

Case Study

WALLENBERG HALL AT STANFORD UNIVERSITY

Wallenberg Hall has succeeded in its goal to be
“a working laboratory where the learning tools
of the future will be forged.”



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Steelcase

“ The Wallenberg Hall classrooms allow us to carry out multiple modes of collaboration in class and allow the students to continue those collaborations at other sites, including their dorm rooms.”

Andrea Lunsford
Professor of English, Director of
Stanford's Program on Writing and Rhetoric

The goal was to provide learning spaces for university classes and state-of-the-art facilities for research in learning and education. The result is found in Stanford University's Wallenberg Hall.

A new world for learning.

Objectives

Wallenberg Hall embodies Stanford's commitment to understanding how people learn and to using that knowledge to improve the educational process for students of all ages. Its renovation was instrumental in helping support the "home base" work environment needs of three research efforts at the University:

- **The Stanford Center for Innovations in Learning (SCIL)**, a research facility dedicated to conducting scholarly research and related activities that advance the sciences, technologies, and practices supporting learning and teaching;
- **Stanford MediaX**, a new interdisciplinary research network that links research about people with the study and design of interactive technology, and
- **The Stanford Humanities Lab**, which offers the opportunity for scholars in the humanities to understand mid- to large-scale collaborative research projects.



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Constructed within one of Stanford's historic sandstone buildings dating back to 1898, Wallenberg Hall features classrooms designed to foster and nurture collaboration with state-of-the-art technology that truly assists the education process for both faculty and students.

Expert help.

Situation

The project began in 1999 under the direction of the Stanford Learning Lab, which was later incorporated into the Stanford Center for Innovations in Learning. The building opened in fall 2002.

The Learning Lab brought in IDEO, a Steelcase partner and a worldwide leader in innovation and design to work on the project along with the architect and interior designer, Skidmore, Owings & Merrill LLP. IDEO began with six weeks of research, using on-campus interviews, photo-surveys, and shadowing to understand the work process of the students and the staff and faculty. This work informed the design documentation IDEO delivered, including visualizations of every aspect from architecture and furnishings to information systems and protocols of use. In addition to IDEO, other Steelcase researchers contributed to the process.

The team delivered a space that was flexible enough to support a wide range of research activities from small private spaces that allow concentration to large-scale presentations.



The space needs to communicate the Center's work to a wide audience, both on campus and off, through technology and secure Internet connections.

Informal collaboration rules!

Solutions

The ground floor is Wallenberg Hall's most visible aspect and serves as its public face. A full-width display wall made of timber slats provides a warm, adaptable welcoming lobby to greet students, faculty, and guests. This area also provides information that showcases the Hall's work using many forms – from posters to plasma displays and beyond. The functional core of the ground floor contains the experimental classrooms and the Peter Wallenberg Learning Theater.

These spaces are inter-connected and provide a flexible, high-performance learning environment that integrates the architecture with the technology and the furnishings.



“It has relatively open spaces. It has spaces that can be reconfigured. It allows for activities that aren't otherwise doable in a room on campus.”

Larry Liefer, Director, Center for Design Research

Solutions *continued*

The fourth floor houses the majority of the staff and is the most flexible, collaborative and experimental section of the Hall.

A space features a series of project rooms called “boxcars”, each with sliding doors on two walls, which allows the rooms to open wide to accommodate teams or close for privacy.

Spaces for informal collaboration have been woven throughout the interiors. Stair landings, lobbies, and overlooks become hubs of exchange, while a café further blurs the boundary between classroom and social space. The slatted interior wall and open plans maximize natural light to create an optimal environment.

Realizing this advanced approach to space planning and technology in an historic structure required yet another level of innovation. Using a whole-building design approach, the architects concealed significant seismic improvements while seamlessly integrating “smart” lighting, data, power, HVAC and acoustic systems. The result is a building infrastructure that allows for complete adaptability to changing needs – hour to hour and year to year.



Project rooms called “boxcars” allow room wall to open to support teams or close for privacy.

According to Robert Emery Smith, Director of Technology Services at SCIL, technology-assisted learning has been evolving at Stanford for more than a decade. The challenge for Smith and his colleagues is to support the use of technology in classrooms and to provide what faculty and students need in technologically advanced rooms. This includes giving students the ability to recall lectures, hear specific conversations through replay technology or call up notes from whiteboards from the convenience of their dorm rooms.

“ (As the space was planned), what was emerging as the dominant technology issue was the physical space itself,” Larry Leifer, Director, Center for Design Research notes, “and how that enabled and was a barrier to desired forms of behavior, desired forms of learning, desired forms of teaching.”

