

Knowledge is fundamental to all human achievements and progress. It is both the key and the quest that advances mankind. The search for knowledge is what brought [us] to the moon; but it took knowledge already acquired to make it possible to get there.

How we use the knowledge we gain determines our progress on earth, in space or on the moon. Your library is a storehouse for mind and spirit.

Use it well.

NEIL ARMSTRONG Class of 1955



ACKNOWLEDGEMENTS AND SIGN-OFFS

PURDUE UNIVERSITY LIBRARY MASTER PLAN

September 2023

PREPARED FOR:

Purdue University West Lafayette, IN

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This master plan represents a high-level, holistic evaluation of the space needs for the subject organizations' near-, mid-, and long-term space needs based on many variables and space metrics. Space metrics are not space entitlements. These metrics determine magnitude and priority of need only. The vision, or framework, represented in the plan requires more detailed assessment/programming to create a roadmap for near-term priority project implementation. It is not a build plan. Utilizing this approach allows the plan to be flexible and responsive to yet unknown future conditions and opportunities. Implementation of this plan can be accomplished in a variety of ways, including a combination of reassignment, renovation, or densification (the improvement of efficiency) of existing spaces, or through the construction of additions or new buildings.



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VOLUME III: APPENDIX



THE TEAM

LIBRARIES MASTER PLAN - KEY CONTRIBUTORS

The Purdue Libraries Master Plan is the product of collaborations with multiple over 30 stakeholder groups and the multi-disciplinary guidance of the following key contributors:

EXECUTIVE COMMITTEE

Comprised of library and university leadership, this group was responsible for reflecting on content and deciding the project's short and long-term directions. Executive Committee participated in selected visioning and masterplanning strategy workshops.

Beth McNeil / Dean of Libraries

Nathan Manges / Director of Real Estate

Jenna Rickus / Vice Provost for Teaching and Learning

Rob Wynkoop / Associate Vice President, Auxiliary Services

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Allison Leavitt / Director, Campus Planning

Drew Furry / Project Manager, Capital Program Management

WORKING COMMITTEE

Comprised of day-to-day contacts for the masterplan process, including leadership from the library and university architect's office.

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Rebecca Richardson / Associate Dean for Collections and Access

Allison Leavitt / Director, Campus Planning

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CORE GROUP

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CONSULTANT TEAM

A multidisciplinary team of professionals collaborated with university stakeholders throughout the consultation, analysis, and strategic design process.

Perkins&Will

Derek Jones / Library Design & Planning Practice Leader

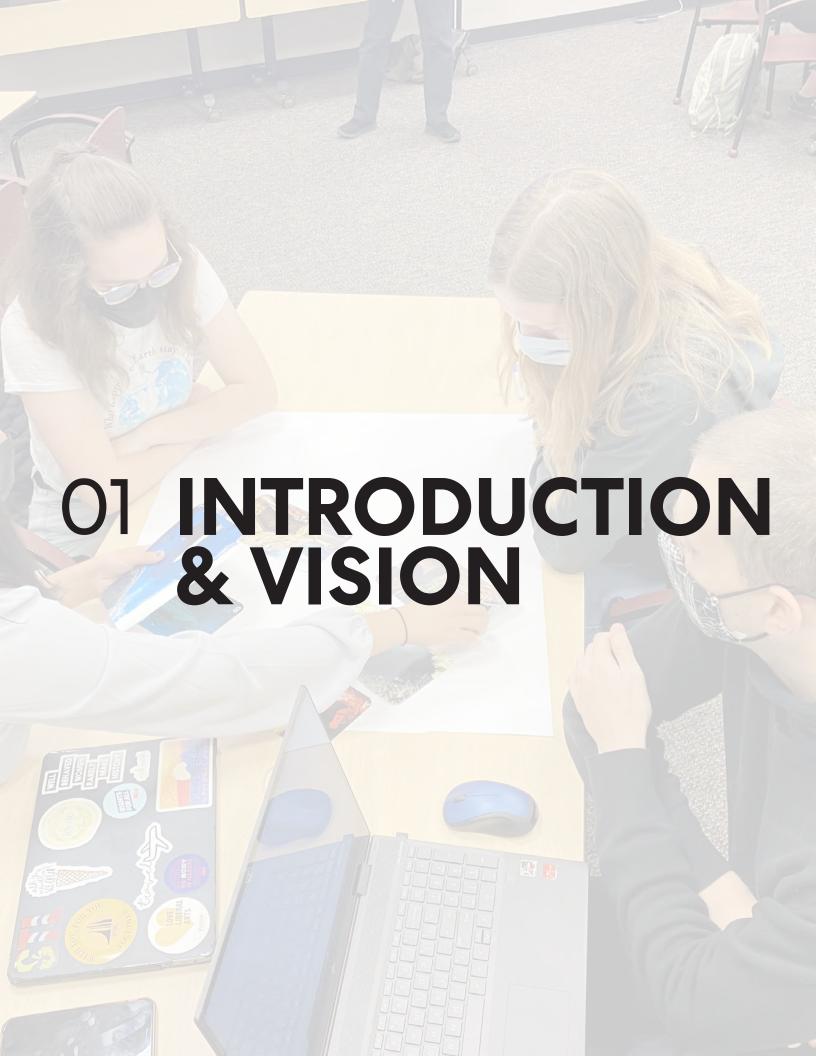
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INTRODUCTION

In November of 2021, Purdue University engaged Perkins&Will as partners in an eight-month study of how best to re-position Purdue Libraries for the campus' current and future needs.

As each of Purdue's libraries was conceived over the past 50+ years, they exemplified forward thinking concepts around the delivery of library resources and services. However, the way in which students, scholars, and faculty connect with and use repositories of knowledge has changed significantly in the last 50 years. Purdue University Libraries remain a leader in the field, but many of the physical libraries have fallen behind. Ironically, in an increasingly digital world, the physical library is more relevant than ever. The library grounds knowledge with place and human interaction. It offers access to authentic, physical materials and tools. The library plays an essential role in helping students manage quality information and develop critical thinking skills to assess it. Faculty members increasingly partner with librarians to support their teaching and research.

Fundamental to the vision for a repositioned Purdue Library system is an understanding of recent shifts in library customer expectations. Libraries were once a "have to" destination, often the only source of information. If one needed certain books, maps, or films, they had to visit the library to access them. Technological advances have changed this dynamic. Today, most people can do research from home, a residence hall, or a coffee shop.

This change is bringing about a dramatic shift in what libraries do and how they do it. In order to remain relevant in the current academic climate, libraries must become a "want to" destination. To draw in customers, the libraries must be exciting, engaging places to be — centers of the knowledge economy, of collaborative learning, and of creative production. The library is now a facilitator, bringing together individuals, interdisciplinary groups, creative technologies, collections, and more into a vibrant, resource-rich place for learning. A revitalized library will be a "preferred destination," an active participant in supporting knowledge creation — a "want to" space for the diverse disciplines it serves.

Completed in 2018, the Wilmeth Active Learning Center (WALC) is the newest expansion to the Purdue Library system. WALC increased seating capacity and demonstrated new synergies between directed classroom learning and more self-directed library study. Since that time, there has been a global pandemic, cultural upheavals, and significant student enrollment growth resulting in new student needs and traffic patterns in and around the libraries. This master plan study uses objective tools to address the space needs of Purdue University Libraries over the next ten years. This study begins with an overall assessment of service goals and the organizational structures to support them. Academic libraries each respond to the unique cultural context and brand of their host institution. The master plan is founded upon the collectively crafted Project Vision Statement and its supporting Services and Space Principles.



PROJECT VISION STATEMENT

The future Purdue Libraries will be the bridge between individual learners and the academic community, the campus and the world. It will connect disciplines and integrate resources across the university so all can engage in the richness of the Purdue experience. The Libraries will be a consistently recognized partner for experimentation, collaboration, and digital learning. It will be a pathway between knowledge acquisition and its application in the service of society.

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GUIDING SERVICE PRINCIPLES

- Welcoming Staff create an inclusive environment for the community through friendly service interactions that are mindful of diverse experiences, needs, and expectations.
- 2. The Hub The libraries are the recognized center for the sharing of knowledge and scholarship for students, faculty, library partners and visitors.
- 3. Technology The libraries bring together a collocated Center for Digital Scholarship that combines existing and future digital resources together into mutually supportive and synergistic services.
- 4. Hybrid Learning Staff offer guidance and tools to support learners simultaneously balancing in-person and virtual courses loads
- 5. Experiential Integration Staff regularly connect the mission of the library with the larger Purdue brand and seamlessly reinforce research and learning as part of the "total" Purdue student experience
- 6. Collaborative Staff connect to communities of learnings. They build relationships with and between students, faculty, and departments, learning more about their projects and identifying ways the libraries could become active partners in their success.
- 7. Interdisciplinary Understand the breadth of relevant resources to help interconnect people and scholarship across disciplines.
- 8. Unified Staff have a unified alignment purpose and processes to both support one another and offer consistent services and protocols across all libraries.
- 9. Visible Staff make known their deep knowledge and expertise to confidently guide patrons towards success, enabling them to ask better questions, seek out answers through research tools, and become selfsufficient scholars.

GUIDING SPACE PRINCIPLES

- Welcoming Spaces to have a clarity of organization and hierarchy. Destinations are visible. Wayfinding is intuitive and accessible. Integrated exhibits and stories help validate the lived experience of all visitors.
- 2. The Hub Using visual transparency and programmatic adjacency, library spaces showcase creation, scholarship, institutional legacy, and Archives/Special Collections
- Technology Technology and resources are seamlessly present. Co-locate technology resources to form a visible Center for Digital Scholarship.
- 4. Hybrid Learning Host spaces to support learners simultaneously balancing in-person and virtual courses loads. Offer faculty an experimental classroom to support testing of new pedagogies.
- Experiential Integration Develop and deploy a consistent, Integrated brand across physical and digital spaces.
- 6.Collaborative Blur spatial boundaries between formal and social learning, digital and analog resources, directed and selfdirected spaces—to encourage movement and exploration across silos.
- 7. Interdisciplinary Support learning across academic and co-curricular spaces by showcasing their relevance and impact.
- 8. Unified Co-locate staff with serendipitous meeting and collaboration spaces. Use a consistent visual language to reinforce system wide identity and protocols.
- Visible Use consistent brand expression, physical transparency, and open sightlines to make learning and scholarship visible.



VISIONING PROCESS

The Perkins&Will Team started with an in-depth review of all available documents including prior strategic plans and aspirations for the libraries. During the first two months, the Design Team facilitated three multi-day workshops to systematically tour existing facilities, meet with Library Leadership, Facilities & Maintenance staff, Library Departmental staff, library partners and stakeholders, the project Core Group, and the Working Group to co-create the Project Vision and Guiding Service and Space Principles. The Design Team also led separate engagement sessions with students and faculty to gather wide-ranging perspectives on how the library could better serve its community of users. Visioning workshops included a variety of exercises designed to elicit an array of ideas that would inform the vision for the future Libraries. A description of the activities through which information was gathered is outlined below.

VISUAL LISTENING

The Visual Listening exercise was first completed with student representatives and the Libraries Master Plan Core Group. A variety of images were posted around the room showing different types of spaces categorized by activity: Learn | Flex, Share | Inspire, Gather, Collaborate, Study, Ask | Partner, Eat | Drink | Engage, Integrate Technology, Work, Connect, and Express. Individuals were asked to indicate preferences by placing stickers next to images they liked and disliked. The group reviewed images and discussed areas of consensus and those where preferences diverged. There was significant overlap between the faculty/staff group and the student responses. Below is a summary of themes and the images that represent the overlap between the groups.



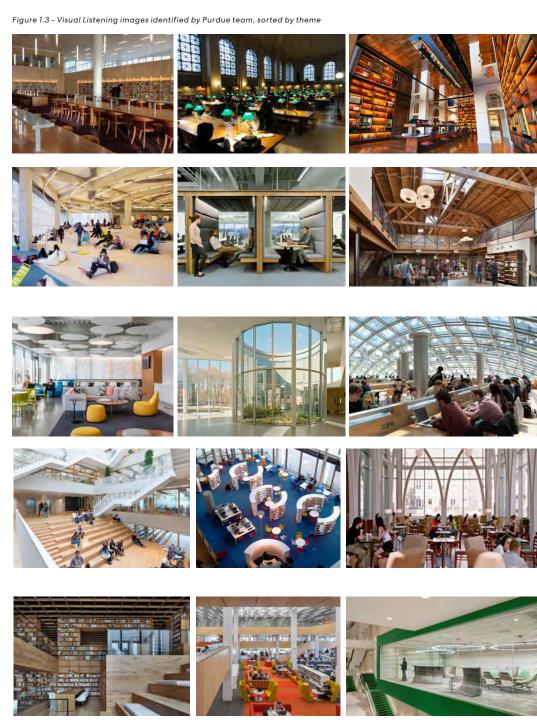


Figure 1.1 & 1.2 - Visual Listening exercise with Core Group on 11/11/2021.



(1) Formal (2) Casual

(3) Daylight
(4) Open & Airy



(5) Interconnected

(6) Stairatorium

















(8) Choice













(9) Natural Materials

(10) Outdoor Connection







(11) Presence of Books

(12) More than Books











CULTURE VISIONING SUMMARY

As part of gathering feedback from faculty, staff, and leadership, the group was asked to bring an object that represented the current library culture and another that articulated the desired future culture. The responses suggested a series of cultural shifts that fell into four general categories:

- 1. Become a more inclusive environment
- 2. Interconnect departments and staff
- 3. Anticipate needs more proactively
- Shift from a culture of 'tool users' to one of 'tool creators'

The future Purdue Library will be 'more than books.' It will be a place of creative production supported by a team of interconnected librarians that anticipate patron needs. There was consensus around the desire to work more as an interoperable team and to move away from patchworked silos of reactive services.





Figure 1.4 - Culture visioning exercise with Core Group on 11/11/2021. Images or objects representing the Library's culture today and future.

Figure 1.5 - Collective descriptions of the Library's past culture and future culture.

Past Culture

Welcoming
Siloed
Alone
Hidden
Temporarily Connected
Tennuous Patchwork
Reactive
Juggling
Tool User

Future Culture

Inclusive Co-Creation
Interconnected
Together
Campus Gateway
Permanently Bonded
Streamlined Interoperability
Proactive
Anticipate
Tool Maker





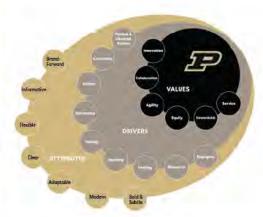


Figure 1.6 - Brand visioning workshop on 12/6/2021.

Figure 1.7 - Brand drivers

BRAND VISIONING SUMMARY

Exploring how Purdue Libraries perceives its brand enabled the Perkins&Will team to better understand the future direction of the community as a whole. The group discussed the perception of the brand today and how they would like it to change in the future. The summarized responses by the group are seen in Figure 1.7 & 1.8. While aligning first with the Purdue brand, the Purdue Libraries response to their future brand suggested a series of aspirations that fall into these five categories: 1) become known as the Information Service Hub for Purdue, 2) create brand consistency

across both physical and digital platforms, 3) leverage expertise, leadership and personalized guidance in the story of the Purdue Libraries brand, 4) tell the Purdue brand-based stories that enrich user experience as seen in Figure 1.9 & 1.10, and 5) become the brand that inspires all users to innovate, collaborate, experiment, discover, create and grow. With these shifts, the Purdue Libraries brand will be recognized as 'so much more than books' and will provide environments and experiences that allow their constituents to thrive.

Figure 1.8 - Attributes of brand today and potential for future brand.

