DESIGNING FOR DESIGNERS: LESSONS LEARNED FROM SCHOOLS OF ARCHITECTURE

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SUMMARY

Long after they graduate, alumni remember the buildings where they first studied architecture. Temple Buell Hall, a 1995 addition to the University of Illinois at Urbana-Champaign, is no exception.

Our post-occupancy evaluation of Temple Buell Hall included an analysis of archives about the building, physical traces, behavioral observations, and surveys of 424 students, faculty, and staff.

Results show students, faculty, and staff as highly satisfied with the building. The exterior survey, completed by 141 individuals, revealed that respondents rated overall appearance of the exterior favorably, and also liked its impressive looks, excitement, and lighting features after dark. In particular they liked the west glass wall, the use of glass, and the curve. They disliked the west entrance and the north façade.

The interior survey, completed by 283 occupants, yielded favorable but more mixed results. Respondents gave the most favorable rating to the aesthetic quality of the exterior, maintenance, security, proximity of views, quality of building materials, aesthetic quality of interior, and ability to find
ANATOMY OF A SUCCESS

- The university had many avenues of oversight.
  - It exerted a fair amount of control over size, form, and materials of buildings on campus.
  - It had strict design restrictions; the red brick exterior ties in with surrounding buildings in terms of massing, roof lines, and more. This may explain why respondents judged it as compatible.
  - The school administration played a significant role in overseeing the design of the building, monitoring just about every aspect of the design.
  - The university design review committee also oversaw the project.
- The architect—Ralph Johnson from Perkins and Will—designed a building that works for the users. He did not give making a statement a higher priority over fitting in with existing campus architecture.
- Good materials. Brick dominates the building inside and out, giving a solid, stable appearance.
- The Atrium is a star space; and perched atop it, the Eagle's Nest studio stands out as a visually impressive landmark.
- Wayfinding is one of the building’s greatest strengths. Because the atrium is such a large, central, open space which can be seen from almost every spot in the building’s interior, it is almost impossible to get lost. Circulation and wayfinding work well because most circulation areas are open to the atrium. The design has hardly any enclosed corridors.
- The studios and jury/crit spaces have huge windows, some studios feature two-story spaces with large expanses of glass, and most review rooms have glass doors that can be shut for privacy.
- The design successfully put one roof over the three academic units, Architecture, Landscape Architecture, and Urban and Regional Planning, which had formerly been split across the campus (although architecture still has a significant footprint in other buildings).

Your way. They were least satisfied with its environmental quality. Responses to open-ended questions captured some complaints. Although occupants praised the building’s visual quality, they criticized deficiencies in spatial programming; inconvenient functional provisions; a loud heating, ventilating, and air conditioning system; and a poor landscape design.

Three changes can improve the building: 1) Activate the atrium space with more exhibitions, ongoing events, and regular food service; 2) Activate the plaza with a greater variety of outdoor seating arrangements in sun and shade; and 3) Lower counters in administrative offices to make them more welcoming to persons with physical disabilities.
A BRIEF HISTORY

The project began in 1988 with a gift of $1 million from the Temple Hoyne Buell Foundation, followed in 1989 by a second gift of $5 million. The State of Illinois contributed an additional $4 million to complete site improvements and building construction. In 1991, a $1 million gift from alumnus Lawrence J. Plym resulted in the design and construction of the Plym Auditorium with seating for 200.

Temple Hoyne Buell was a 1916 graduate of the University of Illinois School of Architecture and a 1917 graduate of Columbia University, where he received his master’s degree. He began his architectural career in Chicago working for the firm that built landmark hotels such as the Drake and the Blackstone. After a diagnosis of terminal tuberculosis in 1921, his doctors recommended the clean mountain air of Colorado. Buell moved to Denver where he launched T. H. Buell and Company in 1923. By 1940, with a staff of 150, it became the largest architectural firm in the Rocky Mountain States, achieving a national reputation for “the Western Style.” Buell designed movie palaces; elementary, high school, and college buildings; private residences; an array of commercial buildings; and shopping centers. In 1941, after creating the Buell Development Corporation and transforming a 55-acre Denver dumpsite into the Cherry Creek Shopping Center, he earned the nickname, “the father of the shopping center” (University of Illinois Foundation, 1991). A philanthropist to public and private institutions across the country, his 1974 gift to the School of Architecture resulted in the Temple Buell Gallery in the Architecture Building, a presentation and exhibition space. At the same time, he made major donations to Columbia University and to several universities in Colorado.

The School of Architecture, the Office for Project Planning and Facility Management, and the Office of Capital Programs all participated in the selection of the architect for Temple Buell Hall. The commission was awarded to the Chicago firm of Perkins and Will, led by Ralph Johnson (Principal-in-Charge of Design), a 1971 University of Illinois architecture alumnus. The building committee visited five architecture schools in order to identify key issues to be addressed in Temple Buell Hall, and to incorporate them into the program statement.

