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Lehman College Life Sciences Building

CUNY's first LEED Platinum building acts as both classroom and curriculum

By Matt Alderton

Most teachers agree: The best way to learn about something is to immerse yourself in it. Faced with the national challenge of recapturing America's scientific leadership, the **City University of New York** (CUNY) designated the years 2005 to 2015 as the "Decade of Science" and resolved to create an educational pipeline to STEM superiority. In conjunction, it built a new 69,000-square-foot **Life Sciences Building** at **Lehman College** in the Bronx—CUNY's first LEED Platinum building—which welcomed students in spring 2013. For the college, **Perkins+Will** conceived a structure that not only houses the life sciences department, but also actively participates in it. **Breeze Glazer**, research knowledge manager and sustainability leader at Perkins+Will, offers a tour of the building.



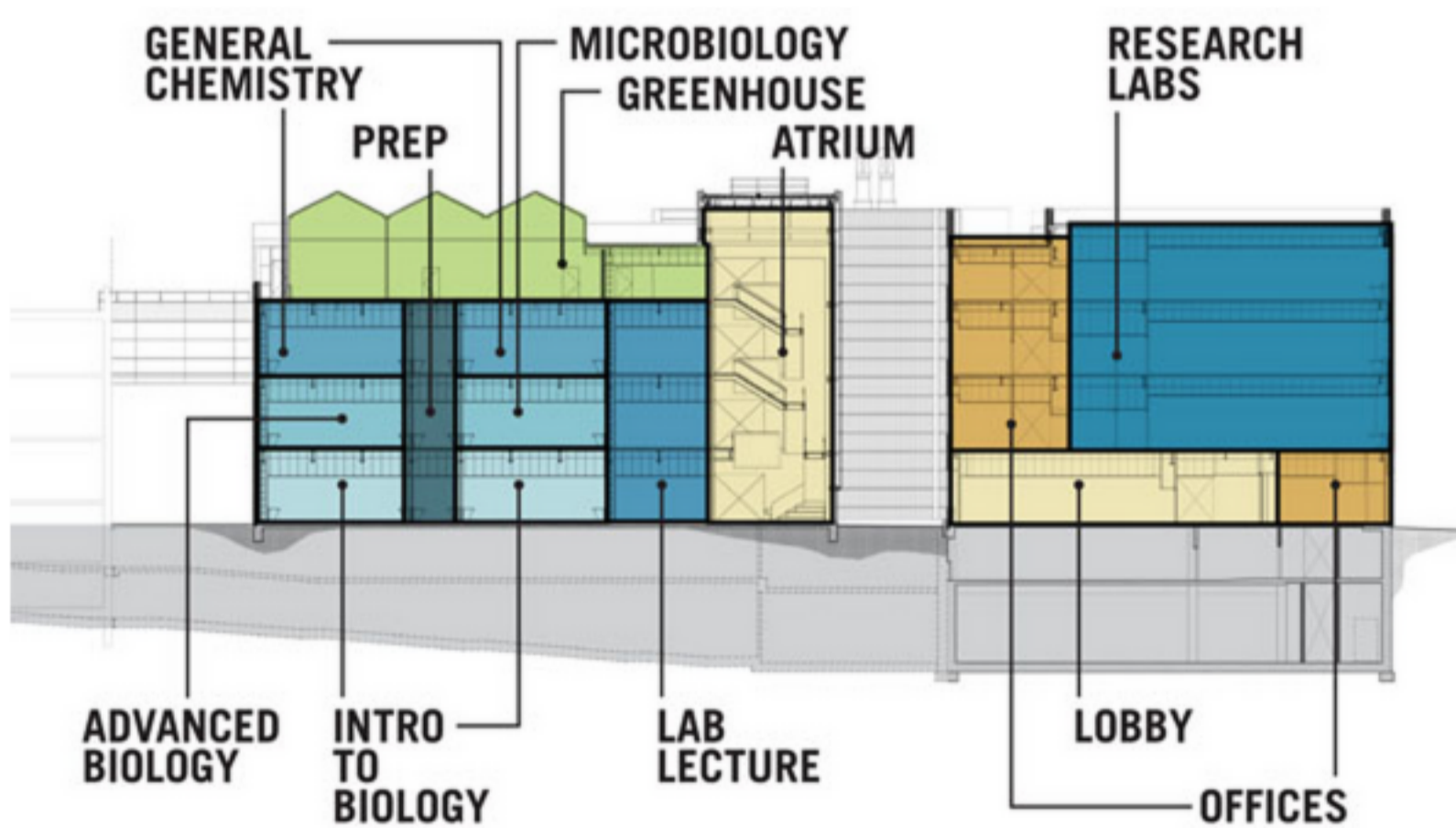
BLENDING IN

The science building is phase one of a 15-year, three-phase effort to create a 300,000-square-foot science campus at Lehman College. It's a large footprint, but its location means it will have minimal environmental impact. "It reuses an existing site on an existing campus," Glazer says. "What's interesting about this project is that the adjacent building at Lehman College has a very specific architecture already—a traditional, Gothic Revival style. We have shown that you can design a building that complements the existing architecture and still accomplishes pretty amazing things around sustainability." The science hall contains 20 percent recycled content and 20 percent regionally sourced content. Additionally, it uses FSC-certified wood and incorporates a substantial amount of low-E glass for daylighting purposes, which maximizes natural light while minimizing passive solar gain.



WETLAND WORK

The building's centerpiece is its courtyard, onto which all buildings on Lehman College's planned science campus eventually will face. Also known as the "science quadrangle," it features a constructed wetland of native grasses that cleans stormwater runoff for reuse within the building. In combination with water-efficient fixtures and urinals inside the facility, the system has significant resource savings, gained by relieving the city and municipal utilities from the burden of removing and treating greywater that can be managed on-site. "Rainwater is gathered on the roof and in the courtyard, then it's cleaned, filtered, and held in an underground cistern for reuse in flushing toilets back inside the building," Glazer says. "The wetland itself can become part of an academic class; you can talk about the role of plants in cleaning stormwater, then you can go right outside and see that plant and take water, soil, and plant samples to analyze in the lab."



