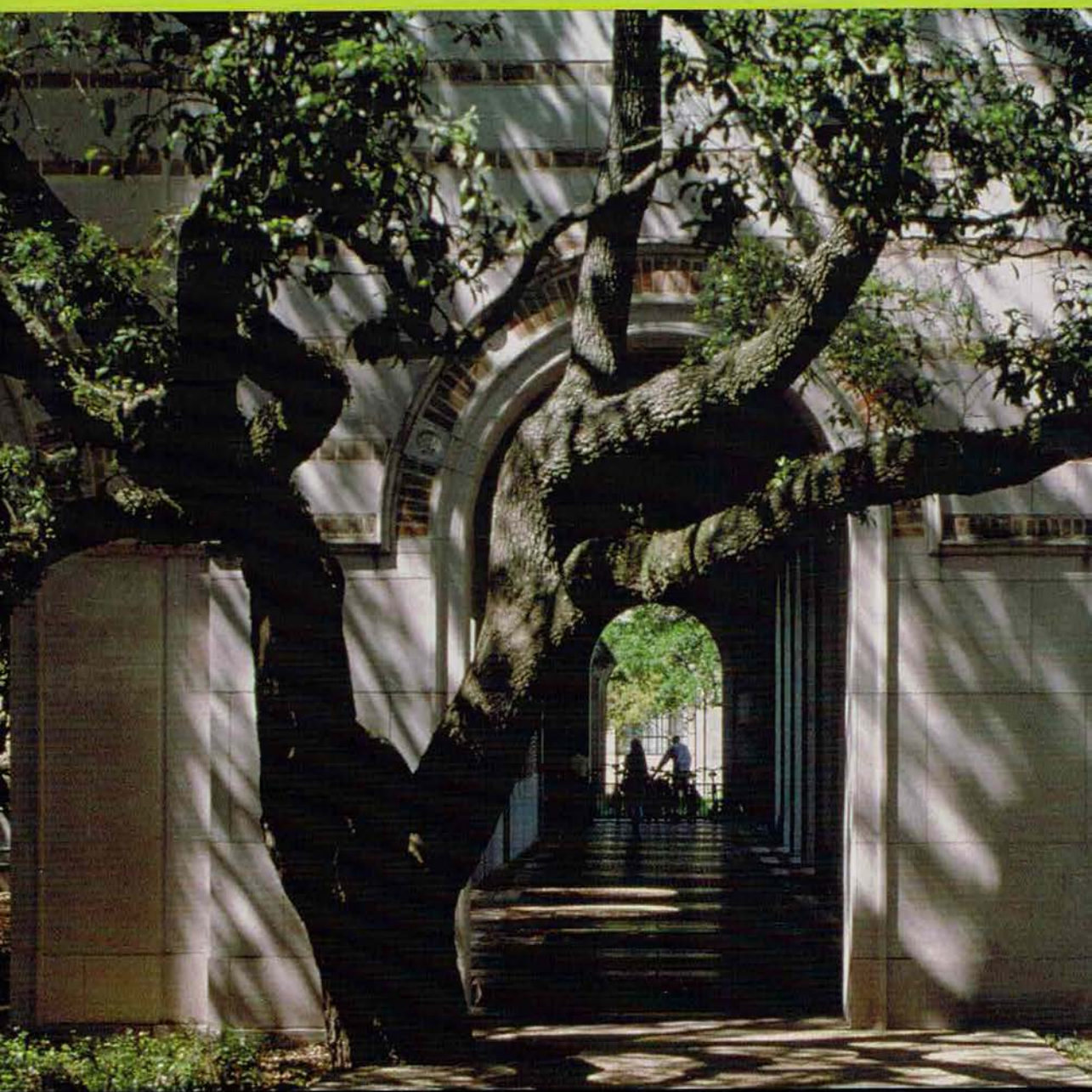
AMERICAN COUNCIL ON EDUCATION

mission and place

Strengthening Learning and Community through Campus Design



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Chapter Lead-in Photographs

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Meeting Today's Challenges

All across the country, American institutions are reevaluating their identities and how best to express them, their missions, and their fundamental charge to deliver a high-quality education. Professional preparation has never been more important to students, while a liberally educated citizenry has never been more critical to society. Greater numbers of people of increasingly diverse backgrounds are enrolling in colleges and universities. Competition for the best students and faculty is stiff, while financial constraints continue unabated; in fact, costs continue to increase more rapidly than the rate of inflation. Sometimes, institutions can barely manage to keep up with critical campus maintenance, much less accommodate needed growth. While technology is transforming the teaching and learning experience, the social experience is also changing. Institutions everywhere are concerned about loss of community and loss of a sense of place.

Education is an endeavor that is most sensitive to ambience; students respond all their lives to memories of the place that nourished their intellectual growth.[1]

- THOMAS A. GAINES

The American institution of higher education today is truly facing formidable challenges.

This book will help institutional leaders and the planners and designers who work with them to leverage one of the most powerful resources they have to change formidable challenges into resounding opportunities: the campus and its environs—what we refer to as *place*—and the act of making physical decisions about these—*placemaking*. Some of the points addressed in this book may seem obvious. Many have been discussed in the press and at conferences. Nevertheless, most institutions could be doing more effective placemaking than they are.

Addressing institutional challenges

Most of the challenges facing today's institutions are not about place. They are about learning and teaching, about community and communication, about leadership and vitality. But having visited over 250 institutions in our careers as institutional campus planners and designers, the authors have found that in most cases, the campus mirrors the issues that an institution faces.

Is the institution struggling to achieve better cross-disciplinary communication among its sciences faculties? How far apart, then, are their offices and classrooms?

Does the spark of vitality seem missing from the college these days? What, then, does the campus offer to students so that they will linger when classes are over?

Is recruiting hindered by a run-down neighborhood? How, then, can the institution rethink its own campus edge in a way that contributes to the neighborhood?

Do students complain of isolation and lack of community? How much, then, do they have to drive from one place to the next—a solitary activity—as opposed to walking—often with friends?

This is a book about transforming challenges into exciting opportunities. The physical campus offers the potential for changes that can address and improve most of the issues that many institutions struggle with. Often, these improvements can be made without higher expenditure, and often, too, these changes can accomplish multiple objectives at the same time.

Because it is easy to see and grasp, physical change is a powerful way to stimulate change along other dimensions as well. A university's new sciences quadrangle with its arcaded walkway that unites the biology and chemistry buildings may be an exciting space that speaks to the university's vision of the importance of the sciences in its curriculum. It may also spark more interdisciplinary communication between these two departments, leading to more creative research and new, leading-edge course offerings. The dictum "form follows function" has been considered a fundamental truth in the field of architecture since it was first stated by the famous architect Louis Sullivan in 1896. But it is also true that function follows form. If we design our buildings and spaces in certain ways, we can cause certain things—more effective learning, more vibrant community—to happen there. Physical changes can be a powerful tool in facilitating social and organizational change in an institution's culture. We can also shape perceptions, opinions, and memory.

The campus planning process itself can often facilitate change. Constituents have an opportunity to express what they value about an institution and its campus as well as what improvements they'd like to see. Through promoting an understanding of social and educational consequences of physical decisions, the planning dialog provides an opportunity to build consensus for positive change.

Reflecting the geography of the heart

People want to be in places that feel good to them. They prefer nicely appointed places with beautiful views rather than adequate but uninteresting places. Further, people want to feel good about the physical places they are affiliated with: their home, their workplace, sometimes their city and state. Why should it be any different on campus?

The goal is to use the campus's entire physical environment—its neighborhood, buildings and landscape, paths and roadways, parking lots, fountains, and bell-towers—to promote institutional goals. Physical decisions that are not made specifically to forward the institutional agenda may inadvertently be working against it. Furthermore, every decision and action taken regarding the campus may have multiple effects—some for the good and others not—that reflect back on the institution itself.

The heart of the campus:
Rice University

By realizing the interconnection between their strategic goals and their campus, institutional leaders have an opportunity to take control of institutional direction by making wise physical decisions about the campus.

Expressing vision

The campus should reflect the vision and the values of the institution. Campuses need "meaningful places"—places that actually feel like the idea of the institution to students, faculty, and visitors. A television program about a remarkable student who, despite being homeless, became her high-school class valedictorian describes her first visit to Harvard Yard on a high-school field trip. Her reaction to Harvard Yard was strong and immediate: she wanted to go there. The authors have seen prospective students react this way on other campuses as well. Love at first sight is not unusual on campuses where the place expresses the vision of the university or college.

All too often, physical decisions are divorced from the institutional mission. The campus decision makers don't fully see how a physical decision (to add more parking, perhaps, or to locate a building in a certain place) can manifest—or contradict—an essential part of the institutional mission. Investing more money in more construction does not necessarily make campuses better places.

The next section of this book, *Foundations*, describes in detail how the campus can reinforce the three fundamental components of institutional mission—teaching and learning, creating community on campus, and acting as responsible citizens of society and the world.

Teaching and learning

As the educational emphasis shifts from teaching to learning, the size, number, arrangement, and mix of classroom types needed on campus has also been changing. An increased focus on interdisciplinary study and research brings new importance to the physical arrangement of spaces for these activities on campus. But this focus is still too narrow. On average, students spend only fifteen hours per week in class. Even considering academic subjects alone, the rest of students' learning time is spent in an astonishing array of locations on campus. Add in the nonacademic but vital learning that most institutions consider part of their missions, and truly every part of a campus must be considered a learning environment. Anything less is a missed opportunity.

UNIVERSITY OF NEBRASKA, MIKE SINCLAIR

Learning occurs everywhere on campus

Creating community

On many of the campuses we visit, educators and students alike lament the loss of community. We hear this so often that we have come to understand loss of community as a manifestation of today's fast-paced television- and automobile-centric American culture. Nevertheless, institutions of higher education demand of themselves leadership in counteracting this trend, in creating an environment in which community can flourish. Some institutions have made unfortunate physical decisions that may have accelerated loss of community—such as building off-campus or remote housing on campuses that already lack vitality. But most campuses offer many opportunities to further a feeling of community.

Acting responsibly in society and the world

The campus contributes at many levels to an institution's ability to teach social responsibility. First, the campus itself is a microcosm of society. In a tradition stretching back to the ancient Greek *agora*, the campus provides public spaces for people to meet, to post notices, and to engage in the activities of an aware citizenry. It also provides a small (or sometimes, not so small) piece of the natural world—one that before the eyes of all the institution can squander or can nurture and protect. An institution teaches social responsibility by its actions on campus, and the results of these actions are emblazoned in the campus landscape for all to see—sometimes in green spaces that have been turned into parking lots, but sometimes in proudly displayed environmental certifications on buildings.

Institutions also have neighborhoods. Many are fortunate to find themselves adjacent to charming urban areas, but others are challenged by neighborhoods in decline. When they barricade themselves off from these neighborhoods—whether by fences, by parking lots, or by the turned backs of buildings—they may be contributing to this decline. Conversely, many institutions have found ways to work with their neighborhoods to the benefit of all.

Integrating the institution

Overall planning is necessary for an institution. When an institution allows individual departments to make their own decisions, not all decisions benefit the institution as a whole. Individual decisions tend to solve one need at a time, without sufficient consideration of the long term and the big picture.

The same is true for the campus. Although American colleges and universities typically began with a strong, even visionary, plan for their campus environments, many have evolved over the years not through a consciously planned process but rather by making single decisions to solve one problem at a time. These campuses are composed of buildings and facilities created as individual entities rather than as part of a greater whole.

Unified initial plan at Texas A&M University

CUSHING LIBRARY, TEXAS A&M UNIVERSITY

Campuses, like cities, should grow according to a particular hierarchy. They should be considered first as manifestations of a single *plan or idea,* then second, united by their *landscape and open space structure,* and finally, framed by *buildings*. Recent years have seen a loss of understanding of this hierarchy. Today, we more often see campuses comprised of seemingly random collections of *buildings* served by *parking* tied together with *roads*. When the institution comes to understand the need for a campus plan, they and their planners have to work back through these layers to excavate—or sometimes to create—a vision of the campus as a whole.

Whether a campus is already unified or is in need of integrating components, it will benefit through the application of certain principles to physical campus decisions. These include:

- Precedence of the overall plan over individual buildings and spaces
- Use of compactness (density) and mixing campus uses to create vitality and interaction
- Creating a language of landscape elements that expresses the campus's individuality and relationship to its regional context
- Embracing environmental considerations
- Taming the automobile
- Utilizing campus architecture to further placemaking
- Integrating technology
- Creating a beneficial physical relationship with the neighborhood
- Bringing meaning and beauty to the special places on campus

These topics are discussed in detail in the *Principles* section of this book.

Managing change

Things change. The stories of many institutions are stories of change.

Today, growth in enrollment, growing competition, increased student diversity, and mind-bogglingly-rapid advances in technology continue to drive change. The choice is not whether to change, but whether to drive change or be driven by it. Just as the campus is affected by changes to the institution, so too can it be a powerful instrument to effect change. This book concludes by providing a planning-based methodology for making desired changes real.

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Linking an Institution's Mission and Its Place

The mission and values of higher education shared by most colleges and universities bind them to society and to each other. An institution's mission, expressed in its mission statement, is the foundation to which that institution's every decision and action should be held accountable. Upon this bedrock of institutional values, the entire edifice of educational and co-curricular programs, student life, faculty interaction, and community relations is built. The campus plan, architecture, and landscape architecture facilitate the realization of fundamental values in all these areas.

The American campus is a world in itself, a temporary paradise, a gracious stage of life.[1]

- LE CORBUSIER

A closer look at mission

Washington University in St. Louis has an ambitious mission and inspiring goals. In this, it is not unusual. "Central to our mission are our goals, which are to foster excellence in our teaching, research, scholarship, and service; to prepare students with the attitudes, skills, and habits of lifelong learning and with leadership skills, enabling them to be useful members of a global society; and to be an exemplary institution in our home community of St. Louis, as well as in the nation and in the world."[1]

Other mission statements, each with its unique quality, express much the same central foci. Here are a few more examples from a diverse selection of institutions:

- "Texas A&M University is a public institution dedicated to the development and dissemination of knowledge in many and diversified academic and professional fields. The University is committed to assist students in their search for knowledge, to help them understand themselves and their cultural and physical environments, and to develop in them the wisdom and skills needed to assume responsibility in a democratic society."[2]

- "The University of Miami's mission is to educate and nurture students, to create knowledge, and to provide service to our community and beyond. Committed to excellence and proud of the diversity of our University family, we strive to develop future leaders of our nation and the world."[3]

- "Duquesne [University, in Pittsburgh, Pennsylvania] serves God by serving students–through commitment to excellence in liberal and professional education, through profound concern for moral and spiritual values, through the maintenance of an ecumenical atmosphere open to diversity, and through service to the Church, the community, the nation and the world."[4]

- "Marlboro College's mission is to help students think clearly, learn independently, strive for academic excellence and take part in a community that values democratic participation."[5]

Most mission statements in their broadest terms identify education (and often research), productive social and personal development of the students, and service to community and society as institutional core values.

The link between mission and place

An institution's physical campus environment plays a key role in expressing—and in helping to achieve—that institution's mission and strategic objectives.

Teaching and research

The campus supports an institution's fundamental mission of education and research in both obvious and subtle ways. Clearly, the campus provides the classroom and laboratory spaces needed for formal teaching and learning. But on campus, the spaces that are used for learning activities include less formal but equally critical areas. These less formal areas can be a widened space at the bend of a corridor where a student can sit on a chair with a book while waiting to meet a friend, a busy coffee shop, the front steps of the library on a sunny day, or a sheltered quad where an inspired teacher brings a class to discuss Plato in the fresh air. They can also include the open and undeveloped areas of the campus where native ecosystems can be observed and natural environments enjoyed.

Students can learn wherever they have opportunities for interaction; and the more chance for running into friends, teachers, fellow students, or colleagues, the better.

Strengthening interdisciplinary programs and sharing academic experiences across departments is often a high-priority strategy for advancing

knowledge as well as for providing a meaningful educational experience. Today, faculty and students want a campus that fosters a sense of collegiality and supports the open exchange of ideas, free inquiry, exposure to many disciplines, and collaboration. The layout of the campus—including the adjacency and proximity of programs—can foster the exposure and interactions that lead to successful interdisciplinary collaboration, or it can stymie them.

The classroom moves outdoors at Creighton University

Productive social development

Institutions have long viewed developing and preparing the whole individual for a productive life and meaningful contribution to society as central to their missions. In his seminal book *A University for the 21st Century,* James Duderstadt, President Emeritus and University Professor of Science and Engineering at the University of Michigan, expressed this role of the university well. "Beyond formal education in the traditional academic disciplines and professional fields, the university has been expected to play a far broader role in the maturation of students…The campus experience we tend to associate with undergraduate education does a remarkable job in preparing the student for later life, and clearly it does so through a complex social experience extending far beyond the classroom and the curriculum."[6]

In an increasingly individualistic yet diverse society, this aspect of most college and university missions is more critical than ever. We must use every part of the public realm on campus—every place two paths intersect, every stairway, every lobby, every lawn and garden—as an opportunity for encouraging communication and engagement. Conversely, without comfortable, human-scaled common spaces for people to get together, social interaction is stifled. A plan that provides "front-door" access to automobiles can encourage students and faculty to leave campus quickly when their formal work is done, limiting opportunities for collegial exchange.

Service to society

"If the condition of man is to be progressively ameliorated, as we fondly hope and believe, education is to be the chief instrument in effecting it," wrote Thomas Jefferson in 1818.[7] From Jefferson's time on, the American university has taken this responsibility to heart. Today, institutions of higher education are concerned with improving society at every scale, from local to planetary.

"I know no safe depositary of the ultimate powers of the society but the people themselves," Jefferson wrote in September, 1820, "and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their

discretion by education."[8] Jefferson was referring both to "knowledge of those facts which history exhibits"—dissemination of information—but also to the development of habits of mind and virtue of character appropriate to those who must take responsibility for making decisions that affect the governance of their nation.

Colleges and universities are a microcosm of society whose every member has the opportunity to practice social values ranging from simple neighborliness to good citizenship to governance. The public spaces—large and small, indoors and out—of the university provide a forum in which all of these activities can be engaged.

Most institutions today include education about promoting a sustainable world and direct action to further environmental stewardship as part of their essential values. Institutions' actions on campus in managing the built environment provide an opportunity to demonstrate their commitment to this value.

Above all, to be true to their mission of serving society, colleges and universities must themselves be willing to act as role models to educate our young citizens and future leaders on the meaning and importance of fostering the economic and social well-being of the neighborhood, city, and region in which they are located.

Place as an expression of the institution

Most institutions start as an idea, but as soon as a place is created to house the institution, the idea becomes grounded in the place. The idea and the place of the institution have a mutual and enduring impact on one another. Harvard Yard, for example, means something to most people. But even if a person is not familiar with the institution, its place says something about it—whether that place is the great playing field at the heart of Wesleyan University in Connecticut or the seven-story atrium of Hartford Community College's downtown former-department-store building.

One high-school junior, strolling the gracious campus of Rollins College in Winter Park, Florida, decided that she wanted to attend the college without talking to a single student. She felt the quality and character of the institution in the place, and later conversations with students and admissions representatives confirmed this impression for her.

When a brand-new campus is created, university leaders frequently feel the need to express the essence of the institution in how it is built. The campus is physically designed to meet the pedagogical model. Although its inspiration came from a number of influences, the overall form of

Stanford University owes much to Leland Stanford's vision of a great but uniquely Californian institution whose role was to produce citizens who would be both cultured and "useful." The combined use of arcaded walkways, interconnected, formal courtyards, and native building styles and materials was revolutionary. In 1913, Stanford University's first president, David Starr Jordan, wrote of the twenty-two-year-old school: "The yellow sandstone arches and cloisters, the 'red-tiled roofs against the azure sky,' make a picture that can never be forgotten, itself an integral part of a Stanford education."[9]

As institutions grow, expand, and change, the connection between the physical layout and the pedagogical model typically becomes weakened. Pedagogical models change, as does society as a whole. New needs develop. New buildings are added to old, new functions appended to existing, wherever there seems to be room. With the pressure to add new building space and accommodate an increasing number of cars on campus, many institutions appear to have lost altogether the connection between their physical campus and their mission and vision.

We're not creating a lot of great new spaces on our campuses today. In fact, we're lucky to preserve the old ones undamaged by automotive encroachment and inappropriately scaled buildings. On many campuses today, projects are carried out to meet discrete needs—more classroom space, more parking, a new student center—until the overall sense of unity and harmony on the campus as a whole is destroyed. Campus leaders, planners, architects, and landscape architects need to help institutions reveal the connection between their visions and their campus as they help these institutions grow.

Looking toward the future

Attracting the best

Every college and university wants to attract the most talented scholars, researchers, and teachers, as well as a bright, diverse, and intellectually vibrant student body. The mission of each institution reflects its vision in a way that can inspire potential students, faculty, and staff. An attractive campus with facilities that support an active and vital campus life is a well-documented critical factor in attracting both students and faculty. Thomas Gaines reports, "Sixty percent of college-bound students told the Carnegie Foundation that visual environment was the most important factor in choosing a college."[10] *Mission-driven planning and design* provide institutions with a method for implementing campus facilities and open spaces with a view toward supporting the mission of the institution and providing this kind of attractive environment.

Rutgers University:
The campus environment is often the most important factor in college choice

Laying the groundwork for tomorrow's education

Does the physical campus play a pivotal role in helping to realize all kinds of institutional missions? Clearly, it makes a difference for some more than others. A storefront campus makes sense for Heald College, with its no-nonsense approach. "Get in. Get out. Get ahead," states its storefront window in downtown San Francisco. "Heald College," the institution declares unequivocally in its mission statement, "provides focused programs in business, technology, and healthcare that prepare students for success in the workplace in the shortest practical time." The institution has selected a location to reinforce its businesslike approach and perhaps needs only sufficient and well-designed classroom and laboratory space.

Educational values of most students have changed over the last few decades, placing a greater emphasis on vocational preparation and training.[11] Arthur Levine and Jeanette Cureton observe, "Even more dramatic than this continuing trend toward vocationalism...is the plummeting value placed on nonmaterial goals, such as learning to get along with people and formulating the values and goals of one's life. Whereas these personal and philosophical goals were the principal reasons for attending college in the 1960s, today they are at the bottom of the list."[12]

Many of the more visionary educators today lament these changes in student values. They are calling for changes in undergraduate education and new visions for learning to meet the needs of students and of society in the rapidly changing culture and global environment of the early 21st century. The historical mission of educating the whole individual has never been more important. Levine and Cureton, for example, propose an educational curriculum woven around five critically needed elements:

communication and thinking skills; human heritage; the natural and human-made environments; the variety of individual roles that people will play in their lives and how these interact to create a full and complete life; and civic and personal values. Calling this "a curriculum for living," Levine and Cureton describe it as "grounded in the life needs of students...designed specifically to prepare current undergraduates for the life they will lead and the world in which they will live."[13]

To rise to the opportunities, face the challenges, and meet the diverse needs of widening American college enrollment demographics, the Association of American Colleges and Universities (AACU) created the Greater Expectations Initiative. The AACU's rational for Greater Expectations declares that "capacities traditionally developed through a liberal arts education, that include but go beyond a body of factual knowledge, will be required of most Americans as they live and work in the twenty-first century."[14] While acknowledging that students will pursue specializations in college, Greater Expectations calls for higher education *across all fields* to "help college students become intentional learners who can adapt to new environments, integrate knowledge from different sources, and continue learning throughout their lives." Students must master intellectual and practical skills; learn about the natural and social worlds and about how to continue learning in these areas; and take responsibility for their personal actions and for civic values.[15]

The requirements for a high-quality education, one that meets the needs of a widely diverse and growing student body in the twenty-first century, go well beyond vocational training. Students need to learn civic and moral values as well as the qualities that will enable them to become lifelong enthusiasts of learning. The campus plays a key role in establishing, reinforcing, and facilitating the realization of this mission.

Planning our campuses to meet these broad challenges and establish effective learning communities is fundamental to the mission of higher education. Since most educators agree that learning occurs best with a combination of instruction (in a classroom or on the computer), peer group interaction, and "real-world" hands-on experience, campus and building spaces should be designed to support all three of these learning modalities.

The following chapters in the *Foundations* section of this book describe the significant role of the campus's physical environment in supporting a college or university to realize its goals in the areas of teaching and research, productive social development of students, and service to the world outside of the campus. Later chapters in the *Principles* section of the book go into greater detail on the campus planning and design principles that should be followed in support of the institutional mission.

ALEX S. MACLEAN / LANDSLI

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Neighborhood and Urban Community

The only way to achieve true success is to express yourself completely in service to society.[1]

- ARISTOTLE

Unlike the cloistered European campuses from which they sprang, American universities look outward as well as inward. They always have. American campuses were built to reflect this value. Harvard University, founded in 1636, began as a single building on nine acres of land and expanded to a number of separate buildings facing the roadways and opening outward to the community of Cambridge, Massachusetts in which it was rooted. In laying out the campus this way, Harvard's founders were making a statement concerning their connectedness to the community. "Harvard knows nothing either of jealousy or the dignity of high walls and guarded gateways," wrote Henry James as late as 1886.[2] Not until the end of the nineteenth century was Harvard Yard turned inward with construction of buildings along its perimeter and a fence to enclose it.

Commitment to education, to development of students as whole people, to community on campus is strong in American colleges and universities, but outward moral obligations to the community and to society are just as profound. American universities overwhelmingly continue to emphasize in their statements of mission and values their ongoing commitment to the outside world. Educating students to be responsible participants in society is inextricably linked to an institution's own activities in that society. These activities are often most strongly expressed in the institution's relationship with its neighboring community.

The town-gown relationship

Cities and towns may experience a kind of "love/hate" relationship with their institutions. They are aware, at least in part, of the benefits the institution brings them, but they are also frustrated by the day-to-day problems that they sometimes blame, at least in part, on those same institutions. Sometimes the relationship is uncomfortably adversarial. Immediate, day-to-day goals may be opposed. But with a longer-term perspective, institutions find that promoting the welfare of the neighborhood and town is not only consistent with their missions—it is also in their own best interest, and it is the right thing to do.

As a first step, institutions and their neighbors need to understand each other's point of view. Every situation is different, but the outcomes that most institutions and communities desire are similar—though they sometimes seem distressingly hard to achieve.

Services, parking, and transit

Faculty, staff, and commuting students require good vehicular access through the neighboring streets on their way to and from the school. They don't want to be held up by traffic, finding and using alternative routes, sometimes through formerly quiet residential streets, if they don't have to. When parking is difficult or inconvenient on campus, they may look for parking in the neighborhood as well.

Some institutions take for granted and expect that the network of neighborhood streets and parking facilities will serve them, unaware that automobile traffic and parking generated by the university can be a significant issue for their neighbors. Institutions, especially large ones, can be a major source of traffic in surrounding areas. University-related traffic and parking congest the city streets. Even when the many benefits an institution provides to its neighbors are well appreciated, the concomitant traffic is resented. When institutional parking lots encroach where houses once stood, resentment can deepen.

In these situations, institutions must take great care that they do not worsen the neighborhood as they work to solve their own traffic and parking problems.

