ARCHITECTURE SCHOOL
THREE CENTURIES OF EDUCATING
ARCHITECTS IN NORTH AMERICA

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JOAN OCKMAN editor

with REBECCA WILLIAMSON research editor

INTRODUCTION
The Turn of Education

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For an original exploration of these different identities, see Andrew Saint, *The Image of the Architect* (New Haven: Yale University Press, 1986).

Architecture schools are undergoing far-reaching transformations in the early twenty-first century. Globalization, digital technology, and an increasingly market-driven education economy are among the powerful forces reshaping academia. Natural and man-made disasters have also played a part over the last decade, focusing the attention of educators on environmental change, the technical performance of buildings, and their representational role. The present volume does not purport to address all these developments explicitly (except in the final chapter of Part One), nor does it make recommendations for the future of architecture education. But it does aim to provide a context for reflecting on them and on the way architecture schools have historically prepared students to confront the challenges of their day. History, as Benedetto Croce noted, is always written from the perspective of the present. This book is no exception. As the first full-scale overview of the history of architecture education in North America, it is inevitably a document of its time.

Just as the architect's training has been subject to pressures from outside the discipline, it has also contended with continual frictions from within; some have been present from its colonial beginnings through its coalescence into a modern-day system of instruction. The centrality of the design studio in the architecture curriculum is often claimed to be what makes architecture education unique, yet "studio culture" with all its pedagogical conventions and specialized practices—the project method, the "over the boards" transaction between the instructor and student, the rigors of the charrette and the jury—only dates to the last third of the nineteenth century. Arguably, what most distinguishes architecture education from other types of professional and graduate training is its syncretic nature. Geared to producing skilled practitioners and founded on concepts and discursive formations that have evolved since the time of Vitruvius, it combines technics and aesthetics, sciences and humanities. Schools are called on to impart highly disparate types of knowledge, negotiating the architect's multiple identities as craftsman, technician, and creative artist; professional and intellectual; public servant and businessman.[1]

These identities have not just coexisted but sometimes conflicted. Architecture's hybridity implicitly challenges the very definition of the discipline; indeed, it is fair to ask whether architecture has ever really constituted a unified domain of knowledge. Its unsettled boundaries have contributed to a tense relationship between the worlds of practice and academia. They have also complicated architecture's interchanges with adjunct areas of study, from landscape to urban design, and at times led to efforts to subsume all the design disciplines under one comprehensive, architectural roof. Other questions—for example, of hands-on versus abstract methods of learning, of artistic expression versus collaborative practice, of native versus foreign ways of doing things, of professional protectionism versus democratic pluralism—have also persisted historically, and have taken on particular inflections in the North American context. All these themes recur throughout this book, and they add richness and fascination to the historiography of this understudied institution.

Mixed beginnings

As the first three chapters of the first part of this book show, the development

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of architecture education in the United States and Canada was considerably less straightforward than "Beaux-Arts to Bauhaus" would suggest. The mixed parentage of North American architecture education reflects not only its syncretism but also the complexion of a continent built by immigrants from various cultural traditions. The beginnings of modern architecture education in North America date back three centuries. Young men who wished to obtain the skills of an "architect" acquired their practical knowledge through craft apprenticeship in building trades like carpentry and bricklaying. The practice of apprenticeship, which emerged in the Middle Ages, was codified by statute in sixteenth-century England and regulated by guilds. In the Anglo-American New World, where guilds did not exist and arrangements were looser, apprentices were indentured to a master craftsman for an agreed-upon period of years (typically seven), during which they were initiated into the "art and mysteries" of their trade. Afterward they became journeymen who could charge for their services and open their own shop.[2] On occasion master craftsmen also banded together for fraternal as well as educational purposes. The *Reminiscences of Carpenters' Hall, in the City of Philadelphia* record that

> It was as early as 1724, about 40 years after Wm. Penn first landed on these shores, that the Master Carpenters of the City and County of Philadelphia organized an Association called the "Carpenters' Company." The object of this Association, as expressed in the subsequent act of incorporation, was to obtain instruction in the Science of Architecture.[3]

Although the Carpenters' Company got little further than creating a library until 1834 (when it added a third story to its building to house an "architectural drawing school" open five nights a week to "scholars"), other enterprising early practitioners began to offer self-styled classes to paying students. In 1758, one Theophilus Hardenbrook, a surveyor in New York City, placed an advertisement in the *New-York Mercury* announcing that he had "now open'd a school near the New English Church where he teaches Architecture from 6 o'clock in the Evening till Eight."[4] As Dell Upton explains in the opening chapter, these men—no women in the field at this date are known—had a transitional status between artisan and architect. Variously claiming to purvey science or art, they viewed their occupation as making the drawings and estimates necessary for putting up buildings and supervising the construction process. Yet they quickly sought to increase their social and cultural capital, supplementing practical experience with a panoply of handbooks, travel itineraries, and, in urban centers, institutes and libraries open to the "mechanic trades." The figure of the gentleman-architect also appeared, the most famous of whom was Thomas Jefferson (1743–1826). The son of a well-to-do surveyor, Jefferson acquired his knowledge of architecture from his extensive readings in classical sources and European travels. Starting in 1814, he promoted the teaching of civil and military architecture at Albemarle Academy in Charlottesville. Two years later, the school's name was changed to the University of Virginia, and Jefferson drew up its grounds plan in the form of an "academical village." Intended to provide "perpetual object lessons to students in the right principles of architecture," the academical village was a statement in built form of his educational philosophy.[5] **Figure 1**

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On this subject, see Mary N. Woods, *From Craft to Profession: The Practice of Architecture in Nineteenth-Century America* (Berkeley: University of California Press, 1999). Apprenticeships existed earlier in French Canada than in the American colonies. Claude Baillif (c.1635–1699), a "stone-cutter, master mason, plasterer, contractor, architect" who emigrated from France to Quebec in 1675, had up to twenty apprentices; his library included books on mathematics and civil and military architecture, and his drawings were sophisticated and carefully executed. Among those he trained was Jean-Baptiste Maillou, later known as the "King's architect," who in turn trained six apprentices. See A. J. M. Richardson, *Quebec City: Architects, Artisans, and Builders* (Ottawa: National Museum of Man, 1984), 89–91, 386–87.

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Reminiscences of Carpenters' Hall, in the City of Philadelphia (Philadelphia, 1858), 4.

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Esther Singleton, *The Furniture of Our Forefathers*, with critical descriptions of plates by Russell Sturgis (Garden City, N.Y.: Doubleday, Page & Company, 1913), 283.

5
Herbert B. Adams, *Thomas Jefferson and the University of Virginia*, Contributions to American Educational History no. 2 (Washington, D.C.: Government Printing Office, 1888), 100. It is interesting to note that George Washington—like Jefferson, a wealthy Virginia landowner and farmer—was trained as a surveyor and cartographer and had significant architectural talents, as expressed in his designs for his house and landscape at Mount Vernon and in his collaboration with Peter Charles L'Enfant on the plan of Washington, D.C. See Allan Greenberg, *George Washington, Architect*, with foreword by Vincent Scully (London: Andreas Papadakis Publisher, 1999).

With the rise of industrialism and public education in the nineteenth century, and the coalescence of architecture into a more defined professional institution, the locus of architectural apprenticeship shifted from the workshop into the firm and drafting room, where soon an ambitious young man could work his way up the ladder from office boy to delineator. By midcentury, however, two other European educational models came to be viewed as more efficient and up-to-date preparation for an architectural career: the German polytechnical school (originally based on the French École Polytechnique) and the French École des Beaux-Arts. These were well-organized, state-subsidized, and highly prestigious institutions in their European versions, the one rooted in the sciences and the other in the fine arts. Both systems were products of the rationalization of knowledge and the regulation of the professions ushered in by the Enlightenment. Paradoxically, in Britain, the birthplace of the Industrial Revolution, architecture continued to be taught for most of the nineteenth century by pupilage—paid or unpaid internships in offices— supplemented by private courses.

But the determining factor in the development of architecture education in North America in the latter part of the nineteenth century was the emergence of the university in its distinctively American forms. Prior to the Civil War, higher education in the United States had been mired in a static tradition of religious piety and

