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.
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.
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.
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.
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
SKYLIT ATRIUM AND PERFORATED FLOORS
Balanced daylight for visual comfort and maximized productivity

HEAT RECOVERY
Enthalpy waste heat captured for preheating outside air

HIGH PERFORMANCE FILTERED FUME HOODS
Calibrated to research, allowing for minimized air changes and energy consumption

DEMAND CONTROL VENTILATION
Reduce heating and cooling energy by decoupling ventilation from process, occupant and air change loads

AIR QUALITY MONITORING AIRCUITY
CO2 and hazardous chemical monitoring integrated into optimized air delivery and purge safety modes

COMMUNICATING STAIRS
Emphasize active movement through the building over the passive vertical transportation systems

LIGHTING CONTROLS
Light level and occupant sensing tied to daylight monitoring

HEAT SHIFT CHILLER
Free energy source for concurrent heating and cooling needs across seasonal variation of primary load demand

HIGH EFFICIENCY LAB EQUIPMENT
Minimizes energy consumption

AUTOMATED INTERIOR SHADES
Deployed sequentially to maximize views and capture heat between shading and glazing

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

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Enthalpy waste heat captured for preheating outside air

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Minimizes energy consumption

10. AUTOMATED INTERIOR SHADES
Deployed sequentially to maximize views and capture heat between shading and glazing
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  
2. Classrooms  
3. Teaching Labs  
4. Faculty Offices  
5. Wet Research Labs  
6. Computational Lab  
7. Student Study
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
2. Teaching Labs
3. Research Labs
4. Computational Lab
5. Classrooms
6. Vertical Commons
7. Courtyard
8. Closed Study / Conference Center
9. Open Study
10. Makerspace
11. Future Growth Labs
12. Support
CONTEXT RESPONSIVE SITE DESIGN

1. **BIRD SAFE GLAZING**
   Custom Frit Glazing with building wide America Bird Conservancy Avoidance Index of 76%

2. **GREEN ROOF**
   Over engineering labs connects back to campus with plantings adapted to Easton, PA environment

3. **LOWER COURTYARD**
   Featuring native and adaptive plantings

4. **OUTDOOR CLASSROOM**
   With blackboard, seating, power and wifi infrastructure

5. **NATIVE NON FOOD BEARING PLANTINGS**
   Reducing irrigation need and discouraging bird proximity to glazing for increased safety

6. **VIEWS TO EXTERIOR**
   92% of regularly occupiable spaces have visual connection to the rest of campus

7. **POROUS PAVEMENT**
   Reducing storm water run-off

8. **BENCHES AND FLEXIBLE SEATING**
   At multiple levels around the site activate exterior rooms

9. **STORMWATER BEST MANAGEMENT PRACTICES**
   Swales and berms slow the speed of the water increasing the ability to infiltrate, collect and limit run-off

10. **SITE TREES**
    At all levels of landscape improve occupant comfort
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 jambs, 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
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.

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.