Brand Recap - Purdue Libraries Today **Future** An Information Service Hub for Purdue...so much more than books! Welcoming service organization. Equitable access to information & resources. Cohesive. Complementary. Inclusive. Teach crucial information skills. Discover. Create. Grow. Innovate. Let us inspire you. Advancing leadership and the profession through critical research. Furthering the field of Information Science through research. Distributed "hodge-podge" of resources & services. Portfolio of resources, experiences and experimentation for all. Dynamic multi-space environment with great resources. We have study spaces; WE ARE MORE THAN BOOKS. Responsive services and staff at the academic forefront. Striving to be better understood by all. Nice. Helpful. Friendly. Welcoming. Willing and Ready to Assist. Expert level instruction and personalized guidance. Open to new ideas. Still open to new ideas. Serve the information needs of the Purdue community. Connected within our organization, the university, the community, and the world



Stories	
Our History Our Archives Our Collections	Library Locations & Specializations
A Place for Knowledge Creation	Our Services, Resources & ToolsMore than Books
Authentic Source of Information	Personal-Touch AssistanceLet Us Help You!
Patents, Firsts, Innovations at Purdue	At Purdue, it's Cool to be Smart
Your Experience Begins at Purdue Libraries	The Digital Experience
Research & Explore	We are ONE Library System
Study, Learn, Collaborate, Innovate, Celebrate	Our Expanded Network
Physical Places & Spaces	Our Rich Database
Information Literacy	Vital Partnerships

[↑] Figure 1.9 - Brand-based stories to bring authenticity and identity to the Library brand experience.

↓ Figure 1.10 - Storytelling opportunities

Recognition	Archives & Special Collections	One Library System	Digital Experience	Partnerships	Services & Tools	Resources
	Preservation Catalogue of Content	- Incorporation - Authentic Source of Internation In	- Rich Potoviner • Research • Events • How! • Locations • Explore	Networks Global Reach E Publishing IT Support	ITaP Lab Print Shop Maker-space Digitization Interlibrary Loan Media Production Digital Scholarship Experimental Learning Virtual Learning	- Study • Learn • Collaborativ • Innovari • Collaborativ • Resetted • Explore



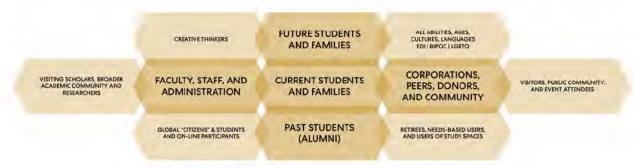


Figure 1.11 - Audience types

AUDIENCE GROUP PRIORITIZATION

In order to suggest appropriate environment typologies and experiences for Purdue Libraries, it was important for the Perkins&Will team to understand the user groups and audiences of the Libraries. As imagined, Purdue Libraries engage with a vast array of audience types. The five key audience groups align directly with the University audience types: 1) current students, 2) future students and families, 3) past students (alumni), 4) faculty, staff, and administration, and 5) corporations, peers, donors, and community. But as a global hub and information resource, Purdue Libraries finds itself uniquely positioned to provide services to ever-widening groups and individuals, from visiting scholars to retirees to "global citizens" and beyond. See Figure 1.12 for a comprehensive list of audience types. Purdue Libraries will embrace the diversity of all users while maintaining focus on their core constituents.

Figure 1.12 - Audience types

Audience Types – Purdue Libraries	
All Students	Visitors & Visiting Scholars
All Faculty	Prospective Students
Staff	Academic Community
Public Community Members	Researchers
Alumni	Student Families
Donors	EDI BIPOC LGBTQ
Retirees	Creative Thinkers
Global "Citizens" & Students	Needs-Based Users
On-Line Participants	Users of Study Spaces
Event Attendees	All Abilities, Ages, Cultures, Languages





Figure 1.13 - Student engagement session, 11/22/2021.

STUDENT ENGAGEMENT

STUDENT INTERCEPT INTERVIEWS

As an introduction to the student population at Purdue University, the Perkins&Will team performed student intercept interviews in and around libraries across campus. Figure 1.14 shows a breakdown of participants by gender, field of study, and academic year. The responses to a series of library use questions follows in Figure 1.15. Responses show high utilization with 70% of the students surveyed visiting the libraries 3 or more times per week. Over 70% of the respondents say they utilize more than 1 library—and the choice of library is based on geographic convenience rather than specific collections. One thing students are not doing in the library is browsing the books with 98% of participating students confirming that they either never or rarely browse the stacks. Intercept conversations then led to understanding where students prefer to spend their time while in the library and what amenities they would like to maintain. As seen in Figure 1.14, most students are seeking quiet study space followed by active group spaces and then computing resources.

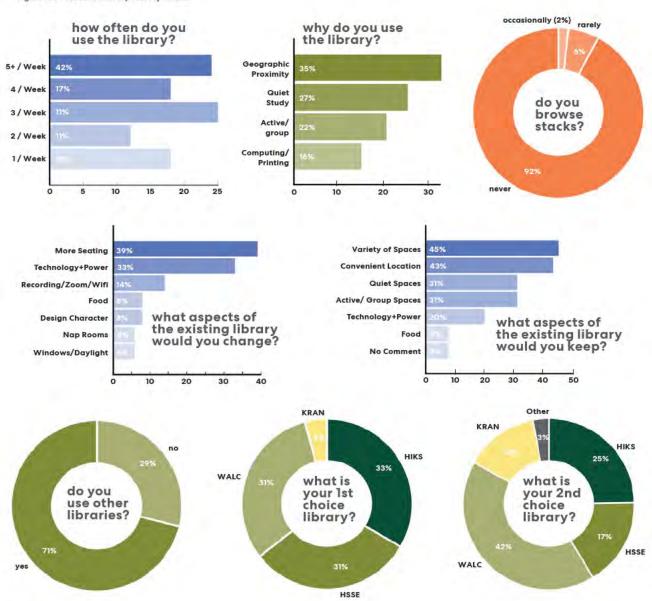
We asked students to describe what they most liked about the library. Nearly half of students cited the variety of seating environments and convenient locations as features to preserve in the future. When asked about what they would change in the future, student wanted to see more seating and more varied seating—including group areas, quiet areas, and group study rooms. Access to technology (power/WiFi) was also an important library space feature to be enhanced. Analysis of the information gathered during these interviews, showed a high level of utilization of the libraries system. There are opportunities to densify the footprint of collections to harvest space for student desired increases in quantity and diversity of study seat options.



Figure 1.14 - Student intercept survey demographics



Figure 1.15 - Student intercept survey results





STUDENT VISIONING SUMMARY

During the student visioning session, the students gathered in groups of 4 or 5 and were given a set of images (see Figure 1.17). These images represented a variety of outdoor experiences from which the student groups chose 3 that they felt best represented how they would like their library experience to feel. Participants then associated experiential words with the selected images and whether the libraries currently provided these preferred experiences. Collectively, the students were looking for differentiated spaces that could at times support focused concentration and at other times collaborative teaming. Some students desired the library to be a space of interdisciplinary visibility—a place for unexpected discovery and growth. In all cases, students felt these attributes were somewhat (but not fully) actualized in various libraries across campus.

KEEP | TOSS | CREATE

As a final student exercise, the design team asked students: What would you keep, toss, and create within the library? The summary of their responses is seen in Figure 1.18. Commonly repeated themes included:

- Students desired space characteristics that are notably scarce (or entirely absent): natural light, high volume spaces, and collaborative areas.
 These are notably absent in two of the major facilities—HIKS and HSSE libraries.
- Students like the 'feel' of books. They felt that beautifully displayed, curated collections surrounding study spaces would reinforce a scholarly mindset, elevate a sense of academic purpose, and help validate students' commitment to learning.
- Students have a curiosity about what others are doing and the kind of research/scholarship that is taking place around them. Interdisciplinary collaboration spaces, visual transparency, and idea spaces were seen as mechanisms to see and witness the richness of Purdue learning.



Figure 1.16 - Student engagement session, 11/22/2021.



Figure 1.17 - Student visioning responses on the preferred experi-ence of using the Libraries.



Figure 1.18 - Student responses to what to Keep in the existing libraries, Toss from their current experience, and what to Create from scratch.

KEEP:			
SOME	BOOKS		
CDACE	LITIM	"VOL	INAE"

TOSS:

POOR INTERIOR FINISHES
HARD, STODGY CHAIRS
IMPERSONAL LAYOUT
LIBRARY=ALWAYS QUIET
FORMALITY FACED WITH LIBRARIAN AT ENTRY UNIVERSITY DINING IS TOO FAR

CREATE:

CURATED BOOKS
NATURAL LIGHT
CLEAR & OPEN WAYFINDING
CONFERENCE STYLE STUDY
TIERED SEATING PRIVATE & ERGONOMIC IDEA SPACE MOVEABLE WHITEBOARDS ADJUSTABLE FURNITURE COWORKING ADEQUATE POWER INTERDISCIPLINARY COLLABORATION





CAMPUS-WIDE SERVICE DISTRIBUTION

PROGRAM DISTRIBUTION

Historically, libraries have followed a collection focused model with 50% of floor area dedicated to the storage of collections on browsable shelving. 15% of space was dedicated to staff and the remaining 35% was held for patron services and study. Today's more engagement focused model retains the same amount of space for staff, but allocates 60% or more to patron services, partners and wide-ranging study and collaboration spaces. The existing program distribution across all libraries was analyzed and organized into the following categories: Staff Office spaces, User Reading/Study spaces, Collections, and Building Support areas. Figure 2.1 graphically depicts the area allocation of these models relative to the existing Purdue condition which falls somewhere between the two. The high percentage of existing staff space is actually a product of deficient patron seating. When patron space is brought up to benchmark standards, the staff space allocation normalizes as shown in the

fourth graph depicting the future Purdue Libraries Program. Seating metrics are covered in more detail below and detailed programming is summarized in the next section. Based on overall program distribution metrics, Purdue Libraries needs to consider significant increase in patron seating and the relocation of some library collections to an offsite collection repository. Staff areas are somewhat fragmented across geographically dispersed library locations and even across multiple floors of HSSE, which is likely a contributing factor to the sense of disconnected silos among staff. Similarly, partner staff are distributed in ways that limit collaboration. While the campus distribution is necessary to support the network of libraries, there is an opportunity better cluster staff and partner staff within individual libraries to enhance collaboration. This kind of clustering both enables planned and unplanned synergies, and it eases user navigation and awareness of available resources.

Figure 2.1 - Typical models of program distribution against Purdue existing & proposed

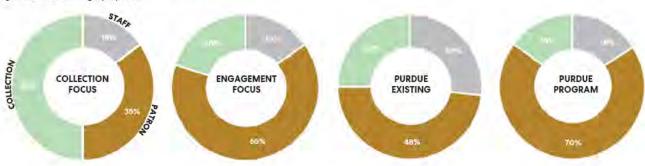


Figure 2.2 - Circulation rates showing change over time

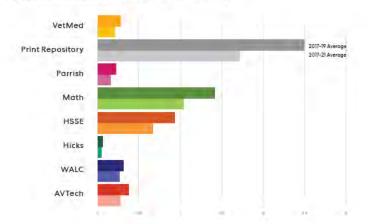
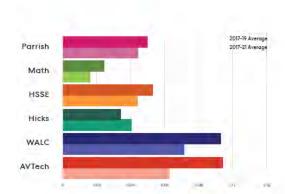


Figure 2.3 - Reference request rates showing change over time





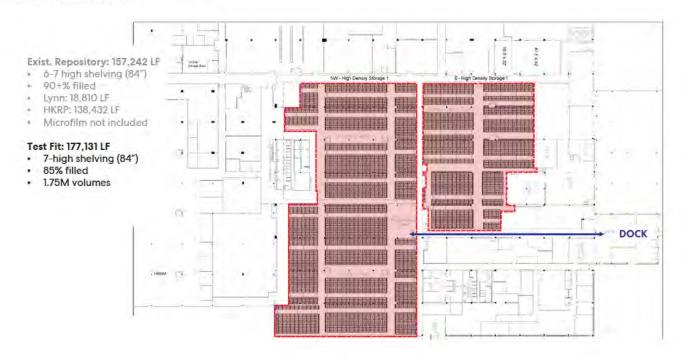
SERVICE POINT DISTRIBUTION

Most libraries have a simple, single point service desk. HSSE library, however, has multiple service points across multiple floors. The future plan will be to simplify all services into a single point of service: Circulation, Information, Reference, Inter-Library Loan, and space for occasional pop-up services like computing assistance, health services, or career guidance.

EXISTING COLLECTIONS ANALYSIS

A review and analysis of existing collections was based upon current and historical collection information provided by Purdue University Libraries. The libraries are already actively using Green Glass software to weed collections and move them into available repository spaces. Circulation data shows continued circulation rates even as material are shifted from accessible library floors to non-accessible repository storage (see Figure 2.2 & 2.3). During the course of this study, significant space in the offcampus 2550 Northwestern Avenue building (2550) became available. Studies found that with a modest 15% weeding of collections, the 2550 site could accommodate all repository collections, HSSE floor collections, and MATH floor collections (see Figure 2.4). While allowing for some curated collections to remain in high visibility areas, this relocation of books will clear space for just over 1,000 additional patron seats within the existing library spaces.

Figure 2.4 - 2550 Northwestern Avenue repository test fit for collections storage





SEATING ANALYSIS

As part of the existing conditions analysis, Perkins&Will reviewed seating quantities, types of seating and perceived availability. As shown in Figure 2.6, there are over 2,836 seats. "Potential seats" are based on open, unfurnishes areas of the existing HSSE library and classroom seats that are used for study in WALC. Library seating metrics are correlated around type of institution and on-campus enrollment. In consultation with Purdue University, a 10-year enrollment outlook was organized into three scenarios: Steady, Growth, and High Growth. Using current on-campus to off-campus ratios for undergraduate and graduate student populations, we were able to calculate total on campus populations for each scenario (see Figure 2.5). For the purposes of this study, we have based all seating models on the Steady scenario with the understanding that higher growth will translate into a linear increase in seating targets.

Traditional percentage-of-student-population metrics have proven to now be outdated by changing study

cultures on campus and radical shifts in campus building amenities that offer alternative study environments. The currently favored seating metric involves 'Visits/Seat' and 'Visits/Student' benchmarks. Using the averages derived from comparable academic libraries, Purdue libraries is under-seated by about 2,997 seats. As can be seen in Figure 2.7, the Growth enrollment scenario would need an additional 311 seats and the High Growth enrollment scenario would warrant 579 additional seats.

Figure 2.5 - Enrollment growth scenarios

2021 Enrollment:	37,101	11,613	
FTE %:	97.8%	71.0%	
2031 Enrollmant	37,326	20,925	
2031 Steady FTE:	36,491	14,851	
A	40,129	20,925	
2031 Growth FTE:	39,231	14,351	
	42,543	20,925	
2031 Hi-Growth FTE:	41,591	14,851	
Projection (Purdue Provided	i)		
2031-Steady	36,491	14,851	51,342
2031-Growth	39,231	14,851	54,082
2031-High Growth	41,591	14,851	56,442

Figure 2.6 - Total existing study seats

BUILDING	LEVEL	CARRELL	BENCH	2-TABLE	G-TABLE	E+TABLE	LOUNGE	HIGH TOP	COMPUTER	4-GAP AIV	6+ GRP RM	POTENTIAL	TOTAL
									-			35 SF/SEAT	
STEW	Total	221	0	21	168	136	34	0	90	48	8	223	726
	96	30.44%	0.00%	2.89%	23.14%	18.73%	4.68%	0.00%	12,40%	5.61%	1.10%		
HIKS	G	98		84	100	268	46	40	69	52			757
	%	12.95%	0.00%	11.10%	13.21%	35,40%	6.08%	5.28%	9.11%	6.87%	0.00%		
WALC	Total	24	9	26	156	170	194	0	95	4	48	270	726
	%	3.31%	1.24%	3.58%	21,49%	23.42%	26.72%	0.00%	13.09%	0.55%	6.61%		
CRAN	2	18	7	4	116		23	39	65		24		296
	%	6.08%	2.36%	1.35%	39.19%	0,00%	7.77%	13.18%	21.96%	0.00%	8.11%		
MATH	3	23			39	12	18		4	12	14		122
	%	18.85%	0.00%	0.00%	31.97%	9.84%	14.75%	0.00%	3.28%	9.84%	11.48%		
YNN	1	28			64		35		3	16			146
	%	19.18%	0.00%	0.00%	43.84%	0,00%	23.97%	0.00%	2,05%	10.96%	0.00%		
TERM	1			2	24		12	9	4		12		63
	%	0.00%	0.00%	3.17%	38,10%	0.00%	19.05%	14.29%	6.35%	0.00%	19.05%		
		CARRELL	BENCH	2-TABLE	4-TABLE	E+ TABLE	LOUNGE	HIGH TOP	COMPUTER	4-GRARM	6+ GRP RM		TOTAL
TOTAL SEATS		412.0	16.0	137.0	667.0	586.0	362.0	88.0	330.0	132.0	106.0		2,836
		14.53%	0.56%	4.83%	23.52%	20.66%	12.76%	3.10%	11.64%	4,65%	3.74%		

Figure 2.7 - Benchmarking data to determine study seat needs

Institution	- 1	Student FTE	Library Seats	% of students	Gate Counts	Visit/ Seat	Visit/Studen
Ohio State University		61,391	4,333	7.1%	4,103,455	947	67
North Carolina State University		34,767	5,027	14.5%	2,464,590	490	71
Iowa State University		33,391	3,330	10.0%	1,916,566	576	57
University of NC, Chapel HIII		29,877	5,705	19.1%	2,667,100	468	89
Western Michigan State University		21,470	2,551	11.9%	597,958	234	28
Georgia Tech University		19,432	2,360	12.1%	318,614	135	15
Miami University		17,697	1,640	9.3%	382,474	233	22
19	Average	31,146	3,564	12.0%	1,778,594	440	50
Purave Library (2008-19)	5,8%	41.3/8	1836				
PURDUE-Steady	II.4K	51,342	5,833	2,997	2,568,985	440	50
PURDUE- Grawth	11.4%	54,082	6,144	3,308	2,706,101	440	50
FLIRDUE High Growth	11.4K	58,442	6,412	3,576	2,824,188	440	50



In collaboration with the libraries, a system of occupancy sensors was deployed in all library spaces to measure occupancy in 24 zones. Sensors utilized both on-site technical calibration as well as Al-learning technology to calibrate WiFi detection over time with actual occupancy. Additionally, the design team conducted a multi-day series of site observations of 175 micro zones (smaller subsets of the initial 24 zones) to determine when a space "feels full." Based on observational data, Figures 2.10-2.12 illustrate by seating type the point at which the occupancy is perceived as full such that a patron is not comfortable claiming a chair at a seating table or grouping. By calibrating the perceived occupancy specific to Purdue University culture, the team collected Spring 2022 occupancy data for analysis.

