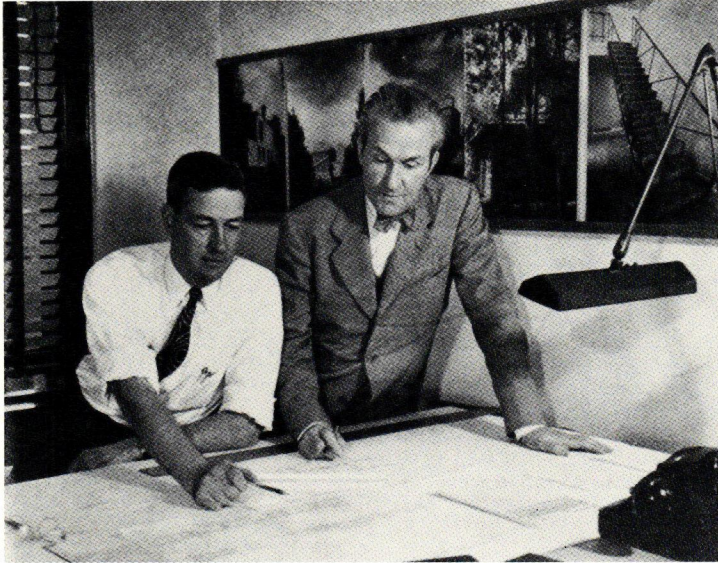


KECK AND KECK



ROBERT BOYCE

FOREWORD BY NARCISO G. MENOCAI

Robert Boyce

PRINCETON ARCHITECTURAL PRESS

Published by
Princeton Architectural Press, Inc.
37 East 7th Street
New York, NY 10003
212.995.9620

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96 95 94 93 5 4 3 2 1

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context of reviews.

Book design: Ken Botnick
Cover design: Kevin Lippert
Text editor: Andrea Kahn
Production editors: Joseph Cho, Stefanie Lew, Clare Jacobson

Special thanks to: Judy Blanco, Antje Fritsch, Laura Mircik, Erika
Updike, and Ann C. Urban—Kevin Lippert, Publisher

Library of Congress Cataloging in Publication Data:
Boyce, Robert.

Keck and Keck/Robert Boyce.

p. cm.

Includes bibliographical references and index.

ISBN 1-878271-180 (cloth). —ISBN 1-878271-17-2 (paper).

1. Keck & Keck. 2. Architecture, Modern—20th century—

Illinois—Chicago. 3. Architecture, Modern—20th century—

Middle West. I. Title.

NA737.K4B69 1993

92-26846

720'.92'2—dc20

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TO MY WIFE JEAN

For Dorothy Tredennick who first excited my interest in art history,
Roy Sieber who introduced me to a passion for African art, and
Narciso G. Menocal who guided me through the process of a PhD.

I thank them for their humanity, scholarship, and counsel.

ACKNOWLEDGMENTS

A grant from the Graham Foundation for Advanced Studies in the Fine Arts made it possible to purchase numerous illustrations for this publication.

Many of the photos were purchased from Hedrich-Blessing Photographic Archives, Chicago.

William Keck graciously allowed me to make copies of his own photographs, and gave me copies of others.

Architectural Record, published by McGraw-Hill, granted me permission to reproduce illustrations from their journal (March 1933, May 1933, and January 1934).

The Architectural Review (The Architect's Journal) granted me permission to reproduce images from the July 1935 issue. I am most appreciative of their assistance in this project.

Also, I wish to thank Trish Harrell-Ayers and Andy Shupe, who assisted by printing illustrations for this book.

The lists of awards and honors of individual projects, the names of the clients, their addresses, and the project dates were gathered from records in William Keck's office and from the State Historical Society of Wisconsin, Madison.

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FOREWORD

The story of modern architecture of the 1920s and the 1930s in America has come of late under scrutiny. Scholars no longer accept a simplistic differentiation of a *moderne* skyscraper sponsored mainly by the Architectural League of America and an "international style" championed by the Museum of Modern Art. We are learning that the development was complex and the crosscurrents rich. A number of books recently published, or about to be published, wisely choose to follow a monographic pattern, studying architects and even buildings individually. We still need a few years of such work before anyone can attempt a summation of those crucial inter-war decades.

George Fred Keck was probably the first architect to design in "the new manner" in Chicago. Regretfully, the Miralago Ballroom of 1929, "catering to the young set of automobiling, jazz-dancing nite lifers," is no longer standing; neither is the stunning Crystal House of the Chicago Century of Progress International Exhibition; its companion, the House of Tomorrow, was floated on a barge across Lake Michigan to a new location where it still stands altered and almost forgotten last time I saw it. But happily the story is not so universally grim. Countless other Keck buildings still stand—including his own apartment building in Chicago—and it is a wonderful story they tell.

