

# **The User Perspective: A Paradigm for Facilities Design and Space Planning**

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## **Introduction**

Integrating the expertise of multiple disciplines—architecture, engineering, interior design—building design is a collective process. Each project comes with its own pragmatic considerations and cultural expectations. Therefore, there is no generic problem statement for a new building, facility, or space. Rather, in order to achieve a solution with nuance, depth, and complexity, each problem merits its own statement of parameters and constraints.

Thus, achieving a library building design that is functional, flexible, and forgiving requires information from multiple sources. Although an integrated design process, one that empowers users and seeks their ongoing participation, would seem sensible, architects, perhaps for the sake of a more streamlined process, do not always develop a detailed building program based on the information that only users can provide. The most durable designs—those that allow for multiple uses, adapt to repurposing over time, and accommodate the complexity of library missions and operations—result from sustained and systematic collaboration among multiple constituents. User participation enables the design team to collaborate from the outset of the project to devise solutions to multiple problems.

The objectives of this chapter are to help the reader

- Understand the architectural and space design process;
- Select appropriate tools and techniques for gathering user requirements in order to make informed design decisions;
- Articulate needs in quantitative and qualitative terms to create a meaningful picture of user needs;

- Develop a disaster plan to ensure emergency preparedness.

### **Main Focus of the Chapter**

Why is space planning important? With the concept of the third place, more libraries are seen as extensions of home, as places for social interaction, for discovery, for collaboration, as well as for contemplation. But to draw constituents to these spaces, they need to be perceived as comfortable, safe, neutral—even beautiful. Csikszentmihalyi and Hermanson remind us that motivation in public learning environments requires that they be supportive and "free of anxiety, fear, and other negative mental states."<sup>1</sup> Thus, a well-designed library with those attributes will also be successful learning spaces.

And why is user participation important? In addition to achieving buy-in for what may become a new design paradigm in the community or on the campus, there is a systemic reason: user participation can shift the basis of decisions from opinion to more measurable behavior and patterns of use.<sup>2</sup> A multidisciplinary team in Taiwan concluded that a collaborative design process ensures more successful buildings, especially when that process integrates the knowledge and experience of library staff, institutional administrators, architects, and engineers—each group demonstrating respect for the other's "perspectives and priorities" and an openness to compromise.<sup>3</sup>

Several ethnographic methods for designing an ideal learning space will lead to an outline of strategies for incorporating patrons into space planning and for soliciting feedback from library users. After describing the steps of the design process, the chapter will outline steps for assessing user needs with ethnographic methods, for expressing those needs in terms of a

quantitative statement of need—the architectural program, and for safeguarding the result with an emergency preparedness plan.

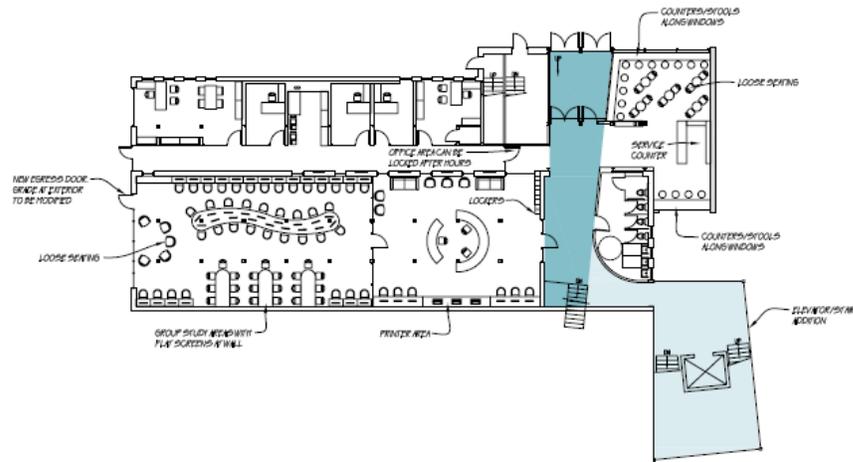
### The Design Process

Whether imagining the shape of a pencil sharpener or a church sanctuary, designers begin with a concept in the form of an abstract diagram or *parti* that communicates the core idea of the product. As the design materializes, the floor plan, a scale drawing of the spaces and their enclosures from above, emerges, sometimes from bubble diagrams (figure 24.1), which make no reference to scale, height, or form, but rather indicate relative adjacencies of functional areas.