That is where PolyVision™, a Steelcase company that is a leading supplier of products for communicating visually, stepped in. PolyVision provided a multitude of technology systems to meet varying classroom needs. Its Impulse™ LTX Multimedia Whiteboard and Rear Projection Systems are interactive large-scale displays that allow students to work collaboratively on presentations while instantly capturing notes and images for distance learning applications. Rather than selecting one system to work in all environments, the team used a wide breadth of technology offerings.

“In equipping Wallenberg Hall, we found that different tools suited different classrooms and different models of working,” Smith says. “Rather than provide students and faculty with a one-size-fits-all technology solution, we provided them with an ecology of products that met different needs. We chose an appropriate mixture from old school, no-tech whiteboards to PolyVision’s interactive boards to create classroom collaboration environments.”



The Impulse System helps capture the energy of spontaneous collaboration. Saved work can be shared any time, using any PC.



PolyVision Interactive products support collaboration on a global scale with a large-screen digital information display. The system enables immediate feedback from on-site and remote locations.

“I want to use the technology to break down the dichotomy between student and professor. We can break away from the broadcast mode of lecturing and make students the co-constructors of the course material.”

Tim Lenoir, Chair of the Program in History and Philosophy of Science

Solutions *continued*

The rooms contain sophisticated collaborative computing environments, the ability to digitally record activities for later use, large wall displays that can be used as recording whiteboards, as well as for videoconferencing and presentation, and adjacent breakout spaces for group work.

The Impulse LTX Multimedia Whiteboard System, featured in one classroom, is the industry's first multimedia whiteboard system. It is designed to meet the needs of users who desire “walk up and use” simplicity to instantly capture notes and images written on the board, re-display notes saved in the board’s internal archives, and attach a laptop to display and interact with presentations.

Some classrooms also boast PolyVision’s Interactive Rear Projection System. “With the benefit of rear projection, the classrooms are entirely mobile. Students are able to move the systems anywhere they need in the classroom without worrying about projector distance or logistics,” Smith notes.

Ultralight and portable, Huddleboard™ whiteboards are available to be used for small group collaboration or presentations. The ideas generated on Huddleboards can be converted to high-resolution digital images using the CopyCam® Image Capturing System. It instantly captures anything written or drawn on the board to print, or to use electronically by saving either to a disk or web archive.

Lightweight, mobile furnishings from several Steelcase companies provide support for a wide range of traditional as well as emerging modes of teaching. In addition, furniture is configured to enhance interaction and communication among the researchers, while reservable “boxcars” provide private space for meetings and intensive project work.



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Ideas generated on whiteboards can be converted quickly and easily to digital images using the CopyCam Image Capturing System.

How does the space lend itself to the goal of collaboration?

Solutions *continued*

Flexible furnishings and equipment allow quick, easy set-up and change between activities. The fluidity the space provides its users is demonstrated by furnishings such as tables that fold up easily and can be stored, according to need. An extra-added attraction for the students was that the furniture was on wheels for extra mobility. Particularly user-friendly is the Cachet™ chair, a highly flexible, lightweight chair designed for meeting and training areas and mobile workers. The chair has a balanced action rocker mechanism that allows the user to gently recline as the seat flexes. The result is that people can sit for hours at a time and still be productive and comfortable.



Cachet combines simple design with advanced technology, and received the Gold Industrial Design Excellence Award from the Industrial Designers Society of America in 2002.

Another popular spot are hallways and alcoves outside the classrooms that feature Metro® Bix™ products. Bix creates booth-based worksettings that host four to six people in comfort and provides technology with convenient connections to power, voice and data. At Wallenberg Hall students can often be seen sitting in Bix minutes before classes and then working on projects for hours after class. A refined system of seating and tables, Bix combines the essential elements to support conversation and collaborative work.



Migrations® seating features a mobile or stationary base, tablet arm and an open storage space below the seat.



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Booth-based Metro Bix provides a collaborative setting for students before and after class.

A working lab.

Results

The results that testify to the environment's success include:

- teachers request the Hall's classrooms since the technology solutions save them course preparation time and the systems actively engage the students in the class
- the advanced technology solutions reduce equipment set-up and breakdown time
- advanced systems allow Wallenberg Hall research staff to apply for grants on research work that would not be practical without the technology
- flexible, mobile furnishings and environments enable students and faculty to quickly adapt the spaces to their unique needs and make the spaces an extension of their activities

As the University itself notes, the structure and furnishings are grounded in research on learning spaces design, cognitive psychology and a strong sense of the architectural legacy at Stanford. In short, Wallenberg Hall has succeeded in its goal to be “a working laboratory where the learning tools of the future will be forged.”



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