That story is not linear, however. Stylistically, it expresses the modern at times, the *moderne* at others, and even a Wrightian organicism at some others. The expression of a universal idea through a consciously sought stylistic continuity was never an artistic aim for Keck, but as it makes him interesting it defines him as an American architect. Asked why he never wrote "about architecture," he was quick to answer that he was "no Hemingway, just an architect," a pithy statement worthy, in fact, of a Hemingway character.

Boyce's work is the final, comprehensive link in a chain of events pertaining to the Keck literature. That chain of events began in 1974 with Stuart Cohen and Stanley Tigerman's *Chicago Architects* exhibition; continued with Jeffrey Dean's interest in the firm's archives (which led to the deposit of the firm's archives in the State Historical Society of Wisconsin); and led, in 1980, to my own Keck and Keck, Architects exhibition and catalog at the Elvehjem Museum of Art of the University of Wisconsin, Madison, and the subsequent bequest to the museum of the furniture of the "House of Tomorrow," which, unfortunately, has never been exhibited. Boyce became my student shortly afterwards, and chose the architecture of George Keck as his dissertation topic. Out of that exercise issued this book, which, I hasten to say, is by no means a "published dissertation." Boyce's effort is a most welcome addition to the literature of this area. It brings a fresh midwestern dimension to a field dominated geographically by New York, California, and Miami Beach, and typologically by the skyscraper. Boyce casts new light on midwestern modern residential architecture and on the relationship of that architecture to the wider American and international picture as well. I am confident that, besides making new knowledge public, it will open new avenues of research in the history of American modern architecture and its ever-present, exciting dialectic of the autochthonous and the foreign.

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Professor of Architectural History
University of Wisconsin

INTRODUCTION

George Fred Keck, principally a residential architect, consistently incorporated technical experimentation that forced new solutions to building and made improved ways of living. Frequently, technical innovations and new materials almost completely dictated the appearance of his projects, but for the client to be satisfied and comfortable, Keck believed the innovations had to be livable. He engineered functional innovations into his designs with such developments as large-scale fixed windows in south walls, adjustable ventilating louvers beside those windows, an evaporating sheet of water on a flat roof to cool the house during summer months, forced hot water or air in radiant heating floors, a compact built-in kitchen, and extensive built-in storage throughout the house. Keck proposed that an architect ought to abandon emotion and tradition, and attack the facts and needs of contemporary construction; only by so doing would he give the client the best possible living accommodations.

The Century of Progress International Exposition, 1933–34, was instrumental in introducing modern architecture to the American public, as was the 1932 traveling exhibition of the Museum of Modern Art, International Exhibition of Modern Art. During the 1930s and especially at the Century of Progress, Keck built buildings that were influenced by the formal sophistication of Art Deco and the International Style. Reduction of form, emphasis on surface planes, and interest in open interior volume indicated Keck's link with European architecture. While European architects sought societal transformations with their work, Keck was more interested in engineering the modern house as an architecture that organically fit the individual client's needs, not as a cold impersonal universal machine for living.

In the major twentieth-century architectural surveys—*Pioneers of the Modern Movement from William*

Morris to Walter Gropius by Nikolas Pevsner (1936) and *Space, Time and Architecture* by Sigfried Giedion (1941)—only the Chicago School and Prairie School in American architectural development merited discussion; Pevsner and Giedion proposed that during the twentieth century America had nothing to offer the architectural student until Walter Gropius and Mies van der Rohe came to the United States. The office of George Fred Keck (who formed a partnership with his younger brother William in 1946) should have been included in these two surveys. This small office gave America its first glass houses—the House of Tomorrow and the Crystal House—at Chicago's Century of Progress International Exposition of 1933–34. These houses were based on the concepts of prefabrication, which had been a major focus in expositions since the Great Exhibition of Industry of All Nations of 1851, and which played a primary role in Keck's residential architecture during the 1940s.

Keck and Keck's International Style technology and aesthetics were later merged with an American organic vernacular—stick, shingle, and prairie style residential architecture. The combination of these two styles was based on construction and aesthetic principles that Keck examined, analyzed, accepted, and then incorporated into an eclectic but highly personal architectural statement.

Other architects were also involved with Americanizing the International Style and making it palatable to the public. Gropius, William Lescaze, Marcel Breuer, Richard Neutra, and Rudolf Schindler, all naturalized Americans, were but a few involved with this transition. It was Keck, however, who consistently designed and built residences that combined a European machine aesthetic with Wright's organic aesthetic to accommodate the tastes and pocketbooks of post-Depression and post-Second World War Americans.