Occupancy data revealed the heaviest library use to be Monday through Wednesday of each week. Though many of the libraries rarely hit peaks or stressed occupancies (70% or more of perceived capacity), HIKS was consistently at a moderate occupancy while WALC and HSSE were often stressed and often exceeded 100%. In other words, it is safe to assume that the instances in which students are being turned away from WALC and HSSE libraries (which comprise more than 50% of total library seating) due to the lack of available seats are frequent (see Figure 2.8). It should be noted that all occupancy measurements were collected in a transition period between pandemic isolation and an incremental return to campus. Anecdotally, many academic libraries are reporting 50% - 85% return-to-library rates during the Spring semester of 2022. It is safe to assume that occupancy rates will rise significantly as students return to pre-Covid use patterns.

A unique feature of Purdue University is that there are no standalone library buildings. Libraries are embedded in larger academic buildings. These are buildings that include some classrooms, or in the case of WALC, entirely comprised of classrooms. Using a comparative analysis of library occupancy with classroom enrollment over time, we discovered strong correlations. As classes discharged, library occupancy increased and vice versa. This suggests that classroom adjacency has a measurable impact on library use. And by extension, deliberate pairing of library resources with classrooms will increase library utilization. This is significant in light of established studies that have also correlated library use with student success.

Lastly, the Design Team was able to use University provided historic WiFi data to understand the types of students using each library. Figure 2.9 illustrates average occupancy by academic major. The data shows that most libraries cater to all students with the exception of the Aviation Tech Library and the Vet Med Library, both of which are more specialized and geographically remote.

Figure 2.8 - Stress instances for existing libraries: how often are library spaces over 70% experienced capacity? Data from Mon-Tues-Wed from 9a-5p, Feb 6-Apr 10 2022

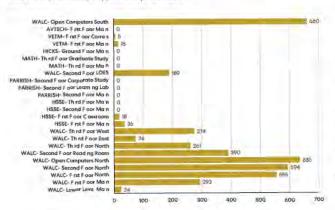


Figure 2.9 - which students use the libraries - sorted by College

Purdue University				punding s	Isers - by College		
	AVTE	HIKS	HSSE	MATH	PARRISH	VETMED*	WALC
College of Agriculture	1.9%	8.9%	9.8%	7.0%	7.6%	10.0%	8.4%
Callege of Education		1.4%	1.4%	2.3%	0.5%		1.8%
Callege of Health & Human Sci	2.5%	11.1%	31.4%	10.3%	77%	5.5%	10.6%
College of Liberal Arts	0.5%	12,6%	13.4%	10,2%	1.9%	2.5%	11.9%
College of Pharmacy	0.5%	0.6%	0.6%	1.1%	0.9%	0.3%	0.5%
College of Science	1.4%	13.5%	13.6%	19.5%	10.8%	4.5%	19/3%
Doctor of Pharmacy	0.2%	0.6%	0.6%	0.7%	1.0%		0.5%
Exploratory Studies	0.2%	0.6%	0.6%	1.0%	1.0%	0.7%	0.5%
Graduate Professional		0.0%	0.0%	0.0%		0.2%	0.0%
Graduate School	21.3%	18.8%	19.6%	16.2%	10.25	38.4%	21.5%
Polytechnic Institute	42.8%	12.3%	10.8%	10.5%	7.5%	3.1%	12.6%
Pre-Pharmacy		0.1%	0.0%			0.5%	0.1%
School of Management	0.6%	9.6%	9.2%	8.1%	20.3%	3.1%	8.9%
Temporary	2.3%	0.3%	0.4%	0.4%	0.2%	0.3%	0.6%
Veterinary Medicine		0.4%	0.3%		0.4%	10.6%	0.3%
Veterinary Technology	-	0.3%	0.1%			12.7%	0.2%
College of Engineering	5.8%	8.9%	8.6%	12.1%	11.9%	6,6%	8.2%



Figure 2.10 - Utilization by seat type: which seats are most desired by students?

Each MicroZone has a predominant seat type.

This is the average* utilization by seat type at peak observed usage:

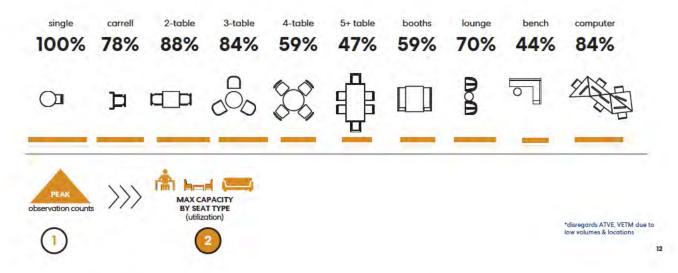


Figure 2.11 - Example observations from HSSE Level 2 seating utilization 62% 31 Example - HSSE 2nd Floor | 178 seats **OF EXISTING** 5+ tables SEATS 4-tables 51 carrels 2-tables carrels 2 (000 d D 4-tables 5+ tables 2-tables 110 seats AVG PEAK UTILIZATION BY SEAT TYPE & MICROZONE



Figure 2.12 - Seating utilization during Peak times

	AVTE	HICKS	MATH	PARRISH	HSSE	VETM	WALC	
single							100%	100%
carrell	13%	77%	77%	83%	66%	43%	100%	66%
2-table	25%			25%	113%	20%	100%	57%
3-table				83%			81%	82%
4-table	21%	38%	100%	29%	41%	22%	79%	47%
5+ table		55%	49%	56%	27%		76%	53%
bench		38%		51%				44%
booths		54%		58%			60%	57%
computer		51%	120%	45%	91%		94%	80%
lounge	33%	31%	33%		22%	29%	92%	40%
Average	23%	49%	76%	54%	60%	28%	87%	

Figure 2.13 - Seating utilization during Off-Peak times (which seats are chosen first?)

	AVTE	HICKS	MATH	PARRISH	HSSE	VETM	WALC	
single							100%	1
carrell	6%	28%	44%	44%	24%	14%	33%	2
2-table	6%				44%	20%	52%	1
3-table				33%			18%	2
4-table	13%	18%	4%	15%	11%	16%	24%	1
5+ table		33%	11%	20%	11%		21%	-1
bench		13%		28%				2
booths		29%		33%			38%	3
computer		44%	32%	23%	26%		33%	3
lounge	8%	1%			4%	3%	21%	
Average	8%	23%	23%	28%	20%	13%	38%	

13



EXISTING EXPERIENTIAL CONDITIONS

PHYSICAL SPACE

Site observations and surveys were conducted and spaces photo-documented in order to evaluate existing experiential conditions. A full existing physical experiential conditions assessment was not included in the scope of this study. However, enough information was gathered to reach key conclusions about the current Purdue Libraries experience in the physical space.

As noted elsewhere in this report, Purdue Libraries are embedded in buildings aligned with academic programs, without free-standing library presence on campus. Coupled with inconsistent identification and signage announcing each library entrance, this leads to difficulty finding the individual libraries, which in turn leads to a frustrating experience for users and lack of overall library brand awareness. Simple way-finding cues and appropriate signage can go a long way in creating a stronger library presence.

Purdue Libraries spaces currently follow a more traditional library layout comprised of book stacks, study carrels and tables, lounge seating, and study rooms. Many facilities are adjacent to classrooms. What is not present are those features that would position Purdue Libraries as both academic and social hubs of learning, creating a more holistic experience systemwide. There are many apportunities to expand services and programmatic functions that can make Purdue Libraries more prominent destinations of choice.

While the library staff are welcoming, knowledgeable, and experienced, not all of the library spaces feel welcoming. This is a function of lighting and ceiling systems; furniture, materials, and finishes; lack of access to daylight and views; and in some cases, spatial configuration. It is understandable that many of the libraries are stylistically connected to the buildings in which they reside, but this leaves the libraries without a specific identity of their own. This works against a consistent library experience. But with adjustments, Purdue Libraries could advance the sense of an interconnected and welcoming network of academic and social resources.

Storytelling can enrich spaces, trigger interaction, create a sense of belonging to place and institution, and ignite learning opportunities. With few exceptions, Purdue Libraries minimally deploy storytelling as a method to engage their audiences. Additionally, Archives and Special Collections currently lack a method to display or tell compelling stories about the rich information they house across the network of libraries. Integrating storytelling methods throughout the Purdue Libraries system would add a layer of richness to the overall library experience.

Sign systems are inconsistent and lack hierarchy across the network of Purdue Libraries as well as within each individual library. This is compounded by other ad-hoc postings which generate an overall sense of visual clutter. This makes it difficult to find your way and recognize specific destinations. There are simple solutions that can overcome these inconsistencies and create a better unified experience.

See the Appendix for supporting imagery documenting these observations.

Figure 2.13 - Brand observation summary comparing existing physical & digital spaces

Physical Space	Digital Space		
Inconsistent Library name identification across the system.	Purdue brand leads for Libraries		
Each Library is unique in its design and features.	n and features. Navigation to individual libraries is sometimes difficult/confus		
Not all Libraries oppear welcoming.	Landing pages are text heavy.		
Minimal inclusion of story-telling within the Libraries.	Physical Library imagery is small and often of poor quality.		
Missing display space for Special Collections or other features	Inconsistent categories across various libraries		
Design feature at desks integrated in many libraries.	Archives & Special Collections has strongest visual "personality".		
Inconsistent wayfinding and signage.	"Real-time readership" feature engaging and dynamic.		
Ad hoc postings cause visual clutter	Most libraries highlight availability of study & specialty spaces.		



Figure 2.14 - Libraries and School of Information Studies online homepage



DIGITAL SPACE

Perkins&Will explored the Purdue Libraries website in order to evaluate existing experiential conditions (Figure 2.14). As with the physical space, a full existing digital experiential conditions assessment was not included in the scope of this study. However, enough information was gathered to reach key conclusions about the current Purdue Libraries experience in the digital space.

The Purdue University brand identity leads for the Purdue Libraries digital presence. This is a strong affiliation for the libraries and one that should be maintained. Within that framework however, the libraries lack their own sense of identity. More could be done to allow the two to co-exist while creating a library-specific online experience.

Navigation to individual libraries within the site is sometimes difficult or confusing. Some links suggest access but terminate in only one area of information. Consideration should be given to information hierarchy and organization to improve the online presence and create a better user experience.

Archives and Special Collections have a strong visual presence on their landing page, allowing imagery to energize data and pique the curiosity of online users.

Imagery on each of the specialized library landing pages, however, is limited to images of the library itself, and these are often small and implemented using low-resolution photos. The lack of related subject-matter imagery results in text-heavy pages that are difficult to process and at times visually confusing. Integrating more imagery as a means of online storytelling would enhance user interaction.

Several features within each of the library landing pages and the Purdue Libraries home page are useful and enhance the overall experience. They include 1) a brief description of the individual library and the services they provide, 2) a library campus location map, 3) availability of study and specialty spaces within a particular library, and 4) the "real-time readership" feature which is both engaging and dynamic within the context of the virtual setting.

There is nothing today that graphically connects the physical space with the digital space or vice versa, nor contributes to the vibrancy of the library brand. There is opportunity to bridge this gap and create a stronger, more holistic Purdue Libraries experience.

See the Appendix for supporting imagery documenting these observations.



EXISTING BUILDING CONDITIONS

Full assessment of existing library building conditions was not included in the scope of this study nor were engineering consultants retained on the Design Team to analyze building systems. The Team has relied upon the University's Facility assessment reports which are briefly summarized below and in Figure 2.15:

WALC

No major issues identified.

STEW

- · Structure: No major structural issues identified
- Envelope: Roof leaks continue to be a liability to program spaces underneath, especially Archives/ Special Collections. Significant deferred maintenance in the form of caulking and brick repointing work is recommended.
- Interiors: Interior finishes within HSSE library are at the end of their service life. Tiny elevator in historic stack space is not adequate for library's needs.
- Mechanical: Aging AHU's will require full replacement, with an opportunity to adjust the system to modern standards. Some mechanical work is currently underway on the Undergraduate Admissions office renovation in Stewart. Current mechanical systems are not adequate for Archives/Special Collections.
- · Electrical: Major electrical repairs required
- Life safety: No standpipe present in Stewart,
 which limits changes to existing without sprinkler
 system upgrades. Stack space in historic library
 wing is a non-compliant 'atrium' space. The central stair is currently being considered as an egress
 stair, but does not seem to lead to a protected exit
 passageway at ground level potentially another
 stair could be extended to the fourth floor to satisfy egress needs.
- Accessibility: Restrooms are noncompliant. A
 raised floor system in Level O1 HSSE creates significant barriers to accessibility. Stack space in
 historic library wing has accessibility challenges
 existing elevator and adjacent ramp is noncompliant. Only one compliant elevator within HSSE
 footprint.

HIKS

- Structure: Significant structural evaluation required due to water intrusion over time.
- Envelope: Major waterproofing repairs required at basement roof (remove soils to access). Limited daylight into study space due to underground location.
- Interiors: Interior finishes within HIKS Ground Floor are serviceable.
- Mechanical: Full replacement of 40-yr old AHU's required.
- · Electrical: Significant electrical repairs required
- Life safety: Potential use of Basement floor will be limited due to lack of daylight. No information provided on Life Safety systems.
- · Accessibility: No major issues identified.



The following libraries operate within larger buildings, and thus have less agency over the state of existing conditions and future capital investment into systems.

TERM

Significant deferred maintenance related to exterior envelope and building systems.

 Interiors: Interior finishes within AVTech library are at the end of their service life.

MATH

Structure and envelope are maintained adequately, while the MATH building will likely need a significant investment in Mechanical systems soon.

- Interiors: Interior finishes within Math library are at the end of their service life.
- · Accessibility: Restrooms are noncompliant

LYNN

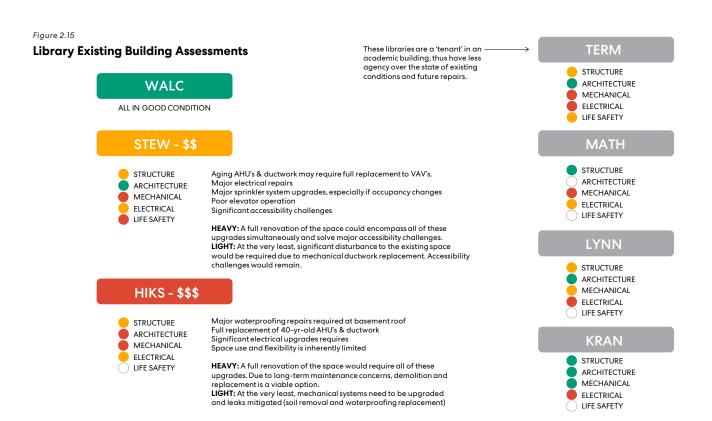
Structure and envelope are maintained adequately, while the LYNN building will likely need a significant investment in Electrical systems soon.