Money

Tax-exempt status of institutions, provision of services

Many towns resent the tax-exempt status of their neighboring institutions. This feeling is exacerbated when the town considers that it must provide services, such as increased policing of student activities (on or off campus), toward which the institution does not contribute. The property taxes that are not collected each year are often the most visible issue that neighboring cities and towns experience.

The property tax issue flared up for Harvard University in 2001 when it purchased a thirty-acre, 765,000-square-foot office complex in Watertown, Massachusetts from a private developer. With over a decade of planning and more than $100 million in federal toxic-waste cleanup and infrastructure improvements, the city of Watertown counted on the money that this private development would bring onto the tax rolls to account for about a third of its tax revenue. Harvard initially offered about $3 million per year, generous by standards of most agreements for payments in lieu of taxes, but far less than the amount that the town was expecting. The resulting controversy, as reported in the *Boston Business Journal,* "caused something of a backlash, focusing resentment against wealthy institutions like Harvard and the Massachusetts Institute of Technology."[3] Harvard owns 18.6 million square feet of property in the region, 11.8 million of it on 215 acres in Cambridge, where it pays about $6 million per year in lieu of taxes—an amount that Cambridge officials have called "laughable."[4]

Institutions defend strongly their tax-exempt status and therefore must strive to reach out in other ways to their neighbors. The sizes of Harvard's and MIT's endowments may worsen their neighbors' resentment, compared to the experience of most other institutions. However, Harvard, MIT, and six other Boston-area institutions are counteracting the issue in part in the effective way that many other institutions have also done—by collecting and publishing information on their overall economic impact on the area. A draft report described in the *Boston Globe* on March 8, 2003, shows that eight local universities contribute about $7.4 billion annually to the local economy, with Harvard itself contributing over $2 billion.[5]

ALEX S. MACLEAN / LANDSLIDES

Harvard University and MIT have significant presence in the Boston area

Fiscal benefits

The economies of towns, cities, and in some cases, entire regions are supported by the presence of colleges and universities. For every full-time student, a complement of professors, administrative staff, and people who run and maintain the facilities is required. Most of the spending of the institution stays within the local economy. Salaries are distributed; rents are paid to local landowners; goods are purchased in local retail districts. Students themselves spend their money locally—on housing (sometimes), food, movies and entertainment, and consumer goods. In addition, many visitors to institutions spend money locally. Many colleges and universities engage in a certain amount of construction and other capital projects each year, hiring contractors, many of whom are local.

Even where colleges and universities do not formally pursue such a policy, they typically do contribute substantially to the local economy:

- The University System of Georgia calculates that in 2001 – 02 it directly and indirectly infused $8 billion into local economies—about $5 billion in direct spending by the institutions and their students, and the remaining $3 billion in the re-spending of these dollars within the communities.[6]

- According to an independent study, "for every dollar Brown [University] collects from Rhode Island sources, it spends more than 9 dollars in the Ocean State."[7] Brown is also one of the state's leading employers, with over 3,000 regular employees, over 80 percent of whom live in the state.

- A similar report for Columbia University shows that "the combined value of economic activity directly and indirectly generated in New York City by the University, by various affiliated institutions, and by students and visitors to Columbia was nearly $2 billion in 1994 – 95."[8]

- Silicon Valley in California is inextricably linked with Stanford University. According to Richard M. Rosan, president of the Urban Land Institute, "In 1996, half of $100 billion in GDP of Silicon Valley economy came from Stanford-related firms."[9]

Cities that have not experienced knowledge-industry growth are beginning to understand that their colleges and universities represent an opportunity. "When it comes to attracting the best and the brightest," states a *USA Today* Life section cover story, "colleges and universities aren't the only stakeholders. Civic, business and government leaders here also want prospective students to fall in love with their college experience—so much so that they'll stay in the area after they graduate...It's all part of a push, primarily in large metro areas, to become more competitive in a rapidly changing economy fueled increasingly by the ideas, knowledge and talent produced inside the ivory tower."[10]

Safety and security

One major concern that the authors frequently hear on campuses of colleges and universities, especially those in larger cities, is a feeling that the neighborhood is not safe. On many campuses, students worry about when and how far they can go out into the city. In some cases, as with Lehigh University and South Bethlehem, Pennsylvania, this is more of a perception than a fact. In other cases, the neighborhood may be so unsafe that violent crime, including toward students and faculty, occurs.

Where security issues exist, the university faces a dilemma of how best to deal with them. If the crime is motivated by hostility toward the institution, what can they do to gain the understanding and cooperation of community residents, thereby reducing the risk of hostile incidents? If crime threatens the neighborhood as well as the institution, will it be possible to work in a broader community context to deal with it?

Where students live in the neighborhood in large numbers, institutions must also sometimes address student misdeeds in the community, including rowdiness and vandalism.

Institutional encroachment

Land owned by institutions is constantly increasing, taking money off the tax rolls. Many academic institutions, especially in confined cities and towns, are on a continual quest for space and land, a threatening reality to many neighboring communities. If not done carefully, institutional expansion can damage the fabric of the neighborhood. The likelihood that an expanding institution may buy a property at a good price encourages both real estate speculation and neglect of properties that may be purchased by the institution. Also, if the institution uses the land it buys in ways that are not constructive in the neighborhood, e.g., for parking lots, property values may go down. The pattern of a deteriorating neighborhood, institutional encroachment, and lower property values can turn into a downward spiral that is unwittingly abetted by institutional actions.

Even without actual purchase of land, institutions may encroach on their neighborhoods. Lehigh University, for example, discovered in planning workshops with the community that too much rental student housing relative to owner-occupied housing caused at least the perception that a block or neighborhood is deteriorating.

Reasonably priced, attractive housing close to the institution

Nonresident students who don't commute from home hope to find reasonably priced housing close to the institution. So do many members of faculty and staff, provided that the housing stock is good, the streets are clean and safe, and the local K – 12 schools are good ones. When they have a choice, no one prefers a long commute to a short one (much less a short walk!). Unfortunately, in some places this can be a large proviso. West Philadelphia in the early 1990s is an example. Like many urban neighborhoods, it had fallen on hard times. Much of the housing stock in this once-stately neighborhood had become rundown, and some of it abandoned. The local elementary schools were poor. A significant turnaround on many fronts would be needed to make this neighborhood—and others like it—an attractive place for faculty, staff, and students to live. The University of Pennsylvania was willing to make just such a commitment, and the results have been extremely positive.

Government and neighborhood support

Cultivating good communication and a mutually beneficial relationship with the neighboring communities and local government is one way to ensure that the neighborhood and local government understand and support the university's needs and new projects. They do so both because they experience the university as an ally rather than an adversary, and because, with open channels of communication, the university can develop better solutions to its problems—ones that are acceptable, even beneficial, to the community.

The University of Washington in Seattle proactively works with its neighborhood organizations and with the city of Seattle. An organization called the City/University Community Advisory Committee (CUCAC) provides input to the university's master plans, in accordance with a formal agreement drawn up with the city in 1977 and revised in 1983. In addition, the agreement facilitates participation by the university in neighborhood planning in its area.

Attracting and retaining the best students, faculty, and staff

The neighboring community establishes the backdrop against which prospective students and their parents, as well as current students, faculty, and staff, experience and judge an institution. A good quality of life in the neighborhood, town, and region is an important asset for the institution. Students, professors, and staff desire to be involved in institutions and communities that provide and promote an urban environment. Cities, towns, and districts adjacent to an institution, if they are vibrant and lively, can offer an enormous lure against which other, less fortunate institutions compete only with difficulty.

Conversely, some colleges and universities find themselves in a neighborhood so unappealing that they experience an impact on their ability to recruit new students and faculty. "Almost every major city has a major university that started out in a neighborhood and ended up not being in the kind of neighborhood they thought they wanted to live in,"[11] stated Ron Mason, former director of the Center for the Urban Community in New Orleans and now president of Jackson State University. Everyone knows of cases where a neighborhood appears run-down enough that some prospective students and their parents won't even get out of their cars as they drive by.

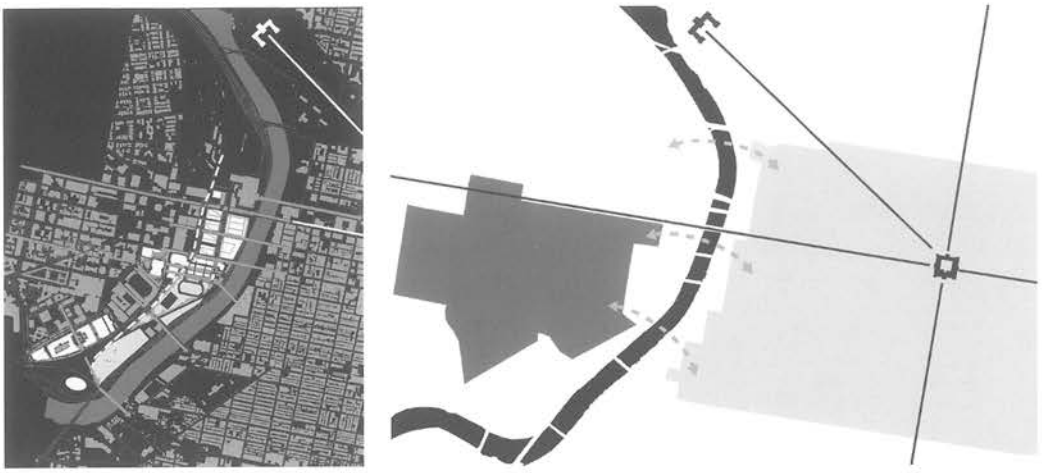
Quality of life

One of the strongest demographic trends today is the growth of college towns and districts across the country. One aspect of this growth is that many members of the empty-nester (over 55) age group are returning to towns and cities with collegiate environments. This regeneration comes at a time when most small towns and cities are facing loss of population, especially the young, and with it, local economy and most destructively, local vitality.

Perhaps the largest social benefit that a college or university can offer its community is its youthful energy and idealism. Most institutions provide cultural resources and activities that their communities can take advantage of. These may be the cultural mainstay of smaller communities. Institutions also often offer their communities an enhanced identity, including being rated as "best places to live."

Ranked first among *Money* magazine's "Best Places to Retire" in 2002, Providence, Rhode Island is home to a number of colleges and universities. In its description of Providence's attractions for retirees, *Money* magazine noted, "Both Brown University and RISD offer continuing education classes. And Johnson & Wales University not only offers vocational education classes to all ages but has also left its mark on the food scene...Plus, Brown's medical school is affiliated with seven hospitals, providing them with a steady stream of Ivy League-caliber doctors."[12]

While Providence may have benefited indirectly from its collegiate environment, some institutions are becoming more proactive in trying to attract retirees. In 2000, the *Orlando Sentinel* reported that the University of Florida at Gainesville "has joined forces with developers on a retirement community that revolves around university life."[13] The development, which is aimed at retired alumni and faculty, offers university classes, concerts, games, and other activities as well as more traditional retirement amenities. Some 100 retirement communities are already located near colleges and universities, and as more affluent, well-educated people reach retirement age, the number is expected to grow.



The University of Pennsylvania has made a significant commitment to the city of Philadelphia

Furthering the institutional mission

"If you really are going to support the mission of the university, you have to have that type of vibrant city life that goes along with an institution such as Penn in a city such as Philadelphia,"[14] observed Jack Shannon, when he was Managing Directory of Economic Development at the University of Pennsylvania. Most institutions have some kind of neighborhood outreach or community service in their mission statements. For some, service is mentioned equally with teaching and research. Yet, how to actively engage the students, much less the institution as a whole, in service to its community is less than clear. Ira Harkavy, director of the Center for Community Partnerships at the University of Pennsylvania, notes, "Universities teach far, far more by what they do than by what they say." University action in support of its neighborhood does not go unremarked by students. This is especially true when an institution can integrate its efforts in the community with academic courses. Judith Rodin, president of the University of Pennsylvania, evaluated Penn's extensive interaction with its community as follows:

> Penn's investments over the past several years have produced a safer, more vibrant neighborhood and a flourishing academic environment on campus. Our rankings have soared. Research dollars are flowing in at record levels. Our students are thriving in their surroundings. Just as important, our engagement with the community has renewed Penn's spirit of activism and purpose among faculty, students, and staff, while strengthening town-gown bonds.[15]

By not losing sight of their most important goals—creating a vibrant neighborhood, taking action in accordance with their basic mission, and doing the right thing for their neighbors—Penn can serve as a model for many institutions in creating a neighborhood relationship that works.

Part III.
Principles

ALEX S. MACLEAN / LANDS

seven

Meaningful Places

The significance of place

Working hard to raise funds for more research and classroom space, some institutional leaders don't want to spend money on anything they see as a low priority. While institutional leaders and governing boards generally want their campuses to be beautiful, some think that spending money on creating a more beautiful and memorable campus is not an important priority, and they think that it would cost them more money. Both these assumptions are frequently in error.

Places, like people, touch our lives more than we know...Whether grand or humble, the best architecture defines a place that holds deep emotion for those whose lives the place has touched.[1]

- J. SCOTT ODOM

The physical campus sends a message about the institution. The meaning of the physical campus and the message it sends to students, faculty, staff, and visitors is fundamental to achieving every part of the institutional mission. Further, money already committed to campus maintenance and improvement may well be adequate to the task of furthering this message—but it must be spent in the right way.

Even with the best intentions, governing boards still sometimes make decisions (or allow decisions to be made) about the message they want the campus to send, about the meaning of the institution's places, while unintentionally creating the opposite effect. These fundamental decisions are too important to be left to routine operations. Institutional leaders must take charge of the message they deliver through their campus.

Sometimes an institution needs an internal champion—or a good planning consultant—to help articulate the value of the special places on campus. For example, a board member of a community college told one of the authors that parking at the front door of the classroom building was "exactly who we are—a box and a parking lot." Students coming in at the end of a busy day wanted to park right by the door of the building, get in, go to class, and then go home. This might have been the end of the story, but the college had a planning consultant who acted as its champion.

He listened to the faculty and president complain that they needed more of a place. "We don't feel like a campus." Their image of the campus affected their sense of self-worth. They needed a place where they could interact with one another and with the students, and the parking lot wasn't it. The campus needed a heart. When the consultant articulated the need to replace close-in parking with a green quadrangle, students, faculty, and board members alike were willing to trade a five-minute-farther walk to get it. The value was clear.

The significance of the places on campus is different from one institution to another, even from one place to another. But the meaning of the campus and all of its component places should always express the mission, values, and vision of the institution itself.

Placemaking—why do it

A memorable campus with unique, inviting spaces strengthens the institution by deepening the ways in which people experience it. The meaningful places on campus enhance a student's college experience from everyday experiences to once-in-a-lifetime events.

Quality and strength of everyday experiences

Institutions of higher education care about the quality of the experience of being on campus. Institutional leaders talk frequently and passionately about creating and strengthening learning and community on campus—endeavors, as we have seen, that are intimately tied to the quality of the places the campus provides. Students may not worry as much about these issues, but they do care about the quality of their lives. For them, as for everyone, this quality is bound to the places where they live, work (study), play, and travel through while moving from one activity to another.

Think for a moment about a scene that typifies your everyday undergraduate experience. This could be an experience of *coming or going* somewhere. One person's memorable experience, for example, was of walking through a wooded park on the way to class. Another person recalls walking across the campus green when all the trees were flowering, with the petals covering the ground and falling through the air. Yet another person walked a block down a college town's commercial street that was just opening up for the morning. These moments of transition and arrival are special. We remember them forever.

Alternatively, your typical undergraduate experience may involve *being somewhere*—in a seminar held around a polished wood table in a classroom in a building from the early 1800s; studying on the lawn in the springtime or in the library as a commuter student; meeting friends as

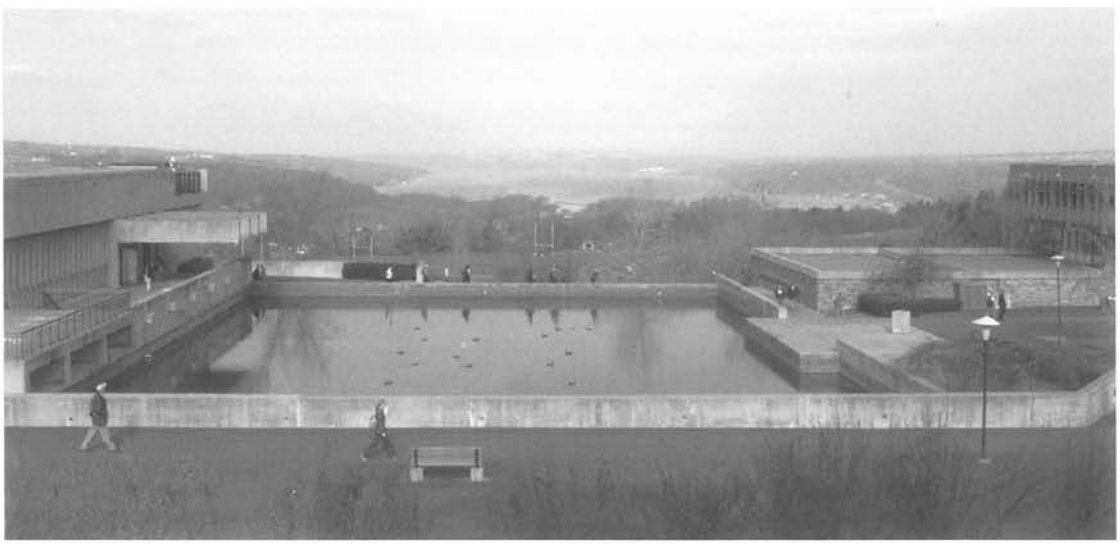
you cross the quad or at your favorite hangout; or endless hours of football practice as the weather turns colder.

Whatever memories you have of those special years, you will notice that they are always set in a place. And most likely, it is a place that you cherish because of the experiences you had there.

Traditions and special experiences

Traditions also provide important memories of the college experience. Traditions build loyalty, connect to the history of the institution, and help students bond with their class and college. Most college traditions are tied to a place: freshmen and graduating seniors pass through the Van Wickle Gates at Brown University; seniors jump into the fountain upon graduation at Ithaca College; birthday celebrants are thrown into the fountain on the main quadrangle at Stetson University; freshmen dormitory residents steal the thirteenth plank from the Rustic Bridge at Allegheny College.

The memories of everyday experiences, traditions, and special events in their lives—usually tied to special places on campus—that most students retain long after they have graduated affect their relationship to the school as alumni. We wonder, for example, whether meeting his future wife by the fountain in the quadrangle at Southwestern University played a small role in an alumnus's eventually becoming the school's chairman of the board. At the very least, that fountain provides a backdrop to a story he enjoys retelling.



The fountain at Ithaca College supports tradition and placemaking

JEFFREY D. ETHERIDGE, AU PHOTO SERVICES

Old Main at Auburn University

Memorable and sacred places

Everyday memories as well as special experiences are often tied to special open spaces on campus, such as the Oval at Ohio State University. They can also be tied to iconic and symbolic buildings that make the campus unique. Many land-grant institutions, for example, have a building called "Old Main," generally one of the first buildings on campus. Old Main was typically built in the late 1800s, often on high ground with a tower. Centrally located, Old Main houses the president's office and other administrative functions of the institution. For these campuses, Old Main is the icon building.

Memorable places on campus can help create a sense of belonging, and sharing these places helps to create a feeling of community. Memorable places may be indoors or outdoors. The student center might be such a place, or it could be a central quadrangle on campus. A sensitively designed building lobby, with little nooks where people can hang out, might be such a place, or it might be the student hangout in town. Typically, students remember the open spaces of the campus more vividly than they remember the buildings.

Frequently, memorable places are at a crossroads, such as a mailroom, stairway, or plaza, where many paths intersect. A crossroads is not a comfortable place to hang out and stay for an interchange. When people meet a friend there, they probably don't find a place to sit down, or to hang out and review notes if they're fifteen minutes early for class. Crossroads are vibrant, active places that bring people together, but they are not places to linger.

Memorable events happen in memorable places.

Competitive advantage—creating a good first impression

Whether created by walking through the college town, by sitting on the campus library steps overlooking the quad for the first time, or by touring a campus on the web, the power of the first impression cannot be overstated. Institutions are well aware of this power.

Admissions directors have stated that prospective students form an opinion of a campus in the first ten minutes of their visit, and in the next thirty minutes they make a decision whether to rule the college out or to continue the application process.

The Oval at
the Ohio State University

More than luxurious residences and signature facilities, the vitality and the beauty of the campus and the feeling of collegiality in personal interactions are among the most important decision criteria for prospective students. Clear signage and wayfinding, a well-maintained campus, and attractive landscaping may be much more effective per dollar spent than expensive new non-academic facilities, such as student centers and fieldhouses, in attracting new students.

Symbols of institutional identity

Some institutions have places on campus that immediately identify them. These places can be open spaces, such as Harvard Yard or the Oval at Ohio State University. They could be buildings, such as Old Main or the Moorish main building at the University of Tampa. Often, the identifying item is another type of campus element, such as the fountain at Ithaca College and the tower at the University of Texas. It can also be a gate or even a system of signage.

These places and campus elements can be used in branding by tying the idea and reputation of the institution to the image of the place, thereby making the idea of the institution more concrete and meaningful.

LINDA A. CICERO, STANFORD NEWS SERVICE

Palm Drive at Stanford University

Making meaningful places

Different campuses present themselves differently, and different people perceive even the same campus in different ways. For some, the focus is on the setting, for example, the view of Cayuga Lake at Ithaca College; at other campuses, such as Princeton University, the architecture is the main focus. Some campuses organize themselves around a defining big idea, such as the Oval at Ohio State University; others, around the landscape, as at Vassar College.

Whatever the organizing principle, creating good first impressions and ongoing feelings of warmth and belonging on the campus and its institution involves every aspect of the campus from the first glimpse to the smallest spaces.

The first action institutions must take is to make sure that they identify the sacred places (places that have special meaning) that already exist on campus, and preserve them. These unique spaces are critical to institutional identity. They can be outdoor landscape elements, such as Stanford's great entryway at Palm Drive, or they can be architectural features, such as MIT's two great domed spaces: Building 7 (facing Massachusetts Avenue) and Building 10 (facing the river).

Preserving sacred places does not mean that nothing can change. As the campus grows and changes, these sacred places can be enhanced, emphasizing their uniqueness.

In addition to preserving and enhancing the old, institutions should look for opportunities to build additional, new special places by building remarkable buildings and creating enjoyable open spaces. A campus or district can foster more than one space or building that carries special significance. As the campus grows and the institution changes, its leaders need constantly to be looking for new opportunities—new spaces, buildings, or features—to create meaningful places and enhance institutional identity.

For a new campus or district, an institution might even think about creating a new "Old Main." In this case, the institution might want to consider designing a signature building, as it would become a special place on campus that carries symbolic meaning.

The campus entrance is a particularly significant space. Creating distinctiveness and impact in the architectural and landscape composition of the campus entrance may be the single most effective way to add a sense of identity to the institution as a whole. Iona College, for example, commissioned a new entry gate that expressed the institution's roots and religious heritage, as well as its vision for the future.

Institutions should also think about creating significance and symbols of institutional identity at a smaller scale than that of buildings and open spaces. Elements of identity can include the institution's system of signage, certain walls, banners, and signature features such as a clock tower or a kiosk.

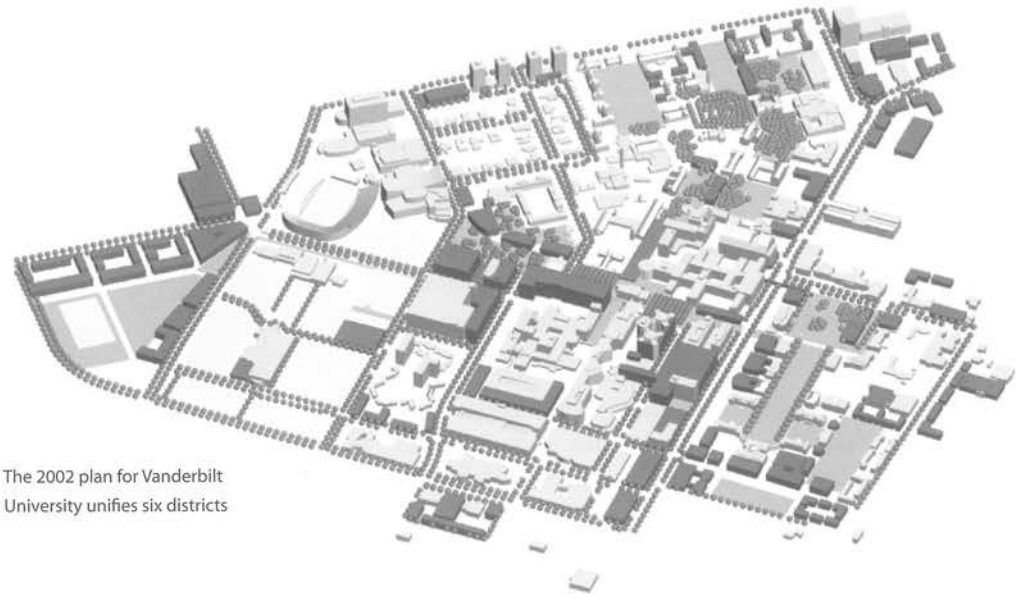
ANTON GRASSL

Top: Main gate at Iona College
Bottom: Albritton Bell Tower at Texas A&M University

The principles of placemaking

Place comprises a combination of physical elements. How much of a role each element plays varies by the character of the institution and the place—but all play some role.

The chapters that follow in this section of the book describe the major elements that contribute to making great campuses that help a college or university achieve its mission and strategic goals. Many of these principles contribute to more than one of the elements of institutional missions, and many of them work harmoniously together in ways more powerful than they could alone.



The 2002 plan for Vanderbilt University unifies six districts

The role of a plan or overarching physical vision in unifying the campus

A campus plan does not simply show the layout of the campus like a stylized aerial photograph. The plan embodies institutional values, giving the institution's vision tangible form. In specifying the numbers, location, and arrangement of classrooms and of informal spaces that can be used for conversation and study, it provides the setting in which students and faculty can learn both formally and informally. The plan promotes community on campus and sets a social agenda by the proximity and placement of buildings and their inhabitants. It supports the institution's relationship with its neighbors, its physical and cultural surroundings, and the community at large. The plan dictates the arrangement and proportion of campus uses, reflecting the phasing and priorities of overall institutional strategy.

Density or compactness of uses and spaces for interaction

Density works together with enclosure, green space, mixed use, and a pedestrian scale to create vital spaces on campus. In a densely built and lively community, people are more likely to run into one another than in a spread-out one. Creating the right kind of density is all about creating human intersections—and intersections and the collegiality they generate are at the heart of community on campus.

Synergism provided by intermixing various campus uses

The more that people's paths cross and intersect, the more a campus—or a town—feels like a community and a place to be cherished. Collegiate places where seeing colleagues—fellow students and professors alike—is a common event promote the exchange of ideas vital to the educational mission. This was accomplished at early colleges and universities in part by mixing the many campus uses together in one compact area. As institutions have grown, the uses have often been separated. But more and more institutions are coming to understand the need to mix campus uses again.

Landscape

American institutions have always had a unique relationship to the landscape. People are attracted to unique places—places that resonate with the personality of the region they inhabit, that are dynamic yet enduring. More than just a collection of lawns and trees, a properly designed and implemented campus landscape establishes the campus's overall character and beauty. It shapes and solidifies the campus plan and provides the campus with a sense of unity. The landscape embodies the essence of the place the institution strives to be.

