RESEARCH ARTICLE

The Intersection
Where Do Human Needs and Space Allocation Cross?
by Matthew Menzies, Michelle Nilson, and David Paterson

As designs for an institution and its spaces are considered, decision makers should seek a balance between offering areas for quiet work that requires intense concentration and for social engagement and the sharing of ideas.

INTRODUCTION

In 2000, the Canadian Association of University Business Officers (CAUBO) argued that aging infrastructure was becoming a significant concern for universities, suggesting that “aging and deteriorating facilities will have a negative impact on the ability of universities to fulfill their missions in teaching and research” (CAUBO 2000, 47). As a form of environmental and organizational cultural sustainability, the issue of facilities and maintenance decision-making is of central concern to campus administrators.

Figure 1 Campus Sustainability Assessment Framework (Cole 2003)

Given the deterioration of campus buildings, administrators need to make daily decisions about building survival, future sustainability, and use. What is not well understood is how those decisions are being made, who is involved in the process, and what happens with stakeholder input. Are there connections and relationships that are currently extended, as well as being planned for, in the future incarnation of spaces? What environmental factors are important components of where community members work and learn? And how can the administrators who are in charge of facilities work with the community to provide sustainable environments?

What environmental factors are important components of where community members work and learn?

We explored those questions and sought to understand the perceptions community members within the Faculty of Business at a large Canadian university had about how the values of sustainability manifested in an academic culture through decision-making processes and the relationships between stakeholders. (We note that throughout this study “Faculty” represents a college or unit within the larger institution, while “faculty” refers to instructional staff, which includes tenure track and adjunct members.) Positive engagement in working and learning spaces sustains
educational organizations and suggests “how particular initiatives can be developed without compromising the development of others in the surrounding environment now and in the future” (Hargreaves & Fink 2005, 17).

**SUSTAINABILITY**

While most studies of higher education sustainability focus on environmental resources and economic impacts on institutional operations, there are few studies that address the critical social indicators of sustainability (Link 2007). Consistent with previous work on leadership and sustainability in education (Hargreaves & Fink 2005; Fullan 2005), the definition of sustainability used in this study is best characterized by Filho (2000), who noted that campus relationships and social aspects should be central. An educational organization and those who are in charge of buildings should take into consideration the social indicators and relationships that encourage the development of all of the participants in the community.

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**SPACE AND DECISION-MAKING**

Spaces often carry symbolic significance within an institution’s culture; it is generally accepted that people often develop a strong relationship with their workspace (Cavenagh 2005; Kuntz 2009; Vischer 2005). “Both in traditional and modern societies, authority structures, representations of power, distinctiveness, and differences in rank or status are to a large degree exhibited through ordering, positioning, demarcation, exclusion, and elevation” (Meusburger 2008, 46). Day-to-day habits of decision-making form a reciprocal relationship with an institution’s culture, both contributing to and produced by its dynamic development. That relationship has been described in different ways, from “a means of constructing one’s identity within a larger world” (Kuntz 2009, 382) to a “non-rational attachment” (Vischer 2005, 20). In a university environment that involves working and learning spaces, many of which that are shared or transient in their purpose, spaces and what they represent to different people can have significant effects on the overall workplace environment. Further, one’s workplace can be “a symbol of a [social] contractual agreement between employers and their employees that is implicitly understood and rarely questioned” (Vischer 2005, 5). Perceptions of bias and unfairness in decision-making have a detrimental effect on individuals and the institution’s culture as a whole (Kickul 2001); therefore, it is important for decision makers to understand the culture of the institution. Further, Meusburger warned,

One should always bear in mind that the significance of the built environment and architecture “reveals itself only in combination with people and their agency” (Maran 2006, 13) and, as I (Meusburger) would like to add, in combination with their prior knowledge, experience, motives, and expectations (51).

