

As featured in

building OPERATING management

The Broad Institute: Mission-Driven Design in the Nick of Time

January 2012

Since its launch in 2003-2004, the Eli and Edythe L. Broad Institute of Cambridge, Mass., has developed into a research powerhouse, with ground-breaking discoveries in understanding the fundamental causes of many different human diseases, and pursuing new ways to treat them. In that same period, the institution has grown from 200 to 850 researchers and administrative staff whose work demands functional, flexible, state-of-the-art laboratories and equally innovative offices and behind-the-scenes spaces to support their revolutionary programs. This astonishing growth rate necessitated the acquisition of 82,000 square feet of unfinished leased space in the research corridor of Kendall Square in 2009. They charged Signer Harris Architects with developing a design responsive to their ever-evolving research agenda, their highly collaborative approach to scientific discovery, and their extremely tight construction schedule. To address each of these challenges, the Signer Harris Architects team was guided by the following principles:

Harmonize institutional goals and individual needs.

The Broad Institute required the new lab satisfy two main criteria: flexibility and transparency. To align institutional goals and individual researchers' needs and preferences around these objectives, Signer Harris Architects employed the following 3D Programming process:

- First, identify and assess fundamental core elements that balance stability with flexibility.
- Second, identify and assess equipment and room requirements.
- Third, assess how culture and process intersect with the individuals actually in the lab.

Flexibility

Signer Harris Architects' solution anticipates small and large-scale evolutions in program, processes and equipment that necessarily arise as a result of fast-paced research, which



© Richard Mandelkorn Photography

Flexible casework feature casters that retract to provide firm footing for benches, but can be easily moved to support changes in programmatic needs.

enables the Broad Institute to respond nimbly and cost effectively. Laboratories are designed with a combination of both fixed and mobile benches, and utilities are distributed from overhead service carriers to allow for quick and seamless changes in equipment. The space is also equipped for a dramatic shift in focus. Entire floors can be cleared and reconfigured to accommodate alternative science programs, new equipment, or the introduction of new faculty and staff.

Transparency

The design also expresses the value the Broad Institute places on transparency by facilitating its collaborative approach to research. Glass partitions are covered in notes, equations and formulas written with dry-erase pens, which convey visually the openness and curiosity of its researchers and the institution as a whole. User groups are clustered around Scientific Living Rooms, conversation areas equipped with soft-seating, open work tables, and sometimes a kitchen located along main pedestrian

arteries throughout the building, which facilitate chance-meetings and conversations between researchers in different programs to encourage holistic problem-solving.

Hospitality

These responses to the Broad's mandate for flexibility and transparency dovetail with researchers' workflow and preferences. The design places as much emphasis on the spaces outside the labs as inside to support all of the researchers activities in comfort. Write-up desks are located outside the lab to allow the scientists to focus on analysis and planning in a quieter environment and enjoy a cup of coffee or a snack, which is not permitted inside the lab. Floor-to-ceiling glass keeps an integral connection between the scientists and the lab, while allowing natural light to filter through the office areas into the lab spaces at the building's core. The palette of finishes, textures, and colors are inviting, vibrant, and tactile to create a pleasing workspace.

Design with Constraints in mind

The building housing this new workspace was not originally intended to support laboratory environments. Within its overall envelope the architects were challenged to create a unified workplace within and between two disproportionately long and narrow shell spaces, each about 60' x 450'. The design solution takes advantage of these linear proportions by creating a “street-like” plan, with circulation that meanders along the corridor, rather than a “shotgun” approach that would only exaggerate the building’s unusual proportions. Scientific Living Rooms are located at axes in the circulation to create vibrant “town squares”. Walls of glass frame vistas within the building and visually widen the space. The act of moving through the workplace is an integral part of the work experience, from observing the research unfolding in adjacent labs to regularly connecting with colleagues.

Perhaps more challenging than the floor plate configuration, it was not known which user groups would ultimately occupy the space. Consequently, the layout had to be general enough to accommodate all groups, yet adaptable enough to support the specific, highly technical demands of the user groups that would eventually move in. By focusing on



flexibility, the lab environments shift quickly and easily to accommodate changing research or entirely new teams.

Constructed in just 22 weeks — a break-neck pace for a highly technical space — this project was designed and delivered ahead of schedule and under budget, due to the collaborative design process and the project teams’ commitment to our client’s bottom line.

Signer Harris Architects’ 3D Programming effort identified critical issues and opportunities early, which were immediately integrated into the design. The Broad Institute facilities planners provided expert leadership and insight into researchers’ needs, testing and validating the design as it developed. A Design Assist partnership was arranged with the construction manager, which enabled them to pre-purchase long-lead equipment and bid out elements of the project to key sub-contractors, who then provided a constructability review and valuable support with budgeting and purchasing before design development, avoiding costly and inefficient value engineering.

The ultimate lesson of the design of the Broad Institute’s newest space is collaboration. As an experienced client thoroughly versed in its organization’s processes and culture, the Broad Institute contributed critical insights and shaped the design process. Signer Harris Architects synthesized poetic and practical requirements into a coherent and executable design. And the project manager, construction manager and sub-consultants put their first string on the project. Together, the team produced an environment that will support the Institute’s ambitious agenda, even as its programs evolve in the years ahead.



Circulation down the long corridor of the building is punctuated by breakout zones and other common and support spaces.

 **Signer Harris Architects**

46 Farnsworth Street | Boston, MA 02210
617.757.7300 T | 617.757.7373 F | signerharris.com

All photographs © Richard Mandelkorn Photography