Stewardship of the campus and its environment as a contributing factor to, and as an outcome of, campus placemaking

Educating students to be thoughtful citizens of their community and their world is a fundamental value that in one form or another relates to the mission statements of most colleges and universities. Most institutions therefore want to teach and to find a way to model environmentally responsible behavior. Just as care for the environment is inextricably related to an institution's mission, many of the actions recommended in this book to foster community and learning on campus also, at no additional cost and often with cost savings, significantly promote environmental stewardship. This means that, as the institution takes action to improve community, collegiality, and learning on campus, it can also reap the tangible and intangible benefits of environmental stewardship.

Mastering the need for automotive access on campus

Next to sports and recreation, the automobile is the single largest user of land on campus. On some campuses, roadways and parking consume up to 40 percent of the developed campus land. No matter how much parking is available, most colleges and universities find themselves under a barrage of pressure to build more. Through its destruction of the campus environment as a pleasant place to spend time and interact with people, and through the very door-to-door convenience that it promises, the

automobile is a major factor in the erosion of community and collegiality on campus. When the full costs and impacts of letting the automobile dominate campus environments and patterns of interaction are identified, the communities on many campuses are motivated to take back their campuses from the automobile in favor of environments and life styles for human interaction.

Architecture

Buildings provide the space in which necessary institutional functions—such as classroom learning, administrative work, residential life, and indoor recreation—take place. They are also a major component of the framework of the campus as a whole; they shape space; they contribute to the overall life and vitality of the campus; and they are a key element of institutional identity. Buildings reinforce the vision and identity of the campus by establishing character and providing focal points.

The impact of computers and technology on campus, and the potential of a campus inside the computer

Often seen as a significant detriment to community on campus, computers, when integrated properly into the fabric of the campus, can also enhance community. The impact of technology on campus community is still unfolding. Will wireless networks, by allowing opportunities for instant messaging, email, and other Internet uses without the need to find a public terminal or even talk with a friend, subvert it? Or are we looking at new opportunities, yet unforeseen, for social experiences of the future?

The richness of the Internet allows online users to create, inhabit, and explore virtual places as vividly realistic as any described in books. Can these be used to enhance the experience of community among residential, commuter, and especially distance learners? However, even beautifully and realistically designed virtual spaces may not be enough. Many distance learners benefit from integrating some degree of physical presence into their learning experience. Most institutions that offer remote learning also provide, in one way or another, the intimate contact of a real physical place.

Being in a neighborhood, city, or town.
Whether an institution is located in a small town, a suburb, or an inner city, a relationship that is mutually beneficial to both the institution and its neighbors can be hard to achieve. An unattractive or hostile neighborhood environment can have an impact on recruiting top students and faculty. And when the college community experiences a lack of safety in the neighborhood, the university faces the dilemma of how much to emphasize campus security and how much to join in the larger urban community in order to gain the understanding and cooperation of community residents, thereby reducing the risk of hostile incidents.

Many institutional leaders have found that they need to take the lead in building a healthy community. Those institutions that have achieved enduring symbiotic relationships with their neighboring communities or city districts are conscious of, and cultivate, the many benefits that both the institution and the city or neighborhood can realize from this relationship. As with institutional community, physical places play a pivotal role in engendering a sense of community with the neighborhood and city.


ALEX S. MACLEAN / LANDS

eight

The Plan Expresses the Big Idea

The campus plan expresses the mission of the institution by illustrating the institution's academic, social, and environmental values. A well-crafted and well-implemented plan can inspire students to attend, professors to come, and alumni to give generously for generations. As the manifestation of the institutional idea, the plan is the starting block from which great campuses, large or small, begin their history and guide their future.

> ...the future becomes the present, the present becomes the past, and the past turns into everlasting regret if you don't plan for it.[1]
>
> - TENNESSEE WILLIAMS

Why plan?

High expectations should be standard for a planning process and the resulting plan. A comprehensive and sensitive plan (and planning process) can guide growth of a lively campus so that its vitality and sense of identity are retained as it grows, and it continues to support the academic mission of the institution. Or it can resurrect a campus in trouble, transforming a campus without a vision or a sense of place into a vibrant and memorable place.

Despite this potential, institutions frequently lack good campus plans. The reasons are legion, and mostly mistaken. Often, the reason given for not creating or maintaining a good, current plan are actually the very reasons such a plan may be needed.

An historic vision too sacred to change

The original historic vision and campus may be so sacred in the minds of board members, alumni, and current students that institutional leadership finds great difficulty in moving toward a new, updated, or expanded vision. An insightful analysis and story about the original plan and how the idea can guide the future of the institution once again can inspire the board and the entire campus community when they see how the new plan respects the old plan and grows out of it.

No growth

Institutions with flat or receding enrollments often think that they do not have to plan. Historically, however, campus facility needs grow an average of 1 percent to 1½ percent per year regardless of enrollment growth. Programs change; buildings go out of date and need replacement; changing demographics of students, faculty, and staff require parking and circulation increases. Changing neighborhoods off campus may require a response from the institution. The reasons to plan even without enrollment growth are numerous.

Planning when growth is declining may be an *absolute necessity.* Examining the reasons for the decline in enrollment may be the key to solving the problem. The reasons for enrollment decline can be tougher competition, outdated academic facilities, perception of unstable surrounding neighborhood, or perception of poor campus conditions. An integrated campus plan can perhaps contribute to reversing all these conditions.

Tight financial constraints

Institutions may not want to spend money on planning when fiscal constraints are tight. In addition, the lack of strategic planning capacity internally can lead to a disconnection between institutional financial planning and physical planning. However, financial concerns may be precisely the reason to plan. An integrated plan can reduce operational cost through recommendations for efficient building systems or through reducing grounds maintenance. Institutions fortunate to have land or building resources beyond their need may be able to devise strategies for sale, lease, or development that either generate revenue or put unneeded resources and deferred maintenance of those resources in someone else's hands.

Organizational structure and poor communication

Planning that does not recognize the many overlapping intricacies of a well-functioning campus or that plans a single aspect of the campus without realizing the effect on everything else is poor planning. The lack of a coordinated and unified administrative system can cause poor planning when administrative units do not communicate. Facilities administration may be unaware of academic departments' new building needs, or academic departments may be unaware of new planned construction that they might be able to utilize. This situation can be exacerbated when the planning staff is too low in the organizational structure to have effective input in campus-wide planning decisions. Some institutions have found they must remove recently completed parking or open space because a new need has arisen, or because no one investigated the expansion needs of an adjacent academic department. A comprehensive campus plan can eliminate unnecessary moves and attain full value with every dollar spent.

Focus on architecture

Administrators, board members, and donors sometimes think that individual or multiple building projects can be built successfully without an overall guiding plan—or that a plan might in some way inhibit the creative talents of the architects. Sometimes they think that architecture projects can solve campus issues beyond their own scope. Rarely can an isolated new building project achieve the full potential *for the whole campus* that it could if informed by a plan. Conceiving a single- or multiple-building project without a comprehensive plan leaves too little guidance for the architect and can damage the institution as well. A campus plan can aid the architect, providing the context and framework in which to design and allowing him or her to focus on how the building can contribute to the overall campus. Great, enduring, contributing architecture needs the focus that a visionary and comprehensive campus plan can give.

History of unrealized plans

Some institutions have a history of creating plans that, for the most part, go unfulfilled, leaving the institution reluctant to invest in planning again. This lack of follow-through may be due to a plan that is developed with too little involvement by the campus community or to a vision that is ungrounded in thorough analysis. Some plans are unrealized because they call for removal of entire precincts of the campus, or they fail to address the magnitude of difficulties such as topography, river corridors, and town-gown relationships. Recently, for example, a firm doing campus master planning for Harvard University suggested moving the Charles River to best unite that institution's landholdings. This solution was challenging from an engineering and financial perspective, but more important, the antagonism it would arouse in the community politically made it impossible to consider.

Desire to maximize flexibility

Cash-strapped institutions that look increasingly to donors to fund campus facilities may focus mainly on securing the gift at any price rather than on institutional imperatives. They fear that a plan could inhibit flexibility. How to accept well-meant donor contributions yet preserve the institution's right to implement that project or utilize that contribution to the institution's full advantage is a serious issue on today's campuses. In response to this issue, an institution may be able to utilize the planning process to illuminate the strategic principles behind the plan and secure vested interest by board, alumni, and contributors. When contributors know that there is a larger idea behind the project, a visionary plan can excite and promote involvement. People are often more ready to give to ideas such as enhancing learning and community on campus than to a single building project.

New leadership

The arena of campus leadership today is markedly different than that of the previous generation. Leaders, presidents, and chancellors, once stalwarts of the institutional memory, move from one institution to another on average every five to seven years and are judged primarily on their specific, tangible accomplishments within the short period of their tenure. To deal with this new pattern of leadership, the planning process and the resulting plan should be far-reaching in their horizon, envisioning a campus future beyond five- and ten-year cycles of leadership change. This long-term view must be described in short increments of achievable goals that move the institution toward the longer vision with or without the leader who has initiated them. In this way, both the institution and its leaders can achieve the results they want.

Fear of expectations

A plan establishes a vision, directs growth and change, and marks the course to achieve that vision. Having a plan establishes expectations to raise the necessary financial resources and to achieve that plan—and thereby provides a gauge of success. Setting marks of "quantifiable" achievement for institutional leadership and boards can be daunting. On the other hand, a plan that inspires involvement and a visible, engaging process of implementation can enable leadership to be successful because the entire community is vested in the ideas embodied in the plan; the well-done plan represents their aspirations and has marked a clear course to achieve fruition.

What the plan should do

Great campuses adapt well to change and growth. They preserve their most cherished characteristics while undergoing growth, change, and renewal, however subtle or bold. From their inception through their growth to their great leaps of reinvention, these campuses have a plan to chart their individual course.

The plan provides all the details needed to manifest the central idea of the campus. Even if an institution lacks a cohesive vision, idea, or strategic plan for itself, a campus plan can at least guide the most fundamental aspects of a campus' needs, such as placing a building, parking, or recreation facility based on a thorough and logical review of existing conditions.

A comprehensive campus plan should:

- Express the idea or vision of the institution
- Guide growth and change
- Reinforce the strategic plan

Expresses idea or vision

Academic and civic vision, history, tradition, culture, and context are the foundations of great campus plans. They give meaning and purpose to all who pass through the institution. The plan should always be far reaching in its horizon, knowing that each move furthers the *idea* of the institution and will contribute to its long-term success.

Many of the great campuses of the world started as an idea. From the medieval cloistered universities of Europe to the over 4,100 institutions of this country, many institutions had at their beginning a vision for the campus. These visions had social roots, such as the land grant schools established after passage of the Morrill Act in 1862; had academic ideals, such as the University of Virginia; or expressed a relationship with a dramatic physical place, such as Carnegie Mellon University. Whether the instigation of the idea was social, academic, or physical, the plan was the instrument of the vision.

Social ideals

Access to education for all is an American ideal. The Morrill Act, which established the land-grant mission and provided the foundation for a number of state institutions nationwide, manifested this desire for open higher education. "The land-grant university," states Iowa State University president Martin Jishcke, "is a uniquely American idea, defined by a commitment to the land-grant values of access and opportunity, combining practical and liberal education, conducting basic and applied research, and reaching out to extend the university to serve the people of the state."[2] The establishment of community college systems in the mid-1900s extended the concept of accessible education for all by offering affordability and local proximity.

Historic image of main quadrangle at Utah State University

Early plans for land-grant institutions set out a plan that was generally visible and accessible, reflecting their charter for educational accessibility. The central building, Old Main, was typically set on a hilltop, the highest point on the campus, so that it was a visible landmark. The grid of the surrounding city was extended into the campus, to connect the campus to the city.

Academic ideals

Perhaps because its founder, Thomas Jefferson, was also its designer, the core campus of the University of Virginia is one of the finest examples of how the physical form of the campus can be designed to reflect its academic vision. "We fondly hope," Jefferson stated to the Virginia Board of Visitors in 1821, "that the instruction which may flow from this institution…may ensure to our country the reputation, the safety and prosperity, and all the other blessings which experience proves to result from the

The "academical village" at the University of Virginia

PHOTOGRAPH © ALAN WARD

cultivation and improvement of the general mind."[3] Jefferson believed that the college experience should extend beyond attendance in classes. He envisioned an "academical village" inhabited by professors and their families along with students, in which the shared life experience formed the foundation of the learning community. The education thus obtained would be one suitable for responsible citizens of a republic.

The original plan of the university, as laid out by Jefferson, reflects this vision. Ten "pavilions" faced each other across a gracious lawn, each housing a professor and his family upstairs, with classrooms on the ground floor. Joined by colonnaded walkways and student rooms, the pavilions are flanked by working gardens and, behind the gardens, by two additional rows of student rooms connected by arcaded walkways. Although each pavilion is unique, all are joined by a unifying colonnade strongly suggesting classical Greek or Roman culture. At the head of the central, shared lawn is not a church (as might have been the case in colleges and universities in Europe at the time) but the university's library, a strong statement about the importance of education and enlightenment. The library's domed and columned architecture, reminiscent of Rome's Pantheon, recalls the virtues of the republican form of government. Altogether, in its plan and design, the original campus of the University of Virginia speaks to the importance Jefferson placed on an educated citizenry in a democratic republic.

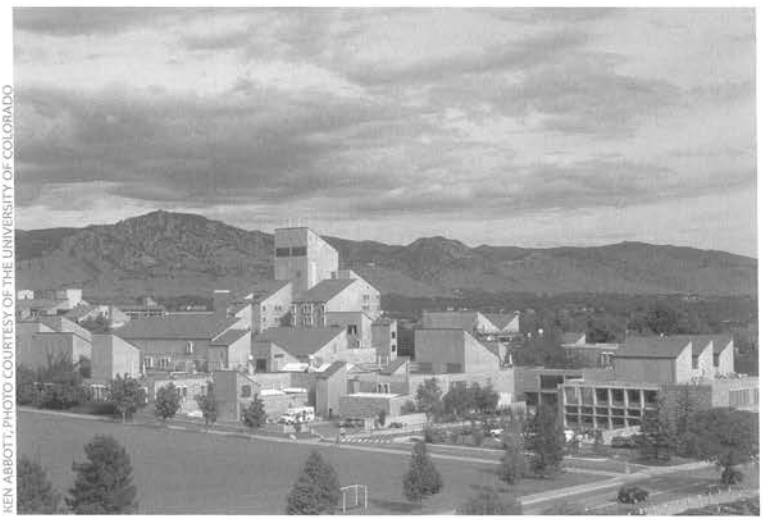
Response to physical place

In many cases, the form of the campus responds strongly to its physical setting. Cambridge University responds both to the river and to its interwoven relationship with the city of Cambridge. The river and university are so intimately intertwined that it seems impossible that they could exist apart. Much the same can be said physically about the university's relationship with the city.

Several campuses in the United States are as much a response to their stunning physical settings as they are to their institutional ideals. Carnegie Mellon sits atop a natural plinth in Pittsburgh, Pennsylvania, on the edge of the hill commanding its district setting. The formal early building groupings of the campus seem to grow out of the tree-covered slopes of the hill. They frame a central open space where today art, science, and engineering come together. Form, function, and place are united in a complete and enduring composition.

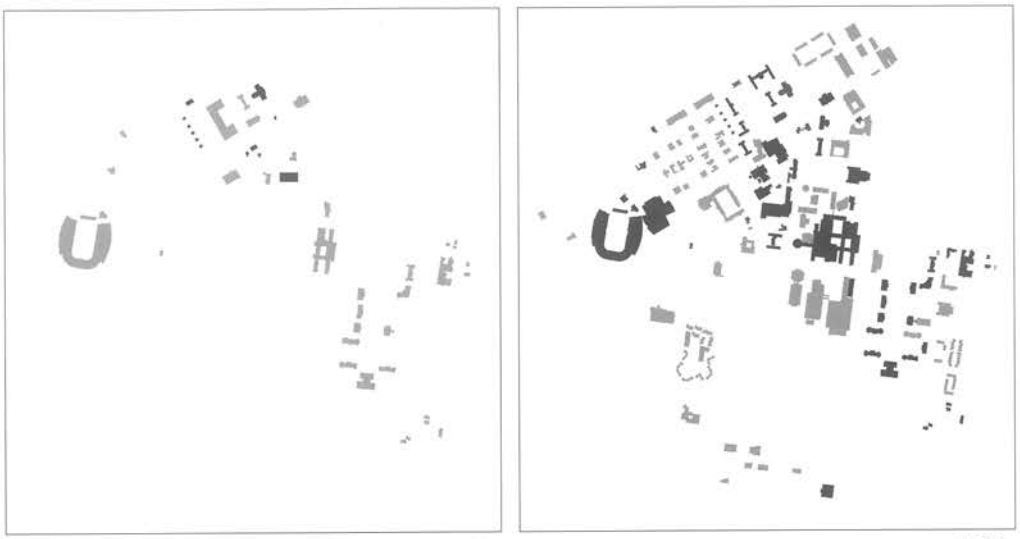
The University of Colorado responds directly to the background of the Rockies with its bold building groupings and roof forms.

Ithaca College, which is located on a scenic hilltop just outside of Ithaca, New York, developed a master plan that creates "three-sided quadrangles"—areas enclosed on three sides by buildings—to generate pedestrian traffic and increase community, with the fourth side left open to the splendid views overlooking Ithaca and Cayuga Lake in the valley below.



KEN ABBOTT, PHOTO COURTESY OF THE UNIVERSITY OF COLORADO

University of Colorado at Boulder



1900 1950

Guides growth and change

The plan should guide institutional facilities growth, which averages 1 percent to 1½ percent per year regardless of growth in enrollment—but every new building, every dormitory renovation, every parking lot can also challenge the original vision. Perhaps an opportunity arises for a dormitory on the edge of the campus when the plan called for creating more residential space near the campus core. Should the institution take advantage of this opportunity, or let it pass? If the institution decides in favor of the new dormitory, what other modifications must be accommodated in the plan so that the overarching goals of the institution are not weakened?

Over time, the vision itself of the institution may change. New visions call for new plans. But the institution now has a campus—a campus that has reflected the original vision and changed over time in planned and perhaps unplanned ways; a campus that has the patina and character that reflects—and also influences—the essence of the institution. It probably has some "sacred" spaces, and it may also have some features that the institution would like to change. A new plan for an existing campus must strike a balance between the institution's current assets and its new aspirations. History, tradition, and culture *must* color some portion of the new campus vision.

Growth of Vanderbilt University

2001 Master Plan

Links to the strategic plan

A major motive for creating a new campus plan is the institutional strategic-planning process. Institutions generally conduct strategic planning about once every five years. They ask whether they are performing at their best academically. Do they have the right technology and enough of it? Should courses take new directions? Are new initiatives needed in recruiting or student life? Often, the answers to these questions have implications for the physical campus.

- The strategic planning process instituted by president Kermit Hall at Utah State University proposed bold academic initiatives in research, arts, and residential life in the quest for an excellent cross-disciplinary living-learning and environmental community. It also instituted new initiatives—unprecedented at this public university—to raise needed capital from private and government sources. The strategic plan was then translated into a series of district plans for compact, sustainable campus growth. These plans have succeeded in harnessing individual donor, government, and private-sector capital for implementation, partly because of the strong link between the strategic objectives and the plan for facilities to support these objectives.

- After allowing its once-strong astronomy program to languish, Wesleyan University in Connecticut decided to reinvest in this core discipline. New faculty members were brought in. But in the meantime, safety concerns had led the school to add lighting throughout the campus—lighting that obscured the view of the nighttime sky at the campus observatory. The new astronomy faculty led the way in setting new standards for campus lighting, making it safer than the existing lighting as well as glare-free and night-sky-friendly.

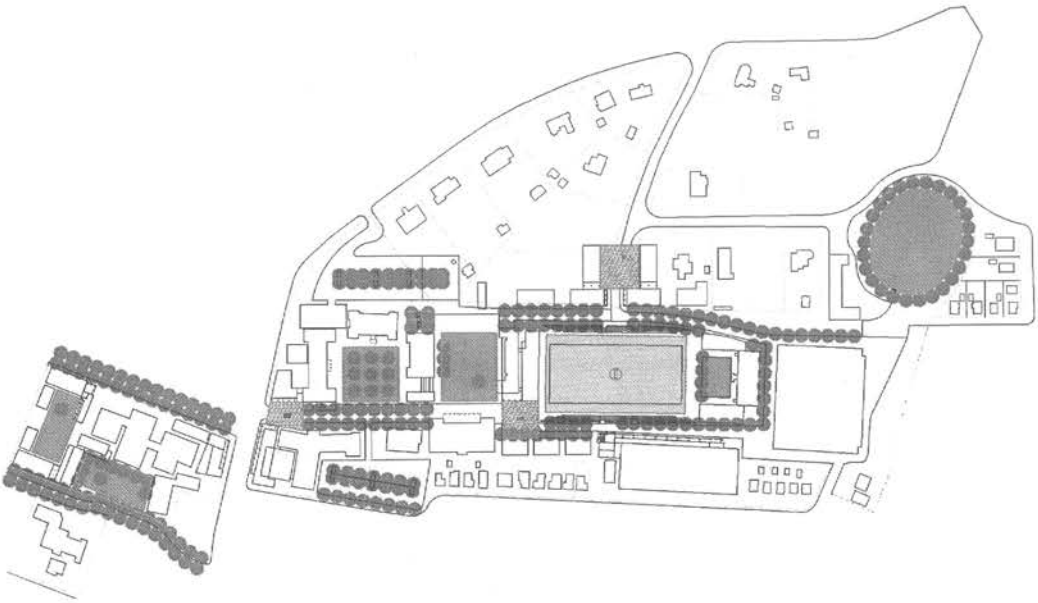
- The strategic planning efforts at Lehigh University led to an initiative to improve interdisciplinary communications among academic disciplines. This idea was the impetus for a master-plan recommendation to move the Graduate School of Education, then in a remote district of the campus, to a new site in the historic core campus near a number of related academic disciplines. The proposed location was also adjacent to the existing Southside neighborhood schools. This placed the graduate school at the crossroads of both interdisciplinary work within the institution and application of that knowledge in the neighborhood.

An institution's strategic plan and its physical plan go hand in hand. The physical plan lays out the priorities and time phasing for changes to be made to the campus. This plan should connect these changes with the financial realities and the academic and social priorities of the institution. Each project, no matter how large or small, should fulfill a strategic purpose. Campus plan changes must respond to changing strategic emphasis on academic priorities, on recruiting, on campus social life, and other factors. Every facilities investment should be made to improve the quality of the whole campus environment—academic, civic, and physical. The more the institution can tie its strategic and physical plans together through a defined process, the more the campus will continue to support and enhance the institution's strategic directions.

Plan elements

The plan integrates and orchestrates the three fundamental physical form-giving components of the campus: the landscape framework; the use of roadways, parking, and paths for circulation; and the buildings and architecture of the institution. The plan creates a balance among these components, causing them to interact and collaborate gracefully with one another in a manner that is supportive of the fundamental idea of the institution. The amount of land area devoted to buildings should have the right proportion to the amount of land area given to circulation and parking and to the amount of open space.

The uses of the buildings and open spaces are also balanced. No one element should be allowed to overwhelm a campus or campus district, but the proportions of elements vary based on organization of functions, position from the centers, and other characteristics of the overall plan. By identifying the principles for location of uses on the campus, now and into the future, the campus plan is a road map of the intent and purpose of the physical campus.



Landscape framework

The plan focuses first on the campus open spaces, not on its buildings. In this, campus planning remarkably resembles urban planning. Towns and cities have always grown around their public spaces—from the *agora* of ancient Greece or the forum of Rome, to the town commons of New England. The *Laws of the Indies*—the dictum of colonization principles laid out by King Phillip II of Spain in 1573 to govern (among other things) the development of settlements in the new world—specifies first the town plaza, which "is to be the starting point for the town." In order, after the main plaza, the king specifies the principle streets, which begin at the main plaza, then smaller plazas, and finally the town's buildings, main buildings first.[4]

Plan and model of landscape vision for Iona College

The main quadrangle, green, square, street or avenue is the starting point of the campus just as the town plaza is the starting point of the town. The plan dictates the character of this and other important open spaces of the campus. These are the "outdoor rooms" where the community of the university sees itself and interacts with itself both in formal gatherings, such as the annual convocation and graduation ceremonies, and in informal situations, such as the intervals between classes. The plan surrounds and frames these spaces with buildings—not the other way around.

The plan also lays out other campus open spaces—its formal quadrangles and informal residential courtyards as well as its athletic fields and nature preserves.

The plan can manifest vernacular landforms and architecture of the region to create a style of expression and instill the campus with a memorable sense of place. Does the institution want to express itself formally or informally? With its virgin site on rolling California hills, Stanford University could have done either. Frederick Law Olmsted's vision for the campus preferred a site in the foothills and, likely, a concomitant informality in the overall plan "probably with winding roads, and buildings nestled asymmetrically in the irregular topography, precisely as in Olmsted's earlier designs."[5] But Leland Stanford's desire for a monumental and formal plan prevailed, and the university was located on the flatter portion of the site.

The plan can also encourage collaboration with the city or town that the institution resides within. The cloistered institutions of Europe and elsewhere controlled their involvement with their neighbors; some institutions in America emulate this precedent, but many others prefer to blur the boundary between the campus and the community.

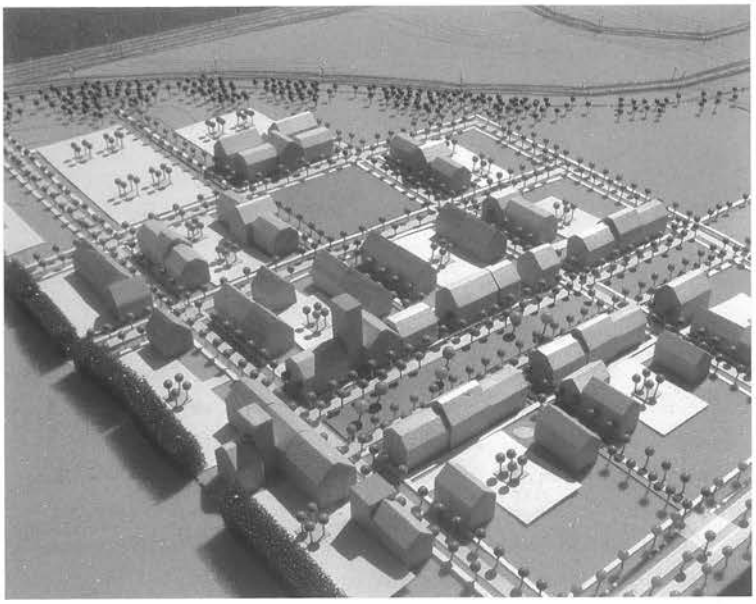
Circulation

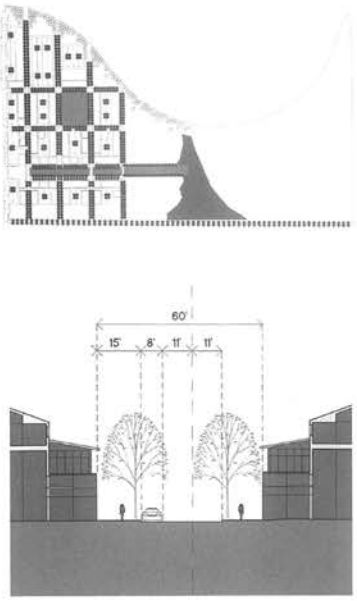
Circulation comprises all of the aspects of a campus required to move people, goods, and services from place to place, and to move and store cars on campus. Students walk from residence halls to classes; faculty and staff bicycle or drive to the campus and park near their offices; food and supplies are delivered; garbage is removed. In the nineteenth century and earlier, circulation was a relatively minor consideration whose primary function was a pictorial approach to the campus; with the advent of the automobile, circulation has become a dominant factor in campus organization. Today, circulation (including parking) is the second largest user of land on campus, after sports and recreation.

