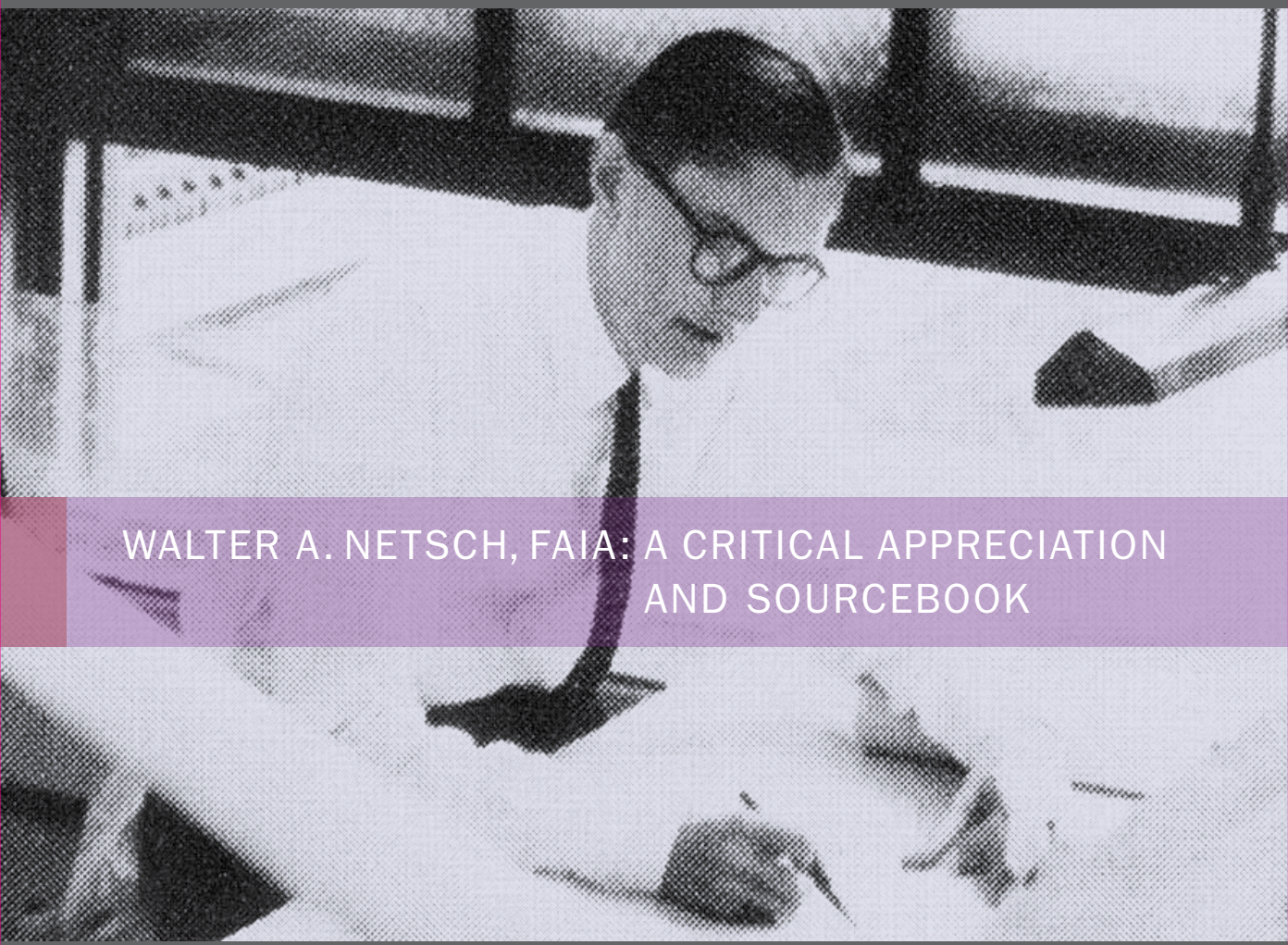
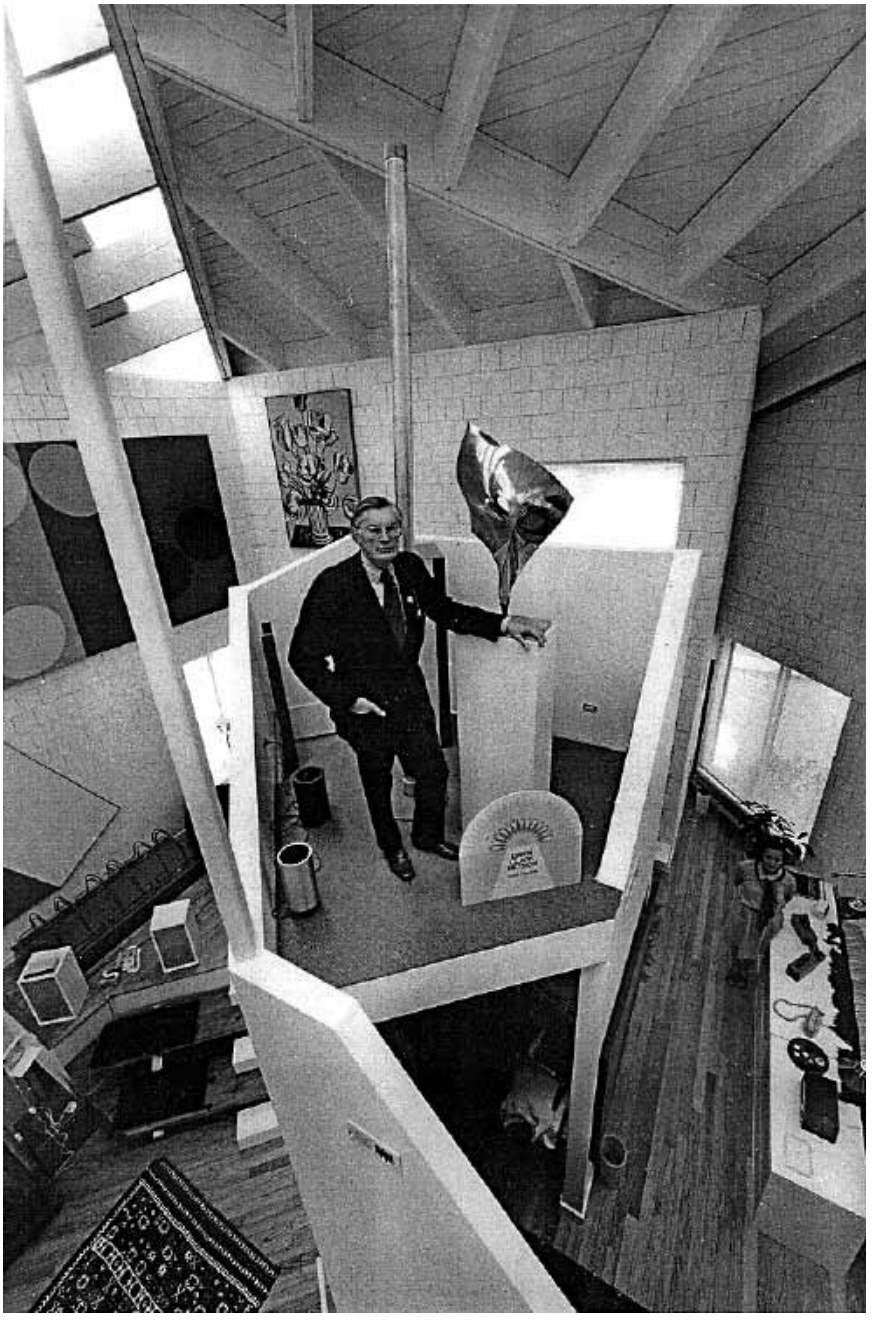


