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Inside:

A Sports Venue of Olympic Proportions
Washington Architects Design Around the Globe
National Firms Bring Expertise to Local Projects

Exterior rendering of the Neural and Behavioral Sciences Building at the University of Pennsylvania.



University Buildings:

Goodbye Ivory Tower by Steven K. Dickens, AIA

The apple, it would seem, has become the paradigm to which higher education now aspires. Not Apple the computer and iPod company (although its products and philosophy are part and parcel of this trend), but rather Newton's apple, as perhaps the most famous example of a random event leading to a "Eureka!" moment. The traditional paradigm of the "ivory tower" revolved around the romantic notion of the intellectual, literally or figuratively peering out from a tower at the world far below and drawing conclusions thereof. The Newtonian apple, in contrast, suggests a model in which the world comes to the intellectual, leading to unpredictable interactions, now seen as the font of innovation and new ideas. The detached intellectual has been replaced, at least in part, by regular people; humanity has assumed the role of collective scholar.

Model Behavior

The as-yet unbuilt **Neural and Behavioral Sciences Building (NBS)** at the University of Pennsylvania, designed by the Washington office of **SmithGroup**, illustrates this shift in thinking. The building is a relatively straightforward rectangular box, oriented east-west for optimal solar control, and expressed as three interlocking elements:

Kalwall translucent panels clad the faculty offices and the penthouse; a copper-paneled volume houses the laboratories; and while both of these areas have ribbons of clear windows, the third element, the "interaction" zone, is distinguished by floor-to-ceiling glass and the building's signature element, a lacy sunscreen which filters views and controls solar gain.

The sunscreen is a marvelous architectural manifestation of the NBS's purpose, the "study of the massive interconnectedness and variation of neural processes and biological forms," to use the words of SmithGroup principal **Sven Shockey, AIA**. Additionally, it is a custom creation that, in a very direct way, illustrates the potential of computers in design and manufacturing. The sinuous lines of the sunscreen—an obvious reference to illustrations of neural networks—are created by various rotations over two overlapping forms, one solid and the other perforated, creating a great deal of variation. Although it could have been made without computers, the digital revolution makes the whole process quite easy, not to mention economical, as the resultant design can be transferred directly to manufacturers' computers for fabrication.

The "interaction" zone is the heart of the building, serving as the circulation between offices and laboratories. The accidental



Rendering of the end of the Neural and Behavioral Sciences Building with Kalwall panels.

Rendering by SmithGroup

interactions that will naturally occur in these areas are considered crucial, so the space is not only given great architectural importance, but is thoughtfully designed to promote use. For example, typically, fire stairs are unfriendly, enclosed elements that people avoid, but SmithGroup created a beautiful, open stair of terrazzo with glass railings as a compositional anchor at the southwest corner of the interaction zone. It meets building code requirements thanks to two sliding fire doors (which have smaller, standard doors within), which automatically close if the fire alarm system is set off. A less elaborate version of the same concept makes the other fire stair, within the faculty office wing, much more appealing, in both cases inviting random interactions.

Last year, the NBS won an Unbuilt Architecture award from the Washington Chapter/AIA, which was announced the same day as a crucial Penn Design Review Committee session. The timing couldn't have been better, notes SmithGroup associate **Dayton Schroeter, AIA**: SmithGroup's team reported the award to the

university *after* the committee had weighed the project's architectural merits against its cost. The award validated the committee's decision to give the project the green light.

A Scientific Experiment

In **Dickinson College's Stuart Hall and James Hall**, by the DC office of **Zimmer Gunsul Frasca Architects (ZGF)**, the word "collaboration" is preferred over "interaction," but the concept is identical. Dickinson College is one of the nation's oldest independent liberal arts colleges. Since its origins in the 19th century, interdisciplinary study and collaboration have been central academic goals. The new building houses a mixture of learning and research spaces for biology, biochemistry, molecular biology, chemistry, neuroscience, and psychology. The various uses and disciplines are purposely mixed up in the facility.