The plan provides a logical infrastructure system. Efficient paths and corridors to deliver energy, services, goods, and technology can reduce both initial cost and long-term operating cost for the institution. They are also critical elements of a sustainability plan for the campus.

At the historic core of older campuses typically sits a central quadrangle that was once, or has always been, a pedestrian space. Its simple diagonal pathways are a focus of interaction and community on campus. Outside of this quadrangle, the struggle to reach a reasonable balance with the demands of circulation begins. The campus master plan addresses circulation issues such as:

- The extent to which pedestrian and bicycle activity is encouraged or automobile use is accommodated
- How close vehicles are allowed to which buildings or functions for convenience or for maintenance





The circulation plan at Heartland Community College extends the street grid of the city and provides sheltered parking in courtyards

- Whether access for servicing is centralized or decentralized
- What considerations are required for safety

The plan must deal with issues around the integration or separation of vehicular, service, pedestrian, and sometimes bicycle traffic. In many places, these can be combined, much like in a vibrant city street, often in ways that preserve and enhance the vitality of the campus spaces.

Almost every plan wrestles with the problem of storing automobiles. Creating a rim of parking around the campus can have a disastrous impact on the image of the campus, the surrounding neighborhood, and the institution's relations with its neighbors. Large parking lots in the center of the campus spread out the functions, desired academic adjacencies, and buildings, increasing the amount of driving that must be done and creating places where no one wants to linger. Distant parking lots do not adequately serve faculty and staff who drive; parking must be in relatively close proximity to their destinations. Each precinct of a larger campus must accommodate some parking, with the remaining parking (as large a percentage as reasonably possible) in satellite areas served by a shuttle system of some kind. Structured parking is generally preferable to land-consuming lots, particularly in core areas of the campus, near neighborhoods, and in areas with an ecological impact. Given the cost of parking in general and garages in particular, and the value of land resources, the plan must provide a well managed circulation and parking system that collaborates with mixed land use to dampen parking demand, increase safety, and contribute to a positive campus image.

Housing at Colorado College

Buildings and architecture

From a planning perspective, the buildings of a campus are tools to define campus outdoor spaces. They provide the walls to the outdoor spaces that they border, and the character of these walls defines in large measure the character of the spaces they define.

Buildings also provide internal spaces to serve program needs, provide needed academic and social adjacencies, accommodating uses that must be integrated into the campus as a whole and adequately served by circulation.

Collectively, buildings also contribute to the character of the campus as a whole. Restrictions promulgated in the plan specify height limits, massing and allowable materials, as well as possibly specific architectural styles or forms. The plan identifies how each new building is to relate to or depart from the buildings around it. Even on campuses where many different building styles and materials are allowed, a good plan should describe the building's contribution to the overall pattern of campus buildings—how its campus presence and placement collaborates with other buildings and enlivens the outdoor spaces it neighbors; and whether it also serves an iconic or landmark function on campus.

In addition, through its integration of the architecture, the landscape, and circulation, the plan can manifest the institution's commitment to a sustainable world. Commitment to stormwater quality, alternative transportation, and reduction of energy usage can all be incorporated into the campus plan.

Bringing it all together

A well-crafted campus plan expresses a long-term vision or idea of the campus that is simple, powerful, and memorable. It organizes the campus around a clearly identifiable big idea. A successful plan promotes the desired institutional identity, which should in turn differentiate the institution and ground it to its place. The examples in this section show how campus plans can meet the objectives of providing vision, guiding growth, and supporting an institution's mission and strategic plan.

University of South Florida

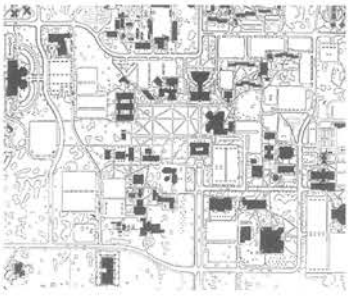
The University of South Florida in Tampa in 1995 developed a new master plan[6] to create a strong physical institutional identity while accommodating significant growth. The single form-giving big idea of the plan was the creation of a "greenway" that traverses the campus diagonally, connecting

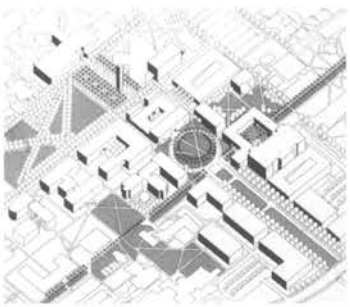
two large natural areas with the central lawn at the heart of the campus and providing a counterpoint to the more urban building densities that campus growth would require. The plan combined strategic growth, visionary, academic, place-making, and community-oriented goals:

- Accommodate a ten-year program of academic research, residential and support facilities expansion of nearly 80 percent on the 815-acre suburban Tampa campus.
- Create a sense of place by providing a more urban spatial order and identity and a more pedestrian-oriented environment on what had become a sprawling, automobile-dominated campus.
- Strengthen the functional and collegial connections among the campus's various academic, research, residential, and recreational districts.
- Restore the indigenous landscape of the university by creating a natural system of open spaces for amenity, recreation, and stormwater management.
- Enhance the university's presence as an educational, cultural, and economic resource in the Tampa Bay region.

To meet these goals, the plan established a hierarchy of connected pedestrian open spaces framed by the substantial building program to create a series of unique places where none had existed before. Building infill was used to shape the open spaces of the campus in a variety of settings such as quadrangles, courtyards, and plazas. Arcades and breezeways were used to connect buildings in a response to the long, hot summer seasons with afternoon downpours characteristic of the regional climate. Most significantly, the plan recommended the creation of a "greenway" that traverses the campus in a diagonal to connect the central lawn at the heart of the campus with a botanical garden on the southwest and a vast, regional ecological preserve to the northeast. Combining an indigenous, semi-tropical landscape with a series of informal ponds and basins also used for stormwater management, this greenway provided a counterpoint to the higher-density urban structure of the campus built environment that would be needed to meet the growth program.

Using a phased implementation based on institutional strategic objectives, the plan coupled implementation of architectural projects with the creation of new public spaces to fill in gaps in the pedestrian fabric of the campus with active uses and animated spaces. It also simplified the vehicular circulation and replaced surface lots needed for new buildings and open spaces with structured parking.





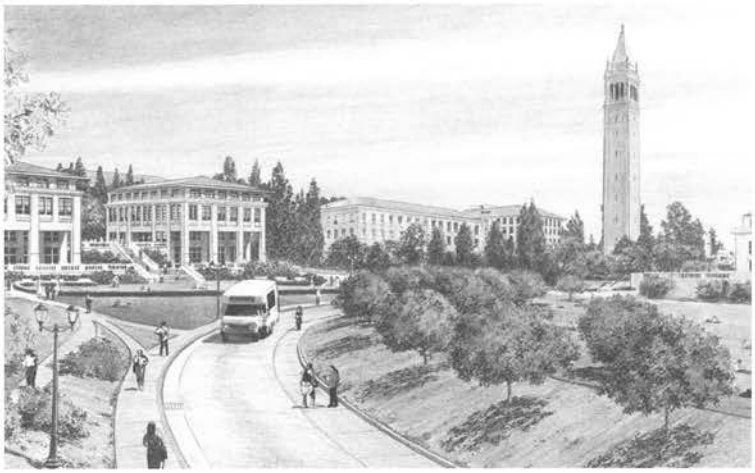
University of South Florida
From Top: Existing conditions (1994), proposed plan (1995), design guideline, and the new greenway

Since adoption of the plan, the university has constructed nearly two million square feet of new building facilities, strengthening program linkages among its academic and research precincts. New residential space has enlivened the campus by bringing twenty-four-hour life into the academic core. Creation of animated, open spaces in conjunction with building development has had a profound effect on the quality and clarity of place on the campus. In particular, the new Martin Luther King Plaza, a gracious ensemble of shade trees, trellises, fountains, and seating areas on the university's central lawn, has provided an iconic space that has enhanced the identity of the institution. The greenway system has been substantially implemented and brings a natural, indigenous environment to the campus to act as a foil to the increased density of development; in addition, it provides a system of ponds that provide stormwater management capacity for the campus as it develops. A new landscaped gateway has been created at the main vehicular entry into the campus, and pedestrian concourses have been created by the conversion of roads and parking areas in the academic core to tree- and building-lined walkways connecting major districts of the campus.

University of California, Berkeley

In its first comprehensive master plan in one hundred years, the University of California, Berkeley[7] addresses the need for major physical change. "The New Century Plan is a national model to renew a campus by linking academic mission, investment, and design through vision." The campus plan responded directly to the university's strategic academic plan, its growing enrollment, and its need to functionally upgrade its facilities, while leveraging each investment in the campus to enhance campus life and to build on the campus's extraordinary legacy of landscape and architecture.

Since space was at a premium on the Berkeley campus, institutional leaders and planners focused on ensuring that each new capital investment be designed to maximize its contribution to intellectual community by creating dynamic, interactive places. The plan "reinforces the distinctions between the Beaux Arts features of the classical core, with its axial vistas toward the Golden Gate, and the ambling frame of riparian glades and picturesque buildings that line its edges and weave through it." These distinctions became, in fact, the unique, organizing principle of the plan. The ravine and stream that cut through the center of the campus had been preserved, but over time the campus had turned its back to them. Parts had been covered up, and they were perceived more as an obstacle than a feature. The new plan for the campus restored the Central Glades

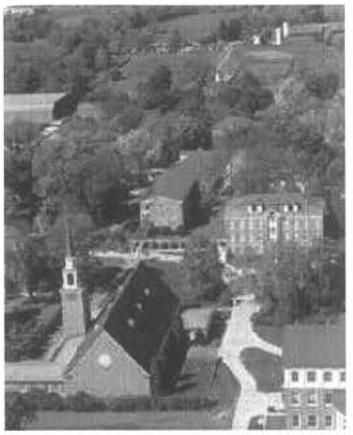


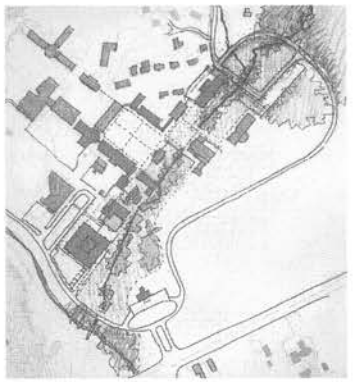
as a natural amenity and primary organizing element, and oriented new campus development toward it. The plan proposed removal of a "ten-story concrete monolith" building, which would be replaced by two smaller pavilions that would frame a cascade of steps from a public plaza to the Glades.

To enhance social and intellectual interaction and generate activity in outdoor public spaces, the plan places active uses, such as library reading rooms, classrooms, and food services, at the entry level of buildings. It relocates nonessential uses off campus to increase the university's on-campus inventory of academic and research space, placing administrative and public functions (including a new hotel and conference facility and university museums) at the edge of the campus near downtown Berkeley where they can contribute to the quality of the neighborhood and be served by public transit. New housing is planned in concert with local community plans as infill high-density housing within a twenty-minute walk, bike, or public-transit ride of the campus. The plan also establishes a hierarchy of gateways and movement systems that preserve and enhance the pedestrian orientation of the core campus. Sustainability is addressed through policies and initiatives to conserve energy and enhance the natural environment, such as retention of stormwater and removal of impervious surfaces.

University of California at Berkeley
Top Left: Rendering of restored entry drive
Top Right: Central Glades
Bottom: New Century Plan

Project guidelines that support the university's strategic goals and policies provided more detailed criteria for location, space utilization, and design of buildings and open spaces. Capital-approval processes were amended to ensure that project scale, form, and character were taken into account so that project decisions could be made in the overall context of the plan and strategic goals rather than on an ad-hoc basis.





Hollins University
Top: Central campus
Bottom: 2004 campus plan

Hollins University

The 2004 campus master plan at Hollins University[8] addresses land management, campus structure and organization, landscape, circulation and parking, space use, deferred maintenance, flood protection, phasing, and implementation funding. It organizes the structure of the campus around the traditional, iconic, and much-loved central quadrangle around which the earliest buildings stand, and which forms a substantial part of the institution's identity, restoring the historic buildings and revitalizing them and the central quadrangle with student-oriented activities. The goals of the plan were to:

- *Invest in existing facilities.* The plan gives priority to capital investments that renovate existing facilities to meet program needs, attend to deferred maintenance, and address accessibility. It also looks at opportunities to use improved facilities to generate additional revenue.
- *Enhance campus vitality.* Addressing a generally acknowledged lack of vitality on campus, the plan provides expanded, visible space for student activities.
- *Reinforce academic mission.* The organization of academic uses is strengthened, encouraging opportunities for interdisciplinary interaction.
- *Build on the beauty of the campus.* The campus contains an impressive collection of historic buildings sited within a stunning natural landscape. The plan preserves these features, defining a strong landscape framework and providing for adaptive reuse of historic buildings that is sensitive to their historic character.
- *Improve circulation functionality.* The plan defines major entry points to the campus core and provides clear access to public destinations and sufficient convenient parking.

As a central organizing idea, the plan revitalizes the campus's main quadrangle, making it a new focus for campus life. It provides for the restoration and renovation of the surrounding buildings, completely replanning the use of their ground floors with active, student-oriented uses, including student services, clubs, and a café. The plan establishes two "academic axes" extending from the main quad as the principal locations for academic uses on the campus, relocating some academic programs from other parts of the campus. It also defines three residential districts—one utilizing the upper stories of buildings right on the main quad and the other two at the ends of the academic axes. Each district provides support amenities for residential students.

The plan provides a long-term vision and physical design for the campus intended to guide decision-making for ten years and beyond, and it establishes a phased structure for investment in campus land and facilities that reflects the university's academic mission, history, and traditions. It has been adopted by the university's board and is in the process of implementation, with enthusiastic support by the university community.

Recommended initiatives

Creating a good campus plan requires both discipline and vision. Plans are not born in isolation—and they cannot be put together piecemeal. The following initiatives support effective campus planning.

Integrate the campus plan with the strategic plan. A great campus supports its institution's strategic objectives when the institution's campus plan manifests and supports its strategic plan. When the campus plan is grounded in the strategic imperatives of the university or college, its goals are clear and achievable, and everyone involved in the planning process understands their importance.

Capitalize on unique campus attributes. An institution should capitalize on opportunities to create uniqueness in its campus plan. These opportunities may come in the form of the character and personality of the region or the site or the traditions and culture of the institution itself. Sacred or special places should be celebrated in the plan.

Plan comprehensively. Institutions should plan primarily for the whole campus and for the long term. The clarity of that entire vision will illuminate achievable short-term objectives.

Organize clearly. A campus should be legible to all who come. A good plan unites the campus behind a single vision. It is simple, comprehensible, and unified.

Challenge traditional ideas respectfully. New plans for existing campuses must honor traditions—but also reinterpret them as needed to meet today's needs and tomorrow's challenges.

Build consensus. Institutional leadership can use the master planning process to create unity among the campus constituencies. A unified vision is a product of open process and the informed constituency behind it. Because the process builds consensus, unified visions move forward.

Never stop planning. A dynamic institution must stay in front of its growth needs with continual review to ensure that development takes place within the context of the larger plan framework.

LINDA A. CICERO, STANFORD NEWS SE

nine

Creating Interaction through Density

Density of interaction

Density has a far-reaching effect on the site plan and the quality of life within it.[1]

- KEVIN LYNCH

Density. No other planning idea provokes such controversy. The idea of a dense or compact campus (the terms are used interchangeably to describe a close adjacency of buildings and functions) can seem unpleasant to some institutions, conjuring visions of the tenements that in the late 1800s threatened public health, safety, and welfare. On the other hand, in America and elsewhere, the tightly built small town centers and city districts that are often cherished have relatively high densities, as measured by building site coverage. Indeed, many of the core areas and older centers of great American university and college campuses have densities that equal or exceed the densities of many of the negative stereotypes that the word density evokes. This physical compactness allows students and faculty to walk more easily from one place to another, encouraging interaction and community, and reinforcing a sense of place and institutional identity.

Within certain limits, a town or a college can be a vibrant community whether it is compact or spread out. The perceptions of compactness and vibrancy are functions of many things, including the visual context and the landscape, architecture, and topography. The way the space is designed, as well as the physical and cultural context in which it is located, are much more important in determining its vitality than its measure of density alone.

The most useful way to consider the compactness necessary for community and vitality is to look at the human qualities of the place—the intensity of its use and the opportunities for intersections that this intensity creates. 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.

Density issues in campus development

Institutions need to find a way to balance the human desire for enduring, symbolic places with the dynamic growth and change emblematic of great campuses—without creating a sprawling, centerless campus. One of several issues related to density may upset this balance.

Large expanses of surface parking force apart campus uses

COURTESY OF MICHIGAN STATE UNIVERSITY

Suburbanization

To accommodate growth, many campuses over the last forty years have followed the general American model of suburbanization. In particular, many of the American land-grant institutions, with their generous land resources, have fallen into this pattern. As these campuses grew over the last several decades, the creation of vital, lively places was not a prime consideration. Colleges and universities were facing other issues. Even today, many institutions do not understand the link between their sprawling campuses and the lack of community they experience.

Many American institutions still resist building densely. The choice to spread out is often based on the feeling that spreading out preserves open space between buildings and is more beautiful than building compactly. The choice to spread out has also been made in conjunction with several other campus trends:

Proliferation of the automobile on campus

The automobile has made sprawl both feasible and, to some degree, inevitable. As many as 75 percent of on-campus residential students have cars on some campuses. Students can drive a considerable distance from their dormitories at one end of the campus to their classes at the other. But cars also require roadways and parking lots at all major destinations, pushing new buildings farther apart.

Development of large building types

Buildings such as recreation centers, athletic centers, large laboratory buildings, and student centers have a different scale from older campus buildings. More massive, they also tend to have less façade articulation. Each of these building types occupies much more land than the older buildings. Creating vibrant spaces around these building types can be a challenge. Some institutions solve this problem by avoiding it—by locating the newer, larger buildings far from the campus center. This dispersal of campus functions requires ever more use of the automobile.

Memorializing the center

Interestingly, the original centers of some campuses have become static spaces, no longer changing or evolving. Respect for the historic center is merited. Not touching it is better than some of the changes on campuses where later infill buildings have destroyed the original character of the center. But if the center is not allowed to change at all, then as the institution's needs grow and change, the center becomes secondary to the emerging growth areas of the campus. Campuses may develop centers of activity apart from or in addition to their historic centers. Vanderbilt University, for example, didn't want to build or add to its historic center, while its Medical Center (and associated research) grew increasingly demanding in its need for space, becoming the dominant area of the campus. Over time, the geographic "center" of the campus moved to the parking area between the Medical Center and the traditional campus center. Vanderbilt is now making the emerging medical area into one of several new, vital district centers, as well as addressing the revitalization of the historic core.

The shopping mall syndrome

Just as development can be too spread out, it can also be too unevenly distributed, so that it is too compact in some areas and too sparse in others. When functions are densely grouped together and surrounded by seas of parking, a sense of human scale is lost, and the land area as a whole is not well utilized. Interior retail shopping malls, for example, are much denser than retail on even the most vibrant Main Street. But to achieve the density of shopping that mall-developers desire, most of the land is used as a paved and inhospitable parking area. The mall sits like a fortress in the middle of this asphalt. Many large campus venues such as campus centers and recreation complexes share this problem.

Some colleges and universities have created a barrier of lifeless surface parking between the campus and its adjacent neighborhood. Where a sea of parking surrounding a mall might be acceptable, a sea of parking surrounding a campus makes—perhaps unintentionally—a hostile statement to its neighbors. Indeed, the parking may create a neighborhood environment that is not desirable from the point of view of the institution itself. No building or campus exists in isolation. The desirable density in the campus center must transition smoothly to neighboring uses.

Capacity limits

Every place has limits on how dense it can become. Too much density, like too much sprawl, can cause problems. "There is no ideal density. For any given activity, there is a range of densities outside of which conditions are likely to be substandard and within which there are a number of thresholds marking a shift from one character with its particular advantages to another with other advantages."[2]

Usually, the solution to a capacity problem is unique to a particular situation. Vanderbilt's Medical Center is a case in point. Growing rapidly, the area was reaching a limit in the amount of parking that could be handled within a reasonable walking distance of the hospital. Uses such as office space did not need to be in the core hospital area and were using a large share of the available parking. The core hospital uses alone were growing and required location in close proximity to one another. They would soon also require all the available parking capacity. An obvious, but expensive, solution might have been to add structured parking capacity to the infrastructure of the area and to then deal with traffic capacity limits. Instead, Vanderbilt saw an opportunity in the situation. A plan was developed to move clinical and other offices out of the core to much less expensive space where they would in turn stimulate activity in areas that the university and the city wanted to revitalize.

In addition to traffic and parking, capacity limits can also arise along a number of other dimensions. Some overbuilt areas can use up too much open space, leaving too little or poor quality spaces that are too shaded by adjacent buildings. The utility infrastructure may also reach a limit, requiring expensive upgrading.

Reaching a capacity limit may be a sign to direct additional needed development in new directions.

An elusive concept

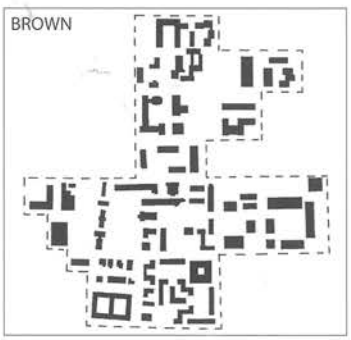
Few planning concepts are as difficult to define meaningfully and make use of as *density*. How can we achieve the kind of density that leads to interaction, vitality, and community?

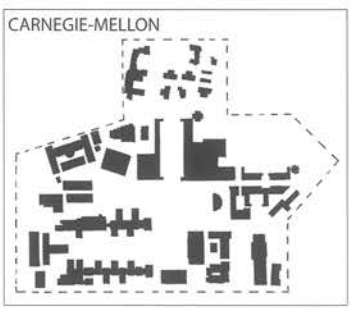
Campus Comparisons

	Building Footprint (sf)	Total Area (sf)	Total Area (acres)	Total Building Area	Total # of Buildings	Floor Area Ratio (far)	% Building Coverage
Ithaca	695,325	5,052,960	116.0	2,000,000	48	0.40	14%
Lehigh-Parker	646,880	3,898,620	89.5	2,624,080	53	0.58	17%
Lehigh-Mountaintop	289,974	3,012,669	69.2	1,014,909	9	0.34	10%
Brown	736,880	3,332,340	76.5	2,579,080	83	0.77	22%
Carnegie-Mellon	866,560	3,441,240	79.0	3,032,960	44	0.88	25%
Dartmouth	393,810	2,183,200	50.1	1,378,335	33	0.63	18%
Harvard Business School	704,176	2,571,474	59.0	2,464,616	33	0.96	27%
Harvard Yard	251,375	1,046.062	24.0	879,813	31	0.84	24%
Rice	856,245	3,778,830	86.8	2,996,858	40	0.79	23%

Traditional density metrics

In the planning field, the concept of *density* was initially applied to urban areas, not to campuses. Metrics were created in the late 1800s to provide standards for new development or renovated areas that would avoid the unsavory slum conditions, with their concomitant disease, filth, and crime, which had sprung up in industrialized cities. These metrics include the ratio of built space to land area known as Floor Area Ratio (FAR), building coverage, and people per unit of land area (typically, per square mile).[3] Although the conditions that gave rise to the need for these measurements mostly no longer exist, the concepts have become embodied in zoning and building codes in communities across America.





Building coverage, floor area and plan are typical density comparison metrics

The use of density metrics on campus is a relatively new phenomenon. Within the last ten years or so, some institutions have begun to look at FAR and other metrics mostly as a way of comparing their own campuses to others.

Metrics are not enough

Planners today generally recognize that while these metrics can be used to make comparisons and to record facts about places, by themselves they do little to predict whether one community will be more livable or vibrant than another. A high-rise laboratory building in a sea of parking may have the same density measurements as Harvard Yard, but there is no doubt which is the more collegial space.

ALEX S. MACLEAN / LANDSLIDES

Sweet Briar College:
Aerial view of existing campus and model of proposed redefined core

In fact, using density metrics in institutional planning may have unanticipated and undesirable consequences. A cap on the building coverage ratio at Sacred Heart University in Connecticut, for example, forced the institution to build residential towers to accommodate its growth needs. These towers limited activity at ground level and therefore reduced the interaction and community that the university was seeking to create through its residential-life program.

Concepts of density should not be applied uniformly across a campus. Density measurements are only meaningful as the selection of the area over which they are measured. When looking at density with an eye toward creating an active campus center, institutions should include only the core areas, excluding any surface parking, playing fields, and undeveloped land that might be at the edges or outside of the core area. Stanford University, for example, defines an "Academic Growth Boundary" within which it allows new infill construction under certain guidelines, while leaving other land undeveloped.[4] Sweet Briar College, likewise, has a densely developed fifty-acre core campus surrounded by three thousand acres of undeveloped land. Although the density of the entire campus would be so low as to resemble farmland, the core campus is walkable, vital, and surprisingly dense.

Density redefined

The measures that are generally used to quantify density, while providing ranges that may serve as guidelines, do not allow us to predict which campuses will be lively and vital places, reaping the benefits that a compact community provides. The essential aspects of density that constitute a barometer for success are proximity, centers of activity, and character of space.[5]

Proximity

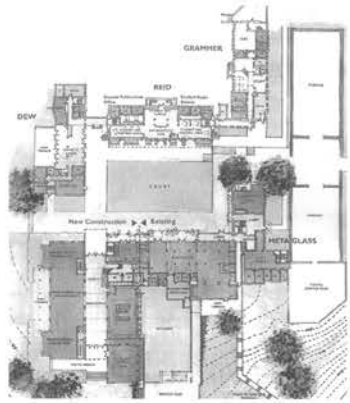
Putting buildings and uses in close proximity is a key factor for a thriving community. This proximity improves the chances that people will cross paths with other people, thus increasing the likelihood for spontaneous interaction and exchange of ideas, which are fundamental to collegiality and to interdisciplinary communication. To the extent that learning is a social activity occurring as much outside the classroom as within it, an environment that maximizes collegial encounters and exchange of ideas also maximizes learning on campus.