WALTER A. NETSCH, FAIA: A CRITICAL APPRECIATION AND SOURCEBOOK



WALTER A. NETSCH, FAIA: A CRITICAL APPRECIATION AND SOURCEBOOK

Northwestern University Library | Evanston, Illinois

Contents

Foreword

When I look at the Northwestern University Library, I wonder how it turned out the way it did. Northwestern University had an elegant, classical library designed by a prominent architect, James Gamble Rogers. Rogers had just finished Yale's magnificent Sterling Library, and his Charles Deering Library was another outstanding monument of the period. It was a campus icon. I didn't want to touch that building and was sensitive to its beautiful site and landscaping. The Lakefill project was under way, and we were resolved to keep the lake next to the existing campus. Remodeling or incorporating Deering Library into a larger library was out of the question. We wanted a continuum of what was—a continuum of the past in a modern, functional style.

Beginning in 1962 I met twice a month with the Library Planning Committee, chaired by Clarence Ver Steeg. We were a thoughtful and creative group who started with the overarching question "What is a library today?" We weren't inhibited by the past and elected not to replicate attractive features of the Charles Deering Library, such as its spacious reading room. We discussed how students use libraries, we read books and articles (I even stole a book about library architecture but soon returned it because it was so outdated), we listened to students, librarians, consultants, and faculty members. Before I started drawing, we developed succinct goals about how the building would function. I had previously designed libraries at Grinnell College and the Illinois Institute of Technology, but the Northwestern Library required a different level of programming.

The list of primary objectives grew and grew. Two goals stick in my mind: first, that carrels and classrooms be integrated with the book collections; and second, that the books be easy to find. Computers were coming, and we planned a small central computer facility for a single computer. A Core Library, open 24 hours a day, was a priority. I remember how empty most of the stack floors were in 1970. When I visited a Level 5 stack tower in 2006, I was amazed at how much the collections have grown. However, the fundamental reader-book relationship remains the same. The library is the culmination of the work of the committee and an important Field Theory building. I'm amazed that it was built as

programmed and that we avoided getting trapped into using ungainly features such as standard windows and doors.

My career as an architect spans seven decades. I was hired by Skidmore, Owings & Merrill in 1947 as a fluke—I applied only at the urging of a colleague in Morgan Yost's residential architectural practice. Assignments on large-scale SOM projects—in Oak Ridge, Tennessee; Chicago; San Francisco and Monterey in California; Washington, D.C.; and Japan, as well as the Air Force Academy in Colorado Springs—forged my career and standing as an architect. These projects gained worldwide attention, and I was singled out as a promising young architect. The Air Force Academy design was a hard sell, the Cadet Chapel in particular, because some people didn't think it looked like a church. It's the only building I had to redesign. The architecture community supported the second design tremendously at a time when the press and factions in Washington wanted to kill it. Fifty years later appreciation for its design and geometry as a monument to modernity continues to grow. I'm pleased with its recent preservation and the respect with which Academy buildings are being maintained.

Notable projects followed, many appearing in these pages. Most memorable are those that reflect Field Theory, my signature design aesthetic, which was influenced by modern art, patterns in nature, and Japanese and Algerian cultures—historic Japan for its revered past, Algeria for its forward-looking social revolution. Of these I am especially fond of the Miami University Art Museum in Oxford, Ohio—my Louvre. I'm still thinking about new ways for architecture to respond to modern life. At present, I'm completing urban sustainability designs to endure the effects of global warming, called the 2060 Project.

It is fitting that this volume, which charts my ideas and career in my own words and those of others, should be produced by Northwestern University Library. Like the building, this book too is a continuum of the past.

I'm grateful to the many teammates on many projects and for all of the effort on this project. I wish to thank two people in particular. The first is my wife, Dawn Clark Netsch, who shares my moods and quandaries with love and devotion. The second is Russ Clement, who organized a library exhibit of my work and who developed and managed this complex compilation into a book that will be distributed to libraries throughout North America.

Praiseworthy modern architecture is an absorption and synthesis of the society around us—the physical manifestation of the ability and drive to see beyond accepted solutions and aesthetics. The critical difference between good and mediocre architecture is the depth of the design search, with both its joys and sorrows. All of my designs are different. I had a personal desire not to copy but to probe for the excitement of architecture.

Walter Netsch

Chronology

Projects for which Walter Netsch was the primary designer are listed by name alone; entries for other projects indicate the scope of his involvement. Dates indicate when Netsch's involvement in a project began.

1920

Walter Andrew Netsch Jr.
born February 23 in Chicago

1934

Attends Hyde Park High School, Chicago; graduates 1937

1938

Postgraduate year at Leelanau School for Boys, Glen Arbor, Michigan

1939

Studies at Massachusetts Institute of Technology, Cambridge, Massachusetts; graduates 1943

1943

Joins U.S. Army Corps of Engineers; serves in North Pacific; discharged 1946

1946

Designs for L. Morgan Yost, Kenilworth, Illinois

1947

Joins Skidmore, Owings & Merrill (SOM) in Chicago

Designs for SOM in Oak Ridge, Tennessee

1949

Honorable mention in the *Progressive Architecture* U.S. Junior Chamber of Commerce Architectural Competition

Joins SOM's Chicago office

Lake Meadows Shopping Center, Chicago

1950

Del Monte Shopping Center, Del Monte, California

Recent Buildings by Skidmore, Owings & Merrill exhibition at the Museum of Modern Art, New York (September 26–November 5) includes a model of Del Monte Shopping Center

1951

Joins SOM's San Francisco office

1952

Elmendorf Air Force Base Hospital, Anchorage, Alaska

1953

Greyhound Service Garage, San Francisco

Designs military air bases in Okinawa, Japan (continues through 1954)

1954

Plans, Crown-Zellerbach Headquarters Building, San Francisco (project completed by Charles Bassett, 1959)

Returns to SOM's Chicago office

Plans, Inland Steel Building, Chicago (completed by Bruce Graham, 1957)

U.S. Naval Postgraduate School, Monterey, California

Directs design team, U.S. Air Force Academy, Colorado Springs, Colorado (completed 1958)

U.S. Air Force Academy Cadet Chapel, Colorado Springs, Colorado (completed 1963)

1955

Becomes member of the American Institute of Architects (AIA)

The Academy Master Plan exhibition at the Colorado Springs Fine Arts Center (May 13–15) unveils designs for the U.S. Air Force Academy

Made partner at SOM

1957

Buildings for Business and Government exhibition at the Museum of Modern Art, New York (February 25–April 28) includes designs for the U.S. Air Force Academy