That emphasis on the interplay between governance, human agency, and (literal) structure was the primary reason that we chose to examine the decision-making processes surrounding space allocation and resources. Academic institutions, which are currently experiencing the effects of aging infrastructure (CAUBO 2000) and increasing population (Schofer & Meyer 2005), are an especially relevant context for developing understanding about space-allocation decisions. The number of people associated with higher education institutions for either working or learning has grown significantly in recent decades (Schofer & Meyer 2005), leading to space becoming an “increasingly precious commodity” (Burke & Varley 1998, 20).
In order to investigate the process-based questions about space allocation and participants’ perceptions, we used an inductive research approach, drawing on case study methods. The case was selected based on convenience and, more specifically, because there was funding provided to explore sustainability in education at the university with which we (the coauthors) are affiliated, Simon Fraser University.

This article’s three authors comprised the research team: a research assistant, who was a master’s-level graduate student from outside the province; an associate dean, who had been with the institution for several years and had space allocation experience in his portfolio; and an assistant professor, who was hired three years prior to the study and was from outside the province. Due to the potential conflict of interest (e.g., the person responsible for allocating facilities interviewing people about their perceptions on the process), we determined that the best person to conduct the interviews would be the research assistant. Further, we decided that the person who was responsible for allocating space, the associate dean, would have to take on the role of participant researcher.

The research assistant conducted a series of 12, 45-minute interviews over the period of a year. Using a stratified purposeful sampling method, we sought insights from four stakeholder groups: students, staff, faculty, and administrators. We did not seek to draw any conclusions about the specific group’s experiences; we hoped that by investigating the process, we would learn more about the status of the then-current context and explore the vision for how the future process might look.

Case studies are bound by space, time, and individuals (Creswell 2008). This case was bound to one academic Faculty (of seven) that was located within one campus of a large three-campus Canadian university. We delimited the study to the main campus because each campus was so distinctly different. We recognize that this delimitation is also a limitation, in that the notion of a university is fluid and is not contained to one campus—or even to a physical manifestation of a campus. In the future, we would hope to explore the similarities and differences in the experiences and perceptions of the people across several campuses.

Further, while there are many spaces that might be relevant to the culture of the Faculty community (even on the same campus), not all of those spaces are governed by faculty level-administrators. As a result, we bounded our study to the spaces over which the Faculty had control.

We sampled for maximal variation, interviewing members of the Faculty community that were involved in a variety of roles (including students, staff, administrators, and faculty) with the understanding that they are all part of the social construction of its culture. Each constituent’s past experiences were considered to be relevant to how the community member interacts within the community and, therefore, was relevant to culture (Tierney 1988a). For that reason, our study was not bound by time, even though the interviews did take place during a window in time.

As it will “serv[e] the purpose of illuminating a particular issue,” the ethnographic study we conducted can be further defined as an instrumental case study (Creswell 2008, 476). Specifically, we explored the relationship between space, decisions about space, and culture. Our goal was to provide a lens through which an administrator might inform decisions about how spaces controlled by the Faculty are used. Masland (1985) suggested that a more complete picture be captured by an investigation into organizational culture through the inclusion of “members of various campus constituencies such as faculty, students, administrators, and staff” in the interview sample of a study into organizational culture (163).
His sentiments were reinforced by Tierney (1988a), who stated that “it is possible for all organizational participants to influence and be influenced by an organization’s culture” (10).

**DATA COLLECTION PROCEDURES**

Data collection methods initially focused on academic ethnographic (Tierney 1991) interviews with community members, and included notes being taken by the interviewer, as well as audio recording of what was said during the interview. Recorded interviews were transcribed and coded using inductive coding methods and were organized into relevant themes. We met participants “on their turf,” in order to ensure that they were comfortable during the interview and that confidentiality was being attended to (Tierney 1991, 12). To be consistent with several qualitative interviewing approaches, we conducted participant response checking during the interviews by summarizing what had been said and moving toward a conclusion.

