INTRODUCTION

A Profession in Perspective

The education of architects—the men and women who design our skyscrapers and plazas, churches and museums, our schools and our homes—rests on traditions as old as history. From one generation of architects to the next, there is a rich legacy of principles and personalities that creates a common bond among veterans and novices alike. During one campus visit, we heard an eighteen-year-old student and a seasoned professor discussing intently the trinity of core values composed more than two millennia ago by the Roman architectural writer Vitruvius: “Firmness, Commodity, and Delight.” Often, we heard students and faculty swap remembrances of architectural deities like “H.H.” (Richardson), “Corbu,” (Le Corbusier) or “Mies” (van der Rohe)—as if reminiscing fondly about familiar friends. And students throughout this country soon learn to converse comfortably in the arcane but richly fascinating language of architecture that has developed over centuries. Alongside technical twentieth-century terms such as “CAD” (computer-aided design), or “HVAC,” (heat, ventilation, and air conditioning systems), aspiring architects quickly become acquainted with eighteenth-century French Beaux Arts terms such as “en charrette,” still the common parlance for the grueling work marathons students and practitioners engage in to solve design problems.

This sense of kinship with centuries of traditions, thoughts, and personalities is, in fact, the true tie that binds those who practice architecture with those who teach it and study it. The nobility of architecture has always rested on the idea that it is a social art—whose purposes include, yet transcend, the building of buildings. Architects, in short, are engaged in designing the physical features and social spaces of our daily lives.
which can shape how productive, healthy, and happy we are both individually and collectively. The profound and permanent impact of the architecture profession demands an education not only highly technical and practical, but broad and intellectually liberating as well. A nineteen-year-old student told us: "Architects must use their unique skills and talents to revitalize both our communities and the world. Our purpose must be noble, to create sustainable environments which are healthy for nature and man, environments that can be improved by our intervention."

An architect in Michigan put it this way: "Architects must seek a balance between economic construction, safety and welfare of the general public, long-term value of the products they help produce—all while remaining sensitive to the aesthetic concerns of the owner, neighbors and the architect him/herself."

The essential purpose of architecture education, then, is not only the basic training of beginning practitioners, but also the initiation of students into this common legacy of knowledge, skills, and language, while instilling a sense of connectedness to the human needs that architecture, as a profession, must continually address. Architecture education, if it is to fulfill those ends, must celebrate and support, and also challenge, the profession and society as a whole.

DURING THE CONDUCT OF THIS STUDY, we discovered that despite serious concerns about the education of architects, schools of architecture draw at least as much praise as criticism from students, educators, and practicing architects. In hundreds of conversations, we met only a handful who proposed abandoning altogether the methods and traditions which have shaped architecture education for much of this century. What we heard most often were calls for reform, not revolution, and we were, in fact, impressed by the number of schools who are engaged in candid review of their programs. Reflecting on all we heard and read, we concluded that the fascination of architecture education lies far more in its possibilities than in its problems.

This is not to suggest that changes, even bold changes, should not be
carefully considered. Still, we are convinced that architecture education, at its best, is a model that holds valuable insights and lessons for all of higher education as a new century approaches. We agree with a faculty member at a southeastern campus who called architecture education "one of the best systems of learning and personal development that has been conceived." The professor went on to say: "I would hate to see us abandon a system with so many wonderful qualities and successes for the sake of some 'bold experiment in education.'"

For the nation's 35,524 full- and part-time students who attended 103 accredited degree programs in 1994-95, the study of architecture is among the most demanding and stressful on campus, but properly pursued it continues to offer unparalleled ways to combine creativity, practicality, and idealism. Coming from public school environments where aesthetic and three-dimensional learning experiences are frequently downplayed and even disparaged, it's little surprise that eighteen- and nineteen-year-old students seeking an artistic avenue with a practical bent soon become fiercely devoted to the design studio culture.

There are several available educational paths to a professional degree. Most students pursue either a five-year undergraduate program directly from high school or a six-year master's program that combines undergraduate education and two years of graduate professional study. Some, particularly those who decide on architecture later in their college years, pursue a three- or four-year graduate degree. With few exceptions, students in practically every state are required to earn a professional degree, spend at least three years as interns, and gain a specific set of professional experiences before they can take the Architecture Registration Examination that must be passed to become licensed as an architect. (It even took Philip Johnson three tries to pass all ten parts of that dreaded test.) The path to licensure, then, is not just demanding, but long: at least eight years, and often more.

