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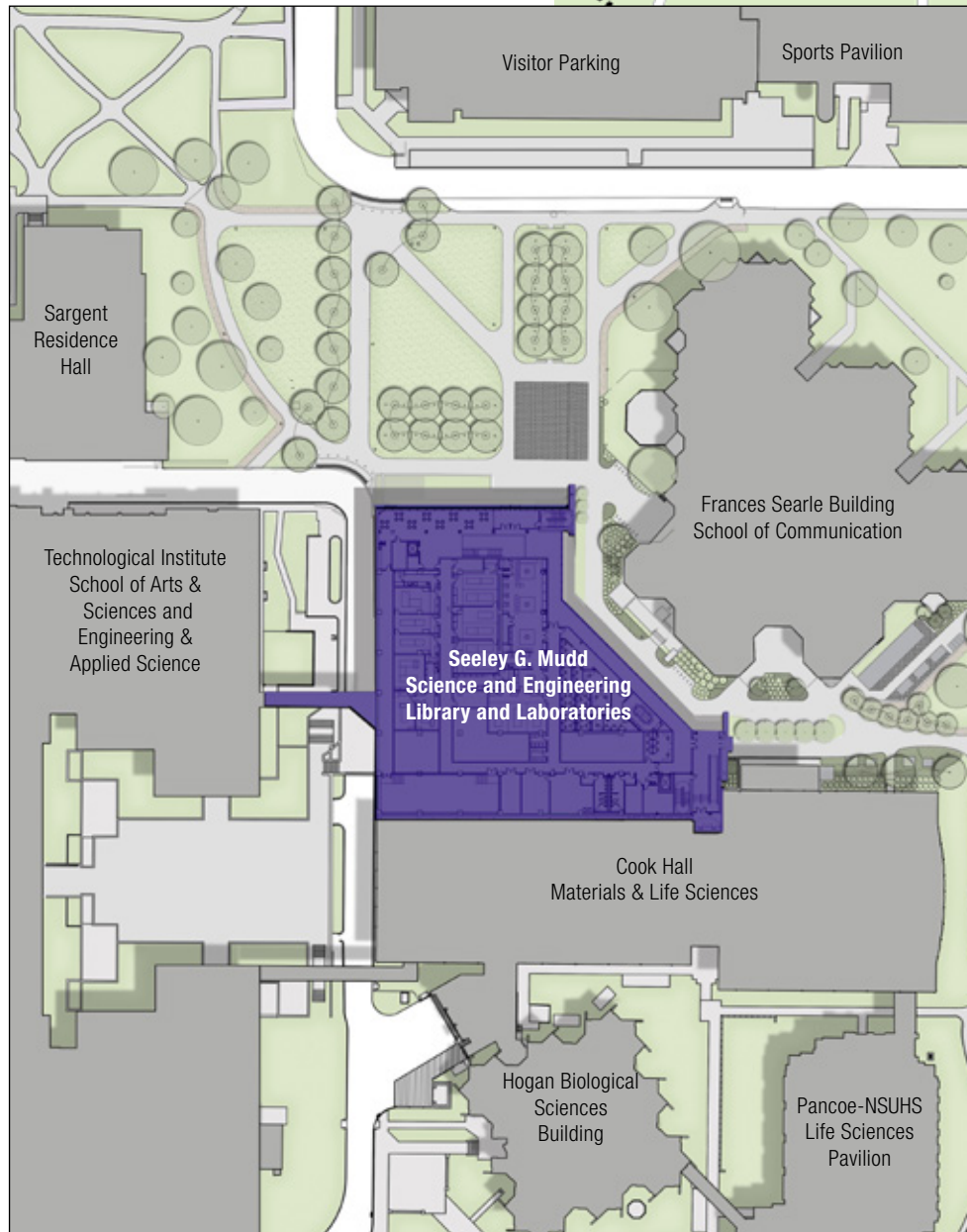
NORTHWESTERN UNIVERSITY