Participants were recruited in person at staff meetings, and via poster, flier, and email notification. We interviewed a diverse sample of constituents, selecting the sample purposefully based on the differing characteristic of individuals’ respective roles within the Faculty. We interviewed 12 participants, allowing for both depth and breadth of data collection and interpretation. Adhering to Tierney’s (1991) guidelines, interviews were 45 minutes in length. They were semi-structured in order to allow for open-ended responses, while relying on a framework that focused on developing the themes of space and decision-making in which we were interested. We also relied on other documents such as the maps of the Faculty building. We allowed for the fact that a wide variety of artifacts could emerge during interactions with Faculty community members, leaving open the possibility for their collection and analysis.

**RESEARCH INSTRUMENTS**

We constructed targeted questions relating to “experience, opinion, feeling, knowledge, sensory, and background in order to elicit relevant information” (Tierney 1991, 15). Tierney (1991) emphasized that the key to the ethnographic interview process was in allowing the interviewee’s knowledge and experience to emerge, noting that “instead of manipulating the research process to fit categories already outlined, the inquirer tries to understand the participants’ worldviews” (10).

In order to allow for rich conversations that delved into participants’ relevant experiences, interviewers asked about which spaces the participants used within the Faculty facility, their description of the space, their feelings about the process of being allocated the space, and about how well the space works for their purposes (the full instrument can be found in the appendix). Specific follow-up questions and responses were dependent on the unique answers that were given by participants, and skill on the part of the interviewer was required in order to effectively probe the aforementioned themes.

**RESULTS**

**QUALITIES OF CONCERN: HOW COMMUNITY MEMBERS RELATE WITH SPACES**

Through the interviews, participants shared their individual perspectives on what worked, and what did not, with respect to the spaces that they used. Among the students, staff, administrators, and faculty members interviewed, we found repetitive and particularly salient themes, which are explored.
PROXIMITY TO COLLEAGUES AND RESOURCES

Participating faculty members and administrators, in particular, expressed a sense of value toward their physical proximity to colleagues, resources, and also between main and satellite campuses. A faculty member, for instance, noted that he made arrangements to move his office because of a sense of isolation from colleagues and technical support. Participants expressed concern about the availability of resources in the spaces they used. For example, one participant noted he was “more likely to book a space that has more equipment [than needed] on a given day” to avoid the hassle of having to “drag all the equipment in and tear it down again.” A graduate student who used a shared office in her role as a sessional instructor enjoyed the location of the space “in the hub of the same hallway as [the program], you know, just up the road from [a communal educational technology and lounge space] . . . and next to the bathroom, that’s nice, too.”

In two cases, the participants mentioned the distinct challenges that came with having to work between more than one campus location. An administrator, referring to the effects of splitting members of a single program unit between two campuses, suggested that “one of the ways mythologies happen is that if people who are involved in them can’t actually talk together, they (rumors) start circulating.” A faculty member who was situated on a satellite campus expressed a similar perception—“splitting the same Faculty is a bit nuts”—for a variety of reasons, including the fact that students and instructors had to move between campuses for classes, paper documents requiring review or a signature also required a trip across town, and important meetings taking place on the main campus without support for participating at a distance, thus inconveniencing community members not primarily assigned there.

PRIVACY AND SPACES FOR “OBSESSIVE ATTENTION”

Simultaneously, participants noted a desire for private spaces to hold confidential meetings, store confidential information, perform work without interruption, and even to simply disconnect from the environment. One faculty member recalled that “if you had a student crying” in a former sessional instructor open office space, “they were crying in front of all these people.” She continued to suggest that that issue had not been resolved; and “[while] you can close your door, it’s a glass door . . . also, the walls are like tissue paper here.” A staff member similarly expressed her desire to have her own door for privacy when advising students. Another faculty member noted his desire to hold on to a research assistant office space in part for the purpose of securely storing sensitive materials because “on all of your ethics paperwork, you have to have a place to store these data and my data tend to take the form of graphs of surveys and videotapes.”