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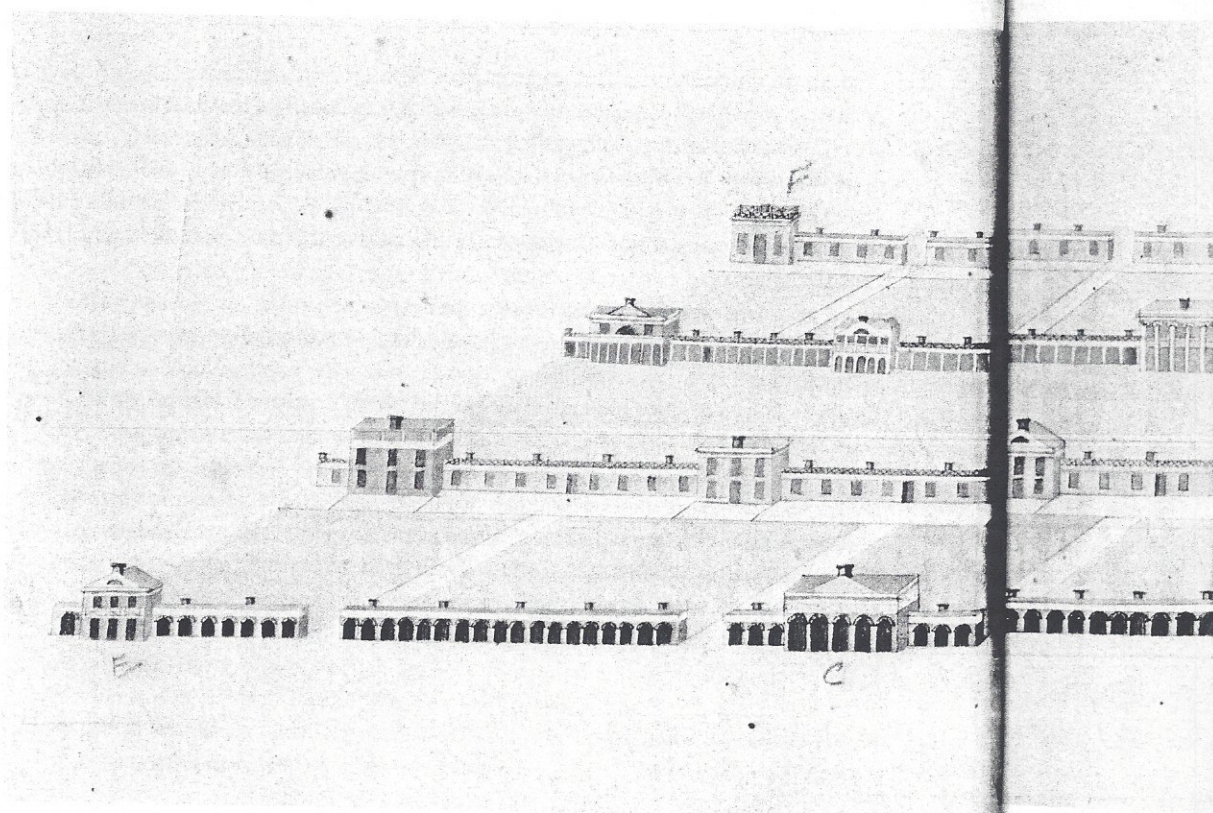
so-called mental discipline; the traditional American college emphasized proficiency in Greek and Latin, and centered its instruction on recitations from a canon of texts. Afterward, the new scientific spirit of the period converged with the expansion of national capital to support the development of an entirely different kind of academic institution. National pride also stimulated a desire on the part of American intellectuals to create an educational system equal in quality to that of their European counterparts (and, for some, to distinguish their institutions from the foreign ones).
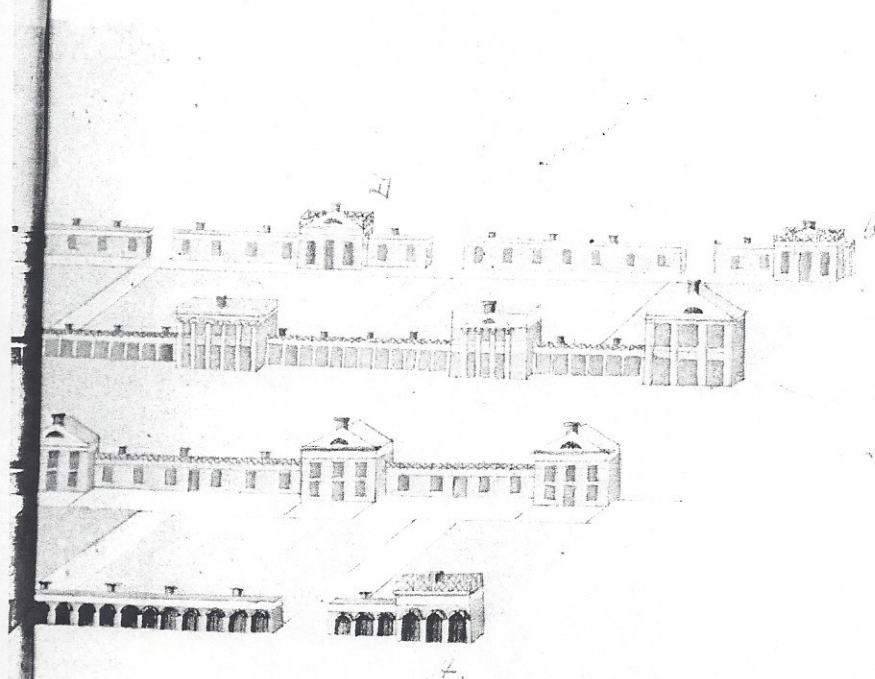
In this context, as Laurence Veysey has elaborated, three distinct conceptions of the university came into being.[6] The first was based on a view of higher education as practical preparation for public service. The second privileged "pure" scientific research, on the model of the German technical university. The third took the university's mission to be the elevation of public taste and the diffusion of a liberal, humanistic culture. While all three were responses to demands by reformers for "sweeping and fundamental changes" in American higher education,[7] each conception would have its own implications with respect to architecture, as reflected in the first architecture programs to open in major universities as formal courses of study: at Massachusetts Institute of Technology in 1865, the University of Illinois in 1868, Cornell in 1871, Syracuse in 1873, and Columbia in 1881. Yet as Michael J. Lewis explains in the second chapter, on the period from 1860 to 1920, it was the second

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Laurence Veysey, *The Emergence of the American University* (Chicago: University of Chicago Press, 1965).

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Noah Porter, inaugural address as president of Yale University, 1871; cited ibid., 1.

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Leopold Eidlitz, *The Nature and Function of Art, More Especially of Architecture* (London: Sampson Low, Marston, Searle, & Rivington, 1881), 479.

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Emerson further characterized the spirited Hunt as "a thinking soul ... horsed on a robust and vivacious temperament." *Journals of Ralph Waldo Emerson* (New York: Houghton Mifflin, 1914), 280–81; "Death of Richard M. Hunt: One of the Foremost Architects of the United States," obituary, *New York Times*, August 1, 1895.

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Report of the Committee on Permanent Organization, *Architecture and Building* 18, no. 167 (1895); cited in Arthur Clason Weatherhead, *The History of Collegiate Education in Architecture in the United States*, Ph.D. diss., Columbia University (Los Angeles: privately published, 1941), 77.

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Frank Lloyd Wright, *An Autobiography* (New York: Duell, Sloan and Pearce, 1943), 103.

conception, the polytechnical model identified with German science and research, that prevailed initially within the new university-based engineering schools.

In 1881 the architect Leopold Eidlitz articulated the dilemma facing the architecture student:

> [I]f the student of architecture could master the mathematical and scientific branches taught in modern polytechnic schools, make himself proficient in drawing, attend an academy of architecture, and then become in succession a good carpenter, mason, stone-cutter, painter, sculptor, and decorator—no doubt such a student would be eminently well prepared for professional life, and produce marvels of architectural art; but as human life is too short to enable one man to master practically so many arts, the question to be answered is reduced to this: Shall the pupil of architecture be educated in some mechanical workshop, in an art studio, or in a polytechnical school.[8]

Certainly there was much for the architect to learn! But for the Prague-born Eidlitz (1823–1908), a solid grounding in mathematics and mechanics on the polytechnical model trumped both vocational and aesthetic desiderata.

In contrast, for Richard Morris Hunt (1827–95), it was the system of the École des Beaux-Arts that was best suited to turning out illustrious and well-cultivated architects (and architecture). Hunt was one of the first Americans to attend the renowned academy in Paris, entering it in 1846. He returned from Europe nine years later to establish his own atelier on Tenth Street in New York, where he trained such influential members of the next generation as William R. Ware (1832–1915), who would go on to found the architecture school at M.I.T. and subsequently the one at Columbia. Enamored of "fine theories of the possibilities of art" in the description of Ralph Waldo Emerson, Hunt was the possessor of the outstanding architectural library in the United States at his death, according to the *New York Times*.[9] By that date the Beaux-Arts had displaced the polytechnic as the preeminent educational model in North America. The Society of Beaux-Arts Architects was formed in 1893 by seventy-two charter members who had attended the school in Paris, with the aim of "preserving among ourselves the principles of taste required at the École des Beaux-Arts [and] endeavoring to propagate these principles among the rising generation of architects and the public in general."[10] A year later the society issued its first competition program, circulated to its members, architectural clubs in three cities, and six schools; the program was for "A Small Theatre for Cantatas." Ateliers and drafting clubs proliferated around the country, and within the schools, design studio took pride of place for the first time.

Yet for another foremost architect of the period, both the polytechnic and the Beaux-Arts models lacked authentic inspiration. Louis Sullivan (1856–1924) continued to view apprenticeship as the primary vehicle for instilling the genius and poetics of architecture in young aspirants. A formidable master to the draftsmen in the Chicago office he shared with Dankmar Adler, he fostered in the most receptive of his "pencils"—above all the young Frank Lloyd Wright—a belief in the value of self-education and "a radical sense of things."[11] Sullivan began his own architectural studies

in 1872 at M.I.T. under Ware and the Frenchman Eugène Létang, but he left without obtaining a degree, finding the program a "misch-masch of architectural theology."[12] Two years later, with some professional experience under his belt, he decided to experience the École in Paris for himself. Initially enthralled by the richness of its philosophy, the rigor of its discipline, and the panorama of architectural history it opened up, he came to see its institutional character as too "finished"; the authority it wielded over European culture was the end-product of "busy and sad centuries." As he recorded in his autobiography (written in the third person):

> He familiarized himself thoroughly with the theory of the School, which, in his mind, settled down to a theory of *plan*, yielding results of extraordinary brilliancy, but which, after all, was not the reality he sought, but an abstraction, a method, a state of mind, that was local and specific; not universal. Intellectual and aesthetic, it beautifully set forth a sense of order, of function, of highly skilled manipulation. Yet there was for him a fatal residuum of artificiality, which gave him a secret sense of misery where he wished but too tenderly to be happy. And there came the hovering conviction that this Great School, in its perfect flower of technique, lacked the profound animus of a primal inspiration."[13]

Sullivan subsequently denounced the American infatuation with the French system in more vitriolic language—most famously in connection with the Columbian Exposition in Chicago in 1893, with its neoclassical aesthetic imported into the American heartland by architects from the East Coast—as would his disciple Wright after him. Yet Sullivan and Wright were hardly the only apostles of American exceptionalism. Over the course of the next five decades, as Anthony Alofsin argues in his chapter on the 1920s and 1930s, the claims of national identity would be reasserted regularly by architects in the United States, who sought to counteract what appeared to be an endemic inferiority complex on the part of a former colonial nation.