**Figure 24.1**

At this stage, the design is merely schematic, and ideally there will be multiple versions of the floor plan, each representing a distinct set of spatial relationships. Floor plans in a more finalized state (figure 24.2), representing the design development phase, along with cross



**1 MAIN FLOOR FURNITURE PLAN**  
1/16"=1'-0"

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		RUTHERFORD NEW JERSEY	
MAIN FLOOR FURNITURE PLAN		AS NOTED 03.28.13	SK.30
<small>SCHEMATIC ARCHITECT: JLM/1209K</small>	<small>ARCHITECT: ANTONIO IOVINO ALB11725K</small>		

**Figure 24.2**

sections (views that illustrate heights and vertical relationships), and reflected ceiling plans (which indicate tile patterns and, more importantly, where lighting fixtures will be positioned). Once feedback is integrated and a final design is produced, the architectural office produces construction documents, drawings for the builder (usually referred to as the "contractor") and sub-contractors, specialists hired by the contractor to complete specific installations, such as mechanical systems for climate control, electrical conduit, and plumbing.

Why is feedback important? As they develop, according to Peter Drucker, most successful innovations move toward an ideal by incorporating feedback.<sup>4</sup> But what is the source of feedback? How is it gathered? What happens if the architects do not request review during the design development phase and bypass feedback? For this reason the establishment of a project team is critical. Architect Peter Gisolfi recommends that formation of the team of building committee with representation from multiple constituencies (elected officials, board of

trustees, professional staff, frequent users, donors) is the first step.<sup>5</sup> The client representative—and even this role needs to be clarified and assigned—can assemble the team and schedule regular meetings. The client representative may be the public library director, the academic library dean or director, the college chief financial officer, or even an independent project manager employed by the client apart from the design professionals. Regardless of who assumes the role, the client representative plays an irreplaceable role in ensuring that there is a place for the expression of user needs.

### **Assessing User Needs**

What are the key decision-making areas in library design? Even in advance of engaging a design professional or contractor, we can and should be able to justify and offer a rationale for the project with a needs assessment. Aaron Cohen and Associates have produced a survey for both public and academic libraries in which they outline present and future space allocations by activity and function: books, eBooks/readers, computers, program rooms, magazines/periodicals, staff, group study rooms, tutoring, events, and other programs.<sup>6</sup>

Multiple methods exist for gathering data on user behavioral patterns and expectations. For example, at the River Campus Libraries of the University of Rochester, faculty were interviewed and video-recorded to document their work habits and environments. In another study at the same institution, students were given disposable cameras and asked to photograph a series of objects and places that revealed their emotive relation to research, academic work, and library space. These were the twenty assigned objects and places:<sup>7</sup>

- I. The computer you use in the library, showing its surroundings

2. All the stuff you take to class
3. Something that you would call "high tech"
4. Something really weird
5. One picture of the libraries to show to a new freshman
6. Your favorite place to study
7. The place you keep your books
8. A person, any person
9. Your favorite person or people to study with
10. Something you've noticed that you think others don't notice
11. Your communication devices
12. A picture of your dorm room, showing your computer
13. Another view of your dorm room
14. How you manage your time or keep track of your work
15. Your favorite part of the day
16. The tools you use for writing assignments
17. The things you always carry with you
18. A place in the library where you feel lost
19. Something you can't live without
20. The night before a big assignment is due

Although this study was not applied fundamentally to assess user needs in libraries, nevertheless, its ethnographic method is wholly transferrable to those seeking a greater understanding of user behavior and needs in library spaces.

Another important study is ERIAL (Ethnographic Research in Illinois Academic Libraries), a two-year study of how students conduct research.<sup>8</sup> Like the Rochester project—and closely related to it—ERIAL's central objective is not to assess user needs in preparation for library design, but the techniques and results can still be used toward that end. These are the instruments the project employed; all are low in their technological requirements and allow for small survey samples:

- Librarian Interview
- Librarian Photo Journals
- Faculty Interview
- Student Interview
- Student Photo Journals
- Student Mapping Diaries
- Students in Web Design Workshops
- Faculty in Web Design Workshops
- Librarians/Staff in Web Design Workshops
- Research Process
- Student Cognitive Mapping
- Student Research Journals
- Research Paper Retrospective Interview
- Student Space Design Workshops

The ERIAL project also offers guidelines for administering any of these instruments, advising that, although the project will take longer than anticipated, costs are low. Consulting

with a trained ethnographer is beneficial, while the members of the research team can come from a variety of disciplines and backgrounds. The project also provides a four-part structure for any project of this type: planning, data collection, analysis, and reporting and concluding. In an academic environment an additional time consideration is the review and approval of the project by an institutional review board, which will authorize behavioral research involving human beings.