This eclectic style was incorporated in the Usonian projects developed in the 1930s by Frank Lloyd Wright, but it was Keck's mass-produced Green's Ready-Built that made a Usonian-type product available to a wider public.

Passive solar heating was an idea discussed and employed by Europeans during the 1920s and 1930s; Wright was also aware of its merit. However, it was in the design of the Chicago Housing Project (1932) and during the construction of the House of Tomorrow (1933) that the effects of passive solar heat were first observed by Keck. The use of large windows

facing south, which trapped solar heat and light, became an integral part of Keck's residential work and made him the leading American involved in solar architecture.

Though in later years Keck designed and built commercial buildings and very large public housing projects, it was in designing high-quality solar residences, which combined the aesthetics and engineering of the International Style and organic architecture, and in laying the ground work for their acceptance that he most influenced American architectural design.

1

FROM WATERTOWN, WISCONSIN TO CHICAGO, ILLINOIS

At the turn of the century Watertown, Wisconsin was a small rural community settled predominately by German Lutherans who farmed the fertile rolling terrain of the Rock River Valley northwest of Milwaukee. The town was characterized by simple buff-colored brick and timber houses. Because of abundant water-power, Watertown became the center of a lumber industry that shipped goods to Milwaukee and Chicago by rail during the mid- and late-nineteenth century. The lumber industry attracted the town's most prominent nineteenth-century citizen, John Richards, who built the famed Octagon House (1854) using Orson Fowler's architectural concepts.¹

George "Fred" Frederick Keck was born to Fred George and Amalie Henze Keck in Watertown on 17 May 1895, the oldest of five sons.² The Keck home stood on Water Street at the banks of the Rock River and its yard afforded a view of the Octagon House. George Fred Keck's grandfather, John, was a cabinetmaker who had fled Germany during the German-Prussian War of 1848. He settled in Watertown and began a furniture-manufacturing business, which is still partly owned by the Keck family. From the time he was a youngster, Fred was interested in construction. As a boy, he built a canoe and a small sailboat from packing crates salvaged from the family store. At home he and his brothers worked in the kitchen and the family garden. Amalie Keck taught her sons about the simple pleasures—good food and nature—and introduced them to Froebel Kindergarten education. This German pedagogy was first introduced to America in Watertown in 1856 by Margarethe Meyer Schurz, a pupil of Froebel.³

The Kecks were financially secure and determined to educate their children. Their five sons completed primary and secondary schooling in Watertown, where they received a standard turn-of-the-century academic

education; their high school manual training classes taught them drafting and a knowledge of and respect for tools. With his father's encouragement, Fred decided to attend college for an engineering degree. After his 1914 high school graduation, Keck enrolled for a year in the civil engineering program at the University of Wisconsin, but in 1915 left Madison to attend the architectural engineering program at the University of Illinois, where he could better exploit his aesthetic and artistic temperament.⁴ In 1918 Keck's college education was interrupted by his enlistment in the army. He served as a lieutenant in the United States Coastal Artillery stationed in France during the last part of the First World War.⁵ Upon returning to the Champaign, Illinois campus in the fall of 1919 he took courses in the practical aspects of building construction and completed his degree. Keck was a member of the Alpha Rho Chi Fraternity during his years at the University.

After graduating in 1920 as an architectural engineer and while preparing for his architectural licensing exam, Keck worked six months as a designer/draftsman for the Gypsum Company in New York City. An enthusiast of the arts, he partook of the city's theatre, opera, and architecture. Illustrations of Prix-de-Rome and Beaux-Arts buildings fill Keck's sketchbooks from this period and show his interest in classical details. His drawing style is similar to that found in contemporary periodicals, especially *Architectural Record*.⁶

While in New York Keck proposed to Lucile Liebermann, a hometown girl who was working at the New York Public Library. Lucile, daughter of Mr. and Mrs. Albert B. Liebermann, was a childhood friend whose German-Jewish family had settled in Watertown in the late 1800s. Her mother's family, the Bellacks, had come from Vienna and owned and operated a men's clothing store in Milwaukee. She received her training in library science from the University of

Wisconsin, where she won numerous scholastic and honorary awards. In 1920 Keck returned to Wisconsin and passed his licensing examinations in Madison and Chicago. In 1921 he married Lucile and the young couple moved to Chicago.

