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Future of the Library? Turning Conflicting Pressures into Compelling Opportunities

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A photograph of a university campus. On the left, a historic building with a prominent clock tower and a steeple is visible. To the right, a tall, modern brick tower with vertical lines stands out against the blue sky. The foreground is a green lawn with some trees and bushes. The image is partially obscured by a dark grey semi-transparent overlay at the bottom.

Future of the Library? Turning Conflicting Pressures into Compelling Opportunities

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SCUP-46, July 2011, National Harbor, MD

DEGW



UMass Libraries Challenges

- Tallest library building in the country: 26 Stories!
- Stacks full to capacity
- Aging building systems, code challenges
- A successful Learning Commons—but with long lines
- Unmet user needs and demands of increasing mobility
- Pressures to transform the library to meet 21st Century needs
- And... Campus pressures for more space for other functions

Session Learning Outcomes

- 1 Recognize functions compatible with future libraries and their mission.
- 2 Identify forces for change on research libraries and space implications for new facilities
- 3 Compare short and long term stewardship demands on campus planning
- 4 Recognize variation in attitudes about change in libraries, from staff to faculty



The Library Perspective

My Favorite Quote

In “A Letter to His Kids,” *Wired*'s Founding Editor Recalls the Dawn of the Digital Revolution:



In the very first issue (March 1993) I wrote, **"The Digital Revolution is whipping through our lives like a Bengali typhoon."** Got a lot of grief for that typhoon reference — as if it were a pretentious exaggeration instead of the understatement it turned out to be. Should have said **the Digital Revolution was ripping through our lives like the meteor that extinguished the dinosaurs. Practically every institution that our society is based on, from the local to the supranational, is being rendered obsolete.**

This is the world you are inheriting.

Louis Rossetto

"What we got right – and wrong." **Wired.** June 2008

Attributed to
Charles Darwin:



“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is **the most adaptable to change.**”

The Information Age and the Printing Press: Looking Backward to See Ahead

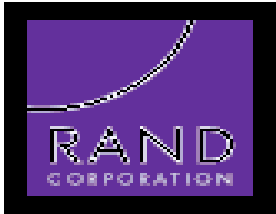


James A. Dewar

Rand Report P-8014. 1998

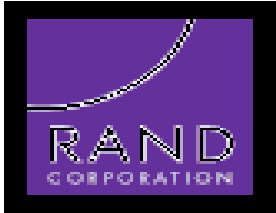
<http://rand.org/pubs/papers/P8014/index2.html>

Looking backward to see ahead...



- Information Age is defined by networked computers
- Internet dates back to 1962 when concept of packet switching and ARPANET (Advanced Research Projects Agency Network) was developed to maintain connectivity of the military command and control network in case of nuclear attack.
- World Wide Web – 1990
- Google released – 2000

Looking backward to see ahead...



Communication before the printing press:

One to One

Communication with the printing press:

One to Many

Communication in the Information Age:

Many to Many

Looking backward to see ahead...



The parallels between the printing press era and today are sufficiently compelling to suggest:

Changes in the information age will be as dramatic as those in the Middle Ages in Europe.

The future of the information age will be dominated by unintended consequences.

It will be decades before we see the full effects of the information age.

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Social Media Sparked, Accelerated Egypt's Revolutionary Fire

By Sam Gustin  February 11, 2011 | 2:56 pm | Categories: People, Politics, Social Media



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Name Charlie Sheen
Web <http://www.charli...>
Bio Born Small... Now Huge...
Winning... Bring it!
(unemployed winner...)

36 following **3,300,053** followers **21,475** listed

Tweets 143

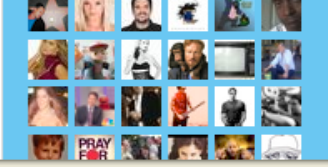
Favorites

Lists

@charliesheen/the-cabinet-2

View all

Following



Mortals; charity raffle tickets NOW!
backstage, onstage, party, flights,
rooms, swag... ME. What else do you
want? Go! <http://bit.ly/ftthrY>

about 12 hours ago via Twittelator

"... about a 1/2 mile out I put on the music. I play Wagner; scares
the hell outta the Trolls, my boys love it... (cont) <http://deck.ly/~CLKMm>

7:22 AM Mar 28th via TweetDeck

ReyDavidRamos We as the faithful followers of the true
WARLOCK WARRIOR shall forever be indebted to the great
philosopher that is @charliesheen

Today's undergraduates...

- Thrive in a digital, graphical, gaming, noisy, and multitasking world
- Always-on, interactive life that blends the social and academic with food
- Multiple and integrated communication modes (cell phones, pdas, IM, RSS, blogs, podcasts, etc.)
- Learn experientially (by trial and error and through collaboration with their friends, normally in groups)
- High-achievers
- Expect choices, customization, self-service, and instant gratification

Mantra: Get us what we want, only what we want, in the format we want it and do it now

Today's students require libraries to take risks to...

- Provide near 24/7 access to resources, services, and facilities (remote and in building)
- Create spaces that can be flexibly transformed by students to meet their needs
- Study new technologies our students are using to see if they have potential for enhancing our services (Facebook, Twitter)
- Study emerging technologies; look at what other libraries are doing with technology

Our users require we take risks to...

- Revolutionize our services and systems
- Consolidate service points (make most efficient use of our prized staff and minimize run around, come back later, and referrals that students find frustrating)
- Add convenience for users
- Simplify services
- Self-service and on demand options

What Will Characterize the 21st C Library?

Building on the strengths and traditions of librarianship, academic libraries will:

- Work with our communities to collect, organize, analyze, and preserve information and data resources
- Create spaces that can be flexibly transformed to meet the changing needs of students and faculty

Collaboration with Partners

WITH CAMPUS COMMUNITIES:

- Re-utilize library space that formerly held print collections
- Bring together compatible service providers
- Integrate library services and collections into teaching and research mission in a new way
- Maintain visibility of library services and collections

WITH OTHER LIBRARIES:

- Utilize both fiscal and human resources to maximize efficiencies
- Maintain high level of services with reduced resources
- Reassign existing personnel to “21st Century Library” needs

Five Colleges Libraries Collaboration

Five Colleges Consortium

- Amherst College - 1,600 students
- Hampshire College - 1,400 students
- Mount Holyoke College - 2,200 students
- Smith College - 2,600 students
- UMass Amherst - 27,016 students

Existing collaborations

- Shared online catalog
- Easy borrowing of books with 1 day courier service
- Shared East Asian librarian (cataloger and liaison)
- Shared off-site shelving facility (remote storage)
- Cooperative collection development
- Collaborative technical services

Shared Offsite Print Depositories



- High density storage facility for lesser-used items
- Retain only one copy
- JStor archive
- Other archives ACS, IEE/IEEE, ProjectMuse
- Affiliate members

The Library's Goals for the Project

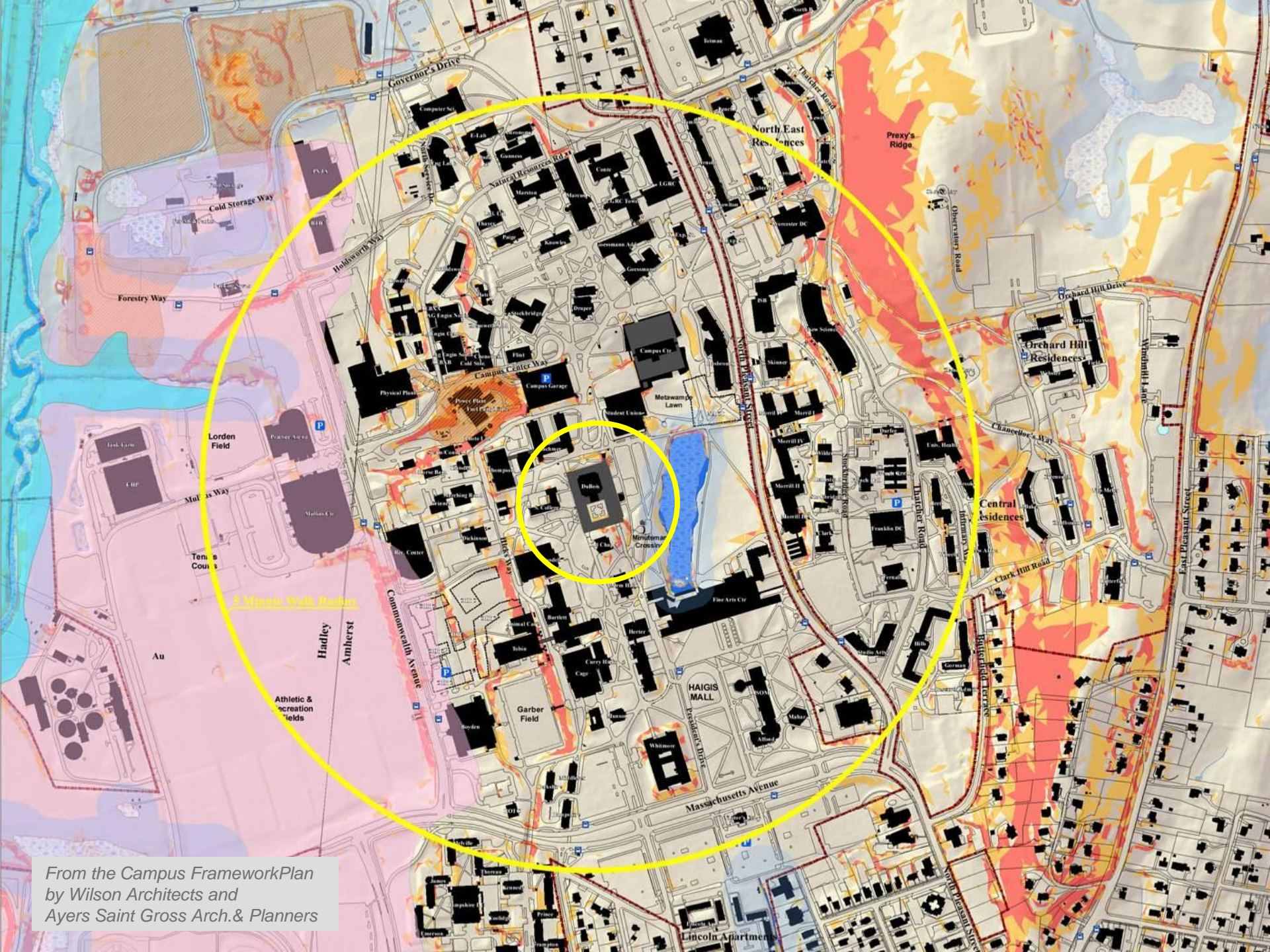
- Convert underutilized space into new functions
- Revitalize the Library facilities
- Enhance the library as a learning center
- Support graduate students more effectively
- Support advanced research and e-science with new services
- Explore partnerships for integrated services
- Enhance staff services, efficiency & effectiveness



The Campus Planning Perspective

Campus Context

- UMass Amherst Strategic Plan for 2020
- Emphasis on research
- Growth projections
- Pressure for more classroom space and modernization for more active ways of learning
- More effective use of existing space



A Strategic Walk Route

From the Campus Framework Plan by Wilson Architects and Ayers Saint Gross Arch. & Planners

UMass Amherst Summary Facts

Students

	2010	2020
Students	Total	Total
Undergraduate & Stockbridge	20,126	22,500
Graduate	4,214	5,214
Total Students (excl. CPE)	24,340	27,714

**24,340
Students
On Campus -**

27,714 by 2020

Staff

	2010	2020
Tenure-Stream Faculty	1,554	1,776
Executive, Administrative, Managerial & Professional	1,777	2,031
Classified	2,088	2,386
Total Employees	7,969	8,823