 Interiors: Interior finishes within VetMed library are at the end of their service life.

KRAN

All building systems are maintained adequately in the KRAN building.

• Interiors: Interior finishes within Parrish Library are fairly new and have plenty of service life.





SITE CONTEXT

CAMPUS LIBRARY DISTRIBUTION

The Purdue University Libraries system represents a constellation of physical and digital resources that are accessed in different ways by the campus community and others. The bulk of the library system (WALC, HSSE, HIKS, MATH, and KRAN) is clustered around the academic core of central campus. TERM and LYNN are geographically remote. Consequently, they do not serve many students other than those in the Aviation Tech and Vet Med programs. University course scheduling is built around a system of time modules with 10-minute intervals between scheduled classes. As the campus has evolved and expanded, there are significant portions of campus that are beyond the 10-minute walk radius from the core of library services represented by the vicinity in and around HSSE. The residential core is 10-20 minutes away and a

developing south campus core is similarly distant. In the last 10-years, there has been over \$750 million in south campus investments with more to come. As we consider geographic coverage, support of academic programs, proximity to student residential life, West and South Campus precincts could be seen as library deserts in need of services (see Figure 2.16).

As part of the student engagement process, interactive poster sessions were held in multiple locations across campus where students were asked where they would most like to see expanded library services. Figure 2.17 shows the preferred West and South Campus locations.

Figure 2.16 - South Campus ongoing investment

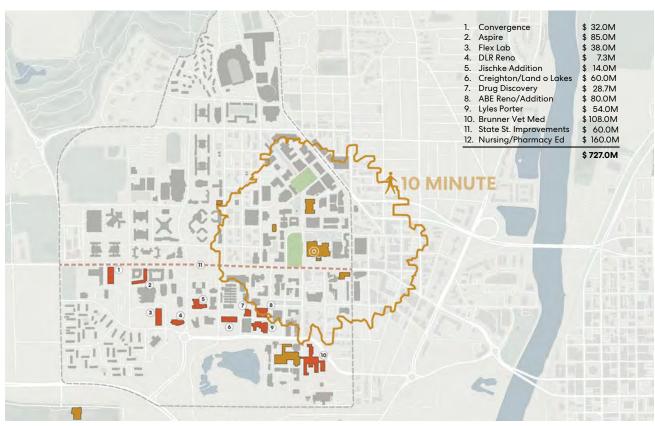




Figure 2.17 - Ten-minute walk times from potential library hubs. The two circles represents locations that were most preferred by students.



Figure 2.18 - Student engagement on 4/14/2022











Figure 3.1 - Programming exercise, 2/22/2022

PROGRAMMING SUMMARY

Prior to planning efforts, the Design Team developed programs for each of the existing libraries. Based on visioning and existing conditions assessments, four fundamental strategies emerged to improve the spaces for library services:

Reach – Improve the geographic reach and distribution of physical services across campus.

Capacity – Significantly increase study seat count and build awareness of the entire network of library services to create pathways for students to move from overstressed libraries less utilized ones.

Presence – Build awareness of library locations, services, and programs (physical and virtual) through more intentional branded environments, showcasing unique assets, and clustering synergistic programs.

Success – Be more deliberate about open adjacencies between library and classroom spaces

To these ends, some libraries need only modest finish and brand refreshes (TERM, LYNN, KRAN) while others may require light renovations (WALC, HIKS, MATH) or more significant interventions (HSSE). Two future library hubs (South Campus Hub and Residential Hub) have also been programmed to better serve across the expanding geography of the academic campus. In this section, you will find program summaries of all libraries.



PROGRAM PRIORITIES

The library hosts a rich diversity of programs and services which will continue to be offered into the future. Some are traditional services organized around the acquisition, preservation, and lending of collections. Others are evolving and expanding services that align with emerging 21st century needs like AR/VR research labs, experimental classrooms, and non-traditional student spaces. Three high-priority programs were identified to not only distinguish the library within the Purdue University context, but also among academic libraries nationally. These include: 1) a new Knowledge Gallery, 2) a Virtual Learning Hub, and 3) a new Center for Digital Scholarship—see Figure 3.2.

Knowledge Gallery – A high-visibility gallery to showcase the unique material assets in Archives / Special Collections as well as broad Purdue University research and scholarship. The gallery will have sufficient security and climate controls to exhibit any part of the collection including digital displays for digital archives and enhanced storytelling.

Virtual Learning Hub – In the post-pandemic return-to-campus, many classes remain virtual as a superior platform for certain types of teaching and learning. In this resulting hybrid learning environment, many students find themselves moving between back-to-back virtual and in-person classes. The Virtual Learning Hubs are reservable touchdown spaces in multiple locations across campus where student can attend virtual classes without the uncertainty of accessing technology or fear of disturbing others in a campus quiet zone. Virtual Learning Hubs will host a variety of spaces—see Figure 3.2. When not used for virtual class attendance, they can flex to become quiet study space.

Center for Digital Scholarship – Purdue already has the parts and pieces of digital scholarship spread across multiple buildings and dispersed leadership. The new Center for Digital Scholarship will collocate these resources into a single place for ease of access, common purpose, and synergistic partnering. This will include Digital Humanities, Digital Scholarship, E-Archives, E-Publishing, Digitization and GIS Walk-In Services. Adjacent Recording Booths, One-Button and Lightboard Studios, and experimental classroom will create a central point of technology tools and services that will attract students and faculty to a common place for chance meeting and cross-pollination of ideas.

Figure 3.2 - Prioritized tiers of programs identified to differentiate the Libraries.

KNOWLEDGE GALLERY Showcase what others are doing Exhibit new scholarship SC/A display New & noteworthy collections		VIRTUAL LEARNING HUB Individual seating for online learning Group seating for online learning Tools & resources for virtual learning		CENTER FOR DIGITAL SCHOLARSHIP Digital Humanities/Scholarship E-Archives / E-Pub Digitization One Button/Lightboard/Recording Data/GIS Walk-In Services	
COLLECTION BASED PROGRAMS	SC/A Engagement	SANCTUARY SPACE OUTDOOR AREA	EXPERIMENTAL TEACHING & LEARNING CTR	ROBUST Makerspace	AR/VR RESEARCH
	NON-TRADITIONAL STUDENT LOUNGE	CAFÉ/FOOD Service	STUDENT REST/NAP ROOM	STAFF/FACULTY LOUNGE	GRADUATE STUDY ROOM
		INTERACTIVE LEARNING ZONE	MORE EMBEDDED COLLAB. CLASSROOMS	QUIET STUDY ZONE	MORE STUDY ROOMS



SPACE PROGRAM SUMMARIES

Through a robust visioning and programming process outlined in the preceding pages, the team established clear space needs. The following summaries below reflect an implementation of those priorities across all libraries in Purdue's network. The Program Summaries below show changes in Assignable Areas by Facilities Inventory and Classification Manual (FICM) codes for each of the libraries. For libraries undergoing more significant change (HSSE, A/SC, South Hub, and Residential Hub) a more detailed summary of net square feet (NSF) by area type as well as the various grossing factors that define the total amount of space required will also be shown. The more detailed programs are organized into seven color coded groups of spaces:

Access Services
Learning Commons
Library Collections
Special Collections
Seating + Collaboration
Operations
Partners + Special Programs

Section 8.0 summarizes all net areas of the program. When only a refresh or modest modifications are recommended, only the changes from existing programs are noted. For significant interventions or new library hubs, a full program is included and can be found in the Appendix of this report.

Section 9.0 breaks down the grossing factors which are applied to account for various types of building

services (mechanical rooms, electrical closets, plumbing chases, etc.), horizontal circulation, and construction (structure, wall thicknesses, etc.). The grossing factor is a means of correlating net square feet to a full building footprint based upon industry practice and professional experience. Grossing breaks down as follows:

Fit Factor: When working within an existing structure with some eccentricities that can lower general efficiencies, we have included a "fit factor" in the grossing. For new construction, the fit factor is set to 'O'.

Building Services: This includes mechanical spaces, shafts, risers, toilet rooms, housekeeping closets, and other support functions that are not part of the assignable areas.

Circulation: This includes vertical and horizontal circulation space (stairwells, elevators, hallways and aisles between assignable areas.

Construction: This includes the thickness of walls and structure between and around all usable areas.

Below each program summary, we have included a second summary organized by existing and proposed Facilities Inventory and Classification Manual (FICM) codes.

Figure 3.3 - summary table on existing vs growth by scenario.

	Undergrad Enrollment	Graduate Enrollment	Library Space (asf)
2031 High-Growth	41,591	14,851	330,612
2021 Existing	37,101	11,613	238,645
2031 Steady*	36,491	14,851	300,739
2031 Growth	39,231	14,851	316,788

^{*}Proposed program based on this growth scenario



STEW (HSSE Library)

Figure 3.4 - HSSE Program summary

B.0	PROGRAMMED SERVICES		EGETTI
	1.0 Access Services	3,891	
	2.0 Learning Commons	7,494	
	3.0 Library Collection	21.727	
	4.0 Special Collections	194	
	5.0 Seating + Collaboration	27,999	
	6.0 Library Operations	3,121	
	7.0 Partners + Special Programs	3,639	
	PROGRAMMED SERVICES SUBTOTAL	68,065	
9.6	GROSSING	Factor	6.5.
	177.0	The same of	

	PROGRA		
2,292	180	- 6	10
4,670	90	0	127
18,193	29,745	0	66
0	0	0	0
26,910	0	0	1,070
9,816	0	88	- 0
16,260	0	11	222
78,141	30,015	105	1,495

9.6	GROSSING	Factor	GSF
	Program Multiplier	1.88	
9.1	Fit Factor		1
9.1	Building Services/Toilets		- 8
9.2	Circulation		- 3
9.3	Construction		- 1
	ADDITIONAL GROSSING SUBTOTAL		_

N.S.F.	Factor	G. S.F.
	1.52	
78,141	0.050	3,907
78,141	0.100	7,814
89,862	0.200	17,972
107,835	0.100	10,783
		40,477

10.0	TOTAL BUILDING AREA	
	8,0 Programmed Services	68,065
	9.0 Additional Grossing	59,731
	BUILDING TOTAL	127,796

78,141
40,477
118,618

Figure 3.5 - HSSE FICM code summary

	EXISTING	
	ASSIGNABLE AREA	SF
110	Classroom	C
115	Classroom Service	
210	Class Laboratory	585
215	Class Laboratory Service	
220	Open Laboratory	
250	Research/Nonclass Laboratory	
310	Office	13,745
315	Office Service	8,218
350	Conference Room	2,721
410	Study Room	12,676
420	Stack	23,547
430	Open-Stack Study Room	10,520
455	Study Service	13,107
530	Media Production	(
535	Media Production Service	
610	Assembly	(
620	Exhibition	54
630	Food Facility	(
635	Food Facility Service	(
650	Lounge	
730	Central Storage	(
750	Central Service	
780	Unit Storage	742
50	Inactive Area	2,611
60	Alteration or Conversion Area	1,649
W05	Lobby	

PROPOSED			Change
	ASSIGNABLE AREA	SF	SF
110	Classroom	1,200	1,200
115	Classroom Service	200	200
210	Class Laboratory	700	115
215	Class Laboratory Service	40	40
220	Open Laboratory	900	900
250	Research/Nonclass Laboratory	600	600
310	Office	8,376	-5,369
315	Office Service	1,160	-7,058
350	Conference Room	2,000	-721
410	Study Room	35,908	23,232
420	Stack	18,443	-5,104
430	Open-Stack Study Room	0	-10,520
455	Study Service	2,408	-10,699
530	Media Production	1,900	1,900
535	Media Production Service	160	160
610	Assembly	500	500
620	Exhibition	2,940	2,886
630	Food Facility	3,130	3,130
635	Food Facility Service	980	980
650	Lounge	420	420
730	Central Storage	1,870	1,870
750	Central Service	550	550
780	Unit Storage	0	-742
50	Inactive Area	0	-2,611
60	Alteration or Conversion Area	0	-1,649
W05	Lobby	330	330
	Total	84,715	-5,459



SOUTH CAMPUS HUB

Figure 3.5 - South Campus Hub Program summary

0.0	PROGRAMMED SERVICES		611511103
	1.0 Access Services	.0	
	2,0 Learning Commons	0	
	3.0 Library Collection	0	
	4.0 Special Collections	0	1
	5.0 Seating + Collaboration	0	
	6.0 Library Operations	3	
	7.0 Partners + Special Programs	ū	
	PROGRAMMED SERVICES SUBTOTAL	0	

7)'0	GROSSING	Fasion	G,S
	Program Multiplier		
9.1	Fit Factor		
9.1	Building Services/Toilets		
9.2	Circulation		
9,3	Construction	100	

10.0	TOTAL BUILDING AREA	
	8.0 Programmed Services	
	9.0 Additional Grossing	
	BUILDING TOTAL	

	РИСТ ЭР М		
1,752	180	5	6
7,690	90	in Albert	199
800	1,080	0	0
0	0.	.0	0
18,800	. 0	0	679
1,764	0	5	0
4,293	0	5	117
35,099	1,350	16	1,000

74.5.F.	Factor	G.S.F
	1.45	
35,099	0.000	0
35,099	0.100	3,510
36,609	0.200	7,722
46,331	0.100	4,633
		15,865

35,099
15,865
50,964

Figure 3.7 - South Campus Hub FICM code summary

	PROPOSED	
	ASSIGNABLE AREA	SF
110	Classroom	1,500
115	Classroom Service	80
210	Lab	700
215	Class Laboratory Service	40
220	Open Laboratory	0
310	Office	758
315	Office Service	400
350	Conference Room	960
410	Study Room	23,168
420	Stack	1,050
455	Study Services	2,353
530	Media Production	400
610	Assembly	500
620	Exhibition	1,000
625	Exhibition Service	140
630	Food Facility	1,800
635	Food Facility Service	580
650	Lounge	210
730	Central Storage	580
750	Central Service	100
W04	Loading Dock	. 0
W05	Lobby	100

Total 36,419



RESIDENTIAL HUB

Figure 3.8 - Residential Hub Program summary

8.0	PROGRAMMED SERVICES		EMSTING
	1.0 Access Services	D	
	2.0 Learning Commons	D	
	3.0 Library Collection	D	
	4.0 Special Collections	D	
	5.0 Seating + Collaboration	D	
	6.0 Library Operations	D	
	7.0 Partners + Special Programs	D	
	PROGRAMMED SERVICES SUBTOTAL	D	

2992	PRESHA		
933	-162	4	D
3,220	.0	0	101
 0	0	0	0
0	0	0	0
9,605	0	- 0	340
1,534	0	5	D
1,118	0	0	60
16,410	162	9	500

9.0	GROSSING	Factor	G.S.F.
	Program Multiplier		
9.1	Fit Factor		0
9.1	Building Services/Toilets		O
9.2	Circulation	191	0
9.3	Construction		0
9.3	Construction ADDITIONAL GROSSING SUBTOTAL		1

N.S.F.	Factor	G.3.F.
	1.45	
76,410	0.000	0
16.410	0.100	1,641
18,051	0.200	3,610
21,881	0.100	2,166
		7,417

10.0	TOTAL BUILDING AREA	
	8,0 Programmed Services	
	9.0 Additional Grossing	
	BUILDING TOTAL	0

16,410
7,417

Figure 3.9 - Residential Hub FICM code summary

	PROPOSED	
	ASSIGNABLE AREA	SF
310	Office	758
315	Office Service	300
350	Conference Room	380
410	Study Room	15,153
420	Stack	110
455	Stack	709
610	Assembly	500
620	Exhibition	500
630	Food Facility	1,200
730	Central Storage	400
750	Central Service	100
W04	Loading Dock	
W05	Lobby	100
W05	Lobby	10

Total 20,210



2550 NORTHWESTERN AVE REPOSITORY

Figure 3.10 - 2550 FICM code summary

	PROPOSED	
	ASSIGNABLE AREA	SF
730	Central Storage	42,554
	Total	42,554

HIKS (Undergraduate Library)

