

# Physical Environments

## *The Role of Place and Design*

### **Scenario: The Campus Visit**

Eric Carter took a late spring day off work to visit nearby Mountain Pass Community College (MPCC), just fifteen miles away by interstate in the community of Rock City. It had been a while since he had been in a classroom because he took a job in a local factory after graduating from high school ten years before. He was thinking of returning to school, and since his cousin was considering the Wildlife Resource Management program at MPCC, Eric decided to go with him to get more information about the institution. As they neared Rock City, they began to look for signs directing them to the campus. Eric had driven this way many times before but had not had a reason to visit the campus. The first sign indicated that the next three exits would lead to the campus, but he was unsure which exit to use. While discussing where the office might be, they arrived at the second exit and decided to take it. At the top of the exit ramp, the sign indicated that the campus was to the left. After going several miles without any additional clues, they discovered that they were in an area resembling a college campus. On further inspection at the next stoplight, they noticed a faint Mountain Pass Community College sign embedded in a timber-like structure. They also saw a directional sign with the word "Visitor" on it. They appeared to be in luck and faithfully followed the next three visitor signs, assuming that they would end up at an admissions office, a welcome or information center, or at least a visitors' parking lot. But after obeying

four directional signs they found themselves at a dead end in front of a campus maintenance building.

After asking a few people for directions, they backtracked and eventually found a visitors' parking lot. Upon examining MPCC's "You Are Here" map, they discovered that the admissions office was in fact nearby. After being confused a bit more by the sign outside the admissions building, they finally entered and took two flights of stairs (finding no elevator) to what appeared to be the admissions office for just the college's nursing program. However, despite the misleading signs at the entrance to the building, they had indeed found the general admissions office, and the friendly and helpful staff inside gave Eric a college catalog and admissions application materials and answered all his questions.

Next on Eric's agenda was a quick, self-guided campus tour. He and his cousin wandered through several buildings just to get a feel for the campus. Although they showed some age, they and the grounds were well maintained. Eric and his cousin peeked into one of several empty classrooms and saw a familiar academic setting—a large, sloped classroom with seats bolted to the floor and an elevated lectern some distance from the first row of students. Despite the familiarity, they thought it appeared a bit incongruous with an institution that touted learning as hands-on and personal. In the Earth Sciences building were several carpeted classrooms and labs with moveable chairs, tables, excellent lighting, and several technical amenities. This was what they were hoping to find: space for smaller classes and more opportunities for student–faculty interaction. The Earth Sciences classrooms seemed to be a better fit for the college's marketing tagline: "A Place for Learning Together."

After a quick tour of the classroom buildings, Eric asked for directions to the campus union. Finding it was relatively simple; it was in the center of campus, with most sidewalks leading to the plaza in front of its entrance and the major student parking lot located out back. The interior steel and plastic had recently been replaced with oak and pine, reflective of MPCC's rolling tree-covered landscape. From a table in a

quiet corner of an otherwise bustling food court, Eric and his cousin could see a pleasant lagoon, with geese swimming near the shore. Eric noted that the proximity of the lagoon to the student parking lot offered a welcome sight, especially given the stress sometimes accompanying interstate highway commuting.

After grabbing a quick bite to eat in the food court, Eric and his cousin headed back toward their car, walking past what sounded like a spirited game or rowdy competition in an adjacent arena. They were a bit surprised to learn from an attendant at the entrance that it was actually the campus's spring commencement ceremony, which honored the achievements of graduates from MPCC's twenty six programs and specialties. Eric began to imagine himself among them someday. The campus visit was a bit frustrating at times, but given MPCC's successful job placement reputation, the feel of the campus, and the fact that he could commute, Eric was seriously entertaining the notion that this place might be for him.

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Eric Carter's experiences in this scenario are not uncommon to all who visit, study, or work on a college or university campus. This scenario also illustrates just how complex and important the physical layout, design, and spaces of educational institutions and their environs are in terms of how individuals interact with them. Two questions are implicated in this case and form the framework for discussion in this chapter: What is the general nature of the physical environment's influence on human behavior? How do the physical dimensions of any campus environment specifically impact the behavior of participants?

## The Campus as Place

Just as Eric Carter in the opening scenario characterized his brief MPCC experience with reference to it, the concept of *place* is an important one in considering the nature of campus environments

and how they might influence students' behavior (Chapman, 2006). Drawing from a diverse disciplinary history (Lewicka, 2011) and several philosophical underpinnings, this concept focuses on the "interplay of people and the environment—as a place" (Cresswell, 2004, p. 11). Place is constituted not only by the built environment—buildings, sidewalks, parking lots, natural and designed landscapes—but also by the many people-made objects and artifacts of material culture that adorn the campus and interact with students, faculty, staff, and visitors alike. Thus, "the meaning of place is not inherent in its 'objective' or physical attributes, but rather rises from the interpretive processes that occur in the interplay between people-to-place and person-to-person interactions" (Morrill, Snow, & White, 2005, p. 232).

The concept of place is foundational to the human experience and can serve as a heuristic device for understanding the dynamics of the college campus. Bott (2000) proposed a four-domain descriptive framework for identifying place: setting characteristics, individual/person characteristics, cultural setting characteristics, and functional characteristics. Bott, Banning, Wells, Haas, and Lakey (2006) used this model to develop a series of questions linking these components to the campus environment, including the following: Are the buildings attractive? Is the campus historic? Is there a sense of belonging? Does the campus have personal meaning? Does the campus meet expectations? Is the campus safe? Such probes can guide the assessment of a campus's "sense of place" (Sturner, 1972) and point to ways to improve its design. A sense of place among students has been connected to higher degrees of involvement in the academic life of an institution (Okoli, 2013), issues of "retention, attention, motivation, learning and academic achievement" (Scott-Webber, Strickland, & Kapitula, 2013, p. 1), and alumni interest and giving (Reeve & Kassabaum, 1997).

Colleges and universities, perhaps more than other institutions, are experienced as settings where the sense of place

(Sturner, 1972) leaves lasting impressions on those who participate in them. Annual rituals like Homecoming, for example, confirm that such places cause a great feeling of attachment and are one of the most important spaces for many in our culture to accommodate the transition to young adulthood and other life phases. Colleges and universities by design are memorable places, and students often develop a strong place attachment (Giuliani & Feldman, 1993) to them, to the point that their sense of belonging and identity become deeply entwined in what Proshansky, Fabian, and Kaminoff (1983) coined place identity.

From the view of prospective college students, the sense of place associated with a college or university campus is often among the most important features in creating a critical first impression of an institution (Sturner, 1972; Thelin & Yankovich, 1987). The basic layout of the campus, open spaces and shaded lawns (Eckert, 2013), the accessibility and cleanliness of parking lots, interior color schemes, the shape and design of a residence hall or classroom building, a library or gallery, an impressive fitness center, and even the perceived climate (Knez, 2005) all shape initial attitudes in subtle yet powerful ways (Stern, 1986). In a firsthand study of campus life on twenty-nine different college campuses, Boyer (1987, p. 17) characterized the critical role of such aspects:

Little wonder that when we asked students what influenced them most during their visit to a campus, about half mentioned “the friendliness of students we met.” But it was the buildings, the trees, the walkways, and the well-kept lawns that overwhelmingly won out. The appearance of the campus is, by far, the most influential characteristic during campus visits, and we gained the distinct impression that when it comes to recruiting students, the director of buildings and grounds may be more important than the academic dean.