Dickinson, located in classic small-town Carlisle, Pennsylvania, has a campus in which most buildings are relatively small, with pitched slate roofs and limestone walls. Some of the more recent campus buildings, including Tome Hall, to which the ZGF project connects, represent a modern take on the historic context. But James Hall and Stuart Hall take this to an entirely new level, visually connecting the college to 21st-century learning models.

Project: University of Pennsylvania, Neural and Behavioral Sciences Building

Architects:

SmithGroup; Washington, DC

Landscape Architect:

Christopher Allen Landscape Architecture & Planning; Philadelphia, PA



Above and below: Exterior views of Stuart Hall and James Hall.

Photo by Chuck Choi Architectural Photography



Photo by Chuck Choi Architectural Photography



A study lounge within the new building.

Photo by Chuck Choi Architectural Photography

The new building uses the same limestone, providing a fundamental degree of continuity. The sloping roofs have been substantially reinterpreted, however, into a radiating sawtooth configuration (ZGF calls them “petals”). The most surprising update involves the slate shingles, which here have morphed into iridescent stainless steel wall panels. These panels—a greenish metallic color in soft, neutral light—take on dramatically different hues depending on the sun, time of day, and angle of view, lending animation to the building—a metaphor, one assumes, for the dynamic learning environment within.

Inside, the main organizational device is a generous curving “street” with a variety of lounge and study areas, platforms that could become impromptu stages, stairs and elevators, and in some areas, second-floor balconies. This street connects the two wings (one named James Hall, the other Stuart), plus loading docks, the pre-existing Tome Hall, and a third wing planned for the future. The bars fan out from the curved “street,” maintaining orientations close enough to east-west for optimal solar control and daylighting.

The various classrooms, laboratories, and offices are pleasant, functional, and (thanks to generous daylighting) bright spaces, but the stars of the interior are the many informal lounge/meeting/study spaces. These spaces are visually separated from adjacent circulation zones by a change from terrazzo to carpet flooring and by semi-open wood screen walls. Glazing connects the spaces to the outdoors and to adjacent learning spaces or offices. The furnishings are easily reconfigured, and blackboards and pinup space are provided for spontaneous scribbles. All of this effort

Project: Dickinson College, Stuart Hall and James Hall

Architects and Interior Designers:

ZGF Architects LLP; Washington, DC

Mechanical/Electrical/Plumbing Engineers:

Bard, Rao + Athanas Consulting Engineers, LLC

Laboratory Planners:

Research Facilities Design

Structural Engineers:

LeMessurier Consultants

Civil Engineers:

Brehm-Lebo Engineering, Inc.

Construction Managers:

Reynolds Construction Management

Landscape Architects:

EDAW (now AECOM)

Lighting Designers:

Francis Krahe & Associates, Inc.

Acoustics/Vibration/Audio-Visual Consultants:

Shen Milsom & Wilke

Specifications Consultants:

Heller & Metzger, PC



New York Law School.

Photo © Jeff Goldberg / Esto

is aimed at facilitating and capitalizing on the accidental encounter or insight.

Almost every space has windows looking to other spaces—either directly or across a landscaped courtyard. In a simple, direct way, this fosters awareness of the myriad academic pursuits under way in the complex, inviting interdisciplinary insights and collaborations.

James Hall and Stuart Hall were designed for LEED Silver certification, but ended up receiving LEED Gold. “We took an evenhanded approach to sustainability,” comments **Rich Hubracker, LEED AP**, ZGF’s sustainability coordinator, noting that the efforts run the gamut. A quotidian example is a concealed break in the limestone walls where they penetrate from inside to outside, to prevent thermal bridging. A less common example is the enthalpy wheel, which is an attachment to the main air handler unit that dramatically increases HVAC efficiency by transferring both heat and humidity between exhaust air and incoming fresh air.