When it opened, Temple Buell Hall was the first academic building in the Midwest to combine study and research in architecture, landscape architecture, and urban and regional planning. Its goal was to alleviate the physical fragmentation of these three disciplines, which had been housed in nine structures about a mile apart (University of Illinois Foundation, 1991). The School of Architecture was located in three buildings: the Georgian Revi-
style Architecture Building (1926), as well as two converted dormitories, Flag Hall and Noble Hall (1954), on the west side of campus. The Department of Landscape Architecture was located in portions of another Georgian Revival classic, Mumford Hall (1924), as well as in two converted houses: 1203 West Nevada, an English Domestic style (1914), once the residence of the University President; and, the Neo-Classical house at 1205 West Nevada (1926). The Department of Urban and Regional Planning was located at the east edge of campus in three converted houses: 909 West Nevada Street (a 1929 American Foursquare), 1001 West Nevada Street (a 1918 Craftsman/Bungalow style), and 907 1/2 West Nevada Street (1989). While the School of Architecture continues to use additional facilities for studio, classroom, and office space, the other two units moved almost entirely into Temple Buell Hall (Figure 11.1).

The building opened in August 1995 with ribbon-cutting ceremonies on October 13, 1995. Chicago Tribune architecture critic Blair Kamin (1995) gave it a rave review, contrasting Temple Buell Hall with Yale University’s Art and Architecture Building, which students set afire in 1969. “No one seems likely to take a match to Ralph Johnson’s new Temple Hoyne Buell Hall ... Instead, top university officials are scheduling dinners in its light-washed atrium. Students are turning the atrium into a lively indoor courtyard, complete with coffee bar. And as often happens in Johnson’s buildings, people are inquiring if they can use the place for weddings.” (The coffee bar has since been removed.) Edward Keegan’s (1996) description of the building in Architecture was almost equally glowing.

How did faculty, students, and staff evaluate Temple Hoyne Buell Hall? Overall they liked it, but open-ended questions revealed some problems.

**TEMPLE BUELL HALL EXTERIOR**

Results from the exterior building survey show that people liked its overall appearance (Figure 11.2). They also rated it favorably for these attributes: looks impressive, looks exciting, and lighting after dark. Students and faculty in Temple Buell Hall tended to have more favorable scores than others.
When asked for exterior features they liked best, respondents most often cited the west glass curtain wall, the use of glass, and the curve of the building (Figure 11.3). When asked for the features they liked least, respondents most often cited the understated west entrance, the north façade, and the sterile, uninviting landscape design.

During special events, the courtyard works well. Yet even in excellent weather, the sunken outdoor courtyard and all outdoor spaces adjacent to the building are rarely used. The courtyard has linear concrete benches with no seat backs, not conducive to conversation or to long-term sitting, exactly the type of seating that Whyte’s (1980) research on plazas found flawed. Other researchers who have conducted extensive studies of campus outdoor spaces have confirmed Whyte’s findings (Cooper, Marcus, and Francis, 1990). Whyte’s research also revealed the importance of visual connection to the street and pedestrians. Regrettably, the plaza offers nothing much to look at and no shade for protection. The grassy area, intended for seating, is rarely used. Had Whyte’s widely known findings been incorporated into the design of Temple Buell Hall, its outdoor spaces could have been lively campus showpieces—a missed opportunity indeed.

**TEMPLE BUELL HALL INTERIOR**

Of the faculty, staff, and students who used the building regularly, a total of 283 people completed the interior survey. Results reveal high satisfaction with the interior. All but two features received ratings of 5.1 or above. Figure 11.4 shows that respondents reported highest satisfaction with the aesthetic quality of the exterior, maintenance, security, proximity of views, quality of building materials, aesthetic quality
of interior, and ability to find your way. Environmental quality received the lowest rating. Spaces that respondents reported as ones they felt most satisfied with included public areas, along with computer lab and large lecture spaces. Those who cited the public areas (43% of those answering this question) praised adequacy of space (6.4), lighting (6.4), aesthetic appeal (6.4), and flexibility of use (6.3).

Yet many good public spaces have acoustic and temperature problems. Criticisms of environmental quality concerned both temperature and humidity, along with sounds from the heating, ventilating, and air conditioning system. Multiple hard surfaces—brick interior walls, concrete floors, exposed metal decking beneath the floors, metal handrails and guardrails, and large glass surfaces—exacerbate acoustical problems (Figure 11.5). In design studios, noise problems led to the removal of variable air volume system fans. Eagle’s Nest, the building’s premiere studio critique space overlooking the atrium, is especially noisy. While visually impressive, its walls do not meet the ceiling, so sounds from walkways and the atrium reverberate into the space, causing major distractions and exacerbating pressure for students in already stressful design reviews (Anthony, 1991).

