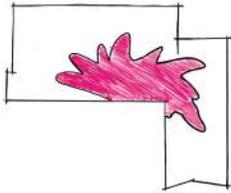
Single spatial volume connects all four floors



Study spaces on L4 and L5 distinct from main commons



Reality
Modest footprint and small openings



Perception
Expansive and connecting space

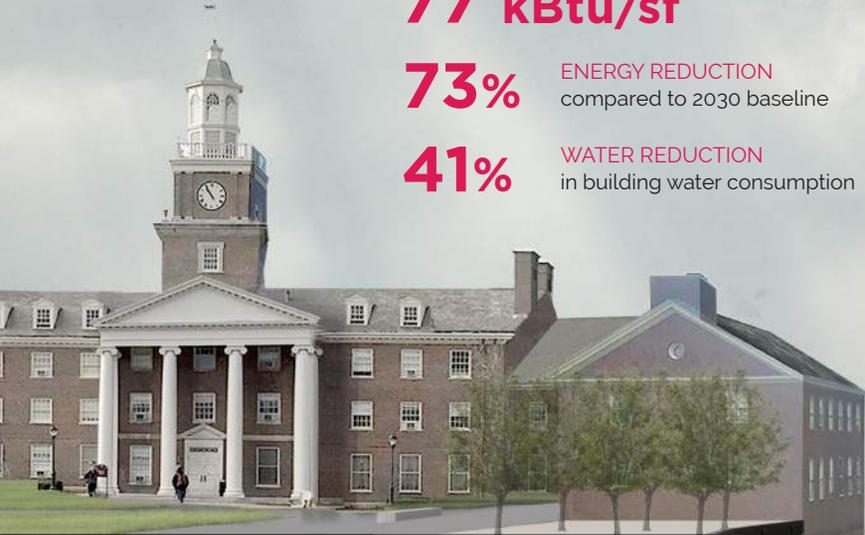


LEED PLATINUM CERTIFIED

77 kBtu/sf

73% ENERGY REDUCTION
compared to 2030 baseline

41% WATER REDUCTION
in building water consumption

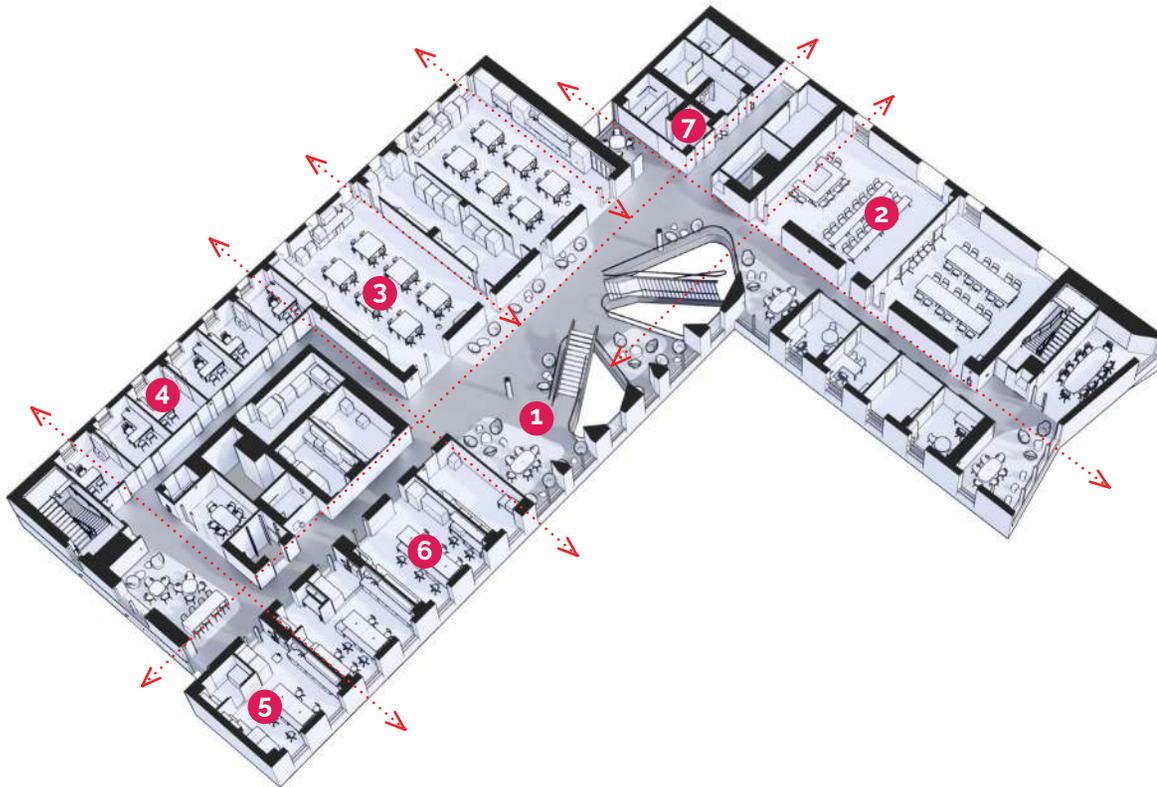


ATRIUM AND ENERGY

- 1 SKYLIT ATRIUM AND PERFORATED FLOORS**
Balanced daylight for visual comfort and maximized productivity
- 2 HEAT RECOVERY**
Enthalpy waste heat captured for preheating outside air
- 3 HIGH PERFORMANCE FILTERED FUME HOODS**
Calibrated to research, allowing for minimized air changes and energy consumption
- 4 DEMAND CONTROL VENTILATION**
Reduce heating and cooling energy by decoupling ventilation from process, occupant and air change loads
- 5 AIR QUALITY MONITORING AIRCUIITY**
CO2 and hazardous chemical monitoring integrated into optimized air delivery and purge safety modes
- 6 COMMUNICATING STAIRS**
Emphasize active movement through the building over the passive vertical transportation systems