Indeed, as early as 1894 the architectural historian Barr Ferree protested, "the system of architectural education most in vogue in America is utterly at variance with the prevailing conditions and limitations of American life."[14] Four years later, critic Russell Sturgis, writing in the *Atlantic Monthly*, opined:

> [T]he young architect would do well not to learn what his contemporaries and those a little older than he have been doing. That which has been done since 1815 in the way of architectural fine art has not been worth the doing, and it would be better, on the whole, if it were all wiped out. Some interesting buildings would be lost, but it would be better for the immediate future of art if the buildings erected since that time had been brick factories in appearance with square holes for windows. ... The student of architecture has nothing to learn from the epoch in which he finds himself.[15]

Sturgis's radical recommendation anticipates the ban on teaching architectural history to beginning architecture students that Walter Gropius would famously impose three decades later at Harvard. Meanwhile, in 1908, Ware's successor in the staunchly

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Louis Sullivan, *The Autobiography of an Idea* (New York: Dover Publications, 1956), 188.

13
Ibid., 239–40.

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Barr Ferree, "Architectural Education for America," *Engineering Magazine*, May 1894, 161.

15
Russell Sturgis, "The True Education of an Architect," *Atlantic Monthly*, January 1898, 255; see also "An Architect's Education," *New York Times*, February 7, 1898.

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A. D. F. Hamlin, "The Influence of the Ecole des Beaux-Arts on Our Architectural Education," *Architectural Record*, April 1908, 244.

17
Ibid., 247.

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On the establishment of the AIA, see Henry H. Saylor, *The A.I.A.'s First Hundred Years* (Washington, D.C.: The Octagon, 1957), 1–9, 109–10; Saint, *The Image of the Architect*, 80–89; and Woods, *From Craft to Profession*, 28–42. The architect who was the prime mover behind the AIA was Richard Upjohn.

Beaux-Arts stronghold of Columbia, A. D. F. Hamlin, would defend "wholly native American initiative," arguing that Paris no longer was "the one place in the world where a really efficient and artistic training can be had":

[O]ur architecture has undergone an extraordinary evolution—almost a revolution—since the Centennial of 1876; indeed, since the Columbian Fair at Chicago. It has advanced along two lines, that of monumental planning and composition, thanks largely to the earlier influences of the Paris school and schoolmen; and that of scientific construction, as a result of wholly native American initiative.[16]

He prophesied:

The tide that once rolled from America to the German universities has dwindled to almost nothing. I foresee a day in the near future when American graduates in architecture will cease frequenting the courts and halls of the Paris Ecole. Nay, I dare to forecast the coming of a day in the future, not too far distant, when French students will come to America to study architecture, seeking fresh inspiration, a new point of view, a new enthusiasm, in the study of an architecture as verile [sic], as fresh and independent in its ideas as the American people itself.[17]

Different types of modernization

Two crucial developments affecting collegiate architecture education—one specific to the architectural profession, the other more general—accompanied the university's rise in the postbellum United States. One was the establishment of the American Institute of Architects. Based on two predecessor organizations that had foundered during the previous couple decades, the AIA was convened in 1857 by thirteen prominent New York architects—among them Leopold Eidlitz and Richard Morris Hunt—who wished to "promote the scientific and practical perfection of its members and elevate the standing of the profession."[18] With its bylaws solemnly consecrated in a Gothic Revival chapel designed by Alexander Jackson Davis on the campus of New York University, this gentlemanly group soon appointed a Committee on Education. The Civil War curtailed the fledgling organization's immediate further activities, but a decade later, in 1867, the AIA proposed to found a great central school under its own oversight. When this project did not get off the ground for lack of funding, it threw its weight behind the architecture programs emerging at M.I.T. and other universities. For the next century and a half, as the self-appointed custodian of the elevated standing of the architectural profession, the AIA would play an intermittently progressive and conservative role in the evolution of architecture education.

The second event had the reverse implications. The Morrill Land Grant Act, signed into law by Abraham Lincoln in 1862, jumpstarted the creation of a nationwide system of land-grant colleges and universities, earmarking the proceeds from sales of selected federal lands for the creation and permanent funding of state-supported institutions of higher learning. While especially associated with the extension of college education to parts of the country remote from the cosmopolitan centers (at

a time when most of the nation's citizens were farmers), the Morrill Act gave equal weight to the educational needs of an industrializing society, providing in its language for the teaching "of such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."[19]

By this date the term *mechanic arts*—whose origins went back to the Middle Ages and contrasted with the liberal arts—was more or less synonymous with mechanical and civil engineering. Earlier in the nineteenth century, the elite American institutions of higher learning had shunned the empirical and applied sciences, favoring a pedantic tradition of classical studies; technical subjects, if not taught on the job or in mechanics' institutes and schools of mines, had been the province of military and naval academies. The Morrill Act promoted the introduction of technical studies into the American university curriculum, and in doing so had the effect of making collegiate education at once more practical and more democratic. As a direct result of the Morrill Act, the number of colleges granting degrees in engineering more than tripled in the United States within a few years after the Civil War, from six to twenty-one, and by a decade later the population of engineering graduates had increased tenfold. Architecture educators in the new land-grant schools quickly defined their discipline as a branch of modern engineering. And while the German polytechnical school provided the primary model for the new, research-oriented curriculum in architectural engineering, the Morrill Act—named for a Vermont congressman who was the son of a blacksmith—laid special emphasis on the "American" trait of practicality. As the Frenchman Alexis de Toqueville had presciently observed in the 1830s, in aristocratic societies science was "particularly called upon to furnish gratification to the mind," but in democracies it had to satisfy more material and immediate requirements: "Nothing is more necessary to the culture of the higher sciences or of the more elevated departments of science than meditation; and nothing is less suited to meditation than the structure of democratic society."[20]

In this context, a demonstration at the 1876 Philadelphia Centennial exhibition by an educational innovator named Victor Della Vos, the director of the Moscow Imperial Technical School, had an enthusiastic reception. A method of tool-based education, it showed that it was possible to offer systematic instruction in mechanical skills within a school setting as an effective alternative to on-the-job training. The "Russian Tool System" not only sparked a vocational education movement in public schools throughout North America, but also had an important impact on higher education. Among those who brought the idea back to their own universities was John D. Runkle, M.I.T.'s second president, who saw in it direct implications for the training of future engineers, and Calvin Woodward of Washington University in St. Louis.[21] Another adherent of the Della Vos method was Nathan C. Ricker (1843–1924), the first recipient of a degree in architecture from a newly founded land-grant school, Illinois Industrial University (subsequently the University of Illinois) in Urbana-Champaign. Ricker, who would chair Illinois's architecture department from 1873 to 1910, had himself worked as a craftsman before entering the university, and had had the opportunity to witness Della Vos's method in 1873 while traveling in Vienna after

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"The Morrill Act, 1862," in Richard Hofstadter and Wilson Smith, eds., *American Higher Education: A Documentary History*, vol. 2 (Chicago: University of Chicago Press, 1961), 568.

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Alexis de Toqueville, "Why the Americans Are More Addicted to Practical Than to Theoretical Science," *Democracy in America*, vol. 2, book 1, chapter 10 (New York: Vintage, 1954), 46, 43. Compare a near-contemporary statement by Benjamin F. Greene entitled "The True Idea of a Polytechnic Institute," concerning the reorganization of Rensselaer Institute as a school of engineering: "A true idea of the Polytechnic Institute is … that of a *series of Special Schools* for the complete educational training of Architects, Civil Engineers, Mining Engineers, and other Scientific Technists,—all united under a common organization,—all alike aiming at the realization not only of exact and extended scientific culture, but of the utmost practical skill in the applications of science to the pursuits of active life." *The Rensselaer Polytechnic Institute: Its Reorganization in 1849–50; Its Condition at the Present Time; Its Plans and Hopes for the Future* (Troy, N.Y., 1855), 38; italics in original.

21
On the impact of Della Vos and the Russian method, see Herbert M. Kliebard, *Schooled to Work: Vocationalism and the American Curriculum, 1876–1946* (New York: Teachers College Press, 1999), 3–8; and Lawrence A. Cremin, *The Transformation of the School: Progressivism in American Education, 1876–1957* (New York: Random House, 1961), 23 ff.

Figure 2
Students constructing their own schoolhouse at the Interlaken School, Silverlake, Indiana, c. 1915. From John Dewey and Evelyn Dewey, *Schools of Tomorrow* (1915)
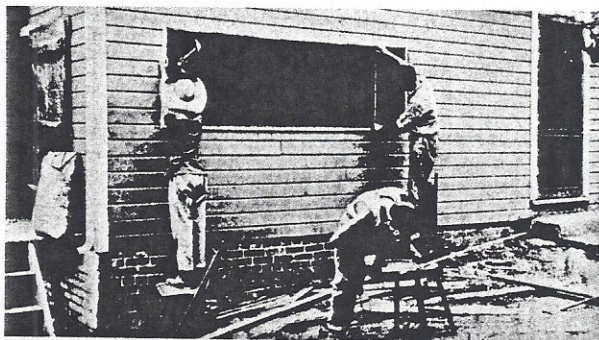
22
Weatherhead, *History of Collegiate Education*, 65–66; see also Woods, *From Craft to Profession*, 72–73.