Similarly, while the atrium works well for visual displays, any event that requires people to hear a speaker must have a microphone. Masters’ thesis design reviews held here have had special problems, forcing them to relocate elsewhere. On occasion, a reviewer sitting less than 5 feet in front of student presenters could not even hear them. In retrospect, while the building is visually stunning, in other aspects of sensory design it falls somewhat short (Malnar and Vodvarka, 2004).

As for temperature control, faculty offices along the west glass wall often either heat up excessively or are over-air-conditioned during the summer and can be too cold during the winter. In addition, almost all year round, the Plym Auditorium feels too cold.
Respondents also gave positive scores to most spaces in the building. As shown in Figure 11.6, all but four spaces had scores of 5.0 (fairly satisfied) or above. Spaces receiving highest scores included public areas, large lecture space, studios, restrooms, and administrative office area, large classrooms, and exhibition/gallery space. Lower scores (4.1 to 4.4) went to computer labs, storage, and seminar rooms. Even though restrooms received favorable ratings, some open-ended comments revealed two serious problems. Because restrooms are located at the north end of the building, many students, faculty, and staff must walk over a city block to reach them. The first floor has no restrooms, inconveniencing visitors and support staff—most of them females—who work in the building 40 hours a week.

Computer labs were rated least favorably, as architecture students must use a computer lab in the Architecture Building across the street. Seminar rooms were among the spaces with which respondents were least satisfied. They are below grade and windowless. Consequently, the only seminar room remaining in the Architecture Building across the street, a room filled with natural light, is usually booked to capacity.

In sum, the interior building design reflects a value system whereby the grand public areas and the spacious studios reign supreme and other classroom spaces—at least for the School of Architecture—are given somewhat short shrift. This is less true for the Departments of Landscape Architecture and Urban and Regional Planning, which have conveniently located computer labs and a greater variety of classroom spaces.

Some responses differed at a statistically significant level across groups. For example, urban planners and architects rated the aesthetic quality of the exterior and the aesthetic quality of the interior higher (by 0.8) than did the landscape architects. Architects also rated the amount of space more favorably than did the landscape architects (by 0.9), and they rated environmental quality more favorably than did the urban planners and landscape architects. Men rated environmental quality significantly better than did women. Students tended to report more favorable ratings than did faculty and staff, giving higher scores for the amount of space (by 1.5 points), environmental quality (by 0.8 points), and quality of floors, and quality of walls (each by 0.6 points).
Administrative offices in the old Architecture Building had superior natural lighting to that in the new building. Most support staff previously had south-facing offices with large multi-paned windows, whereas in Temple Buell Hall some now look out of narrow slits of glass. Even the Director's office in the new building has three windows measuring only 5 feet high by 1.5 feet wide. While most studio spaces are flooded in natural daylight, some staff offices require artificial lighting all day long.

When asked to select up to two spaces with which they felt least satisfied, most respondents cited public areas, medium-size classrooms, seminar rooms, and the large lecture space. Those who cited public areas (21 percent of those answering the question) were most critical of temperature (a mean of 3.1 on a 7-point scale) and acoustics (3.3). Ironically, these results reveal that public areas—most notably the atrium—were both the least satisfying and most satisfying spaces. (Figures 11.7 and 11.8). The atrium, the building's most prominent design element, elicits a strong reaction one way or the other.

Among the facilities currently lacking in Temple Buell Hall, respondents cited food service, computer labs for architecture students, a library, a faculty lounge, and better outdoor seating. During the first year of operation, the building had a food service kiosk offering only snacks, and it was closed during lunch hours, the peak usage times; it soon closed altogether. Student organizations occasionally sell pizza in the atrium. Adding permanent food service could enliven the atrium, which sits empty most of the time.
Although the survey did not pinpoint accessibility as a problem, the reception areas in the administrative offices need to be redesigned to accommodate visitors with physical disabilities. High counters in all three offices present any visitor in a wheelchair with a blank wall. Offices should send a more welcoming signal to all users, and a message to students about the importance of universal design.

**METHOD**

This post-occupancy evaluation was conducted during fall 1999. Methods included an analysis of archives about the building; physical traces; behavioral observations; and surveys of 424 students, faculty, and staff. We obtained 141 responses to the exterior building survey, and 283 responses to the interior building survey.

The first author of this chapter, Kathryn Anthony, oversaw the study. All 23 students in her seminar on “social and behavioral factors in design” participated in gathering the data. Students included both graduates and undergraduates with majors in architecture, industrial design, landscape architecture, and psychology. One student team distributed the exterior building survey at the north, west, and south entrances during mornings, afternoons, and early evenings. Another team distributed the interior building survey and asked instructors in all three academic units to administer the survey during class time. Another team contacted faculty and staff and distributed the surveys in their mail boxes.