Chicago in the 1920s was a major metropolitan center and the site of prolific building. Keck wanted to be a part of the construction boom. Working in Chicago kept him close to his family and free to enjoy the opera, theater, and other fine arts that were vital to the city's life.⁷

After working as a draftsman for a number of Chicago architects, Fred Keck opened a private practice at 612 North Michigan Avenue in 1926. Keck was "very much the romantic image of an architect. Tall and lean in his white linen suits replete with white shoes, white shirt, and black bow tie" he was an imposing, successful, charming, and attractive man who enjoyed life and even took vicarious pleasure in the family lives of his young clients.⁸ He made the initial client contacts and preliminary design sketches, personally signed office correspondence, escorted clients to job sites, and even entertained them when they visited Chicago. But as his practice grew he found he needed assistance in the daily running of the office.

During the 1930s, Keck's office grew. His brother William joined in 1931, after completing his architectural degree at the University of Illinois; Robert Bruce Tague, Fred Keck's chief draftsman, was in the office from 1934–44, 1946–57, and intermittently during the 1960s; Ralph Rapson came from Cranbrook in 1938 and stayed until 1945, when he left for private practice; and Robert Paul Schweikher (the most Wrightian of the associates) worked with Howard Fisher on the General Houses projects of 1933–34 and collaborated with Keck on war housing during 1941–42.

William Keck was responsible for keeping the office running smoothly. He also would "sweat out the design details" so that Fred's ideas could be realized in built form. William did most of the on-site inspections, wrote follow-up site reports and specifications, and kept up with newly marketed construction products. After World War II, William returned to the office in March 1946 to become a full partner with his brother in May of that year. The practice, known as

George Fred Keck, William Keck, Architects, continued to employ a stream of young draftsmen. After 1948, William's initials and those of young drafting apprentices appeared on the plans. Fred Keck "was glad to get young sympathetic draftsmen who could draw up what he wanted, [but then] he was one of the only architects in Chicago who was doing modern architecture." For his young employees "it never was like working but was almost like Fred Keck was subsidizing them, ... paying them for having fun." One of the most important draftsmen and designers was Robert Bruce Tague. "Fred could believe in Bob and Bob reinforced Fred's own thinking."⁹

Tague (1912–84) joined Keck in May of 1935, while William was in Phoenix, Arizona helping construct an adobe house for a fraternity brother's parents, the A. E. Chapmans. As far as Tague was concerned, "Keck was the only major architect in Chicago doing modern. There was nothing else modern to look at except the Art Deco office buildings of Holabird and Root. The other good work being done in America was mostly by Lescaze, Neutra, and a few other Europeans."

Tague began his M.F.A. thesis (a housing development layout and site plan) after receiving a postgraduate scholarship at the Armour Institute and requested Fred Keck as a consultant.¹⁰ With William in Arizona, Fred asked Tague to be the office boy. He accepted the offer using the drafting tables for his independent thesis, answering the phone, and keeping the office open. He began drawing on Keck projects during that summer, but in the fall of 1935 went to Texas in an unsuccessful attempt to find a job.¹¹ An invitation by Keck brought him back to the Chicago office where he assisted with the 1936 Bertram J. Cahn House. He stayed on as draftsman until he was called into the army in 1944. According to Tague, "Ideologically, Fred Keck was absolutely the designer, but as far as process was concerned, Keck did less and less work on the drafting board. All the rough parts [of the design] were mine."¹²

After viewing Henry-Russell Hitchcock and Philip Johnson's traveling International Exhibition of Modern Architecture in 1932, Tague became an International Style enthusiast. In that show he discovered a "style" broad enough to be universal and adaptable over

long periods of time to new materials, methods, and functional requirements—with rules, as Louis Sullivan might have said, “so broad as to admit of no exception.” Tague advised students at Armour Institute, the New Bauhaus, and the Chicago School of Design to study the exhibition catalogue.¹³ Whereas “Fred Keck was more romantic and loose, and relied on the organic nature of the site and the individual family needs, [Tague] tended to be crisp, thin, delicate, slick, and more elegant” in his designs. Tague “struggled to keep the Keck designs from being too far out [and made them] more contained to an International Style purist vocabulary.”¹⁴ After World War II Tague remained in Paris and in 1945 became secretary and typographer to a modern art committee called *Continuity*. The group included, among others, Gertrude Stein, Jean Arp, Le Corbusier, and Constantin Brancusi and was devoted to the “unity and synthesis of the major arts [and a better] understanding of the creative and aesthetic developments of the modern period and their relationship to technique and production.”¹⁵

Ralph Rapson completed his graduate studies with Eliel Saarinen at Cranbrook Academy of Art, and in 1940 went to Chicago to start a private practice. He worked part time with Paul Schweikher before being asked by Fred Keck to join his office staff. He worked off and on with Keck from February 1941 to January 1944 until taking over the Chairmanship of the Department of Architecture at the Institute of Design (1942–46) upon Fred Keck’s resignation of the post.¹⁶