- 7 LIGHTING CONTROLS**
Light level and occupant sensing tied to daylight monitoring
- 8 HEAT SHIFT CHILLER**
Free energy source for concurrent heating and cooling needs across seasonal variation of primary load demand
- 9 HIGH EFFICIENCY LAB EQUIPMENT**
Minimizes energy consumption
- 10 AUTOMATED INTERIOR SHADES**
Deployed sequentially to maximize views and capture heat between shading and glazing

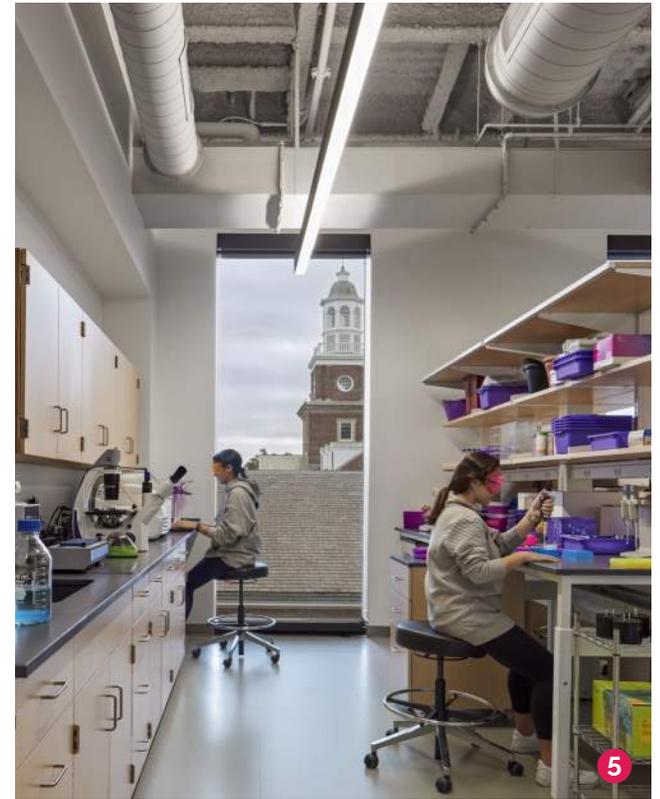
LAYERED TRANSPARENCY IN LIVING LAB

The plan organization promotes a distinctly connected social geometry memorable for its transparency and intimacy. Spaces for students and faculty, research and teaching as well as study and socializing are all clustered around the central skylit atrium inviting daylight and views from the exterior deep into the core of the plan. Interior glazing aligns with large exterior windows, providing layers of transparency throughout the project.



TYPICAL RESEARCH FLOOR ORGANIZATION

- | | |
|-------------------|---------------------|
| 1 Commons | 5 Wet Research Labs |
| 2 Classrooms | 6 Computational Lab |
| 3 Teaching Labs | 7 Student Study |
| 4 Faculty Offices | |