23
See "Democracy and Education," From John Dewey and Evelyn Dewey, *Schools of Tomorrow* (New York: E. P. Dutton, 1915), 287–316. One progressive vocational training school organized along lines similar to those of Della Vos was the New York Trades School, which still exists today as New York City College of Technology (part of the City University of New York). Founded in 1881, it was the conception of Richard T. Auchmuty, a prominent New York architect. See Richard T. Auchmuty, "An American Apprentice System," *The Century* (new series), vol. 15 (1888–89), 401–5. Pratt Institute in Brooklyn, founded in 1887 by an oil magnate who was the son of a carpenter, had similar origins.

24
Roger L. Geiger, *To Advance Knowledge: The Growth of the American Research Universities, 1900–1940* (New York: Oxford University Press, 1986), 22; cited in Howard Singerman, *Art Subjects: Making Artists in the American University* (Berkeley: University of California Press, 1999), 11. It is interesting to note that the College Art Association was founded in 1912, the same year as the ACSA.

completing a postgraduate course at the Berlin Bauakademie. Perceiving no contradiction in a curriculum that emphasized both manual and mental labor, he set about integrating shop instruction into Illinois's polytechnic program. Students were required to enroll in three different workshops (carpentry and joinery, cabinetry, and the making of scale models) in their first year of study. In 1874 Ricker specified his objectives for the shop course as follows:

1. To acquire a knowledge of tools and manual processes in construction.

2. To distinguish between good and bad work in inspection.

3. To learn the peculiarities of materials and modes of working with them as a background for design.[22]

The vocational approach also became the basis of architectural education at Tuskegee Institute in Alabama, established in 1881 under Booker T. Washington, as well as at other HBCUs (historically black colleges and universities). A less often acknowledged influence on North American architecture education than the British, German, and French models, shop training represented an effort on the part of educators in an industrializing society both to bridge the gap between traditional craft practices and scientific instruction and to extend architectural instruction to a wider segment of the population. The debate over the philosophical and class implications of vocationalism would subsequently engage the most influential educational philosopher of the day, John Dewey, the father of the progressive education movement in America. While championing the idea of "learning by doing," Dewey would reject vocational training as a narrowly utilitarian and socially stratifying solution to the needs of industrial democracy as well as to human potential.[23] **Figure 2**

Modernization and modernism

The establishment of the Association of Collegiate Schools of Architecture was the next major milepost in the institutionalization of American architecture education. "If there is a single crucial point in the process of academic professionalization," one educational historian has written, "it would be the formation of a national association."[24] Twenty-seven collegiate architecture schools existed in the United States

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in 1912. That year eight professors met at the AIA's forty-sixth annual convention and agreed to form an organization to address problems in education; officers were elected and a meeting scheduled for the following year.[25] At its second meeting, held a year later at Columbia University, ten schools became charter members—Carnegie Institute of Technology, Columbia, Cornell, Harvard, M.I.T., Washington University in St. Louis, and the universities of California, Illinois, Michigan, and Pennsylvania, representing some seventy-five percent of the architecture students in the United States at the time. Out of these early meetings came the idea of establishing basic curricular requirements for admission of schools to its membership; these "standard minima" would serve as the equivalent of school accreditation criteria until 1932.[26]

One other early ACSA initiative was to call for a comprehensive survey of North American architecture education. Abraham Flexner's acclaimed *Medical Education in the United States and Canada* had appeared in 1910. Funded by the Carnegie Foundation for the Advancement of Teaching and written by an independent observer, the Flexner Report was a scathing critique of the quality of North American medical education at this date, and its findings spurred extensive reforms in physicians' training. The demand for an analogous stock-taking in architecture—the subject of an explicit resolution by the ACSA just before World War I—remained unfulfilled until 1932, when *A Study of Architectural Schools* appeared. Funded by a grant from the Carnegie Corporation of New York, it was coauthored by Francke Huntington Bosworth, Jr. (1875–1949), a professor and former architectural dean at Cornell, and Roy Childs Jones (1885–1963), head of the architecture department at the University of Minnesota.

Bosworth and Jones began by briefly summarizing the history of architecture education in North America since 1865 before proceeding to examine in detail the curricula and organization of schools across the continent, by now numbering fifty-two degree-granting institutions in the United States and six in Canada. Of these, more than half were still housed in engineering programs, although under the sway of the Beaux-Arts—now represented by an even more powerful organization, the Beaux-Arts Institute of Design, set up in 1916 as a successor to the earlier society—the prestige of the degree in architectural engineering had declined in relation to the bachelor's of architecture. As insiders, Bosworth and Jones approached their subject more descriptively and less critically than Flexner had. Writing in the midst of the Depression, they expressed optimism about the "fundamental vitality" of North American architecture education. Although they did not fail to chide certain schools for preparing students for "an unreal profession of their own imagining, whose vague duties and misty obligations have no possible relation to actuality," they nonetheless argued that the influence of the French academy had primarily been "in the single subject of design," and that "[c]onstruction, drawing, and history have developed indigenously and out of our own existing educational system."[27] They pointed out that a number of schools had introduced original approaches—the University of Oregon, for example, where the jury system was replaced by a noncompetitive system of student evaluation; and the University of Cincinnati, where on-the-job training was incorporated directly into the curriculum.

The day predicted by Talbot Hamlin when American architecture and education

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The first officers were Warren Powers Laird of the University of Pennsylvania, president; Emil Lorch of the University of Michigan, vice-president; and Clarence A. Martin of Cornell, secretary-treasurer.

26
In 1940, the National Architectural Accrediting Board was formed and took over responsibility for accrediting schools. See the article by Rebecca Williamson on "Degree Nomenclature" in this book.

27
F. H. Bosworth, Jr., and Roy Childs Jones, *A Study of Architectural Schools*, prepared for the Association of Collegiate Schools of Architecture (New York: Charles Scribner's Sons, 1932), 180, 186.

28

"The United States is just now the oldest country in the world, there always is an oldest country and she is it, it is she who is the mother of the twentieth century civilization. She began to feel herself as it just after the Civil War." Gertrude Stein, "Why I Do Not Live in America," *transition* 14 (Fall 1928), 19. On this subject, see also Jean-Louis Cohen, *Scenes of the World to Come: European Architecture and the American Challenge, 1893–1960* (Paris and Montreal: Flammarion and Canadian Centre for Architecture, 1995).

29

A plan of the exhibition appears in the catalog, *Austellung neuer amerikanischer Baukunst* (Berlin: Im Verlage der Akademie der Künste zu Berlin, 1926). See also Nancy Ruth Bartlett, *More Than a Handsome Box: Education in Architecture at the University of Michigan, 1876–1986* (Ann Arbor: University of Michigan College of Architecture and Urban Planning 1995), 60–61.

30

Margret Kentgens-Craig, *The Bauhaus and America: First Contacts 1919–1936* (Cambridge, Mass.: MIT Press, 2001), 91–94.

31

Quoted in William H. Jordy, "The Aftermath of the Bauhaus in America: Gropius, Mies, and Breuer," in Donald Fleming and Bernard Bailyn, eds., *Perspectives in American History. The Intellectual Migration: Europe and America, 1930–1960* (Cambridge, Mass.: Charles Warren Center for Studies in American History, Harvard University, 1968), 507.

would be able to stand on their own merits was already dawning. The 1920s saw a steady stream of architects associated with the European modern movement making their way across the Atlantic in a reverse *grand tour*, one that included compulsory stops in cities like New York, Pittsburgh, Chicago, and Detroit, and extended to engineering works—places Reyner Banham would later celebrate as a "concrete Atlantis"—in Buffalo, Minneapolis, and Montreal. While Le Corbusier in 1923 advised the readers of his *Vers une architecture* to pay heed to America's engineering achievements but to pass over its architectural ones, the early transatlantic encounters between European and American architects recall Gertrude Stein's quip that the United States was the oldest country in the world since it had been the first to enter the twentieth century.[28] In 1924, in a first instance of work by American architecture students being presented to a European public as exemplary of modern architectural ideas, the director of the Akademie der Künste in Berlin invited architecture students at the University of Michigan to contribute to an exhibition on American architecture and city planning. Although models proved too cumbersome to ship to Germany, the Michigan students' drawings were showcased alongside work by Sullivan, Eliel Saarinen, and Albert Kahn.[29]

Meanwhile, news of the experimental architectural pedagogy being forged at the Bauhaus in Germany began filtering into North America during the 1920s by way of the widening network of transatlantic contacts as well as the first modernist émigrés, among them Richard Neutra and Knud Lönberg-Holm. By the time of the Bauhaus's closure in 1933, more than a dozen American students had matriculated or taken courses there.[30] Bauhaus pedagogy arrived full force in the United States over the next decade as the school's leading faculty members sought refuge from European fascism. In its original incarnation in Weimar, the Bauhaus had emerged out of yet another state-sponsored educational system, the school of applied arts (and indirectly the British Arts and Crafts movement), and had thus represented a rebellion against both the fine-arts and the polytechnical school. Its vividly anti-academic spirit was able to find fertile ground in North America at a moment when the Beaux-Arts system was corroding under the impact of industrial civilization and Depression-era realities.