Rapson later taught at M.I.T. He wrote:

Working in the Keck office was relaxing and rewarding....Fred was a realist who was able to assimilate traditional technology with higher technology....while Fred seldom “designed,” we all knew his general approach and, of course, always discussed the projects at length. Fred acted as the design critic offering advice and direction.... Robert Tague worked...as his chief designer [and] while Fred was the guiding genius, disciplinarian, and innovator, Bob Tague was the principal design influence.¹⁷

Bertrand Goldberg was a frequent visitor to the Keck office in the mid-thirties. Although never hired as a draftsman, he was, by his own account, “tutored” by Keck.¹⁸ When he was nineteen years old, Stanley Tigerman worked as a draftsman in the Keck office and took night classes at the Institute of Design under Robert Tague in 1949 and 1950.¹⁹ Tigerman’s initials can be found on only one Keck project, a concrete block and fir-sided house for John Frets to have been built at Dune Acres, Indiana.

Keck was at all times the principal and guiding force of the office, but because the office was small and daily contacts were congenial, the abilities and designs of young associates were encouraged, constructively critiqued, and often reworked for incorporation in client projects as can be seen in the Crystal House and the Kellett and Pioneer Cooperative.²⁰

NOTES

1. An East Coast lawyer, John Richards built the Octagon House to impress the public and to serve as a functional dwelling for both family and laborers. Because of the proximity of his lumber business, the house was built above the mill and the river valley. The octagonal shape wrapped around the cantilevered spiral staircase and utility core, which provided access, ventilation, heating, and water to all rooms of the house. Its upper floor was designed as sleeping quarters for the numerous mill hands. The four walls of the stairwell were hollow and allowed heated air from the basement furnace to circulate through the house. With the southwest basement window open and a northeast window of the cupola open, a natural draft cooled the house in the summer. Water on the sloped roof was collected in a cistern, then piped to the basement. There it coiled through the kitchen stove, was heated, then, by the pressure of the water in the cistern, was pushed up to the lavatories and bathtub, giving running water to the family and residents. Many rooms had built-in storage walls. The Octagon House was an ingeniously designed practical house that was well-known to Fred Keck and his brother William, who were interested in its historic preservation. Kevin Johnson, "The Natural Thing to Do," *Chicago Reader* (27 November 1981): 9, 29; Walter Creese, "Fowler and the Domestic Octagon," *The Art Bulletin* 28 (June 1946): 89–102.
2. Children of Fred George Keck and Amalie Henze Keck: Meta, a daughter, died as an infant, George Fred (1895), John (1897), Karl (1898), William (1908), Pete (Earnest) (1910), and Albert (1912, died as an infant).
3. Margarethe Meyer Schurz and her husband Carl, a German revolutionary politico, taught for a while in England before they came to the United State. They settled in Watertown, where Mrs. Schurz continued her private teaching in German in a small wood-frame school house on Second Street. She passed her ideas on to Elizabeth Peabody, who became an active disciple of the Froebelian method. The historic wood schoolhouse was moved to the backyard of the Octagon House in 1956. Watertown Historical Society brochure.
4. In 1873 Nathan C. Ricker became the first graduate from the University of Illinois to receive a professional degree in architecture. That same year, he was appointed Head of the newly formed Architectural School, the first of its kind in the United States, and served as its chairman until 1910. He also served as Dean of the College of Engineering from 1878–1906. There he introduced (ca. 1890) the first course in America in architectural engineering that met the needs of training students for constructing and designing steel-frame buildings. With his friend Dankmar Adler he pressed the Illinois legislature to create and empower a Board of Examiners to regulate and license architects. Illinois was the first state to do so in 1897. Wisconsin did not pass such a bill until 1917. Turpin C. Bannister, *The Architect at Mid-Century: Evolution and Achievement* (New York: Reinhold Publishing, 1954), 97–99, 422–423. Ricker was still on campus but L. H. Provine was the new Department Head when Fred Keck enrolled at Illinois. After graduation, William Keck took an evening structural engineering course from Armour Institute, the second (1893) architectural school to be founded in the Midwest; interview with William Keck, 20 July 1983.
5. Fred Keck kept a diary for the 14 months he was in the service. Most of the entries are written about daily life: *i.e.*, stationed at Fort Hamilton, New York; Pratt Institute visits; Metropolitan Museum; Ziegfield Follies; a good piano on the ship to France; adored Paris; involved with intelligence work while in Paris (police duty and censored letters); and a few battle descriptions. William Keck still has possession of this diary.
6. In one notebook there are quotes taken from articles by and about Leonardo da Vinci, John Ruskin, and Julien Gaudet. There are lists of Prix-de-Rome designs and there are numerous pen and ink drawings that must have been taken from periodical illustrations: *i.e.*, Gilbert's Detroit Public Library; a U.S. Post Office by J. G. Rogers; McKim, Mead and White's Fine Arts Museum of Minneapolis; Low Library at Columbia University; Metropolitan Club in New York; and Boston Public Library. Correspondence file, box 3, M73-431, State Historical Society of Wisconsin, Madison (SHSW).
7. Ron Offen and D. Shigley, "Portrait of the Artist this Week: George Fred Keck as a Landscaper," *The Herald* (5 September 1973): 12; "A Pretty Wedding in the Liebermann Home at High Noon Today," *Watertown Daily Times* (26 November 1921).
8. Stuart Cohen and Stanley Tigerman, "George Fred Keck, 1985–80," *The Chicago Architectural Journal* 1 (1981): 57.
9. Interview with Buford Pickens, 27 July 1985, St. Louis, Missouri.
10. Interview with Robert Tague in Chicago, 22 July 1983, and correspondence from Tague to Buford Pickens, 8 July 1980.
11. Tague assisted drawing the J. W. Garretton House, Kenilworth, Illinois, May–June 1935; the Morris A. Mueller House, Beverly Hills, Illinois, June 1935; and the Beryl R. McNabb House, Beverly Hills, Illinois, July 1935.
12. Interview with Tague in Chicago, 22 July 1983.
13. Tague was a postgraduate critic for the junior class architectural students at the Armour Institute, and taught drafting classes from 1939 to 1943 at the New Bauhaus and Chicago School of Design during evening hours. Interview with Tague, 22 July 1983; correspondence from Tague to David Joselit, 6 November 1981.
14. Interview with Tague, Chicago, 22 July 1983. Tague only worked off and on for Keck during the late 1950s and 1960s. He worked on his own projects and then with Bill Reed and Crombie Taylor. Interviews with Buford Pickens, 27 July 1985, and Stanley Tigerman, 31 July 1985.
15. *Continuity* 2, brochure, 1945.
16. Correspondence with Ralph Rapson, November 1984. Ralph Rapson's initials first appear on project 263 in February 1941, and are not seen again after January 1944 on project 307. He worked on most of the major Keck projects during these years: *i.e.*, Rice, 263; Quenneville, 273; Greven, 276; P. Keck, 277; Sloan, 298; Solar Park Houses; Green's Ready-Built, 306; and Haugley,