It is clear that the campus as place is an important factor that influences students' attraction to and satisfaction with a particular institution. What, then, is the nature of that influence, and how does the campus environment shape specific behaviors?

Most introductions to the topic of how physical environments influence behavior begin by noting Winston Churchill's observation that we shape our buildings and then they shape us. While the observation is a simplistic one, it does fit many of our everyday experiences with building designs and spaces and the artifacts we encounter on a college or university campus. Place does matter, and it influences our behavior. For example, once doors and hallways fix the shape of the traffic flow within a campus building, walking behavior within the building is pretty well determined. But we know it has not been entirely determined. Despite many design efforts to direct pedestrian flow through campus or through buildings, it is also a common experience to see someone going the wrong way. In the same way, people on campus often rearrange, change, or remove semifixed elements of interior and exterior furniture (Rapoport, 2005), like bicycle racks, benches, and picnic tables, to meet their own needs, and campus inhabitants are constantly placing, removing, and rearranging the material culture of the campus (e.g., posters, artwork, graffiti, and other symbolic material) for one purpose or another. Whether behavior within an environment is presumed to be caused by it (the position of *architectural determinism*), facilitated by it (an assumption of *possibilism*), or simply made more likely (the conclusion of *probabilism*) (Bell, Greene, Fisher, & Baum, 2001), it is clear that whatever defines the campus environment must be taken into account when understanding the behavior of students. Although features of place lend themselves theoretically to all three positions, the layout, location, and arrangement of space, facilities, and campus artifacts—and the nonverbal messages they convey render some behaviors much more likely and thus more probable than others. A well-planned place is seen as being more

active and having greater influence than just making opportunities available and consequently is designed to achieve certain purposes. In the case of institutions of higher education, they are places expressly designed for learning.

### **Function and Symbol of Place**

Whether built or natural, the physical aspect of any campus place offers many possibilities for human response. However, it is the nature of its functional and symbolic influence for some behaviors to be more probable than others. For example, from the opening scenario, an admissions office located on a second floor is *functional* in that its design is capable of allowing necessary activities to be carried out, but its location might also send out *symbolic* messages of other possibilities, perhaps causing some to seriously question the institution's commitment to the users of the service or their needs for convenience and accessibility. Another consideration might be that the institution does not see this function as central to its mission or that it lacks necessary funds to relocate the office. The symbolic view of campus place environments suggests that it can potentially convey all of these messages, depending of course on the meaning people ascribe to them (Gustafson, 2001).

It is this link between function and symbol that leads to an understanding of how campus physical environments and artifacts impact behavior through nonverbal communication (Rapoport, 2005). Such communication incorporates "those messages expressed by other than linguistic means" (Adler & Proctor, 2014, p. 188) and includes cues from the physical environment as well as the material culture of place. Rapoport also concluded, "Environments are more than just inhibiting, facilitating, or even catalytic; they not only remind, they also predict and describe" (1982, p. 77). Each setting "thus communicates, through a whole set of cues, the most appropriate choices to be made: the cues are meant to elicit appropriate emotions, interpretations, behaviors, and transactions by setting up the appropriate situations and

contexts” (Rapoport, 1982, pp. 80–81). The research supporting the nonverbal communications link between the physical environment and behavior has long been established. For example, it has been shown that the attractiveness of a room influences positive affect and the energy level of those working in the room (Maslow & Mintz, 1956); low lighting, soft music, and comfortable seats encourage people to spend more time in a restaurant or bar (Sommer, 1978); and the artifacts on the walls of a student room can reflect messages about the student’s adjustment to the university (Hansen & Altman, 1976). Even the overall architectural style of a campus can influence students’ attributions of individual success, stimulation, and expectations for quality of education, with modern architecture being more favorable in that regard than traditional designs (Bennett & Benton, 2001).

The functional aspects of campus physical environments are designed and built, but the results of designing and building create symbolic nonverbal messages that campus users then read. For example, if the campus decides to make a curb wheelchair accessible by molding some asphalt to the curb instead of installing proper curb cuts, it might be technically functional but may also encode messages of not caring enough to do it correctly, not valuing the user, or just responding minimally to the mobility needs of some. When the student in a wheelchair rolls up to the makeshift curb, the decoded message may reveal that the institution doesn’t care about or value the student. On the other hand, if the curb cut is correctly designed and constructed, the encoded and decoded messages may strike a different tone, conveying a sense that the institution cared enough to do it correctly. Either adaptation is functional, but they are quite different in their symbolic effects.

The functionality of the campus physical environment not only affords and constrains certain activities but also communicates important nonverbal messages that are often seen as more truthful than those that are verbal or written (Mehrabian, 1981). In some cases they send ambiguous, if not contradictory, messages, as did



the campus entrance welcome sign for Eric Carter in the opening scenario. Similarly, while the campus president may speak about the open posture of the campus in welcoming ethnic minorities, the presence of defamatory graffiti on buildings may suggest just the opposite. Double messages have strong impact, and when a person perceives an inconsistency between the verbal and nonverbal, the latter often becomes most believable (Eckman, 1985). Such was the case with Eric, as he had doubts about MPCC's claim to be a place for learning together after seeing a restrictive physical classroom design. To paraphrase a quote attributed to Sir Kenneth Clark: "If one had to say which was telling the truth about the school, a speech by the principal or the actual school building, classrooms, and material he or she was responsible for providing, one should believe the building" (Anderson, 1971, p. 291). A major function of nonverbal communication is to convey emotion (Adler & Proctor, 2014). If a picture is worth a thousand words, viewing the campus physical environment not only leads to a more truthful perspective but perhaps also to a far more personal one.

## **Conduits of Nonverbal Communication**

Campus places communicate their messages through a variety of mechanisms or conduits: behavior settings, artifacts of material culture, and behavioral traces. A college or university conveys its sense of place intentionally or inadvertently as these mechanisms serve to impress students with a variety of expressed values and tacit images of what it means to be a student on campus or to behave in a certain setting.

### **Behavior Settings**

Behavior settings are the social and physical contexts within which human behavior occurs (Barker, 1968; Wicker, 1984). While the concept has its foundation in ecobehavioral psychology, its linkage to the concept of place is evident (Rapoport, 1994). The college

campus is a classic behavior setting, composed of essentially two parts: the human or social aspects of the setting and the inanimate or physical aspects of place. For example, on the college campus, students, faculty, and staff interact within a physical environment including many components such as pathways, parking lots, activity fields, statuary, artwork, and buildings, which all present myriad designs that vary in size, color, and arrangement. It is the transactional (or mutually influential) relationship between these elements in the setting that shapes behavior. Behavior settings can function like nonverbal mnemonic devices (Rapoport, 1982), where messages encoded in the physical component serve to remind participants of what is expected. For example, an athletic field house is a behavior setting, where seating, props, sports teams, cheerleaders, and decor all convey cues that loud and rowdy sports event behaviors are not only appropriate but also expected. The rowdiness Eric observed coming from MPCC's commencement ceremony the day of his visit to campus might prompt consideration of a redesign of the behavior setting or a change to an alternative venue. Institutions experiencing similar concerns often hold their ceremonies in an athletic field house, where students are sometimes seated in the same arrangement as when they attend a sporting event and are most often grouped into departments and colleges, which encourages a competitive team identity. Ceremonial foliage, drapes, and a crested podium are often overshadowed by hoops, scoreboards, time clocks, and bannered reminders from victories past. Such encoded messages, along with the official excitement of the moment, remind students that yelling, cheering, and otherwise rowdy behavior are clued to be appropriate. A change of amenities and artifacts (e.g., classical music, lighting, carpet, and other textured surfaces) can help soften the atmosphere to improve student decorum and send messages about the importance of such events for all involved.