**10.8 million
GSF in over 400
buildings and
6.6M NASF on
1,400 acres –**

Space

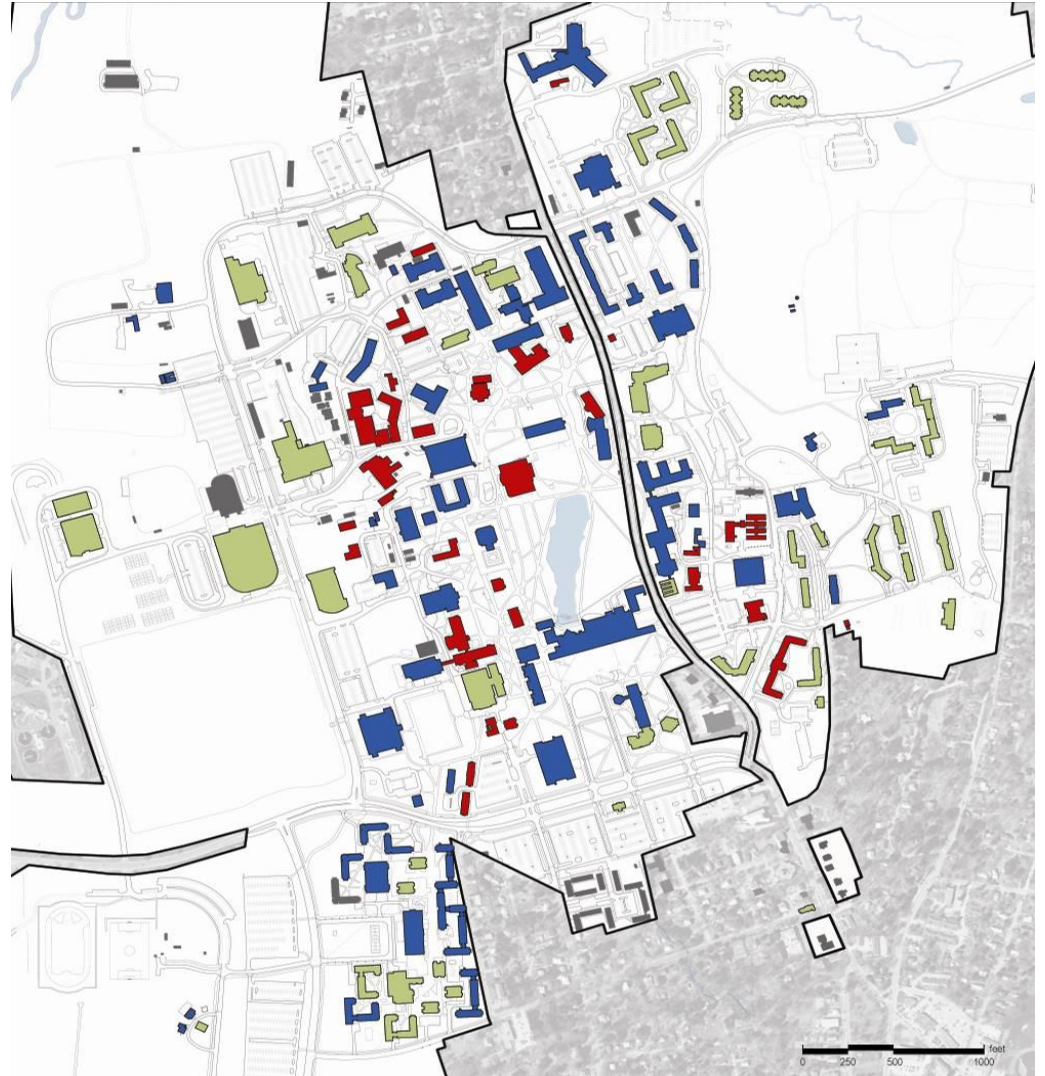
	2010	2020
Academic	3,727,700	4,576,300
Residential	3,443,000	3,943,000
Student Life	686,900	701,700
Recreation	644,700	704,700
Administrative	1,924,100	2,014,800
Parking	390,500	595,500
Total	10,816,900	12,536,000

**Increase of
space by 1.7M
GSF by 2020**

Building Conditions

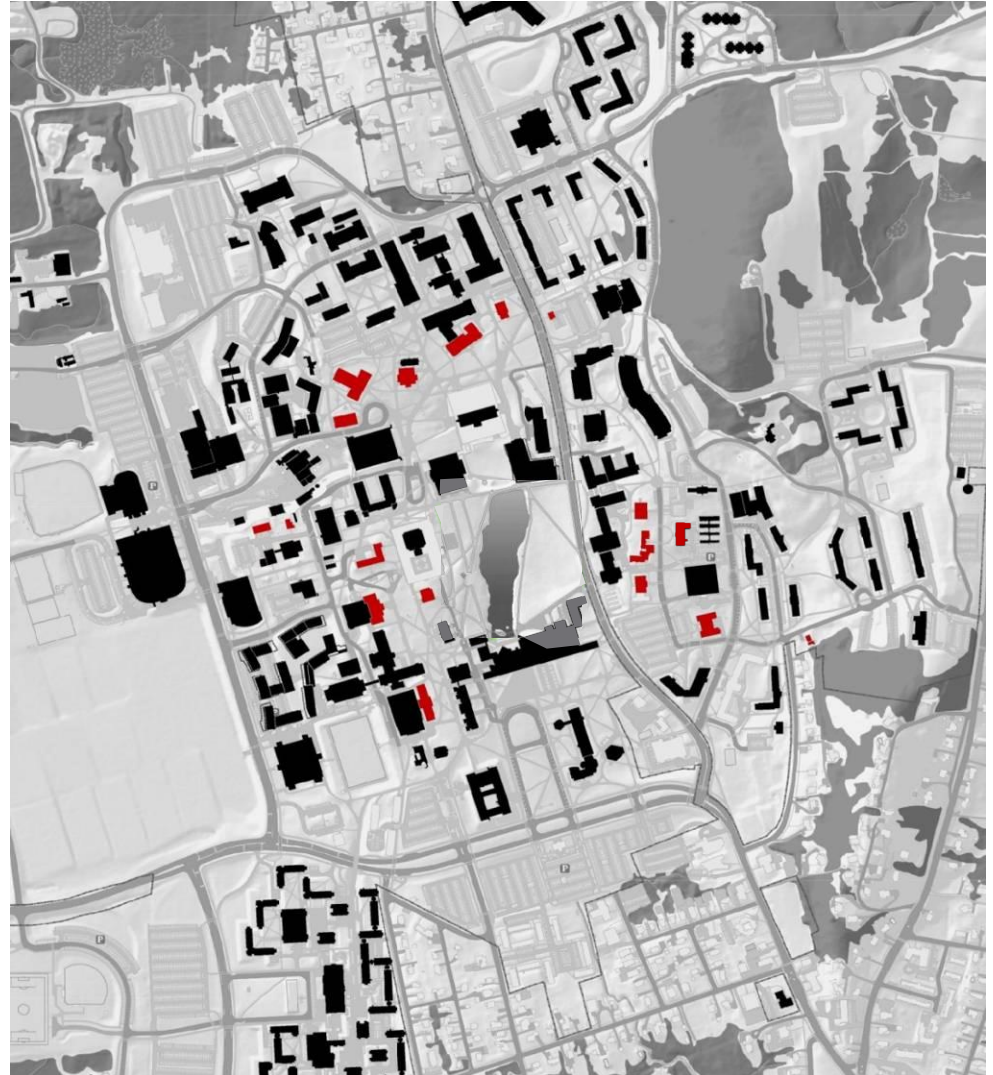
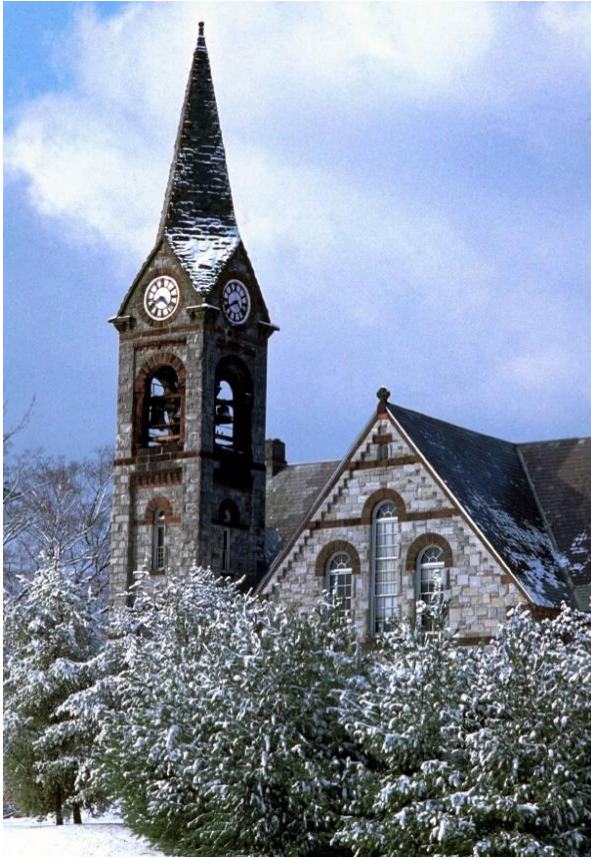


- Good
- Fair
- Poor
- Not Rated



From the Campus Framework Plan - Wilson Architects and Ayers Saint Gross Arch.& Planners

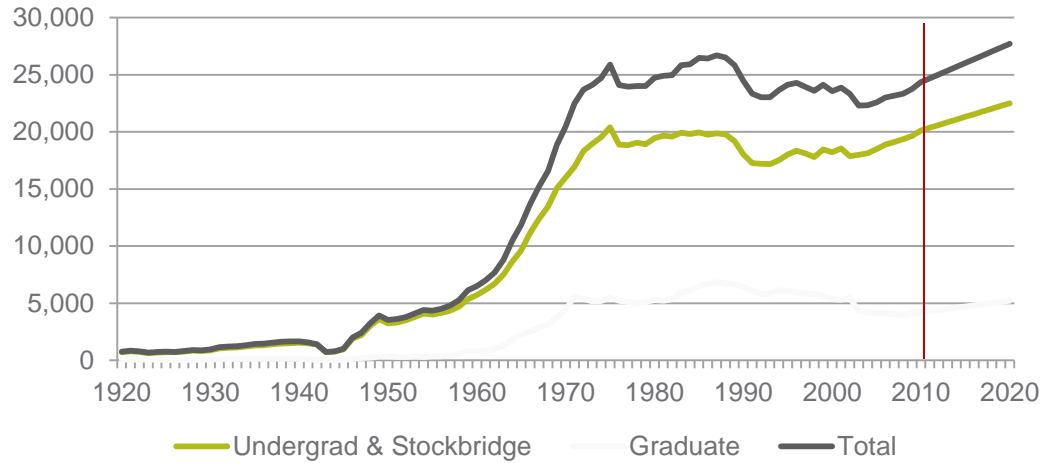
Buildings of Historic Interest



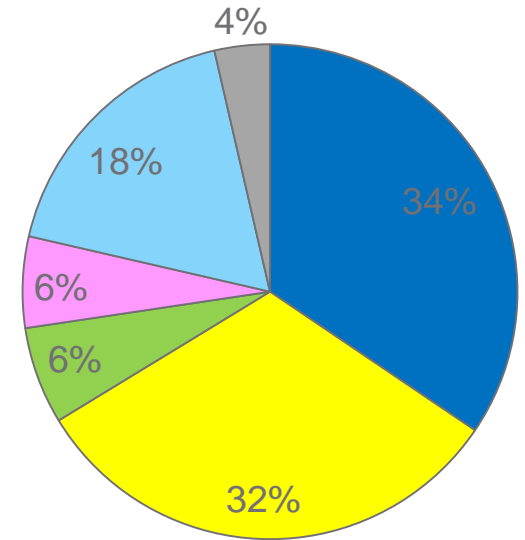
From the Campus Framework Plan - Wilson Architects and Ayers Saint Gross Arch. & Planners