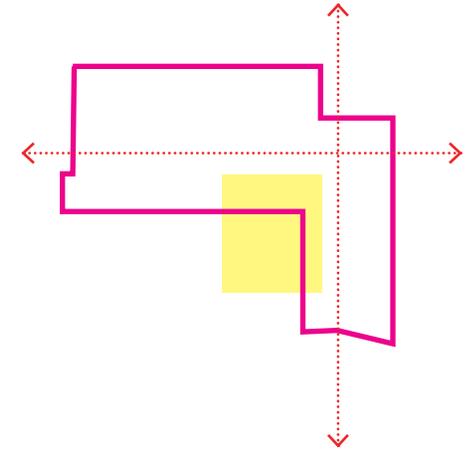


HEART AT THE CROSSROADS



Collaboration & Makerspace

Flexible makerspace and entrepreneurship center at the project's crossroads strengthens interdisciplinary connections across the sciences

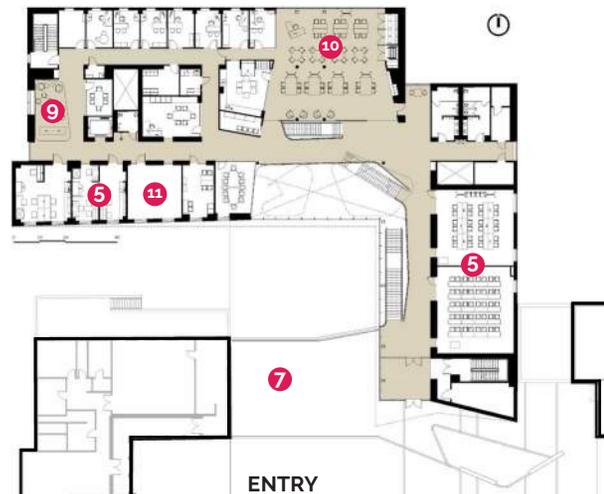


FLOOR PLANS

- | | |
|----------------------|-------------------------------------|
| 1. Offices | 8. Closed Study / Conference Center |
| 2. Teaching Labs | 9. Open Study |
| 3. Research Labs | 10. Makerspace |
| 4. Computational Lab | 11. Future Growth Labs |
| 5. Classrooms | 12. Support |
| 6. Vertical Commons | |
| 7. Courtyard | |



COURTYARD



ENTRY



UPPER FLOOR



CONTEXT RESPONSIVE SITE DESIGN

- BIRD SAFE GLAZING**
Custom Frit Glazing with building wide America Bird Conservancy Avoidance Index of 76%
- GREEN ROOF**
Over engineering labs connects back to campus with plantings adapted to Easton, PA environment
- LOWER COURTYARD**
Featuring native and adaptive plantings
- OUTDOOR CLASSROOM**
With blackboard, seating, power and wifi infrastructure
- NATIVE NON FOOD BEARING PLANTINGS**
Reducing irrigation need and discouraging bird proximity to glazing for increased safety
- VIEWS TO EXTERIOR**
92% of regularly occupiable spaces have visual connection to the rest of campus
- POROUS PAVEMENT**
Reducing storm water run-off
- BENCHES AND FLEXIBLE SEATING**
At multiple levels around the site activate exterior rooms
- STORMWATER BEST MANAGEMENT PRACTICES**
Swales and berms slow the speed of the water increasing the ability to infiltrate, collect and limit run-off
- SITE TREES**
At all levels of landscape improve occupant comfort



CONTEXT RESPONSIVE FAÇADE DESIGN

Embracing the material consistency of adjacent buildings, the façade design seeks a refined and subtle response to its context. At once blending in and sitting apart, the building uses a collection of restrained detailing, unfamiliar masonry expression, and contemporary interpretations (and inversions) of traditional techniques of brick façades. Away from campus, a highly economical precast façade uses expressions of light to create texture, scale and tonal variety.



REDUCTIVE DETAILING

Intently minimal brick details include concealed window jamba, crisply folded brick sills, and dimensionally unfamiliar expression at the masonry corners and copings.



REFERENTIAL MATERIALITY

Extruded iron spot bricks reference the tonality of adjacent buildings yet embrace a contrasting crispness and reflectivity that varies with the light throughout the day.



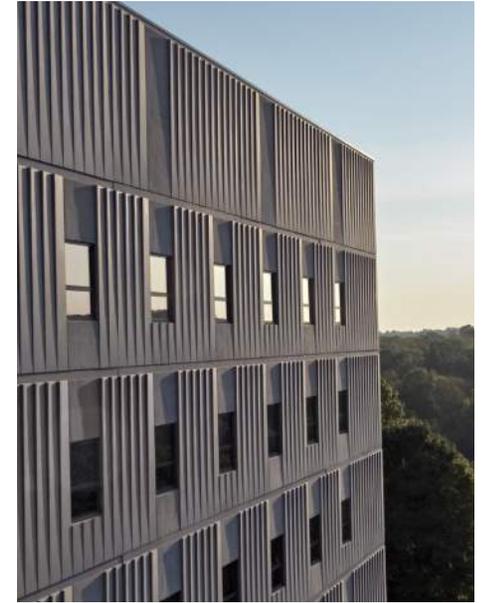
FRITTED BIRD SAFE GLAZING

Custom ceramic frit dot pattern calibrated to provide total building Bird Safety Avoidance Index over 75% reduces solar gain, maintains visual connections from the interior and blends clear and spandrel glazing.