Different environments affect people's perception of proximity. How active or visually interesting a journey is can greatly affect our comfort with distance. The planner Christopher Alexander describes the choice of route for walking from one place to another as a subtle interaction of the shortest distance, intermediate attractions, and the destination itself.[6] Walking nine hundred feet (three typical city blocks) from a remote parking lot to a classroom can be tedious and feel unsafe, while the same distance past connected buildings, multiple entries, and visually diverse ground-level uses can seem pleasurable—and brief.

Centers

A district, even a densely developed one, should have a special place that is clearly identifiable as its center. The center may be an area that is even more densely developed than the surrounding district; it may provide important functions that draw people to it; or it may be a space of iconic significance readily identifiable as the district's heart. Under the right conditions, people begin to conduct more and more of their activities in the center, adding vitality. On campuses just as in urban centers, people are drawn to these vital areas to see and be seen, or just to enjoy the sense of activity.

The center may not be physically denser than its surrounding areas by traditional metrics, but it is the place with the maximum density of interaction of the university or district community with itself. As distance from the center increases, the density of these interactions decreases—whether the university is gradually giving way to an equally dense surrounding city or to unpopulated rolling countryside.



ROBERT COMAZZI

Sweet Briar College: Buildings and uses in close proximity create a center with special character

Character of space

Character of space describes the way in which the various attributes of a place harmonize with one another and with the physical qualities and the culture of the environment. The attributes of a place that affect the feeling of density include its degree of enclosure or openness, the distances between buildings, the quality and opaqueness of building facades, the size of the open space compared to the heights of buildings around it,

the amount of land covered by buildings or left open, and the amount of sunlight and vegetation in the space. The character of a place responds to the sensitivities of the people in the community. This response includes preserving important views and movement corridors and providing location-appropriate height limits or ratios of building height to width of open space. Every place is unique, and thus, every place has—or should have—a unique character, a quality that lets its inhabitants feel at home.

Designing the right density

Is there an objectively optimum density to ensure that an area will be beautiful, vibrant, or livable? On the surface, it would seem not. An acceptable density must be designed to take into account a number of considerations: context and of culture; the arrangement and structure of the campus's spaces; and walking distance.

Context and culture

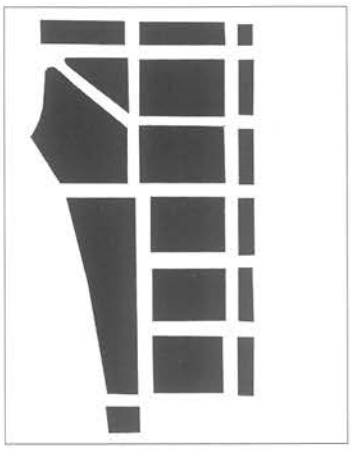
What feels like just the right density in one place may feel too spread out or too dense in another. Buildings on campuses in rural or remote suburban areas may feel comfortably close to one another at distances that in urban settings would feel distressingly undeveloped. The University of Colorado at Boulder, for example, has created a master plan that allows a maximum density in its most dense area that is about half the density of Brown University in Providence. In Iona College in New Rochelle, New York, adding infill buildings was not the issue it might have been in a more rural location. New Rochelle itself is quite dense and proximate to New York City, so the infill development didn't violate the people's sense of openness and space, and the added density seemed reasonable.

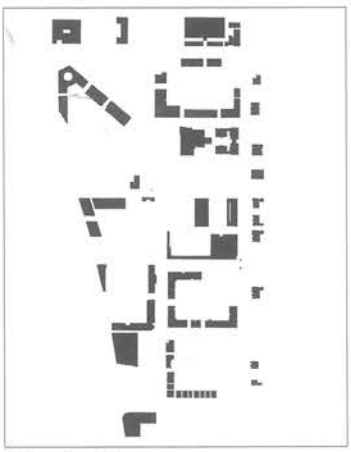
For colleges and universities located far from an urban center without the benefit of an adjacent college-town neighborhood, urban density may be inappropriate. But, in the context of the setting, planners and administrators must still take care to create on campus a level of density that maximizes meetings of students, faculty, and staff. Sweet Briar College and Hollins University are both located in rural settings but have created vitality in a compact core campus.

Where no neighboring town provides community, vitality, and activities for the students, the institution itself must create an environment that fosters them. The University of South Florida at Tampa, located in a suburban setting, has deliberately allowed a higher density on its campus to create the needed feeling of a city center on campus.

Arrangement and structure

Density works together with enclosure, green space, mixed use, and a pedestrian scale to create vital spaces on campus. The structure and pattern with which these elements are assembled over the core campus area and extend toward the neighboring functions is important. A large recreation center surrounded by a vast parking lot does not create the kind of density of use and interaction that is conducive to a rich community life. Neither does a high-rise dormitory surrounded by open parkland. All of these elements are necessary, but they work best when the parking is in human-scaled courtyards or on the street, when the green space is sheltered and surrounded by interesting functions, when the buildings relate to people's movement at ground-level, and when the functions blend one into the next over a short walking distance.





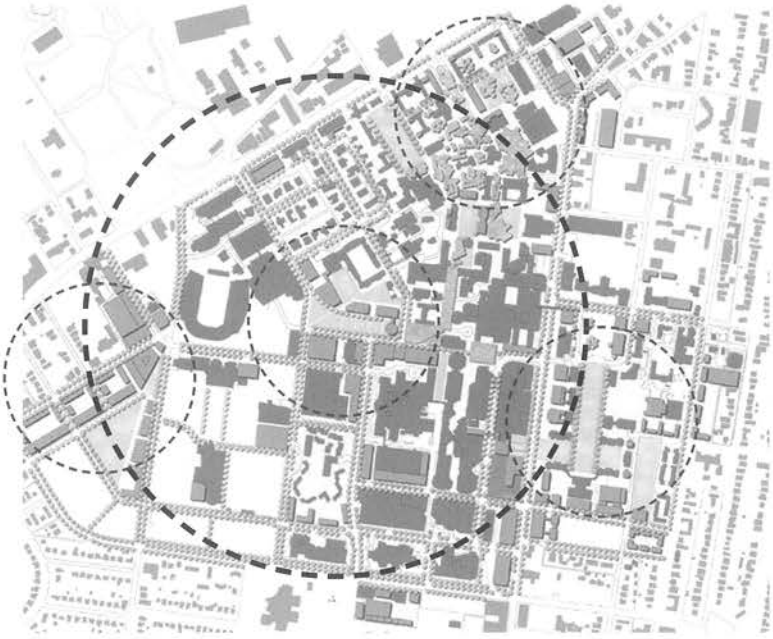
University of Scranton
Top: Master plan model
Middle: Street blocks framework
Bottom: Building framework

Walking distance

None of the metrics of physical campus density predicts the density of interaction that is conducive to collegiality, community, and learning on a particular campus, but there is an optimum size for a densely developed community. Planners increasingly rely on the idea of the ten-minute walking circle for academic uses, reflecting the time limit for changing classes. When they are not faced with a short time limit, and when the walk is pleasant, people will walk up to fifteen to twenty minutes. Urban studies have shown that beyond this point, people will tend to drive rather than walk, with concomitant need for more parking, deterioration of the environment, and reduction of the number of chance interactions while en route. On campus, some faculty members may demand two dedicated parking spaces—one near their office or lab and another by the classroom building where they teach. Students will feel the need for parking near the classrooms as well as at the residence hall. Increasing parking may start a vicious cycle that spreads even more of the campus beyond a reasonable walking distance.

As institutions increase the number of their students, faculty, and other people on campus, they need more space. The amount of space needed per hundred or thousand new students varies from one campus to another, but eventually, some growing campuses become so developed that it is no longer possible to go from one location to another in a ten-minute's walk between classes. This ten-minute class-change time equates to about 2,400 feet from desk to desk (*not* doorway to doorway). This, in turn, depending upon the characteristics of the campus, limits the core campus area to a maximum size of about fifty-five to seventy acres. Each core campus area, again depending on the building density of the institution, will serve a limited number of students, faculty, and staff. The planner

The larger circle indicates the approximate ten-minute class-change distance overlayed on the four districts at Vanderbilt University



Christopher Alexander[7] suggests that the optimum city or town community size is about 7,000 people. Many universities are larger than this. Beyond this approximate limit, institutions should consider the creation of additional core centers rather than increasing the amount of sprawl.

One major university that has about 15,000 students and a total community size of about 35,000 long ago grew from its original historic core campus area to two core areas. But it has now outgrown even two centers. The master-planning process allowed the university to balance its desire to be one community against the constraints that size imposed, and to strengthen each of its component communities to achieve a more human scale. The university has decided to move some of the functions in its overcrowded centers to new campus centers now being created. Each center will be more physically self-sustaining, providing all its community's necessary functions within a ten-minute walk.

Benefits of density

Although the density measurements may vary widely depending on culture, context, and the area under consideration, compact campus development is clearly important.

More conducive to learning

The student at Boston University burst into his Latin classroom two minutes late—as usual. The other students could set their clocks by his arrival amid a flurry of books, papers, and apologies. Red-faced and out of breath,

he had run several blocks from his music class, but he could never run fast enough to make it in just the ten-minute period between classes. He would have the same problem again when Latin ended because his next class was back in the music building. Although located in an urban, lively environment that is the envy of many schools, Boston University's campus, spread out a mile or more along Boston's Commonwealth Avenue, is itself not very compact. Resignedly, students and professors adjusted themselves to the student's habitual lateness.

This student was lucky. He had the self-confidence to show up late and a professor and classmates who tolerated his disruptive arrival with good-natured resignation. A recent study at the University of Maryland[8] showed that close to 30 percent of all students who had scheduled back-to-back classes could not get from their first class to the second within the allotted ten-minute class-change time. More than three fourths (77 percent) of the students in the survey reported a number of significant adverse impacts of this insufficiently compact campus on their ability to learn:

- Classroom disruptions as some students are forced to leave class early or arrive late
- Insufficient time for some students (39 percent) to finish exams in class
- Inability or unwillingness of a significant percentage (11 percent) of students to attend class at all
- Limitation of student contact with faculty (and each other) before or after class
- Disproportionate impact on freshmen, probably affecting the university's retention rate

The problem, once identified, was troublingly hard to fix. The obvious solution—modifying the class-change time from ten to fifteen minutes—was (according to university sources) too costly, requiring reprogramming of the university's course registration system. Other changes in schedule or building location were either difficult or controversial. In the end, all the university could do was to issue a warning to students who attempted to schedule back-to-back classes with too-long walk times and to plan to study the effect of this change again. With a more dense campus, the issue might never have arisen in the first place.

Given the changing nature of academic teaching and learning styles and the softening of disciplinary boundaries, flexibility in the academic core is becoming a requirement on more and more campuses. Greater density, by improving the closeness of buildings and departments, helps to provide that needed flexibility.

Community

A compact environment increases the number of unique moments when one person crosses paths with another and has a possibility of interaction. They may smile and say hello; they may stop for a chat; or they may just be aware of each other's presence. These intersections allow people the opportunity to communicate, to exchange goods, services, and ideas, or just to see and be seen. This simple contact generates vitality in the space and encourages people to spend time, making more intersections possible, leading to more contact, generating more vitality and more desire to be there, and so on. In a densely built and lively community, people are more likely to run into one another than in a spread-out one. Creating the right kind of density is all about creating human intersections—and intersections and the collegiality they generate are at the heart of community on campus.

A sense of place and a place for everyone

Suburban-style campuses are the ones where the authors hear the most complaints about isolation and lack of community, about a need for more interdisciplinary communication and more interaction among students and faculty. There is no sense of the whole. A common complaint from students on large, sprawling campuses is, "I feel like a tiny ant here. I can't connect to this place."

Small sprawling campuses in rural settings can be unattractive to prospective students precisely because of this feeling of isolation. "There was nothing there," said one prospective student who visited Hampshire College in rural Massachusetts. "It was too spread out for how small it was."

Our colleges and universities have dense roots—many of our oldest campuses started in one building (e.g., Brown, Princeton, and Harvard Universities) or in one small cluster of buildings. Densely built campuses still tend to be oriented around one or more recognizable centers full of people and activities. There is definitely *something* there.

Freedom from the automobile

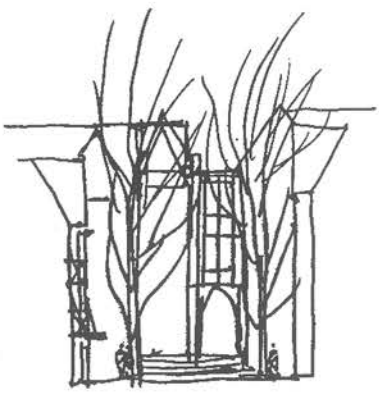
Given an equal (and not too great) distance, people are more willing to walk when the way to their destination is full of interesting sights and other people they might meet. They are also more willing to walk if the pedestrian way is clearly laid out. Walking promotes health as well as neighborly interaction. In less dense settings, with nothing of interest between the trip's origin and destination, people are more likely to drive. One person recalls with pleasure his walks to the store to get milk when he lived in a teeming urban neighborhood. Now a suburbanite, he drives to the nearest store—and is surprised to discover that the distance is the same as it was in his old neighborhood.

Safety

The more spread out a campus is, the less safe people feel. Roadways, paths, and parking lots that are not bordered by buildings are harder for people to keep an eye on. Conversely, areas surrounded by occupied buildings and areas where people are out and about feel much safer. People also feel safer when they can see the path leading to where they are going, when it is not isolated, and when other people are visible along the way.

Efficiency

The close proximity of buildings in a dense environment increases operating efficiency. Buildings placed close together can create microclimates that positively affect energy usage. They can afford protection from the hot summer sun by creating adjacent shade, thus cooling both interior and exterior environments. In the winter, the same buildings can store and capture warmth or shield from winter wind.



Initial sketch for the University of Scranton residential quadrangle envisioned a tight and efficient grouping of buildings

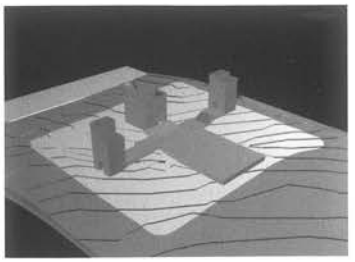
The initial infrastructure cost of bringing utilities (including heating, water, electricity, telephone, and computer cabling) to support a new building can be well over $1000 per linear foot. This initial cost is minimized by proximity, as is the long-term efficiency of operating and maintaining these utility systems.

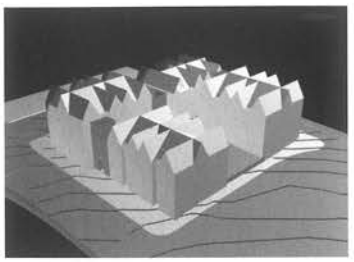
Dispersal forces people to drive, either through distance or through preference, thereby increasing construction and maintenance costs of additional roadways, parking, and other transportation infrastructure. Grouping buildings together can minimize street and walkway length to serve those buildings. On a more dense campus area, a smaller percentage of the land is required for roadways and parking. The average initial construction cost of a two-lane street, including street surface, pedestrian walkways, curb, and lighting can be $550 to $625 per linear foot, and this additional roadway must be maintained. In addition, buildings placed too far apart require additional parking, which can run from $2,000 to over $14,000 per space. Additional maintenance costs incurred when buildings are built far apart includes installation and maintenance of lawn and other landscaped areas, and perhaps the need to provide additional security.

Better land utilization, preserving options for the future

Infill buildings can often serve multiple functions. They provide more than just dormitory beds or space for classes. Properly situated and designed, they can also help frame and structure the spaces of the campus.

On campuses with sufficient land, densely building the core area can preserve the natural environment much more effectively than spreading out the buildings over all the available land.





Infill along primary pedestrian paths at the University of Scranton provides an opportunity to create a rich residential environment

Although some facilities administrators feel that they are preserving options for the future by spreading out campus development, the opposite is true. More options are available—at less cost—for unbuilt land than for land already occupied by scattered buildings, parking, and roadways.

Actions for optimizing density on campus

We need to stop shying away from density on our campuses. It offers far too many advantages for enhancing learning, community, and collegiality. The right degree of compactness for a particular campus or part of a campus depends on many factors, including environmental context, topography, climate, and culture. For its unique situation, each institution should strive to develop an appropriate *degree* and *quality* of density to foster contact, community, and interaction on campus. To meet this challenge, institutions must use a process involving guidelines, careful design, and campus community input.

- *Establish campus guidelines and principles for appropriate density.* Visualizing in three dimensions, using tools such as models and renderings, is crucial; plans alone are not enough. Traditional measures, such as Floor Area Ratios, by themselves are not enough. In response to a commitment to a walking range, together with the "feel" of a place appropriate to the location, region, and character of the campus, institutions can begin to establish their own metrics for FAR, building coverage, height, massing, and other qualities that can guide future development.

- *Ensure vitality in the heart of the campus.* Institutions should find ways to capitalize and expand upon the often-stunning assets of the iconic campus core. Buildings and open spaces in the core should be restored and well maintained. New buildings may be added—respectfully. Uses should be selected for these areas that bring people to them during a large portion of the day.

- *Look for opportunities to infill within the existing built campus framework to enhance proximity, intensity of use, sense of place, and vitality.* Infill development should capitalize on existing major pedestrian corridors and open space.

- *Repair existing undefined districts.* Poor planning of the past can be repaired. Institutions should identify the strong features of existing favored districts and emulate them in the weaker districts, avoiding copying style but instead replicating density, open space definition, and mixture of uses.

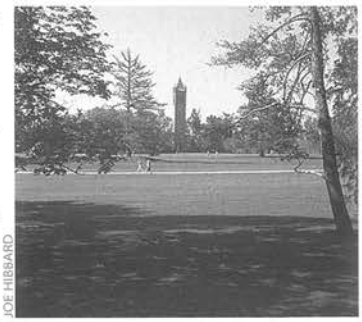
- *Create new campus districts when needed.* Campuses occupying an area that is more than a ten- or fifteen-minute walk across may require division into two or more individual campus districts. Each district should have a compact plan with a clear identity and an iconic space. Its center should enhance vitality and provide intensity of use all day long.

- *Envision large campus programs such as recreation, performance, and student centers as groups of buildings rather than as single, massive buildings.* By planning these large uses as if they were small districts of independent but linked buildings, institutions can weave them into the existing fabric of the campus around usable courtyards and other spaces.

- *Respect community density values.* Every campus is unique. Those developing and approving long-range campus plans must sense and respect their own comfort levels about density, but they should also be open to change. They should study local densities carefully and should understand the densities of some of the college and university districts and college towns that they cherish.

- *Balance density issues carefully.* The planning process must reach an equilibrium between the community's desire for proximate parking, for preserving green space, beloved vistas, and a sense of openness, and for respecting site conditions on the one hand; and on the other, its need for better academic adjacencies, greater community and vitality, and cost-effective use of resources.

Many American college and university campuses have become distinctly un-collegiate places. To become more collegiate and vital places, most of these campuses must develop centers that are more compact and dense with human interactions. The campus can serve as a model of the collegiate excellence, cultural richness, physical benefits, and fiscal common sense that density can provide.



JOE HIBBARD

Top: The main quadrangle at Iowa State University offers tremendous potential to add vitality through infill
Middle and bottom: The campus center at the University of Scranton is designed as a grouping of smaller buildings

ALEX S. MACLEAN / LANDSLIDES

ten

A Mixture of Campus Uses

One main goal for creating or updating a campus master plan is to address a perceived lack of collegiality and community on the campus. Campuses lacking a sense of community are often zoned with discreet areas for academic, residential, recreational, and other uses—a separation that can have serious adverse effects on campus collegiality and community.

> The district...must serve more than one primary function; preferably more than two. These must insure the presence of people who go outdoors on different schedules and are in the place for different purposes, but who are able to use many facilities in common.[1]
>
> - JANE JACOBS

What is mixed use?

A vital and diverse campus. This fundamental aspiration of today's institutional leaders was also the aspiration of the early campus founders who espoused the ideal of the living and learning campus. The founders envisioned a collegiate place where seeing colleagues—fellow student and professor alike—was a common event. Because of this, the university promoted the exchange of ideas vital to the educational mission. It made possible the meeting of individuals from diverse backgrounds, and created some of the students' most enduring personal relationships. This was accomplished at early colleges and universities in part by mixing many campus uses together in one compact district or even in a single building. Sadly, many of today's campuses have—perhaps inadvertently—moved far from the living and learning ideal of our earliest campus environments.

A college or university requires multiple activities to accomplish its mission. These activities collectively comprise the uses of the campus's various buildings and facilities. On campuses, the major categories of uses are academic; research; residential; offices and support services (such as the physical plant, storage, and printing facilities); sports and recreation; student services (including coffee shops, dining, bookstores, movies, and extracurricular organizations); and parking. Physically mingling these uses within a single building or in a group of buildings arranged in such a way that they utilize common spaces collectively over an extended period of time is known as *mixed use.*

The mall at Texas State University
Top: A quiet time between classes
Bottom: Class change time

Use patterns

To achieve the community interaction that institutions want, the various uses have to be close enough together so that people can move easily from one to another. Jane Jacobs's observation about cities is also true of campuses: They fail when they do not respond appropriately to the hour-by-hour patterns of individual activities. When the uses are separated, some parts of the campus are intensely active at some times of the day—and decidedly inactive the rest.

The academic district

If academic use is exclusive to a district, then institutions will tend to have a pattern of use that is active only during the hours when classes are scheduled. At traditional residential institutions, the academic district is particularly busy during the heavily scheduled times from 10 A.M. to 2 P.M. By late afternoon, the district can be dead because students have moved on to other activities such as clubs, sports, homework and lab work, and dinner. Some of the more lively campus academic districts are the ones that have expanded to encompass residential or community-oriented uses, or where the academic district is also used for evening classes or community education during non-peak hours. Housing that is adjacent to the campus core, or that over time has become surrounded by academic buildings, is usually among the most desirable housing on campus, and on nights and weekends it brings to the academic district activity that is valued by the entire campus community.

Changes in academic pedagogy, including more group work and student-directed learning, and changes in student study patterns demand a new look at learning environments. The access that students need to computers, to group study areas, and to informal study spaces can be provided most effectively by an environment that combines these uses in buildings and spaces with easy access to food service. The study patterns of today's students almost demand a mixed-use environment. This mixture of uses can also benefit the institution, enlivening the academic district during off-peak hours.

Increased emphasis on involving undergraduates in research and on mixed graduate/undergraduate programs also suggests new building use patterns, as classrooms and research labs may have to be located closer together. In addition, institutions may want to consider other changes that create opportunities for these two populations to interact. For example, in its new master plan, Hollins University relocated the graduate studies program from a facility outside the academic core into a renovated and expanded space in the core of the campus to make it more visible and accessible to undergraduate students.

Research laboratories

Because the often-intense nature of the work requires ideally almost twenty-four-hour access to these facilities, mixing research and teaching laboratories in with classrooms activates the academic part of the campus during hours outside normal class time. Also, professors typically prefer to have their research laboratories next to their offices, in the academic center of the campus. Today, however, these laboratories are often moved to the campus perimeter because of the need to build more classrooms within the ten-minute class time change of the academic core. Research investment by government and large private corporations, with concomitant security requirements, also tends to isolate the research function. Removing research from the core areas of the campus, however, has had the unfortunate result of removing graduate students and some of the star teachers themselves from the campus core, to the detriment of the entire community.

Research laboratories are tightly linked with offices and administration on the new Mayo Clinic campus in Phoenix, Arizona

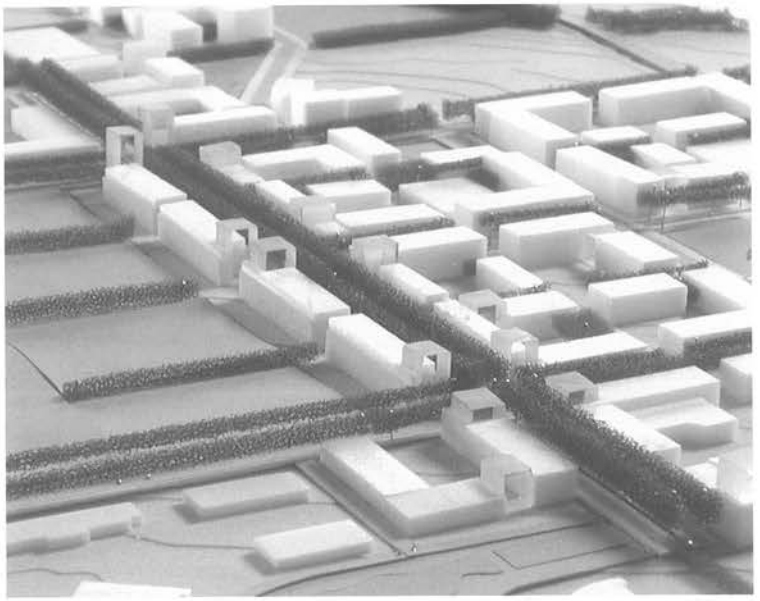
The scale of the required architecture also separates research from other campus functions, even when it is located near them. Research laboratory buildings are typically much larger than traditional academic campus buildings. Many times, students and professors are not the only workers in these facilities. A private work force demanding its own parking and facilities creates an environment much like a suburban office park—automobile-dominated, single-use districts. Examples of this phenomenon are Princeton Forrestal Center, the Research Triangle of North Carolina, and the University of Utah Research Campus.

Ironically, this sort of isolation inhibits the very nature of research. Many of the greatest breakthroughs in science occur in the interstices between disciplines. Bringing researchers from different departments together is increasingly important. One way to do this, even if the research campus

JAMES FOOTE, TOOMBS DEVELOPMENT CO.

Mixed-use village center at Princeton Forrestal research campus

The new research campus at Utah State University envisions a mixed-use environment to complement the research facilities



is separated from the rest of the university, is to mix the departments (respecting the requirements for specific types of labs and facilities). If for proprietary reasons this is not possible, another method is to provide common campus functions that can be shared by all research departments. A number of research facilities can be organized around a common courtyard, sharing a cafeteria or café, administration facilities, and so on, as planned in the new campus for the Mayo Clinic in Phoenix, Arizona and the Innovation Campus at Utah State University in Logan, Utah. As populations in these research areas rise, the need for support facilities, such as copy centers and cafés, increases so that the researchers don't have to leave the campus to find a meal or run an errand. Further adding to the vitality of the area would be a conference center, inn, or hotel (with associated restaurants) to support visiting researchers and visitors from private corporations.

But why remove these facilities from the main campus at all? In many cases, research facilities might be built at the edges of the original campus, where access by outside workers is convenient, the required parking can be provided, and administrative support can be shared. In addition, faculty, graduate students, and others using the research laboratories can have access to the many facilities available on campus. Graduate housing is generally not in the core campus, but in peripheral areas. Graduate research laboratories at the edge of the campus can be located conveniently close to this housing, which might in turn blend into a residential neighborhood beyond.

Residence halls

After World War II, new residential districts, separate from the academic functions, were created on most campuses. This change paralleled the creation of residential suburbs and "bedroom communities" in American cities. Urban planners have re-learned since then that residential life closely intertwined with other activities (offices, retail, and entertainment) ensures not only the vitality but also the economic success of cities and towns. The same is true on campus.