Amanda Etches classifies methods for data collection into three groups: attitudinal (surveys, interviews, focus groups), behavioral (observation, walk-throughs, journey maps, cultural probes), and participatory (cognitive maps, rapid prototypes, and reverse guided tours). By allowing for easy selection of one activity from each of the three methods, these classifications are useful for simplifying the ethnographic process.<sup>9</sup>

Libraries of varying size have experimented with ethnographic studies in preparation for building planning, design, and construction. Students enrolled in a course at Dalhousie University, in increments of an hour, observed fellow students in the library and recorded general surroundings, characteristics of student groups, duration of use, patterns of interaction, and circulation through architectural space.<sup>10</sup> At Purdue University Libraries, the planning for the construction of an integrated classroom and library building to accommodate active learning pedagogies provided the opportunity to gather input from instructors, students, and libraries staff, using observation and interview techniques to gather the most significant needs and wants of each stakeholder group as they related to working in an active learning environment, both in and out of the classroom. The results of the study became a centerpiece in the academic program statement for the integrated building. At Seattle Pacific University, the cultivation of student participation in the design process began with identification of multiple types of student

resources, from academic to social, for gathering input to align space planning with user needs. Subsequently, the library established an aesthetics team in order to evaluate and implement student recommendations on space use. And Sonoma State University, the user feedback strategy was linked to its pursuit of a sustainable culture of assessment, resulting in the creation of a planning toolkit for soliciting user input on a variety of design issues.

### **Expressing User Needs**

Once the data is collected, analyzed, and reported, the goal is to articulate the need with quantifiable requirements by describing existing conditions, providing estimates of spatial requirements, and creating a program from that information.<sup>11</sup> The architectural or design program is a list of quantifiable, functional requirements. It is not a design solution; rather, it is a problem statement. It can serve as a checklist after a solution is identified to ensure that functional and space needs have been addressed properly.

In 2005 Hofstra University initiated a plan to renovate and transform the public areas of the main floor of the Joan and Donald E. Axinn Library, completed in 1967 to the designs of Warner, Burns, Toan & Lunde. Renovation architects were provided and worked closely with a detailed program, the prefatory matter of which is included here (figure 24.3).



## Hofstra University Library

### JOAN AND DONALD E. AXINN LIBRARY RENOVATION Program

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#### Program goals

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- Create an inviting, functional, comfortable and safe space for users.
- Make spaces brighter and lighter.
- Provide a variety of spaces for reading, quiet study, group study, and research.
- Serve as a metaphor for patron-centered service.
- Improve access to information technology through greater employment of the wireless network.
- Create environmental conditions that provide adequate task lighting, attractive ambient lighting, and comfortable climate conditions.
- Select durable and comfortable furnishings throughout.
- Introduce a coffee bar at an appropriate location.

#### General guidelines

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- The library should be designed to have a clear and easily negotiable plan, as well as a signage system that assists with navigation.
- There should be overall acoustic control to handle the noise and traffic of a busy gathering place.
- Service areas (information desk and circulation desk) should have excellent task lighting.
- Materials and surfaces, including floor surfaces (which should be sound-absorbent as well) should be durable and stain-resistant, and they should age gracefully.
- Drinking fountains should be preserved.
- Coordinate the introduction of new ceiling designs with fire suppression hardware.
- Meet building and fire codes, as well as ADA standards.
- Provide electrical power by all seating.
- Trash containers and recycling bins should be coordinated and evenly distributed.

### Figure 24.3

In 2013 Felician College was awarded a grant from the Building Our Future Bond Act of the State of New Jersey for the renovation of the abandoned Messler Library into an education commons. (The college purchased the original campus of Fairleigh Dickinson University in Rutherford to serve as its residential campus.) In advance of commissioning Arcari + Iovino Architects, library faculty and staff members, based on interviews of faculty and students, devised a concise program areas summary, which served as the basis for the design (figure 24.4).