The Campus | 1920 - 2020

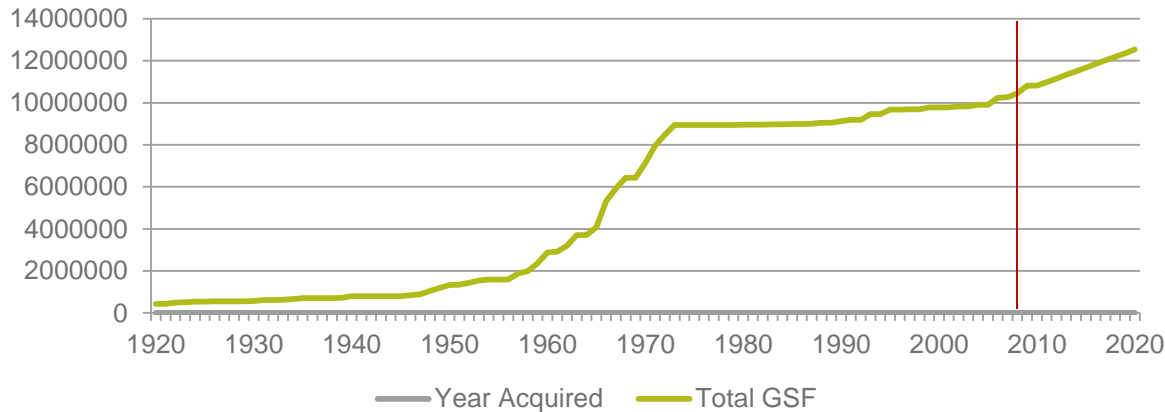
Student Enrollment 1920 - 2020



2010 Campus 10.8 Million GSF

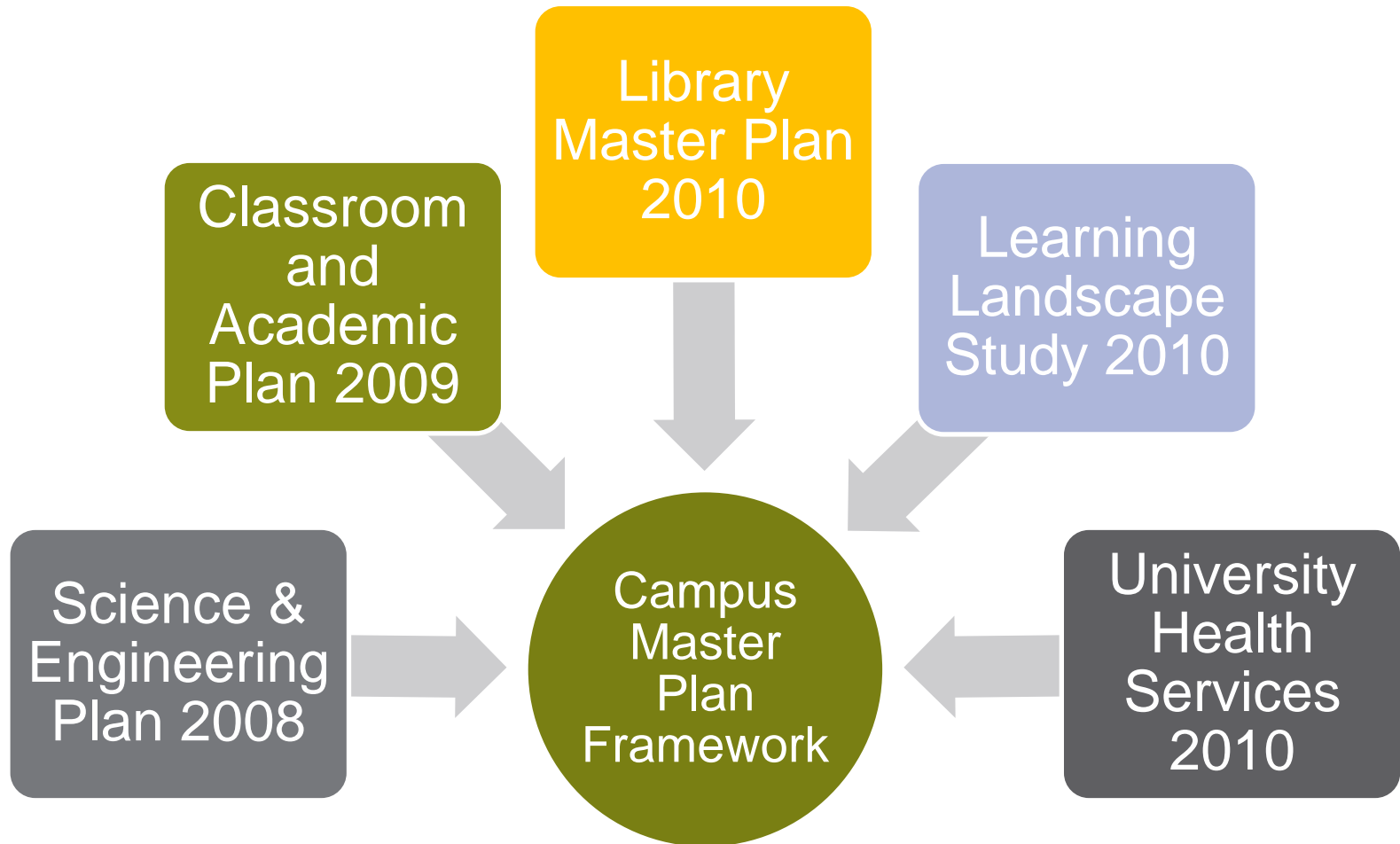


Total Campus GSF



- Academic
- Residential
- Student Life
- Recreation
- Administrative
- Parking

Detailed Discipline-Based Plans



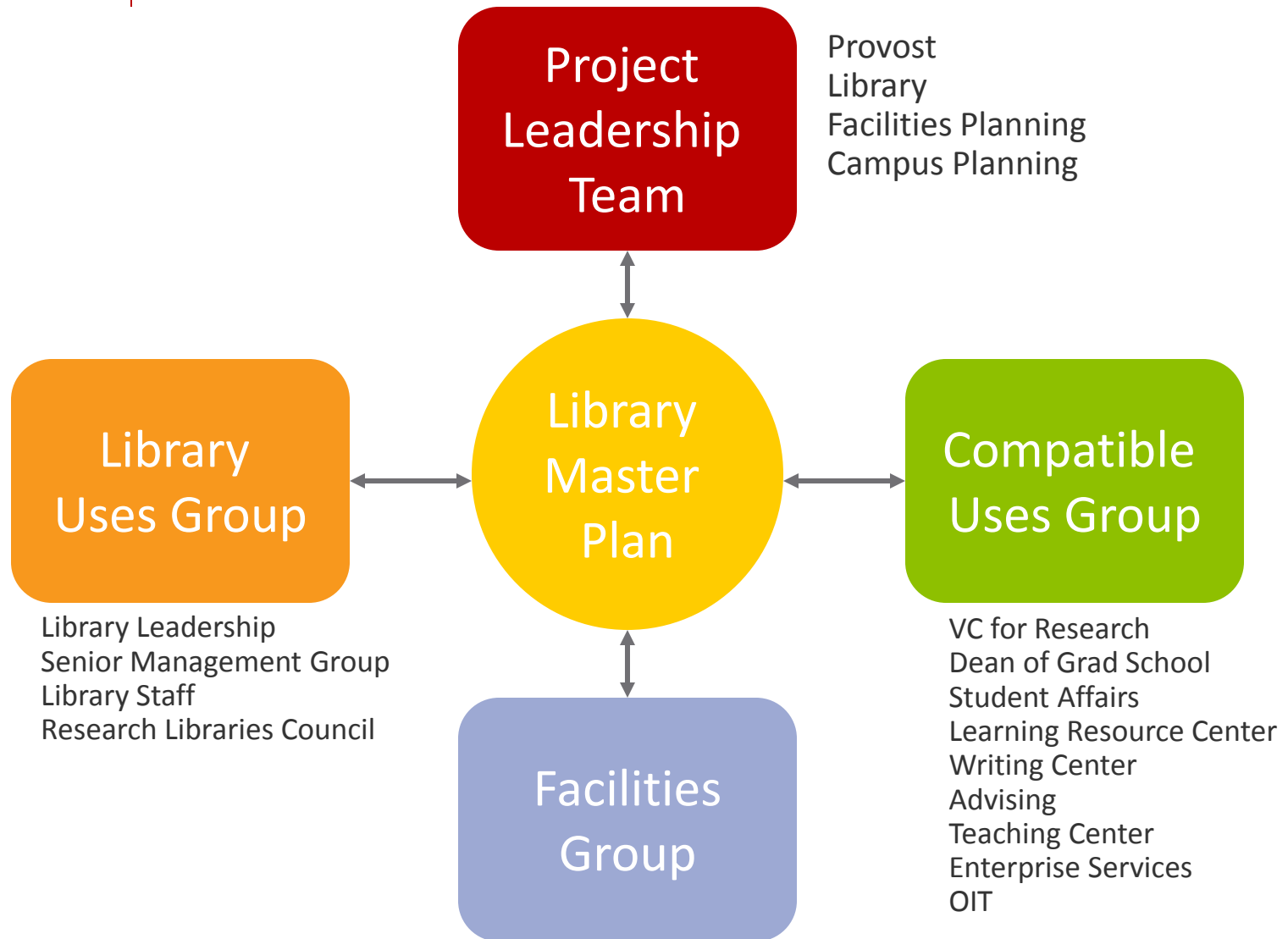
Campus Space Needs

- More classrooms
- Renovate lecture halls and accommodate those classes elsewhere during construction
- Introduce team based learning spaces
- Find additional space for administrative offices
- Relocate various functions to enable renovation phasing

Institutional Goals for the Project

- Analyze existing space utilization
- Understand the future print collections needs
- Identify compatible uses and their space needs
- Add classroom capacity
- Identify space that can be repurposed into administrative office space
- Phasing and cost implications

Process Organization



“Supply” Side: The Building Challenges



The Existing Libraries



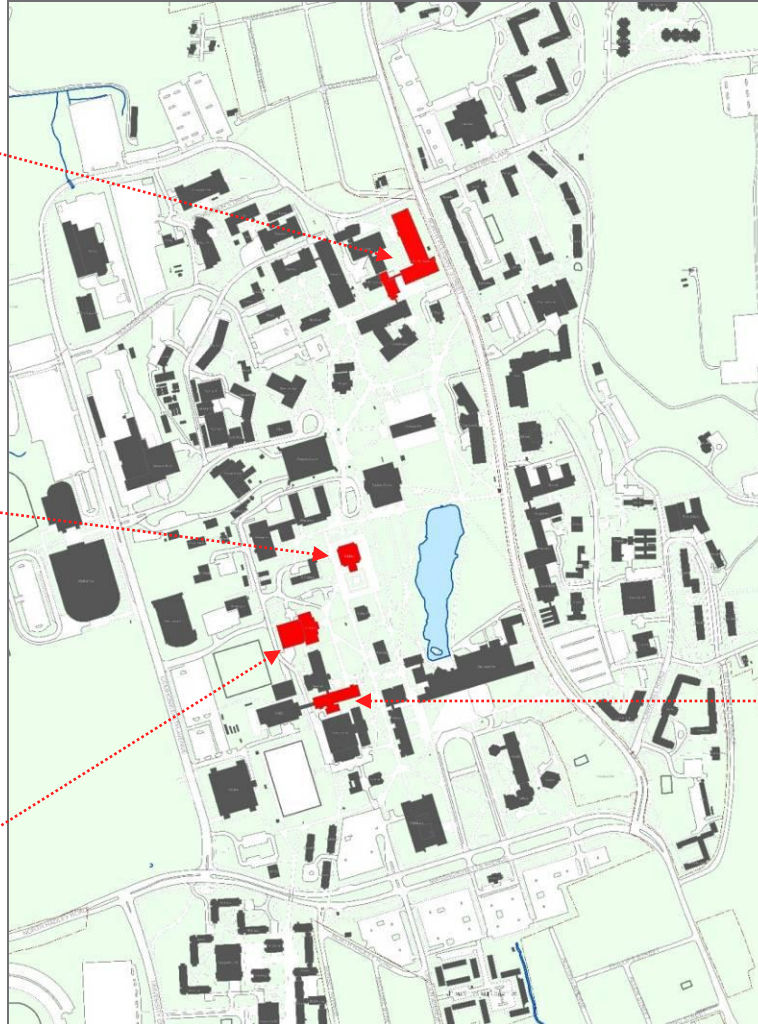
Integrated Science & Engineering Library in Lederle – 32,100 sf