How satisfied, in fact, are students with their experiences in architecture programs? When we surveyed students and alumni from fifteen representative campuses whether they would attend their school of architecture again if they had it to do over, about eight out of ten said they would (table 1).
Table 1

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<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>NOT SURE</th>
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<tbody>
<tr>
<td>Students</td>
<td>82%</td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td>Alumni</td>
<td>79</td>
<td>15</td>
<td>6</td>
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Table 2

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<th>PERCENTAGE</th>
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<tr>
<td>Very high</td>
<td>10%</td>
</tr>
<tr>
<td>Fairly high</td>
<td>64%</td>
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<tr>
<td>Fairly low</td>
<td>17%</td>
</tr>
<tr>
<td>Very low</td>
<td>3%</td>
</tr>
<tr>
<td>Not sure</td>
<td>6%</td>
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And even with the demands of school and the often dire forecasts about job prospects, we found morale among architecture students to be remarkably high. Nearly three out of four students we surveyed rated morale at their schools as either "very high" or "fairly high" (table 2).

Revealingly, more than 90 percent of administrators, students, and alumni and more than 80 percent of faculty surveyed believe that graduates of architecture school leave "well prepared" as problem solvers—a quality that leading practitioners repeatedly told us was among
Table 3

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<tr>
<th></th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>DON'T KNOW</th>
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<tbody>
<tr>
<td>Administrators</td>
<td>96%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Faculty</td>
<td>82</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Students</td>
<td>91</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Alumni</td>
<td>96</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
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the most prized in new employees (table 3). A twenty-two-year-old student at a midwestern campus told us her school “does an excellent job of creating problem solvers. With this talent and skill, architecture graduates can go on to be leaders and innovators in an unlimited number of areas, as well as in the profession of architecture.”

Despite the evident stresses of student life, nearly 4,500 architecture students earned professional bachelor's or master's degrees in 1994-95, and most seem quite aware of the gloom-and-doom job scenarios that may await them. When we asked students what their salary expectations were five years after earning their professional degree, 24 percent said less than $30,000 and another 44 percent said in the $30,000 range (table 4). As one student put it, freshmen are routinely greeted at the portals of architecture school with the message: “I won’t be rich, I won’t be famous, and I have to work a lot.”

We then asked students what motivated them to enter the architecture field. The most common response, given by 44 percent of those surveyed, was “putting their creative abilities to use.” Intriguingly, the other most frequent responses—given by a combined 39 percent—were a desire to improve the quality of life in communities or improve the built environment as a whole. Hardly anyone cited the prestige of the
profession or good salary prospects (table 5).

For most, then, the intrinsic appeal of architecture education seems to transcend its practical uncertainties, and many students cling, against the odds, to ideal visions of their potential. For many, architecture school is an opportunity to be part of a tight-knit community on campus that is defiantly proud of its distinctive methods and its reputation for long hours and hard work. "We all have a dream," said one thirty-four-year-old student. "We all want to be recognized architects. You have to pay your dues. When we enter this program they tell us that it is not high paying. But I assume money will follow if you gain recognition."

In our survey, 71 percent of students agreed that "this is an excellent time to be entering the architecture field" — a level of optimism exceeding that of both faculty and administrators (table 6).

Again, this is not to suggest that all is well with architecture education. Repeatedly in our travels, we witnessed the estrangement of the academy and the profession, the isolation and stress of student life, the disconnection of architecture from other disciplines, and the inflexibility of the curriculum on many campuses. We also saw the great unevenness of experiences in design studio, and the autocratic, one-way communication that often marks "design juries"—the tension-packed
Table 5

PLEASE RANK THE THREE MOST IMPORTANT REASONS FOR ENTERING THE ARCHITECTURE PROFESSION (SURVEY OF STUDENTS)

<table>
<thead>
<tr>
<th>Item First</th>
<th>Percentage Ranking</th>
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<tbody>
<tr>
<td>Putting creative abilities to practical use</td>
<td>44%</td>
</tr>
<tr>
<td>Improving quality of life in communities</td>
<td>22</td>
</tr>
<tr>
<td>Improving the built environment</td>
<td>17</td>
</tr>
<tr>
<td>The prestige of the profession</td>
<td>2</td>
</tr>
<tr>
<td>Good salary prospects</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
</tr>
</tbody>
</table>


ritual during which invited critics, including faculty, practicing architects, and more rarely clients, review and critique student work.

Further, we frequently heard that many architecture schools fit uncomfortably within the campus culture. In 1900, almost all architects served apprenticeships in offices. Over the last century, professional education was brought fully into academic life, but the values and rewards of these two cultures have never been fully reconciled. Compounding those difficulties, architecture programs are generally small compared with other academic units, expensive in terms of per-pupil staffing and physical space, and for the most part, produce little research revenue for the university.

As W. Cecil Steward, dean of the University of Nebraska's College of Architecture, has noted, many university administrators, especially those on research-driven campuses, tend to see the architecture field as splintered and disputatious, and the design orientation of architecture faculty places architecture among "the 'soft,' 'fuzzy,' and undervalued disciplines in the comprehensive universities."