1959

Harris Trust and Savings Bank (first expansion), Chicago

Burling Library, Grinnell College, Grinnell, Iowa

Two Buildings San Francisco 1959 exhibition at the San Francisco Museum of Art (August 21–September 20) includes drawings and models for the Crown-Zellerbach Headquarters Building; travels to Portland, Oregon (October 6–November 1)

1960

Skokie Public Library, Skokie, Illinois

1961

Fine Arts Building, Grinnell College, Grinnell, Iowa

University of Illinois Circle Campus, Chicago (completed 1965): includes the Art and Architecture Building, University Hall, the Science and Engineering South Building, University Library, among other buildings *(Note: In 1982 it became the University of Illinois at Chicago.)*

1962

Paul V. Galvin Library, Illinois Institute of Technology, Chicago

Grover M. Hermann Hall, Illinois Institute of Technology, Chicago

Plan, Northwestern University Lakefill expansion, Evanston, Illinois

1963

Marries Dawn Clark

1964

R. S. Reynolds Memorial Award for U.S. Air Force Academy Cadet Chapel

Master plan, Lake Forest Academy, Lake Forest, Illinois

Northwestern University Library, Evanston, Illinois (completed 1970)

1965

The Forum, Grinnell College, Grinnell, Iowa

Center for Materials Science and Engineering (Building 13, also called the Vannevar Bush Center for Material Sciences), Massachusetts Institute of Technology, Cambridge, Massachusetts

Silver Medal for Design and Craftsmanship from the New York Chapter of the AIA for colored-glass windows in the U.S. Air Force Academy Cadet Chapel

1966

Lindheimer Astronomical Research Center, Northwestern University, Evanston, Illinois (razed 1995)

Total Design Award from the National Society of Interior Designers for the University of Illinois Circle Campus

1967

Elected to AIA College of Fellows

Illinois State Bar Association Office Building (now Illinois Bar Center), Springfield, Illinois

Walter Netsch: A Biography

RUSSELL CLEMENT

"Netsch's work was the soul and the spirit of the people."
— Nathaniel Owings

Walter Andrew Netsch Jr. was born at home—6807 Paxton Avenue, a block south of Jackson Park on Chicago's South Side—on February 23, 1920. His father, Walter Sr., was from Manchester, New Hampshire, the son of German immigrants, and had attended Dartmouth College on scholarship. There he met Anna Calista Smith, a devout Christian Scientist who descended from an established New England family. Anna's mother, Lizzie Smith, was the second wife of a wealthy meatpacker and maintained homes in Nashua, New Hampshire, and Jacksonville, Florida. In 1917 Walter Sr. and Anna married.

Anna's father offered Walter Sr. a large share of the family business, which he declined. The offer may have established Walter Sr.'s goal of joining the meatpacking industry, however, for in 1919 the Netsches moved to Chicago, where Walter Sr. worked for Armour & Co., rising to the position of vice president. At the time of Walter Jr.'s birth they lived in the South Shore community, a few blocks from Lake Michigan and several miles from the Union Stock Yards. A girl, Nan, was born 18 months after Walter.

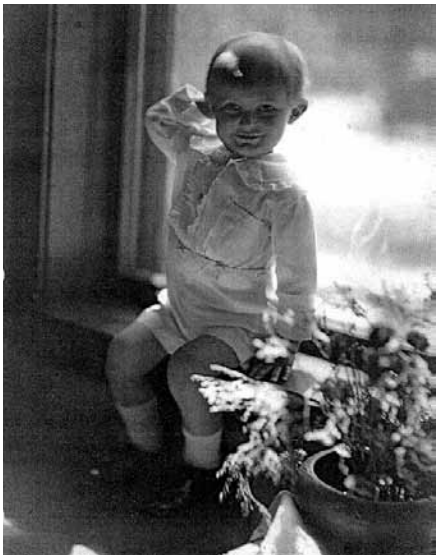
fig. 1 Walter Netsch with his mother, Anna, c. 1921

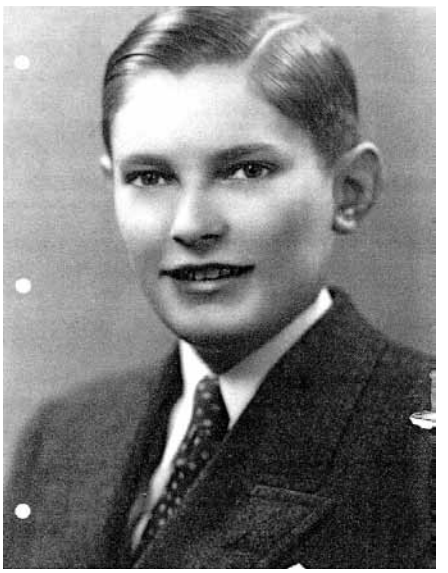
As a baby, Walter returned with his parents to Nashua from Chicago in 1920–21, when his grandfather was ill. Henry, an elderly freed slave, rocked him in a bedroom above the dining room.

From an early age, Walter was fascinated by patterns and geometries found in nature. His mother's family

owned a summer home on Lake Winnepesakee in New Hampshire, where Walter recalls collecting leaves and rocks, watching shadows, and wanting to be an artist. His parents indulged his proclivities by enrolling him in drawing classes at the Art Institute of Chicago. He also built play structures out of containers brought home from work by his father. He was bright, thin, and small. He recalls roller skating, playing baseball (he became an ardent White Sox fan), and riding horses.

Horses were something of a constant in Walter's childhood and youth. His father rode on horseback in the immense Union Stock Yards—a way to supervise his staff while remaining above the effluent—and Walter recalls being taken for a horseback ride to see the carnage after a fire in the stockyards. His father purchased a hunter that was shown in stock shows and then a prized four-gaited horse named Tommie Boy. Walter recalls riding the city's wide bridle paths on the hunter while his father rode Tommie Boy. Walter himself rode Tommie Boy with the National Guard stationed at the armory in Washington Park, where he could show off to classmates from Hyde Park High School.





figs. 2, 3 Walter Netsch at ages 2 and 12

While his mother exposed Walter to art and music, his father expected him to excel in school, attend Dartmouth, and become a businessman. At that time South Shore was a new part of town, served by public transportation and schools that appealed to upwardly mobile families such as the Netsches. Walter attended O'Keefe Elementary School and Hyde Park High School. At Hyde Park he concentrated on college-entry-level courses in math, science, Latin, and English. His extracurricular activities included the Psychology Club, the Chicago Tour Club, the Bit and Spur Club, and the Election Committee. An avid reader, he frequented the public library at 73rd Street and Exchange and, later, the Blackstone Library in Hyde Park.

Architecture was already a strong interest of Walter's, and he hoped to study architecture at Princeton University. As a junior he wrote a paper titled "What Is Modern Architecture?" that discussed works by Le Corbusier, Alvar Aalto, and Frank Lloyd Wright and made his own surveyor's transit and plotted every square foot of Wooded Island—which featured

a Japanese temple built for the 1893 World's Columbian Exposition—in Jackson Park for a trigonometry project. Neighborhood architecture impressed Walter. Barry Byrne's modern geometric apartments were located nearby, between Paxton and Crandon on 69th Street. While attending Hyde Park High School, Walter discovered and visited Wright's Robie House and Blossom House. In addition to these unadorned geometric designs, he was drawn to Louis Sullivan's Carson Pirie Scott & Co. Building and to Sullivan and Dankmar Adler's Auditorium Building.

