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The Physical Space of Science: The Neurosciences Institute and Skirkanich Hall

Tod Williams and Billie Tsien

This is the first in a series of articles that Landes Bioscience will publish about the physical space where research takes place—the laboratories and classrooms where the science you read about in our journals is happening. Here we interviewed New York–based architects Tod Williams and Billie Tsien about two of their projects, The Neurosciences Institute in La Jolla and Skirkanich Hall at the University of Pennsylvania. We asked them, among other things, how they engaged scientists in the design process. Here is their response.

We had the great privilege to work with two wonderful scientist/engineers in our two science buildings. At The Neurosciences Institute we worked with Dr. Gerald Edelman, who was a Nobel laureate in 1972 for his work on the immune system, and Dr. Einar Gall who is the research director. Dr. Edelman has an amazing mind that for an audience of nonscientists (the architects) navigates easily between metaphors for what happens in your brain, pungent jokes and general observations on culture. Dr. Gall was instrumental in developing our understanding of the day-to-day life of a scientist. Between the two we were able to understand what architectural experiences might feed the scientific mind. Dr. Edelman said to us "wherever you look, I want it to be beautiful, and if it's not beautiful it should be interesting." His second dictum to us when facing cost cuts was "cut what you must, but keep the symphony intact." I think that his mentoring of young doctoral and post-doctoral candidates gave him insight into giving guidance without being too specific and at the same time encouraging our best work by constantly challenging us.

Dr. Edelman asked us to make a "scientific monastery" where scientists of both the hard and soft sciences would mix and have lively discussion. In order to create the sense of a "place apart" we excavated the site and set the buildings into a sunken courtyard. In this way the Institute was separated from the noisy and busy adjacent road and when one enters the court everything is left behind. The intention was to make it a place where people working in wet labs would collaborate with theoreticians. There were three important components

Skirkanich Hall; University of Pennsylvania; Philadelphia, Pennsylvania; 2006; Tod Williams Billie Tsien Architects

The Neurosciences Institute; La Jolla, California; 1995; Tod Williams Billie Tsien Architects

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Above Left: A 352-seat auditorium is enveloped in an origami-like folded plaster wall that allows for the maximum dispersion of unamplified sound. The space is frequently used for musical concerts by outside groups. **Above Right**: The circular courtyard is a place where one can sit and listen to the sound of falling water. **Above**: The landscape and the buildings form a quiet courtyard that unifies the entire project. This plaza, open yet sheltered, encourages interdisciplinary interaction.

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Above Left: At the Neurosciences Institute laboratories occur behind sloped glass windows. Light enters while privacy is maintained. **Above Right**: In Skirkanich Hall, the laboratories are light-filled and column-free to foster communication and facilitate future modification of the space as needs change.

that were outside of a standard program: a place to eat, a place to socialize and a place to listen to music (disguised as a lecture hall but acoustically configured as a chamber music auditorium).

We wanted both the labs and the social spaces to make use of the abundant good weather of San Diego, so there are many places outside—by a large fountain or along an inclined walk—where scientists can leave their labs and offices behind. All of the social spaces make use of serpentine stone and cherry wood to create a sense of warmth and intimacy. For a small campus the Institute has a large variety of beautiful and contemplative places to be. That is the result of the quest to make a monastery.

Dr. Eduardo Glandt, the dean of the School of Engineering and Applied Science at Penn, was our client for Skirkanich Hall. Dr. Glandt is an art and architecture buff and had visited many buildings both in the search for an architect and for his own enjoyment. He had visited a project of ours, the American Folk Art Museum in New York, that led him to believe that we might be the right architects for Skirkanich. The Museum is a small but very vertical building that takes advantage of every inch of its tight site. The new site for the bioengineering labs was between two existing buildings and needed to work as a connector between them. Since the floor levels were not the same, the new building had to negotiate this difference through the use of stairs, elevators and inclined paths. At the same time, people who were not bioengineering students needed to pass through the building to get to a central pathway beyond. This was a building that needed to extend and connect in the x, y and z axes.

Dr. Glandt wanted the building both to fit into the campus and to stand out from the campus—Skirkanich was to act as the gateway to the bioengineering quad. We decided to use brick because it is the material that the Penn campus is primarily constructed of, but we also wanted to give the simple material a fresh look. We ended up using a green glazed brick that is deeply textured and irregularly colored.

The lab spaces needed to be flexible and open—more like loft spaces. Large north-facing windows bring in natural light.

Like Dr. Edelman, Dr. Glandt believed in the importance of social space—the place where people meet. The hallways connect three different buildings so circulation space is generous, full of color and often of dramatic height. Stairs are places to sit and socialize, so they have huge windows to the outside and are very sculptural, creating an almost "Escher-like" feeling (although without the confusion!).

Students who simply need to pass through the building can walk up an inclined path to an interior courtyard with a secret garden. When you look at the fountain, you look through to a walled garden. This is a place to sit, to think, to leave behind the work of the labs and to dream of new questions.

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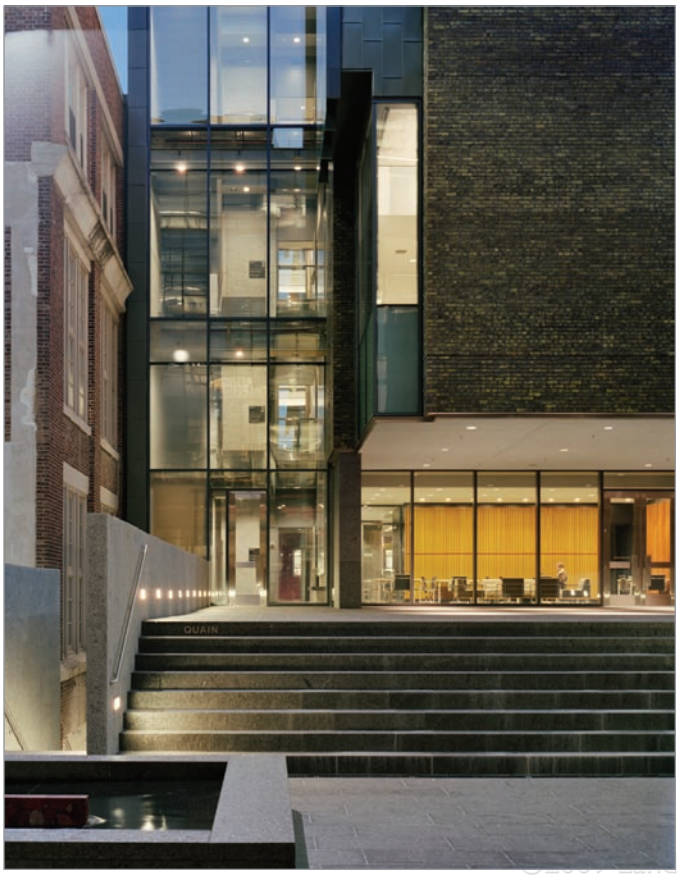

Above Left: At night the fire stair becomes part of the courtyard, as the transparency of the volume draws people in. A wood wall within the adjacent student lounge adds warmth to the landscape year round. **Above Right**: A lobby carved out of black granite is punctuated by luminous fields of tile and a narrow atrium that visually and audibly unites the floors. **Above**: The garden, intimate and walled, is a quiet space for contemplation. A place to sit, read and dream of new questions.