At times behavioral setting components are antagonistic and at other times synomorphic (Wicker, 1984). For instance, physical

features often set broad limits on the phenomena that can occur in a setting, making some behaviors more or less likely than others—a concept first labeled by Michelson (1970, p. 25) as intersystems congruence. A classroom of chairs bolted-down in straight rows makes it difficult to form small-group discussions; in contrast, moveable swivel chairs or cushions make the setting more supportive of such interactions, achieving a *synomorphic* relationship. Common sense and experience suggest that when the physical environment of a campus, building, or classroom supports the desired behavior, better outcomes result. From a behavioral setting perspective, campus designs do not merely create functional spaces, moods, or atmospheres; they facilitate certain behaviors (Wicker, 1984).

Social and psychological aspects of behavioral settings also communicate messages to participants in them. A teaching podium placed twenty feet away from the first row of seats sends a distinct message regarding the formal nature of the upcoming classroom experience. Recall that it was this same cue in the opening scenario that raised questions in Eric's mind about the expressed mission of the college. On the other hand, a simple couch located in a secluded cove in the student union signaled the possibility for intimate social interaction. Whether stated or not, all behavioral settings are purposeful places; there must be a confluence of design and activity among participants if they are to be effective.

### **Artifacts of Material Culture**

The concept of place also includes numerous artifacts found on campus that constitute its material culture. These are often objects made or modified by inhabitants of the setting and placed on campus for intended purposes: art, adornments, modifications of the landscape, and furnishings (Prown, 1982), to name a few. Such objects and artifacts give directions, inspire, warn, or accommodate through signs and symbols, artwork or posters, graffiti, and specific physical structures (Banning, Middleton, & Deniston, 2008). In doing so they also often send strong nonverbal messages about

campus culture and expectations. Signage on a restroom door indicating “Ladies” gives a different message from one saying “Women” or “Gender-Neutral.” An “Admissions Office” sign next to a “School of Nursing” sign at the same entrance sends a confusing message. Many campuses continue to display “Men Working” signs at worksites even though women are involved in the project. While such an implicit message of the invisibility of women would not be supported expressly by any university official, it speaks clearly in this case through the communicative power of a campus artifact.

Campus art also is a source of nonverbal social messages. Older campus buildings often have murals painted by artists whose fame now makes them invaluable, both historically and monetarily. At times these murals are embedded with social messages no longer supported by the campus or society in general. For example, the Kenneth Adam murals depicting assimilation of Native Americans, Mexican Americans as farm laborers, and Anglos as scientists continue to cause controversy after many years at the University of New Mexico’s Zimmerman Library (Banning & Luna, 1992; Stockdale, 2011). Campus artworks, particularly statuary, often portray women in passive positions (sitting) and men as more active (standing or in motion), perhaps essentializing gender-based anachronisms inappropriate in a modern world. Sharing visual effect, campus graffiti is also another messaged source of campus culture, especially if its removal should be delayed, potentially sending nonverbal messages about the presumed values of the institution. Racist or homophobic messages visible for months on the side of an academic building may communicate a lack of concern for creating a safe and comfortable environment for all inhabitants.

Last, physical structures themselves can be seen as campus artifacts of nonverbal communication, as illustrated in the opening scenario. The design and placement of a curb cut and the two-story admissions building with no elevator both might convey a lack of concern for students in wheelchairs or students with children

in strollers. Likewise, buildings that are hidden or have poorly lit spaces may suggest unaddressed safety concerns. Such examples underscore the point that material culture of place on campus is not just related to function and ambiance but also serves to communicate important campus values and expectations.

### **Behavioral Traces**

Another category of mechanisms conveying nonverbal messages to campus participants is behavioral traces (Zeisel, 2006). Students, faculty, staff, and visitors use campus places in a variety of ways, leaving certain traces from which to infer behavior and identify potential clues and messages. Borrowing from the science of archaeology for gaining a more complete understanding of how people use campus environments, Zeisel (2006) suggested a number of ways to read traces by focusing on: by-products of use, adaptations of use, displays of self, and public messages. Concerning this approach Bechtel and Zeisel (1987) concluded: "Few give a thought ... to the fact that the fossils of tomorrow are the garbage dumps of today" (p. 32). Such is the case with college and university campuses, where many an artifact of earlier history has been uncovered during new construction or renovation projects.

By-products of behavior are often reflected in erosion, leftovers, and missing traces (Zeisel, 2006). Examples of erosion on campus are seen in the worn paths students make as they find the shortest distance from one campus building to the next. Such by-products (paths) can be useful in placing new sidewalks. In fact, on some campuses, sidewalks to new buildings are not constructed until student paths emerge, suggesting patterns of movement that are likely to persist. Leftovers are traces represented by objects not consumed during behavior, with trash and litter being the most common forms. At times these become associated with particular campus groups, such as Greek students on one campus who occupy a sitting wall as their favorite lunch spot. Leftover soda cans and fast-food bags produce a negative image problem there for the

fraternity and sorority system. Last, missing traces are apparent where the lack of erosion and leftovers suggest little to no use of expected areas by campus constituents. Some spaces, by virtue of their design, see very little use, and documentation of such missing traces can prove helpful in gaining support for their redesign to better serve campus needs. Missing traces also result from theft or vandalism, such as an iconic clock missing its hands, potentially raising concerns for campus safety.

The concept of adaptations for use refers to where a change has been made to an environment because of failure of the design to serve its original purpose (Zeisel, 2006). Many of the adaptive traces include objects moved to separate elements once connected or to join elements once separated, for example, chaining down outdoor furniture on campus to prevent theft or adapting the corridors of residence halls for recreation because of limited alternate spaces on campus. Larger-scale adaptations would include renovations, expansions, and other changes or improvements. The addition of better lighting, for example, may follow an increase in campus crime; converting an open space to a parking lot could signify an increase in commuter student enrollment; an attempt by students to adapt any space for an unintended purpose might be the first clue that a redesign or renovation effort is needed.

Displays of self, such as the positioning of Greek letters on fraternity and sorority houses, illustrate how the physical environment is used to convey messages about individual and group ownership (Zeisel, 2006). Such displays are important for individualizing and personalizing spaces. Huge signs are often found in residence hall windows marking a particular floor, wing, or learning community, and no one can enter a campus without noticing T-shirts displaying messages of self and group, from student organizations to academic majors, from attendance at rock concerts to spring break location. Again, such traces not only increase understanding of the social environment on campus but also convey an entire social environment to others. Many academic

buildings also illustrate how props are used symbolically as displays of self: a world globe on top of an international studies building, an oil derrick on the roof of a petroleum engineering building, and cannons in front of an ROTC building. Such symbols not only serve as displays in themselves but also send public messages about the values and interests of various campus units, the focus of the next category of traces.