Walter recalls biking to the 1933–34 Century of Progress International Exposition. At the exposition Plymouth Motors sponsored a competition on air flow that Walter entered (his entry featured a drawing of the knee action and a car spring in the background, over which he typed his competition report). He also saw the Travel and Transport Building (whose tensioned roof could be raised and lowered) and Fred Keck's Crystal House, touted as America's first glass house. (Interestingly, facilities for the Armour & Co. pavilion at the exposition—including a hot dog booth—were designed by Nathaniel Owings and Louis Skidmore before they incorporated as an architecture firm in 1936.)

As his graduation approached in 1937, Walter was set on becoming an architect, while his father insisted on business school at Dartmouth. As a compromise, Walter completed a postgraduate year of high school at Leelanau for Boys, a college prep school in Glen Arbor, Michigan, where he took one class and taught geometry. Upon his return, Walter's father relented on Dartmouth, and Walter Netsch enrolled in the architecture program at the Massachusetts Institute of Technology.

According to Netsch, MIT's architectural program in 1939 was in transition from a traditional Beaux-Arts orientation to a more modern approach. Netsch felt that he was better prepared than his classmates and vividly recalls asking a fellow freshman, "What do you think about Le Corbusier?" and receiving the reply, "Who?" Because of the impending world war, the freshman class was small—only nine students. He names Lawrence B. Anderson, Herbert Beckwith, and John Lyon Reid as MIT's most progressive architecture professors.

During Netsch's time there, MIT was primarily a design school that relied heavily on the case study method. As part of MIT tradition, first-year architecture students together designed and built a colonial house that was sold to provide funds for the next year's project. Netsch's admittedly rebellious and modern proposed design, which burrowed into a hillside, was severely criticized.

MIT freshmen and architecture students from Harvard were assigned weekend sketch problems that were critiqued by architects and professors from both institutions. Netsch recalls a conversation after one such review with two architects over lunch in which discussion turned to the war. Netsch made spirited statements against fascism only to discover that his audience was Philip Johnson and Walter Gropius.

The coming war was felt in other ways, too. Finnish architect Alvar Aalto found a wartime home at MIT, and Netsch relates that having a resident genius like Aalto on campus was terrific (and recalls the odd detail of Aalto's jacket pockets being stuffed with paper money). MIT research was vital to the war effort, and students were exposed to

Field Theory: Walter Netsch's Design Methodology

MARTIN FELSEN AND SARAH DUNN

Architects draw while considering the possibilities and outcomes of design problems, and they create drawings to represent ideas and issue instructions. Reyner Banham, the renowned writer on architecture and design, noted that methods of drawing have always had "such crucial value for architects that being unable to think without drawing became a true mark of one fully socialized into the profession of architecture."[1]

Walter Netsch is one such architect who recognized the potential of *drawing* as a critical design tool. He developed a systematic approach to conceiving buildings in which the act of drawing itself was fundamental to the design process and the primary device for architectural speculation and production. Netsch called this design methodology "Field Theory." "We were interested in a systems-based approach to design, not an *a priori* approach," Netsch said.[2] He thought Field Theory had the potential to transform the aesthetic and functional standards of modern buildings. "We keep trying to find new ways to see things," explained Netsch. "Our Field Theory is a process of looking at things differently, and of ordering too."[3]

In the mid-1950s, when Netsch began working at Skidmore, Owings & Merrill (SOM), Field Theory was a concept from the discipline of behavioral science employed to interpret interoperational relations between groups of people with an emphasis on human actions and events. Netsch borrowed these relational ideas, merged them with his own concepts of organizational and spatial hierarchy, and transformed them into a highly functional visualization and planning methodology. Field Theory became a systematic tool of inquiry for generating families of hierarchical, organizational, and spatial design options.

Field Theory is a geometrically based design methodology that mobilizes sets of functional requirements, programmatic relations, and environmental forces. It posits holistic relationships between buildings, and parts of buildings, within a continuous, mostly two-dimensional geometric field. Using Field Theory, Netsch investigated part-to-whole