Du Bois Library – 436,000 gsf



Goodell Building Storage – 7,300 sf



Five Colleges Library Depository – 250,000 volumes, *off-campus*



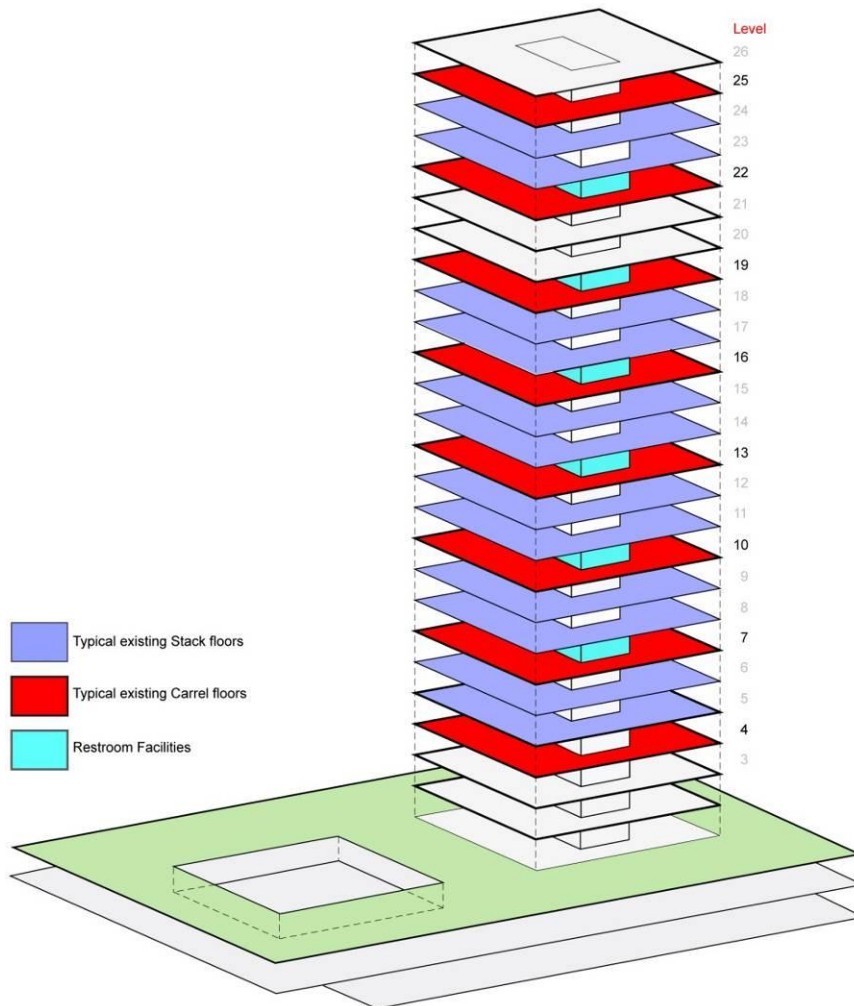
Bartlett Hall Image Collection - 1,600 sf

Du Bois Library Tower



- 26 story Research Library built in 1973 by Edward Durell Stone
- HVAC upgrades are essential and complex
- Exterior wall lacks insulation and requires replacement
- Sprinklers needed throughout
- User accommodations need renovation and power, triggering building-wide systems renovations
- Constrained entry zone
- Loading dock is deficient

Existing Du Bois Structure



Typical floor: 11,000 gsf/ 8,900 nsf

- Floors with enclosed study carrels alternate between stack levels
- Stacks are in pairs of self-supporting book stack levels with low ceilings
- User navigation is difficult with alternating locations of stack floors
- Existing toilets are only provided on study carrel floors

Conclusion: Existing carrel floors are the most suitable for enclosed spaces that require mechanical air distribution systems because of the 9' – 0" high floor to ceiling height.

Existing Du Bois Constraints

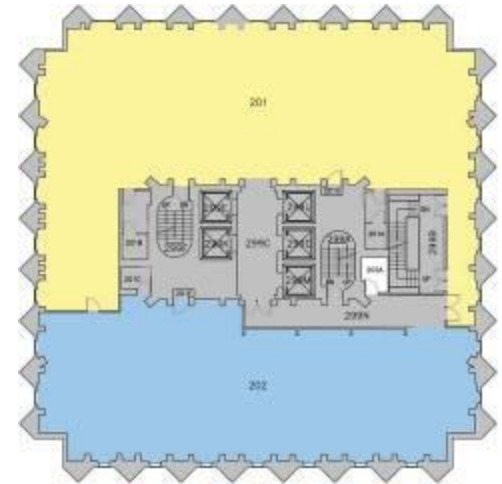


- Stacks are full beyond working capacity
- Enclosed single carrel rooms are in poor condition and seldom occupied
- User seating in the tower is old and needs renovation
- Vertical distribution of functions is heavily reliant on elevator service, which needs upgrading

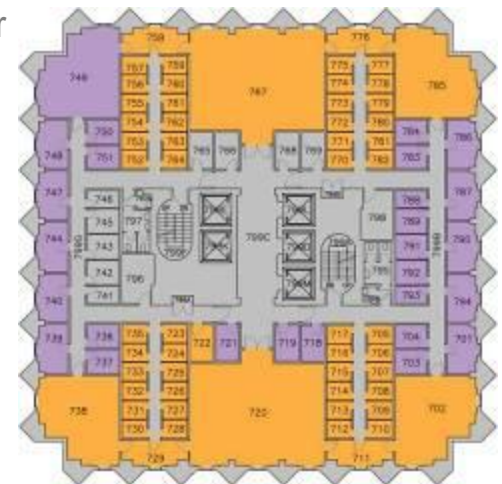
Du Bois Space Allocation Issues

- Tower floor layouts, although column free, limit desirable adjacencies
- Current restroom locations restrict occupancy capacity on floors and do not meet code
- Narrow windows reduce natural light to interior workspace

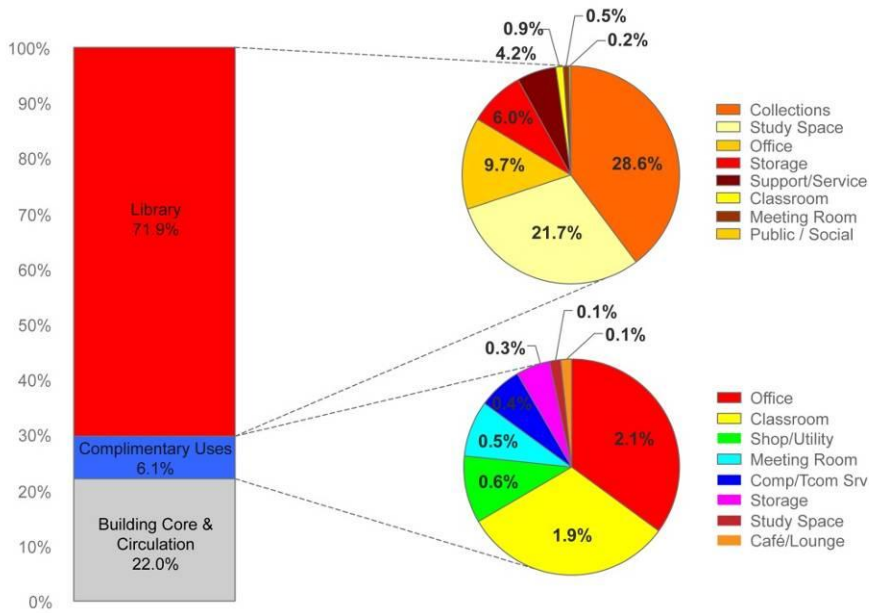
Typ. Stack Floor



Typ. Carrel Floor



Space Utilization Analysis



- “Right sizing” programming exercise demonstrated the space is used quite efficiently
- More space could be freed up by relocation of low usage print materials into storage, but conversion of self-supporting stack zones is problematic
- Any major renovation for any portion of the tower will require that the entire building be brought up to code
- Phased enabling projects will be needed before any space can be converted

Existing Science & Engineering Library

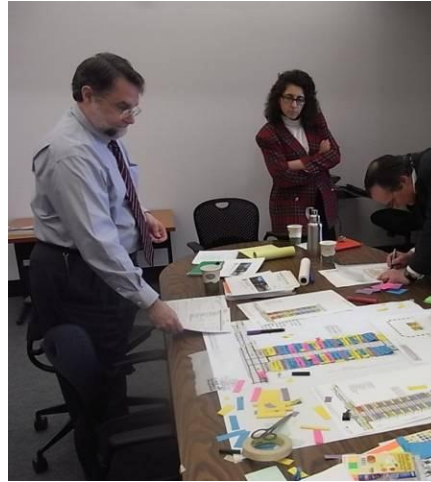


- ISEL location is convenient for its users, on pathway connecting adjacent buildings in the Lederle science complex
- Its “bridge” configuration offers flexibility of layout with potential of daylight exposure on both sides with through views
- Currently 3 floors of stacks, but diminishing demand for print materials onsite

“Demand” Side: The Visioning Process



Visioning Process



- A series of workshops involving representatives of potential compatible uses along with administrators, library staff, students & faculty
- Alternative future scenarios for the library
- Charrette sessions to test alternatives

Drivers for Library Planning

“We live in perpetual beta...”