Public messages include official, unofficial, and illegitimate signs on campus (Zeisel, 2006); often problematic are their design, location, and degree of clarity. Eric's experiences while visiting MPCC in the opening scenario once again are familiar testaments to the confusion ambiguous signage can create. Such problems often lead to the posting of additional signs or a redundancy of messages (Rapoport, 1982), usually a signal that the intended messages are not being communicated accurately. In addition to the more formal signs are artifacts of campus graffiti, which can signal creativity or local issues or can lend insight into prevailing attitudes on issues of diversity and social justice. Collectively, these concepts of behavior settings, material culture, and behavioral traces offer useful tools for the campus observer. Understanding their power as conduits of communication can assist in the improvement of campus environments and the creation of a powerful sense of place.

## **Places of Learning**

Colleges and universities have always been places of learning, although the manner in which they have evolved over the past fifty years has resulted in renewed discussions about their capacity to sustain their stated mission and fundamental purpose. Following World War II and continuing through the 1960s and 1970s, the American college campus went through a period of great expansion unlike any other time in its history (Bonner, 1976). Large public universities were becoming even larger, numerous branch campuses

were being established, and community colleges were beginning to take root in untold numbers of locations to accommodate growing enrollments and the desire for convenient access to learning at the postsecondary level. The physical infrastructure of higher education was rapidly infused with new facilities, including residence halls, classroom buildings, science labs, sports arenas, student unions, and recreation centers, all in an effort to create campuses with a sense of place among students as the preferred setting for their learning experience. Concurrent to this, new areas of research on student development and campus ecology also began to infiltrate the academy, eventually altering the conversation about the purposes and practices of higher education. Questions about good teaching evolved into concerns about student learning, and probes into the outcomes of it all led to new areas of research in the service of student engagement and learning.

In the meantime, structures and facilities designed and built at one time, with one set of assumptions, forty years later found themselves obsolete and in disrepair, no longer able to serve purposes grounded in new understandings and expectations. Over the past ten years especially, American higher education has undergone a resurgence of campus renovation and new construction, and the conversation has once again changed to a new question: How do we design and build facilities in our institutions that support the core mission of student engagement and learning? This current period of renewal has become an era of rich discussion about educational purposes and practices to fundamentally reshape our thinking about spaces and their importance in facilitating student learning. In a rare opportunity to build a college from scratch, Troyer (2005) reported on the processes engaged in while constructing a new campus: “Before campus and classroom design could begin, administrators needed to identify the college’s ‘learning signature’—the values and beliefs about how learning would be facilitated at the institution” (p. 6). Being places of learning, this is where discussions must begin for postsecondary institutions.



Colleges and universities are first and foremost places of learning, and the relationship between their designs and intended outcomes is well documented (Chapman, 2006; Chism & Bickford, 2002). As social places, postsecondary institutions place a premium on the interaction of constituents to effect new insights and understandings. Such is the nature of the learning enterprise. Thornburg (2001) likened this to the anthropological experience of the campfire or watering hole, where group discussion facilitated by a leader replaced the individual work of the cave (or perhaps the tribal smoke signals of early distance learners). The consequential importance of physical design in shaping the outcomes of student learning is considerable (Banning & Cunard, 1986), and American higher education over the last several decades has struggled with the results of too many ineffective designs from the past. As one review suggested, “Faculty and students alike have become so accustomed to meeting in spaces that are sterile in appearance, unable to accommodate different instructional approaches, and uncomfortable for supporting adult bodies that most have taken this condition as a fact of college life” (Chism & Bickford, 2002, p. 1). Consequently, in the mix of numerous institutional projects to renovate or build new campus learning spaces, formal and informal, recent research has begun to articulate key findings and propose guidelines for improving their design (Oblinger, 2006).

Following this line of inquiry, Strange (2014) proposed a typology of learning spaces that can be used to assess campus-wide options for supporting the engagement and learning of students during the college experience. Reflecting a hierarchy of campus design (Strange & Banning, 2001; see Part Two of the present volume), ten kinds of campus spaces are suggested for supporting the inclusion, security, engagement, and community experience of students. For purposes of inclusion and safety, campuses need spaces that are *welcoming* (i.e., creating a sense of belonging and security for newcomers and visitors) and *inclusive* (i.e., affirming identities and supporting expressions of self and others). To support

student engagement, institutions must offer spaces that are *functional* (i.e., supporting key working tasks and activities), *sociopetal* (i.e., encouraging open and spontaneous human interaction and encounters), *flexible* (i.e., adapting to multiple purposes and participant imprint), *esthetic* (i.e., inspiring a creative sensibility and uplifting the human spirit), *reflective* (i.e., encouraging quiet individual imagining and meaning making), and *regenerative* (i.e., restoring energy and motivation for persisting). In addition, spaces needed to achieve community are *distinctive* (i.e., creating unique and memorable impressions), and *sustainable* (i.e., supporting human experience through right proportion, scale, and resource). Such spaces form a palette of learning textures from which to draw and apply as plans are put into place and resources permit. Spaces addressing inclusion and security must be top priority; without them, opportunities for engagement are diminished, and so on. Ultimately, each type of space exerts a cumulative effect as those designed to promote inclusion, security, and engagement are instrumental in effecting the ultimate experience of community—the prototype powerful learning environment.

Other researchers have focused on specific types of teaching and learning facilities in their analyses. For example, Kopec (2012) addressed the challenges of academic building design, noting the importance of student ease in finding classrooms (supporting wayfinding), where the sunlight enters the building, how the design of halls and corridors can influence social interactions, how the flexibility of furniture can accommodate different types of learning, how students can experience a sense of ownership and feel attached to the learning space, and how issues of privacy and crowding impact their learning. In addition, the author outlined the importance of ambient conditions, including color, noise, lighting, and temperature. Connections between space quality and learning are also addressed, from a planning perspective, in a report issued by the Learning Spaces Collaboratory (Narum,

2013); this document provides assistance to institutions for assessing campus learning facilities to enhance their potential as “spaces for becoming” (p. 20). Further evidence that implementing quality learning places makes a difference is presented in Scott-Webber, Strickland, and Kapitula (2013), where the use of an active learning postoccupancy evaluation tool measured the effects of intentionally designed classroom interventions. Accordingly, classroom layout increased student perceptions of their engagement, ability to achieve a higher grade, and increased motivation for attendance.

In a synthesis of extant research on the topic, Painter et al. (2013), under the aegis of the Society for College and University Planning (SCUP), issued a report on learning space design, describing both its current state and future directions. Based on a review of empirical data, cases, anecdotal studies, and conceptual analyses, the authors categorized three groups of campus learning spaces: *formal learning spaces* (e.g., classrooms, laboratories); *informal spaces* (e.g., libraries, group study spaces, gathering areas); and *campus as a whole* (e.g., buildings, layout, natural settings) (p. 6). Within each category, they further delineated a taxonomy of spatial design. Among *formal learning spaces* are the following:

1. *Traditional classrooms*—“flat floor plan, forward-facing desks and chairs, podium at front, clearly visible division of a front and back of the classroom” (p. 8).
2. *Lecture halls*—“large-capacity auditorium with tiered seating plan, podium at front, clearly visible division of a front and back of the classroom” (p. 8).
3. *Technology-infused classrooms*—“similar to the layout of the traditional classroom, but includes computers at the lecture podium, overhead digital projectors, projection screens, and/or video and Internet viewing capabilities” (p. 8).