Yet the Bauhaus infusion was by no means monolithic, taking different forms at Harvard (under Walter Gropius), Illinois Institute of Technology (under Ludwig Mies van der Rohe), the Institute of Design in Chicago (under László Moholy-Nagy), and at smaller outposts like Black Mountain College in North Carolina (under Josef Albers) and the Design Laboratory (later the Laboratory School of Industrial Design) in New York City. In each case the nature of the curriculum depended on both the specific personalities involved and the existing character of the institution. Taken as a whole, Bauhaus aesthetics would have the effect of eclipsing Hamlin's "wholly native American initiative" for a while, although not entirely. The nihilistic, "degree zero" context in which the Bauhaus had arisen in Germany was altogether different from the liberal collegiate environment into which it entered on the American continent. In this sense, as Marcel Breuer put it, "The Bauhaus idea as it really existed could not be transplanted."[31] Each of its variants would undergo a process of adaptation and hybridization, and indeed, the major themes that had surfaced in earlier American academic debates—concerning abstract research versus workshop-type training,

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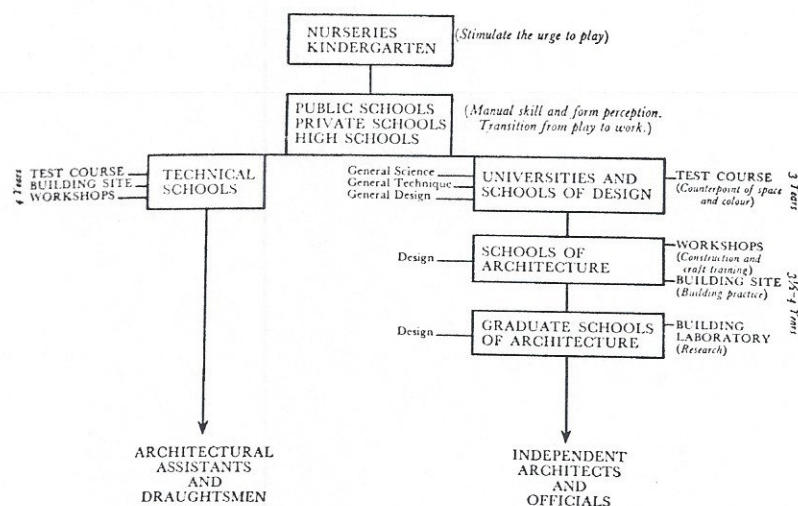arguing that "it
beginning of [th
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│ NURSERIES            │  (Stimulate the urge to play)
│ KINDERGARTEN         │
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┌──────────────────────┐
│ PUBLIC SCHOOLS       │  (Manual skill and form perception.
│ PRIVATE SCHOOLS      │   Transition from play to work.)
│ HIGH SCHOOLS         │
└──────────────────────┘
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NURSERIES KINDERGARTEN — (Stimulate the urge to play)

PUBLIC SCHOOLS PRIVATE SCHOOLS HIGH SCHOOLS — (Manual skill and form perception. Transition from play to work.)

TEST COURSE BUILDING SITE WORKSHOPS | TECHNICAL SCHOOLS | 4 Years

General Science General Technique General Design | UNIVERSITIES AND SCHOOLS OF DESIGN | TEST COURSE (Counterpoint of space and colour) | 3 Years

Design | SCHOOLS OF ARCHITECTURE | WORKSHOPS (Construction and craft training) BUILDING SITE (Building practice) | 3½–4 Years

Design | GRADUATE SCHOOLS OF ARCHITECTURE | BUILDING LABORATORY (Research)

ARCHITECTURAL ASSISTANTS AND DRAUGHTSMEN

INDEPENDENT ARCHITECTS AND OFFICIALS

Figure 3
Chart by Walter Gropius showing "the training and education that will produce architects of authoritative significance." From *Twice a Year: A Semi-Annual Journal of the Arts and Civil Liberties* 2 (Spring–Summer 1939)

scientific rationalism versus humanistic ideals, collaborative endeavor versus individual genius, hierarchical versus democratic conceptions of organization, European versus American traditions—would now recur in new contexts and constellations.

Gropius (1883–1969), who took on the chairmanship of the architecture program at Harvard's newly formed Graduate School of Design in 1937 on the invitation of its progressive dean, Joseph Hudnut (1886–1968), was to remain the preeminent spokesman of the "Bauhaus idea"—or at least the myth of it—for the next three decades. In a programmatic statement of 1939, "Training the Architect," he formulated the architect's role as that of "a co-ordinating organizer of broadest experience, who, starting out from social conceptions of life, succeeds in integrating all social, formal and technical problems of our time into organic relationships."[32] This "organic" conception of the architect's role in modern society demanded, in his view, a total reorganization of architecture education, starting from nursery school and kindergarten "play" and eventually channeling students into either a technical or a professional track based on their demonstrated abilities. **Figure 3** Even those on the more elite track, however, were to be trained in construction workshops and on the building site: "the young architect of today needs to be trained practically in the use of tools and materials," he emphasized, rather than chained to the "bloodless" drawing-board and the "phantom of tradition."[33] The aspiring architect should also receive preliminary training in "a common language of visual communication," a subject pioneered in the Bauhaus *Vorkurs*, the basic design course required in Weimar and Dessau of all incoming students. While Gropius's two-track education would no doubt have been anathema to John Dewey, Gropius sounds remarkably Deweyan in arguing that "it would be wrong to put the 'trade' idea or any specialization at the beginning of [the architect's] training"; rather, the student should be encouraged "to grasp life as a whole":

32
Walter Gropius, "Training the Architect," in *Twice a Year: A Semi-Annual Journal of the Arts and Civil Liberties* 2 (Spring–Summer 1939), 143. Gropius repeated this definition in similar form in subsequent statements, including "Blueprint for an Architect's Training," *L'Architecture d'Aujourd'hui*, February 1950, special bilingual issue on "Walter Gropius et son école" edited by Paul Rudolph, 73; and "Blueprint of an Architect's Education," in Walter Gropius, *Scope of Total Architecture* (New York: Harper & Brothers, 1956), 43.

33
"Training the Architect," 148, 151.

34
"Blueprint for an Architect's Training," 72.

35
On the conflict between Gropius and Hudnut over basic design, see Jill Pearlman, *Inventing American Modernism: Joseph Hudnut, Walter Gropius, and the Bauhaus Legacy at Harvard* (Charlottesville: University of Virginia Press, 2007), 200–38; and Anthony Alofsin's chapter in this book.

36
Turpin C. Bannister, ed., *The Architect at Mid-Century: Evolution and Achievement*, volume 1 of the Report of the Commission for the Survey of Education and Registration of the American Institute of Architects (New York: Reinhold Publishing Corporation, 1954), [ix].

37
Ibid., 107.

38
Ibid., 107–8.

39
Ibid., 122, 109.

What used to be an auxiliary only for the maker of things—paper design—has become the central discipline of the designer. This shift of emphasis from learning by doing to intellectual discipline—or from the workshop to the classroom—is typical for the present educational methods in design. ... I personally have grave doubts as to whether the present bookish climate of universities can offer at all a healthy breeding ground for architects.[34]

Gropius's universalizing views on education ultimately brought him into bitter confrontation with his erstwhile supporter Hudnut, who came to see the German architect's philosophy, despite its ethical motivation, as falsely psychologistic and leading to empty formalism.[35]

By the mid-twentieth century these vicissitudes of the Bauhaus in America would be registered in a comprehensive new study commissioned by the AIA. The first volume of a report entitled *The Architect at Mid-Century*, the ambitious book, five years in the making, appeared in 1954. It laid claim to being "the first major attempt to describe, on the basis of statistical data interpreted by the collective judgment of professional men, the nature of the current practice of architecture and the evolution as well as the present educational methods to prepare youth for that practice."[36] It was edited by Turpin C. Bannister. An architect and long-time educator as well as a trained historian, Bannister (1904–82) was among those responsible for founding the American Society of Architectural Historians (later the Society of Architectural Historians, or SAH) in 1940 and also served as the first editor of its journal.

In a chapter dedicated to a synoptic history of American architecture education from the early eighteenth century to date, starting with its roots in Europe, Bannister offered a narrative similar to the one the British historian Nikolaus Pevsner had developed in his classic *Pioneers of Modern Design: From William Morris to Walter Gropius* (originally published in 1936 as *Pioneers of the Modern Movement*). He acknowledged that the Bauhaus had had a salutary effect in sweeping away the French-inspired eclecticism and instilling a sense of pedagogical rigor, but questioned whether the school's influence had not already given rise to an "aesthetic movement" equivalent to that of the Beaux-Arts: "Despite Gropius' assertion that the Bauhaus intended to establish only an attitude and method of working," Bannister ventured, "much of its impact on students and practitioners has been to promulgate a new style with its own clichés."[37] At the same time, he also expressed reservation about the trend in his own day "to see the future of architecture wholly derived from science and technology," an approach that he ascribed to a "rising cult of engineering."[38] From his own perspective, Alfred North Whitehead's definition of education as "the acquisition of the art of the utilization of knowledge" provided a better philosophical basis for architectural training. Underscoring that "The profession and its educational system are inseparably interdependent," he endorsed "the closest liaison with the profession in order to adjust content and method to the changing needs of practice."[39]

The Architect at Mid-Century concluded with an extensive list of recommendations by the AIA commission that generated it, calling for an end to "laissez-faire" in professional education. It urged greater functional efficiency and integration with
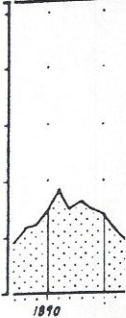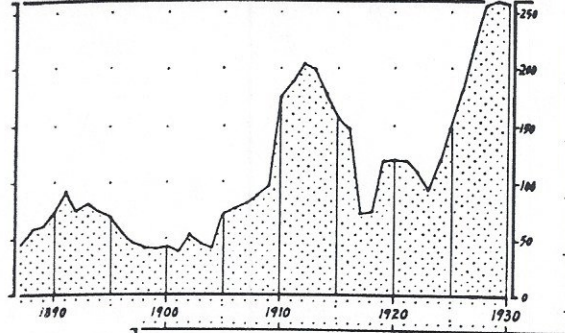
FIGURE 28: ENR(

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FIGURE 27ᴬ:
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ARCHITECTURE
1898·1953: by
Number in 11 Areas