- **New types of digital scholarship** are developing in the humanities and social sciences
- **Data driven research and e-science** is on the rise, generating need for curation of institutional research data
- **User want new types of services** and support, greater mobility and collaboration using information resources
- **Librarians’ roles are changing** with the shift to electronic resources, balanced with continued responsibility for print collections

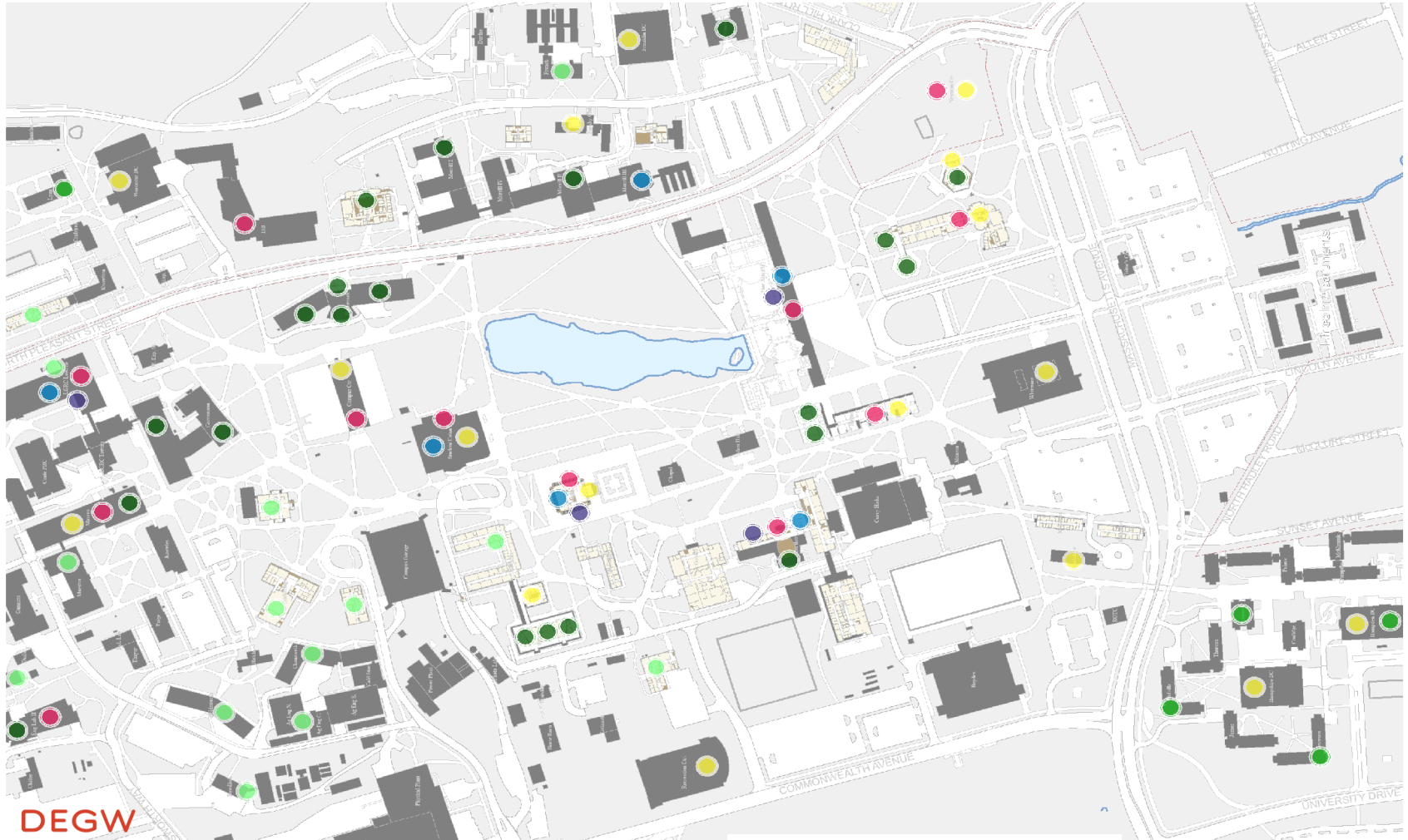
Library Space Needs

- **Develop new types of services**, and offer facilities with specialized support
- **Accommodate future growth** in the general collections, although diminishing, either on or off-site
- **Rationalize the distribution of functions** to anticipate future shifting of roles shift from managing print to electronic resources
- **Enhance Special Collections** and University Archives, enlarge and showcase the collections
- **Integrate the image collections** and provide facilities to create with media resources

User Space Needs

- **Renovate and expand user seating areas**
- **Better facilities and services for graduate students**
- **Center for consultation** on digital scholarship, research support, scholarly communications and data curation services
- **Add more seating in the Learning Commons**
- **Provide more space for library instruction**

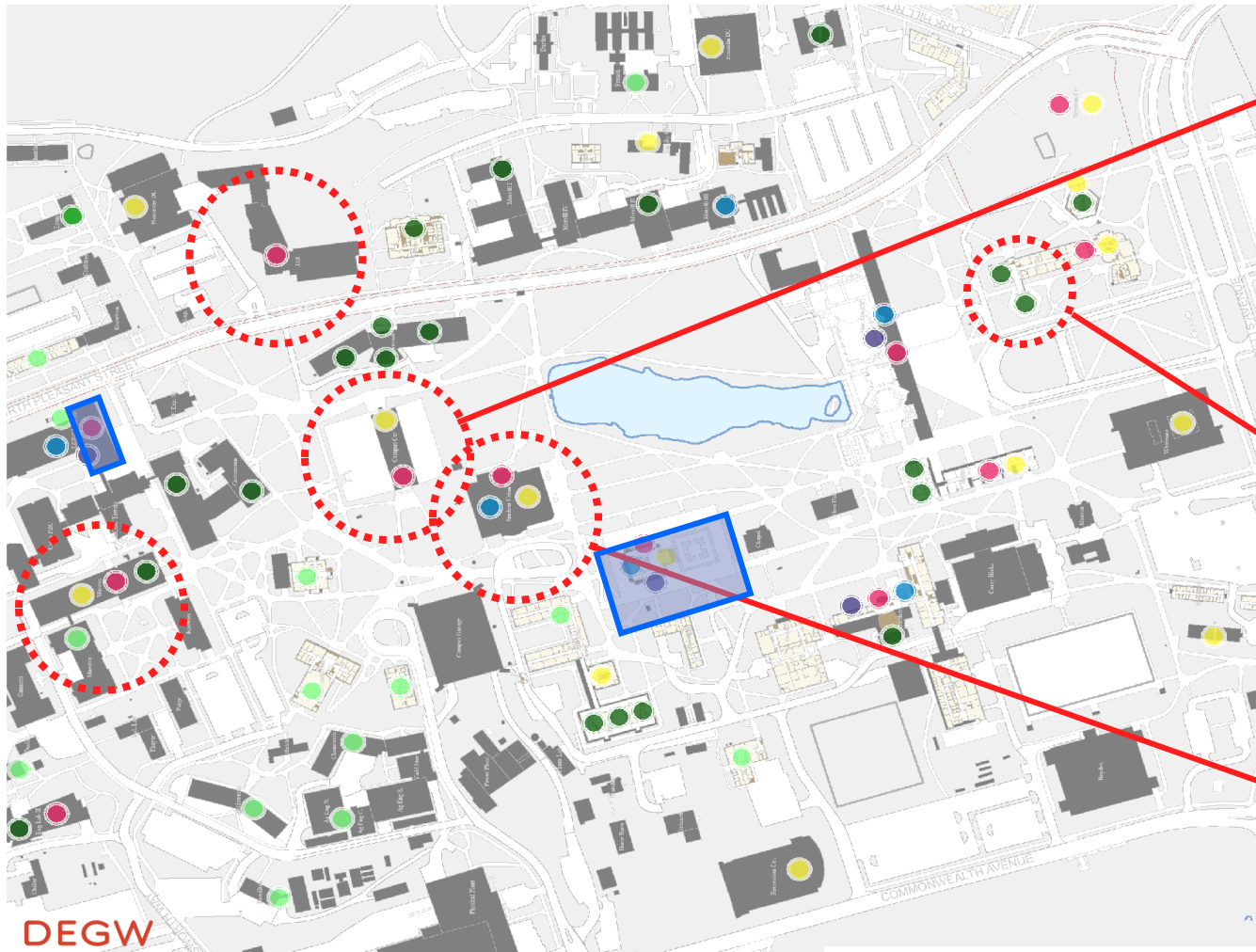
The Learning Landscape Context



DEGW

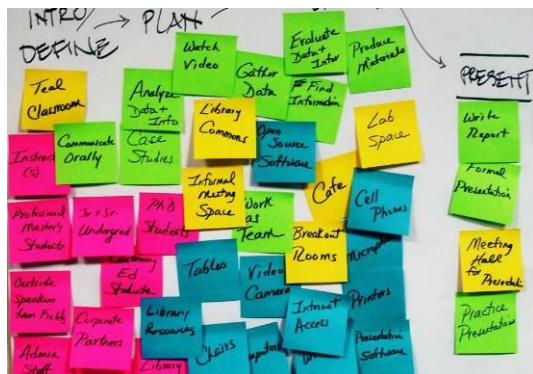
- FOOD
- COLLABORATIVE WORK & INFORMAL LEARNING
- LIBRARY
- COMPUTING SPACES
- GENERAL USE/RESIDENTIAL TEACHING SPACE
- AUDITORIUM TEACHING SPACE

The Learning Landscape Context



- FOOD
- COLLABORATIVE WORK & INFORMAL LEARNING
- LIBRARY
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- AUDITORIUM TEACHING SPACE

Findings about Learning Space Needs



- Imagining future learning experiences
- Changes to Gen Ed curriculum, 4th credit hour virtual
- Desire to transition to team based learning with new kinds of teaching spaces
- Lack of distributed collaborative work areas around campus to work productively in-between classes



Breakout Auditoriums

Learning Studios

University Space Needs

- **Immediate need for new classrooms** as swing space to enable renovation of large lecture halls
- **More variety in teaching spaces** to accommodate diverse teaching styles
- **Additional administrative office space**, especially for new Dean's offices and the Office of Research and Engagement
- **Maximize use of existing space on campus**