4. *Laboratory*—“spaces equipped with formal/traditional, often fixed lab equipment for use in experimentation, creation, and design that is associated with specific, discipline-based course content” (p. 9).
5. *Active learning classroom*—modified in-the-round space with “moveable furniture, accessible outlets, ports, computers, mobile whiteboards, projectors, video, Internet, and/or other accessories” to accommodate “diverse pedagogies, to ease the transition between teaching modes, and deliberately engage students in a more interactive learning environment” (p. 9).

Their review of outcome data on these designs found that active learning classrooms, more so than the other designs, yielded higher grades, more discussion, greater movement of instructors while consulting with individuals and groups, and more frequent use of marker boards; such rooms were better accepted by urban students and those in the first or second year of college. Compatible and flexible furniture served to accommodate different learning strategies within the same class session. Similarly, the technology-infused designs promoted greater class participation, an increased sense of responsibility for completing assignments, and a greater desire among students to work collaboratively. Addition of “swivel desks” increased the interactive quality of another classroom, allowing students to know one another better, to ask questions, and to participate in discussions (Henshaw, Edwards, & Bagley, 2011). The authors concluded that formal spaces best facilitated learning through flexible designs that encouraged interaction among students and faculty alike, supported varied pedagogies and strategies, and were equipped with complementary technology. Overall, “classroom design has an impact on teaching methods, instructor behaviors, and student activities” (Painter et al., 2013, p. 11), an

observation that is consistent with what others have concluded: “Different classroom types are linked causally to the observed differences in instructor and student behavior” (Brooks, 2012, p. 1).

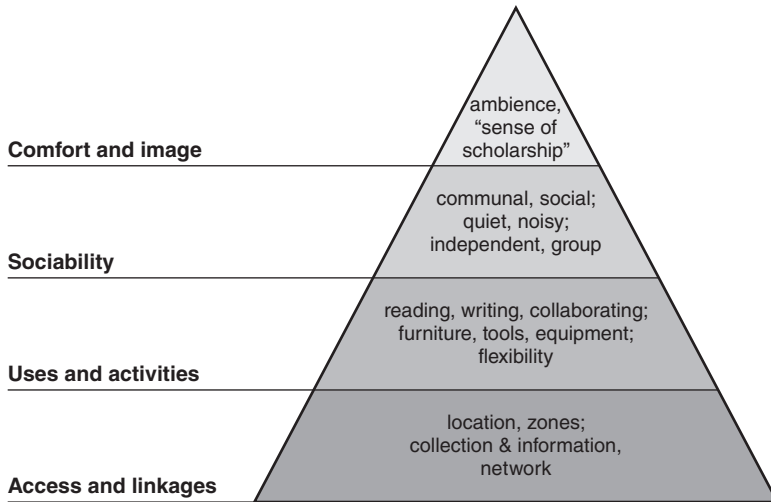
Recognizing that “a considerable portion of students’ learning happens outside of formal spaces,” also referred to as *incidental learning* (Marsick & Watkins, 2001), Painter et al. (2013) focused on informal learning spaces as well, evaluating the potential for libraries, social gathering spaces, and corridors to contribute to such ends. Regarding libraries, again in addition to comfort, convenience, and technology, design parameters students rated highest were space flexibility to accommodate varied learning tasks and the availability of resources and staff support. Other features, such as windows, art exhibits, and color, attracted students as well, along with the presence of other people and appropriate services. Quoting from one emeritus librarian, the authors suggested that mission-focused library design “insists, as its point of departure, that students are before all else learners and that library space design should be primarily concerned not with services but with learning” (Bennett, 2007, p. 18).

In an analysis of academic library design, Cunningham and Tabur (2012) constructed the problem as one of hierarchical design; they proposed a four-tiered model that constitutes the ideal learning space (Figure 1.1).

[The] most basic characteristic is access and linkages at the bottom of the pyramid. Once this attribute meets the primary pragmatic needs of students, they will then look to see if the space also meets their ascending needs of varied learning and social activities. A learning space which not only has these attributes, but also possesses the fourth and highest level attribute of comfort and feel will distinguish itself as an ideal learning space. (p. 1)

A response to Cunningham and Tabur’s (2012) challenge to create “transcendent learning space” (p. 5) is perhaps found

Figure 1.1. Hierarchy of Learning Space Attributes



Source: Cunningham, H., & Tabur, S. (2012). Learning space attributes: Reflections on academic library design and its use. *Journal of Learning Spaces*, 1(2). Retrieved from <http://libjournal.uncg.edu/index.php/jls/article/view/392/283>

best on any number of campuses today in the development of modern learning commons (McMullen, 2008), facilities designed to support relationships in the service of learning, whether “student-to-student, student-to-faculty, student-to-staff, student-to-equipment, or student-to-information” (Lippincott & Greenwell, 2011, p. 1).

Another informal source of learning can be found among social gathering spaces, which include areas of campus that “accommodate large groups of individuals interacting informally for academic, social, and personal purposes” (Cunningham & Tabur, 2012, p. 14) or combination thereof; such spaces are often descriptive of food-service areas, student unions, and outdoor patios and cafes. A recent survey of student life facility trends (Treanor Architects, 2011) indicated that plans for such spaces are on the rise in many institutions, for purposes of strengthening a sense of community, supporting teaching and learning, and

attracting and retaining students. Although the research is limited, there is evidence that social learning spaces are effective in the levels of engagement, peer-to-peer interactions, and collaboration they promote, albeit at times at the expense of individual study (Matthews, 2010; Matthews, Adams, & Gannaway, 2009; Matthews, Andrews, & Adams, 2011). In moments of focused collaboration, intermittent exchange, serendipitous encounter, and ambient sociality in such spaces (Crook & Mitchell, 2012), students pursue group work activity, socializing, individual relaxing or reading, interaction with staff, and discussion of career goals (Randall & Wilson, 2009; Wilson & Randall, 2012). Beginning with entryways and proceeding through, the physical designs of such facilities offer an array of possible and probable influences. For example, the proxemics associated with seating arrangements in a student union lounge can either promote or inhibit social interaction. Messages of material artifacts can signal a sense of belonging (or rejection), a feeling of being welcomed (or ignored), a sense of safety (or risk), and a sense of role, worth, and value (Banning, Middleton, & Deniston, 2008), enhancing or detracting from students' ability to cope with college stress. Consider, for example, the contrasts between a flyer advertising an upcoming gay, lesbian, bisexual, and transgendered awareness week and a hostile homophobic graffiti found in a campus restroom; a student wheelchair user anticipating the excitement of an on-campus event but who cannot find an accessible entrance to the hosting facility; and a resolution of commitment to campus diversity but posters that never feature any race other than Caucasian. Processes of student growth and development are inevitably hindered by such undeserved stress.

Another significant social space with potential for enhancing learning is found where many students live: residence halls. In her seminal work on the questions and dreams of young adults, Parks (2000), citing John Henry Newman on the "power of the social environment to train, mold, and enlarge the mind," noted that if

Newman “had to choose between a school without residence hall life and one with only the life of the residence hall, he would choose the latter, where ‘the conversation of all is a series of lectures to each’ (Newman, 1982, p. 110)” (Parks, 2000, p. 95). Lawless (2012) posted what she described as “rudimentary design ideas for creating academic residential spaces that benefit both the physical and social well-being of the student.”