And in his memorable Walter Gropius Lecture in 1985, Henry N.
Table 6

<table>
<thead>
<tr>
<th></th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>DON'T KNOW</th>
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<tbody>
<tr>
<td>Administrators</td>
<td>67%</td>
<td>31%</td>
<td>3%</td>
</tr>
<tr>
<td>Faculty</td>
<td>47</td>
<td>47</td>
<td>6</td>
</tr>
<tr>
<td>Students</td>
<td>71</td>
<td>29</td>
<td>0</td>
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Cobb, FAIA, then-chairman of Harvard's Department of Architecture, said that his own architecture school:

... with its curious studio-based teaching methods, with its paucity of scholarly research, and its dedication to serving the highly "contaminated" professions of architecture, landscape architecture and urban planning, must appear, to borrow the language of "Peanuts," as a kind of 'Pig-Pen' character in the university family—that is to say disreputable and more or less useless, but to be tolerated with appropriate condescension and frequent expressions of dismay.

Repeatedly, administrators of schools of architecture also told us that lack of financial resources was their biggest problem. The dean of one private, East Coast school of architecture told us his program has been hit with a 25 percent budget cut over the last five years, with further reductions likely. Thomas R. Wood, director of Montana State University's School of Architecture, put it bluntly: "The biggest threats I see are financial survival and, related to that issue, student access to higher education. The past five years have been disastrous for higher education. The budget reductions damage program quality, faculty morale, and limit the opportunities of people seeking an architectural education."
Table 7

<table>
<thead>
<tr>
<th></th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>DON'T KNOW</th>
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</thead>
<tbody>
<tr>
<td>Administrators</td>
<td>73%</td>
<td>27%</td>
<td>0%</td>
</tr>
<tr>
<td>Faculty</td>
<td>77</td>
<td>13</td>
<td>10</td>
</tr>
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In our surveys, architecture administrators and faculty agreed overwhelmingly that their schools have been living with more than their fair share of budget restraints over the past several years (table 7).

At one school we visited, not a single wall clock worked, windows were broken, and paint was peeling off the walls. There were no electrical outlets in the studios—a costly problem if and when the school attempts to move decisively into the computer age. At present, 250 students at this school share a dozen outdated computer terminals—at a time when knowledge of computers has become practically a prerequisite for employment.

Such problems are by no means universal. We found, in fact, quite a number of schools of architecture which have accommodated themselves quite comfortably within the university culture, and in our surveys, more than eight out of ten architecture school administrators and alumni and nearly seven out of ten faculty disagreed strongly that their programs “might be better off if they were not part of university campuses at all.” More than 75 percent of all groups surveyed also considered their schools well regarded on campus (table 8).

Along with the challenges posed by the institutional context of many architecture programs, the profession of architecture itself has become many professions, some connected only tenuously, if at all, to the work of designing buildings. Architectural practice, furthermore, is rapidly
Table 8

HOW WELL REGARDED IS THIS
SCHOOL OF ARCHITECTURE ON CAMPUS?

<table>
<thead>
<tr>
<th></th>
<th>WELL REGARDED</th>
<th>NOT WELL REGARDED</th>
<th>DON'T KNOW/NOT APPLICABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators</td>
<td>89%</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td>Faculty</td>
<td>77</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Students</td>
<td>85</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Alumni</td>
<td>78</td>
<td>7</td>
<td>15</td>
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becoming more global. In 1994, nearly one-third of U.S. firms with at least twenty employees, and 15 percent of firms with ten to nineteen employees were engaged in international work, according to the American Institute of Architects. With virtually all architectural firms now computerized, markets halfway around the globe are quickly becoming as accessible as those around the corner. These emerging trends—globalization and computerization—have implications for architecture education that many schools are only beginning to confront.

A profession that for much of its history prized the new and unique now finds more and more of its members engaged in preservation and renovation. A profession once populated almost exclusively by wealthy, white males now must struggle to connect to a more diverse range of clientele and communities. A profession long regarded as the orchestrator of the building process now finds itself increasingly competing with general contractors, developers, interior designers, construction firms, and others. Practitioners and students who once revered that loneliest of lone architectural wolves, the fictional Howard Roark from *The Fountainhead*, now talk of replacing him with a new icon: the "team player." The field has become increasingly varied, yet there remains fixed in the minds of many a single image of the architect that may well be an antique.

"We are operating a 1900-year-old education program directed..."
toward delivering a 500-year-old model architect as we head into the 21st Century," Professor Gregory Palermo, FAIA, of Iowa State University, wrote recently.1

We found, in short, a profession struggling both to fit in, and if possible, to lead, within a social and economic context that in a number of crucial respects has been dramatically altered. We also found a profession whose faith in its own future has been shaken. What seems missing, we believe, is a sense of common purpose connecting the practice of architecture to the most consequential issues of society—and that same sense of unease permeates architecture education as well.