SCIENCE AND ENGINEERING LIBRARY AND LABORATORIES

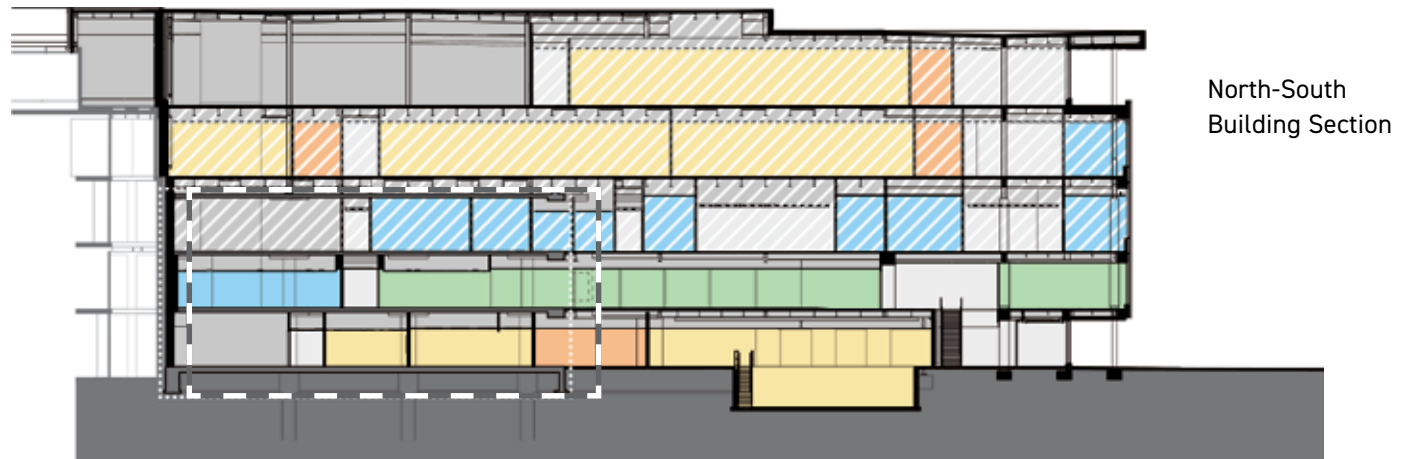


PROJECT TYPE	Building additions, renovation or adaptive reuse
INSTITUTION NAME / LOCATION	Northwestern University, Evanston, Illinois
PROJECT NAME	Science and Engineering Library and Laboratories (Mudd Hall)
INSTITUTION TYPE	Private
CAMPUS SIZE	21,200 students 3,400 faculty 5,400 staff
PROJECT COMPLETION DATE	August 1, 2017
PROJECT OCCUPANCY DATE	2017
PROJECT COST	\$111 million
CONSTRUCTION COST	\$92 million
SIZE	188,000 GSF 108,250 ASF
SITE AREA AFFECTED BY THE PROJECT	2.2 ACRES 96,900 SF



	Parking
	Campus access road
	Service road
	Bicycle / pedestrian path
	Athletic field







Left top: North Elevation

Left bottom: East Elevation

Below: West Elevation





The Seeley G. Mudd Library for Science and Engineering was originally opened to the public July 27, 1977. Its flexible, open design adapted well to changing library needs through its 38-year history. The new horizontal and vertical expansion has increased the building's size from 61,000 to 188,000 square feet and expands its use to include science and engineering research and office space as well as the library.

GOALS AND OBJECTIVES:

Campus Entry

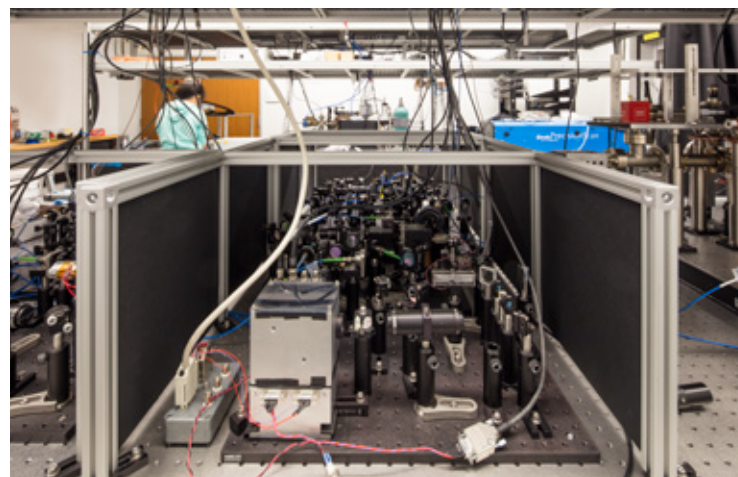
By virtue of proximity to the recently completed visitor parking facility, Mudd Hall serves as a university entry point, particularly to the science and engineering complex on the campus' north side. The building sits directly across a newly developed research quad and presents an active library space and indoor connections with the entire complex.

Environmentally Sensitive Laser Research

The first floor is dedicated to the needs of researchers who require environments with stable temperature and humidity, as well as minimal vibration and electro-magnetic interference.