- Small individual living spaces to foster involvement and interaction.
- Overall, low- to mid-rise buildings (five or fewer floors) with no more than 500 residents total to foster community oriented traffic and interaction patterns.
- Multiple, small social and study spaces to increase incidental social opportunities and increased sense of secondary, neighborhood-like personal space.
- Use of hybrid style spaces, for example a suite designed with ten to twelve rooms opening onto common living, dining, and kitchen facilities.
- Space to complement the academic programming, for example, flexible rooms for formal study space, social activity, or informal learning opportunities
- Flexible opportunities for customization by residents, for example adaptable furnishings, paintable surfaces, bulletin or whiteboard walls and doors. (Retrieved from: <http://www.treanorarchitects.com/news/sector/treanor-architects/2012-01-30/residence-hall-design-success-student-learning/>)

Supplementary to social spaces are also those found by students themselves, sometimes outside offices or along corridors, where they often spend a few moments, either alone or with others,



connecting online or reviewing assignments prior to their next class or appointment. As potential in between learning spaces, they need to be welcoming with appropriate aesthetics and seating comfort and access to power outlets.

Another type of informal learning space is identified in the concept of a *third place* (Oldenburg, 1989); these are typically coffee shops and bookstores adjacent to many institutions. A third place is a “setting beyond home and work (the ‘first’ and ‘second’ places respectively) in which people relax in good company and do so on a regular basis” (p. 2). Furthermore, they function as spaces that bring people together and introduce them to each other and the community. They serve as a source for new friends and a place to plan activities and have fun and to engage in important conversation. Oldenburg (1989, p. xxiii) underscored the role of place in these functions: “An individual can have many friends and engage them often only if there is a place he or she can visit daily and which plays hosts to their meetings.” Much of the value of such spaces in students’ lives is that they encourage informal learning through discussion and the formation of student communities (Oldenburg, 1997; Stantasio, 2002). When asked to identify such a place, 80 percent of students in one recent study (Banning, Clemons, McKelfresh, & Gibbs, 2010) had no problem locating and describing one, where most visited at least once a week or more for socializing and conversation, eating and drinking, and reading and studying. For the students of Bowling Green State University (OH), that place—a coffee-shop-used-bookstore-music-venue on South Main Street—has been known affectionately among them for twenty-five years as Grounds (an abbreviated form of its commercial name, *Grounds for Thought*). In spite of new student reports of frequently or occasionally feeling lonely or homesick and worried about meeting new people (Keup & Stolzenberg, 2004), they also express disappointment with how campuses address social life (Miller, Bender, & Schuh, 2005), perhaps reflecting the limited availability of third-place spaces

on campus. Students need third places to talk with friends away from the complexities of the classroom and their campus experiences.

Complementary to third places are those spaces where students go to rest, relax, unwind, recuperate, and feel safe (Banning et al., 2010). So named *restorative places* (Staats, 2012), they offer relief from the stresses of everyday life and might include nature, the home, the workplace, museums, and religious settings. According to Kaplan, Kaplan, and Ryan (1998), such places must be identifiable, away from any source of stress, and hold fascination for the individual so one can engage in thinking, wondering, figuring out things, and feeling congruent with where one wants to be. Arguably, college students encounter many stresses (Vye, Scholljegerdes, & Welch, 2007) as they sort through a full range of psychosocial concerns (Chickering & Reisser, 1993) and respond to the challenges of life and learning. Locating a secret escape on or off campus is an important task for finding one's way through the college experience. A related study (Banning et al., 2010) found that 45 percent of a sampled group of students could identify their restorative place on campus, usually in buildings or a setting with designed water features, gardens, and park areas, where they often read or studied alone. The 55 percent who named off-campus restorative sites identified various hiking trails, lakes, wooded areas, and mountains. One of five students indicated seeking out a restorative place every day, while 67 percent did so at least once a week.

Last, even campus walkways, a current popular feature in institutional master plans (Kenney, Dumont, & Kenney, 2005), can contribute to the mix of campus learning outcomes through the message-bearing pedestrian experiences of safety, functionality, pleasure, and institutional culture. Such was the case with the incidental learning Eric encountered in the opening scenario as he explored Mountain Pass Community College. A campus walking tour, depending on its features and amenities, might convey an

immediate sense of security or threat. For example, emergency phones, adequate lighting, and signage to regulate bicycle and skateboard traffic suggest one thing; lack of step railings, damaged benches, and worn landscaping suggest another message. Issues of convenience and accessibility are also apparent in the functional experience of a campus. Efficient and barrier-free pedestrian routes improve wayfinding and convey a sense of good design, while sitting walls, benches, flowers, and weather protective features can make for an overall pleasant experience. Finally, in the course of finding one's way, encounters with artifacts of material culture tacitly instruct pedestrians further about what is important and what is valued in the institution.

In summary, campus facilities that support formal and informal learning do so primarily through their capacity to connect peers to one another and to respected mentors and resources. However, in the end, it must be recognized that to support whole student learning, access to a balance of both private quiet spaces and socially interactive spaces is required. Ultimately the impact of these spaces is realized in their capacity for developing "social networks with peers that can lead to greater engagement in active and collaborative learning and that facilitates the sharing of knowledge to meet academic challenges" (Matthews, Adams, & Gannaway, 2009, as cited in Painter et al., 2013 p. 18). Institutional leaders intent on strengthening their commitment to student learning would be wise to consult the work of Felix and Brown (2011) and Felix (2011), which proposed a learning space performance rating system (<http://www.educause.edu/eli/initiatives/learning-space-rating-system>) for campus planners as they consider options in building and renovation. Focusing on both spatial and institutional characteristics, their system attempts to:

- [Create] a common set of measurable criteria to guide the planning, design, and support of learning spaces.

- [Encourage] the design of learning spaces that promote active learning and student engagement
- [Enable] institutions to standardize design and support across campus
- [Facilitate] interinstitutional sharing of best practices in learning space design and comparison with peer institutions
- [Measure] institutional progress toward strategic active learning goals (Felix & Brown, 2011)

## Connecting Through Sense of Place

The study of the concept of place draws widely from a multi-disciplinary base to include contributions from “environmental psychology, sociology, community psychology, human geography, cultural anthropology, gerontology, demography, urban studies, leisure sciences and tourism, forestry, architecture and planning, and economics” (Lewicka, 2011, p. 207). From these related and disparate fields has come a rich deposit of constructs and tools that lend themselves to further understanding how a sense of place evolves within an institution and how participants connect to it. They include wayfinding, placemaking and placemarking, public space, servicescape, atmospherics, and postoccupancy evaluation. Collectively, application of these concepts can improve the design of campus space, the ease with which constituents connect with it, and ultimately the quality of sense of place experienced by those who use it.

### Wayfinding

The evening before opening day classes in most institutions, the campus is filled with map-and-flashlight-toting (or cell-phone-app-viewing) students who are out exploring, giving special attention to the buildings and rooms where their first

scheduled classes are to meet the next day. No student wants to appear lost, and the prospect of not knowing where to go at the very least is unsettling. The solution, as students quickly intuit, is to acquire “the knowledge or understanding of self in relation to [one’s] surroundings (built or natural)” (Devlin, 2012, p. 42), or in other words, to find one’s way around campus.