Figure 3.11 - HIKS FICM code summary

	EXISTING	
	ASSIGNABLE AREA	SF
110	Classroom	521
115	Classroom Service	49
210	Class Laboratory	888
310	Office	3,074
315	Office Service	775
410	Study Room	17,521
420	Stack	39,754
455	Study Service	5,129
780	Unit Storage	72
	Total	67,784

	PROPOSED		Change
	ASSIGNABLE AREA	SF	SF
110	Classroom	521	0
115	Classroom Service	49	. 0
210	Class Laboratory	888	0
310	Office	3,074	0
315	Office Service	775	0
410	Study Room	30,824	13,302
420	Stack	2,792	-36,962
455	Study Service	5,129	0
780	Unit Storage	72	0
	Total	44,124	-23,660

MATH

Figure 3.12 - MATH FICM code summary

	EXISTING	
	ASSIGNABLE AREA	SF
310	Office	319
315	Office Service	270
410	Study Room	3,522
420	Stack	1,690
430	Open-Stack Study Room	989
440	Processing Room	348
455	Study Service	637
	Total	7,774

PROPOSED		Change	
	ASSIGNABLE AREA		SF
310	Office	319	0
315	Office Service	270	0
410	Study Room	5,141	1,619
420	Stack	71	-1,619
430	Open-Stack Study Room	989	. 0
440	Processing Room	348	0
455	Study Service	637	0
	Total	7,774	0

WALC (Engineering & Science Library)

Figure 3.13 - WALC FICM code summary

	EXISTING	
	ASSIGNABLE AREA	SF
210	Class Laboratory	1,333
310	Office	3,098
315	Office Service	4,041
350	Conference Room	251
410	Study Room	12,049
430	Open-Stack Study Room	5,126
440	Processing Room	65
680	Meeting Room	463
	Total	26,427

	PROPOSED			
	ASSIGNABLE AREA SF		SF	
210	Class Laboratory	2,980	1,647	
310	Office	3,329	231	
315	Office Service	4,041	0	
350	Conference Room	155	-97	
410	Study Room	10,402	-1,647	
430	Open-Stack Study Room	5,126	0	
440	Processing Room	65	0	
680	Meeting Room	463	0	
	Total	26,562	135	



TERM (AVTECH Library)

Figure 3.14 - TERM FICM code summary

	EXISTING	-
	ASSIGNABLE AREA	SF
310	Office	159
350	Conference Room	454
410	Study Room	308
430	Open-Stack Study Room	1,269
650	Lounge	147
780	Unit Storage	6
	Total	2,343

	PROPOSED	-	Change	
	ASSIGNABLE AREA SF		SF	
310	Office	159	0	
350	Conference Room	454	0	
410	Study Room	308	0	
430	Open-Stack Study Room	1,269	0	
650	Lounge	147	0	
780	Unit Storage	6		
	Total	2 2/12	0	

LYNN (VetMed Library)

Figure 3.15 - LYNN FICM code summary

	EXISTING	
	ASSIGNABLE AREA	SF
310	Office	573
315	Office Service	345
410	Study Room	4,257
420	Stack	11,975
455	Study Service	197
	Total	17,347

	PROPOSED		Change
	ASSIGNABLE AREA	SF	SF
310	Office	573	
315	Office Service	345	. 0
410	Study Room	4,257	0
420	Stack	2,490	-9,485
455	Study Service	197	0
	Total	7,862	-9,485

KRAN (Parrish Library)

Figure 3.16 - KRAN FICM code summary

	EXISTING	
	ASSIGNABLE AREA	SF
210	Class Laboratory	1,195
310	Office	682
315	Office Service	8
350	Conference Room	724
410	Study Room	8,746
420	Stack	1,240
455	Study Service	316
660	Merchandising	81
	Total	12,991

	PROPOSED		Change
-	ASSIGNABLE AREA	SF	SF
210	Class Laboratory	1,195	0
310	Office	682	0
315	Office Service	8	0
350	Conference Room	724	0
410	Study Room	8,746	0
420	Stack	1,240	0
455	Study Service	316	. 0
660	Merchandising	81	0
	Total	12,991	0



ARCHIVES/SPECIAL COLLECTIONS (wherever located)

Figure 3.17 - A/SC FICM code summary

	EXISTING	
	ASSIGNABLE AREA	SF
110	Classroom	0
250	Research/Nonclass Laboratory	0
310	Office	1760
315	Office Service	0
350	Conference Room	809
410	Study Room	1804
420	Stack	7300
440	Processing Room	1377
455	Study Service	53
620	Exhibition	703
625	Exhibition Service	0
W05	Lobby	0
	Total	13,805

	PROPOSED		Change	
	ASSIGNABLE AREA	SF	SF	
110	Classroom	1050	1,050	
250	Research/Nonclass Laboratory	525	525	
310	Office	2256	496	
315	Office Service	1300	1,300	
350	Conference Room	0	-809	
410	Study Room	1700	-104	
420	Stack	6104	-1,196	
440	Processing Room	550	-827	
455	Study Service	200	147	
620	Exhibition	1300	597	
625	Exhibition Service	120	120	
W05	Lobby	80	. 80	
	Total	15,185	1,380	

TOTAL (net recommended change to Library facilities)

Figure 3.18 - Aggregated Total FICM code summary

EXISTING			
ASSIGNAB	LE AREA	SF	
100	CLASSROOM FACILITIES	570	
110	Classroom	521	
115	Classroom Service	49	
200	LABORATORY FACILITIES	4,001	
210	100 CLASSROOM FACILITIES 110 Classroom 115 Classroom Service 200 LABORATORY FACILITIES 210 Class Laboratory 215 Class Laboratory 215 Class Laboratory Service 220 Open Laboratory 250 Research/Nonclass Laboratory 300 OFFICE FACILITIES 310 Office 315 Office Service 305 Conference Room 400 STUDY FACILITIES 410 Study Room 420 Stack 430 Open-Stack Study Room 440 Processing Room 455 Study Service 500 SPECIAL USE FACILITIES 501 Media Production 535 Media Production 535 Media Production 536 Media Production 537 Media Production 538 Serbily 640 Exhibition 650 Exhibition 651 Food Facility 653 Food Facility Service 650 Counge 700 SUPPORT FACILITIES	4,001	
215		101 22	
220	Open Laboratory	9.	
250	Research/Nonclass Laboratory	17	
300	OFFICE FACILITIES	42,024	
310	Office	23,409	
315	Office Service	13,657	
350	Conference Room	4,959	
400	STUDY FACILITIES	185,522	
410	Study Room	60,882	
420	Stack	85,506	
430	Open-Stack Study Room	17,904	
440	Processing Room	1,789	
		19,440	
500	SPECIAL USE FACILITIES	11	
530	Media Production		
535	Media Production Service		
600	GENERAL USE FACILITIES	1,449	
610	Assembly	10/	
620	Exhibition	757	
625	Exhibition Service	- 4 7 5	
630	Food Facility	- N	
635	Food Facility Service		
650	Lounge	147	
700	SUPPORT FACILITIES	821	
	Central Storage	T 8	
750	Central Service	- (1)	
780	Unit Storage	821	
000	UNCLASSIFIED FACILITIES	4,260	
50	Inactive Area	2,611	
	Alteration or Conversion Area	1,649	
www	CIRCULATION AREA		
	Lobby		

PROPOSED		Change		
ASSIGNABLE	AREA	SF	SF	
100 0	LASSROOM FACILITIES	4,600	4,030	
110	lassroom	4,271	3,750	
115 0	lassroom Service	329	220	
200 L	ABORATORY FACILITIES	8,568	4,568	
210	lass Laboratory	6,463	2,463	
215	lass Laboratory Service	80	80	
220	Open Laboratory	900	900	
250 F	lesearch/Nonclass Laboratory	1,125	1,125	
300 0	OFFICE FACILITIES	33,555	-8,469	
310	Office	20,283	-3,125	
315	Office Service	8,599	-5,058	
350	Conference Room	4,673	-286	
400 5	TUDY FACILITIES	188,202	2,680	
410 5	tudy Room	135,606	74,723	
420 5	tack	32,300	-53,206	
430	pen-Stack Study Room	7,384	-10,520	
440 F	rocessing Room	963	-827	
455 5	tudy Service	11,950	-7,490	
500 5	PECIAL USE FACILITIES	2,460	2,460	
530 1	Media Production	2,300	2,300	
535 1	Media Production Service	160	160	
600	SENERAL USE FACILITIES	16,512	15,063	
610 /	ssembly	1,500	1,500	
620 E	xhibition	5,740	4,993	
625 E	xhibition Service	260	260	
630 F	ood Facility	6,130	6,130	
635 F	ood Facility Service	1,560	1,560	
650 L	ounge	777	630	
700 5	UPPORT FACILITIES	46,233	45,412	
730	Central Storage	45,404	45,404	
750 0	Central Service	750	750	
780	Init Storage	79	-742	
000	INCLASSIFIED FACILITIES		-4,260	
50 1	nactive Area	10	-2,611	
60 /	Alteration or Conversion Area		-1,649	
www c	IRCULATION AREA	610	610	
W05 L	obby	610	610	
	otal	300,739	62,094	



04 PLANNING RECOMMEN-DATIONS



GENERAL PLANNING STRATEGIES

The challenge for Purdue University Libraries is to create enhanced library space to support student academic success, scholarly research, and more visible (and expanded) University Archives and Special Collections. The recommended planning is informed by future library space needs and guided by the four fundamental strategies that emerged from the visioning and existing conditions assessment:

Reach – Improve the geographic reach and distribution of physical services across campus by planning two future library spaces: 1) a South Campus Hub serving the growing investments and academic programs of this precinct, and 2) a Residential Hub serving the needs of students in and around the residential precinct of campus. These future library hubs would be integrated with partners (academic classrooms and residential life respectively) and would help mitigate the shortage of study seats across campus.

Capacity – Increase study seat count by +/- 2,900 seats by increasing densities in existing libraries (HSSE, HIKS, and MATH), and adding future hubs in underserved precincts.

Presence – Build awareness of library locations, services and programs (physical and virtual) through more intentional branded environments, visibility of showcase programs, and increased permeability of libraries to welcome students and increase 'findability' of resources. These are broken down below by strategies of awareness, consistency, alignment, and celebration.

Success – Make the existing relationships between libraries and classrooms more direct and incorporate similar adjacencies in future library hubs. Cluster synergistic library/partner services to enhance cross pollination of resources and improved collaboration among staff.

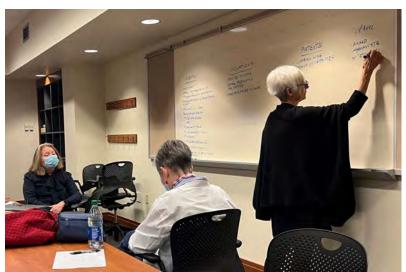




Figure 4.1 - Planning workshops on 4/14/2022.





Figure 4.2 - Campus map of existing library facilities.

LIBRARY EXPERIENCE PLANNING

An exciting opportunity exists to reshape the Purdue Libraries physical and digital experience, thereby supporting student academic success, scholarly research, and enhanced social learning. This can be achieved by promoting attributes of the Purdue University brand while enhancing the qualities of the Purdue Libraries brand. In addition to the four fundamental strategies noted above, the library experience planning is informed by the following four foundational strategies that emerged from the visioning and existing conditions evaluation:

Awareness – Build awareness of library locations, services, and programs through more intentional branded environments (physical and virtual), visibility of showcase programs and features, and increased identification at library entries to welcome students and increase 'findability' of library facilities.

Consistency – Create consistent brand expressions and environments across the library system by crafting a set of common branded elements while still accommodating unique attributes of each academic library, to enhance user recognition, preference for library spaces and places, and as an extension of Purdue culture.

Alignment – Align the physical and virtual environments through the use of visual cues and expanded storytelling to create a "One Purdue Libraries" experience and community.

Celebration – Develop moments of discovery and celebration by implementing a series of display methods and story-telling venues that promote innovation, research, Archives / Special Collections, and the stories that make Purdue, Purdue. Put learning on display and celebrate successes.



LIBRARY SPACE PLANNING

SPACE CONNECTIVITY

An important aspect of experiential planning is to make the connection between library resources and scholarship visible. Architectural transparency and open sightlines help to make this connection. Another consideration is to place core programs that embody the connection between resources, technology and the display of scholarly production at the visible core of the library. By removing visual barriers or even cutting away sections of floor slabs, visitors can immediately orient themselves in the space and understand where primary resources can be found. Rather than thinking of learning commons as a distinctive space apart from other spaces, they can be thought of as the connective tissue between spaces. It should not be defined as one type of space for one type of work. Rather it is zoned across a continuum to best support a variety of adjacent programs and services.

BLOCK PLANS & TEST FITS

The blocking plans and test fits on the following pages demonstrate an organizational approach that integrates programmatic needs and adjacency requirements with existing building constraints and space harvesting strategies. Program areas are sized

per the program and the colors reference similarly colored spatial categories captured in the full program found in the appendix of this document.

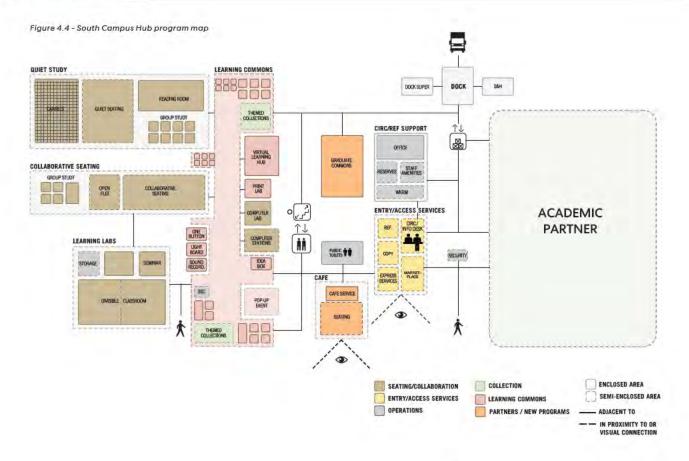
EXPANDED REACH

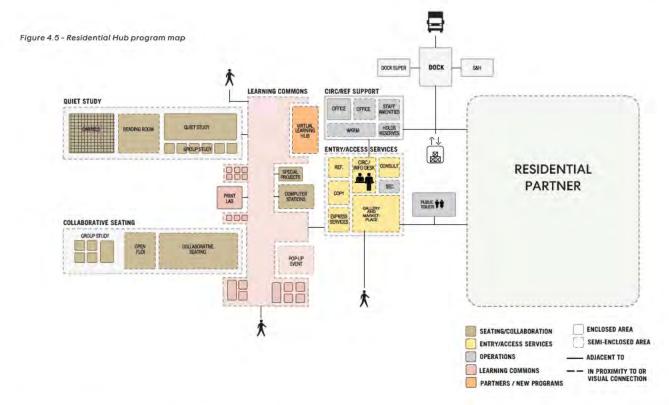
For new library hubs (South Campus Hub and Residential Hub), the general precincts have been determined, but exact sites have yet to be identified. As such, these future hubs remain in Program and Program Map formats. Future blocking and stacking of those spaces should be part of planning once specific partners and sites have been identified. With yet-tobe-identified partners, unknown site availability, and probable enabling projects that would need to occur prior to design and construction of the new library hubs, they are likely to be several years into the future. With this in mind, a list of ideal site criteria was developed see Figure 4.3 for the South Campus Hub Site Criteria Matrix. See Figures 4.4 and 4.5 for Program Maps of South Campus Hub and Residential Hub respectively. These maps are not meant to be floor plans but instead to illustrate preferred and/or important relationships of spaces and programs.

Figure 4.3 - South Campus Hub: site criteria matrix sample

CRITERIA	SITES					
	1	-2	3	-	8	6
Ground Level Student & Public Visibility And Identity						
Proximity To Some Public Parking For A/SC (if located in South Hub)						
Centrally Situated To Academic / Research Buildings and Students						
Location With Potential For Strong Academic Partner Or Classroom Cluster						
8 - 10 Minute Walk To Most South Campus Investment Zones						
5ize; +/- 51,000 GSF Library With A Minimum 17,000 SSF Library Buildog Footprint (+ Partner)						
Donor Appeal Potential						
Site Availability Aligns With Construction Horizon						









REFRESH

The Aviation Technology Library (TERM) is a specialized library that is remotely situated on campus in the Terminal Building. As current replacement plans for this building begin to unfold, the incorporation of preserving study seats will need to be incorporated into the plans for this location.