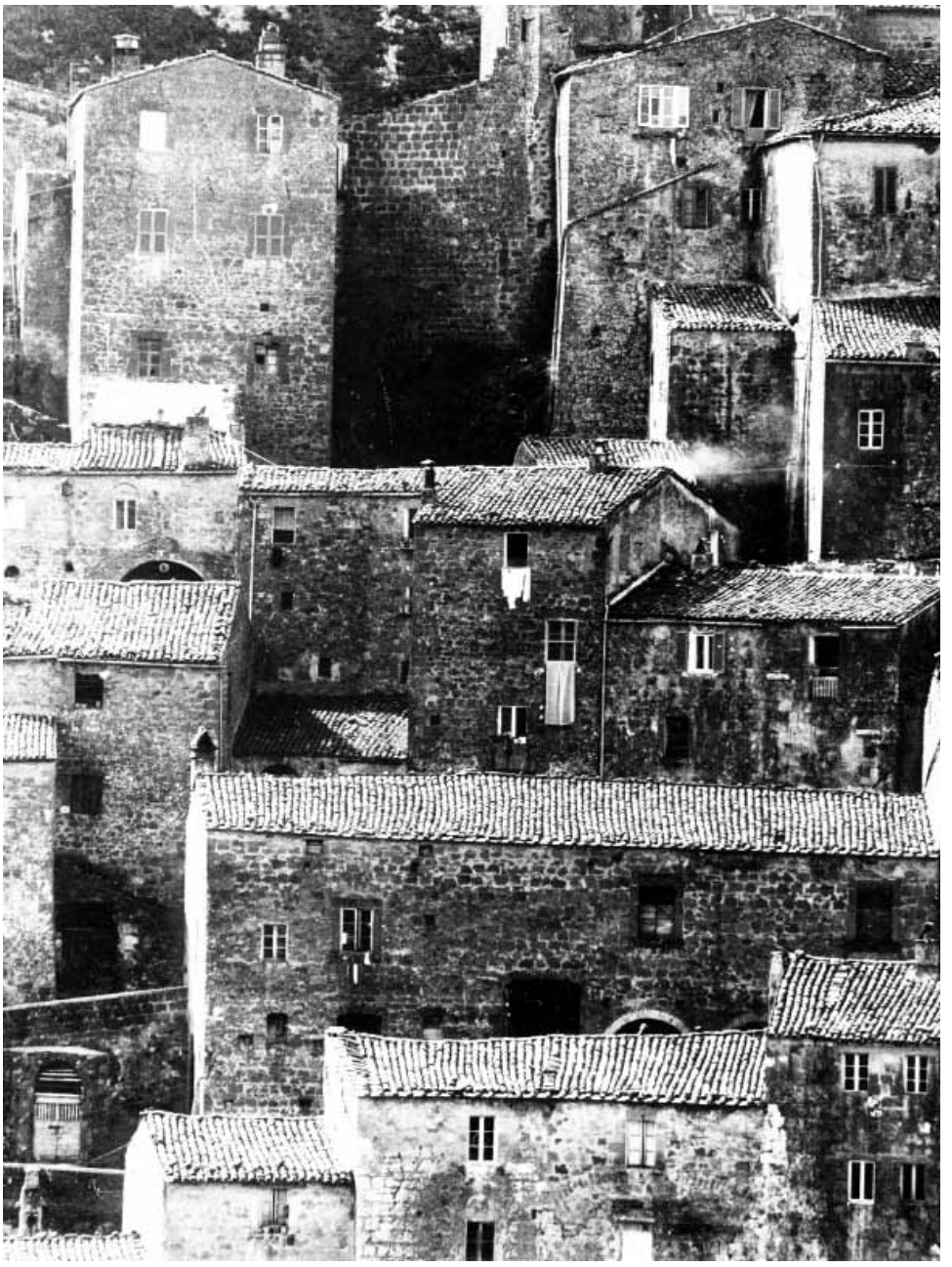


fig. 1 Photograph of an Italian hill town by Robertson Ward, 1975. The photo (and others like it) inspired Netsch to develop a systematic drawing technique to represent the architectural qualities he saw in this photograph: an ordered, geometric, two-dimensional field of optical data.

relations across multiple compositional and associative scales; essentially, it was a formal process of planning a building's entire site while simultaneously organizing the practical and material complexities of a building.

As a disciplinary approach, Field Theory served Netsch in three primary ways. First, it provided aesthetic and psychological variety. Netsch referred to a particularly apt field as possessing "existence will," a term formulated by Louis Kahn.[4] Second, Field Theory was flexible and adaptable to nearly every design problem in that it was an open-ended design system: If a program or structure could not be rationalized within a particular geometric field, the field could be easily transformed via infinite mathematical variation. Third, because of its preestablished unifying objectives, Field Theory was a design system anyone could employ, which was vital in the large corporate office of SOM. "The interesting thing was, it was not an egoistic direction. Anybody could do it," Netsch said of his decision to adopt Field Theory as an operational directive.[5] Under Netsch's guidance, Field Theory became the fundamental technique and procedure of architectural production in Netsch's design studio at SOM at a time when he oversaw the erection of several buildings per year.

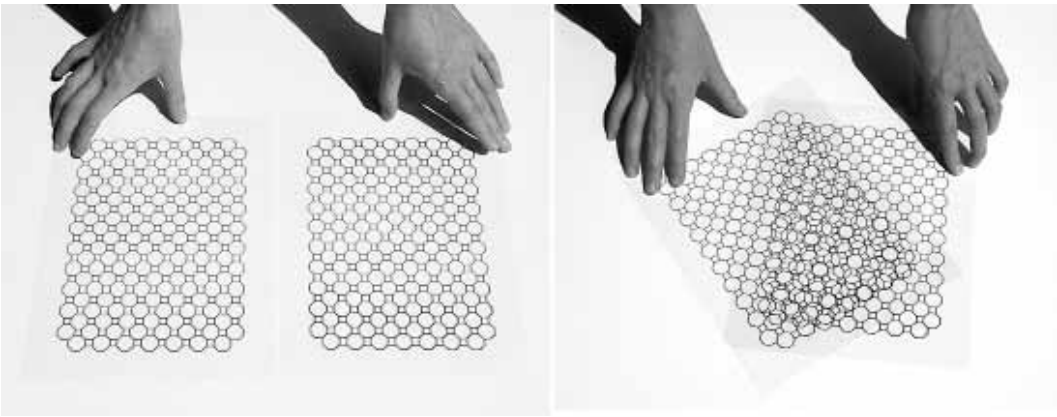


fig. 2 Illustration of the Field Theory process: A lattice is created by superimposing grids printed on transparent acetate sheets.

The Field Theory process began with a grid printed on a sheet of transparent acetate (fig. 2). Several sheets were then superimposed onto one another, creating a moiré or "lattice." Netsch said, "A lattice is when you rotate a sheet that has these forms and then you put another sheet over and you draw it all over again. In fact, you draw it a third time."[6] In this iterative search came discovery at multiple scales: Everything from building plans to furniture layouts were found by tracing the moirés. Netsch and his team made thousands of tracings by hand, revealing a great number of modular and nonmodular geometric patterns. Netsch would name the patterns that would appear, referring to them as "a pack of four or six, octagon ring-slipped fields, double fields, latticing, [and] the figure-ground of the field."[7] In an era before computer animation, Netsch and his team made films of three-dimensional geometric patterns in an effort to accelerate the process of uncovering

novel formal solutions. Ostensibly, the Field Theory design process was begun without preconceived formal notions or ideal models: The objective was for the process itself to release the potential for each field to "will" its own emergence.

Writing about Field Theory during Netsch's prolific career, architecture critic Mildred F. Schmertz commented that

> *proportional systems have always been used in architecture, fundamentally as symbols. The triangle and hexagon, for example, have meaning for the religions of the East and West; the square and the octagon are also universal images. Until the Modern Movement declared that form must follow function, all architecture was geometrically ordered, and during the modern revolution and since, all good architecture continues to be.*[8]

Field Theory was inspired and motivated by historic rules of ordered proportion, patterning, and shape. Netsch gained confidence that his design approach was meaningful as he rediscovered past geometric systems and created new ones with Field Theory. He said, "We use an age-old aesthetic attitude that goes back to the Gothic Cathedral days. They took their programs, what the cathedral was to achieve, and used the geometric definition of form as the factor to establish the character and quality of space."[9]

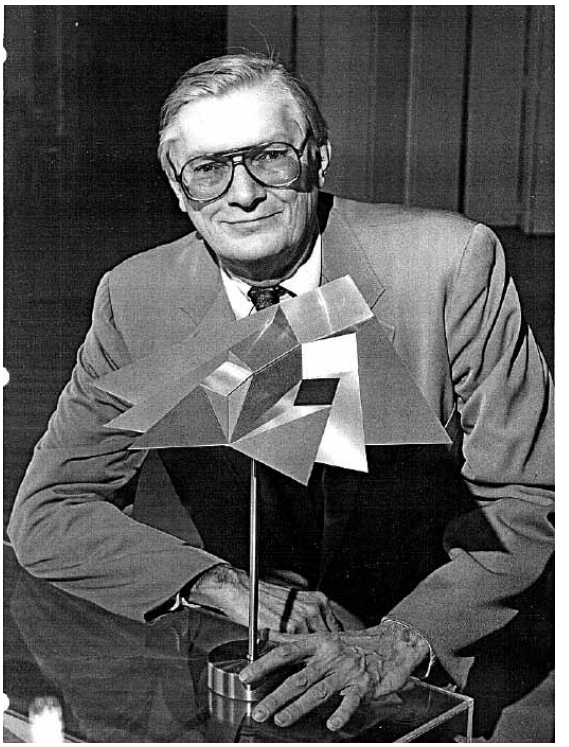


fig. 3 Walter Netsch, c. 1980s

Netsch designed two buildings that incorporated elements of his emerging aesthetic prior to fully articulating and engaging the geometrical language of Field Theory: the U.S. Air Force Academy Cadet Chapel (1954–63) and the Northwestern University Library (1964–70). In Netsch's mind, the inherent complexities of these buildings not only galvanized the necessity of developing a systematic design approach but also germinated the core principles of Field Theory itself.