Passini (2002) noted that wayfinding involves two important aspects: the organization of space and circulation and the environmental communications provided by signs and graphics. It is through the location of buildings, walkways, paths, signs, symbols, supplemented by current you-are-here maps or apps and clear building identifications, that a campus earns the distinction of being user friendly and provides enjoyable wayfinding, in particular for visitors.

Wayfinding and comfort go hand in hand in the navigation of campus space. The best designed colleges and universities facilitate this through legible environments, that is, those with open and distinctive landmarks and a landscape through which one could safely wander but not become lost. The ease with which one succeeds at this is a function of previous experiences and immediate cues provided in the setting about how to plan and carry out movement. Eric’s limited exposure to a college campus prior to visiting MPCC added to the puzzlement he encountered in misplaced signs and erroneous directions once he arrived. The consequences of such experiences for individuals are immediate.

Most people find that wayfinding difficulties and disorientation are highly stressful even in benign cases when the user of a setting is merely confused or delayed. Total disorientation and the sensation of being lost can be a frightening experience and can lead to quite severe emotional reactions including anxiety and insecurity. Self-esteem and assessments of competence may also be affected. (Passini, 2002, p. 96)

Failure to attend to concerns of campus wayfinding also exerts a negative functional impact on the institution that “is measurable in terms of efficiency and monetary value” (Arthur & Passini, 1992, p. 11).

Campuses intent on strengthening the mechanics of wayfinding should pay heed to the kinds of questions newcomers and visitors often bring with them as they move through the campus environment. Where is the student union? Where is the entrance to this building? Is there an elevator? Where are the campus direction signs? Is there a you-are-here map available? Can someone explain this information? Why is it so complicated to find that office? And in today’s digital world the expected question is: Does this college have an app for that?

As institutions seek to make their environments more inviting and hospitable to all users, and ultimately to implement a more positive sense of place about them, wayfinding must be given serious consideration.

### **Placemaking and Placemaking**

Two institutional strategies that can add to the quality of sense of place on campus are placemaking and placemaking. *Placemaking* is about the creation, transformation, maintenance, and renovation of places we inhabit (Schneekloth & Shibley, 1995). A major focus today in college and university master planning is how campus designs contribute to the achievement of institutional mission. Justification for various projects often includes reference to strengthening placemaking and thus a sense of place. As Dober (1992) articulated in a comprehensive approach to campus design, the principal components of any institution are its “buildings, landscapes, and circulation systems” (p. 4). These components come together in an institutional metaphor that guides the “positioning and arrangement of campus land uses and pedestrian and vehicular routes, the location of buildings and functional open spaces ... the definition of edges, and the interface between

campus and environs” (p. 4). Placemaking, on the other hand, focuses on “certain physical attributes which give a campus a visual uniqueness appropriately its own” (Dober, 1992, p. 5), including landmarks, style, materials, and landscapes. The combination of these elements leads to a distinct and memorable sense of place on campus. As activities, “placemaking resembles town planning, producing the larger picture of the future, while placemaking involves the specifics of campus architecture, landscape architecture, and site engineering” (Dober, 1992, pp. 229–231). Thus, an institution committed to educational purposes and student engagement can enhance its sense of place for students by focusing placemaking and placemaking efforts on fulfilling its planning metaphor as a community of learning.

### Placebuilding

Another important aspect of sense of place on the college and university campus is how it is connected to other places (Cronon, 1992; Cresswell, 2004), and in particular to the community in which it resides. “Do the patterns of open space and building that are conventionally associated with ‘campus’ have a place within neighborhoods that the institution influences? Conversely, should the apparatus of the city [or community] have something to say about how campus spaces are formed?” (Lyndon, 2005, p. 3). Institutions engage in place building for purposes of situating themselves as one entity within a larger environment. Thomas (2004) and Thomas and Cross (2007) conceptualized four such possibilities. *Exploitive* institutions view themselves as independent agents, with little to no obligation to the places in which they are located; the larger community is thus exploited as a resource for their use to fulfill organizational needs. *Contingent* institutions consider themselves part of, but having no specific responsibility to, the larger community; they look to what the community can do for them and in turn agree to not disturb or question the norms of the community. *Contributive* institutions

see themselves as contributing in some way to the well-being of the larger community, often times through fundraising efforts. *Transformational* institutions see themselves as interdependent change agents within the larger community, who are trying to improve the conditions of both through various partnerships.

As both a strategy for strengthening the sense of place within a college or university, the place-building framework can serve to inform a variety of common campus concerns, such as issues of town–gown relationships and the interrelationships of intrainstitutional subunits. For example, Kuk, Thomas, and Banning (2008) conceptualized student organizations and their connection to the broader institution through this scheme, and Kuk, Banning, and Thomas (2009) explored how the model could be used to understand and promote the civic engagement efforts of student organizations.

### **Public Spaces**

The notion of public space (Gehl & Svarre, 2013) also contributes to the mix of ideas informing the creation of a sense of place on campus. Public spaces, which include both physical features and the activities that ensue in them, frame the pedestrian experience in a college or university and are often the first to be encountered by visitors and potential enrollees; they also serve as the in between space of the college experience. How an institution approaches public space on campus can either detract from or affirm a sense of place among participants. In related research on new housing developments, Francis, Giles-Corti, Wood, and Knuiman (2012) found that public space quality is a correlate of sense of community among residents. Sucher (1995) suggested that, in terms of public space, good design is “how well it fosters and encourages communication” (p. 166). Thus, campuses that affirm a sense of place about them feature good wayfinding, sufficient seating, generous use of green spaces, settings for games and activities, outlets for food and other vendors, limited impact of parking lots and vehicular



traffic, and opportunities to enjoy the sunlight and benefit from the incidental learning that occurs when people come together. Banning (2002) called for increased attention to how student learning and development could be fostered by designing campus environments that were safe for walking, that were attractive for resting and enjoying the moment, and that would encourage social discourse.

Kenney, Dumont, and Kenney (2005) also emphasized the learning potential of public spaces on campus as they relate to the mission of higher education: “Places set aside for automobiles are almost never a part of the learning campus. But beautiful outdoor spaces framed by buildings often are. So are noisy, bustling, crowded public places—cafes, coffee shops, public computer terminals, perhaps even the mail room” (pp. 40–41). The authors further identified key design principles for increasing students’ opportunities for engagement and learning on campus:

- A pedestrian campus environment reinforced by appropriate closeness of buildings (density) and by juxtaposition of activities that complement one another (mixed use).
- Indoor and outdoor social spaces scattered throughout the overall framework of the campus (not just in the campus center), such as lounges in the residence halls, meeting spaces in the lobbies of buildings, and outdoor sitting areas.
- Informal settings that provide opportunities for interaction, including adding cafes, coffee shops, and bistros in various places on campus. Providing food in multiple locations is clearly a draw both for faculty and for students.
- Integration into the wider community to take advantage of community-based learning resources, and to contribute to (and learn to be a responsible part of) the larger community.