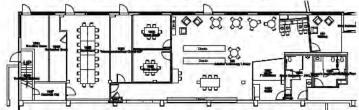
The Veterinary Medical Library (LYNN) is also a specialized library that is remotely situated on campus in Lynn Hall. It is well appointed with study and staff space. Collections will be weeded and moved to remote storage and the vacated space turned over to Veterinary Medicine programs. The library is due for a general refresh of finishes. As an intentional Purdue Library Brand is developed, that identity should be incorporated into the refresh.

The Roland G Parrish Library of Management & Economics Library (KRAN) located in the Krannert Building is working well. It has a good balance of staff and patron space. It is welcoming, and already features a direct connection between library and classroom spaces. As a library embedded in a larger building, its

presence is not clear outside the building. Inside, KRAN has the most sophisticated branding of the Purdue Libraries, but its identity is specific to the Parrish donor legacy and lacks connections to the larger library network. As the Libraries considers general refreshes of the space, a more intentional Purdue Library Brand should be incorporated.

For other existing libraries-MATH, WALC, HIKS and HSSE—light to more intense renovations are recommended. The challenge will be to realize meaningful change in the existing area of each library set within its larger, host building. The Design Team has developed strategies to harvest space within the existing footprint of each library to accommodate increased seating capacity, more diversified seat types, new programs, and improved visibility of unique resources and services. This requires a targeted 15% weed of collections currently on open stacks of HSSE and MATH, and the Repositories in HIKS and LYNN and then relocating those collections to a remote storage facility just north of campus in the 2550 Building.

Figure 4.6 - Furniture plan of AVTech library in the TERM facility. Not to scale.



Furniture plan of Parrish Libra v in KRAN facility. Not to scale

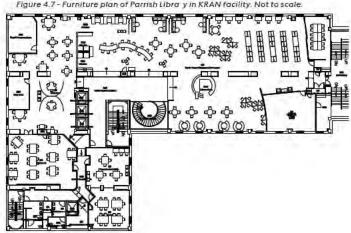
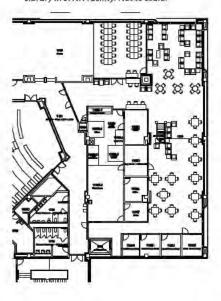


Figure 4.8 - Furniture plan of VetMed Library in LYNN facility. Not to scale.





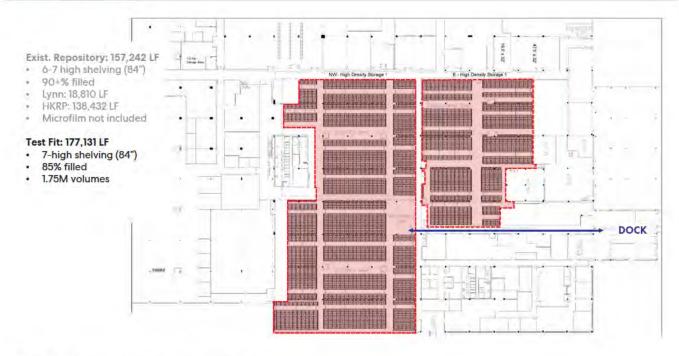


Figure 4.9 - Collections storage test fit for 2550 Northwestern Ave.

2550: CONSOLIDATING COLLECTIONS

Ninety-eight percent of Purdue students surveyed rarely or never browse the physical book stacks. This is in line with national trends that show a strong appreciation for the presence of books, but browsing of information happens on other platforms. Test fits of the available 42,500 square feet in the 2550 building yield a storage capacity of +/- 175,000 linear feet of collections (see Figure 4.9). With a 15% weeding target, all existing repository, 90% of MATH collections and 90% of HSSE floor collections can be accommodated in 2550. Collections in the HSSE Tiers (the structural stacks in the historic library structure) will remain as they are already at reasonably high density and the spaces cannot readily be used for other purposes. The 10% of collections remaining in MATH and HSSE can be specifically curated for high use items or themed collections better suited for browsing. Moving collections to 2550 is critical to harvesting valuable space in MATH and HSSE to be repurposed as student engagement space for study, collaboration, and new programs.





Figure 4.10 - View to HSSE Library from Memorial Mall. Note the new dormer windows for daylight on 3rd and 4th Levels, and proposed roof terrace overlooking Mall.

HSSE

The renovation of the Humanities, Social Sciences and Education Library (HSSE) is by far the most complex undertaking, but it holds the greatest transformative potential. A four-story library embedded in the Stewart Center (see Figure 4.11), HSSE lacks organizational logic and a recognized 'center' for orientation. The Design Team has structured the future planning around a centrally located Learning Commons that vertically spans across multiple floors with clearly visible vertical circulation and access to natural light (see Figure 4.13). Around this core, library spaces and services are loosely organized in graduated zones of activity and spatial character: active to quiet, open to contained, and directed to self-directed (see Figure 4.12).

By moving 90% of floor collections to 2550 and fundamentally restructuring internal library organization, HSSE has the potential to:

- Increase study capacity by more than 1,000 seats
- Interconnect floor levels to build awareness and encourage access beyond entry level services
- Dramatically increase the diversity of seating types including outdoor terrace seats, technology

enhanced group study seats, special projects rooms, seminar seats, reading room seating with themed collections, study-oriented lounge seats, and 'silent' study seats

- · Increase after hours/extended hours study seats
- Increase visibility of unique assets like gallery space, Archives and Special Collections, pop-up event space, Visualization Lab, Special Projects research, Virtual Learning Hub, Center for Digital Scholarship, Experimental Teaching, and library branded café service
- Be physically porous to east-west pedestrian traffic on all floors improving connectivity with admissions visitors, conferencing attendees, and classrooms
- Seamlessly integrate library brand expression

In many ways, HSSE exemplifies the challenges and potential for all libraries within the Purdue system. As such, the Design Team studied and test-fitted this library in more detail to serve as a case study for the future of other libraries.



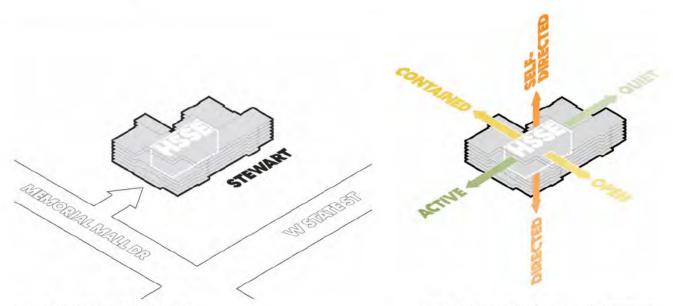
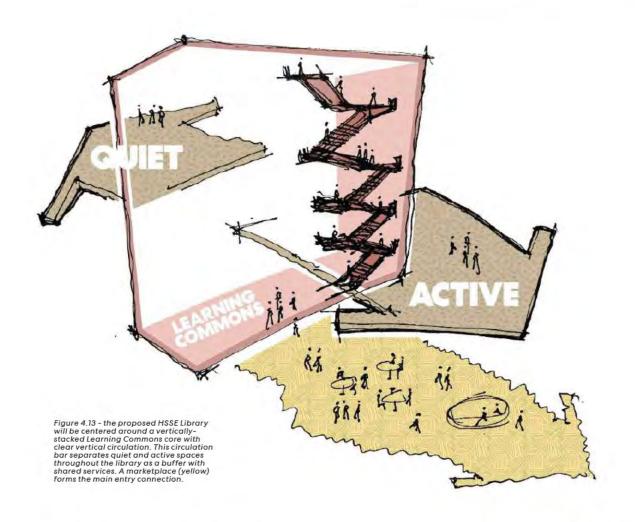


Figure 4.11 - HSSE Library is a four-story space embedded within Stewart Center.

Figure 4.12 - Activities within the proposed HSSE library are organized to provide varying levels of quiet/active zones, directed/self directed zones, and contained/open programs





HSSE LEVEL 1

The arrival to HSSE Library is radically changed (see Figure 4.16). There is no walled threshold with lockable doors. Rather one arrives through open, welcoming, branded portals. At the south entry portal, the glassed in Knowledge Gallery showcases collections and scholarship unique to the Purdue Experience. From the main Stewart Center entry lobby, the portal is dominated by a library branded café that foregrounds café culture as a model for engaged, informal, and social learning. Part hospitality and part library, arrival is about finding people, connecting with place, and discovering tools and resources for personal success. The arrival zone is a mixing pot of curious admissions visitors, theater/auditorium event participants, graband-go café customers, and library patrons alike. From this arrival zone, one is invited up a learning landscape of tiered seating and stairs to the centralized blended service desk on Level 2. Tiered seating is multifunctional—it serves as stepped audience seating for pop-up events, it can be an elevated stage for an audience seated below, and it is a daily place to see and be seen (see Figure 4.17).

Just behind the learning landscape are the public facing portions of Archives and Special Collections(A/ SC). In this location, A/SC is visible, easy to find, and adjacent to the Knowledge Gallery that is three times larger than the existing gallery (see Figure 4.18). Library elevators and main vertical circulation stair are just outside A/SC doors and adjacent to the east-west corridor that connects the Memorial Union with the Stewart Centers main lobby—the most trafficked interior corridor on Purdue University's campus. Placing A/SC and the Knowledge Gallery along this corridor significantly raises the visibility of this unique asset. This location also situates A/SC in direct adjacency to the building's main loading dock and has a direct connection to the library's historic tiers of structurally integrated book stacks (Tiers). Studies suggest that all of AS/C's Rare Books and 30% of Archives can be stored in lower two levels of the tiers.





† Figure 4.14 - Proposed blocking plan for HSSE Library Level 1

↓ Figure 4.15 - Proposed furniture plan for HSSE Library Level 1

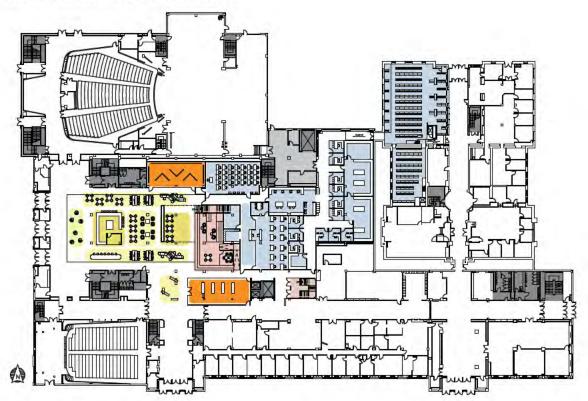




Figure 4.16 - View from lobby into library 'marketplace.' A cafe anchors this entry as a welcoming and flexibly programmed space.



Figure 4.17 - View up to the main Access Services desk on Level 2. The double-height volume hosts pop-up events and creates a focal point within the larger library marketplace.

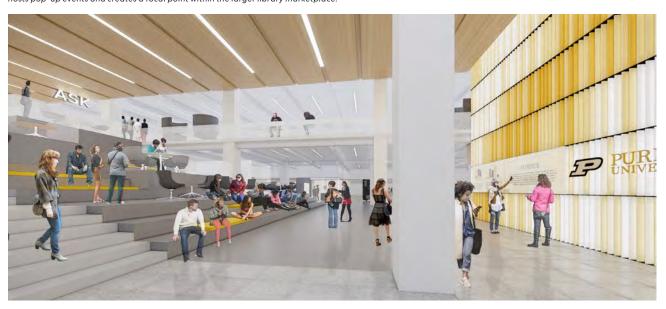




Figure 4.18 - View from the south entry to HSSE (existing Art Gallery). The special collections Knowledge Gallery anchors this entry into the library.



Figure 4.19 - View back towards the cafe and west entry, showing a repositioned Art Gallery space with improved visibility.





HSSE LEVEL 2

By dramatically opening up the south wall of the library to the classroom/conferencing corridor on Level 2, the library's relationship to Stewart Center partners and programs is dramatically changed (see Figure 4.22). The previously non-existent library presence on Level 2 is replaced with a blurred co-mingling of library, circulation corridor, classrooms, and conferencing environments. At the center of the plan is the central blended service point for information, reference, Inter-Library Loan, and pop-up services that might benefit from a short-term presence in the library. West of the service desk, the stepped learning landscape dramatically drops down to Level 1 affording views and sightlines across multiple floors and builds awareness of what other resources are available. This is an active learning and collaboration zone surrounded by clusters of public computing terminals, a seminar room, a computer lab, periodicals lounge, Non-Traditional Student lounge and a semi-enclosed reading room that offers some acoustic dampening (see Figure 4.20).

The Learning Commons core just east of the service desk includes group study rooms, copy-print amenities, and a vertical circulation core of elevators and open stairs. East of the Learning Commons core is a zone of quiet study. The Virtual Learning Hub is a buffer between the classroom corridor to the south and quite study tables and carrels to the north. Designed to offer touchdown space for students attending virtual classes, the Virtual learning hub features check-in stations, acoustical high-partition carrels, and a series of sound attenuated booths for groups of 2-4 students to participate in virtual classes together. Outside of virtual class hours, this space flexes into quiet study space. For a prototype study of a Virtual Learning Hub in HSSE, see Figure 4.23. North of the Virtual Learning Hub is a walled-in quiet study room with doors. After hours, doors can be locked to protect the curated collections that line the study room while also securing the collections stored in the Tiers beyond.





↑ Figure 4.20 - Proposed blocking plan for HSSE Library Level 2

→ Figure 4.21 - Proposed furniture plan for HSSE Library Level 2

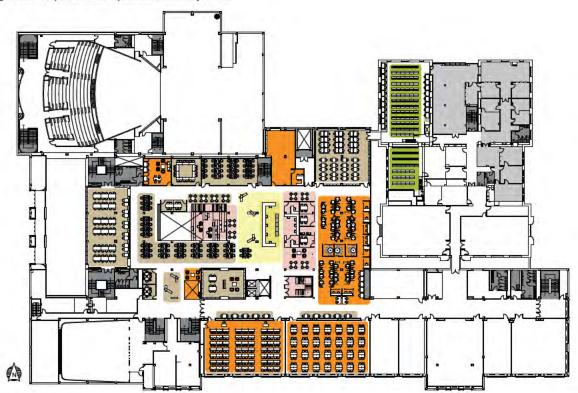
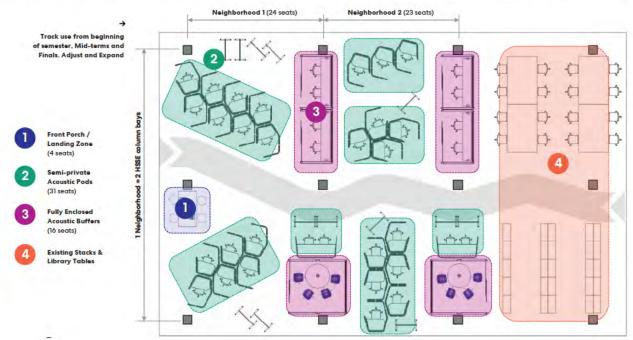






Figure 4.22 - View along Stewart Center's main Level 2 east-west corridor. The walls have been made 'porous' to adjacent programs to increase connectivity between library existing classroom and conference spaces.







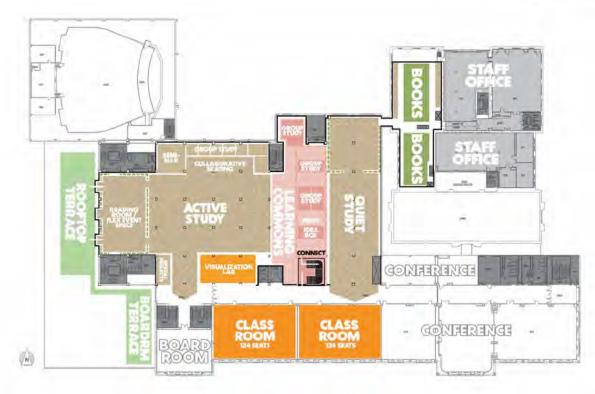
HSSE LEVEL 3

Like Level 2, Level 3 opens the library to the class-room/conferencing corridor to the south. The vertically stacked Learning Commons remains in the same central location hosting similar amenities and an expanded set of group study rooms. It also features a high-visibility, glass enclosed "Idea Box" space to showcase student research, creative production, or interactive environmental installations (see Figure 4.24). Active study west of the Learning Commons is surrounded by more group study room, another seminar room, Visualization Lab, and a high visibility Special Projects Room where students collaborating on long-term projects can reserve team space for weeks or even an entire semester (see Figure 4.26).