For the Northwestern University Library, Netsch devised a unique set of complex building requirements. He hierarchically reorganized the typical functional relationships favored by contemporary library planners in order to formalize more user-friendly design solutions. For example, a typical functional approach to library design might prohibit

public access to book collections in order to maximize space for book storage or to assure maximum manageability and security of book collections. Alternatively, Netsch chose to create a "book complex" at Northwestern, where all members of the community had open and unhindered access to book collections and free access to a variety of spaces for intellectual collaboration or individual contemplation. "The idea for the library was to think about books, not big rooms," said Netsch.[10]

The Northwestern University Library Planning Committee asked Netsch to create a library as social center, and Netsch took its directive literally. He conceived three research towers, or minilibraries, that were designed around radial vectors emanating from social spaces in the exact *center* of each tower. These social centers allowed for informal reading and collaborative book searches. Netsch said, "We imagined people go[ing to] the middle of the square to orient themselves in their search for books."[11] He designed squares about the social centers, a maneuver geometricists refer to as "squaring-the-circle," and used them to order the main structural column grid. The peripheral areas contain private spaces, such as the seminar, study, and carrel alcoves. Radial collection stacks are arrayed between the center and the periphery, visually and acoustically buffering purposefully small-scale environments. Today, walking freely through the stacks, comfortably searching for books, one still becomes fully engaged in the physical act of tracing the orientating public/private paths originally conceived by Netsch.

Northwestern University Library literally formalized Netsch's innovative and "intimately centered" programmatic concepts. The geometries deployed in the library were invented specifically for the program and structure of the library itself; they were not randomly applied. Where later Field Theory projects would typically emanate from the superimposition of rotating 2D geometries, Netsch developed the vector/plane geometries of the library as a unique solution to an innovative set of programmatic constraints. During the design of the library, Netsch said the use of Field Theory methodology was "subliminal."[12] Looking back now, we can certainly see the ancestral mathematical relationships between the library and later Field Theory buildings. (For more on Northwestern University Library, see Goodman, pages 79–96.)

Buildings designed by Netsch immediately after the Northwestern University Library depended heavily on 45-degree-angled geometrical planes. About this reliance Netsch said, "The rotated square was the way we broke the box, by rotation."[13] The first box-buster to be designed was the Architecture and Art Laboratories building at the University of Illinois at Chicago Circle (1964). The organization of the building was developed from fields of rotated squares inscribed by geometries of circles. Mathematically related to the squaring-the-circle geometry of the Northwestern University Library, the Architecture and Art Laboratories building was created from a clustered and continuous set of "latticed fields."

The lattice was the big organizational breakthrough. The technique produced iconic yet rational programmatic hierarchies that were structurally sound, functionally efficient, and economically feasible. Because the design methodology was a systematic generative process, Netsch could fairly easily communicate its rigors to his team and corporate sponsors. Through the teaching and continual updating of Field Theory, Netsch could

also make certain it did not devolve into capricious pattern making—and he could make certain the building designs did not lose their organizational and functional efficiency in favor of simplistic visual aptitude. The self-organizing robustness of Field Theory solutions, Netsch said, avoid "the willful, cute angularities that are sometimes designed in for sculptural variety."[14]

Notes

1. Reyner Banham, "A Black Box: The Secret Profession of Architecture," in *A Critic Writes* (Berkeley: University of California Press, 1996), 298.
2. Walter Netsch, interview by the authors, February 22, 2007.
3. C. Ray Smith, *Supermannerism: New Attitudes in Postmodern Architecture* (New York: Dutton, 1977), 28.
4. Mildred F. Schmertz, "New Museum by Walter Netsch of SOM Given Order by His Field Theory," *Architectural Record* 167, no. 1 (January 1980): 119.
5. Walter Netsch, "Oral History of Walter Netsch," interview by Betty J. Blum, May 10, 1985, June 5–28, 1995, transcript, Art Institute of Chicago, 209.
6. Ibid., 218.
7. Schmertz, "New Museum," 119.
8. Ibid., 111.
9. Nory Miller, "Two Libraries Miles Apart Yet Sharing a Family Origin," *Inland Architect* 15, no. 4 (November 1971): 8.
10. Walter Netsch, interview by the authors, February 22, 2007.
11. Ibid.
12. Miller, "Two Libraries," p. 11.
13. "Walter Netsch Interviewed by Detlef Mertins," *SOM Journal* 1 (2007): 144.
14. Smith, *Supermannerism*, 33

Walter Netsch: Five Imagined Histories

DAVID GOODMAN

Some of this really happened. Actually, it all did, just not in this way. The very idea that there could be a grand narrative—a story of the inexorable evolution of architecture, from Gothic to Renaissance to Le Corbusier and onward, without detour or contradiction—is so thoroughly discounted that one struggles even to explain why that is. How do you debate what seems a self-evident fact?

But what if things had worked out differently? What if architecture at the end of the 1960s had come to a moment of consensus, a sense that the discipline could only have evolved as it did, could only have arrived at that point? What if, instead of fracturing into apparently irreconcilable pieces, architecture had remained whole? New histories would have to be written; linear, inevitable histories would take shape, explaining this remarkable moment of agreement. And while the author is, for one, quite pleased that this consensus never emerged, it is at the very least useful to imagine how the disparate strands of work emerging at the end of the 1960s might be gathered together in order to create the illusion of a definitive movement.

Walter Netsch, while a vital if often overlooked part of the history of modern architecture, could scarcely be said to have been the central figure in that history. In fact, Netsch's work with Skidmore, Owings & Merrill (SOM) only recently seems to have been reincorporated into the history of architecture in tentative and halting steps. We are just now learning how to digest Netsch, where to file him away, into which of the many fractured narratives to insert his personal and occasionally disquieting investigations. Perhaps Netsch's work has been overlooked precisely because we simply don't know what to do with him. The iconic U.S. Air Force Academy Cadet Chapel (1954–63), the bewildering Field Theory geometry of the Behavioral Sciences Building at the University of Illinois Chicago Circle (1970), and the city of crenellated towers that forms the Northwestern University Library (1964–70) could easily be placed within any number of histories of architecture but do not ultimately seem to belong entirely to any of them.

It is this very indeterminacy that makes Netsch's work so provocative. We could quite possibly situate his work at the center of any number of fictional moments of consensus. Like Woody Allen's chameleon-man Leonard Zelig, Walter Netsch, too, seems to fit within any context while not truly belonging to any of them. And while the Northwestern University Library is not generally considered a crucial work in the history of modern architecture, it is nevertheless an extraordinary project, incorporating ideas and formal strategies that would appear in all of Netsch's subsequent work and that were, at the time, fundamental to the discussion about how architecture should proceed. Part megastructure, part sculpted object, part functionalist machine, part contextual response, part exploration of pure geometry, the Northwestern University Library *could* have been a seminal work for any number of reasons. It *could* have defined a movement. This essay will present five imagined histories in which that was the case.