Urs Peter Gauchat, dean of the New Jersey Institute of Technology’s School of Architecture, summarized the situation this way: “The rapidly changing context for architectural services has created a host of problems for architectural education. One problem stands out: the seed of self-doubt and the lack of a clear vision of what the architect can and should do. Many schools are permeated by a considerable lack of conviction about the future of architecture. This is often accompanied by the lack of a clear agenda about how to prepare students for a fulfilling professional life.”

The atmosphere surrounding architecture education and the profession, then, is one of enormous promise and possibilities, but also anxiety perhaps unmatched in the history of the field. The mood resembles, in a fascinating way, that of public education in this country. Everyone agrees that elementary and secondary schools have serious problems. Yet at times of national self-doubt, there is a tendency to overlook the strengths of education. We expect the world of schools—demanding that they solve all of our complex social, economic and spiritual ills. When they inevitably fall short, we condemn them for failing to meet our high-minded expectations. The point is this: In the search for educational renewal at all levels, including the professional, care should be taken not to ascribe to schools alone what must, in the end, be a shared responsibility.
THE MOVE TO THE ACADEMY

In searching for common purpose and a more promising future, we begin by looking backward at the traditions, principles, and paradoxes that have, for so long, shaped the education and the professional lives of architects in the United States, and to a large degree, continue to do so.

Early in the nineteenth century, Thomas Jefferson and others with an interest in the future of architecture in a young and expanding nation sensed that more formal methods were needed to address the acute shortage of trained architects. Technical schools filled that need to some extent during the first half of the century, and a few university-based engineering schools began offering courses in architectural drawing. But the dominant model of training architects was apprenticeship, at best a hit-or-miss proposition educationally.

It wasn't until the mid-nineteenth century that the momentous relocation of architecture education from office to campus began to take shape. In 1865, three years after Congress passed the Morrill Land Grant Act and eight years after the founding of the American Institute of Architects, the first formal, campus-based architecture courses in the United States were offered at MIT. The University of Illinois began its program in 1868, Cornell University in 1871, Syracuse University in 1873, and Columbia University in 1881.

Thus began a century-long process in architecture that paralleled, in many respects, the growing professionalism shaping many other fields. As Dana Cuff related in her recent study of architectural practice, training and the profession were largely unregulated during the nineteenth century. It wasn't until 1897 that Illinois became the first state to require a license to practice architecture. Most who called themselves architects were white, well-off and male, and got their training not at school but in apprenticeships of widely varying quality. The rise of the city, the advent of new building materials and techniques, the birth of skyscrapers and new transportation systems—all made even more urgent the need for professionalization in architecture.

What was emerging in those early days of campus-based education, then, was a growing impulse to standardize architecture's expertise
through a more specialized, organized, and regulated educational program, and a related need to assure the public that practitioners could assume legal responsibility for the quality and safety of their work. These needs were decisively addressed by the arrival in America of a philosophy of education and practice developed at the Ecole des Beaux Arts, the leading center of architecture education in France. William Robert Ware, founder of both MIT's and Columbia University's architecture programs, was instrumental in adapting that French philosophy to American schools, and many of Ware's curricular precepts remain influential to this day.

Ware's principles were:

- that details of a practical nature that can be learned in the office should be postponed until after formal education;
- that courses in construction and history can be taught by means of "cooperative student investigation...";
- that architectural design should be conducted by a competitive method, with judgments by jury;
- that the study of design should be continuous through school, and design problems should not be overly practical, but rather should stimulate the imagination through the study of great masters;
- that the study of construction should be stressed; and
- that architectural curriculum should include as broad a cultural background as time permitted.

The Beaux Arts philosophy has remained, for a century, perhaps the single greatest influence on how architecture education is conducted and thought about. As Professor Kathryn Anthony, of the University of Illinois at Champaign-Urbana, states: "The values behind the accreditation process, the way in which the curricula are structured, the jury system, and other key aspects of architectural education continue to primarily reflect an old Ecole des Beaux Arts model."

The Beaux Arts school established, first of all, the hallowed place of European and classical traditions in design. While that had the advantage of distinguishing architecture from more technically driven approaches
used by engineers and others, it also placed the profession more firmly
in an aesthetic realm that made it seem, to many in the public, less vital
to community concerns than some other professions. The Beaux Arts
philosophy also elevated design above technical aspects of the curriculum,
emphasized one-on-one teaching methods, created the present-day system
of design juries using outside evaluators to judge student projects, and
stressed the learning of past architecture to inform present design.\textsuperscript{12} At the
same time, the ascendancy of design studio under the Beaux Arts system
brought with it an atmosphere of individualism, criticism, and competi-
tion among faculty and students.