ADVANCING EFFICIENCY

Because the building includes classrooms and research laboratories, its energy footprint is unusually large. "Laboratory and healthcare buildings are the two project types that are the most difficult to make green," Glazer says. "But they also provide the most opportunity because their baseline designs are so energy- and water-intensive; designing a green lab building or a green healthcare building saves a tremendous amount of resources." That's especially important for CUNY, which has committed to reducing its carbon emissions by 30 percent by 2017. "They wanted this building to enhance that goal rather than be a roadblock to it," Glazer notes. The building's energy-efficient features include solar-thermal panels that shade the roof and produce hot water for the building; an exhaust system that uses energy-efficient fume hoods and occupancy sensors to ventilate laboratories only when they're occupied; and a rooftop greenhouse, which is heated using an in-slab radiant-floor heating system that is part of Lehman's academic curriculum.



SMART SYSTEMS

Good ventilation is important in academic and laboratory buildings alike. The Life Sciences Building is both, so Perkins+Will paid special attention to it. Because of the potential for toxicity, the laboratories are directly ventilated to the outdoors. Classrooms and offices, likewise, receive as much fresh air as possible. "There have been many studies... showing links between good ventilation in academic settings and quantifiable benefits around student attendance, productivity, and concentration," Glazer says. "With that in mind, [we're monitoring] outdoor air delivery in the form of CO2 sensors, which is a smarter way to ventilate a building. These sensors can gauge how many people are in a room. If they detect fewer people than the designed occupancy, they decrease ventilation; if they detect more people than the designed occupancy, they increase ventilation. We also increased the amount of fresh air that's pumped into the building by 30 percent above code; that could have potential energy impacts, but we think it's a good trade-off."

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