A faculty member noted that other colleagues “are very intentional about staying away from campus when they’re working on tasks that require . . . obsessive attention” in order to avoid being interrupted in their office. The ability to have a private space—even an assigned lockable desk—to get work completed was especially desired by a PhD student, who noted that her current office space, though not particularly large or inviting, was “perfect, because it’s very, like, nothing here except me and my work.” As well, another master’s student valued the ability to not only work, but also to eat meals, rest, and even nap, in his office space.

It was of interest that participants expressed conflicting ideas about community and privacy (as previously indicated). They wanted communal spaces to meet people and form relationships. In the institution we studied, there exists a large educational technology and lounge space that is referred to as a “point of gathering” and a “town square” by a graduate student and a faculty member, respectively. Many had expressed concerns about recent renovations that converted
part of that space into offices, due to its unique purpose as a community-supporting area.

**SUPPORTING LEARNING**

Community members also expressed a desire for spaces that supported learning and sharing of ideas. A PhD student, for example, discussed a shared teaching assistant space as “[giving him] a chance to actually just engage with the other TAs . . . and as you get to know people, you get more comfortable just spinning around in your chair and going ‘hey, have you thought about this?’” Similarly, an administrator, reflecting on effective work spaces, noted that “math (the mathematics education program) basically has a . . . shared space where students have the opportunity to collaborate and work together on projects.”

Participants wanted an infrastructure that supported opportunities for formal and informal learning from peers and faculty and unrestricted by notions of formal coursework or classroom spaces. A staff member noted that “when I run into people in the hallways, you learn so much from them,” and a PhD student shared that they spend “most of my time on my feet in order for the social interactions I engage in and want to engage in, as I see them as learning.” He expressed value in “getting a chance to (1) learn from a modeled behavior, and (2) then to be the person that others ask.” To facilitate that kind of interaction, another doctoral student recommended having more open spaces as opposed to increasing the number of offices.

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The effects of spaces that do not support social learning opportunities were reflected in a master’s student’s revelations that “I don’t feel much like a person in this space . . . I feel very much like an object walking by other objects.” That was particularly evident in their observation that there are not “great spaces for friendship, great spaces for dialogue, [and] great spaces for discussion.” A faculty member also noted that “the hallways are not—and I’m sure you’ve heard this—very conducive to collegial talk.” It was a sentiment shared by a doctoral student, who added “it’s a transitory space . . . people walk past it, but not through it . . . I’ve seen these types of dead spaces around, and they don’t allow for my type of learning.” Similarly, a staff member’s isolation was clear in their observations: “People aren’t really here,” “No one ever sees me,” and that “The space in this building doesn’t really encourage interaction.”

**THE ABILITY TO DO ONE’S JOB**

Participants also expressed space and facility needs specific to the ability to do their respective jobs effectively. Faculty members and instructors noted that flexibility within a space was of great value to them. One faculty member said he liked the Faculty instructional lab “because it’s a very flexible space . . . I can transition rapidly from a one-to-one computer activity and then have people circle their chairs without having to move from one room to another.” Another described the fact that “the furniture allows for flexibility in teaching models and styles” as “wonderful!” Referring to the spaces he used when teaching, a graduate student remarked that:

> The fact that here we are in a [Faculty] and we don’t have fixed desks, is a beautiful way for me to use particular metaphors in regard to what is in a design when I’m teaching. So, I’ll have students move [expletive] around all the time, and just point out, “Well, how do you feel now, being in rows looking at me? Let’s move into a U-shape.” Things like that, and so I quite like the access to resources such as tables, chairs, and things that aren’t fixed.”

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Another faculty member similarly observed that “they haven’t found storage space for [surplus furniture] . . . get that stuff
out of there so that I can circle the chairs!” Other barriers in the classroom were less obvious. Reflecting on his teaching experiences, a graduate student asked whether “I can be an effective teacher if my students are uncomfortable in the room, or uncomfortable in the school? Because that then creates an extra barrier as a teacher that I have to overcome.”