By the turn of the twentieth century, there were still only nine
professional schools of architecture in the United States, enrolling slightly
under four hundred students.\textsuperscript{13} For the most part, those early schools
offered similar four-year programs which attempted to strike a balance
between design and structures, but given the weighty contents, schools
gave only "meager treatment" to either.\textsuperscript{14} By 1912, the number of schools
had grown to thirty-two, enrollments had tripled, and the Association of
Collegiate Schools of Architecture (ACSA) was founded in order to foster
communication among schools and establish minimal standards. By 1932,
there were fifty-two institutions of collegiate rank offering professional
courses in architecture.\textsuperscript{14} Teaching, meanwhile, was carried on by
"technicians" rather than scholars, and thus research, in the academic
sense, was almost totally lacking.\textsuperscript{15}

An early history of architecture education by Arthur Clason Weather-
head noted that the typical curriculum in the early twentieth century
lacked cohesiveness, the business side of architecture was neglected, and
there was little effort to aid the transition of students between the
academy and the office. Graduates gained a strong sense of design, were
resourceful in solving problems in artificial settings, and well versed in
Beaux Arts logic, but their thinking tended to be two-dimensional.\textsuperscript{16}

Following World War I, the competitive precepts of Beaux Arts were
increasingly questioned. By the 1920s and 1930s, the coming of modern-
ism, the growing rejection of Neoclassicism, and the emergence of
urbanism led to a fundamental reconsideration of architecture education.
Modernism was further refined by the Bauhaus philosophy imported
from Germany in the 1930s by Walter Gropius at Harvard, and Ludwig Mies van der Rohe at the Illinois Institute of Technology. Under their influence, greater stress was placed in U.S. schools on draftsmanship, structural logic, appreciation of the properties of materials, and an aesthetic that derived from the exploration of geometric forms. The period was marked by a shift to a more uniform, well-defined training system in which the Association of Collegiate Schools of Architecture also acted as a unifying influence.

Modernism powerfully affected the curricula at many U.S. schools. Stiffer course requirements were introduced, the study of materials and construction was emphasized, more schools related themselves to allied professional fields, and schools began to explore the relationship of architecture to human and community needs. The University of Oregon rejected the atelier, “master-pupil” model of Beaux Arts studio education and permitted students more freedom to choose their projects according to their interests. The University of Cincinnati began its practice of having students alternate school studies and field work, which has continued into the 1990s.

National organizations concerned with architecture education, meanwhile, were considering ways to assure more complete preparation for practice. Along with the rise of professionalism and the growth of architectural knowledge came a drive for monitoring and accountability. At first, the Association of Collegiate Schools of Architecture itself performed the accreditation function by establishing minimum standards for membership. Those early standards were abandoned in 1932, however, amid criticism that they were stultifying curricula. The result was a regulatory vacuum. In 1940, a coalition of education and professional organizations founded the National Architectural Accrediting Board (NAAB). The establishment of NAAB marked a milestone in efforts to create clearer standards and regulatory safeguards in professional degree programs while recognizing the differing resources, geographic circumstances, and missions of individual schools.

By the end of World War II, the nearly century-long shift away from apprenticeship to a university-based system of architecture education was...
virtually complete. In 1953, architecture enrollments nationwide had reached nearly ten thousand, a 150 percent increase over 1930.22

All along, the rationale behind the move to a campus-based architectural education system was that certain kinds of intellectual growth and learning needed for professional education was more likely to occur on campus than in an office. Still, the shift from the old apprenticeship system planted the seeds of separation between education and practice. Because education, organizationally, has been divorced from the practice world, schools have had to make extraordinary and costly efforts to help students gain real-life experiences, such as field trips, undergraduate internships, or preceptorships. Graduates, for their part, have faced the challenge of acquiring certain skills needed to make the transition from school to office not readily available in most standard curricula.

In 1956, the American Institute of Architecture Students was founded, an outgrowth of the student chapters of the AIA that had already spread to many campuses. In 1962, the membership of the National Council of Architectural Registration Boards (NCARB) voted to establish a single, national registration examination, replacing the many different exams given by states.23

During the 1960s, powerful new forces buffeted architecture education and campus life. Many schools sought to include social and political issues in their curricula, and a number also tried to connect students to underserved urban and rural communities by opening, for example, “Community Design Centers.” The 1960s and 1970s, however, also saw increased questioning of key precepts of modernism. Changing economic and political tides led architects and architecture educators to be less optimistic about their prospects to be leaders in shaping the built environment. The resulting “postmodern” movement of the 1970s and 1980s was not simply a stylistic revolt against the alleged “glass box” sameness of modernism, but also reflected a feeling that modernist architecture had led both practitioners and educators away from some of the profession’s more interesting and vital historical precepts. However, as the name suggests, postmodernism seemed more a move away from modernism than toward any specific unified approach.
By the 1990s, enthusiasm for postmodernism seemed to be evolving into an eclecticism in which many now seem inclined to disavow allegiance to any single style or philosophy. Indeed, the very notion of "style" has fallen into disfavor in many circles. Philosophically, however, a sense of modernist engagement in political, social, economic, and environmental issues appears to be reviving among at least some architects, educators, and students.

