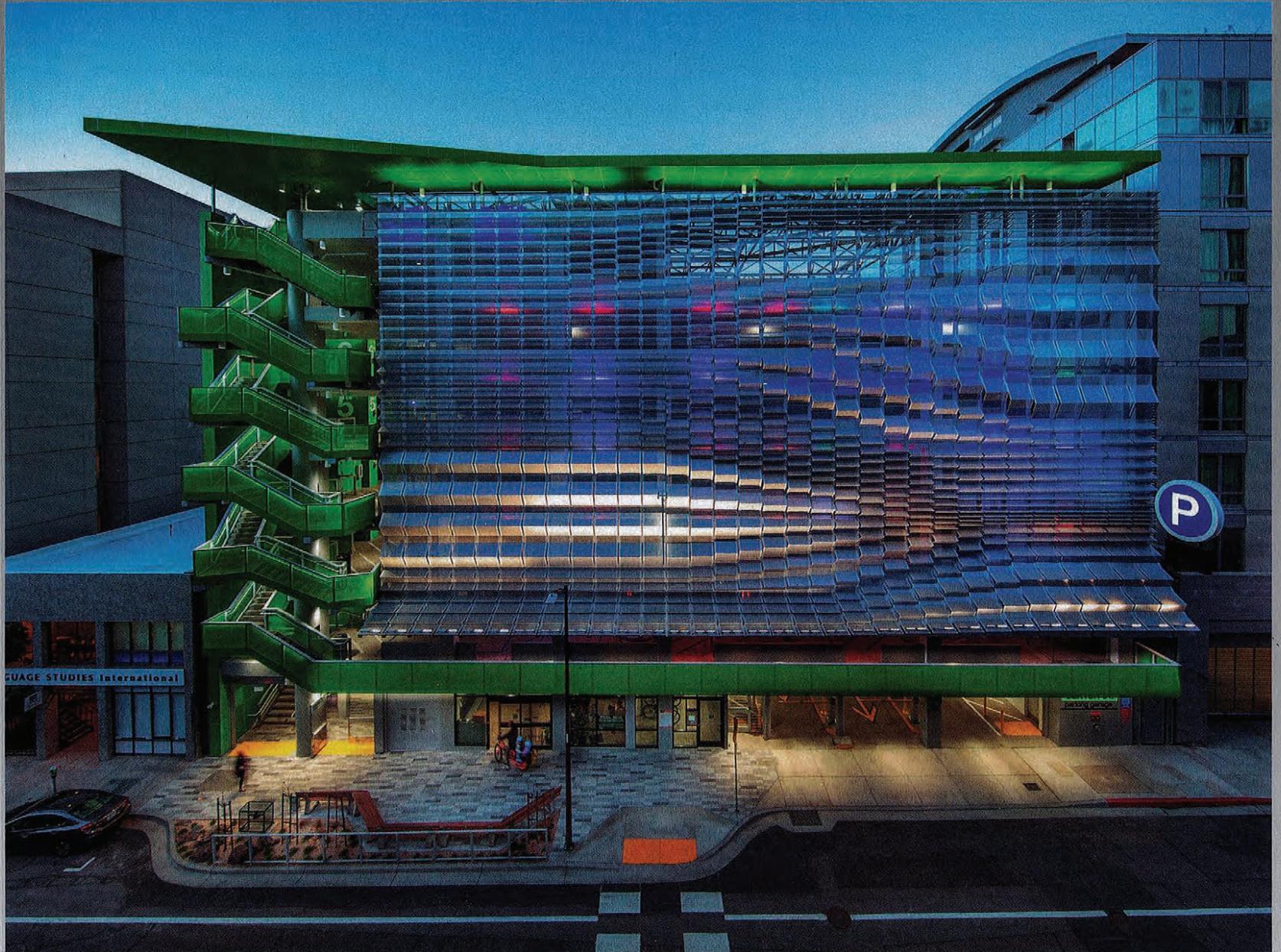


# Global Design + Urbanism XIX



## New American Architecture



Edited by Christian Narkiewicz-Laine



Metropolitan Arts Press, Ltd.

# Sherman and Joyce Bowie Scott Hall

Pittsburgh, Pennsylvania | 2017



Scott Hall is the College of Engineering's new LEED-Gold 109,000 square foot Nanoscience, Bioscience and Energy Technologies Building at Carnegie Mellon University.

The design embodies Carnegie Mellon's interdisciplinary culture to create a vibrant, collaborative research center at the forefront of advanced nanotechnology and complex engineered systems.

The building houses a 11,000 square foot class 10|100 research-grade clean room for nano-scale exploration and spaces for the Department of Biomedical Engineering, the Wilton E. Scott Institute for Energy Innovation, the Disruptive Health Technologies Institute, and the Engineering Research Accelerator, as well as offices, meeting rooms, and a naturally lit, four-story public room with an adjacent cafe.

The building was intentionally built in the heart of the campus between four existing structures on a challenging interstitial site with a steep decline of over a hundred feet into a ravine with an active freight line.

These site conditions inspired a building design composed of two inverted and interlocking forms that create a coherent whole: the above-ground North Wing with gracefully sloped and efficiently placed

column-pods to accommodate major campus utilities in the hillside below, and the Bertucci Nanotechnology Wing, a below-grade, low-vibration lab space placed in a former service court, an addition to the site that we recommended for the project.

Overhead are modern glass elements, such as the Bertucci Pavilion, in the new 35,000 square-foot state-of-the-art green-roof that extends the space of the university's historic Mall and transforms that part of the campus landscape.

The two above and below-grade forms embrace at their overlap in a public room resplendent with ephemeral light from a curtain wall with details that metaphorically link concepts of nanoscience, scale and photons to the architecture.