307, for which he was a Keck associate. Keck Architectural drawings, vault, SHSW.

17. Correspondence from Ralph Rapson, November 1984. Ralph Rapson (1914–), was born in Michigan, received his B.A. in Architecture in 1938 from the University of Michigan, and, after leaving Chicago to teach along side Bill Wurster at M.I.T. (1946–54), he opened a private practice in Cambridge. He was Head of the School of Architecture at the University of Minnesota from 1955–84 and continues a private practice, Ralph Rapson and Associates, Minneapolis. Muriel Emanuel (ed.), *Contemporary Architects* (New York: Saint Martin's Press, 1980).
18. Emanuel, *Contemporary Architects*; interview with William Keck, August 1984.
19. After Stanley Tigerman failed out of M.I.T., William Wurster found him a job

in the Keck office. Tigerman said, "While I worked at Keck's office during the day, I enrolled in the Institute of Design. Robert Tague taught the night school class in which I was enrolled. It was the same Bob Tague that sat behind me at Keck's office who was responsible for my day-to-day architectural education.... It always interested me that Fred Keck's criticism [in the drafting room] stopped short at Bob Tague... it seemed as if Tague were someone very special indeed. Certainly he was very different from Keck in that his buildings were always more classically contained than Keck's." Cohen and Tigerman, "George Fred Keck: 1895–80," 56–57. Tigerman was born in Chicago, September 1930, went to M.I.T. (1948–49), worked with Keck and went to the Institute of Design (1949–50), and worked for S.O.M. and Paul Rudolph. He was Chief of Design

for Harry Weese (1961–62) and a partner with N. Koglin (1962–64) before he opened his own office, Stanley Tigerman and Associates, in 1964. Emanuel, *Contemporary Architects*.

20. The following is a list of draftsmen who were employed in the Keck office and initialed drawings for longer than a year: Arthur E. Miner, August 1944–April 1949; Wilford V. Hingston, March 1947–September 1949; Leona Johnson, April 1949–August 1952; James N. Linderberger, June 1949–August 1952; Robert P. Darlington, April 1951–December 1952; Shigeo Okamoto, November 1952–October 1954; Russel G. Moy, December 1952–February 1955; Alvin P. Klaeren, August 1957–March 1959; and Robert James Freund, September 1958–August 1960.