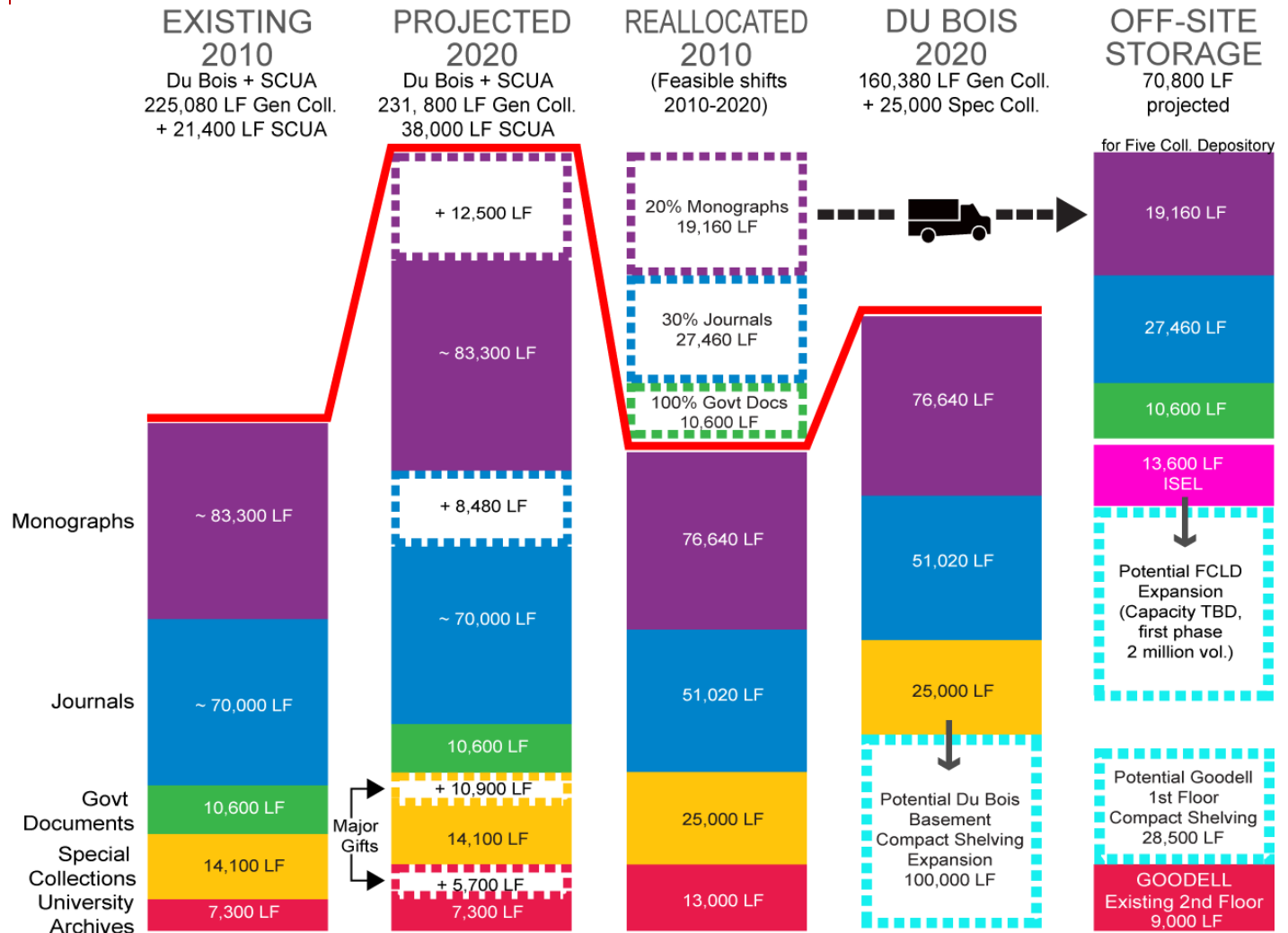
Prioritizing Competing Demands

- 1 Alignment with the Library's mission and compatibility of functions**
- 2 Support for learning and teaching excellence**
- 3 Potential to enhance services for learners, to support them more effectively in out-of-classroom study, research and project activities**
- 4 Services that will benefit from being located in the only facility on campus open 24/7**
- 5 Groups that will enhance existing services by offering even more integrated and convenient services to users (e.g. Center for Teaching in the Teaching Commons)**



Opportunities for Partnering:
Strategy Development

Collections Strategy



Concepts for New Facilities



Research Commons



Science Commons



Graduate Hub



Teaching Commons



Learning Labs



Media Hub



Colloquium Center



Café

A Research Commons

- Centralized research support services
- Data curation, statistical analysis and related consultation/ support services for social sciences and humanities
- Research grant administrative support (grant writing, proposal review, budget approval)
- Promote collaboration among researchers, on campus or off

CAMPUS PARTNERS:

Research & Liaison / Scholarly Communications Librarians

Vice Chancellor for Research & Engagement

Office of Grant & Contract Administration

Office of Commercial Ventures & Intellectual Property (Technology Transfer, Patents, Trademarks, etc.)

Academic departments (statistics)

University Press

A Digital (Institutional) Repository

- Capture and preserve the intellectual output of the university community
- Provide a mechanism to “showcase” campus research
- Provide an immediate and valuable complement to the existing scholarly publishing model
- Build on a growing grassroots faculty practice of self-posting research online
- Offer a strategic response to systemic problems in the existing scholarly journal system

CAMPUS PARTNERS:

Research & Liaison / Scholarly Communications Librarians

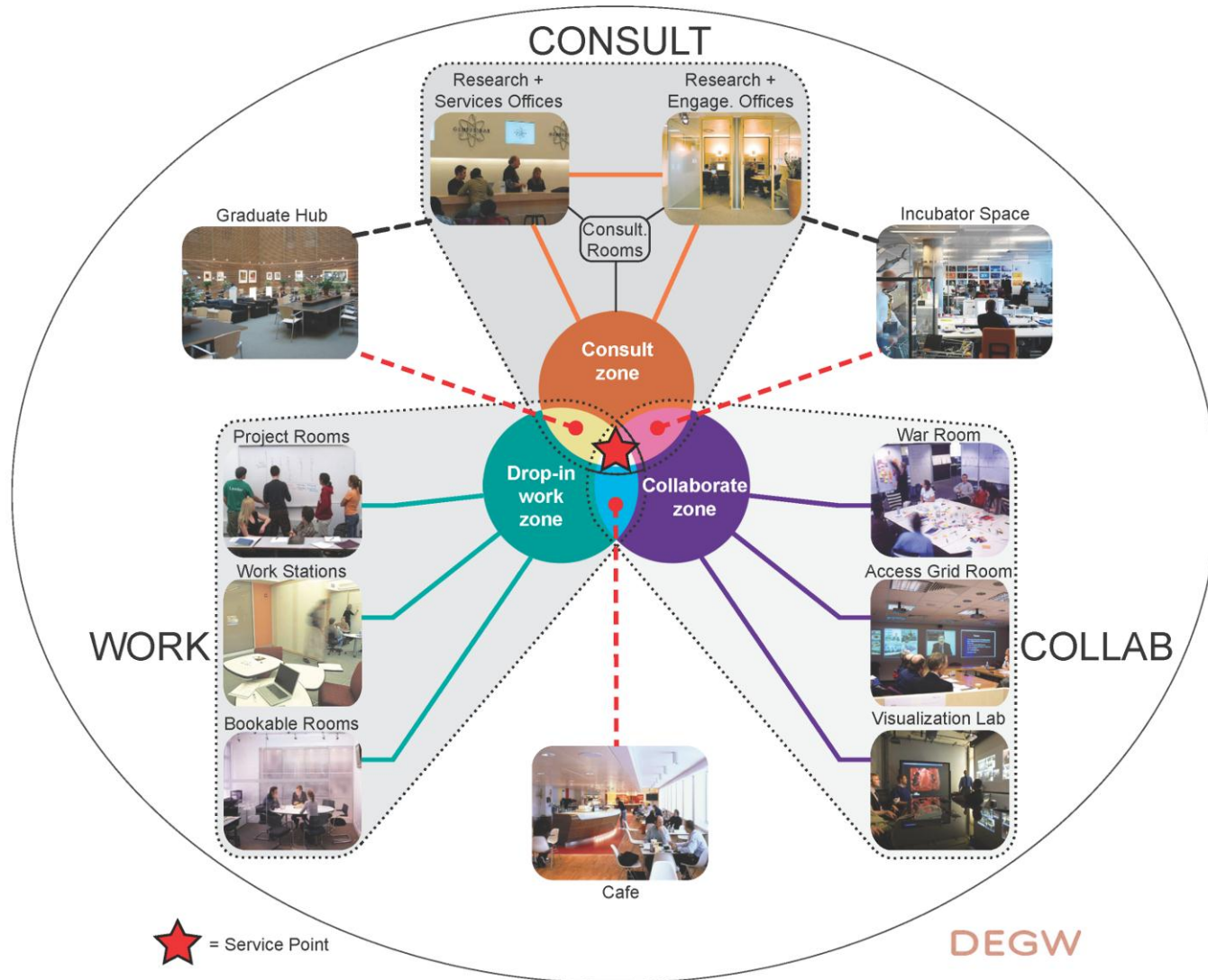
Vice Chancellor for Research and Engagement

Provost, Academic Deans, and Faculty

Graduate School

University Press

Research Commons Concept



Du Bois Research Commons



A consultation center supporting the full range of the research process, from early grant submission to data curation of the findings, with collaborative settings to promote interdisciplinary work

PROGRAM COMPONENTS

- Scholarly Communications /Research & Liaison Services Librarians
- Collaborative work areas
- Bookable meeting rooms with videoconferencing
- Data services/GIS Lab for statistical related consultation services
- Visualization Lab for Digital Humanities & Social Sciences
- Incubator space for special grant-funded projects or research

Du Bois Research Commons



Incubator suites



Graduate work areas



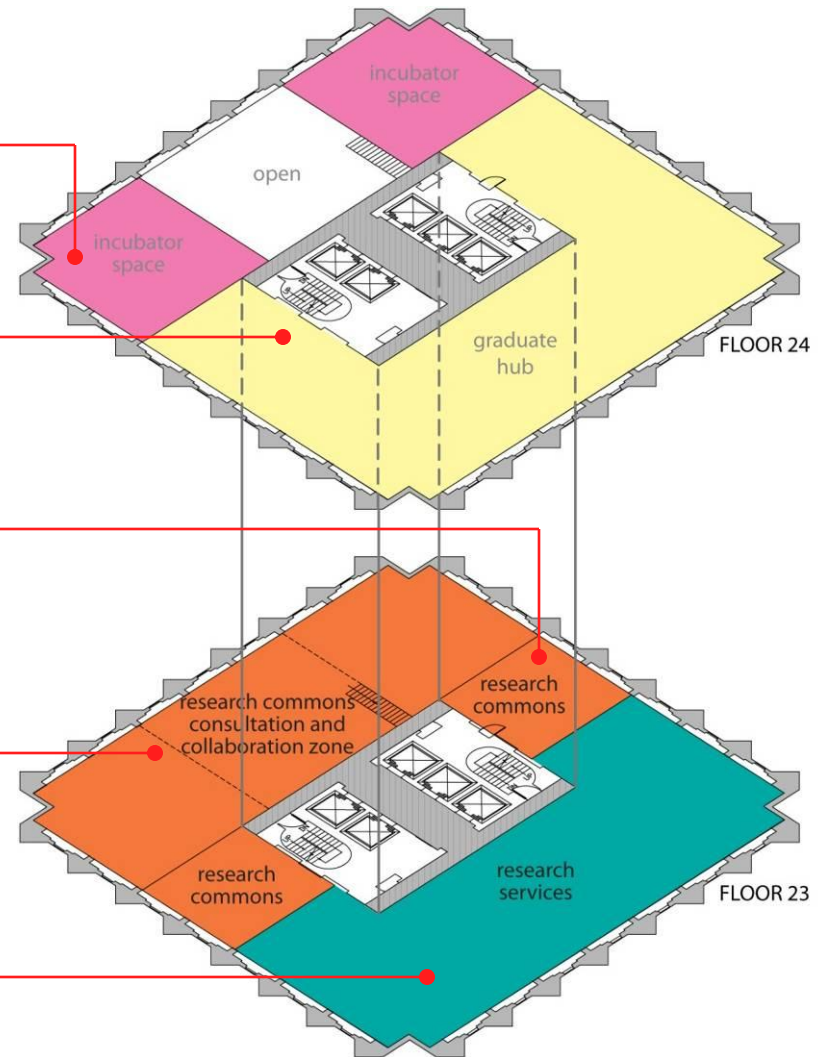
Collaborative spaces



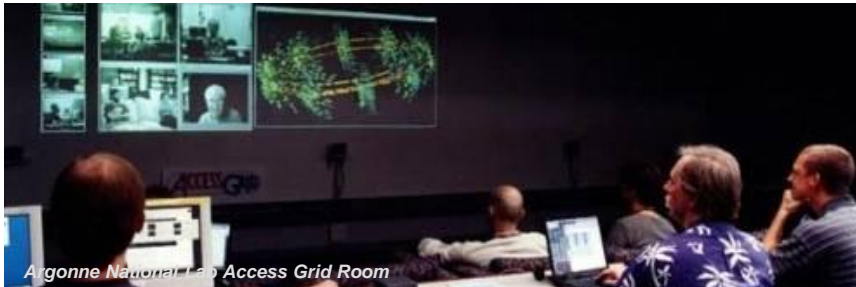
Consultation zone



Staff offices



The Science Commons



A consultation center for emerging needs of e-science and scientific data services, with a range of collaborative and individual work settings at a cross roads in the Lederle Science complex.