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FIGURE 27ᴮ:
ENROLLMENTS·IN
ARCHITECTURE
1898·1953: by
Per Cent in 11 Areas

FIGURE 28: ENROLLMENTS·IN·A·SCHOOL·OF·ARCHITECTURE·1887·1930

FIGURE 27ᴬ:
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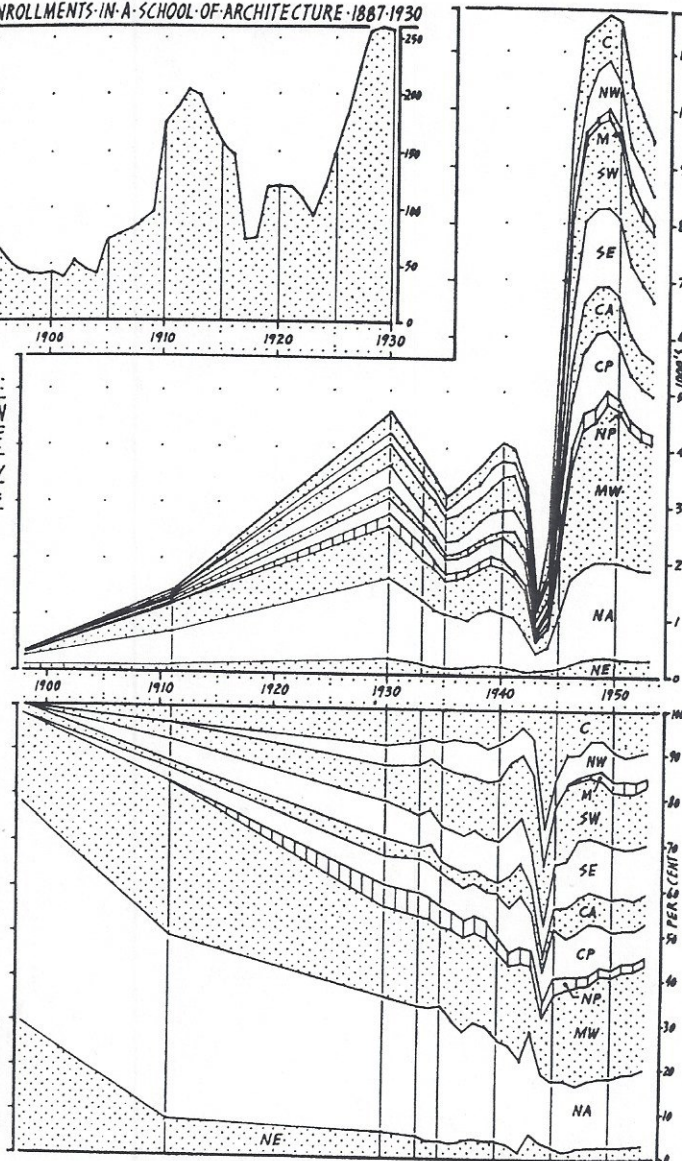NP
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FIGURE 27ᴮ:
ENROLLMENTS·IN
ARCHITECTURE
1898·1953: by
Per Cent in 11 Areas

Figure 4
Graphs showing rising enrollment
in a representative school of
architecture between 1887
and 1930 and for all schools by
geographic area between 1898
and 1953. The deep troughs
reflect the impact of the two
world wars. From Turpin C.
Bannister, ed., *The Architect
at Midcentury*, 1954

40
Arthur C. Holden, "The Function of
an Architect," *Pencil Points* 12 (1931);
quoted in Thomas Larrick, "A School for
Contemporary Architectural Training,"
M.Arch. thesis, University of Kansas,
1932, 97.

41
Museum of Modern Art, "Ecole des Beaux
Arts," press release 34, April 30, 1975, 1.

respect to matters such as aptitude testing and student screening, vocational guidance, teacher training and professional practice, the quality of school buildings, the relationship of schools to the building industry, development of graduate studies and academic research, and future statistical surveys. By this date almost 9,500 students were enrolled in private and public collegiate schools of architecture in the United States, more than double the number at the time of Bosworth and Jones's 1932 report. **Figure 4** The university was in the throes of yet another structural transformation, as Avigail Sachs and I elaborate in our chapter on the post–World War II period. The G.I. Bill, a piece of legislation equal to the first Morrill Act in its immediate impact on architecture education, had not only hugely boosted school enrollments but altered student demography, while the postwar imperatives of technological research and development had combined with the rising hegemony of the social sciences in the university to produce a new entity, the "multiversity"—a massive knowledge factory housing proliferating silos of specialization and deeply beholden to government funding. Two decades earlier, in 1931, as if in response to Leopold Eidlitz's remark half a century before, the architect Arthur Holden had written,

> It is no longer possible for any man personally to know all of the things
> and do all of the things that enter into a building. But he must know
> enough about each of the special items to be able to select intelligently
> the various experts employed for the particular problem, to weigh and
> judge the information they give him and to correlate the whole job.[40]

By the midcentury, the modern concepts of the consultant, the team, and the culture of experts were all in place, and the schools had adjusted their programs accordingly.

A new academic landscape

The postwar paradigm would trigger a major backlash in the 1960s. A turbulent decade marked by social and political upheavals both inside and outside the university, it shook architecture education to its foundations. Architecture students joined their peers throughout the university in protesting against all forms of traditionalism and elitism represented by the establishment, including modernism itself, now received as a false messenger of democratic ideals and societal reform. A raft of alternative pedagogical approaches emerged, although many proved short-lived. By the mid-1970s, as Mary McLeod details in her chapter on the period that would become widely known as postmodernism, the new populism was absorbed into a pluralistic academic and cultural formation. In this context, an exhibition on the architecture of the École des Beaux-Arts, held at the Museum of Modern Art in 1975 and advertised as a "re-examination of the dominant 19th-century architectural theory and teaching principles against which the 20th century rebelled," proved a heavily symbolic return of the repressed.[41] Yet the liberatory social movements spawned during the 1960s, from civil rights and feminism to environmentalism, would have a more lasting impact, even if their effects within still overwhelmingly white, male-dominated architecture schools would be delayed for some years.

Meanwhile, new reports and assessments of the state of American architecture education would be churned out by one institutionally appointed task force after

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another through the end of the century. The two that received most attention were the Princeton Report, formally titled *A Study of Education for Environmental Design*, coauthored in 1967 by Princeton architecture dean Robert L. Geddes with fellow faculty member Bernard P. Spring; and the Boyer Report, *Building Community: A New Future for Architecture Education and Practice*, issued in 1996 by Ernest L. Boyer and Lee D. Mitgang. These two documents were once again underwritten by the AIA and the Carnegie Foundation, respectively, and each registered the tenor of its time.

Describing their motivation as an effort to respond to the vastly increased complexity of the physical environment since "Thomas Jefferson's day," and, more proximately, to the "knowledge explosion" and "revolution of rising expectations" that had occurred since World War II, the authors of the Princeton Report assimilated a number of recommendations that had been put forward in several previous studies, in particular the growing consensus for a combined four-plus-two-year architectural curriculum leading to a terminal M.Arch. degree (to replace the five-year B.Arch.).[42] More sweepingly, they envisaged a broadscale reconfiguration of architecture education under a new disciplinary rubric: that of "environmental design." Intended to supersede the discipline of architecture, environmental design would prepare students, according to Geddes and Spring's proposal, for over two hundred different design-related tasks. Replete with managerial jargon ("The study recommends that all attempts at educational innovation be described in terms of operational objectives") and mechanistic diagrams, the report was received with hostility in the anti-authoritarian climate of the late 1960s. Nonetheless it resonated with a series of sociologically based studies of architecture that appeared subsequently.[43]

Three decades later, the Boyer Report, written by the president and a senior fellow of the Carnegie Foundation, described itself as "build[ing] on the traditions, history, and critiques" of its predecessors. Its conclusions, however, reflected the influence of the recent critiques of architectural modernism, calling for schools to get "more firmly behind the goal of building not only great buildings but more wholesome communities."[44] In the lineage of Flexner, both authors of *Building Community* were outsiders to architecture: Boyer had had a distinguished career as an educational administrator and Mitgang was a seasoned journalist. Laying out an "enriched mission" for architecture education in the twenty-first century, they put forward an ethically conscientious, if predictable, list of goals, calling on the schools to nurture diversity and sustainability, forge productive partnerships with the profession, provide a more humane climate for learning, and foster greater civic engagement.

By this time, the "generation of '68" had acceded to positions of power in both the schools and the profession, and as Stan Allen traces in his chapter on the past two decades, a vanguard of experimental architects who had previously operated on the margins of architectural culture was finding ways to overcome the gulf between academia and real-world practice. The politics of identity and the aesthetics of pluralism that had fueled the rise of an academic specialization in "theory" during the 1980s gave way to a pragmatic approach to new technologies and construction. The processes mentioned at the outset of this introduction—globalization, computerization, commercialization, the "green revolution"—were producing shifts and rifts in the boundaries of architecture education, geographic as well as ideological.

42
Robert L. Geddes and Bernard P. Spring, *A Study of Education for Environmental Design: Final Report*, sponsored by the American Institute of Architects, Princeton University, December 1967, 1, 3, 5.

43
One of the first American sociologists to focus specifically on American architecture education was Robert Gutman, Geddes's colleague at Princeton. On the ways sociology was being put to use by architecture educators and practitioners in the 1960s and '70s, see an early essay by Gutman, "Architecture and Sociology," *The American Sociologist* 10 (November 1975): 219–28.

44
Ernest L. Boyer and Lee D. Mitgang, *Building Community: A New Future for Architecture Education and Practice. A Special Report* (Princeton: Carnegie Foundation for the Advancement of Teaching, 1996), 26, 28.