Science and Engineering Library

The second floor hosts the newly remodeled library that is dedicated less to collections and more to the growing needs of students and faculty for study and collaboration space, as well as access to library staff to assist with research.



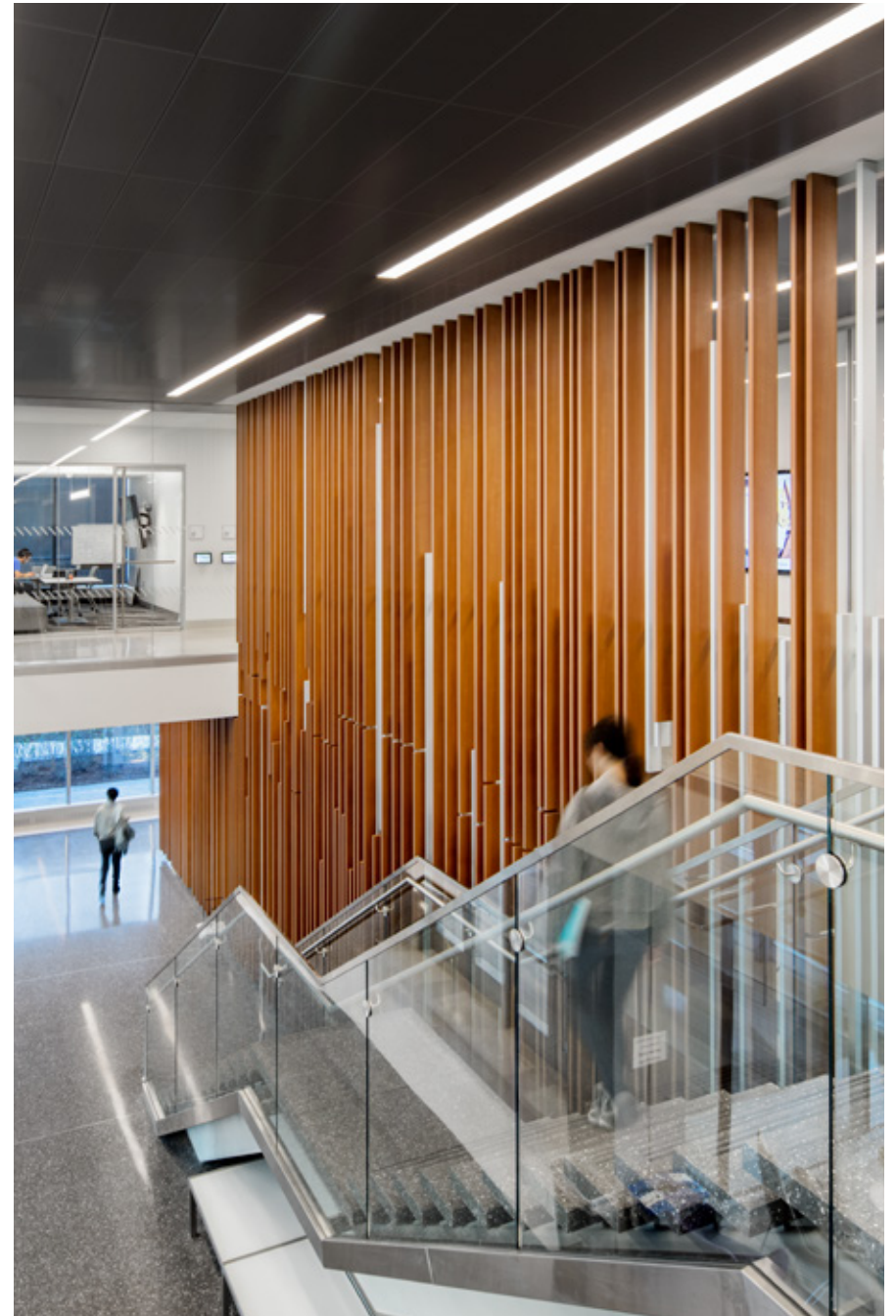


The planning process for Mudd Hall was nonlinear and ultimately the result of several different needs colliding on the same geographic area. The most pressing need came from the College of Arts and Science, which was under growing pressure from current faculty and potential recruits for environmentally sensitive space for laser research. The strict temperature, humidity, and vibration criteria required for this work could not be met in the older buildings.

An unexpected partner in solving this problem came from the Mudd Hall Library. Located in the heart of the science campus, this library was moving a large percentage of its collection to an off-campus storage facility with a desire to transform its image and purpose from book storage facility to active learning and research center.