Many institutions not only separate the residential use from other uses, but they also separate student class years from one another. First-year students in particular are often segregated into separate residence halls to ensure that they meet one another, establishing class unity and class recognition. Administrators in university development departments often cite these factors as key in fostering a long-term relationship beyond graduation and in alumni giving to the institution. While acknowledging the reasons for class segregation, how can institutions encourage interaction and learning from older peers, graduate students, and professors? In addition to mixing residential and academic uses, institutions can also mix student class years and professors in the same residence hall. This is the hallmark of the residential-college system, where professors and students of all ages live, eat, and study together, forming lasting friendships with one another and intense bonds with the institution.

The residential-college approach is gaining adherents among many leading institutions. Vanderbilt University, which historically created residence halls segregated by year and housing type, is in 2003 in the process of restructuring its residential-life program into a number of small residential colleges. The university is retooling existing facilities to accommodate professors and their families as well as undergraduate first-year and upper-division students. At Loyola Marymount University in Los Angeles, even the president lives in an apartment in one of the student residence halls.

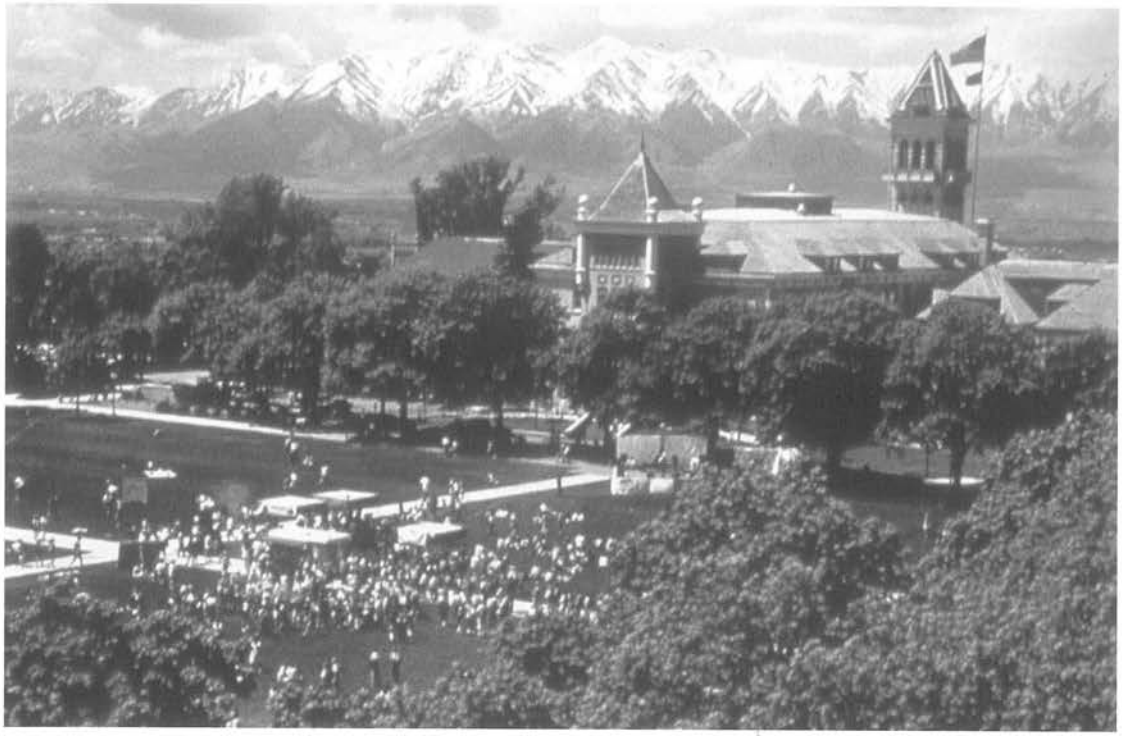
Living/learning communities are also gaining institutional interest. By locating classrooms and other study areas within a residence hall, an institution can provide facilities for educational programs of particular relevance to the students who live there. It can also use these facilities to draw others in. The University of North Texas, for example, plans to use classrooms in one of its residence halls for class meetings of distance- and hybrid-education students who do not live on campus.

Many suburban residential communities are essentially segregated by wealth. The same segregation also occurs in campus residential life when more money is charged for more desirable housing. Utah State University is mixing highly desirable singles as well as doubles and triples on one floor, so that the different costs of these room types does not segregate the students from one another, either by wealth or by their year at the university.

Offices and support services

Professors generally like to have their offices near a majority of their classrooms. But cross-disciplinary contact requires that the offices and classrooms of one department not be isolated. To improve interdepartmental communication, the offices of several departments should be mixed together or adjacent. Common functions, such as a coffee lounge, administrative assistant and graduate offices, library, and copying area, should be provided in areas shared among departments to efficiently use services and space and—more importantly—to facilitate the exchange of ideas among individuals and departments.

In many institutions, administrative offices are the first use removed from the center of the campus when space is short. This approach is reasonable but may not always be the best. Often, when this is done, administrators feel isolated from the students they serve. The camaraderie of being part of one place is lost, and the student perception of a faceless bureaucracy is increased. In addition, when the institutional offices are isolated from the core campus, the administrative part of the campus (whole groups of buildings in large universities) tends to go dead after 5 P.M. and on weekends, when the administrative staff is not there. This issue is shared by downtowns that are dominated by office use. The solution is the same as well. Mixing offices in with other uses benefits all.

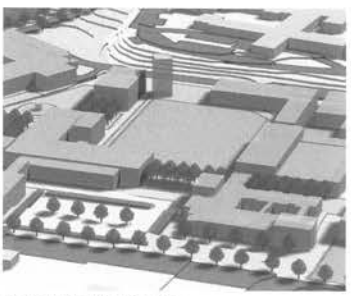


The main quadrangle at Utah State University provides fields for intramural sports programs

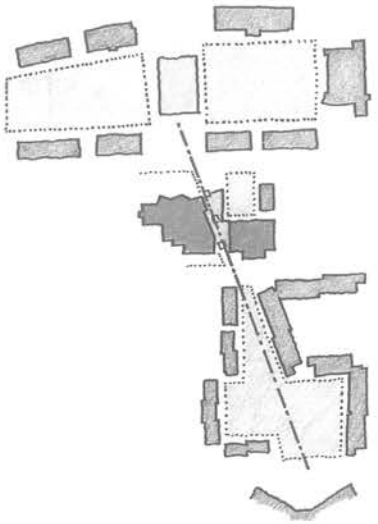
Sports and recreation use

Sports and recreation are typically isolated from the main part of the campus, in part because of the large amount of land needed. Historically, however, many schools have had sports and recreation integrated into the hearts of their campuses. The central green of Wesleyan University in Connecticut, for example, is a playing field. Lehigh University once had—and Rensselaer Polytechnic Institute still does have—the football field in the heart of the campus. Utah State University's stunning main quadrangle also serves as a primary intramural field, creating a place of great vitality after the academic day winds down—from about 3 P.M. until nightfall.

Sacred Heart University, historically a commuter school with limited land resources, is adding intramural activities to the main quadrangle of the campus, surrounded by academic, library, and chapel, to encourage students to stay on campus after class. This change will benefit the center district of the campus as well as the intramural program itself with increased attendance and participation.



Sacred Heart University: Proposed new quadrangle



RICHARD MENDELKORN STUDIO

RICHARD MENDELKORN STUDIO

Merrimack College has mixed the uses of a campus center and a student recreation center in a single building

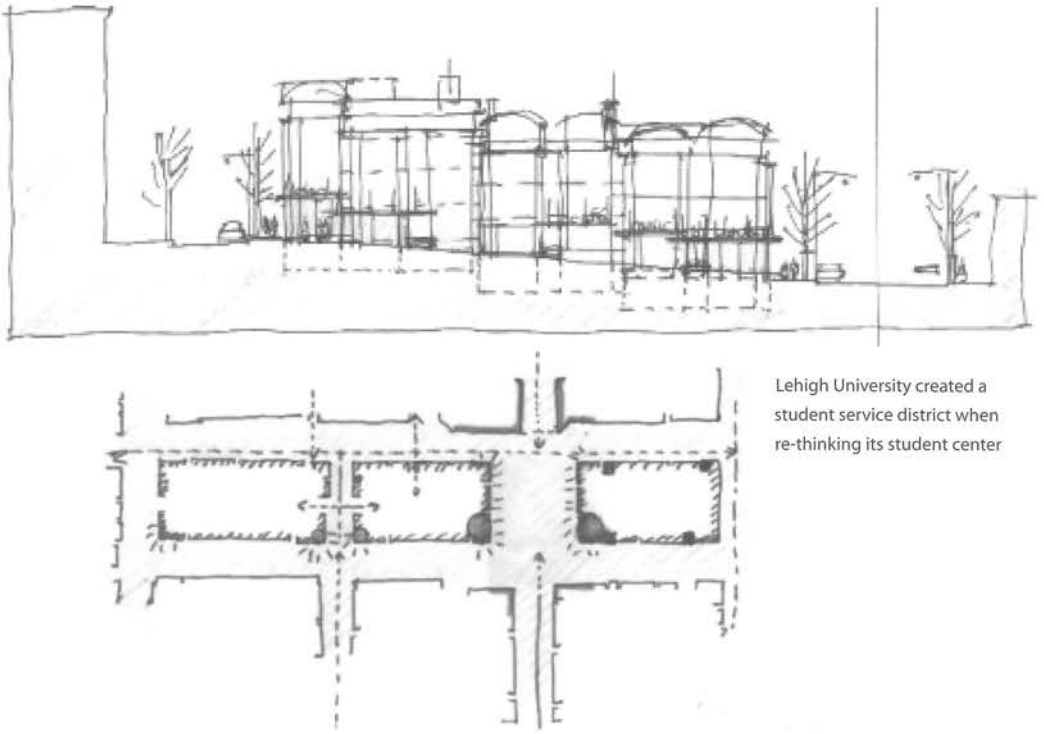
Merrimack College has mixed the uses of a campus center and a student recreation center in a single building. The building was designed to allow these activities to be seen either while walking the central street of the building interior or when participating in either activity. Students can sip coffee at a café and watch their peers playing basketball or exercising. Even more dramatically, large areas of glass on the building perimeter allow these activities to be seen from outside the building, acting as a great beacon for the center of campus.

Student services

The student or campus center is a modern manifestation. It provides a number of functions needed for student life and shares a number of attributes with commercial shopping malls. The functions within the student center are conveniently close to one another and protected against the weather. The center also provides an important venue in which students can see and be seen. It also shares some of the mall's weaknesses. By isolating its functions from others on the campus, a student center can, ironically, contribute to lack of community on the campus as a whole. The inwardly oriented student center at George Mason University was so successful that community and activity suffered on the rest of the campus. Like a shopping mall, it provides many functions that students want—library, café, bookstore, mailroom, bank machine, and so on—all within one building. And like a mall, the functions face inward. Large, inactive walls and undefined grass strips face the neighboring parts of the campus; the intensity and activity within the building does not spill outward to invigorate the rest of the campus.

Other alternatives exist. Today's mixed-use market centers, like public squares and business streets, provide people with the shopping benefits of proximity and variety. Market centers also provide a wealth of activities that people seek in addition to shopping, such as restaurants and cafés, post offices, printing services, and banking. This model has been applied successfully on several campuses. Sweet Briar College combined several separated campus functions such as student organizations, dining, café, financial offices, and bookstore, and arranged these uses in "storefronts" surrounding an exterior square. Above most of these uses are residence halls, which ensure activity in and around the square eighteen hours a day. In addition to creating a lively campus center, this idea highlighted sustainable building practices and reduced cost by combining new construction with reuse of underutilized existing space.

Institutions embedded in lively campus neighborhoods can take advantage of their proximity to the neighborhood, and in fact can strengthen this connection, by moving many of the campus student-service uses to the public street. For example, Brown University's bookstore is located

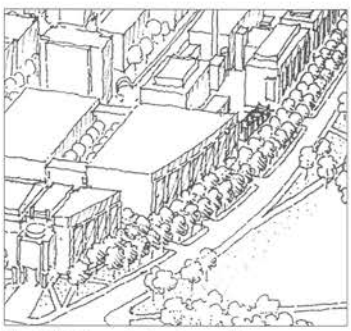


Lehigh University created a student service district when re-thinking its student center

on Thayer Street, a lively adjacent commercial street. In fact, some dormitories are built with shops facing Thayer Street on the first floor. The bookstore for Wesleyan University is on Main Street in Middletown, Connecticut. Lehigh University has moved its bookstore, as well as several other services and shops from the center of campus, to the campus perimeter with the adjacent South Bethlehem retail district. Above and adjacent to these uses, they have added residential uses in order to strengthen this new neighborhood edge—to the benefit both of campus life and the adjacent retail district.

Parking use

Everyone wants to park at the front door of his or her destination. Creating large parking lots in the center of the campus, however, can overwhelm other uses, creating a barren and hostile-feeling space. To retain a mixture of uses in the campus center, structured parking can be provided. Although it is generally seen as a desirable solution, structured parking is four times more expensive than surface parking. Further, structured parking alone does not fully address the need for mixed uses in the campus core because parking garages typically lack active uses at the ground floor. Both the cost of the garage structure and the lack of activity at its edge can be addressed at the same time. Ohio State University and other institutions have activated the ground floor of parking structures by adding uses such as cafés, book stores, print shops, and so on. These uses generate revenue



The Ohio State University parking structures with café and bookstore at street level

to augment the fees from parking. By placing the parking structure in a location convenient to facilities that attract the general public, such as sports, arts, entertainment, or conference facilities, an institution can both generate additional revenue from the parking structure and enhance the activity in nearby spaces. Building residences around the perimeter of the garage, as Lehigh University has done, generates revenue, activates the garage perimeter with twenty-four-hour residential use, and provides residences that are highly desirable to students, who will often pay more to have their cars close to where they live.

Factors working against mixed use

In most eighteenth- and nineteenth-century colleges, all the uses occurred in close proximity, if not in the same building. Few American campuses today still use this model. Instead, paralleling the general urban-development trends since World War II, we have drifted to a model where the functions are spread out. Research stands in isolated enclaves. Academic buildings are located in one area and residence halls in another. Where private developers have built campus housing, these residential buildings may in fact be located off campus, often not even within walking distance.

Several factors have undermined the ideal of the living and learning campus and have led to our present condition:

- Desire for organizational clarity
- Academic competition and the drive for program identity
- Separate ownership of facilities

Desire for organizational clarity

Many people on campuses where functions are dispersed and separated from one another find this model of development clear, organized, and attractive. From the perspective of a facilities manager, the costs and revenues of each use can be clearly understood and managed. Ironically, dispersing these uses usually creates physical inefficiencies with concomitant increased cost of construction, operation and maintenance.

Academic competition and the drive for program identity

The desire for a separate program identity can sometimes drive one department or school to establish its location apart from the mixed districts of the central campus. These separate enclaves of individual programs stifle interaction among academic peers. They tend to be marked by underutilized teaching space while other campus programs scramble for such space; and they promote the use of cars to travel back and forth from the core campus.

Academic competition, too, has contributed to the isolation of campus uses from one another. A competitive spirit can encourage innovation and new ideas. But when competition arises not only among peer institutions but among academic units of the *same* institution, it can go too far. Seeking to differentiate themselves from their peers at other schools and to attract the best students, academic departments feel they must offer the best facilities. To afford those facilities, departments compete for donor gifts. Gifts given to one school become the property of that school rather than of the institution as a whole; and the school uses the money to further its own priorities rather than institutional priorities, perhaps building new academic facilities without the vital mix of campus uses and departments common to the original campus districts or buildings. The need for proximate housing on campus, for recreation, for food, for places to "hang out" is seen as someone else's problem—a problem that often seems to lack money to create a solution. What is best for the institution becomes second to the goals of the individual school or administrative unit.

The Darden School for Business at the University of Virginia received a large gift, which it used to move its academic functions from the main area of the campus to a remote area accessible mainly by automobile or shuttle bus. No housing was created in this new district, which is, not surprisingly, quiet outside of classroom hours. If it wants to enliven this district, the university will need to add residential housing and other uses, in effect creating another campus center for the business school.

Separate ownership of facilities

On many campuses, an individual department may "own" a building or facility, taking it out of the pool for university-wide use. When classrooms, labs, and common spaces become the property of a particular department rather than a common asset shared by the entire institution, the excellent facilities within one school may have extremely low utilization while other academic units of the same institution deal with overcrowding or physically inadequate space. This inefficiency not only leads to building and maintaining excessive academic space, but also creates barriers to interdepartmental study and cross-fertilization. At Ithaca College, the constituencies that felt most deprived by the School of Music's singular ownership of its building were the students and younger professors of the school itself. They would have enjoyed opportunities to run into more of their peers from other schools more of the time. In this case, mixing academic uses among a variety of departments in the one building would have been an improvement for all departments.

UNIVERSITY RELATIONS, TEXAS A&M UNIVERSITY

Active pedestrian paths of Texas A&M University

Benefits of mixed use

The social, academic, and fiscal benefits of mixing campus uses include:

- Increased collegiality and community
- Enhanced learning
- Safety
- Competitive admissions
- Flexibility for growth

Each of these is discussed below.

Increased collegiality and community

Perhaps the most positive aspect of mixed use is an increase in the potential for greater interaction on campus and the feeling of community that this interaction engenders. Bringing diverse uses in close proximity increases the number of people present in an area as well as the amount of time they are likely to be there. This, in turn, improves the probability that their paths will cross. The more that people's paths cross and intersect, the more a campus—or a town—feels like a community and a place to be cherished.

Enhanced learning

Numerous sources[2] cite studies showing that academic performance is improved when students live near their classes. Some institutions have had success in putting classrooms into the student residence halls, creating living-learning communities. Residential college systems mixing undergraduates, graduate students, and professors of an institution stimulate students and professors alike and provide the opportunity for continuous learning and discussion of ideas outside the classroom.

Safety

Single-use districts, whether academic, residential, or recreational, are unoccupied for large portions of the day or night. Vacant and deserted, they contribute to the perception, if not the reality, of a lack of campus safety.

Mixing uses improves both the reality and perception of campus safety by activating campus districts around the schedules and patterns of campus activities throughout the entire day. It capitalizes on these normal patterns of activity to put people in contact with one another because they have reason to be there—whether working, teaching, studying, or relaxing.

Competitive admissions

A less obvious benefit to the ongoing activity of a mixed-use environment is its attractiveness to prospective students and parents. The campus that looks lively, collegial, and safe makes a powerful first impression on a campus tour.

Flexibility for growth

Some institutions resist mixing uses on their campuses because they fear that doing so would rob them of needed flexibility for the future. This apprehension typically arises when discussing putting residential uses among the academic ones. These institutions are concerned that mixing these uses would leave less room for the academic facilities they will need in the future. Though the core of academic facilities should be within walking distance of one another during the ten-minute class change time, ample room is often available to insert appropriately sized enclaves of residential use among academic and administrative uses. Many times this proximity has the added advantage of overcoming students' perceived need to have their automobiles on campus.

Housing near the academic and administrative areas of the older core campus, unlike housing developed on the campus periphery, often has the added benefit of also being near the most beautiful and sacred areas on campus. This location is frequently the most treasured by the students who have a chance to live there. An extreme example of this—though far from the only one—is the University of Virginia, where students vie for a chance to live in Jefferson's "academical village" even though they suffer a long outdoor trek to the bathrooms.

Where larger campuses encompass multiple districts beyond the core academic area, like Ohio State University and Vanderbilt University, these campuses should have a balance of uses and identifiable centers in *each district.* Research districts for example, should have a complement of housing, open space, food service, convenience, and other uses, thus choreographing the various usage patterns into an attractive liveliness in the district for the entire day.

Initiatives to promote the mixed-use campus

Even institutions with highly dispersed, use-separated campuses can take steps, both immediately and over time, to attain the vibrant feel of a mixed-use campus. Every campus planning or building-programming project provides an opportunity. Individual institutions may find many other opportunities as well when considering space allocation, departmental priorities, capital allocations, or other topics.

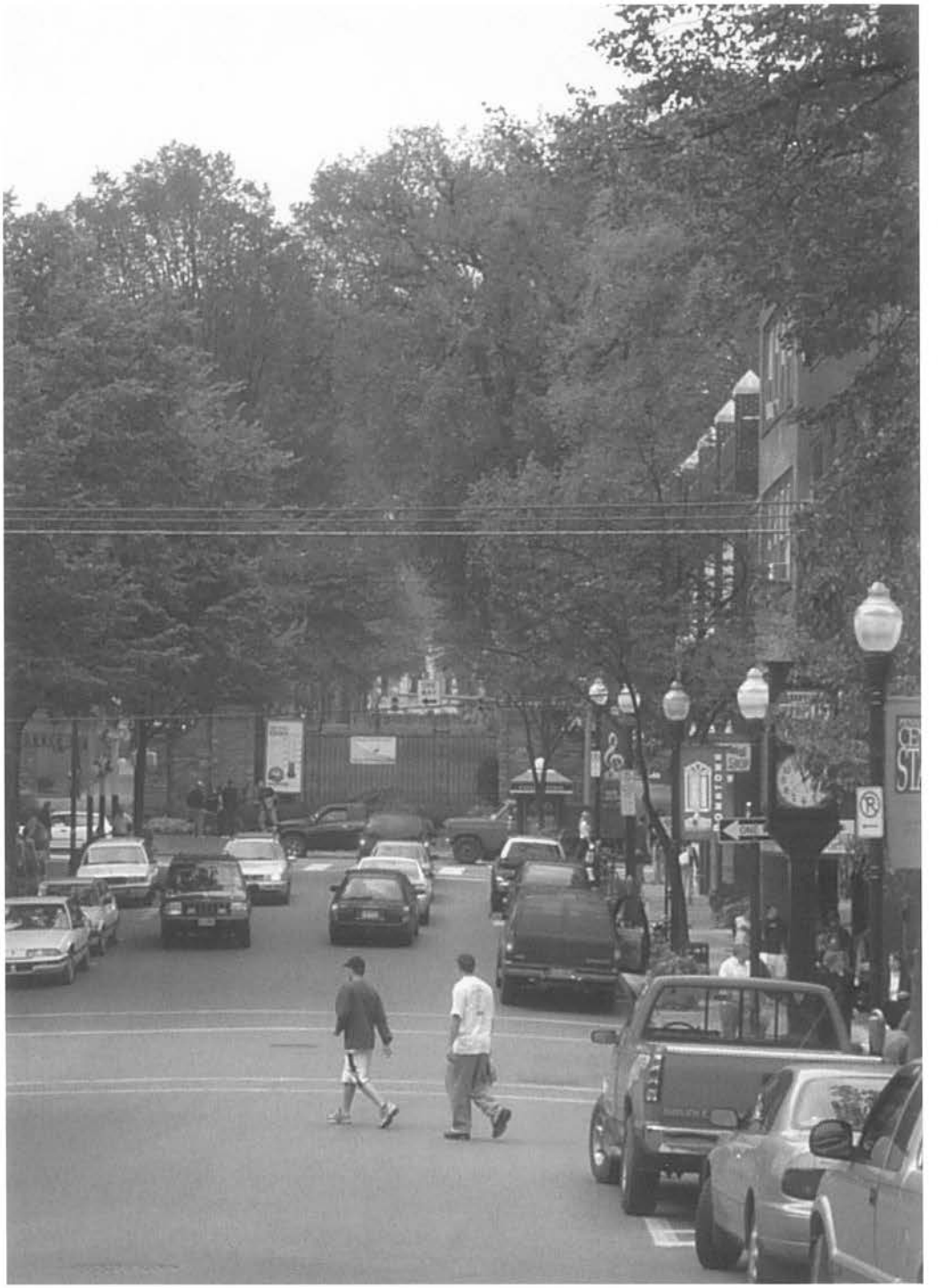
When the situation arises, institutions should seek opportunities to mix uses within *individual buildings* whenever possible. This can include:

- Intermingling similar functions, such as offices or classrooms, of different departments and schools of the institution
- Incorporating residential use above social uses such as student organizations and cafés
- Placing synergistic uses, such as recreation and a campus center, or a library and a campus center, near one another

In addition to uses within single buildings, institutions should search for opportunities for *fine-grain mixing* of uses among buildings within the campus district. Academic, residential, administration, support, cafés, open space, and parking uses should be mixed in the appropriate proportion to one another. The goal is to orchestrate the patterns of usage so that it will enliven the district, create opportunities for the intersection of people and their ideas, and create a self-sufficient and efficient use of land and building resources.

Instead of dispersing functions, larger universities should create *multiple campus districts* with the attributes described above when the campus population is too large for a single district. Campus districts, like neighborhoods in cities and towns, should be no larger than two thousand feet across, the distance one can walk in approximately ten to fifteen minutes. Open space or streets should form strong connections between these districts. Each district should have an identifiable anchor or center of common activity and support, which would ideally draw not only district residents and users but also users from other districts.

Colleges and universities that are located within a city or town should create edges or other campus areas where campus constituents and outside community residents can mix. Either on the campus edge or within a district, institutions should consider incorporating residential, commercial, market, food and entertainment uses that draw a diversity of constituents and enliven the area for the greater part of the day.



Penn State University commercial district is adjacent to main entrance to campus

eleven

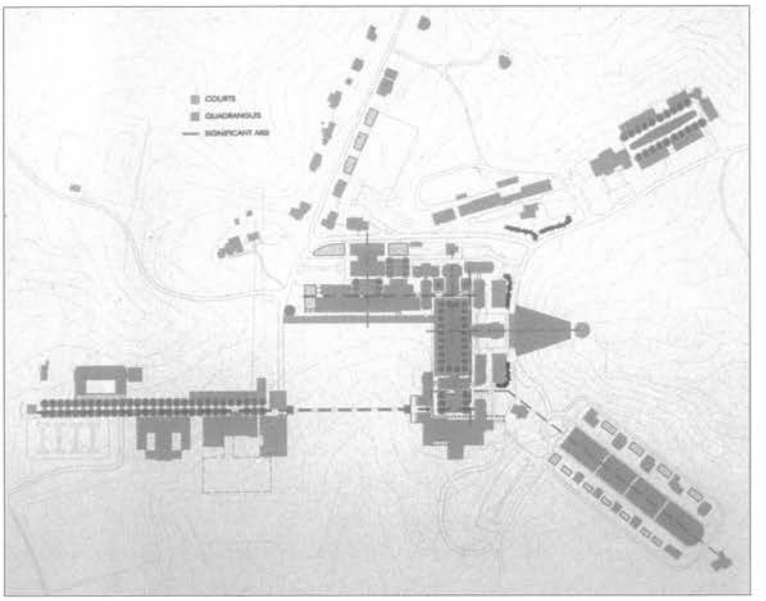
Landscape

If the plan orders the ideas and aspirations of the institution, the landscape expresses its soul and personality. One of the fundamental ways an institution can distinguish itself is through the development of a coherent and consistent landscape. People are attracted to unique places—places that resonate with the personality of the region they inhabit, that are dynamic and enduring. An inspired and well-implemented landscape establishes the campus's overall character and beauty, shapes the campus plan, and provides the campus with a sense of unity. It expresses how the institution belongs to a location, and at its best can also be a provocative and artful expression of its culture.

