



In August 2008, Duke University opened an innovative, technology-enhanced learning space, the Link, in Perkins Library. The physical layout, technical infrastructure and support model provide a new type of highly flexible, active learning environment, supporting collaborative pedagogies, group work, and connections with remote participants, in close proximity to library resources.

strategy behind the project

- Support goals outlined in Duke's IT strategic plan
 - Greater consistency & coordination to the equipping and scheduling of learning spaces, while increasing the number of specialized classrooms supporting teaching & learning innovation.
 - Focus resources on new applications of technologies and teaching models that fit Duke's culture and goals, positively impact the classroom experience, and generate readily assessable learning outcomes.
- Provide a significant opportunity for evaluation and assessment to inform future academic space planning.

- The project was sponsored by the Provost with senior leadership engagement throughout the implementation.
- The project team included key stakeholders and consultation with the user community.
- Assessment was planned at the beginning of the project, to be completed within the first 9 months with follow up assessments within 3 years of the initial opening of the space.

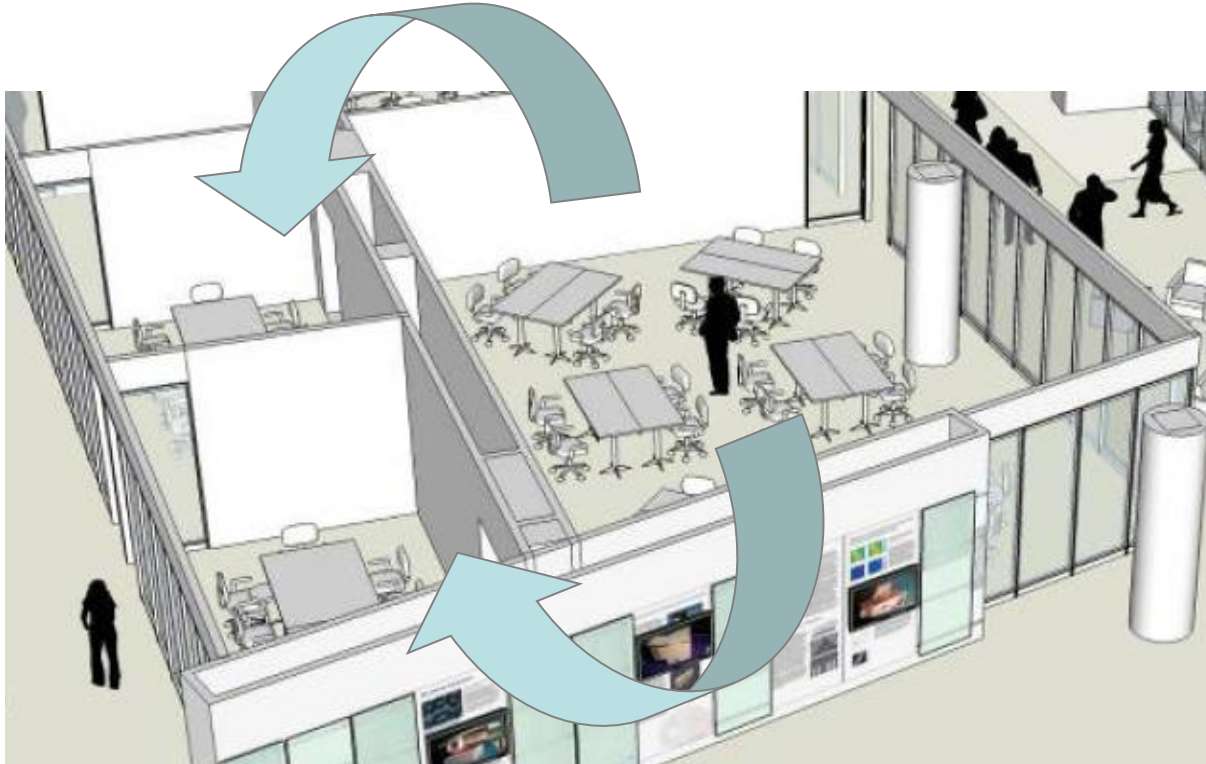
- Project team responsibilities
 - Identify the use cases
 - Confirm the technology, furniture and space needs based on use cases
 - Develop the service model
 - Assign the curriculum
 - Confirm the operational costs
 - Communicate with senior leadership and the Duke Community
 - Plan for the assessment

goals of the project



- Create a flexible, interdisciplinary learning environment
- Promote collaborative, authentic, project-based learning
- Support intensive and interactive technology use
- Support the complete learning process, within and beyond class time

