METROPOLIS
ARCHITECTURE<CULTURE>DESIGN
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THE GLASS LAB

by Michael Silverberg

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A genomic-research center for Harvard and MIT reflects the latest trends in university science buildings.

Photos by Anton Grassl

fig. 1 **Vertical and horizontal brises-soleils protect the interiors from solar heat gain while allowing the labs and adjoining offices plenty of natural light.**

A seven-story concrete-and-glass-skinned building near the edge of the MIT campus, designed by Elkus Manfredi Architects, is part of a wave of university science buildings that emphasize interdisciplinary research and flexibility, gathering together scientists for work that can't be done in small departmental labs. The Eli and Edythe L. Broad Institute, founded in 2004 as a joint venture of Harvard University and MIT, studies the intricacies of the human genome and applies its research to curing diseases, but until last year its labs were sprawled across several blocks in Cambridge, including a former beer and popcorn warehouse.

The intensive research—there are about three billion nucleotide pairs in the six-foot-long human genome—demanded not only the combined resources of two schools and the interdisciplinary collaboration of scientists but also a lot more space to grow. For the Broad that meant room for hulking machinery that parses DNA, such as minivan-size mass spectrometers used to analyze protein structures. Such equipment required floor plates able to withstand heavy weight, and elaborate exhaust systems to manage heat and to circulate air, but it was also essential to preserve sight lines. "Our research only works in the spirit of collaboration," deputy director Alan Fein says. "Everybody needs to be accessible, transparent, visible."

In the place of walls, glazed waist-high barriers separate research areas without isolating scientists, and an open floor plan and overhead utilities allow equipment to be moved quickly—crucial in a field where technologies change overnight. "Because the mission of the place is so broad, and the future activity is so unknown," architect David Manfredi says, "it has an incredibly high degree of flexibility to remake itself."

plate 1

Plan of the fourth floor

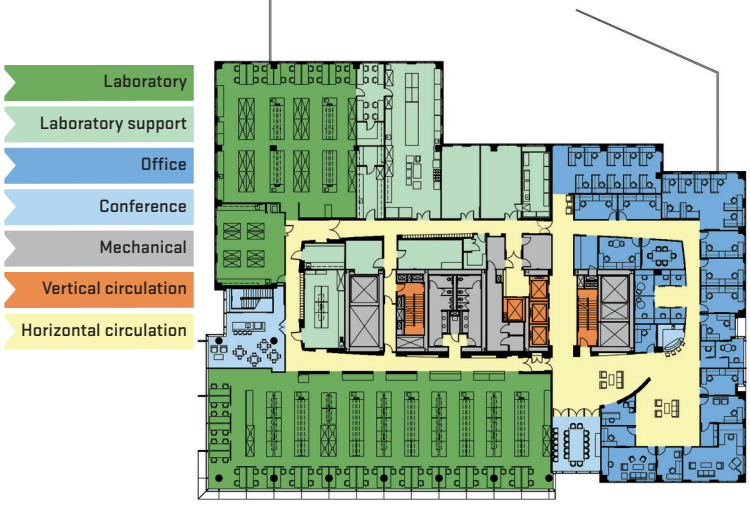

fig. 2 **The inset in the Broad Institute's ground floor will become a museum of genome research.**

Photos, Anton Grassi; all images courtesy Elkus Manfredi Architects

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