The transformative potential of a powerful landscape idea is rarely identified and utilized. Many of our campus landscapes today lack boldness, unity, and clarity. Solutions more often than not occur as a series of independent, unrelated measures taken on a project-by-project basis, damaging or destroying the unity of the campus. Numbers of well-meant unrelated donor gifts add pressure on some institutions to undertake various unrelated projects on their campuses. When Sasaki Associates first started working with Ohio State University, for example, the facilities staff had undertaken a large number of small, unrelated projects in different parts of the campus. While each project was pleasant, the overall effect was to diminish the unity of the campus. As one landscape architect put it, the campus as a whole "was dying of a thousand little paper cuts." When thinking about the landscape of the campus, it is critical to think holistically.

> The occasional contemplation of natural scenes of an impressive character...is favorable to the health and vigor of men and especially to the health and vigor of their intellect beyond any other conditions which can be offered them....[1]
>
> - FREDERICK LAW OLMSTED

The landscape master plan for Sweet Briar College utilizes a prominent campus dell as an ampitheater



Role of the landscape

A well-ordered landscape structures and reinforces the big idea in the campus plan; defines the campus's outdoor spaces; provides, through pedestrian and vehicular circulation, effective means for movement of people, automobiles, and goods; expresses the institution's roots in its site and region; and expresses the institution's unique culture and identity.

Structuring and reinforcing the big idea in the plan

The landscape structures and reinforces the overall campus plan, making it tangible. Important places should be recognizable as unique and singularly important. On some campuses, such as Sweet Briar College, the landscape reinforces the plan, whose main idea is established by the organization of the campus uses and the architecture of the buildings. On others, the landscape is the defining element that structures the campus plan and gives the campus its unique identity. The 1910 Cram, Goodhue, and Ferguson General Plan for Rice University is a good example of this. As the architectural historian Stephen Fox explains, "Trees and hedgerows were specified in the General Plan as the components defining lines of view and movement volumetrically. More so than buildings, hedgerows and trees planted in allées reshape the vast, immeasurable, and monotonous space of the flat coastal plain, imposing rhythm, measure, direction, sequentiality, and hierarchy—what might in literary terms be called a narrative structure."[2]

STU DAWSON

The great spaces of Rice University are defined by both the landscape and the buildings

Defining space

The campus landscape defines the campus's spaces, providing the great outdoor "rooms" and places in which the campus community interacts. The importance of the campus open spaces for meeting, for education, for contemplation, and for communal activities cannot be overstated. These open spaces range from well-defined streets and room-like quadrangles and courtyards, to orderly, well-tended athletic fields, and to the natural forest preserves and agricultural fields of land-grant institutions. The primary landscape elements used to define many of these spaces are walls, hedges, lighting, topography, and trees.

The principal outdoor spaces at Connecticut College are a series of athletic fields with clearly defined borders of rows of trees framed by a consistent edge of buildings beyond. In contrast, the entire campus of Vassar College is an arboretum that provides an informal landscape setting for its buildings. Each of these landscapes is an appropriate response to the environment and culture of its institution. The composition, proportion, and material palettes of these spaces are crucial to campus beauty, efficiency, and vitality.

STU DAWSON

Left: The character of walks at Middlebury College was drastically altered with the demise of their stately elms
Right: Live oaks border the drive at Rice University

Providing circulation

Providing connections among the campus's outdoor spaces, its buildings, campus entries, and the areas beyond the campus perimeter requires a well-conceived system of circulation. Students and professors must move from building to building between classes; campus commuters arrive, depart, and search for proximate parking; goods must be brought to campus and refuse brought out. The orderly function of this system is critical to the institution.

The system of circulation provides the main connections between campus districts and features. Well designed, it is paramount to achieving and supporting campus community with patterns of movement that bring people into contact and connect campus activities. An example is the plan for the River of Trees at the Ohio State University. This plan creates a new and dramatic open space linking Mirror Lake Hollow to the Olentangy River in one direction and the river to the Oval at the core of the campus in the other. The design of the corridor integrates adjacent new buildings and site development into an overall concept that emphasizes continuity of pedestrian movement, diversity of landscape plantings, and framing of views to important campus destinations and landmarks.

Streets, walks, stairways, and arcades provide the campus with connective elements. Streets, whether part of a network of the surrounding urban community or internal to the university, should be defined by landscape elements that establish a hierarchy and clarity to the vehicular and pedestrian circulation of the campus. This definition can be accomplished

through the consistent treatment of tree plantings that provide structure, walks that create a positive pedestrian experience, both vehicular- and pedestrian-scale lighting, and wayfinding signage. Within the campus, pedestrian walks and bikeways should connect destinations in a hierarchical way, focusing major pedestrian activity on primary desire lines, increasing opportunity for interaction while enhancing security through the volume of pedestrian activity. Stairs, where the topography requires them along major pedestrian ways, can provide an opportunity for creating places for people to pause with friends.

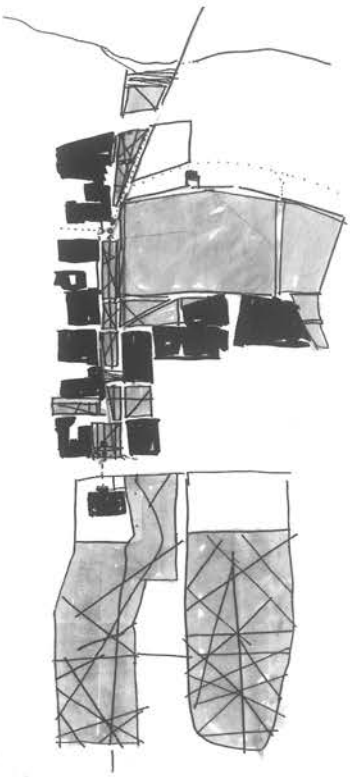
Connecting campus and region: understanding the context

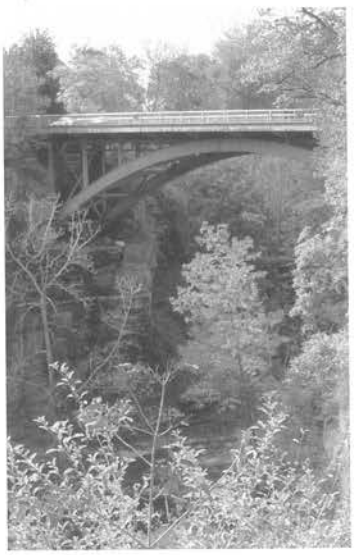
When the campus expresses the nature of its site, its region, and the local culture, it also articulates the institution's commitment to regional distinctiveness. It does this through harmony with the regional landscape and the unique characteristics of the site itself, and through expression of the culture and history of the area. In an increasingly homogenous world, the uniqueness of place can be a powerful attraction to students and faculty. An understanding of the site and context can be the most potent driving force of form on campus.

The region

The campus landscape should reflect the essence and specific characteristics of the regional landscape. Wisely used, regional characteristics can instill a campus with a specific sense of place and sustainable, cost-effective operational efficiency. Regional characteristics include:

- *Ecology.* The local ecology comprises the interrelated natural systems of area.
- *Unique geology and topography.* Geology and topography might manifest in the flatness or hilliness of a campus, or its openness to views; or they might be indicated in an historical use of local building stone.
- *Hydrology.* Rivers and lakes and their respective waterfronts can add tremendous value and identity to a campus. Understanding more subtle hydrologic patterns such as groundwater conditions can dictate placement and function of building and campus exterior space such as athletic fields.
- *Vegetation.* Using local plant materials enhances the sense of campus identity through belonging to a specific place or region. Plant materials of the region can line campus streets and form hedgerows to define parking lots; the strong grids of trees can recall orchard country; and bold informal groves of trees can bind a campus to adjacent forests.





Top: Initial sketch for the "River of Trees" at the Ohio State University
Bottom: The gorge at Cornell University is a defining feature of the campus

- *Climate.* Adaptation to regional climate patterns is critical to creating efficient, comfortable, and enduring campus settings. Coordinated tree planting can substantially reduce summer and winter cost of building operation. Exterior spaces can be screened and shaded to promote comfort, use, and interaction.

At St. Edward's University in Austin, Texas, for example, one of the notable natural qualities is the climate, which is generally hot and dry. This has become a driving force in the form of the campus. Because of the oppressive heat, the university is planting hundreds of evergreen live oak trees, greatly increasing the number of this species on campus. This singular species, the largest shade tree native to the region, has become the dominant species on campus. The live oaks require little water, and they address the need for shade.

Built on a red rock plateau overlooking the Wyoming wilderness, Western Wyoming College participates in the beauty of its rugged natural surroundings. The buildings utilize the colors of their site, and the landscape reflects the beauty of the area. Because of its exposed, windy location, the campus landscape has been organized around small, sheltered courtyards where students can gather. Lawns are limited to these courtyard areas, while the natural rugged beauty of the site is retained in other parts of the campus.

The site of the campus

ANTON GRÄSSL

Vassar College

By working with the unique qualities of its site, the landscape design of a campus can express its institution's distinct identity. Vassar College is well aware of the role its campus plays in attracting and retaining students. "If you ask a Vassar student why she/he picked Vassar," states the college's Web site, "the answer almost always includes the campus."[3] The site of Vassar is a rolling landscape bisected by streams. The institution has capitalized on this site by developing an informal landscape composition in which trees are used to frame and enhance views of the buildings and the rolling hills beyond.

Preserving the integrity of the site does not mean that nothing can be touched or changed. However, where possible, campus projects should retain and enhance the natural features of the campus site and ecosystem.

Campus landscape should respond to the size of the site as well as its other unique characteristics. The unifying design of precious courtyard space on campuses with only a few acres is as important as the appropriate stewardship of campuses with thousands of acres of natural environment. Whether a campus is large or small, every square foot counts.

LINDA A. CICERO, STANFORD NEWS SERVICE

DENNIS PEIPRZ

The courtyards at Stanford University express unique regional characteristics

Expressing the culture of the institution and region

In addition to the physical qualities of a campus's region and site, the landscape should express the social qualities of the institution's environment. The human influences on the landscape include:

- *Local history and culture.* From the symmetrical, formal layouts of some older, eastern campuses to the tight courtyards of the old south to the spaciousness of the west, many campuses have features that reflect the history, development, and culture of their regions.

- *Regulations and covenants.* Zoning encourages some types of development and discourages others. Regulations concerning building density, parking requirements, preservation of open space and trees, and other requirements all influence the overall composition and quality of the campus landscape.

- *Context of the existing built environment.* The landscape of institutions in urban areas is typically different from that in suburban or rural environments. The fabric of Boston University, for example, blends into the city blocks of the Commonwealth Avenue area of Boston so much that a visitor is sometimes hard pressed to distinguish a university facility from a private building. Off-street parking lots are mostly few and small, located unobtrusively behind buildings. Compare this to more rural Vassar College, whose landscape responds to its informal, forested setting.

- *Anticipated or observed behavior and use patterns on campus.* The needs and use patterns of the student population may influence the form of the campus landscape. Lack of residence halls and associated quadrangles and courtyards together with a greater need to park near academic buildings, for example, lend a different quality and functional imperative to commuter campuses than to residential campuses.

The campus of Stanford University strongly expresses its cultural history and values. The Richardsonian Romanesque style of its buildings and courtyards (developed by H. H. Richardson, one of the most famous architects of the late nineteenth century) reflects the European Romanesque style that evolved from the growth of abbeys and monasteries as cultural centers. The cultured European values of Stanford's founders, Leland and Jane Stanford, are also reflected in the formal Palm Drive main entrance to the campus. But the landscape architecture of the campus evokes as well the Romanesque Spanish mission style and the Laws of the Indies, which laid out in 1573 the principles for Spanish colonials to guide the construction of new settlements in the Americas.[4] These laws dictated that settlements be laid out around a colonnaded plaza faced by important buildings, with streets extended from the plaza to allow growth of the town with additional plazas over time. In fact, the growth of Stanford, with its new, additional quadrangles, is in complete harmony with this original vision and has come to epitomize the beauty of a Spanish-inspired American West campus.

Role of landscape in supporting institutional mission and objectives

Whether by specific design intent or not, the landscape of the campus makes a statement about the institution. The composition and definition of campus buildings, streets, entries, quadrangles, and courts should be arranged in an order that supports the institution's philosophies.

Sweet Briar College in Virginia was established at the turn of the past century in the rural foothills of Virginia's Shenandoah Mountains. The original purpose of the college was to establish a close-knit educational community for women. Collegiate architect Ralph Adams Cram translated this original premise into a stunning assemblage of buildings and spaces connected by porches and arcades, all of which surround intimately scaled courtyard classrooms that extend the classroom into the Virginia countryside beyond. By organizing the buildings into tight mixed-use groups—utilizing only fifty acres of the college's three-thousand-acre landholdings—the landscape composition responded strongly to the unique topography, views, and climate of the site. It also nurtured the community so desired by Sweet Briar's founders. The building-to-building and building-to-courtyard relationships promote the educational and communal imperatives of the institution as well as a connection to the land and regional climate. One hundred years later, that plan and philosophy were interpreted into a master plan for the college's next one hundred years. The new plan strengthened the physical and communal attributes of the original compact plan in existing campus districts and instituted

them in new districts. These attributes are still stunningly relevant to the community and environment mission of the campus today.

The Cranbrook Schools in Bloomfield Hills, Michigan provide another excellent example of the evolution of the landscape to reflect both regional and cultural values. The schools were originally housed in a large country estate with extensive grounds surrounding the initial buildings. As the schools grew, new buildings were built around new courtyards, turning inward. Over time, the establishment of a number of exterior courtyards has integrated the original estate and the courtyard and building additions, to the enrichment of the campus as a whole. "What distinguishes Cranbrook from other educational complexes," the school proclaims on its Web site, "is not the types of institutions established—for there are great centers of learning the world over—but what was conceived and built on these grounds. At Cranbrook, institutions were conscientiously developed and designed to encourage individual growth and excellence by providing a built environment [integration of buildings with landscape] that promoted artistic, cultural, intellectual, and spiritual ideals. Here, students had only to look about them for proof that personal dreams and goals—no matter how grand—can be accomplished."[5]

Benefits of great campus landscapes

A well-designed campus landscape provides both human and environmental benefits. Institutions with beautiful campuses know this and emphasize their landscape on their Web sites and on campus visits. The University of Missouri, Columbia, for example, describes its campus as "...a garden; a place of beauty; a distinct community that creates an outstanding and lasting impression of the University."[6]

Great landscapes enrich the human experience

Human benefits

At least as much as the fine buildings of which many institutions are justifiably proud, the campus landscape creates an overall impression of beauty on the campus. "One of the University's most valuable resources is the beauty of the campus landscape," wrote Harold T. Shapiro, president of Princeton University. "The landscape is similar to a work of art in the powerful responses to beauty it is capable of eliciting from us, and the pleasure it gives us."[7] The sensory richness of color, texture, and scale in the landscape contribute to its beauty, and is also a deeply satisfying experience in itself.

People have an innate affinity for the natural environment. This affinity is reflected in the impact that natural environments have on people's ability to learn.

Innovative lighting with hoods that direct the light downward can use half the power of traditional fixtures

Opposite: Constraints on water use and plant materials shaped the sustainable open-space strategy at Utah State University's Innovation Campus

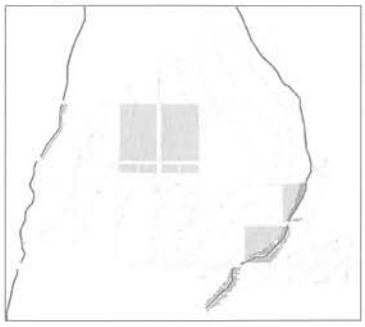
The campus landscape can provide a laboratory for classes in biology, ecology, and related work. But the learning connection goes even deeper. At times, the lawns, arcades, and courtyards of the campus become a natural setting in which both formal classes and informal studying can take place. Even when it is only observed through the windows of a classroom, the natural landscape contributes to the learning environment.[8]

Environmental benefits

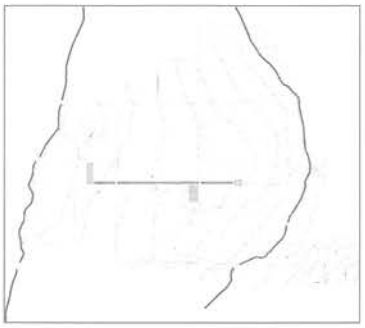
Awareness about the environment is increasingly one of the criteria by which students judge whether they want to come to an institution. Many prospective students consult sustainability awards and lists such as the Top Ten Green Projects of the American Institute of Architects (AIA). The University Leaders for a Sustainable Future maintains a list of signatories of the Talloires Declaration—a ten-point commitment to sustainability that has now been signed by over three hundred college and university presidents and chancellors in more than forty countries (over one hundred in Canada and the United States). The environmental benefits of the campus landscape can be greatly improved by good planning and implementation. They include controlling erosion, thereby improving water quality in watersheds and aquifers; providing habitat for native animal and plant species; reducing energy costs through temperature amelioration; and reducing air pollution.

On the basis of beauty and tranquility alone, trees are valuable assets on campus. In addition, trees can provide great economic benefit through temperature amelioration. Deciduous trees in colder climates let sun in during the winter but shade buildings in the summer. Shade trees can cut air-conditioning bills in half when planted on the sunny side of the building. When used as windbreaks, trees and hedgerows can also cut heating bills in winter. Trees also provide stormwater control and wildlife shelter.

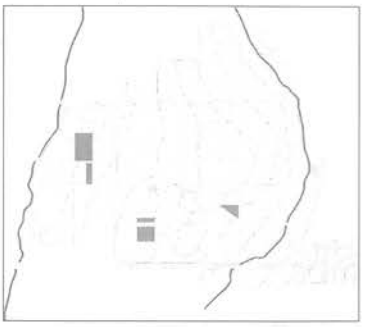
Existing Agricultural Features



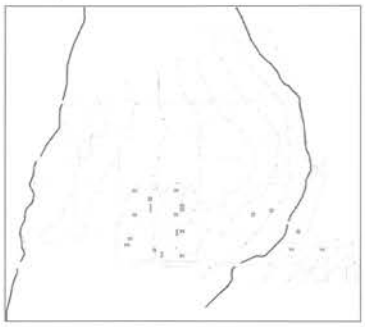
Urban Public Places



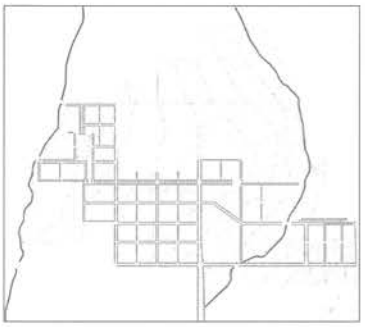
Green Public Spaces



Semi-private Gardens

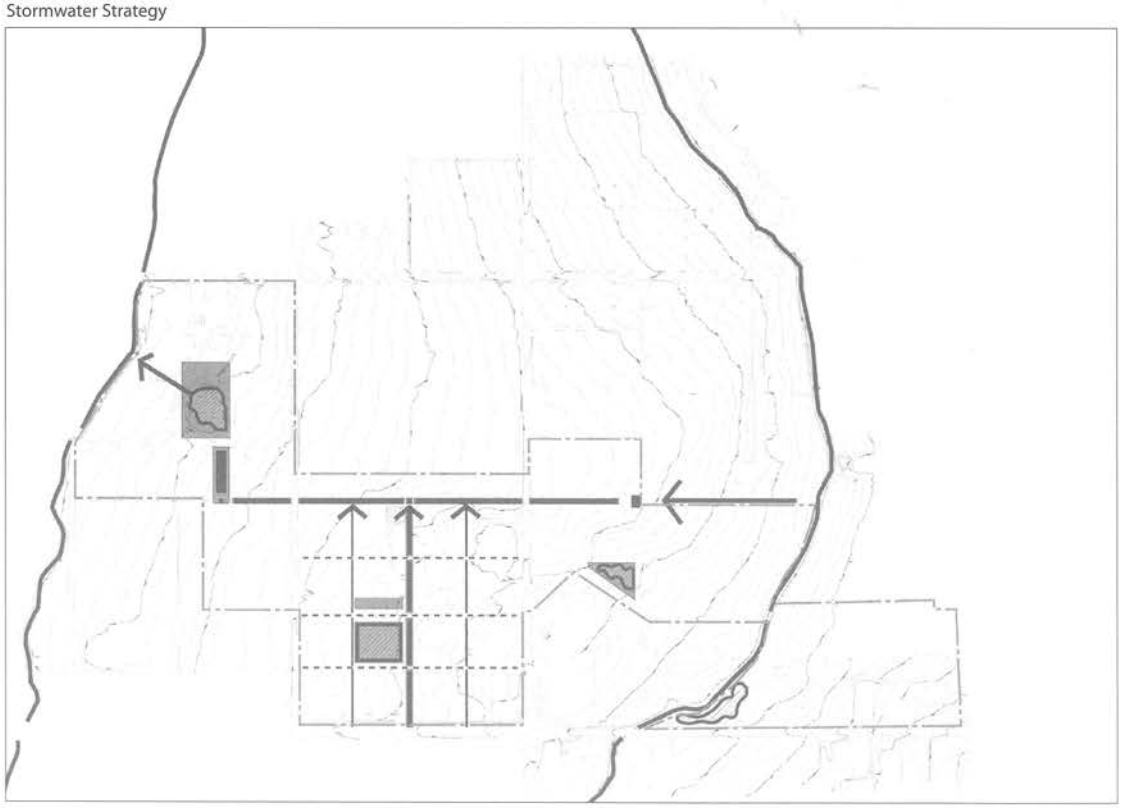


Tree-lined Streets

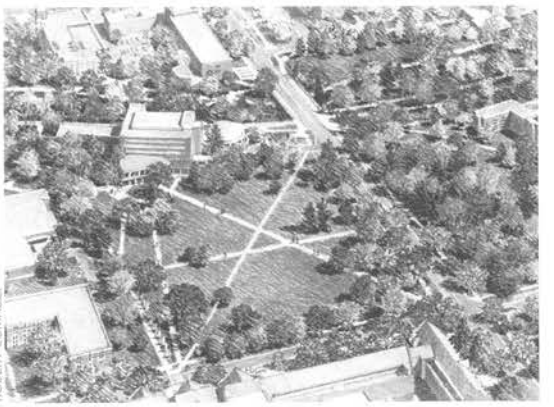


Parking Canopies

Stormwater Strategy



COURTESY OF MICHIGAN STATE UNIVERSITY



ROBERT COMAZZI

A quadrangle will replace a large parking lot at the research district of Michigan State University

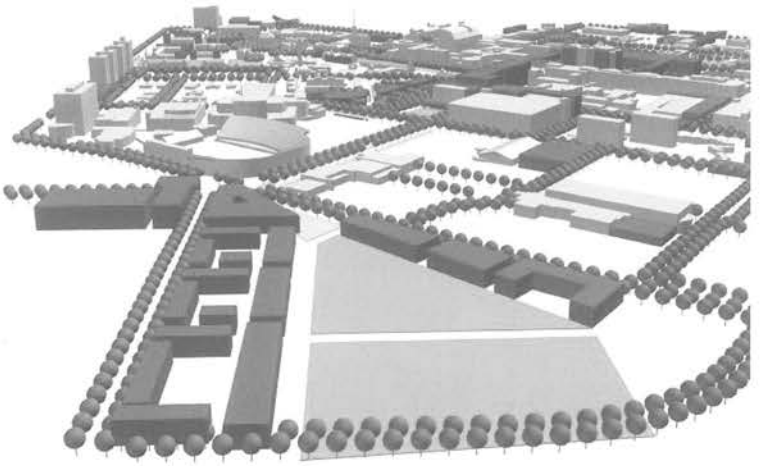
Stewardship of landscape

The landscape is a living organism. A well conceived plan factors the growth and evolution of the landscape into their plans.

Duke University addressed this issue head-on. Ninety-five percent of the university's 1997 – 98 annual tree-maintenance budget was used to remove dead or dying trees and provide safety pruning. Little funding was available for preventive maintenance of larger, older trees. Therefore, Duke University's facilities department factored the campus's long-standing trees into its deferred-maintenance audit. Four hundred fifty trees were selected for this audit because of their size, age, and location near buildings and high-activity areas. The average worth of the trees in the sample, based on size, species, condition, and location, was established to be $15,600. Thus, the four hundred fifty trees—only 13 percent of Duke's major tree population—were worth about seven million dollars. The university's facilities department was able to use this valuation to justify a more proactive tree maintenance program.

Many institutions with a substantial amount of acreage and open space around the campus and buildings have developed the practice of maintaining much of it as turf. As an alternative in rural areas, institutions might look into reducing the acreage of high-maintenance lawns and manicured lands in favor of low-maintenance landscapes such as meadow and restored wildlife habitat. In accordance with its master plan, Northfield-Mt. Hermon School is keeping maintained land in the central campus spaces while converting the rest of the land at the campus perimeter to meadow that flows into the surrounding forests and agricultural lands. This strategy is visually appropriate for a school in a rural setting, as well as cost-effective.

Michigan State University has developed a landscape master plan that connects the diverse districts of the campus to the wooded historic core



Landscape master plan for Vanderbilt University

through a series of expanded and boldly reforested campus avenues. This restored the native forest of the region to areas that had been removed during earlier campus expansion.

Initiatives to attain a distinctive, unified collegiate landscape

A beautiful, unified landscape doesn't just happen. It is achieved through vision and purpose. To create or enhance the campus landscape, institutions and their designers and planners should take initiatives:

Develop a landscape master plan. The landscape master plan should reinforce the ideas in the overall campus master plan. It establishes the hierarchy and vocabulary of the landscape elements on campus. Whether a project is undertaken based upon a study of an entire campus or district or upon a singular site plan, the understanding of the landscape vision for the entire campus provided by the landscape master plan can ensure that the project contributes to the overall unity of the campus.

Conduct a thorough analysis. A thorough understanding of the campus setting for all projects is critical. It is also the best way to ensure that landscape development activities are efficiently integrated with existing resources, taking advantage of an understanding of the campus as a whole. The analysis typically should include topography, vegetation, soils, geology, storm drainage, climate, and man-made features.

Make site selection decisions for buildings in the context of the campus plan and landscape framework. A poorly sited building can harm campus unity. Once the building is complete, the institution must live with the results for decades. Each building project should reflect the principles of the plan, positively contribute to the definition of all exterior space adjacent to it, and support the overall landscape framework.

Terraced lawn and amphitheater on Indianapolis Waterfront

Define civic space. The formation of exterior civic campus spaces, such as the Oval at the Ohio State University, the Lawn at the University of Illinois, and the main axis and parallel east-west axes at Rice University, is one of the hallmarks of great collegiate campuses. Well-defined streets, quadrangles, courtyards, and plazas offer places for the daily informal meetings and group activities that form the backbone of campus community.

Make bold, clear, unifying landscape initiatives. Attaining a unified campus takes great restraint and conviction. Trees should be planted in strong formal or informal groups. The grading of the earth can make a strong statement. It can be used to create spaces with an eye to strong architectonic forms such as useable terraces or simple, elegant, undulating forms either in sympathy with or in contrast to existing terrain. Grading can also unify building groupings and spaces. The selection of pavements and groundcovers should promote simplicity and unity. All decisions must allow easy, thorough, and long-term maintenance.

Respond appropriately to scale. Residential-scale plantings around large institutional-scale buildings have issues of appropriateness to scale, costliness of maintenance, and safety, and should be avoided. A small bed of daffodils that is so charming at the base of an Edwardian fraternity house on campus would be inappropriate at the foot of the thirteen-story science laboratory building—but an acre of daffodils in front could be stunning.