What has emerged, then, over the past century, is an ordered, university-based educational system marked by a high degree of professionalism and regulation. Together, the 103 accredited schools of architecture, the five national architecture organizations, their publications, and leading architectural journals act as the guardians and arbitors of the language and traditions of the profession, the awards and recognition programs, the educational performance objectives, and the legal terms for admission to practice.

"All of which is to say," writes Professor Palermo, "architecture and architects have perhaps never been so systematically ordered, internally defined, and—well, professional."^4

A TRADITION OF SELF-EXAMINATION

As much as any profession, architecture has been engaged in continuous self-reflection, and over the last sixty-five years, as architecture education shifted from offices to campuses, at least a dozen comprehensive studies have been written examining current conditions and future directions of education and practice. Those reports were, for the most part, internal studies, sponsored by groups within the profession itself and conducted by investigators drawn from the ranks of the profession or from schools of architecture.\(^5\)

In reviewing those studies, what is most striking is the continued force of so many of their themes and observations, even those written decades ago. Viewed another way, however, the reports are also powerful testimony to the depth and durability of the dilemmas that continue to confront architecture education and practice.
What are the most critical issues identified in those past studies? Which still resonate today?

*A Study of Architectural Schools, 1929–1932*, sponsored by the Association of Collegiate Schools of Architecture (ACSA) and funded by the Carnegie Corporation, criticized the dominance of design faculty over those specializing in "construction." Design projects at many schools, it said, resulted in "paper architecture" whose real purposes and functions are often unclear. The report noted the scarcity of "real research" in architectural schools, and described the difficulty architecture schools often have fitting into the university culture: "The insistence of the architect on the problem method in design, with its emphasis on accomplishment rather than time spent, on student freedom rather than regimentation, completely upsets the machinery of marks, semesters, and quantitative measures. . . ."

The report's description of school life more than sixty years ago also rings familiar. "Go through, of an evening, any university campus containing an architectural school. That school can be spotted without fail. It is the one brilliantly lighted attic. It is always an attic, usually in the oldest and least desirable building."

Finally, architecture school was very much a man's world at the time of the Bosworth and Jones report. In 1930, just 271 female architecture students were enrolled in 34 U.S. schools of architecture.

Almost twenty-five years later, in 1954, an American Institute of Architects commission produced a two-volume report, *The Architect at Mid-Century*, which presented forty-three recommendations, including an aptitude test for prospective architects, more concerted support for architectural research, establishment of "study institutes" for architecture faculty, uniform registration laws, and a single registration exam.

Looking ahead to the second half of the twentieth century, the report admonished educators and practitioners to close the growing gap between them—advice we heard repeated in our own travels. Schools, the AIA report said:

will do well to maintain the closest liaison with the profession in order to adjust content and method to the changing needs
of practice. And, by the same token, the profession, too, must apply its highest wisdom, most sympathetic understanding, and most penetrating vision to the problems of education. The very term “professional education” reveals by its compound form, the necessity of enlightened and harmonious cooperation.32

Perhaps of all major studies of architecture education, the most widely cited yet frequently misconstrued was the 1967 Study of Education for Environmental Design—sponsored by the American Institute of Architects and widely referred to as the “Princeton Report.” Ironically, the Princeton Report owes much of its renown to a recommendation it never explicitly made. The report is often credited with proposing the “four-plus-two” master’s program—four years of undergraduate study, followed by two years of graduate professional study. While the report did, in fact, propose a dramatic restructuring of architecture education that lent support to the idea, the spread of the four-plus-two programs owes more directly to two earlier reports—Report of the Special Committee on Education, AIA, and “Blueprint ’65: Architectural Education and Practice.

The more visionary aspects of the Princeton Report lay elsewhere. Most essentially, it hypothesized three goals for design education: first, helping students develop the competence to work within the realities of actual practice; second, preparing graduates to be adaptable enough to grasp, and work within, “the continuing changes in the social, economic, scientific and technological setting of our society”; and finally, preparing students to develop their own analytical framework in which to envision a better society and built environment, “beyond present day constraints. . . .”33

To realize those objectives, the study stressed the importance of ending the isolation of the architectural discipline. It called for making connections—“building ladders and bridges,” as co-author Robert Geddes put it recently—between all professions engaged in environmental design: “We needed to make working connections with others—engineers, planners, landscape architects, and an array of non-designers—who participate in the making of the built environment.”34
To build those bridges, the report called for a flexible architecture curriculum, a wide range of teaching methods, and diverse architecture programs. Rather than proposing a "core curriculum" for all schools, the report suggested an intricate "modular, jointed framework for environmental design education" aimed at allowing students to tailor their studies to prepare them for more than nine hundred possible design-related careers.

