

# SHERMAN AND JOYCE BOWIE SCOTT HALL

Carnegie Mellon University  
Pittsburgh, Pennsylvania, USA | 2017



**Architects:**  
**OFFICE 52 Architecture**

**C**arnegie Mellon's new interdisciplinary Nano-Bio-Energy-Technologies Building, a 109,000 square-foot building, creates a new and vital teaching and research hub on campus. Its ambitious program includes an 11,000 square-foot class 10|100 research grade clean room for exploration at the nano scale, a new home for the Department of Biomedical Engineering, space for the University's new Wilton E. Scott Institute for Energy Innovation, the new Disruptive Health Technologies Institute and the Engineering Research Accelerator.

The design of Scott Hall embraces its difficult site and demanding program, seeking to transform these challenges to advantage. The resulting design is comprised of two interlocking geometric forms, the North Wing and the Bertucci Nanotechnology Lab. Together these two forms transform this area of campus.

The highly visible four-story North Wing projects prominently out over Junction Hollow on a composition of sculptural steel columns that recall Pittsburgh's engineering aesthetic while also gracefully avoiding the major utilities in the hillside below.

Its glass form interlocks with a masonry core that anchors the building to the hillside. Its transparent skin reveals the activity within and provides occupants with panoramic views out to the Carnegie Museum of Art and the city beyond. The North Wing has a dual role in the larger composition of the campus; simultaneously creating a highly visible symbol for the College of Engineering and also reinforcing the centrality of Henry Hornbostel's iconic Hamerschlag Hall, the capstone building at the west end of campus. At the scale of the campus, the North Wing's fritted curtainwall draws upon the layered patterns and proportionality of the neighboring Hornbostel buildings to knit together a diverse architectural vernacular. The scale and density of the pattern change from elevation to elevation in response to the distance from which the building is viewed and its specific environmental requirements. The pattern also intentionally obfuscates the floor plates in a reference to the overlap of disciplines within the building.

At a more intimate scale, the frit draws from the nano-scale science taking place within the building through the abstraction of a photonic quasi-crystal structure to create a compelling geometric pattern that brings together art, design, technology and science within the architecture. On the south side of the building and along a portion of the west elevation, dichroic glass sunshades, created with technology commonplace in nano-scale research, shade the building. Their ever-changing reflections and refractions transform the building's appearance depending on the time of day, the intensity of the light, the season and peoples' movement.

The second form of the overall design is an infill building, the Bertucci Nanotechnology Laboratory, which occupies a former sunken service court at the west end of the Hornbostel Mall. The architect's inventive approach relocated the service functions and placed Scott Hall's most sensitive labs at grade within the court. This significantly improved their adjacency to other relevant programs and reduced their exposure to vibration and other environmental factors. The Bertucci Lab is accessed through an elegant and contemporary glass pavilion that rises through a state-of-the-art green roof which covers the clean room and extends the grassy landscape of the Hornbostel Mall to the western edge of the historic campus.

This extension completely transforms the west end of the mall, replacing the former service court with new campus spaces, enhanced connections between buildings and an entry plaza for Scott Hall that frames stunning views out to the west and will be the landing point for a future pedestrian bridge spanning Junction Hollow. At the intersection of the North Wing and the Bertucci Lab lie the important connecting spaces of the design: the Collaboratory and the Ruge Atrium. These two spaces link all four levels of the building and, like a jigsaw puzzle, make direct connections to seven different floor levels in four neighboring buildings, bringing together hundreds of faculty, researchers, staff and students to create a new interactive hub for the College of Engineering.

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