Level 3 includes the opportunity to connect the west reading room to an outdoor roof terrace and a unique set of outdoor study tables. When combined with the interior reading room, this can also be an events venue like no other on campus with indoor/outdoor options for multipurpose events, receptions, dining and other special uses (see Figure 4.27).

Like Level 2, the areas east of the Learning Commons are dedicated to quiet study. This includes another walled-in quite study room with doors. After hours, the doors can be locked to protect the curated collections that line the study room while also securing the collections stored in the Tiers beyond.





↑ Figure 4.24 - Proposed blocking plan for HSSE Library Level 3

↓ Figure 4.25 - Proposed furniture plan for HSSE Library Level 3

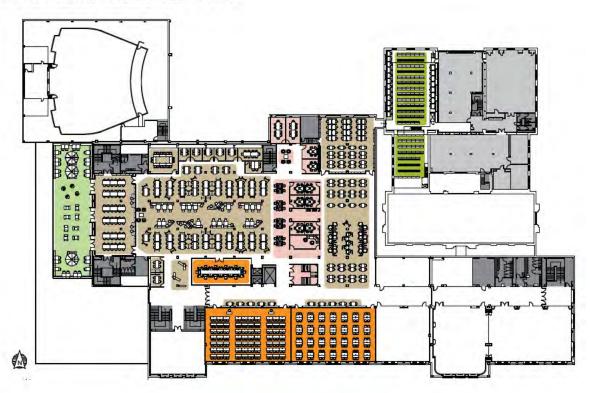






Figure 4.26 - View through the main study spaces of Level 3. Main circulation stair is opened and spills out onto flexible Learning Commons space on each floor for intuitive wayfinding



Figure~4.27-Proposed~roof~terrace~overlooking~Memorial~Mall,~accessible~from~Level~3~of~HSSE.

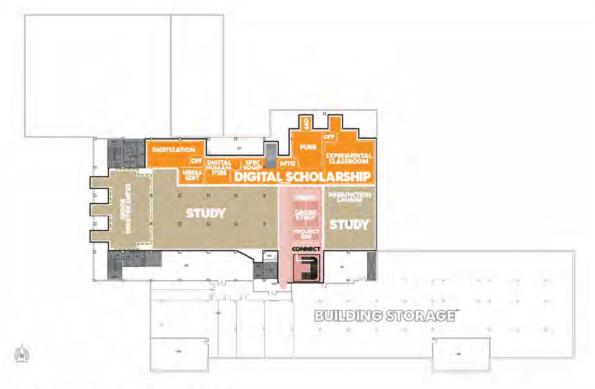


HSSE LEVEL 4

Today, Level 4 is a disconnected island of windowless space. By introducing an elevated roof over the Learning Commons, clerestory windows will flood this central zone with natural light. A skylight over the central community stair also draws daylight down to lower library floors and invites patrons to use the stair to explore the resources on other floors (see Figure 4.31). Level 4 features clustered resources that serve as a cross-disciplinary faculty attractor. This includes faculty offices, an experimental classroom, and the colocation of groups that form a new Center for Digital Scholarship. The center of the plan is dedicated to quiet study with a 'Silent' Reading Room to the west for those seeking absolute quiet. A series of three new dormer windows have been inserted into the existing mansard roof to offer daylight and views to those studying on the uppermost floor. These new dormers extend down to the new Level 3 roof terrace below, integrating the outdoor terrace access doors in a single architectural gesture (see Figures 4.27).

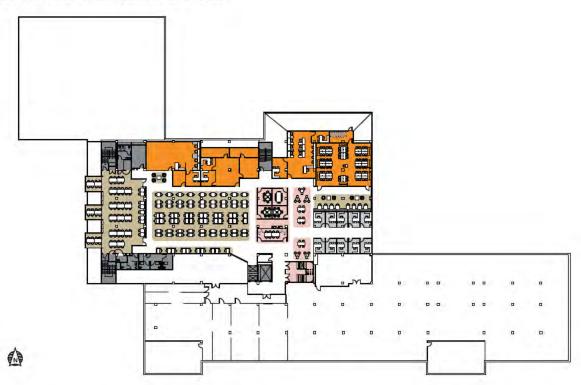
Due to the poor distribution of egress stairs serving this floor, the central north stair has been extended up one floor level to adequately service the occupancy of the new Level 4.





↑ Figure 4.28 - Proposed blocking plan for HSSE Library Level 4

↓ Figure 4.29 - Proposed furniture plan for HSSE Library Level 4





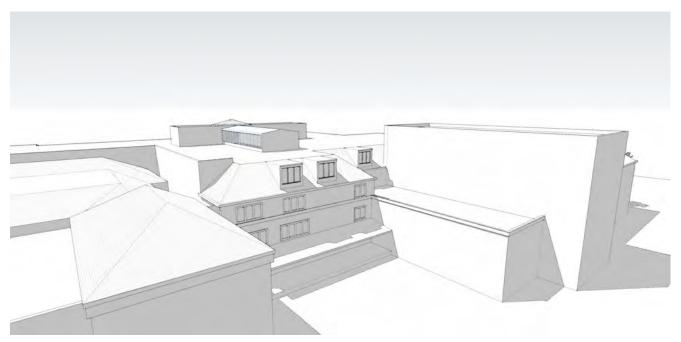


Figure 4.30 - View from north showing potential adjustments to HSSE roofline -- adding dormer windows, clerestory for daylight in Level 4 and a skylight over the central stair.



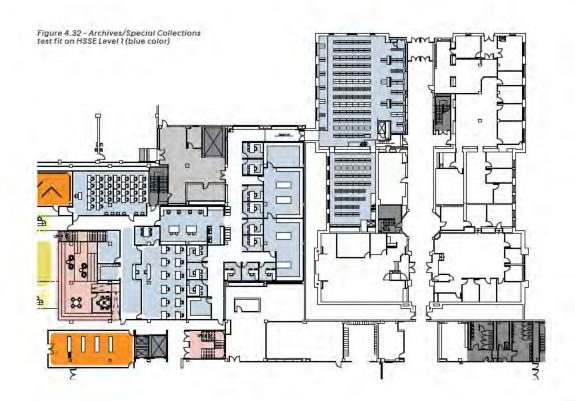
Figure 4.31 - Illustration showing a section through the open stair and Learning Commons zone. Note clerestory addition to bring light to Level 4 study spaces.



ARCHIVES & SPECIAL COLLECTIONS GROWTH

Archives & Special Collections (A/SC) is one of the most widely recognized and valued part of the Purdue Libraries. The current location on HSSE Level 4 is problematic in many ways. It is difficult to find. It has almost no visibility. It holds valuable one-of-a-kind collections in over packed storage directly beneath a roof prone to leaks. Staff and processing spaces are shoe-horned into existing spaces designed for other purposes including a small conservation lab. In general, archives and special collections are the most significant areas of physical collection growth. These collections embody the unique stories and attributes of their host institution. Purdue is no exception. The relocation of A/SC to HSSE Level 1 solves many of the existing deficits, especially visibility, accessibility, and discoverability. The ground level location has direct access to a proper loading dock and the directly connected lower two levels of Tiers can be secured and upgraded with appropriate fire protection, environmental controls to meet appropriate preservation index levels. This upgraded Tier space will accommodate all rare books and approximately 30% of archives. Behind supervised reading room and instructional spaces are the staff offices and processing

space (including growth for future digital archivists). The conservation lab is right sized for the equipment and operations needed to support the collection. There is a holding room for incoming collections to be vetted and a digitization lab that supplements full digitization services located upstairs in the Center for Digital Scholarship. The new Knowledge Gallery is directly adjacent to A/SC and located at the intersection of the Stewart Center's south entry and the busiest east-west corridor on campus. Test fit details can be seen in Figure 4.32 as noted in HSSE Level 1 description above. Existing collection storage areas in the basement levels of HSSE (G064 and B038) and remain and be upgraded for specific storage. Existing spaces in HIKS (B845) can remain for the mediumterm, but suitable remote storage location needs to be identified as a long-term use of HIKS is uncertain. A solution that finds 11,400 cubic feet of long-term A/SC storage would consolidate a future-displaced 7,000 cubic feet from HIKS and another 4,400 cubic feet. for 10-years of continuous growth. It would also make sense to locate about 260 cubic feet of cold storage for the deteriorating film collection. One option could be vacated LYNN repository space (B100A)





HSSE BRAND EXPERIENCE

There is very little sense of place or brand presence in the HSSE Library today. By introducing a series of branded elements we are able to overcome some of the experiential concerns and at the same time, grow awareness and even preference for library spaces in general. These, combined with the proposed spatial modifications, will support the brand, the culture and build a new sense of academic community in Purdue Libraries. Here's how we propose to implement this transformation:

- Introduce a system of icons that are deployed in both the physical and digital space to help with wayfinding, navigation, location, and distraction graphics. The first physical encounter with this system of icons occurs at the entry to Stewart, announcing "Library Inside!", and introducing the icon family for future recognition.
- Mark the HSSE library entry with a Purdue brandcolor portal, the "Library Inside" icon, Purdue logo, and the library name. This begins the enhanced recognition for the library within. Permeable edges are also marked with colored portals to identify the shift to library space.
- Integrate a 2-story translucent screen that activates a pop-up venue, anchors the community stair, integrates Purdue identity, and celebrates the stories of Purdue.
- Put books on display as backdrops to lounge collaboration spaces, to reinforce their representation of discovery and exploration. This is not intended to replace book stacks, but rather create library atmosphere in support of the pursuit of knowledge, research, and innovation.
- Use large-scale icons to provide connection to programs within individual space types; use fields of small-scale icons to provide visual distraction on glass for safety purposes, and to link back to the digital language of navigation on the website. In some circumstances, the distraction graphic changes to a series of words associated with the program of specialty spaces; an example of this is the Idea Box, where the word choices imply the purpose of the room.

- Integrate a flexible display system at the Knowledge Gallery with Purdue branded display cases. This ties Archives and Special Collections, and other Purdue-only stories to the Purdue and library brand, while creating excitement within the library. A system of smaller scale exhibit pylons will distribute smaller stories throughout the subsequent floors of HSSE, as well as distributing storytelling opportunities to other libraries on campus.
- Extend storytelling opportunities in a variety of locations to create interest and learning along a library user's journey. This includes activating the community stair, the connecting 4-story stair in HSSE, long connecting corridors, and classrooms and meeting spaces. Subject matter changes by use, but may include the exploration of language types, famous Purdue individuals, patents and firsts, innovations at Purdue, and other relevant subjects.
- Implement a bold, clear wayfinding and signage system that provides clear orientation, direction, and identification of place. Coupled with an information display system, this will minimize confusion and visual clutter, and create an overall sense of direction and orientation.
- Website templates have been developed to demonstrate the potential of a more aligned brand across the digital and physical environments. Key attributes include the use of large-scale imagery, navigational icons, and clear messaging.

See Figures 4.33 – 4.46 for visual references.





* This library will likely be closed.
Relocation of materials to be considered.





 $\ \uparrow$ Figure 4.33 - Branding strategic opportunity matrix, showing possible implementation across all library locations

 $\,\,$ $\,$ Figure 4.34 - Library iconography examples for clear wayfinding and communication across physical and virtual experiences.







Top Brand Strategies:

WHAT

- Develop exterior sign solution to promote Library presence in each building location, while respecting the Purdue brand.
- 2. Develop consistent interior sign system that clearly announces the individual Library and points of entry.
- 3. Develop consistent interior sign system that identifies functions, space types, and intended use.
- 4. Create between-class study zones and virtual class participation spaces in Virtual Learning Hubs.
- 5. Integrate digital tools to support student research and learning at the Center for Digital Scholarship.
- Develop flexible Knowledge Gallery display platforms to better showcase Archives and Special Collections, and other Purdue stories.
- Develop flexible Story-Telling methodologies that celebrate Purdue and the Library system; leverage across the network of Libraries.
- 8. Provide flexible display methods for special feature exhibitions and events.
- 9. Provide opportunities for student, faculty and administration postings, in an organized manner.
- 10. Develop a series of Website templates and icons that can be leveraged across various communication methods, digital cataloguing, and information sharing platforms.
- 11. Create a system of branded distraction graphics for glass-fronted spaces.
- 12. Create "brand" destinations within the Libraries that support collegiality and collaboration.

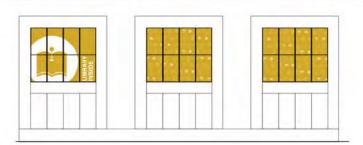
WHY

- 1. Make libraries easier to find. Build greater brand awareness for Libraries on campus.
- 2. Overcome difficult-to-find interior locations. Bring equity of treatment to each library. Build brand consistency.
- 3. Enhance user experience through clarity of purpose.
- Communicate purpose; inform "reserve ahead".
 Modify behavior and provide alternative class participation.
- 5. Promote innovation. Put learning and innovation on display. Support Purdue and Library culture.
- Showcase depth of resources and knowledge.
 Build excitement for the Library brand. Enhance experience through discovery.
- 7. Create equal experiences for each Library. Inspire all who use the Libraries. Celebrate the stories that make Purdue. Purdue.
- 8. Engage the broader Purdue Community. Position the Library system as a source of engagement, collaboration and partnership.
- 9. Minimize the clutter and visual confusion!
- 10. Create visual consistency and bring clarity to navigation. Create visual excitement for the Library brand. Align the physical experience and the on-line experience.
- 11. Safety. Consistency. Extend the brand experience.
- 12. Build community. Support Purdue culture. Drive preference of place.















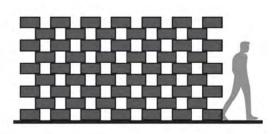
↑ Figure 4.36 - Interior entry identity for HSSE Library - threshold



↑ Figure 4.37 - Interior entry branding wall in double-height space







 $\ \, {\bf \uparrow} \, \text{Figure 4.38 - Book display branding feature, derived from student desire to feel 'the presence of books'} \,$



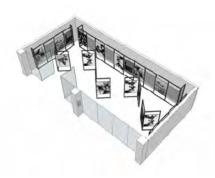


↑ Figure 4.39 - Archives/Special Collections Knowledge Gallery branding & public display opportunities. Pylons can be deployed across campus to showcase content in other library locations





↑ Figure 4.40 - Art Gallery flexible display system concept





↑ Figure 4.41 - Stairway feature wall storytelling concept



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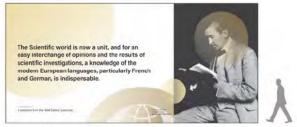


↑ Figure 4.42 - Storytelling opportunities through glass distraction graphics









↑ Figure 4.43 - Storytelling opportunities through feature walls and Purdue history





 $\ \uparrow$ Figure 4.44 - Proposed online presence. Right: example of kit-of-parts approach for a successful web experience.





 $\ensuremath{\uparrow}$ Figure 4.45 - Wayfinding pylons keep direction information simple and easy to navigate.







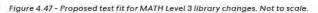


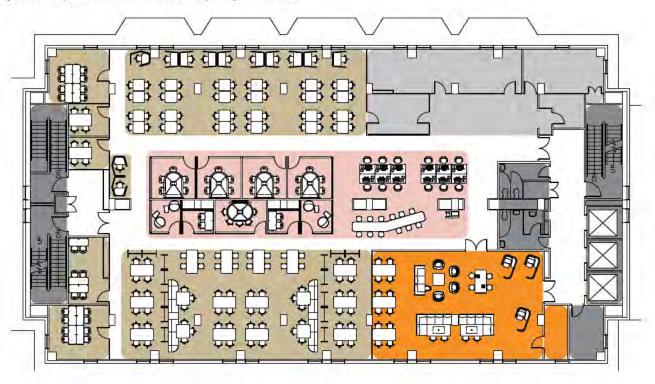




MATH: STUDY SEAT ENHANCEMENT

The Mathematical Sciences Library (MATH) is utilized by a wide range of students across multiple colleges and disciplines including College of Science, Agriculture, Health and Human Science, Liberal Arts, School of Management and the Graduate School. By moving 90% of collections to the off-campus storage facility, the library can improve capacity and variety of study seats. The test fit in Figure 4.47 illustrates the introduction of 9 additional group study rooms in the center of the library to effectively zone the floor into quiet study to the north and collaborative study to the south. This approach increases capacity by 115 seats. The test plan illustrates a mix of multiple seating types including traditional group rooms, technology enhanced group rooms, individual and 2-person collaboration rooms, individual carrels, banquette seating, computer stations, high-top bar-style seating and a mix of mobile 2-top and 4-top tables. An ample supply of mobile white boards provides flexible writable surfaces and a means to partition study space to suit individual needs. Library renovation should incorporate the to-be-developed Purdue Library Brand.