The Princeton Report stressed the need for better understanding of architecture and the built environment among nonarchitects. And it emphasized the importance of continuing education—an issue that has moved in the 1990s to the top of the academic and professional agenda.

The idea is still accepted implicitly at many schools that what is learned in a period of four years to six years must carry a student through his entire professional career. To the extent that we are capable of developing more powerful planning and design concepts and methods through research and experimentation in the field, this idea of a termination point for education becomes less and less tenable.

The Princeton Report was not immediately welcomed by the architecture education community. As Professor Geddes recounted recently, the report was issued at a time of growing disenchantment between the profession and the academy, and the failure by the AIA to invite more active participation from the collegiate schools association and other architectural and nonarchitectural organizations made the report instantly suspect to many educators. Still, the wisdom and foresight of many of its observations survived the initial cool reception, and the document is today referred to by many with renewed admiration.

In 1981, a two-volume, 1,448-page analysis of the design studio was produced by a consortium of eight East Coast schools of architecture. The first volume of the Architecture Education Study, often called the "Mrr Study," consisted of papers by six eminent scholars, each focused mainly on the methods and culture of the design studio. The second
volume offered detailed case studies of design studios and student experiences.

The study introduced a topic of enduring relevance: how design education can shape attitudes about clients, users of buildings, and even fellow architects. M.I.T. architecture professor Julian Beinart wrote that design students often held a pejorative view of architects—considering them egotists, elitists, insecure and indecisive.\(^8\) And he discussed the disturbing attitudes architecture students harbor about clients. Some students advocated cooperation. Others suggested “educating” the client, while still others wished they could “eliminate” the client altogether—in effect, designing without compromise or constraint. Finally, some students spoke of “beguiling the client,” with various kinds of “sneaky behavior” to deceive clients into thinking their wishes were being fulfilled.\(^9\)

Lee Bolman, a professor of education at Harvard University, wrote that many practicing architects felt their schools shortchanged them in nondesign topics: 43 percent of those Bolman interviewed said they hadn’t learned enough about how buildings actually get built, 39 percent wished they had been taught management skills, and 22 percent regretted not having learned how to deal better with other people. No one thought that school had provided too little training in design.\(^{40}\) And Bolman argued that these curricular imbalances were not correctable simply by adding a few courses, but related instead to the more fundamental question of whether the methods and climate at most schools might be contributing to a disdain for technical and practice-oriented topics.

Asked to weigh the prospects of the profession itself, architects told Bolman in 1981 that they were fond of their work, but some believed, nonetheless, that the architecture field was “a dinosaur doomed to extinction.”

One in four felt the profession was clinging to an obsolete model of the architect’s role. . . . A similar number felt that the profession did not know how to convince others of the architect’s value. One-fifth of the architects suggested that the profession was dying, and an equal number felt that society
undervalued architects. . . . There were few optimistic predictions although some predicted that architects would broaden their functions by involving themselves in planning, land use, development, and energy-efficient design. . . . 41

Bolman concluded with this challenge: “Many practitioners blame the schools for failure to address such issues. They ask, in effect, ‘Shouldn’t the schools be doing the research and theory-building to help in charting the profession’s future? If they do not engage in that inquiry, who will?’”42

In the fifteen years since the MIT study, other notable books have been published on aspects of architectural practice or education. Two deserve special mention. Architectural Practice: A Critical View, published in 1988 by Robert Gutman, a sociologist who has taught at Princeton’s architecture program for more than twenty-five years, identified critical issues for the profession generally:

- how to bring the supply of architects more in line with demand for services;
- how to develop, industry-wide, a consistent “philosophy of practice” and a clearer self-image that conforms to the realities of the building industry;
- how architecture could pursue both educational and professional strategies to cope with increased competition from other building professions;
- how to maintain the profitability of design businesses at a time of rising costs and growing competition; and
- how to balance the desires and aspirations of employees with the need for effective management and teamwork within design firms.43

Those challenges, aimed principally at practitioners, raised disturbing questions for educators as well. How effectively, for example, do teaching methods and curricular content at most architecture schools prepare students for a professional climate in which cooperation, management acumen, and specialization of services are increasingly valued? Have the
changes in professional climate described by Gutman dangerously widened the gap between education and practice, and if so, what should be done?