Imagined History 1: The Triumph of the System

The crisis of direction in modern architecture came to a definitive end with the opening of Walter Netsch's Northwestern University Library in 1970. Hailed as an infinitely expandable network and prototype for the organization of large-scale programs, Netsch's embryonic megastructure pointed the way toward a renewed consensus in architecture, serving as a standard-bearer for the nascent movement that would dominate architectural discourse and production for years to come.

The Northwestern University Library is more system than building—a series of towers containing book stacks and informal reading areas is plugged into a plinth of support spaces and lounges (fig. 1). The roof of this horizontal plane forms a student plaza that links the library to the existing buildings on site and provides a space of assembly at the

fig. 1 Walter Netsch, Northwestern University Library, 1964–70

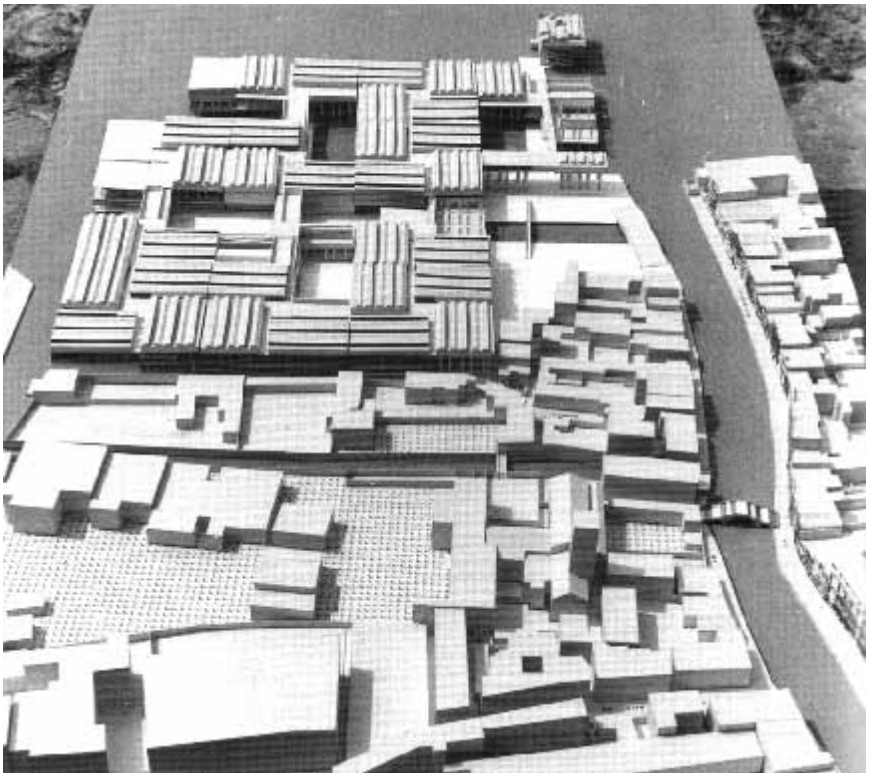


fig. 2 Le Corbusier, Venice Hospital project, 1963–65

heart of the campus. Although this system was not ultimately extended, it promised a way to accommodate changes in use and the inevitable increase in the library's holdings merely by continuing the pattern established with the first three towers.

With its modularity and subordination of the overall form of the building to the idea of the network, Netsch's building was a vertical reinterpretation of Le Corbusier's Venice Hospital project of 1964 (fig. 2) or of the "mat" buildings of Alison and Peter Smithson or Candilis, Josic, and Woods.[1] The early mat buildings were less figure than fabric: dense horizontal networks that ostensibly valued patterns of use over form. At Northwestern, Netsch added verticality to the mat and, in so doing, also added a more assertive and extroverted form to a building type that had until that time been primarily explored through horizontal expansion into the landscape.

Writing in 1974, Alison Smithson would summarize this way of making buildings as one that "can be said to epitomize the anonymous collective; where the functions come to enrich the fabric and the individual gains new freedoms of action through a new and shuffled order."[2] Netsch's strategy at Northwestern was in large part based on a similar emphasis on individual freedom within a network. Unlike the existing closed-stack Charles Deering Library, Netsch's building would open the shelving to students. At the time this represented an innovation, and it was fundamental to the development of the "system building." Once the book stacks had become integrated into the public space of the

project, the design of the building could no longer be that of a grand reading room with an attached mute volume for the storage of books. Books and readers would be interwoven, and the entire building would become a system for simultaneous storage, display, and use of books by unsupervised students. "By developing an individual-centered use," Netsch remarked, "the concept reflects the direction toward self-study."[3]

Megastructure projects, such as Kenzo Tange's 1960 project for Tokyo Bay (fig. 3), attempted to resolve the functional requirements of an entire region through the design of a single highly modulated building or system. Tange's project, with its interconnected suspension bridges and housing slabs, extends a mat-and-tower chain across Tokyo Bay. Other megastructures, such as Archigram's Walking City (fig. 4) and Plug-In City, were attempts to harness the technology of oil rigs, mass production, and the space program and apply them to the design of a building that, in itself, would constitute a city.

Netsch's Northwestern project had a decidedly more humble mission—it is, after all, a library, not a city—yet it applies a similar mode of thinking. The flexible network of towers and plinth was designed to house a broad range of program activities, both planned and unforeseen, and to organize the central core of the campus with a single composite building. There is in all of these projects—the mat buildings, the megastructures, and perhaps in Netsch's library as well—an apparent contradiction: These all-encompassing

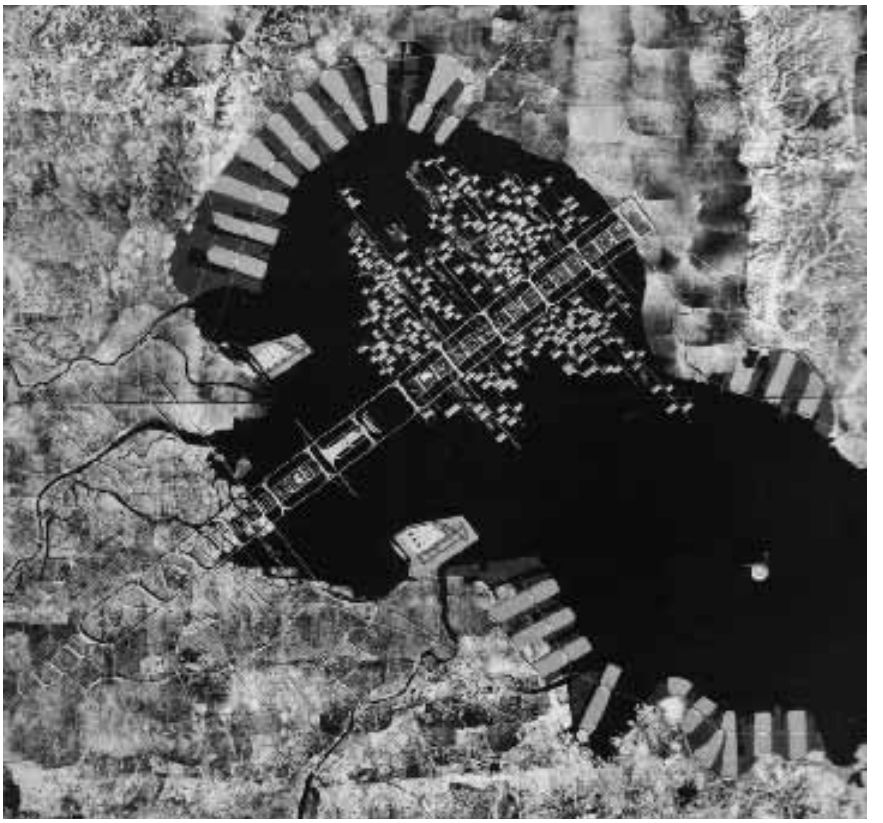


fig. 3 Kenzo Tange, *Plan for Tokyo,* 1960

fig. 4 Archigram, *Walking City,* 1964

systems were intended by their authors to provide maximum individual freedom, maximum flexibility. Yet the architect ultimately remained the author of the entire complex. While the architect promised ultimate freedom, it was ultimately he who would design every last freedom-providing inch. Nevertheless, one cannot ignore the very real way in which Netsch's library allows for unexpected encounters and a radically decentralized vision of what the library could be.