Dichroic glass is a nanotechnology-derived material infused with metal oxides, and the ceramic frit is a geometric representation of a photonic quasicrystal pattern which can be read at a variety of scales - as semi-transparent bands further away to a dot matrix when closer.

The dimensions of the fritted bands are a contextualizing element proportionately derived from adjacent buildings of the traditional campus Mall, and both the frit and dichroic

glass add visual depth and pattern for a bird-friendly building, an important environmental aspect.

Within the building the nanoscale research and wet labs comprise over half of the building's annual energy consumption, thus in conjunction with the building's high performance mechanical system, the curtain wall is designed to meet stringent energy goals.

Dichroic glass sun-shading fins on the south and west elevations are weaved into the façade composition to create an innovative and energy efficient work of art.

With high-performance glazing, custom ceramic frit, spandrel glazing and custom dichroic glass sun-shades, the building envelope exceeds performance goals to produce one of the most energy efficient lab buildings in the country.

By adding the materials of light and color, reflected and transmitted, we turned the building into a dynamic interplay of nano-inspired color and texture that shifts throughout the day dependent upon the angle of sunlight striking the glass and the observer's position.

It is a transformative meeting of material form and scientific innovation inseparable from occupant inspiration.

**Architects:**  
OFFICE 52 Architecture  
**Associate Architects:**  
Stantec  
**Client:**  
Carnegie Mellon University  
**General Contractor:**  
Jendoo Construction Corporation  
**Photographers:**  
Jeremy Betermann,  
Isaac Campbell





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# American Architecture Awards 2019

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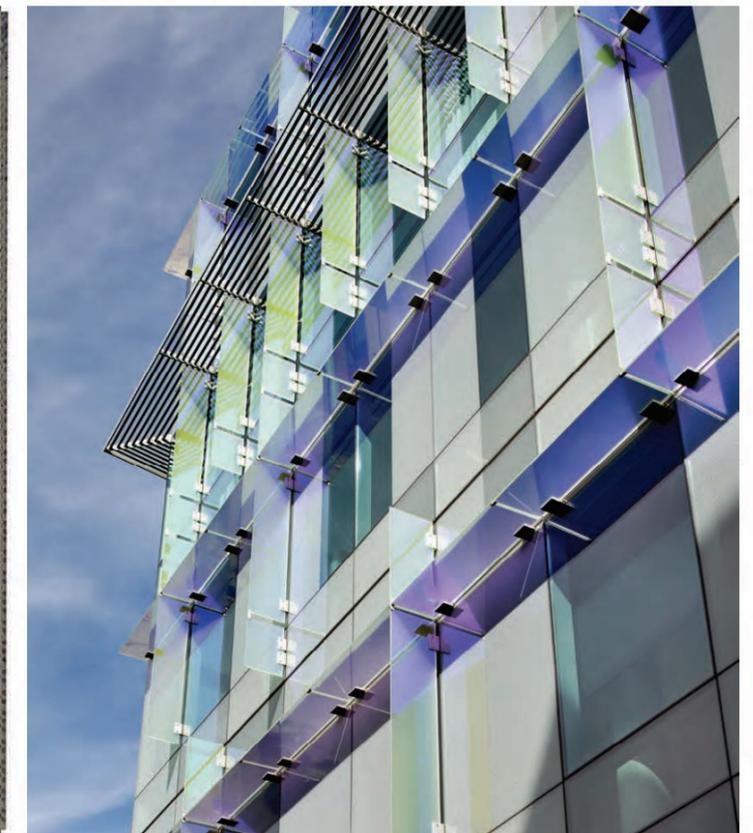
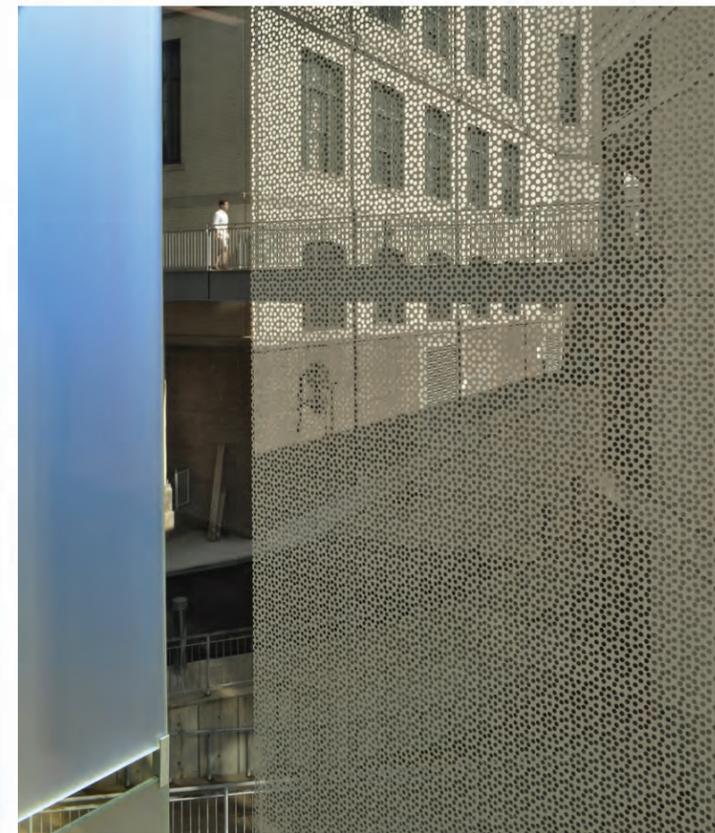
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AAA-2019

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