EMBRACING SYMMETRY

Nodding to the rigorous symmetrical order of its more classical neighbors, window heights vary from floor to floor, always embracing centered symmetrical order.



REDUCED GLAZING TO WALL RATIO

Building wide window-wall ratio of 24% for optimized envelope thermal performance and reduced bird collision threat.

OPERABLE PUNCHED WINDOWS

Operable north-facing office windows sized and located for optimized daylight autonomy (86%) and maximized thermal comfort.

“The Rockwell Center is a **game-changer** for the sciences at Lafayette.
The clear walls and the flow of the building put the work of research and
learning on full display, and the open spaces facilitate frequent interactions
and collaboration among students and faculty, outside of the classroom.
The building puts students first.”

NANCY WATERS, BIOLOGY PROFESSOR





A NEW CAMPUS HEART

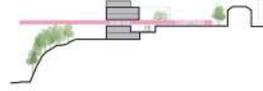
This LEED Platinum Certified Integrated Sciences Center, perched on a steep hill and nestled between existing buildings at Lafayette College, provides visual proximity and intimate connectors between science departments within. Conceived as an "incident" taking the new Riverside Integration Sciences Center leads into the campus fabric and revolves around the building's heart, a vibrant four-story vertical commons.

THE MISSING TOOTH

Located on a tight, irregular site on the edge of the campus zone, the new science center completes a previously unfinished quad by filling an existing "missing tooth" site. The building quietly announces itself as an important academic destination through an appealing and dignified facade with modest signage to campus. The recessed and askew crisp composition relates to its classical neighbors through scale, proportion and materiality.

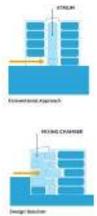


Capitalizing on existing topography, the building nests itself into grade and takes the mass of what is now one of the largest academic buildings on campus. The section below in plan the building presents a modestly scaled expression of contrast with the classical intensity of its more historic neighbors.



USING THE HILL

By entering the building on the third floor, visitors arrive in the geographic heart of the building. Using the hill to lift the building's social epicenter creates an accessible mixing chamber connecting visually and physically across all five floors.



VERTICAL COMMONS

The "Vertical Commons" at the heart of the building envelopes the entire campus community to gather, meet and study. The social experience centers around a series of openings and stairways that meander vertically through the heart of the building, unifying the entire community while offering a variety of character and experience. While the first two floors have a large campus presence, the openings are reduced on upper floors, creating smaller, more intimate student spaces as one moves up.



RIBBON AS CONNECTOR

Deliberately avoiding stacked repetition and spatial redundancy, the vertical commons reveals distinct organic ribbon to drive and define the variety of spatial experiences. Each of the openings are stitched together by continuity in color and factory edges, highlighting the integration of space and program as one moves through the floors.



SCALES OF INTIMACY



LEED PLATINUM CERTIFIED
77 kBTU/sf
73% ENERGY EFFICIENT
41% WATER EFFICIENT

ATRIUM AND ENERGY

- 1. Natural Light and Ventilation: Maximizing natural light and ventilation through the building's atrium and vertical commons.
- 2. Low Energy: Utilizing energy-efficient lighting and HVAC systems.
- 3. High Performance Glazing: High-performance glazing to maximize natural light and minimize energy consumption.
- 4. Energy-Efficient Lighting: Utilizing energy-efficient lighting fixtures and controls.
- 5. Energy-Efficient HVAC: Utilizing energy-efficient HVAC systems and controls.
- 6. Energy-Efficient Water: Utilizing energy-efficient water fixtures and controls.
- 7. Energy-Efficient Controls: Utilizing energy-efficient controls for lighting, HVAC, and water.
- 8. Energy-Efficient Materials: Utilizing energy-efficient materials for building construction.
- 9. Energy-Efficient Construction: Utilizing energy-efficient construction practices.
- 10. Energy-Efficient Operations: Utilizing energy-efficient operations and maintenance practices.

LAYERED TRANSPARENCY IN LIVING LAB

The plan organization promotes a distinctly connected social geometry memorable for its transparency and intimacy. Spaces for students and faculty, research and teaching are used as study and teaching are all clustered around the central atrium, allowing daylight and views from the exterior deep into the core of the plan. Interior glazing aligns with large exterior windows, providing layers of transparency throughout the project.