special features of the Link



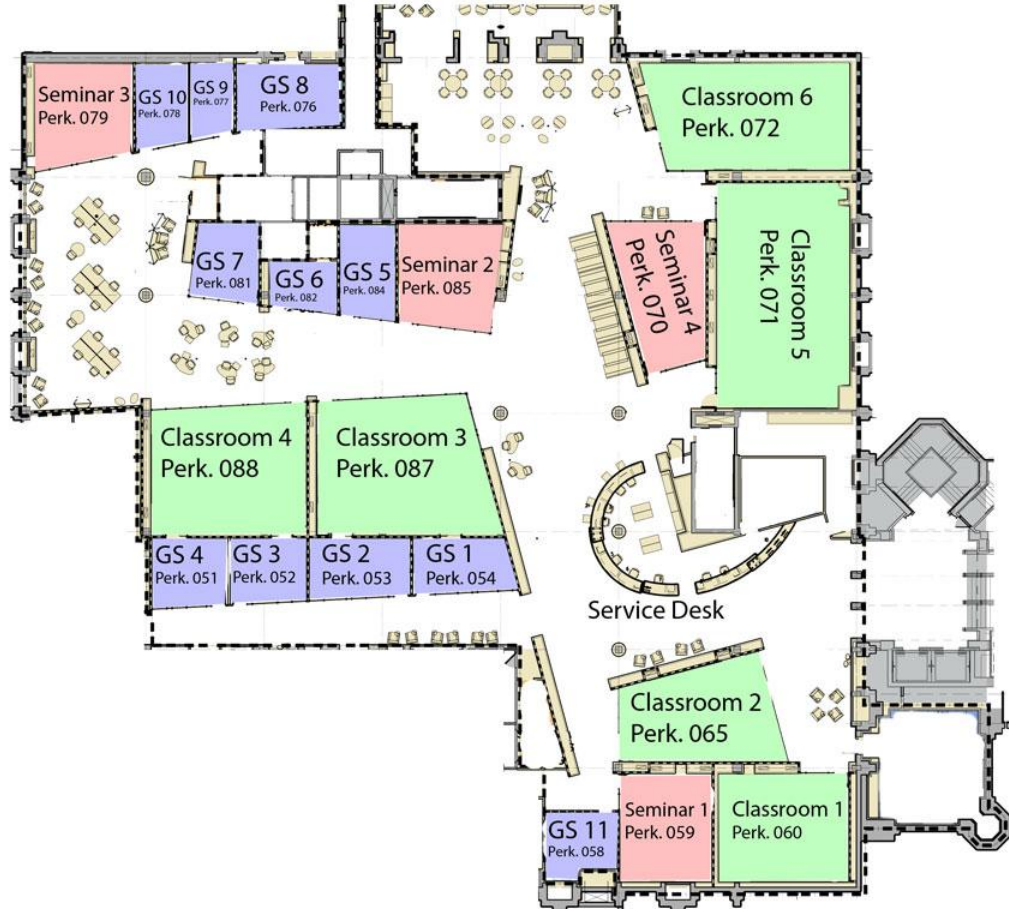
- Integrated group/breakout space
- On-site support and mobile equipment checkout
- Extended hours access for students
- Improved space for study groups, project work after hours
- Proximity to library resources & services

breakdown of space



- six classrooms: four with room for 20-30, one seating 40, one seating 50
- four seminar rooms (15-20 seats)
- eleven group study rooms (6-12 seats)
- informal space for collaboration or individual work
- kiosk-style computing stations
- service desk

breakdown of space



Average Square Foot per Seat
20-25 Seat Classrooms

Link	2008 prototypes	All other A&S and Eng. rooms
36	27	22

design principles



- excellent teaching environments
- flexibility in furniture, infrastructure and technologies
- support for diverse disciplines, learning styles, pedagogies
- experimentation to inform the development of learning environments at Duke

technology in the Link



- 40 tablet PCs and 20 MacBooks for loan
- Mimeo whiteboard capture device
- portable digital whiteboard
- 100 Flip video cameras
- 100 web cameras
- 100 mini-DV tape video kits
- 10 hard drive video kits

continued technology in the Link



- 5 high definition video kits
- 50 microphone headsets
- 200 5th generation iPods
- Over 600 loans of multi-media equipment were processed in the fall of 2008



service desk and faculty support



- OIT service desk relocated to the Link
- 68% increase in walk-in traffic
- room to improve communication, outreach, and marketing



elements of the Link's success



- **architecture and design concept**
- central location
- co-location of formal/informal learning spaces and flexible classroom features
- convenient access to technology, services, and support

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reactions to the project



1. High levels of satisfaction with the design and aesthetic

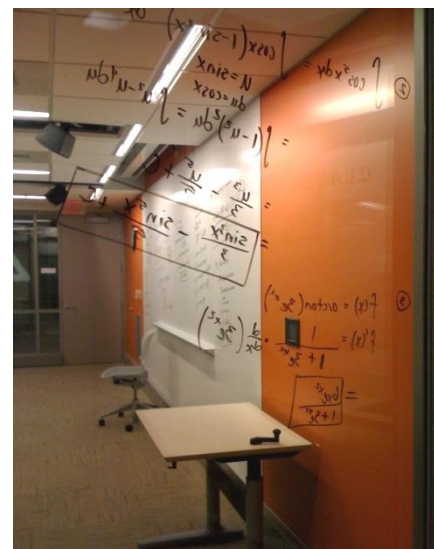


reactions to the project

Link←



2. Praise for whiteboards and glass walls as being conducive to collaboration and learning



reactions to the project



Rank	Students	Instructors
1	ambiance	ambiance
2	technology	help desk
3	furniture	whiteboard walls
4	study space	technology
5	group study rooms	location
6	whiteboard walls	spaciousness

current challenges / future needs



- academic use top priority while also accommodating non-academic events
- provide technology infrastructure for high-end users and baseline users
- engage more faculty and experimental courses
- develop a seamless, scalable support structure
- improve communication and outreach about Link

continued

current challenges / future needs

Link 



- identify ways to prioritize group use of group study space
- ensure that lessons learned are captured and shared broadly with the community

- Fall Semester 2009 report
 - Technology adjustments improved support for video capture and videoconferencing
 - Space utilization increased
 - Courses increased to 76 with no significant increase in support
 - Group study space utilization quadrupled
 - Faculty interest in integrating technology in the classroom
 - Regional and national interest draws attention

- May 2010 report
 - Videoconferencing needs expanded to two additional rooms
 - More use of videoconferencing to support pedagogy
 - More ad-hoc requests for videoconferences
 - Space utilization
 - Courses increased to 105 with no significant increase in support
 - Lead time requirements expanded for group study reservations reduced administrative overhead without reducing usage
 - Circulation of camera equipment increased dramatically
 - More courses integrating multimedia, especially HD video

- New broader assessment is scheduled for May 2011
- Potential change in organizational support model are being considered
- Experimentation with new technologies on the horizon