The need to effectively meet with others was expressed by several participants and across various roles. One administrator noted that without a meeting space, he and community members “just sort of huddle around a desk, which I think would be a bit uncomfortable and hard to be able to be hospitable.” Another PhD student, who also served as a teaching assistant, shared that while “the students come to [my office] for the office hours, [it is] not very important to have a very big, or nice office” so much as it is just to have one.

**PHYSICAL CHARACTERISTICS OF SPACES**

Just having spaces and offices to work in was insufficient. More general physical characteristics of the spaces, such as light, sound, air quality, and general maintenance, also represented a common thread among participants’ interview responses.

**LIGHT**

Natural light and windows (with a view) were consistently desired commodities across interviews, with participants using terms such as “fresh” and “bright,” and “natural light flooding in,” when describing spaces that they found to be most welcoming and functional. One doctoral student described how another institution “made the majority of the grad (graduate student) spaces along the outside wall of the third floor—basically all along the windows—to give them the benefit of natural light.” A staff member similarly suggested that “it would be nice if there was a way to design the space so that everyone got to see the outside.” A faculty member said that during Faculty meetings, “I sort of always try to rush out to the windows, you know, where you can get a little bit of a glimpse of what the sky is looking like.” One PhD student similarly reflected on the physical context of a graduate student office by noting that “individual grad students start kind of moving stuff, to get closer to the light.”

Unfortunately, while the consensus seemed to reflect a desire for natural light, many participants did not seem to have access to appealing light sources. A staff member noted that in general, “this is a dark, dark Faculty, like physically.” A master’s student expressed a desire for “real light, not fluorescent light . . . [which] is kinda cold and clinical.” A doctoral student recognized that “natural lighting may not [always] be an option,” but suggested that “there were subtle ways of lighting it up in such a way that people want to reside there for awhile.” Such techniques, he said, could involve channeling the large amounts of light that came in through doors at the ends of hallways and through the hallways themselves, as well as replacing spotlight-type lamps that project light directly downward with more diffused backlighting.

**SOUND**

Students, faculty, and staff at the institution also held quiet and private spaces in high regard. A staff member noted that “the way I work, if I need to focus, I need it to be quiet.” She explained that “the walls are paper-thin” and “for all intents and purposes, when it comes to having a private conversation, there is no such thing.” That sentiment was echoed by a faculty member who shared that “it was certainly my experience that there is no such thing as a private phone conversation.” Sound was not only a problem between rooms, but also within particular spaces. A doctoral student described the pervasive noise emitted by the HVAC system in rooms throughout the academic institution: “You’ll be sitting in a room [and] you can’t hear someone five feet away from you in a seminar. But then [at] 7:30, when they shut off [the HVAC system], it’s ‘hey, I can hear you, but [by then] we’ve already been through three hours of this.’” He noted that, as a teacher, “I’m fighting the lights and the ventilation.”
THE CONDITIONS OF SHARED SPACES

The institution that was the subject of the case study is nearly 50 years old and was showing signs of deferred maintenance. Air quality was one concern that had been expressed by students and administrators. One doctoral student participant observed that “we have the dust issue in all of the rooms.” Similarly, an administrator revealed that “if you go above there [the ceiling], it’s a sea of dust,” and that the common gathering space “was becoming a very dusty, a very kind of dingy, stale space.” He reflected on efforts that were being made to mitigate that particular problem, referring to recent renovations that removed all of the walls that had been blocking air circulation in the space, as “bring[ing] in fresh air” and “blow[ing] the center out of [the space].”

Other concerns about the physical state of spaces included stories from the faculty about water leaking from the ceiling and walls during rainfall, rodents, ants, and black mold. A doctoral student noted that carpeting had deteriorated to the point where “you take your students and you want to go sit on the floor in a circle . . . [and] sometimes you don’t want to.”

DISCUSSION

The kind of broad transformation that is necessary to change the course of higher education has implications for an entire community. Decision-making processes do not take place in a vacuum; they occur in a complex environment where individuals and resources need to be considered. For example, there are community norms and ways of being that inform how decisions in a given circumstance should proceed, who should be involved or consulted, the use of information, and the timing or flow of the release of the decisions taken. Those considerations are simultaneously symbolic, political, transactional, structural, and relational.