PROGRAM COMPONENTS

- Integrated service desk
- Offices for Science & Engineering librarians, with specialists in e-science, scholarly communications, data curation, GIS and resources
- Research & Engagement offices
- Quiet and collaborative work areas
- Visualization room, equipped with AccessGrid technology
- Flexible team-based teaching room
- Café with work areas

A Graduate Student Hub

- A central campus place for graduate students to work
- Quiet reading for individual study
- Group work on interdisciplinary projects
- Sharing sessions with peers
- Relaxing between
- Ability to leave materials overnight
- Collaboration space with projection and multimedia technologies

Campus Partners:

***Research & Liaison / Scholarly
Communications Librarians***

Graduate Dean

Graduate School

A Graduate Student Hub



PROGRAM COMPONENTS

- Quiet reading room for individual study
- Bookable meeting rooms
- Collaboration spaces
- Comfortable, informal seating
- Lockers for personal materials

A serene place to concentrate and a comfortable setting to meet other graduate students, adjacent to the Research Commons services

The Teaching Commons

- Consultation with experts about new ways of teaching and developing digital teaching expertise
- Team work involving educational librarians, Center for Teaching staff, instructional designers and academic technologists
- Collaborative work by faculty developing course materials
- Working with media for teaching, including recording audio for podcasts and video editing
- Demonstrations and practice using the latest technologies for teaching

CAMPUS PARTNERS:

Information Literacy/Instruction Librarians

Center for Teaching (Instructional Design)

Office of Faculty Development

Academic Computing (OIT)

The Teaching Commons



A central location for consultation on new ways of teaching, with resident expert staff from the Center for Teaching to assist faculty and help develop digital teaching tools.

PROGRAM COMPONENTS

- Spaces for consultation with expert teams about pedagogy and new digital teaching materials
- **Staff space** for educational services librarians & Center for Teaching staff, instructional designers and academic technologists.
- **Collaborative lounge & workspaces**
- **Media development workstations** and **editing booths**
- **Innovative/model classrooms**

Expanding the Learning Commons

- **Integrates library and other campus services, staff, resources, collections, and technologies**
- **Enhances services at the heart of the campus**
- **Integrates social and academic**
- **Accommodates student lifestyles with long hours and food services**
- **Provides varied and flexible collaborative spaces that adapt to students' changing patterns of learning and innovating**
- **Connects students with resources and support they need to succeed on campus**



Expanding the Learning Commons

- Integrates library and other campus services, staff, resources, collections, and technologies
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CAMPUS PARTNERS:

Academic Advising

Writing Center

Learning Resources Center (Student Tutoring)

Disability Services

Career Services

New Student Orientation (tours)

Office of Info'n Technology (Help Desk and Computer Classrooms)

Food Services (Café)

Learning Labs



Flexible experimental teaching spaces for team based learning, technology enhanced and supported by the Center for Teaching in the Teaching Commons

PROGRAM COMPONENTS

- Innovative / experimental classrooms
- Flexible furnishings, high ceilings and multiple projection surfaces
- Team screens and whiteboard surfaces for co-creating
- Sub-dividable
- Doubles as meeting space
- Located adjacent to informal learning/spill-over space
- Storage of furniture & equipment

A Media Hub

- Support for students – mostly undergraduate – working with multimedia resources
- Creating, editing, listening, viewing
- Specialized staff support with both software and hardware expertise
- Library collections and viewing/listening, equipment check-out
- Printing, plotting, scanning

Campus Partners:

Library Media Collections

Academic Computing (Technology services)

Campus Audio-Visual Services

A Media Hub



For co-creating, repurposing, producing, listening and viewing media resources with specialized staff support on content, hardware and software.

PROGRAM COMPONENTS

- Media production workstations
- Open collaboration areas
- Integrated services desk
- Hardware lending and demo area
- Staff work areas
- Audio/video editing booths
- Enclosed viewing rooms
- Printers and plotters, copy/print/scan stations

New Public Amenities



COLLOQUIUM CENTER

- Flexible layouts, 150 seats
- Multiple large screens
- AccessGrid technology enabled
- Displays to showcase research
- Adjacent breakout rooms
- Great campus views at top

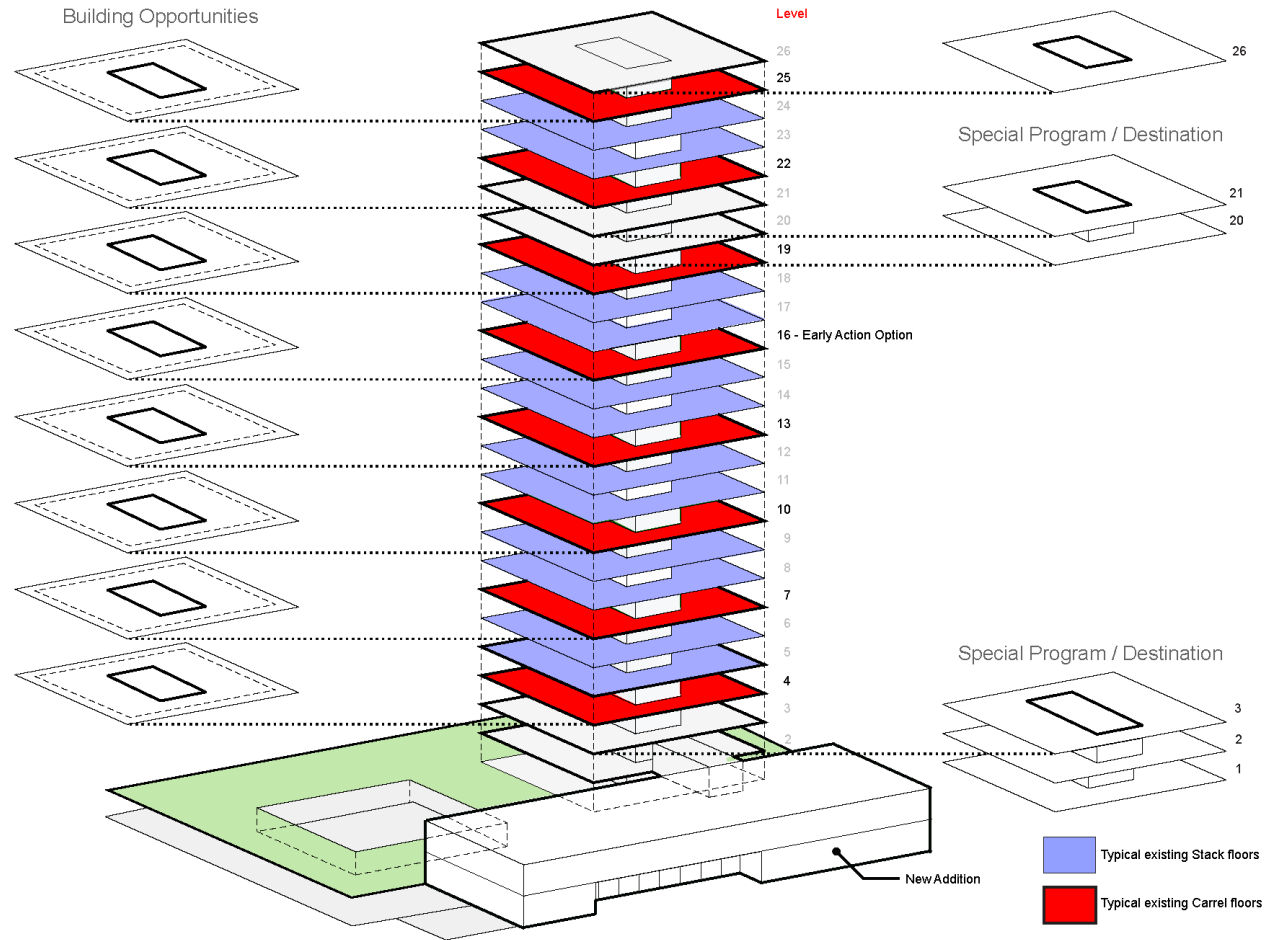


CAFÉ

- New enlarged café where circulation desk used to be at entry
- Working environment with power and range of collaborative seats
- Activity visible from podium, lit at night, views to lake

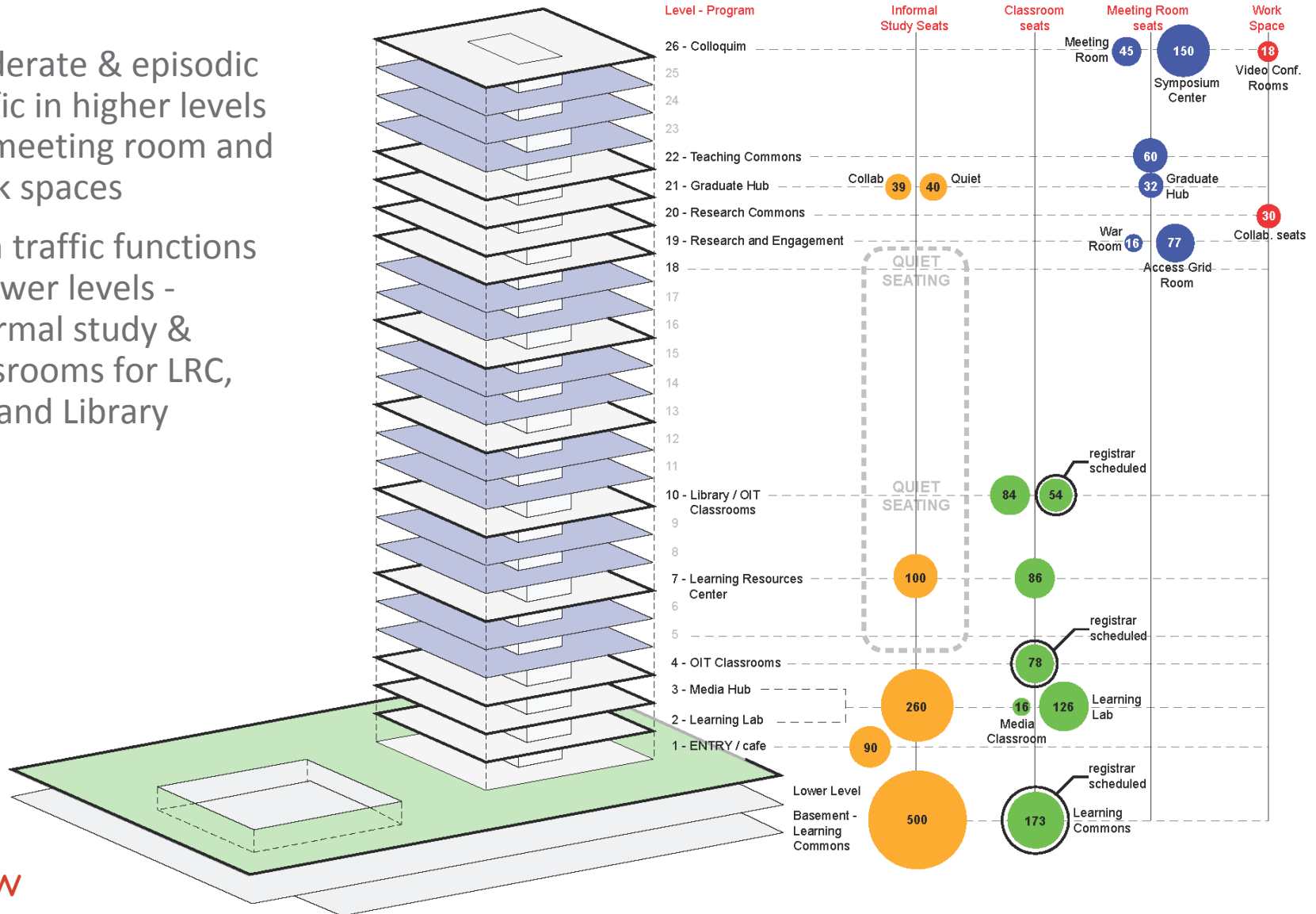
DuBois Planning Strategy

- Convert underutilized carrel floors
- Retain existing stack floors for collections
- Locate heavy traffic functions on lower levels
- Demolish portions of double stack floors for special destination spaces
- Develop top floor as a shared campus facility
- Consider expansion of the podium level