Northwestern saw an opportunity to merge these two dynamic pieces, but it required an integrated

process, cooperation, and leadership. Facilities Management carefully sought to meet both entities' needs by proposing expansion of the existing building's footprint to accommodate both groups, each on one floor. Planning then proposed three additional floors of shell space to meet future needs and comply with the campus vision for the site as an entry point for the north campus.





Several obstacles stood in the way of success – timing was a critical one. An aggressive completion schedule of 16 months after schematic design approval by the Board of Trustees was dictated by research and grant deadlines for the Department of Physics.

Retention of the Existing Building

Since the programmatic and long-term needs required both horizontal and vertical expansion, the option of simply removing the original building was quickly evaluated. After careful study, it was determined that the existing structure would essentially provide a “head start” on construction if existing caissons and structure could support the new loads. When geotechnical engineers determined “most” of them could, another study ensued. Eventually, a plan was developed to use micropiles and supplemental beams to support the program; there was still an advantage in keeping the structure.

Closing the Library

The Mudd Library’s staff expertise and study space couldn’t be missing for 16 months. To make the absence bearable, science and engineering expertise were consolidated to the south campus main library and classrooms throughout the science complex were temporarily rearranged as study rooms available to all students. This carefully orchestrated shuffle wasn’t perfect, but all were willing to make these small sacrifices for greater achievement.



Site Planning

The master plan never called for an expansion to Mudd Hall, and actually dictated its eventual removal and replacement by a new science building. However, the landscape architects and planners creatively considered the opportunities and reached the conclusion that an expansion to the existing building could contribute nicely to future planning for an east-west pedestrian boulevard and a densification of the sciences by constructing all buildings to an 85-foot height.

Exterior Design

The predominantly glass north façade of the new building looks upon a newly developed research quad, providing presence for the building and open space views for the library and lobby. The east façade is terraced at the fifth floor looking to Lake Michigan. The west façade is smooth limestone with vertical window openings cut as a gesture to the immediately adjacent 1943 building.



Interior Design

Located between extremely sensitive laboratories, any future remodeling of the library would be difficult. With an eye toward flexibility to meet frequently changing technological needs, a slim, three inch raised access floor was installed to allow power and audio visual access, and transparent, writable, and demountable partitions create offices and group study spaces throughout the facility to accommodate changing space needs.



Campus Identity and Sense of Place

Northwestern University's north campus has seen dramatic development over the last 20 years. Since the early part of the 20th century, the face of science was the front plaza of the Technological Institute. A grand plaza facing Sheridan Road, it presents a sense of arrival to the university that is fitting of its prestige. Growth in on-campus housing and a major new parking structure have largely moved the front door of campus north of this point. The Mudd Hall project boldly marks this shift and addresses it with an alternate entry acknowledging its history but expressing its relevancy.

Information Technology

An unseen hero in the project's success was the library's technological advancement. By implementing a new system of storing volumes in a climate-controlled, secure off-campus facility, the university paved the way for transforming on-campus library facilities to student-focused centers of learning and away from curating collections. The new system allows any book to be available within 24 hours, delivered directly to the requestor. This transformation sparked the idea that not only could the library change its public face, but it could position itself front and center on campus. No longer tucked away, the library welcomes all to the academic quad.



Mixed Uses

While it isn't uncommon to find science and engineering libraries within science buildings, a new synergy is demonstrated by the evolving purpose of the library. Trends in science research and teaching demand more collaboration space and opportunities for small group meetings and discussions. Space for these activities is well recognized, but often meets with hesitation in programming spreadsheets – labs, offices, and classrooms get priority. By placing the library within the science building, collaboration space is readily available and is an assignable, inarguable necessity.

Safety and Security

How can a library with a large footprint that is open 24 hours a day make students feel safe when doing work late into the night? “It’s not the books we need to keep safe, it’s the students,” said a staff member in a meeting. Transparency was a crucial tool in planning for a secure environment. The library is fully enclosed requiring identification for entry access, but even so, the walls are largely glass, allowing a relatively small staff to monitor the space. An after-hours ride service also helps students get home safely, complete with an off-hours only pick-up lane.

Open Space and Pedestrian Circulation

Like many campuses, Northwestern University struggles with separating pedestrian traffic from vehicles. Planning for this project began very soon after a new parking structure was completed. The opportunity to manage the pedestrian movement into campus in a safe, pleasant manner that could contribute to the greater campus was critical. The project severs a north-south vehicular traffic pattern (except to emergency vehicles) and dramatically improved the campus environment.