**CONCLUSIONS**

Overall results reveal a relatively successful solution. On most items, respondents rated the building favorably, and open-ended comments tended to be positive. As one faculty member stated, “Recognize the building for the fine work of true architecture it is—poetry in light and space.” And that it is. The natural light that floods the public areas of the building is perhaps its greatest quality, one that inspires and uplifts its occupants even on the darkest days. Without a doubt, the building offers something unique to the campus, and its atrium space is one of the most impressive of all the university buildings. Even the side stairwells—spaces often overlooked—are bathed in light. As architectural design critics have noted, the building is routinely in demand for official university functions; and for receptions, exhibits, and special events, it provides a stunning setting. It has become a showpiece.

As university administrators and architects had intended, Temple Buell
Temple Buell Hall has indeed served as a valuable teaching tool. Projects assigned in studio addressing Temple Buell Hall include acoustical installations in the atrium, gallery, and entry space; and expansions incorporating new programmatic uses. Students in seminar courses and studios routinely evaluate the outdoor plaza according to Whyte’s (1980) principles.

What lessons can be learned from Temple Buell Hall? While placing such a strong emphasis on the grandeur of public spaces like the atrium paid off, some lesser spaces, such as faculty and staff offices, medium sized classrooms, and seminar spaces were short-changed. Public spaces need to be designed with a greater level of activity in mind, so they do not sit empty much of the time.

Our recommendations for improving the building include activating the atrium space with more exhibitions, events, and regular food service. With the addition of a café offering lunchtime fare, the building has potential to become as lively as Berkeley’s Wurster Hall or Harvard’s Gund Hall, and a much greater draw for faculty, students, and staff from across campus. This would help achieve the benefactors’ goals of linking the three disciplines. Communication occurs best when people are sitting, eating, and drinking together, not just when they pass each other on the bridges or dash down the walkways late for class.

Ironically, when the building was still in the planning stages, a handful of faculty members stressed the need for a dining facility in the original design program. But it is still not too late. As Whyte (1980) demonstrated, public

LESSONS LEARNED

- Use campus design guidelines and design review to keep the building materials, proportions, scale, etc., compatible with the rest of campus and its neighborhood. The building can be unconventional inside while tying in with its contents.
- Provide livable outdoor public spaces, with seating, trees, water, and other features to enliven the area and attract outdoor use. (The outdoor screen and outdoor theater at Illinois did not work).
- Provide natural light throughout the facility (atrium, studios, classrooms, stairwells, and offices).
- Make sure that large atrium spaces have adequate acoustic controls and soft human features. These large spaces work exceptionally well (with a microphone) for special events (graduations, awards, ceremonies, exhibits) but they need better acoustics for more frequent uses as crit spaces. Designs should also soften and humanize these spaces in scale and materials.
- Crit spaces need acoustical privacy. The crit spaces with glass doors work better than those without.
- Include a café or eatery (preferably linked to the atrium or special event area) to enliven the building.
- Offices for architecture faculty with profession libraries must provide adequate space and she space.
- Make faculty mailrooms attractive, well-lit hubs, linked to Atrium spaces and outdoor pick up. Avoid windowless faculty mailrooms, such as the ones at Illinois—hidden, claustrophobic and lacking adequate storage and closet space.
spaces where food is available are those that are most highly used. More seating in the atrium would also help in this regard. Ideally, new food-related activities along with both indoor and outdoor seating could spill over from the below-grade atrium up toward the west entrance of the building at grade level to attract more passersby.

Providing a greater variety of outdoor seating arrangements with opportunities for both sun and shade would help remedy problems with the adjacent outdoor space. Incorporating into the courtyard a landscape design that has more greenery and sitting space would help make it a more user-friendly place as well.

Many initial difficulties with the building's mechanical systems have already been addressed, although not fully resolved. The experience with Temple Buell Hall points out the need to incorporate mechanical engineers earlier on in the design process. Rather than attempting to fix costly problems repeated on a colossal scale, engineers can help architects prevent such problems. The building could have benefited at the outset from some softer surfaces, thus preventing acoustical problems and also allowing more flexible exhibit space throughout the corridors. Red brick wall surfaces along circulation ways remain empty most of the time; a notable exception was during a 2003 architecture accreditation visit when student work was posted all along the walkways with special fixtures to prevent damage to the brickwork. Rotating displays like this would no doubt enliven the entire building.

Is the University of Illinois at Urbana-Champaign a better place because of Temple Buell Hall? The answer is a resounding yes. That architecture, landscape architecture, and planning are now housed under the same roof is a major improvement. No longer are these units spread across campus with little or no contact with each other. Instead, students, faculty, and staff of all three disciplines see each other and products of their labor every day. And no doubt Temple Buell Hall will continue to inspire a new generation of designers.