University of Southern California Professor Dana Cuff's 1991 study, *Architecture: The Story of Practice*, employs the language of social science to describe the role of schools as "socializers" of young architects into the "culture" of the profession. Tracing the development of this culture, Cuff probed how schools of architecture help create in students, through their curricula and methods, a professional "ethos": what is valued, what is devalued.44

Cuff's telling portrait of life in architecture school adds modern insights to the picture presented sixty years earlier in the first ACUSA-sponsored report. Students, she wrote, "stay up late, are never home, spend all their time in studio, and belong to a clique of other architecture students. . . . Here, in this earliest phase of becoming an architect, we see kernels of architects' later values, such as the principle of peer review and a developing segregation from the general public."45

Cuff especially notes the difficulties women face in entering academies where the curriculum and classroom culture reflect a long history of male dominance. Whatever their virtues, the design jury, the desk-side critique of student design work known as the "desk crit," and the grueling string of all-nighters known as the "charette"—reinforce a macho, boot camp atmosphere. Adding to the discomfort of female students is the fact that role models in studio and in the curriculum remain predominantly male.46 Most essentially, Cuff argued, schools should do more to extend education "beyond context-free design," and she urged both the academy and the profession to pay more attention to "the social aspects of architecture."47

To summarize, our review of the history of American architectural education and of past efforts to assess it reveals as many possibilities as problems and as much continuity as change. A rich legacy of traditions continues to shape the methods and content of architecture education as well as professional practice, and an understanding of the historical roots
of those practices is surely a necessary prelude to considering current conditions or future directions.

The distinguished scholar and practitioner Gerald McCue, of Harvard University, notes that the common pitfalls facing any study of architecture education include a tendency to exaggerate “newness and change,” while downgrading that which is traditional, fundamental, and likely to continue. There is also, McCue says, a tendency to assume that problems, once identified, will necessarily be solved rationally. “It’s like having a toothache forever, and yet we did. We’re still dealing with some of these toothaches thirty years later.”

With those wise precautions in mind, we begin our examination of current conditions and future prospects of architecture education by recalling, once more, the two-thousand-year-old Vitruvian trinity: Firmness, Commodity, and Delight. Throughout history, what has distinguished “architecture” from the mere building of buildings is the insight and skill to blend the useful with the timeless, the technically sound, with the beautiful. The challenge that has always faced both the academy and the profession has been discovering the right balance of those three ancient ideals, each so indispensable to successful architecture. That challenge continues today.

A NEW VISION

In the chapters that follow, we recommend a new framework for renewing architecture education and practice based on seven separate but interlocking priorities. The new vision builds on the traditions, history, and critiques already described, as well as best practices we discovered in campuses and offices around this country. If widely embraced, these “designs for renewal” would, we believe, help promote a more fruitful partnership between educators and practitioners that would not only enhance the competence of future architects but also lead the profession into more constructive engagement with the most pressing problems of our communities, our nation, and our planet.

We propose, as the first and most essential goal, an enriched mission—connecting schools and the profession more effectively to the
changing social context. Specifically, we recommend that schools of architecture should embrace, as their primary objectives, the education of future practitioners trained and dedicated to promoting the value of beauty in our society; the rebirth and preservation of our cities; the need to build for human needs and happiness; and the creation of a healthier, more environmentally sustainable architecture that respects precious resources.

Second, we propose a more inclusive institutional context for the scholarly life of architects based on the principle of diversity with dignity. We imagine a landscape of architecture programs in which the multiple missions of schools are celebrated, and the varied talents of architecture faculty are supported and rewarded in a scholarly climate that encourages excellence in research, teaching, the application of knowledge, and the integration of learning.

To support the priority of diversity with dignity, we propose, as a third goal, standards without standardization. Such standards would affirm the rich diversity among architecture programs, establish a more coherent set of expectations at all schools that would support professional preparation, and bring into closer harmony the scholarly activities of students and faculty.

Fourth, the architecture curriculum at all programs should be better connected. A connected curriculum would encourage the integration, application, and discovery of knowledge within and outside the architecture discipline, while effectively making the connections between architectural knowledge and the changing needs of the profession, clients, communities, and society as a whole.

Fifth, each school of architecture should actively seek to establish a supportive climate for learning—where faculty, administrators, and students understand and share common learning goals in a school environment that is open, just, communicative, celebrative, and caring.

Sixth, educators and practitioners should establish a more unified profession based on a new, more productive partnership between schools and the profession. The priorities for sustained action between the academy and the profession should include strengthening the educational experience of students during school, creating a more satisfying system of
internship after graduation, and extending learning throughout professional life.

Finally, we urge schools to prepare future architects for lives of civic engagement, of service to the nation. To realize this last goal for renewal, schools should help increase the storehouse of new knowledge to build spaces that enrich communities, prepare architects to communicate more effectively the value of their knowledge and their craft to society, and practice their profession at all times with the highest ethical standards.

Taken together, we propose an enriched educational climate in the academy and the profession—dedicated, with equal intensity, to promoting professional competence, and to placing architecture more firmly behind the goal of building not only great buildings but more wholesome communities.
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8. Ibid., 26.


12. Weatherhead, 63.


15. Weatherhead, 164.


35. Geddes and Spring, 22.
36. Ibid., 22.
37. Geddes, remarks.
40. Ibid., 683.
41. Ibid., 733–34.
42. Ibid., 737.
44. Dana Cuff, 43.
45. Ibid., 118.
46. Ibid., 121.
47. Ibid., 108.