The faculty’s goal was to make research public and watchable, subverting the idea of the genius toiling away in a laboratory hidden

from view. In James Hall and Stuart Hall, the science has become visible to all users, thus giving Dickinson College a jolt of the future.

Legal Transparency

New York Law School (NYLS) has never been a standard-issue legal institution. It is an independent law college (not, as is often assumed, part of New York University) founded in 1880 as a splinter from Columbia University Law School, for the purpose of providing educational opportunities for minorities and women. Since the early 20th century, it has been located in Lower Manhattan, in the area now known as Tribeca. Its motto is “Learn law, take action,” and in this case, action is the promotion of social justice via legal activism, not the earning of impressive salaries.

After winning the commission to design a new facility for NYLS, the Washington office of **SmithGroup** devised a variety of schemes that didn’t come to fruition: the school couldn’t afford a new building. Then, unexpectedly, Tribeca’s popularity



Photo © Jeff Goldberg / Esto

as a residential neighborhood for the very wealthy soared. NYLS, which had accumulated a number of properties over the decades, found that it could finance an entirely new building adjacent to its existing ones, simply by selling off one building. (That structure, immediately to the east of the new NYLS building, was torn down to make way for a very tall, ultra-luxury condo tower designed by Herzog & de Meuron. The foundations were constructed, but the tower is on hold.) The school jumped at the opportunity to create a new identity.

With some 1,500 students, NYLS is a large law school. The new building has roughly 200,000 square feet on nine floors, connecting to 150,000 square feet of existing space in adjacent buildings. One odd characteristic of the site is that it came with a deed restriction mandating a maximum height above street level of five stories. Fortunately, the deed set a generous maximum height of 95 feet, allowing for the very tall stories that are useful to an academic institution, but to fill the programmatic requirements it was still necessary to dig down four stories. This was accomplished via “top-down” construction, in which, incredible as it seems, each basement floor was actually excavated and constructed under and after the one above it. These basement levels primarily house an auditorium, gallery, and library stack space.

A big break from the norms of law school design was the prioritization of student spaces over faculty areas. Student spaces are front and center—literally and figuratively. The two street facades are almost entirely given to lounges, semi-private meeting areas, food service areas, and the like, with classrooms and other program spaces inboard. The entire penthouse (fifth) floor consists of student spaces, ranging from an large, open dining area along the exterior window wall, to quieter informal study/lounge areas in the middle of the building (separated from the dining area by glass, and therefore sharing light and views), to group study rooms along the inside party wall.

Notwithstanding the breaks with tradition in programming and planning, the interior design of the building is reminiscent of a modern, high-end law firm’s offices. Oceans of crisp white surfaces, with carefully composed reveals and joints, are offset by warm wood walls, metal accents, and, in less public areas, grey carpet. Panes of clear and etched glass modulate light and views. Chic lounge furniture provides splashes of intense red and orange, and the lighting is expertly controlled and composed.

Thanks to the transparency of the facades, the entire city shares these beautiful spaces, especially at night, when the building truly becomes a lantern. NYLS’s community-minded identity is unmistakable.



Project: New York Law School

Architects:

SmithGroup; Washington, DC

Associate Architects:

BKSK Architects; New York, NY

Project Managers:

VVA; New York, NY

Mechanical/Electrical/Plumbing Engineers:

Jaros Baum and Bolles; New York, NY

Foundation & Geotechnical Engineers:

Mueser Rutledge Consulting Engineers; New York, NY

Acoustic/AV Technology Consultants:

Cerami & Associates, Inc.; New York, NY

Lighting Design:

SmithGroup; Detroit, MI

Curtainwall Consultants:

Raymond Wilson & Associates, Ltd.; Hamilton, ON, Canada

Signage Designers:

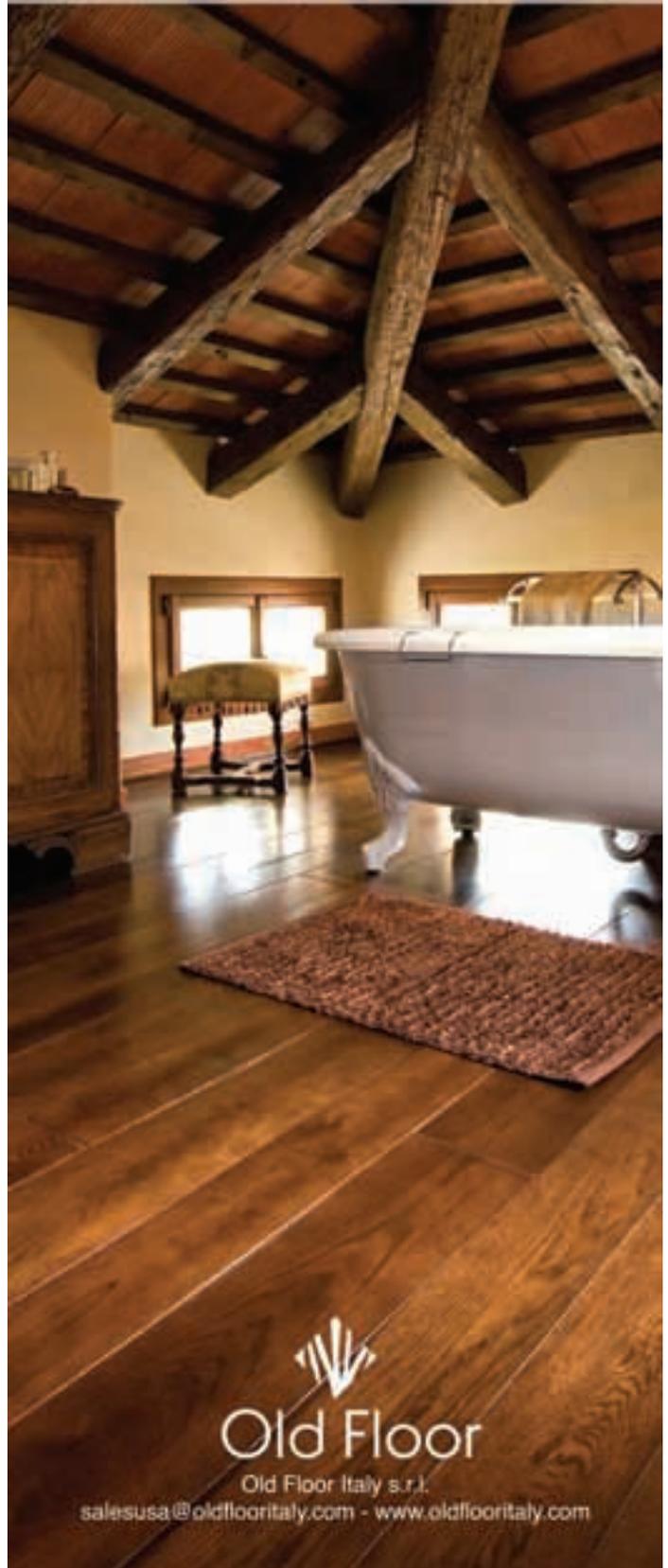
Two Twelve Associates; New York, NY

Epilogue

It is worth noting that sustainable or “green” design has become so standard for university buildings that, in two of the interviews for this article, the architectural teams didn’t even think to mention it until asked. Yet all three projects met high standards in this regard. Admittedly, universities are among the most logical clients for sustainability—not only do they have a strong interest in controlling life-cycle costs, but they are also centers of innovation and often advocates for social progress. Moreover, young people in general and students in particular are interested in, and demand, concerted action to reverse environmental degradation.

Nor should one overlook the fact that university buildings tend to have above-average construction budgets, enabling them to absorb higher up-front costs, but for this writer, the somewhat blasé attitude of these design teams is cause for optimism. Green has gone mainstream, at least in one corner of the architectural profession. 🏡

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