HEART AT THE CROSSROADS



CONTEXT RESPONSIVE SITE DESIGN

- 1. Site Context: Understanding the building's location and its relationship to the surrounding campus and city.
- 2. Building Form: Designing a building form that responds to the site's topography and existing buildings.
- 3. Materiality: Using materials that are contextually appropriate and sustainable.
- 4. Integration: Integrating the building with the surrounding campus and city.
- 5. Sustainability: Designing a building that is sustainable and environmentally friendly.
- 6. Community: Designing a building that fosters a sense of community and belonging.
- 7. Flexibility: Designing a building that is flexible and adaptable to changing needs.
- 8. Innovation: Designing a building that is innovative and pushes the boundaries of architecture.
- 9. Quality: Designing a building that is of high quality and craftsmanship.
- 10. Value: Designing a building that provides value to the campus and the community.

CONTEXT RESPONSIVE FAÇADE DESIGN

Embracing the material consistency of adjacent buildings, the facade design seeks a refined and subtle response to its context. At once blending in and sitting apart, the building uses a collection of restrained, detailing unfamiliar masonry expression and contemporary interpretations (and inversions) of traditional techniques of brick facades. Away from campus, a highly economical precast facade uses expressions of light to create texture, shade and formal variety.

REACTIVE DETAILING: Highlighting the building's unique details and materials.

RESIDENTIAL MATERIALITY: Using materials that are contextually appropriate and sustainable.

REFINED BRICK AND GLAZING: Using brick and glazing that are refined and subtle.

EMBRACING CONTEXT: Embracing the building's context and its relationship to the surrounding campus and city.

RESPONSE TO SITE: Responding to the site's topography and existing buildings.

QUALITY OF MATERIALS: Using materials of high quality and craftsmanship.

VALUE OF DESIGN: Providing value to the campus and the community.



Project Description

The new Rockwell Integrated Sciences Center was intentionally designed to spark and strengthen interdisciplinary connections, a distinctive feature of the College's educational mission. With outdated facilities and growing demand in the sciences, the College needed significantly improved spaces for multidisciplinary science with a student body slated to expand by over 15% in the coming years. The building also needed to showcase the College's commitment to fostering a community of interdisciplinary undergraduate teaching and research across both the sciences and liberal arts.

Project Summary

Conceived as an "inside-out" building, the new Rockwell Integrated Sciences Center revolves around the building's heart, a vibrant four-story gathering space. Perched on a steep hill and nested tightly between existing buildings, the new LEED Platinum building provides visual proximity and intimate connections between science departments within and uses cascading exterior landscape spaces to connect back to the campus community. With its entry on the third of five floors, much of the building's mass is largely concealed from view. It serves as an inviting beacon at the core of this cherished historic setting.

The new Rockwell Integrated Sciences Center was intentionally designed to spark and strengthen interdisciplinary connections, a distinctive feature of this College's educational mission. With outdated facilities and growing demand in the sciences, the College needed significantly improved spaces for multidisciplinary science with a student body slated to expand by over 20% in the coming years. The building also needed to showcase the College's commitment to fostering a community of interdisciplinary undergraduate teaching and research across both the sciences and liberal arts. A primary objective for this project was to seek a way to add this significant new science/engineering facility within the heart of campus without overwhelming the delicate scale and charming character of this cherished campus.

Envisioned as a vertically connected walk-up science community, the new science center uses a steeply sloping site to conceal the large program within the historic brick fabric of the existing courtyard. The design solution takes full advantage of the topography of the site by building much of its bulk down the steep slope. With only three floors above grade, the design solution hides much of the 103,000 SF volume down the hill to fit the existing context both in scale and materiality of the neighboring buildings. A continuous four-story "vertical commons" with a monumental stair at the heart vertically links the academic programs and campus community spaces within. Two landscaped courtyards on different levels, a spatially dynamic atrium and informal student spaces of varying size and location make the building a destination for the sciences and the larger campus community.

Providing new departmental homes for biology and computer science, the integrated science center includes teaching labs, research labs, support spaces, offices, a rooftop greenhouse and animal facility. The building's interdisciplinary identity is supported by the centrally located areas for STEM leadership, the Office of Sustainability, Environmental Science and Studies and Neuroscience.

The construction cost of \$630/GSF was a remarkable achievement given the rapidly escalating construction market and the extremely challenging site conditions. Lafayette College supported an approach that utilized a "raw" interior aesthetic that reflects its science/engineering purpose and putting higher level finishes in the most visible and public spaces.