- Access to technology and digital communication, including opportunities to socialize online and in person while online.
- Places and opportunities to participate in co-curricular activities. (pp. 40–41)

In addition, the authors stressed the importance of building layout and open public spaces in a campus master plan, calling for careful consideration of the density of their placement: “Putting buildings and uses in close proximity is a key factor for a thriving community. This proximity improves the chances that people will cross paths with other people, thus increasing the likelihood for spontaneous interaction and exchange of ideas, which are fundamental to collegiality and to interdisciplinary communication” (p. 111). They concluded, “When a place promotes interaction through compactness appropriate to its size, location, and culture, then the benefits of density may be realized even in a small, rural setting” (p. 105). The effectiveness of a campus in doing so may depend largely on its layout, as implicated in the distinction between sociofugal and sociopetal spaces (Osmond, 1957)—two major systems for patterning space: “Sociofugal space (gridlike) tends to keep people apart and suppress communication while sociopetal space (radial) does just the opposite. It brings people together and stimulates interaction as routes merge and overlap” (Howard, 2008). Thus, like other spaces in the institution, those that are public offer an important asset for achieving the educational purposes of a college or university. Focusing more intentionally on their use can only strengthen students’ experiences of a sense of place in them.

### **Servicescape and Atmospherics of Place**

Two concepts from the literature on marketing and retailing, servicescape and atmospherics, offer additional tools for shaping the quality of sense of place at an institution. Whether understood in

terms of the increasing number of retail opportunities sponsored by many campuses or as general strategies for presentation of the campus to consumers, such ideas emphasize the importance of the service environs on campus and the service experience of those who encounter them. From the very first contact with an institution, whether as a visitor or potential student and parent, the interplay of these dynamics creates an immediate and significant impression that feeds into the shaping of a sense of place about a college or university. The physical environment and material culture of an admissions office, a university union, a bookstore, an advising center, and a financial aid office, for example, constitute much of the servicescape encountered in the early stages of the college experience. The ambient conditions of temperature, humidity, air quality, smells, sounds, light, and comfort (Ford & Heaton, 2000)—and the quality of service itself—often determine how a consumer is likely to proceed. An uncomfortable waiting area or limited lighting could send an individual back to the parking lot, but pleasant human scale surroundings can go a long way in making a necessary delay more acceptable. The focus of servicescape is to enhance the sense of hospitality felt and the quality of guest or consumer experience (Ezeh & Harris, 2007). Atmospheric also figure into the mix of creating a sense of place by focusing on the transactional experience in the setting (Thang & Tan, 2003). One employee misstep can lead to a bad impression of the whole; likewise, one above-and-beyond effort can result in a positive story told time and again. The lesson of these two concepts is that paying attention to the details of enacting the institutional mission through allocation and display of campus spaces may be as important as what is espoused.

### **Postoccupancy Evaluation**

Finally, a sense of place is a quality that is never finalized in any setting but rather an objective that must be nurtured and maintained continuously. While one group of individuals might experience a campus at one point, another at a different time might

recall something quite different about the setting. Thus, just as the characteristics of places evolve, so, too, do the needs of individuals who engage in them. Postoccupancy evaluation, in its narrowest application, is the process of reevaluating building performance (Gabr & Al-Sallal, 2003). Typically, a building is evaluated regarding its systems performance (e.g., heat, air, ventilation), along with its functionality in relation to its occupants and intended uses. The evaluation is carried out after the building has had sufficient use for the appropriate assessments to be made. Such an analysis has led more than one campus administrator to conclude, “I’d like to tear it down,” as was the sentiment at the University of California at Berkeley where the overpowering Evans Hall, once characterized as a fortress or prison, never fulfilled its purpose (Keller, 2007). But a broader interpretation of this process makes it useful in other campus applications, such as evaluating campus use patterns, effects of material culture, pedestrian experiences, engagement with natural environments, and interactions with other facilities. Postoccupancy evaluation has a long history of methods and procedures (Mallory-Hill, Preiser, & Watson, 2012; Preiser, 1989), and if these can be extended to the broader notion of sense of place and include users from present, past, and prospective students and current faculty, staff, and visitors (Sanoff, 2000), then such methods can enhance the future of campus placemaking and sense of community (Schneekloth & Shibley, 1995). Monitoring and soliciting participant impressions and experiences in a setting is an ongoing effort at any institution aspiring to a strong sense of place, and postoccupancy evaluation is one of a number of institutional tools effective for achieving such ends.

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Gordon Gee, an eight-time college president at five different institutions, once commented, “In accepting the significance of how decisions regarding bricks and mortar affect not only individual programs but also our ability as an institution to sustain our mission, we begin to fulfill our highest potential” (as cited in

Kenney, Dumont, & Kenney, 2005, p. viii). Placemaking on the college and university campus must be a mission-driven process involving all participants and stakeholders, and to nurture a sense of place about an institution requires both intention and good design. Whether built or natural, components of the campus physical environment figure prominently in the process and must be considered a critical asset that warrants the attention and full support of institutional decision-makers.

In a seminal piece on the sense of place and the college campus, Sturmer (1972) charted an agenda for institutional design that continues to play out among campus planners today, and perhaps even more so, as interest in student learning has recaptured the academy's attention at a time when campus construction, renovation, and renewal are once again rising to the top of the higher education agenda. What was done poorly in the past can be corrected; what has been imagined for the future can find form and function once again. Sturmer (1972) articulated six precepts of an environmental code to guide this process and to be essential for supporting student engagement and learning:

1. "The university is a total environment, a system of exploratory activities occurring in various forms of order and disorder, which take place in a particular physical setting" (p. 98).
2. "The physical environment, that which houses the formal learning component, simultaneously reflects and shapes, is both a response to and a cause of, the values and practices of an educational institution" (p. 98).
3. "The design and construction of the physical aspects of the university should complement and strengthen the mission of the university to stimulate students in the effective use of learning opportunities. The physical environment should facilitate the process

by which men and women seek to understand themselves and others through experiential and vicarious encounters with the extensions of man and nature” (p. 99).

4. “The physical environment of the campus should be integrated into an organic habitat or ‘village’ which reflects and instills a tactile sense of place” (p. 99).
5. “The physical environment of a given campus should not only mirror and support the learning process in general, but it also should reflect the distinctive values and aspirations of those who actually live at and use a particular college or university” (p. 100).
6. “Campuses cannot be planned, designed, and constructed for the inhabitants by others. They must be formed by, for, and of the students, faculty, and staff. This essential role of the user in shaping [one’s] own habitat can be guaranteed only by inclusion of students, faculty, and staff in the decision-making processes that affect the design and construction of buildings, transportation systems, landscaping, and decorations.” (pp. 100–101)

Contained in the composite of these tenets is a yet relevant prescription for any postsecondary institution intent on creating a sense of place for supporting student learning and success. Keeping in mind these tenets and the concept of place that underlies them, this chapter surveyed the impact of the campus physical environment as the first component of our framework for understanding how the designs of colleges and universities exert their influence on students, especially as they shape opportunities for their learning, growth, and development. We now turn our attention in the next chapter to the aggregate impact of those who come to occupy our campuses.

## Questions for Discussion

1. What are the signature buildings on your campus, and what messages do they convey about your institution?
2. If you were to map out a tour of your campus, where would you lead prospective students and why? What would you say about the natural environment of your campus?
3. Where are the sociopetal spaces on your campus that promote student–faculty interaction?
4. If you were to design a new facility on your campus, what would it be, and what purposes would it serve?
5. What recommendations would you offer for renovating a current space on your campus and for what purposes?