45
Ibid., 19.

46
Weatherhead, *History of Collegiate Education*, 249.

Problems of historiography

The Boyer Report begins by acknowledging what it calls architecture's "tradition of self-examination."[45] In fact, the mirror held up to architecture education by the authors of the sequence of reports discussed above was primarily policy-oriented rather than historiographic. A rare exception to this trend was a doctoral dissertation by Arthur Clason Weatherhead, completed in 1941 and distributed to school libraries. Titled *The History of Collegiate Education in Architecture in the United States*, it was written under the auspices of the Joint Committee on Graduate Instruction at Columbia University. At the time, Weatherhead (1888–1952) was the long-time dean of the architecture school at the University of Southern California in Los Angeles, a position he held until his retirement in 1944. Based on a decade of research, it falls between the volumes of Bosworth and Jones and of Bannister, which is to say within the third moment of Weatherhead's own periodizing framework, the "Modern Period." With respect to this culmination, Weatherhead details the "pioneer experiments" undertaken in the 1930s in some of "the more progressive American schools"—namely the University of Oregon, Yale, Cornell, the University of Cincinnati, the University of Kansas, Columbia, Harvard, and his own institution, the University of Southern California. It is worth quoting at some length from his conclusion:

> The social and technological demands of the scientific and industrial order which have been increasing for more than one hundred years have finally become recognized in architecture. The breakdown of monopolistic capitalism, and the grave problems with which the practicing profession has been confronted during the last decade have hastened a consciousness of those realities. Although, in the United States, the best traditions of the past still provide a healthy, refining influence, contemporary architecture as a movement is no longer plagiaristic. It is consciously inspired by the forces and instrumentalities of modern civilization.
>
> The diversified experimentation has now resulted in a complete readjustment in American architectural education. The objective of the new curriculum is to provide a more effective and homogeneous experience in preparation for the rigorous requirements of the profession today and for the challenge of an indigenous, creative art of architecture. In its more professional branches, the new education is intensely realistic. The projects, which form the core of the curriculum, are based upon actual situations involving a thorough study of the intricate functional needs of modern life, the scientific processes of construction as an architect must comprehend them, materials now available, and the economic factors which would be considered in actuality. In all of the progressive schools, architecture is related to the closely allied fine and industrial arts and to the vital social and cultural problems of the entire community.[46]

Although never strident in its tendentiousness, Weatherhead's thesis is nonetheless teleological, bent on tracing a process of academic and professional maturation

leading to the rejection of Beaux-Arts "plagiarism," with experimentation and realism ultimately winning the day. As such, it should be regarded not just as a noteworthy contribution to the history of architecture education, but as an early document in itself of the emergence of an American modernist sensibility.[47]

One other effort to produce a synthetic history of architecture education, of four decades later, should also be mentioned. Kenneth Frampton and Alessandra Latour's "Notes on American Architectural Education: From the End of the Nineteenth Century until the 1970s" appeared in 1980 as an introduction to a special issue of the Italian journal *Lotus* that was dedicated to presenting the work of three contemporary architecture schools, Columbia, Cooper Union, and Cornell. An expanded essay, necessarily selective in its examples, Frampton and Latour's account takes as its brackets the rise of the Beaux-Arts and the rise of postmodernism. Not surprisingly, given the authors' critique of the latter, it concludes on a considerably less triumphal note than Weatherhead's:

> in a political and economic climate where it is difficult to isolate a professional and cultural strategy which seems to be relevant to the range of dilemmas facing late Capitalism, the best one can hope for is an intelligent holding operation and for the emergence of educational programmes which reject a simple-minded and opportunistic indulgence in an historicism which has no other intent than to reduce architecture, once and for all, to the status of a commodity.[48]

Apart from these exceptions, both of which deserve to be reprinted today, efforts to produce a comprehensive historiography of American architecture education have been meager.[49] While the last several decades have seen an increasing number of books devoted to specific schools—many published by the institutions themselves, their faculty members, or former students—as well as monographs on significant pedagogical figures and episodes, by definition this body of work has been piecemeal and not always disinterested.[50] More recently, conscientious archival conservation by individual schools and the production of oral histories have shed new light on particular contexts, and within the last few years doctoral students have begun turning to topics in the history of architecture education with renewed interest. The present book thus represents only an initial foray into a very large territory containing much untapped material.

It is worth reflecting a little further on the gap in the historical scholarship. Architecture education is unique not just by virtue of its specialized practices but, as suggested above, by the range of identities and types of knowledge it encompasses. This makes it especially challenging to write a unitary history. In addition, any educational history ideally requires a well-developed theory of institutions, both academic and professional, and an epistemology of knowledge. The ongoing dialectic between the diversification of architectural knowledge and experience, on the one hand, and demands for the maintenance of the architect's autonomy and expert standing, on the other, has made for a continuous push-pull within the field. Today the desire in many architecture schools for greater porosity with other disciplines and fields of practice expresses itself in a striking variety of efforts to overcome the constraints

47
It is unclear why Weatherhead's dissertation never saw wider publication, although the outbreak of World War II is a likely explanation.

48
Lotus 27 (1980): 33.

49
Two other graduate theses, separated by almost six decades, should also be noted: Thomas Larrick's M.Arch thesis of 1932, "A School for Contemporary Training," cited note 40; and Michael Anthony Jones, "Models for Educating Architects in This Century and the Next," Ph.D. diss., Georgia Institute of Technology, 1989. Each contains substantial historical material, although both authors, coincidentally, are ultimately focused on proposing their own new model for an architecture school.

50
Some in this genre, however, have been exemplary. See, for example, Alexander Caragonne's thoughtful and authoritative *The Texas Rangers: Notes from an Architectural Underground* (Cambridge, Mass.: MIT Press, 1995); and Nancy Ruth Bartlett's well-researched history of architecture education at the University of Michigan, *More Than a Handsome Box* (cited note 27).

Figure 5

"Geometrical Ornament," from *A Textbook on Architecture and Building Construction: Geometrical Drawing, Architectural Drawing, Ornamental Drawing, Advanced Architecture Drawing*, prepared for students of the International Correspondence School of Scranton, Pennsylvania, 1901
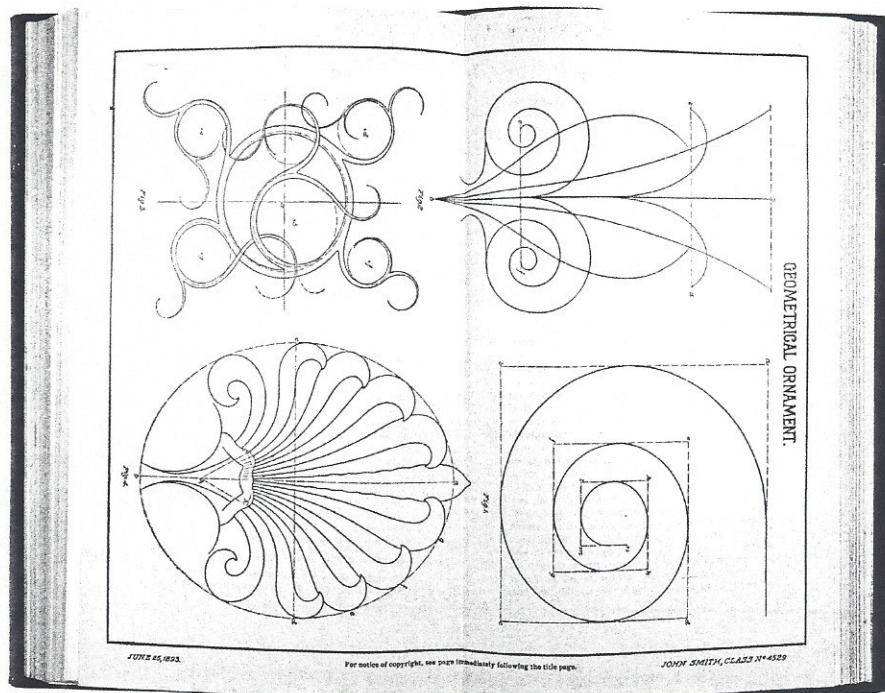
51
On this subject, see an interesting article by James D. Watkinson: "'Education for Success': The International Correspondence Schools of Scranton, Pennsylvania," *The Pennsylvania Magazine of History and Biography* 52, no. 4 (October 1996): 343–69. The Scranton program, the largest of these correspondence schools, boasted over a million enrollments by 1910 in over forty engineering subjects as well as other practical areas of study, including architecture. In 1906, a "Complete Architecture" course paid in advance cost the not insignificant sum of $110.

of architecture's enclosure in the late-modern university. The popularity of design/build and community-based programs, the advent of the global studio or "studio without walls," the revival of craft values in the context of contemporary modes of fabrication, and (conversely) the transference of three-dimensional thinking into virtual media also suggest that some of the early educational paradigms have not so much disappeared as reasserted their logic in new ways. For example, the recent reconfiguration of design studios as "labs" in many schools and the preoccupation with "research" hark back to the experimentalism of the Bauhaus as well as to the earlier polytechnical model, while today's digital shop with its CNC milling machine and laser cutter has an ancestor in the nineteenth-century workshop with its lathes and joinery equipment. Even forgotten forms of architecture education—for example, the early twentieth-century correspondence course, which provided a path to upward mobility for many African Americans, women, and others denied a place in elite universities[51]—may well enjoy a revival in the context of contemporary "distance learning" programs and electronic classrooms. **Figure 5** As one contemporary architectural historian and educator has written of architecture schools' expanding boundaries,