Establish a consistent palette and guide to materials. Guidelines for campus identity, expressed through signage, pavements, edges, lighting, furniture, stairways and railings, and planting, are essential to ensure unity. Clear guidelines foster and promote high-quality implementation in the field through repetition of craft and detail.

Parking at Weyerhaeuser World Headquarters

Make strong first impressions. The first impression is a great determinant in decision-making for potential students and faculty. The structure of the campus, the views of the surrounding area, the approach to the heart of a vibrant campus through a gateway or a tree-lined walk or street can make the first impression memorable, enduring, and decisive.

Enclose parking and service courts. Parking and service courts are necessary elements of the campus landscape. Even where it has minimized parking through demand management, shuttles, parking garages, and other methods, the institution will need some surface parking lots on the campus. These should be surrounded and screened with walls or hedges. Where the lots remain large, they should be divided into smaller enclosed "rooms." It helps to think of parking lots as "parking gardens."

Act sustainably in defining the institution's landscape agenda. Wise stewardship of campus natural and landscape assets can save money, enhance school reputation, and assist recruitment.

Coordinate to enhance unity. Planning, engineering, landscape architecture, architecture, parking, and athletics administrations must work as a team to support the institution's vision and plan for a cohesive landscape.


GREG HURSLEY

sixteen

Creating a Vital Neighborhood

Whether an institution is located in a small town, a suburb, or an inner city, a relationship that is mutually beneficial to both the institution and its neighbors can be elusively hard to achieve. The consequences to the institution can be devastating. One college located in a major city, seeking zoning approval for new buildings, was forced to deal with a neighborhood coalition still burning from the impact of previous expansion. To gain the approvals it needed, the college had to agree to an enrollment cap, violation of which required the institution to cease all new building anywhere on campus.

Unless you're in what's perceived to be a vibrant and vital community, you're at a distinct competitive disadvantage to others.[1]

- JACK SHANNON

Typically, the town or neighboring community resents the tax-exempt status of the institution, whose non-taxed land is increasing every year. Most academic institutions, especially in confined cities and towns, are on a constant quest for space and land, a threatening reality to most neighbors. Pressures are constant: Student housing saturates the abutting neighborhood districts; parking and traffic congest the city streets; the public must pay to police nighttime student activities. Any community will describe endlessly the negatives while the positives receive little, if any, press.

Often there are negatives from the college's point of view as well. An unattractive or hostile neighborhood environment can have an impact on recruiting top students and faculty. And when the college community experiences a lack of safety in the neighborhood, students worry about going out into the city. The university faces the dilemma of how much to emphasize security with fences, gates, and guards, and how much to identify with and join in the larger urban community in order to gain the understanding and cooperation of community residents, thereby reducing the risk of hostile incidents.

Many institutional leaders have found that they need to take the lead in building a healthy community. Those institutions that have achieved enduring symbiotic relationships with their neighboring communities or city districts are conscious of, and cultivate, the benefits that both the institution and the city or neighborhood can realize from this relationship.

As with the institutional community, physical places play a pivotal role in engendering a sense of community with the neighborhood and city. Planning and implementing change to the physical environment can be a powerful vehicle for turning a negative community relationship into a positive one, and for addressing the concerns of both the institution and the town. The institutions that are the most successful in creating a positive relationship with their communities work with their neighbors in many ways—from instituting policies of buying products and services locally to acting as developers in their areas. Focusing on the use of physical place, this chapter lays out six general principles followed by the most successful institutions:

- Living in the neighborhood
- Setting boundaries on growth
- Creating a vital edge
- Handling traffic and parking
- Respecting the physical character of the neighborhood
- Leveraging community partnerships through reciprocal planning

Living in the neighborhood

Most colleges and universities prefer that their faculty and staff live in nearby neighborhoods. Faculty who live nearby are more likely than those with longer commutes to spend time on campus when not teaching. Further, employees are more likely to use a means other than the automobile to commute to the campus, reducing traffic congestion. Staff and faculty living nearby strengthen positive ties with the community; and the availability of nearby appealing, affordable housing helps attract desirable new faculty and staff.

All else being equal, most faculty and staff share this preference for short commutes and nearby housing. Unfortunately, all else is not always equal. People do not want to relocate to neighborhoods that are rundown and that feel unsafe. If they have young children, they want the neighborhood schools to be good ones.

Some colleges and universities offer financial incentives to faculty and staff who buy homes in nearby areas. Yale University started such a program in 1994. "As of February 21, 2003," its Web site stated on the

Left: Penn State neighborhood district
Above: Design for new faculty housing in Cambridge, Massachusetts near Harvard University

following day, "534 Yale faculty and staff have participated in the Home-Buyer Program representing a financial commitment by the University of over $12 million toward home purchases of more than $63 million."[2]

Ohio State University, through a nonprofit group it created with the city of Columbus, Ohio, is acquiring and rehabilitating more than 1,300 sub-standard homes in an adjoining run-down neighborhood. In addition, the university encourages faculty members to move into the neighborhood by giving them $3,000 loans at no interest that will be forgiven over a five-year period. Improvements in home ownership in the neighborhood are being made along with a major redevelopment of a commercial street bordering campus. This redevelopment replaces some thirty-two businesses, many of them bars, with a mixed-use development comprising "five buildings with 250,000 square feet of retail space, 70,000 square feet of offices, 200 apartments and parking for 1,200 cars." The university will lease the office space and about 70 percent of the housing. In addition to a Barnes & Noble bookstore, the retail space will include a mix of local, regional, and national chain stores.

Since starting its program in 1998, the University of Pennsylvania has helped provide housing in West Philadelphia in a number of ways. Between 1998 and 2001, at least 276 Penn faculty and staff purchased homes in the area, assisted by Penn's Guaranteed Mortgage Program. Under this program, the university guarantees mortgages on single and

two-family homes in a wide area of West Philadelphia for up to 105 percent of the purchase price (to cover closing costs) or up to 15 percent of the purchase price to help pay for home improvements. For homes within a more restricted designated area, lump-sum assistance is provided. Employees who already live in the area are also eligible for financial help in making exterior home improvements. In addition, the university is proactive in providing rental housing. It has raised more than $50 million in capital to create a fund to protect an inventory of over 200 units of moderate-cost rental housing for students and community members, and worked with a private developer to create another 282 units of housing. In some cases where a seriously distressed property was blighting an otherwise stable block in its area, the university has purchased, renovated, and resold the rundown unit.[3]

But all of these housing incentives might not have been enough to encourage employees and faculty to put down roots in West Philadelphia. "Because quality public education is a key factor in where families choose to live, Penn's partnerships with the West Philadelphia community have long focused on improving the neighborhood's public schools. Over the past decade, more than 1,700 Penn faculty, students and staff have joined together with local educators and community members in more than 130 programs at 33 different West Philadelphia public schools."[4] Many other colleges and universities are also actively involved in community schools.

Colleges and universities located in expensive neighborhoods also hope that faculty and staff will be able to live nearby. Providing economic assistance under these circumstances is also challenging. Some institutions subsidize housing for some of their faculty to make it possible for them to live nearby.

Affordable, attractive neighborhood housing is often an issue both for the community and the institution. Whether the problem is the deterioration of the neighborhood or its gentrification, colleges and universities may be the entities best able to find win-win solutions that both support the neighborhood and create opportunities of nearby housing for faculty and staff.

Setting boundaries

When a college or university engages in a program or pattern of buying land in its neighborhood, it may unwittingly become a contributor to the neighborhood's decline. Some people may purchase property as a speculative investment rather than as a place to live. These people and others, even if they do live in their property near the institution, do not feel encouraged to invest in that property, knowing that the university is a likely buyer who won't care much about the condition of the property when they buy it.

This activity destabilizes the neighborhood.

Most neighbors can live with a certain degree of institutional expansion, but they want an explicit understanding about how much the university is going to grow, what kind of growth it will be, and where it will take place. To be good neighbors, to contribute to the quality of the neighborhood rather than to its decline, institutions must, in partnership with community groups or town governments, set limits to their community encroachment, and then plan to live within those limits.

A sometimes-unexpected side benefit to the institution is that limiting expansion may cause it to be more creative in infill development on campus, increasing the density of interaction and feeling of community on campus.

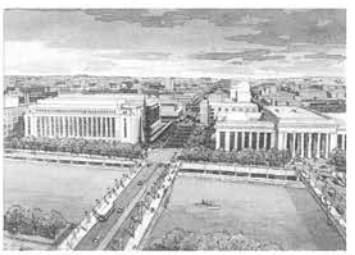
From time to time, an institution may want to engage in some kind of development outside its growth boundaries in the neighboring community. Such projects should be undertaken with care. In close partnership with the community, the institution may be able to meet its space needs in ways that also provide substantial benefit to the neighborhood.

Creating a vital edge

Until recently, a clearly defined edge, ideally with a fence, was seen as a desirable way of distinguishing a college or university from its neighborhood. Today, edges must be more porous, as institutions seek ways to be part of, rather than separate from, their neighborhoods. Treatment of the *edge* between the institution and the town is one of the most decisive actions an institution can take in building vitality in its neighborhood. Many colleges and universities, considering only the organization of functions within their campuses, ignore this opportunity.

They do so at their peril.

Schuylkill Gateway, Philadelphia, illustrative master plan



Schuylkill Gateway revitalizes former rail yards and connects the University of Pennsylvania with the center of the city

Meeting parking needs with large lots and structures at the campus edge may work well in preserving an historic campus core, but may blight the surrounding neighborhood, starting a chain reaction of deterioration. Conversely, livening the edges of streets shared with the town by judicious placement of residential use and student activities may create enough liveliness that markets open for private shops, cafés, and development as well.

Depending on the nature of the institution and of the town, many types of lively and enlivening seams between the two exist. Institutions can contribute to the vitality of their towns and neighborhoods through commercial, residential, research, and cultural interfaces.

Commercial campus district

A college or university may anchor a commercial district in a larger town or city. The institution plays a central role in this district, such as Syracuse University does in the M Street area of Syracuse. M Street is not the main commercial area of the city, but rather a neighborhood center that grew up next to the university. College Hill in Providence, which serves Brown University and the Rhode Island School of Design, and College Town at Cornell are other examples. Small colleges and universities in small towns may bring zest and vitality to an adjacent small downtown area. Oberlin College (3,000 students) plays such a role in Oberlin, Ohio (population 8,000); to a lesser extent, so does Stetson University (2,000 students) in Deland, Florida (population 21,000). Were it not for the presence of the college or university, most likely those small rural communities would not exist as such vital town centers.

Residential interface

Bates College in Lewiston, Maine houses four hundred of its 1,700 students in college-owned houses in the surrounding neighborhood. Absorbing local housing stock to remedy short-term residential needs or control ownership of bordering properties, though done with good intentions, can be harmful to the neighborhood. Owners stop reinvesting in their homes, opting to capitalize on student rents or waiting for the institution to buy them out. Most facilities administrators also dislike dealing with home ownership. A single-family home adapted to house a dozen students can be difficult to maintain, and operation is expensive and energy inefficient because the structure is not connected to the college's utility system. Bringing these structures up to applicable code and ADA requirements is difficult and expensive as well. Nevertheless, residential living in neighborhood houses is cited by Bates' students as one of the most popular housing alternatives. Bates is planning to address these issues in part through the creation of new mixed-use residential buildings along Campus Avenue.

Iona College in New Rochelle, New York, owned housing that was difficult to maintain on the edge of the campus. The facilities staff wanted to tear down these buildings in favor of additional parking. Upon careful planning consideration, however, the college decided instead to replace the old buildings with new housing on the perimeter designed as a series of suites and apartments—more traditional university housing buildings that were more feasible to maintain and more sensitive to the adjacent residential neighborhood.

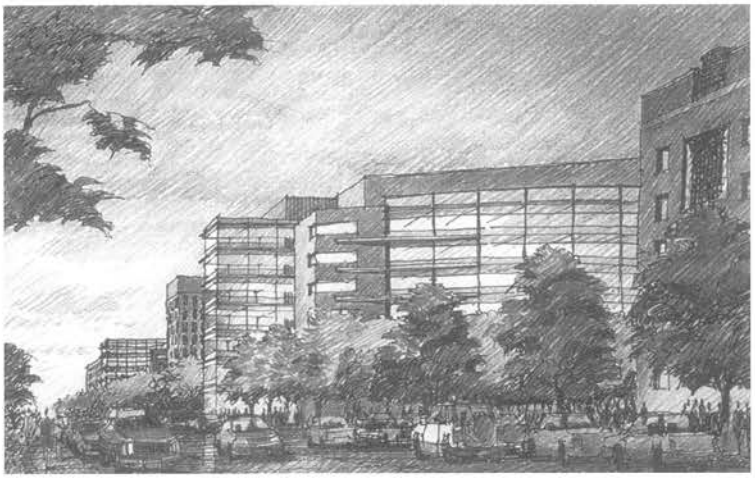
Research

Research conducted by American universities plays a major role in the advancement of regional, national, and world economies. On a worldwide scale, university research has contributed to the development of innovations ranging from penicillin to radar and to cultural shifts as profound as the Internet and telecommunications. Public-private research partnerships must rise to many challenges, but the opportunities that they provide to make a significant impact on society make them central to many universities' missions.

Because of their deep commitment to research, many universities are now involved in owning or developing research parks.[5] A survey conducted by the Association of University Research Parks in 2003 reveals the depth of university involvement. Most research parks have been established on completely or partially university-owned land (65 percent), and in most cases the university completely or partially owns the buildings as well (56 percent). The university provides financing in 26 percent of the cases.[6]

Development of a new research campus provides an opportunity to make a difference both to the university and to the adjacent town. Historically, research campuses such as Princeton Forrestal were conceived of as office parks. Buildings were dispersed, often developed on greenfields (formerly undeveloped farmland). Cornell University's research park is located near the airport, not near the university. The university was reluctant to establish the new development on or near the core campus, as it wanted to reserve limited core-campus land for potential future university core purposes. It was also concerned about bringing private enterprises into the core campus. Because of its distance from the campus, however, the research function doesn't work as well as it might. Professors and students perceive the drive to and from the research area as an impediment to their activities. Like the suburban office parks on which they are modeled, these research parks perpetuate our society's dependence on the automobile, with its attendant traffic and pollution problems. By pulling people and functions off-campus, they also harm rather than promote community on campus.

MIT's Tech Square in Cambridge, Massachusetts provides a dense urban research environment



MIT's urban Tech Square is in many ways a better model. It creates a vital, vibrant community directly adjacent to the institution. From an urban viewpoint, Tech Square might have been even livelier if more housing had been included.

In or near former industrial neighborhoods, some colleges and universities find that old industrial buildings offer a perfect space for research. They buy these industrial properties and retrofit them, in the process transforming the neighborhood from one of warehouses and underutilized factories to an active academic area. MIT is a classic example, with its expansion along Vassar Street and Main Street in Cambridge.

The challenges in creating an environment that nurtures productive research are noteworthy. Traditionally, academic departments have wanted to be separate, often "owning" their own facilities. Many campus environments still reflect this approach. But increasingly, success in cutting-edge research requires extensive communication and cooperation across disciplines. In addition, research often involves interaction with private concerns. The academic and business worlds do not always mix smoothly. For example, industrial concerns about security must be balanced against academic freedom and desire for communication. The most successful research institutions are those that give serious consideration to how they organize their buildings and their campuses, as well as the human organizations that occupy them, to meet these often-conflicting agendas.

Cultural activities

Campus theaters and other arts functions of universities or colleges are often located on the edge of the campus, primarily because of the university's awareness that a large percentage of the attendees of those

New public space at MIT's Tech Square

events are from outside the college community, and that townspeople are more likely to attend cultural events than they are to attend classes. Especially in small towns, this function integrates the institution and the town. Cornell University's Schwartz Center for the Performing Arts, for example, which houses the university's primary performance spaces as well as its Department of Theatre, Film, and Dance, sits on the border between the Cornell campus and neighboring Collegetown. The primary performance space of the North Carolina School of the Arts is the Stevens Center, a restored neoclassical 1929 silent-movie theater in downtown Winston-Salem, North Carolina. The Stevens Center also houses a number of community-based performance organizations such as the Winston-Salem Symphony and the Piedmont Opera Theatre.

As many paths can lead to a vital community and neighborhood as there are institutions and neighboring communities to create them. Each one is unique—but there are common elements. In most of these paths, the physical space of the campus, especially the edges where it joins the neighborhood, plays an important role.

Handling traffic and parking

The worst of town-gown relationships many times center on automobile issues. In every city and town where we develop a college or university master plan, traffic and parking are almost always on the agenda. In many places, the institution is the single largest generator of traffic in nearby neighborhoods. Lessening the impact of traffic and parking on the town requires a cooperative strategy. The best solutions can strengthen the university's relationship with its town; the worst can destroy the neighborhood.

Impact on surrounding communities

Some universities have bought up land in surrounding neighborhoods—often areas where students and faculty as well as neighbors once lived—and have torn down housing to create surface parking for the campus. These barren parking lots can destroy neighborhood character, isolate the institutions from their host communities, and perhaps even cause neighborhood decline.

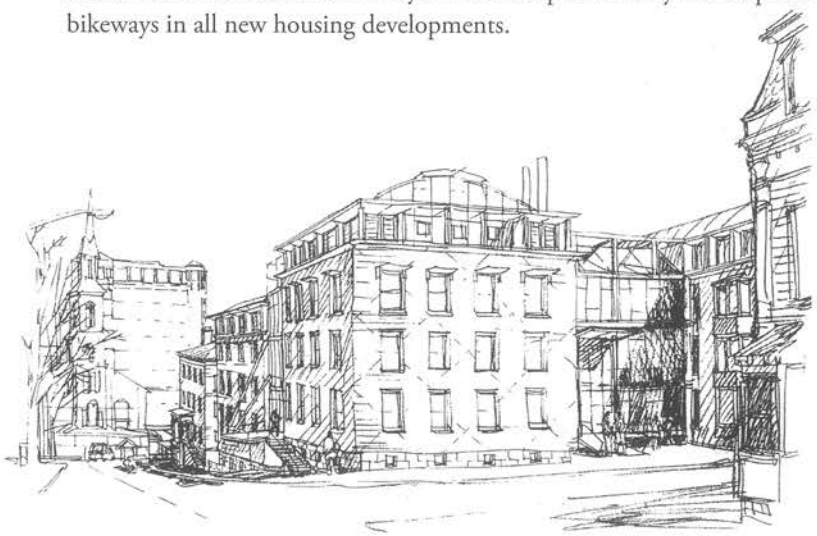
Universities that build parking lots along their border with the community are—wittingly or not—sending a message of hostility to their neighbors. To avoid this, the University of Washington, which works closely with its neighbors in its planning and development efforts, specified in its master plan for the West Campus area that abuts a mixed-use, residential-scale neighborhood, "Development in that area should avoid an inward focus and care should be taken that development not turn its back on the community...."[7]

In the end, the impact of the automobile in the neighborhood hurts the institution. Being surrounded by traffic and parking lots, perhaps in a declining neighborhood, does little to enhance the institution's image among its visitors, prospective students, and their parents.

Fixing the problem at its source

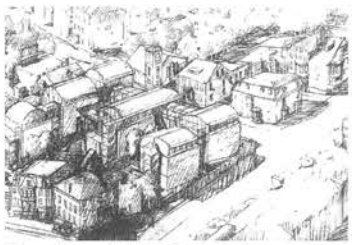
The best method for reducing automotive impact on the neighborhood is to reduce demand for driving. Many colleges and universities are motivated to reduce demand because of problems on campus, particularly in the core area. In this case, the neighborhood will also benefit.

The University of California at Davis and the city of Davis, California have worked together to provide an extensive network of bicycle paths and lanes that interconnect the city and the campus. The city now requires bikeways in all new housing developments.



Respecting the physical character of the neighborhood

In its developments in or near its neighborhoods, an institution should respect those neighborhoods' physical character. The 2001 Seattle Campus Master Plan for the University of Washington specifies as a land-use policy that "University land uses located outside the boundaries and on the campus periphery should be compatible in size and nature with the surrounding uses."[8]



Opposite and Above: Proposed student and faculty residences for the Rhode Island School of Design

Like many colleges and universities, Georgia College & State University recognizes the importance, both to the college itself and to its community, of its beautiful campus. More conscious than most, Georgia College & State University includes its campus as a premier element of its mission statement.

> Georgia College & State University is Georgia's designated Public Liberal Arts University, located in historic Milledgeville, Georgia, less than a dozen miles from the geographic center of the State. Milledgeville was the antebellum capital of Georgia and is a center of history and culture featuring beautiful antebellum homes and historic buildings. The University enhances the town's beauty with its architectural blending of majestic buildings of red brick and white Corinthian columns. Georgia's Old Governor's Mansion, one of the finest examples of Greek revival architecture in the United States, is the founding building of the University and remains central to the University's Mission.[9]

Lack of respect for a neighborhood's character can cause lasting problems. Neighbors sometimes have long memories. Harvard University is still feeling the repercussions of its 1960s-era decision to build high-rise modern student-housing towers in Cambridge's blue-collar residential Riverside neighborhood. The Peabody Terrace complex, largely admired among architects, is generally loathed by the neighborhood community. "It's a great little neighborhood, except that Harvard built these three ugly concrete towers," one neighbor is quoted as saying.[10] And, almost forty years later, a *Boston Globe* editorial vividly recalls the emotions that Peabody Terrace provoked. It describes the complex as "a hulking three-tower high-rise [that] swallowed up city streets, obstructed views and access to the river, and dwarfed the surrounding two and three-story clapboard houses. The towers cast an ominous, permanent shadow over the predominantly African-American neighborhood." "They just come in and wipe you out, and they expect you to go away because they have money and power," one protester is quoted as having said—back in 1970. All this emotional grief was marshaled 31 years later in an editorial that opposed Harvard's building of two museums on a nearby site today.[11]

Lehigh University's South Bethlehem urban context

Leveraging community partnerships through reciprocal planning

Universities and their neighborhoods often share the same needs. Actions that benefit one can also benefit the other.

Lehigh University

Lehigh University's main quadrangle

Lehigh University and its residential neighbors

Lehigh University is located on the southern edge of the South Bethlehem business district, a section of Bethlehem, Pennsylvania that has developed an image as a lower-class area. Traditionally, the university has grown away from, rather than toward, the city. It acquired six city blocks of land just north of the campus, demolished the buildings on these blocks, and created parking lots in part to provide a buffer between the campus and the city. Despite the beauty of its campuses, the richness of nearby housing stock, and the safety of the neighborhood, none of these measures was sufficient to overcome visitors' image of the university as being in a dangerous, unattractive area. And despite the diversity and liveliness of the community and the presence of many students in off-campus housing in the neighborhood, not one store was oriented toward students. In 1998, the university decided to look again at its long-range campus and facilities plans with an interest in revitalizing the neighborhood as an asset for students and an enhancement to its strategic marketing.

Lehigh's new plan emphasized improving the historic in-city campus and the university's border with the city. As part of the planning process, the university learned that the density of student rental housing on some

Southside commercial district with proposed Lehigh University research facilities

streets was a neighborhood concern, and that an important initial action, from the neighborhood perspective, was to create additional student beds on campus. The new master plan addressed this need by proposing to build new student housing in a style compatible with the neighborhood on university-owned land adjacent to the town that it had previously converted to parking lots.

In addition, the university planned the addition of new academic buildings on the city street edge that would face outward as well as in, thereby providing a more open and welcoming face to the city. Construction has now begun on some of these projects.

Improvement of living conditions in two other neighborhood areas adjacent to the business area and to the university remained a concern to residents. In particular, they perceived a need for a strategy to "de-densify" certain streets and areas, encouraging the conversion of multifamily investment properties rented mostly to students back to single-family owner-occupied housing. In addition, neighborhood parks and play spaces, as well as local convenience stores, were needed. A new study by a nonprofit neighborhood development organization and funded partially by Lehigh, was undertaken to address these issues. A ten-year implementation period is envisioned and by 2001 was already partially funded.

Lehigh University and the South Bethlehem business district

The city of Bethlehem, Pennsylvania wanted to improve its South Bethlehem business district. To the south end of the district, Lehigh University

provided some activity, but with the failure of Bethlehem Steel, many buildings on the north side had become vacant. Lehigh could have purchased these buildings outright for needed research facility expansion, but the university was sensitive to the city's concerns about becoming again a "company town" again, this time for the university. Rather than purchase and improve land on its own, Lehigh decided therefore to help fund a planning study that would be conducted by the city of Bethlehem. This study recommended the creation from the old Bethlehem Steel facilities a research and entertainment district and defined specific actions the city should take to integrate its revitalization efforts with those of the university. In addition, it specified policies and priorities for implementation.

In support of this plan, the university has currently leased space in the new research district, becoming its first, and prime, tenant. The city and the university together applied to the state of Pennsylvania for funding for street improvements. This funding—ten million dollars over a three-year phased approach—was approved in 2001.

Trinity College

Trinity College in Hartford, Connecticut is a distinguished school, but its poor-quality neighborhood put it at a significant disadvantage in student and faculty recruitment. Taking a leadership role in making changes, in 1996 the college announced a comprehensive revitalization initiative for the neighborhoods surrounding its campus, an initiative in which other organizations have joined. Broadly conceived, the initiative includes the development of a "Learning Corridor" linking Trinity with other institutions nearby and providing educational and recreational opportunities for the community, including a Boys/Girls Club, a Montessori Day Care Center, a middle school, and a charter school for the performing arts. In addition, "the initiative will generate over $130 million in new construction. Designed to increase owner occupancy throughout the neighborhoods, the initiative will weave housing rehabilitation, neighborhood retail businesses, streetscape improvements, job training, recreation, and family services into the fabric of the reinvigorated residential community, thus building widespread and deeply vested interest in maintaining the quality and vibrancy of the community."[12] Improvement to the physical quality of the neighborhood is only one part of the initiative—but a critical one.

"Trinity has assumed leadership of this effort because we have a profound sense of obligation to Hartford and we intend to honor it. And this obligation is not at odds with our fundamental educational mission. In fact, the two are closely aligned and complementary. It is vital to the College's future that our neighborhood turn itself around. We have led in this initiative because it is the right thing to do. It would be morally bankrupt for Trinity to teach the liberal arts on our campus and ignore what is happening across the street,"[13] stated Trinity's then-president, Evan Dobelle.

Themes and lessons learned

In many cities and towns, overall improvements in the neighborhoods near institutions of higher education should be good for the institutions, the cities, and the neighborhoods themselves. But often, these improvements are not possible without leadership and direct action by the institutions. Colleges and universities are emerging as significant players in urban revitalization. An institution working to improve its neighborhood can demonstrate its commitment through a variety of actions:

- Emphasizing in its own planning efforts the needed delicate relationships with the city and the surrounding neighborhoods
- Providing open communications to engender trust on both sides, ensuring that the city and neighborhood constituencies are involved in the planning process
- Understanding the needs and the viewpoint of the city and neighborhoods, which manifest the diverse cultures of their constituencies
- Responding appropriately to specific situations by playing the role that works best, at times by direct leadership, at others by background support, and when possible, by equal partnerships
- Above all, working with the city and neighborhood to create a bold and clear vision of the vibrant college town that the neighborhood is or could become