2

CHICAGO'S EXPANSION DURING THE DECADE OF THE TWENTIES

Chicago's post-World War I economic prosperity produced an enormous quantity of construction. During the twenties, parts of Daniel Burnham's *Plan of Chicago* were implemented, downtown and North Michigan Avenue experienced unplanned expansion, and Chicago was transformed into a vertical city. Many tall office buildings were erected between 1921, when the North Michigan Avenue Bridge was completed, and 1930, when national and local economic conditions curtailed major construction projects. The 1930 Michigan Square Building was the last important North Michigan Avenue building erected before construction resumed after World War II. This 1920s Chicago architecture relied on simplified surfaces and geometric forms. Piers rose uninterrupted to building tops designed without parapets, spires, temples, or pyramids. Windows were only slightly recessed from the building's outer skin. City regulations and an Art Deco vocabulary influenced designs. A twenties "jazz-age" style began in 1918 when "an architects' committee including Holabird and Roche, Andrew Rebori, and Howard Van Doren Shaw proposed that heights be limited and...architectural standards...introduced on the newly improved North Michigan Avenue. A maximum building height of 260 feet above grade was in force in central Chicago until 1923 when a new building regulation of 1916 allowed additions if they did not exceed a quarter of the lot area and a sixth of the building's volume, and if the building envelope was set back one foot in ten from lines of adjacent property."¹

The most publicized yet least influential building produced in Chicago during the twenties was Howells and Hood's Chicago Tribune Tower. The product of a 1922 competition, it was completed in 1925 on a visually impressive North Michigan Avenue site alongside the bridge.² Its steel frame was clad and crowned



- 1 Holabird and Root, Chicago Daily News Building, Chicago, IL, 1929
- 2 Holabird and Root, Palmolive Building, Chicago, IL, 1929
- 3 Holabird and Roche, 333 North Michigan Avenue Building, Chicago, IL, 1928

with French Gothic buttresses, its trim outmoded before the building opened.

Instead, the stylistic standard in Chicago before the Depression was set by the clean lines, broad surfaces, vertical articulation, and geometrical faceting of office buildings designed by Holabird and Root and Graham, Anderson, Probst and White. The offices of Graham, Anderson, Probst and White³ and Holabird and Roche⁴ were two of Chicago's busiest firms.

Beaux-Arts detailing was their preferred style in public and private high-rise projects constructed to satisfy economic, utilitarian, and environmental requirements. A number of skyscrapers begun by Martin Roche were completed by his partners John Holabird and John Root, Jr., including the Chicago Daily News Building (fig. 1) and Palmolive Building (fig. 2). These buildings, the 333 North Michigan Avenue Building (fig. 3), and the Michigan Square Building (fig. 4) were the city's first important works of Art Deco architecture. Except for Michigan Square, they were soaring skyscrapers, incorporating New York City-type setback silhouettes and the sheer faces of Eliel Saarinen's Chicago Tribune project.⁵ The Holabird and Root office numbered approximately 300 assistants who helped carry out these symmetrically stepped, tall buildings typically clad in Indiana limestone.

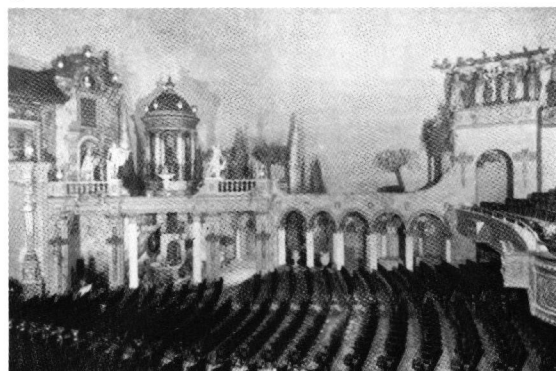
Despite their classical origins, the historic precedents of these modern structures were hard to decipher. They followed Louis Sullivan's advice to embellish office buildings at street level and where they met the sky. Decorative sculptural reliefs could be found at entrances, in lobbies, and along the tops of buildings; rich materials arranged in geometric surface patterns covered walls, floors, and ceilings; and the inherent qualities of materials were emphasized. The Art Deco style, as it was later called, was meant to attract attention and have immediate sensuous appeal.⁶