> The current generation of teachers exploring diverse new paradigms for the delivery of design in the digital age at many leading institutions, along

with interdisciplinary connections between landscape and architecture, between regional planning and economic analysis, between design and the current demographic crisis make universities the most interesting laboratories of design potential in the world. If one thing is clear, it is that the various professions taught in design schools will only prosper, and will only have the transformative power that is their potential, when practiced in ongoing dialogue and collaboration, in feedback with one another.[52]

An altogether different kind of question that arises with respect to the historiography of architecture education has to do with how to treat exceptionally talented and visionary individuals. "This history," Arthur Clason Weatherhead states at the beginning of his study, "is one which is so dependent upon the personalities of its great leaders and so rich in human interest that it cannot be adequately presented by mere statements of scientific facts alone."[53] Undoubtedly the figure of the teacher looms especially large in architecture education. Whether it is a matter of a self-styled, creative master like Wright or someone like Gropius, who, despite championing "teamwork" in both his pedagogy and practice, projected a decidedly charismatic persona, the intense interpersonal relationship between the student and instructor—epitomized in the one-on-one "desk crit"—remains at the heart of a form of education that has revolved around the design studio since the Beaux-Arts epoch (and, at an earlier moment, around the close social and professional bonds between master and apprentice). Yet "[m]en make their own history, but they do not make it as they please," as Marx famously wrote; "they do not make it under self-selected circumstances of their own choosing, but under circumstances existing already, given and transmitted from the past."[54] Although great men (and women) have always had a powerful impact on architecture education, they have exercised their agency within the framework of established professional networks and institutional agendas, cultural and aesthetic tendencies, social and political ideologies, and economic givens. While the history of individuals and of individual institutions continues to offer a rich form of description, it needs to be offset and challenged by other types of inquiry.

The history of education is always the story of an encounter between successive generations and, in the broadest sense, the account of a meeting between the past and the future. In this respect, educational history may be regarded as paradigmatic of the concept of history itself. As institutions, schools internalize the contradiction between reproduction and production; they have a fundamental stake in perpetuating their own values and at the same time an obligation to go beyond themselves in nurturing new practitioners and new knowledge. Intergenerational relationships can at times be fraught with rebellious impulses or incomprehension, as in the 1960s, when architecture schools were split by a "generation gap," or in the 1990s, when the "digital divide" manifested itself in the design studio. From this perspective, Raymond Williams's concept of history as an interplay of dominant, residual, and emergent forces is particularly useful.[55] Professional education is also by its very nature *formative*; its impact on the young architect is intense and enduring. Louis I. Kahn's training in the Beaux-Arts milieu of the University of Pennsylvania in the

52
Barry Bergdoll, commencement address at the University of Pennsylvania School of Design, May 2010; in Megan Born, Helene Furján, and Lily Jencks, eds., *Dirt*, viaBooks 2 (Philadelphia and Cambridge, Mass.: PennDesign and MIT Press, 2012).
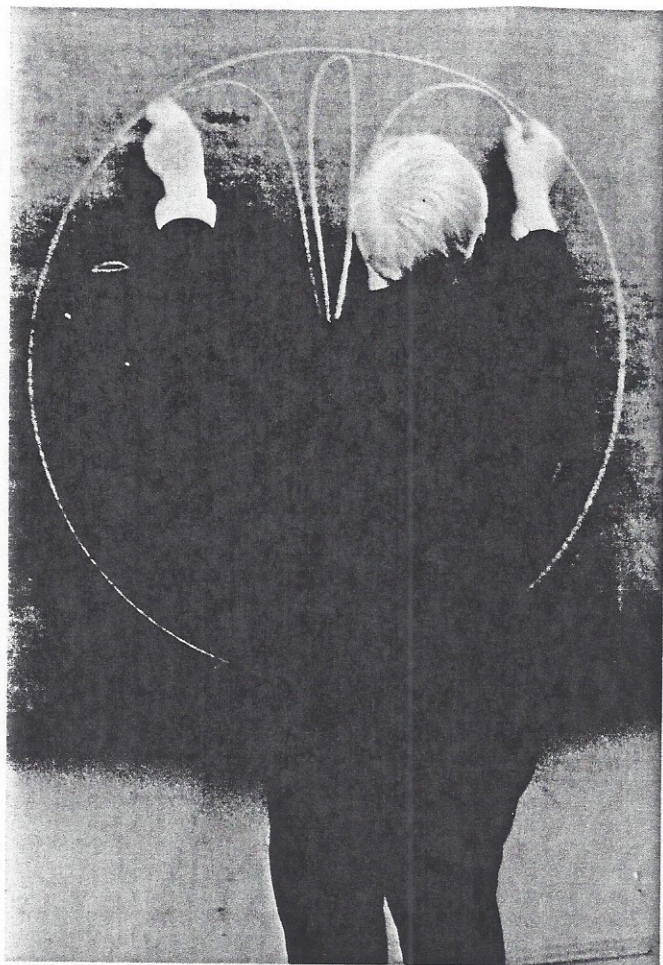
53
Weatherhead, *History of Collegiate Education*, 1–2

54
Karl Marx, *The Eighteenth Brumaire of Louis Napoleon*, trans. Saul K. Padover from the German edition of 1869, chapter 1, paragraph 2; online at http://www.marxists.org/archive/marx/works/download/pdf/18th-Brumaire.pdf.

55
See Raymond Williams, *Marxism and Literature* (Oxford: Oxford University Press, 1977), 121–27.

Figures 6a, b, c, d
Louis I. Kahn drawing an ornament in a Master's studio at the University of Pennsylvania, c. 1963–64

56
For an intriguing attempt to map the influence of a particular pedagogy—and the difficulties of doing so—see the "family tree" in Alexander Caragonne, *Texas Rangers*, 338–43.

1920s, for example, remained fundamental to his worldview long after his "conversion" to modernism a decade later; indeed, the tensions in his mature work between modernism and classicism constitute the crux of his originality. **Figures 6a, b, c, d**

Apropos of a "master" like Kahn (1901–74), it is noteworthy how the presence of a dominant figure in an architecture school can engender a golden age within that institution, only to make it difficult for the school to move on afterward. Such was the case at Penn for many years after Kahn's death. The rise and fall of architecture schools in relation to the personalities that pass through them requires a special kind of historical mapping, one sensitive to the network of personal and power relationships among protagonists and to the mobility of teachers and students.[56] Likewise, the movement of ideas and images from school to school has to be charted historically; books, journals, and exhibition catalogs—together with the architecture school library—have long played an important role in the circulation and transmission of pedagogies, and continue to do so, although in today's amplified media environment ideas and images travel much more quickly and fluidly.

Finally, the traffic between the academic world and the profession constitutes an ongoing, intricate dynamic. As has been seen, the profession has at times been a force for educational change, as in the founding years of the AIA. At other times, the schools have insisted on autonomy from the profession or else aspired to play a

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vanguard role with respect to it. At present a certain truce between the two seems to be in effect, but it will no doubt be subject to new inflections in future years.

The aims and organization of this book

The object of this book has been to open up as many avenues as possible for future inquiry and, in doing so, to work against the tendency to produce a canonical history. "Disciplinary histories serve a number of representative functions," as one professor of humanities has noted, "including indoctrinating new entrants into a field, legitimating the field to outsiders, and controlling, promoting, or opposing change."[57] A conscious effort has been made here to counteract some of the negative effects intrinsic to this genre of publication.

The book's bipartite structure—comprising a chronological overview and a thematic lexicon—affords two axes of approach. Part One consists of six sequential chapters. The period dates delimiting them are not meant to be hard and fast; each chapter overlaps somewhat with the one before and after, with individual authors emphasizing what is central to their argument. Each author was asked not to privilege any schools unduly in their account; naturally, certain institutions have played a larger role than others in particular periods and receive greater attention. The chapters also inevitably reflect the different interests and knowledge of their authors.

57
Julie Thompson Klein, "Blurring, Cracking, and Crossing: Permeation and the Fracturing of Discipline," in Ellen Messer-Davidow, David R. Shumway, and David J. Sylvan, eds., Knowledges: Historical and Critical Studies in Disciplinarity (Charlottesville: University Press of Virginia, 1993), 196.

The extension of the periodizing framework back to the early eighteenth century is intended both to provide a prehistory for the university-based training that has predominated since the late nineteenth century and to offer a context for rethinking its assumptions and inevitability in the future.

Part Two contains twenty-nine shorter articles that focus on significant themes or topics that have emerged over the course of architecture education's history. Organized alphabetically, they represent a selection out of a universe of many possibilities. A number of topics seemed obvious, a few have received little or no historical attention to date, and others could just as easily have been included. A great many interesting issues—a comparison between architecture education and other forms of professional and graduate education, to take just one—regrettably did not make it into the book. The two parts of the book are meant to resonate synchronically and diachronically.

Overall, the editorial approach was to try to be as balanced as possible. The thirty-five contributing authors come from educational institutions across North America and a variety of disciplinary backgrounds; they provide different lenses on their collective subject. The illustrations throughout, many of which have never been published before, are intended to offer as many new perspectives as the texts and should be especially welcome to architectural readers. The focus on North America (the United States and Canada) reflects the ACSA's current constituency, although the Canadian schools deserve a more detailed account than has been possible here. Today, of course, architecture education, like architectural practice, is thoroughly global. The concept of North American architecture education is thus a heuristic one, and the next book on this subject will likely be worldwide in its purview.

At least for now, architecture school remains the crucial site where the discourse of architecture is formulated and disseminated. More than the sum of its curricular components, it is the place where students become conscious of themselves as members of a preexisting community of professionals and intellectuals, where they begin to sort out the manifold identities available to them, and where the future field of architecture, in all its disciplinary and professional cognates, is collectively constituted. For all these purposes, the lessons of history are indispensable. It is to a heightened understanding of the historical role of the school—to an "educational turn" in architecture—that the title of this introduction alludes.

Joan Ockman, September 2011