

Heat Island Effect

Above the Level 3 Innovation Center is a living roof terrace that absorbs rainwater, reduces runoff, provides insulation and helps keep the building cool in the summer. This green roof, in combination with non-absorptive roof surfaces, vegetative landscaping and light colored paving materials, is part of an overall effort to reduce "the heat island effect" and improve the micro climate created by the building.



Stormwater Management

The plan reduces impervious cover, promotes infiltration and captures and treats groundwater and stormwater runoff from 90% of the average annual rainfall using a water quality vault and Bioretention practices. The landscaping and irrigation systems have been designed to reduce portable water consumption for irrigation by 55%. The building employs strategies to reduce water usage by 35% of baseline calculated standards.

Daylighting

The façade design prioritizes daylighting and outdoor views throughout the building, in both offices and laboratories. The use of skylights bounce visible light further into the building bringing natural daylighting while reducing the use of artificial lighting during the daytime. Optimally sized view windows maintain a strong visual connection to the landscape and adjacencies without sacrificing useable wall space. The large size, number of windows, glazing treatment and the use of occupancy sensors throughout improve the transparency, quality of life and reduce energy consumption for lighting.



Materials and Resources

The project used locally sourced and recycled content materials. Much of the construction waste and debris was diverted from landfill to be recycled. A majority of all wood products, including finished millwork and rough carpentry were sourced from sustainably managed forests.

EUI
231kBtu/sf/yr

Energy Use Intensity

The Engineering and Science Building's predicted Energy Use Intensity (pEUI) is 231 kBtu/sf/yr. In AIA 2030 Challenge terms, this compares to a "Regional Average EUI" of 420 kBtu/sf/yr, meaning the ESB uses approximately 45% less energy than existing labs of similar type. In LEED EAcl "Optimize Energy Performance" terms, the ESB is 30% more efficient than "code minimum".

Sustainable Construction

With a strong sustainability initiative and a project goal of achieving LEED Gold certification, the design team and University decided to claim the lumber that was harvested from the site and have it milled for use within the building. In order to maximize the yield, a decision was made to incorporate the varying board lengths, sizes and colors into millwork feature walls.

These walls are located in highly visible and central spaces including the main lobbies and elevators. The varied species provides a surprising range of color and texture which results in a lively backdrop that helps provide human scale to the large spaces.



Indoor Environmental Quality

Increased outdoor air ventilation rates to all occupied spaces by at least 30% above the minimum rates required. Use of low emitting VOC materials, adhesives, coatings and sealants are used throughout the building.

VANDERBILT UNIVERSITY



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