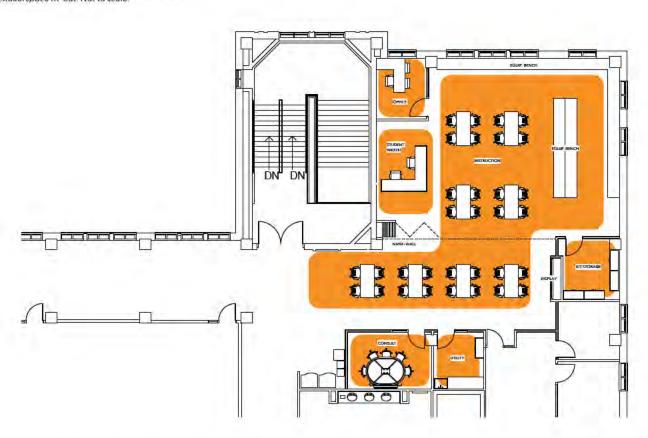




WALC: NEW MAKER SPACE

Purdue Libraries has been planning a new Maker Space in the southeast corner of Wilmeth Active Learning Center (WALC) level 3. The available space is insufficient to meet programming needs. With less than 8 feet of public facing frontage, it also lacks visibility to showcase maker programs and tools available to students. However, by extending common corridor space and rethinking the use an existing staff meeting room and staff breakroom, the Test Fit illustrates a means to create a flex zone that is sometimes makerspace and sometimes open study space. In this way, zones can be consolidated for adequate Maker Space area and visible frontage is increased 40+ feet (see Figure 4.48). It also gives the Maker Space access to an existing water source and places 16 study seats in common flex zone. Build out of the WALC Maker Space should include an implementation of the to-bedeveloped Purdue Library Brand.

Figure 4.48 - Proposed test fit for WALC Level 3 Makerspace fit-out. Not to scale.



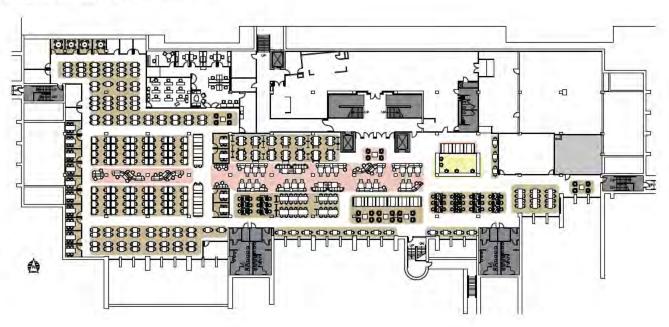


HIKS: STUDY SEAT ENHANCEMENT

HIKS Ground Floor: As noted in the existing conditions summary, the John W. Hicks Undergraduate Library (HIKS) is an aging facility in need of major upgrades. As a largely subterranean building, it has poor access to natural light and limited egress stairs prohibit high occupancy uses (like libraries and classrooms) on the lower basement level. These deficits along with specific building systems limitations makes HIKS cost prohibitive to renovate or expand. Sitting on high value campus real estate adjacent to the newly renovated Purdue Memorial Union near the corner of State and South Grant Streets, it is recommended that HIKS be maintained with minimum investment pending redevelopment of the site in the next 10-15 years. In the interim, furniture and finish investments will improve seating quality and capacity.

The Ground Level test fit in Figure 4.49 illustrates a way to repurpose existing furniture and add some additional furniture types to both increase capacity by 47 seats, and expand the variety of seating options. By simply inserting four centrally located group study rooms (using demountable partition systems or built-in-place partitions), the floor can be zoned into quiet study to the west and collaborative study to the east. By using more 2-top table seating and tabled lounge seating, we believe the perceived available seating will increase.

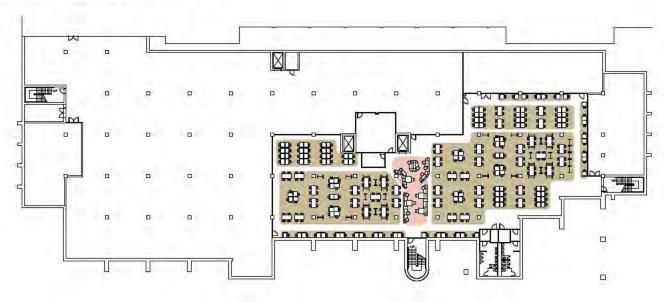
Figure 4.49 - Proposed test fit for HIKS Ground level.





HIKS Basement Floor: As repository collections are moved from HIKS to 2550, portions of Basement Level space can be improved for as much as 321 seats. This limit is determined by the egress capacity of two egress stairs (south stair and east stair). The exact strategy must be reviewed with the local Fire Marshall to determine agreed upon load calculations and the additional egress load coming from the repository zones of this floor. The Basement Level test fit in Figure 4.50 studies 321 seats distributed in the southeast quadrant using existing HSSE furniture. As HSSE is renovated (see next section), its furniture becomes available to relocate without additional acquisition cost. The southeast quadrant of HIKS Basement Level houses static ranges of repository stacks while the remainder of the floor hosts highdensity rolling storage systems. This zone will be the first and easiest portion of the Repository to vacate. It also has direct access to egress stairs without building new partitions and rezoning building infrastructure and egress paths.

Figure 4.50 - Proposed test fit for HIKS Basement level.





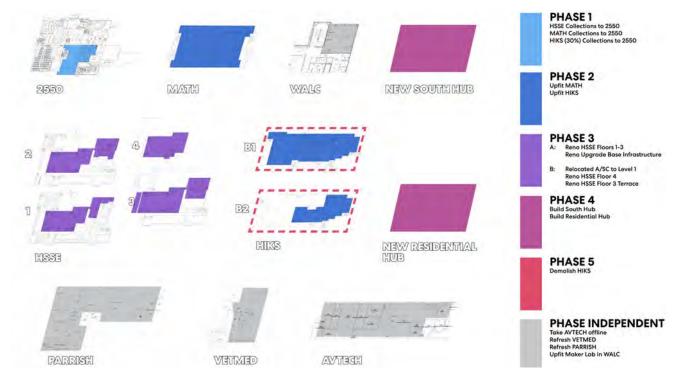


Figure 4.51 - Phasing matrix for potential library projects

PHASING STRATEGY

We understand that it may be unrealistic for a campus to shut down multiple libraries to execute building-wide renovations. We know from experience that these types of projects are implemented incrementally as zones can be temporarily taken off-line. Fortunately, the Purdue Library model is one of distributed facilities across campus. Provided capacity is built up elsewhere, individual libraries could come off-line for a period or refresh and/or renovation. This phased approach must balance the technical sequencing of work with the library's priorities and maintaining study seat capacity. To this end, work has been organized into five (5) basic phases and a series of Phase Independent projects (see Figure 4.51).



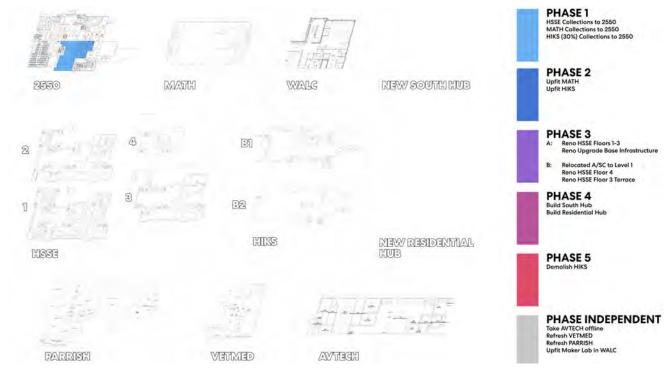


Figure 4.52 - Phase 1 phasing matrix

Comprised of building out the high-density offsite collection storage capacity in the 2550 building. This is a critical enabling project to allow Phases 2-4 to flow seamlessly. The work includes minor adjustments to demountable wall systems and fire protection and lighting. There will be some electrical work to power motorized storage systems. The majority of work will be in basic finishes, placing mobile storage system rails, and building up floor levels between rails for a continuous, accessible floor finish. Actual installation of the storage systems will be a turnkey process performed by the selected storage system vendor. In the event that the full fit-out cannot immediately happen, it is critical to accommodate open range repository collections currently in HIKS B850, all of HSSE floor collections and all of MATH collections.



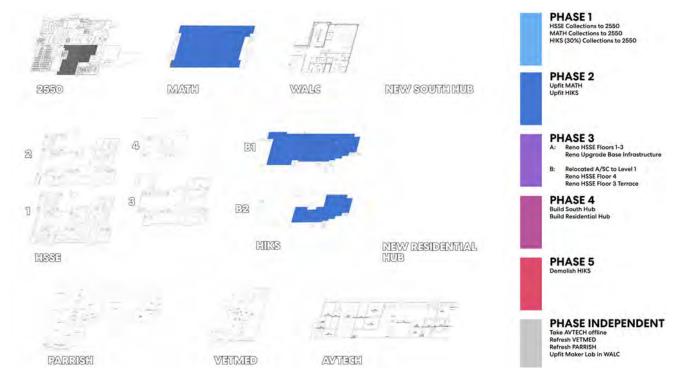


Figure 4.53 - Phase 2 phasing matrix

Comprised of light renovations and refreshed to MATH and HIKS libraries. MATH will include the introduction of some partitions and the replacement of most furniture adding about 115 additional seats. Similarly, the Ground Level of HIKS will include finish refresh, partitions to form four small group study spaces, and the repurposing and addition of new furniture which will add about 47 seats on this floor. The Basement Level of HIKS will require all new finishes, new lighting, and the movement of existing HSSE furniture to the repurposed basement level to add about 321 seats. In total, Phase 2 adds about 483 seats.



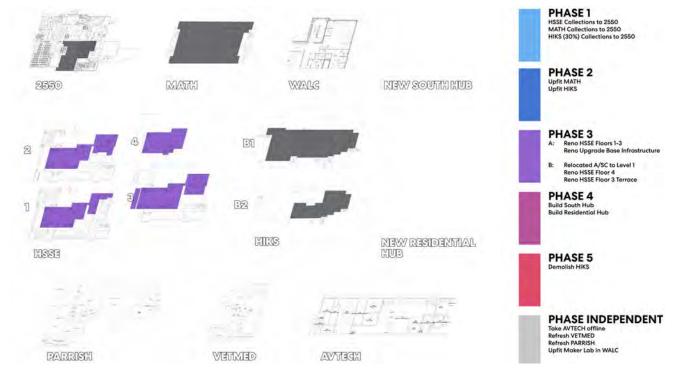


Figure 4.54 - Phase 3 phasing matrix

Includes the full renovation of HSSE Library. This will happen over two sub-phases. The first will take Levels 1 through 3 off-line for renovation while A/ SC operations are maintained on Level 4. This scope consists of major interventions involving all trades including structural demolition and reinforcement, replacement of HVAC systems, reconfiguration of stairs, and full renovations to toilet rooms for code and accessibility compliance. A new elevator will be added to the Tiers and existing elevators refurbished. After Levels 1 through 3 are completed, A/SC can relocate to its new home on Level 1. Then, Level 4 renovations can begin. Level 4 also involves major renovations including roof modifications, new dormer windows, and interior modifications/upgrades to what was just completed on lower floors. During Phase 3 construction, total library system seating capacity will be down by 167 seats due to the nearly 650 HSSE seats temporarily taken offline. Upon completion of Phase 3, the library system will have added 1,550 seats—more than 50% of the benchmarked target.



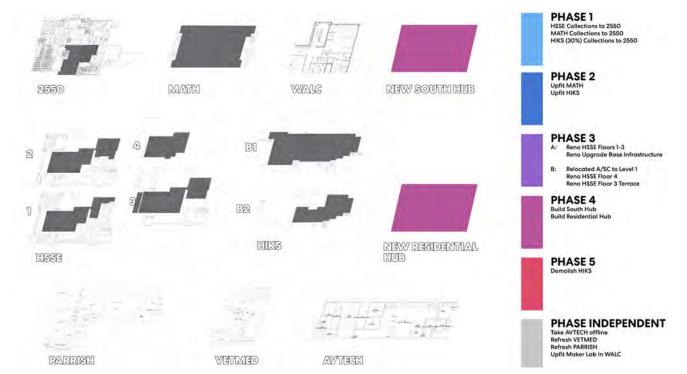


Figure 4.55 - Phase 4 phasing matrix

Comprised of the new construction of a South Campus Hub and a Residential Hub. These projects will be developed with to-be-identified academic and residential life partners. Per program, they will add 1,000 and 500 seats respectively. Though these projects could happen at any time, the must happen before Phase 5 to ensure that there is not a significant loss of library seating. Upon completion of Phase 4, the library system will have added 3,050 seats.



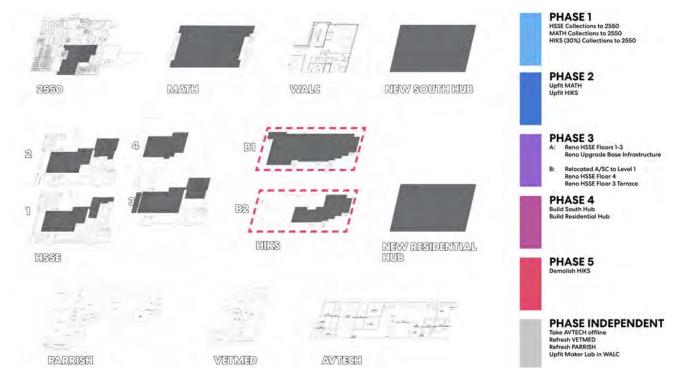


Figure 4.56 - Phase 5 phasing matrix

This work acknowledges the inevitable removal of HIKS Library. Though this will remove 1,005 seats, it is sufficiently far into the future that conditions, use data, and/or new directions in higher education delivery trends may change targeted library study seat metrics.



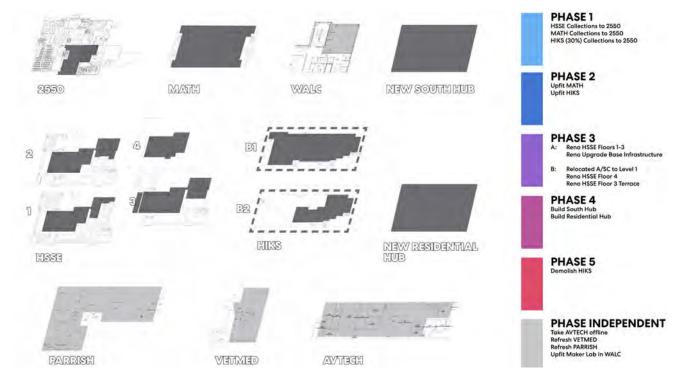


Figure 4.57 - Phase Independent phasing matrix

PHASE INDEPENDENT

These projects are a series of additional improvements that can be implemented outside of the above noted sequence of phases. This includes the fate of the Aviation Technology library as the Terminal Building is replaced, and the refreshes to the Veterinary Medicine Library and the Roland G Parrish Library of Management & Economics Library. The execution of a new Maker Space in WALC also falls into this category of being independent of any preceding or following work in the larger library system.





NEXT STEPS

This report is a summary of design team recommendations to further Purdue Libraries' strategic goals. The following next steps are actionable items that can help facilitate execution of the broader vision.

ENABLING WORK

There are several activities the University could undertake to prepare for a implementation:

- Initiate Phase 1 move of collections to 2550 Northwestern Avenue
- Initiate schematic design services for Phase 2 and Phase 3 projects to be used for more detailed cost forecasting

IMPACT NOW

In order to improve services and spaces for students in the meantime, the Libraries could implement the following recommendations:

- Initiate Library Brand & Identity design services to prepare for a larger capital campaign
- Consider working with a furniture vendor to implement the purchase and install of a Virtual Learning Hub prototype in HSSE Library space vacated by collections