Despite the eventual exhaustion of the movement it came to represent, Netsch's Northwestern University Library remained for years both icon and example to architects such as Rem Koolhaas, whose Nexus World housing in Fukuoka, Japan, suppressed the verticality of Netsch's tower pavilions, concentrating instead on the development of the plinth; Koolhaas used a series of undulating bands to create a network of private houses and gardens that together form a housing system more than a mere housing project.

With the Northwestern University Library, Netsch illustrated how the varied activities and spaces of a city could be condensed into a single building, how the very notion of building could itself become elastic to include several identical buildings knitted together to form a system—a composite whole. Architects of the late 1960s rallied around this concept and around Netsch's example, ending the years of fractious debate that increasingly had come to divide the discipline. With the Northwestern University Library, Netsch emphatically declared the triumph of the system.

Imagined History 2: The Triumph of the Operation

The crisis of direction in modern architecture came to a definitive end with the opening of Walter Netsch's Northwestern University Library in 1970. Hailed as a case study in how the careful and systematic application of a series of geometric operations could yield an architecture of formal complexity and programmatic invention, Netsch's starbursts of rotated and cantilevered carrel bays presaged his later explorations in Field Theory and pointed the way toward a renewed consensus in architecture, serving as a standard-bearer for the nascent movement that would dominate architectural discourse and production for years to come.

Bibliography

Primary Sources

All primary sources are by Walter Netsch unless otherwise noted.

1943

"Characteristics of the House As Determined by Space-Use and Its Application to Storage." B. Arch. thesis. Massachusetts Institute of Technology. 37 pp.

Netsch's fifth-year undergraduate thesis examines the growth and change of residences in relation to family size and storage needs. His theory was that as families grew, different types of storage units evolved that changed enclosed and open spaces, thus reshaping the volume of the typical domestic family home. Copy in Institute Archives, MIT Libraries.

1954

"Programming the U.S. Naval Postgraduate School of Engineering, Monterey." *Architectural Record* 115, no. 6 (June 1954): 150–57. 11 illustrations, 7 plans, 1 map, 2 charts.

Netsch discusses the development of the design program for the U.S. Naval Postgraduate School in Monterey, California, for which he was associate partner in charge of design, representing Skidmore, Owings & Merrill (SOM). The design program was created by considering faculty needs and the course catalog, which were used to determine the amount of time spent by students and faculty in different types of facilities and the technical requirements of each department. Based upon their analysis of this information, the design team devised a schematic plan involving a multistory laboratory sciences building; two-story buildings for electrical engineering, mechanical engineering, and aeronautical engineering; a building for classrooms and offices; and an auditorium. The article includes schematics, design drawings of buildings, and simple floor plans. Reprinted in part in Statements, pages 99–101.

1957

"Die Hochschulanlage der Air Force Academy, Colorado Springs, Colorado: Die Entwicklung eines Gesamtplans." *Bauen + Wohnen* 11, no. 4 (April 1957): 124–28. 3 illustrations, 9 plans, 3 maps.

Overview of the design of the U.S. Air Force Academy that details programming of the project, site topography, preparation, and development of the master plan. Illustrations, maps, and photographs show the Academy's location, models and elevations of buildings, the chapel surrounded by the Court of Honor, and other buildings. Text by Netsch covers approximately two pages. *Bauen + Wohnen* was published in Zurich (1946–47) and Munich (1947–81).

1958

"Objectives in Design Problems." *Journal of Architectural Education* 13, no. 2 (Autumn 1958): 44–46.

Printed text of a presentation at "The Teaching of Architecture" seminar, sponsored by the Association of Collegiate Schools of Architecture and the American Institute of Architects (AIA). Netsch enumerates eight touchstones for a high-quality architectural education and advocates for lifelong learning. Proposes adding a year to an architect's training toward a professional degree in architecture. According to Netsch, the sixth year "would increase the opportunity to begin the professional phase of education with better prepared and more motivated students" (p. 45). Concludes with a plea for environmentally conscious architecture and criticizes licensing exams that support single solutions

that ignore environmental concerns. "Architects have evidently not accepted their responsibility for our physical environment … the opportunity exists for greater fulfillment of the society which must inhabit this environment" (p. 46).

Reprinted in part in Statements, page 101.

1959

"What Architecture Is and Is Not." Convocation address, Grinnell College, Grinnell, IA, October 17, 1959. Typescript. 8 pp.

In this address Netsch emphasizes human components of architecture:

> *I think architecture in all civilizations has been the environmental structure arising out of human need, and utilizing the materials and techniques of the particular era. Today, the multiplicity of human needs, materials, and techniques provides an infinite variety of spatial opportunities. The search for unity in this variety, the search for the nuances of need, and the search for visual order are the primary elements of today's total modern architecture.*

Netsch also discusses individual buildings, such as the Woolworth Building, the Reliance Building, the Guaranty Building (Buffalo), the Seagram Building, the S. C. Johnson and Co. Administration Building, the Robie House, Unité d'habitation, Notre-Dame-du-Haut at Ronchamp, as well as his own Burling Library for Grinnell College. Copy in Grinnell College Archives.

Reprinted in part in Statements, pages 102–03.

1960

"On Political-Economic Horizons." *American Institute of Architects Journal* 66 (June 1960): 82–84.

Text of remarks made at the conclusion of a presentation to an AIA convention in San Francisco by C. Northcote Parkinson (1909–93), the English historian and political scientist famous for satires of bureaucratic institutions, notably *Parkinson's Law and Other Studies in Administration* (1957). Netsch relates Parkinson's remarks to urban life and design by examining societal trends such as greater mobility, longer life spans, more free time and recreation, and accelerated concepts of time, space, and knowledge.

He urges architects in the audience to be open and to explore opportunities to address changing patterns in basic human needs:

> *As architects we should: 1) Intensify our critical values for a personal philosophy. 2) Recognize through personal research the opportunities available through science and technology to give new solutions to human shelter. 3) Recognize that basic research in our field is a requirement now if we are to maintain a mature environment for future civilization.* (pp. 83–84)

A caricature of Netsch standing beside two seated speakers (likely Parkinson and Robert E. Alexander) appears in the article.

Reprinted in part in Statements, pages 103–04.