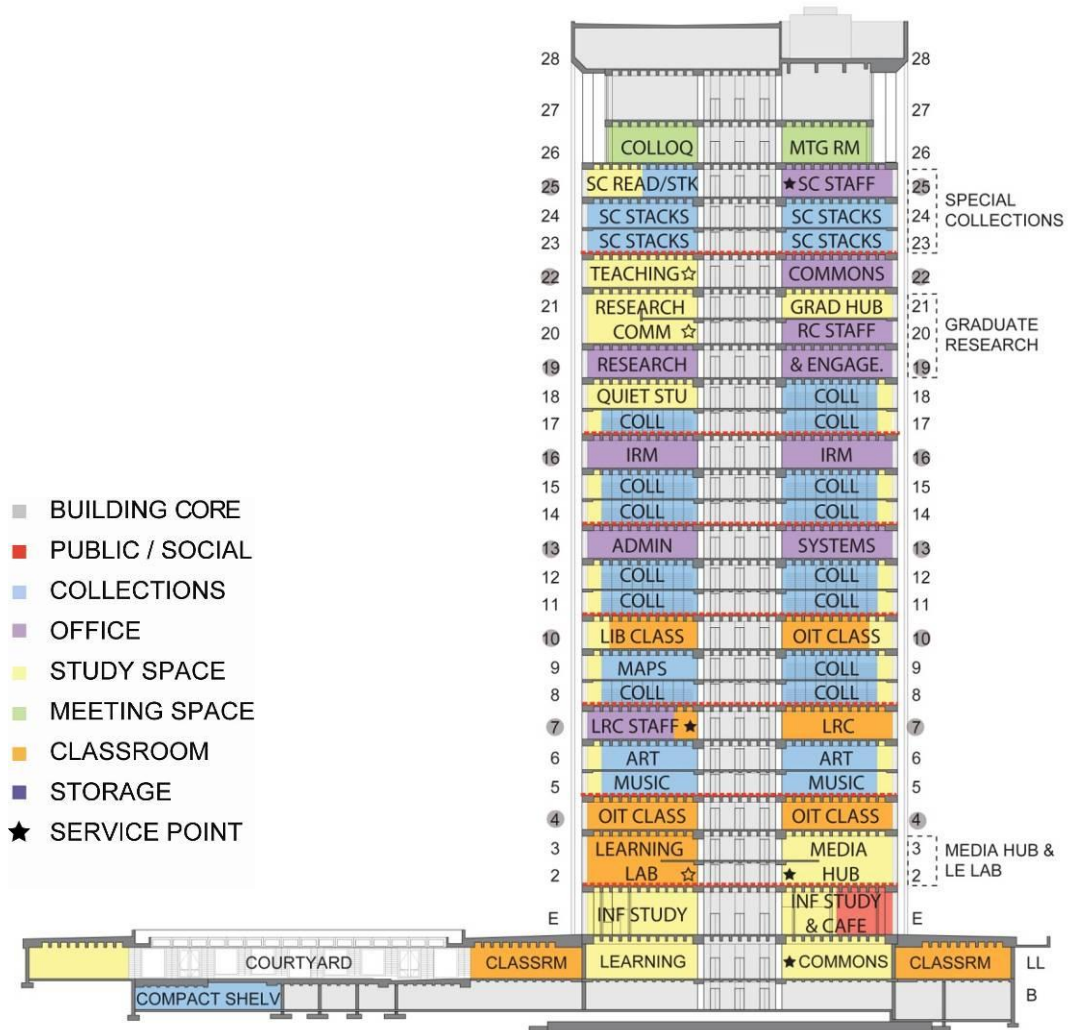
Proposed Function & Seating Distribution

- Moderate & episodic traffic in higher levels for meeting room and work spaces
- High traffic functions in lower levels - informal study & classrooms for LRC, OIT and Library

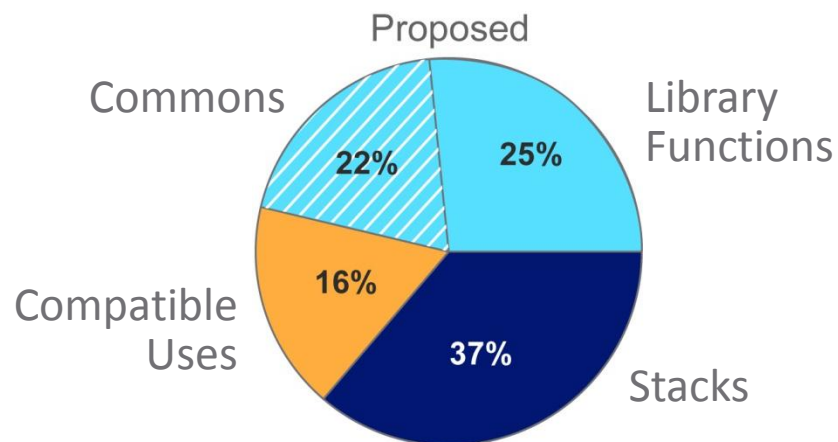
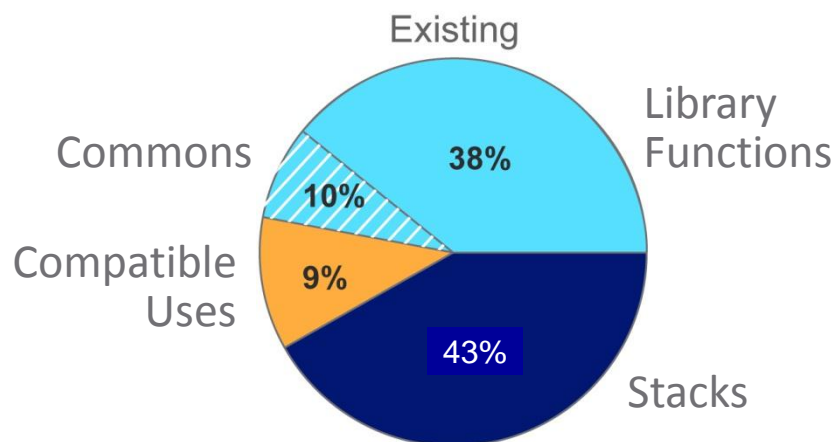


Proposed Du Bois Master Plan

- Create additional classrooms in the Learning Commons
- New café at entry
- Remove 3rd Fl. to create the Learning Studio on 2nd
- Convert carrel floors to classrooms & offices
- Create Research Commons on 19-20th
- Expand Special Collections
- Increase user seats
- Colloquium Center on top



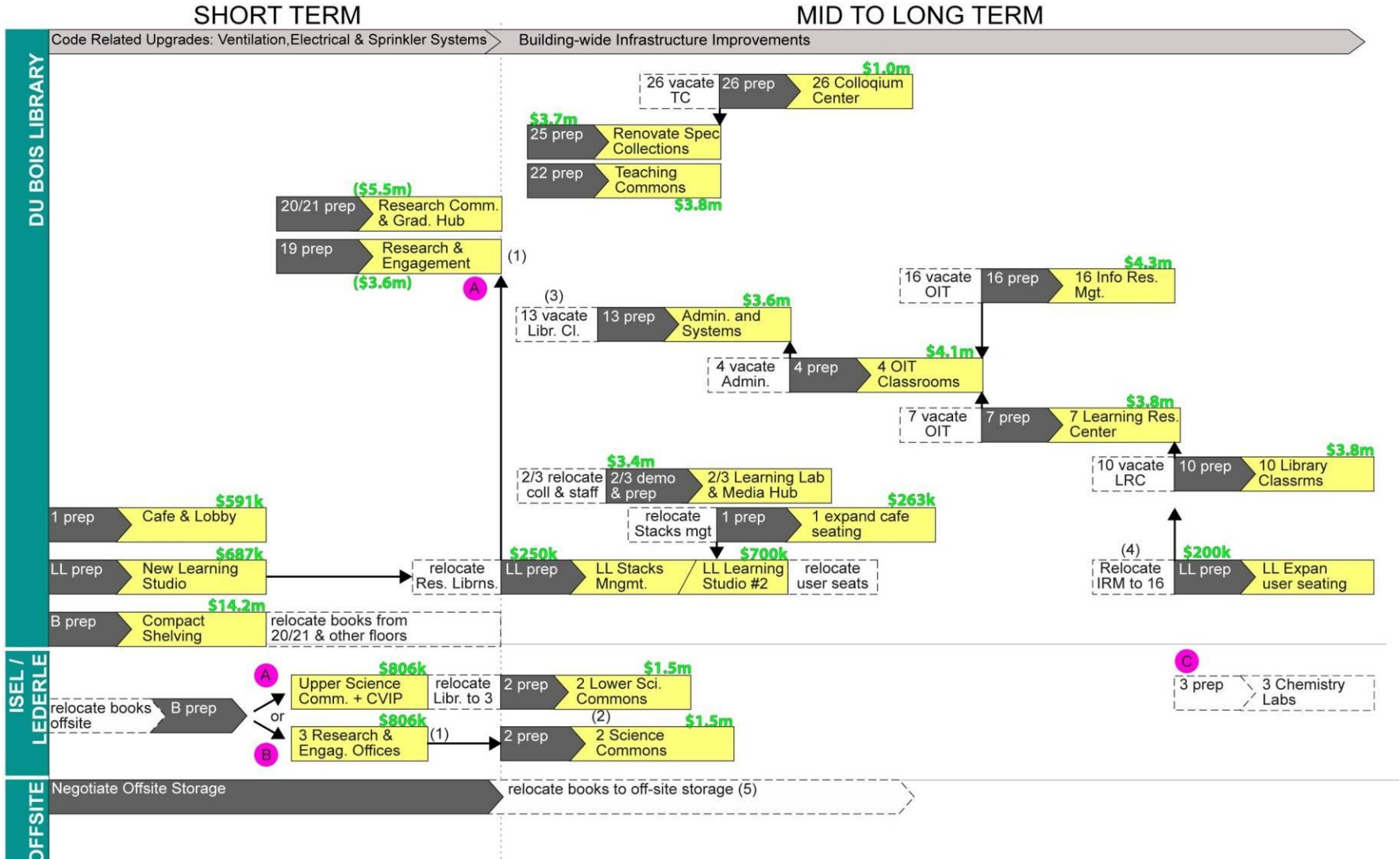
Shifting Space Usage



- Library functions decrease from 38% to 25% of the space
- Stacks decrease 43% to 37%, assuming 10 yrs growth off-site

- Commons space increases from 10% to 22% with addition of Research Commons, Media Hub and other new facilities
- Compatible uses increase from 9% to 16% of total space

Complex Challenges for Implementation



Balancing Short and Long Term Needs

SHORT TERM CHALLENGES

- Shifting organizational priorities
- Opportunities that arise in the academic landscape
- Business and physical deficiencies that arise

RESPONSES

- A pool of swing space provided by the campus
- A grasp of the existing space portfolio, and its capacity to serve different functions
- Good communications between planning and business officers

Balancing Short and Long Term Needs

LONG TERM CHALLENGES

- Changes in building codes and functional requirements for research, learning & services
- Deteriorating assets or lack of funding/ability to maintain them
- Energy, land use or other sustainability challenges to the campus community

RESPONSES

- Maintain quality enterprise data
- Plan implementation that monitors short term solutions' affect on an evolving long term plan
- Develop a culture of integrated planning

Libraries Responding to Change

- 1** Reality of changing user demands and collection storage costs transform the academic library
- 2** Consortiums will emerge at a regional level to conserve print collections
- 3** Libraries will evolve to become integrated consultation centers
- 4** Academic libraries will find opportunities to innovate through creative partnerships

Thank you!

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