# Felician College Library

STUDENTS FIRST

## Education Commons

## Program Areas Summary

Program component	Collection # of items	Shelving (l.f.)	Seating #	Technology
<b>Public spaces</b>				
Vestibule				Digital sign; drinking fountains, 2; 6 l. f. of fabric-covered bulletin boards
Exhibit space		50 in cases		
Lounge: booths with tables & chairs; café tables & chairs; open/lounge seating			50	Power (data?) outlets in floor; 3 rolling two-sided whiteboard easels; 6 l. f. of fabric-covered bulletin boards
Service desk, desk height			2	Sliding slings for 2 computers; monitors with articulated arms; printer
Cell phone booth				
Conference room			16	Wall-mounted 80" LED/ LCD panel; monitor on articulated arm; computer; cabinet for computer; wireless keyboard; laptop connection; whiteboard; speaker system; telephone & jack; installed video camera & microphone at ceiling level
Cultural events space (can be co-located with lounge—3 above)			75	Data projection with large screen & computer cabinet; laptop connection
Charging stations			5	
<b>Information services</b>				
Help desk, desk height			3	3 computers in sliding slings; monitors with articulated arms; printer
Computer lab with extra power & data outlets			50	50
Printing stations/copy center/scanners				3 printers & scanner; copier
Group study (2 @ 8 occupants)			16	Wall-mounted 46" LED/ LCD panel; monitor on articulated arm; computer; cabinet for computer; wireless keyboard; laptop connection; whiteboard; speaker system; telephone & jack
Group study (6 @ 4 occupants)			24	Wall-mounted 36" LED/ LCD panel; computer; monitor on articulated arm; computer; cabinet for computer; wireless keyboard; laptop connection; whiteboard; speaker system; telephone & jack
Consultation room (2)			6	Computer in sliding sling; monitor on articulated arm; cabinet for computer; laptop connection;

				whiteboard; telephone & jack
Offices, library faculty (3)			9	Computer in sliding sling; monitor on articulated arm; telephone & jack
Office, library director/manager (2)			8	Computer in sliding sling; monitor on articulated arm; telephone & jack
Staff rest room, solo				
Instruction				
Smart classrooms/labs (1 or 2)			50	85" SMARTboard; teaching station with podium/cabinet for computer & monitor; wireless keyboard; laptop connection; whiteboard; speaker system; telephone & jack
<b>Materials (shelving)</b>				
Print resources	6,100	800		
Media collection	1,000	60		
Digital Media Lab			8	Plotter; scanner; color printer; cabinet for computer; iMac station; laptop plugin; 46" HD screen; cabinets for equipment (12 l. f.); wireless keyboard; installed video camera; tripod; wireless microphone; DVD recording capability; control panel; speaker system; whiteboard; headphones with microphones
All-hours study with after-hours entry			~50	Wall-mounted 80" LED/ LCD panel; teaching station with podium/cabinet for computer & monitor; wireless keyboard; laptop connection; whiteboard; speaker system; telephone & jack; ~50 student work stations
Lockers	20			
Café/coffee kiosk/cart			~15	Plumbing; digital sign
Rest rooms				Ensure good exhaust system; manual paper towel rollers or high-velocity hand dryer

**Figure 24.4**

In the cases of both Hofstra University and Felician College, the assertive behavior of library faculty and staff created a close collaboration with design professionals to integrate sensible and practical design parameters into the project.

### **Preparing for Emergencies**

With the investment of time, expertise, mental energy, and financial resources into a new or carefully renovated library environment, a new or renovated library environment needs to be prepared for natural and other disasters. With the Online Disaster-Planning Tool from

the Northeast Document Conservation Center (NEDCC), library staff can, with reasonable time and financial outlay, create a usable emergency preparedness plan.<sup>12</sup>

### **Conclusion**

Shaping library space is an energizing experience for those privileged to participate. Therefore, engage as many of the library's staff members as you can in the planning and design development stages. Gather and review information thoroughly. Double your time investment and be prepared to delay the completion date. And be prepared in the end to settle for less, bearing in mind that any improvement to the library environment adds value.

### **Discussion Questions**

- Why is an interior or architectural design program important?
- How is the library staff involved in the planning and design process?
- What kind of information must the library director have in order to make informed decisions?
- What is the process of developing a management plan?
- Who will be consulted when the designers have questions?
- How will internal communication be handled, and who will make decisions?
- Should every library construction project have a technical consultant or project manager?

### **Further Reading**

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