Cortese (2003) argued that higher education played a critical role in creating a sustainable future, suggesting:

Planners must focus as much on the education and research being done in higher education as on the physical, operational, and external community functions of the university and do so in an integrated, independent manner. This is profound. I believe that a college or university that models sustainability in all its operational functions and actions to collaborate with local and regional communities but does not involve the faculty and students as an integral part of the educational process will lose 75 percent of the value of its efforts and cannot fulfill its role in society (22).

IMPLICATIONS

There are several groups of students, administrators, staff, and faculty that should be able to use the findings of this study. Sustainable leadership is a prerequisite for sustainable education. Students and faculty in architecture, planning, higher education leadership, and development should note that in any planned architectural renovation or design of an institution, the feedback and input of those who will or do teach, work, and learn in those spaces is a vital component of the process. In this study, there were several examples of participants making direct comments about the impact of the physical environment encroaching on or enabling pedagogical, research, and service commitments and practices. For example, flexibility to manipulate the working, teaching, and learning spaces (i.e., control over lighting, sound, climate, configuration of furniture, etc.) had a direct and positive relationship with the level of satisfaction with the spaces. Participants expressed great value in having the room furnishings or a variety of spaces available to accommodate their pedagogical and working needs rather than having the spatial limitations determine the pedagogy or research.

While the physical spaces were important, teaching and learning was not limited to the classroom. That point should be acknowledged and fostered in the planning of physical architecture of educational institutions. Several
participants, from across stakeholder groups, reported that informal hallway conversations were an important part of the development of community and their sense of well-being in the place where they worked and studied. Pedagogically, that was important, as the culture of an organization appears to have the potential to have a significant impact on students’ experiences. That connection has been explored in other studies that look at the link between campus environments and student engagement (Kuh 2006).

Institutional spaces serve to create opportunities to structure social interactions. By doing so, they educate community members about the organization’s culture. Those structural and ideological values should be recognized and explored among an institution’s community members. And, to as great an extent as possible, be considered in the design of an institution and institutional spaces. Several study participants noted a need for flexibility in space allocation, from opportunities for quiet, “obsessive attention” working to socializing places for engagement and the sharing of ideas and interdisciplinary work. It’s important that campus community members have a way in which to indicate their needs, and that facilities planners take those needs into consideration when making allocation decisions.
APPENDIX

QUESTIONS TO ASK IN SURVEYING FOR SPACE ALLOCATION

A community that has citizens who are engaged has a much better chance of being successful in coordinating efforts and making progress toward its goals. The following questions seek to determine the level of engagement a respondent has with university working and learning spaces, as well as the alignment between the function and form of the classroom and working environments.

1. To what extent do the spaces you use in your institution make sense?
   0: Not applicable.
   1: There is no alignment between what space I use and what I do there.
   2: Little sense. There is very little alignment between the space I use and what I do there.
   3: Makes sense. There is fairly good alignment between the space I use and what I do there.
   4: Perfect sense. There is a great alignment between the space I use and what I do there.

2. On the following spectrum, how would you rate the decision-making process that led to the allocation of spaces you use?
   0: Neutral, neither opaque nor transparent
   1: Opaque
   2: Somewhat opaque
   3: Somewhat transparent
   4: Completely transparent

3. How would you rate your overall experience with space allocation at [this institution]?
   1: Not at all satisfied
   2: Limited satisfaction
   3: Neutral
   4: Somewhat satisfied
   5: Very satisfied

4. How would you rate the flexibility of spaces to accommodate your functions?
   1: The space is fixed; it does not accommodate the functions I need to perform.
   2: The space is fixed, but it accommodates the functions I need to perform.
   3: The space is flexible, but it does not accommodate the functions I need to perform.
   4: The space is flexible, and it accommodates the functions I need to perform.

5. How many times were you consulted in the decision of where you are working or learning? ______________
REFERENCES


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