The thirty-five-story tower at 333 North Michigan Avenue incorporated dark polished granite at street level. The thirty-seven-story, 620-foot Palmolive Building, raked by exterior lighting, flaunted interior surfaces of walnut, marble, black vitrolite, and fine metalwork. The twenty-six-story Chicago Daily News Building incorporated polished granite storefronts and interiors decorated by Alvin W. Meyer (a New York sculptor) and John W. Norton (a Chicago painter). The eight-story Michigan Square Building was the finest of these examples. Its Diana Court was a slick package of subtle marbles patterned in stripes, chevrons, and checkerboards with a central semicircular stage set, presided over by Carl Milles's bronze sculpture of Diana (fig. 4). All these buildings, dressed in rich materials but constrained by economic and functional considerations, were inspired by the ocean liners like the *Ile de France* and the *Normandie*.⁷ The Art Deco

4



5



4 Holabird and Root,
Michigan Square
Building, Diana Court,
Chicago, IL, 1930
5 John Eberson,
Capitol Theater,
Chicago, IL, 1924

dressing ceased with the end of the building boom in 1931, yet, the practicality and efficiency of these buildings allowed them to weather the stock market crash and subsequent Depression. It would take, however, fifty years before the Deco interiors and exteriors attracted their deserved attention, by which time many were altered or, in the case of the Michigan Square Building, destroyed.⁸

Chicago was predominately a city of apartments. This phenomenon started before the turn of the century and rapidly accelerated with the development and expansion of the Gold Coast and northern lakeshore. In the late 1800s Chicago's shore line ran along Michigan Avenue; the Gold Coast was built of virtually all reclaimed land. The site had much to recommend it: lake, beach, park, scenic drive, and a downtown area in its backyard. Construction on this man-made land did not begin until the twentieth century with modest, steel-frame apartments, eight- to eighteen-stories high, set on pile foundations. Often sheathed in limestone and red brick, the buildings used curtain walls, sound insulation, and hollow tiles for fireproofing. The homogeneity and uniformity of the Chicago apartment building type was the result of an economic synthesis of technical and aesthetic principles.

Investments were inhibited following the First World War, and between 1918–21 there was no large-scale construction on the Gold Coast. Over 18,000 apartment units were completed in 1922, and this number increased steadily every year until a 1927 peak of nearly 37,000. A downward slide reduced the 1930 total to fewer than 1,500. "The amount of [apartment] construction in Chicago during the five year period 1932–36 averaged less than three percent of the average for the six year period 1923–28."⁹ Many large luxury apartment buildings were designed by architectural firms in conjunction with engineers, but the majority of housing, three- and four-story walk-ups, was built by contractors using rather uninspired standard plans.

High cost of lake front property dictated that the structures would be long and narrow with the narrow side on the lake. Living rooms overlooked the lake while bedrooms and service facilities were in the long section away from the lake. Although some of the earlier buildings were ornamented in a manner similar to the Parisian apartments that were

frequently illustrated in U.S. architectural periodicals in the early years of this century, most used ornament from a variety of sources placed on the lower storeys and the upper segments of the buildings. The mid-sections were usually unornamented....Although the ornamental elements were frequently ordered from catalogues and used on buildings for which there was no past precedent, there was a visual consistency that occurred among the apartments....In keeping with the still largely single-family area, apartments attempted to suggest a feeling of domestic scale by concentrating ornament on the lower storeys where it would attract people to look at it rather than at the building's height.¹⁰

For the most part, apartments in the North Shore area were built by designers, whereas North Michigan Avenue office buildings were the work of Beaux-Arts trained architects who specialized in the design of public buildings.

The firm of Schmidt, Garden and Martin was an accepted authority in institutional design. Its hospitals and schools, sited outside downtown Chicago, incorporated the same progressive structural and material technology as that of commercial and office buildings. The firm's projects were practical and utilitarian. With a minimum of historical detail applied to entrances or major axes, they avoided the revivalist excesses of the Chicago Tribune Building and the U.S. Post Office.

The movie palace—allied to the popular art of fantastic illusion and make-believe—illustrates best this use of extravagant revivalist trim. Movie entrepreneurs Balaban and Katz financed the biggest and most sumptuous of the movie palaces, projects designed by George L. Rapp and John Eberson.¹¹ Rapp and Eberson clothed up-to-date building technology with archaeologically reproduced architectural illusions. Greek, Italian, Spanish, Persian, and Indian architectural types and details adapted in plaster, paint, and lights created an artifice second only to that of fairs and circuses. Marble, tile, bronze, and iron were used to counter daily wear and tear (fig. 5). Eberson said, "it was important to intelligently, appreciatively, and artfully use paint, brush, and electric light, free ornament, furnishings, light, and shadows to produce a true atmosphere...without cheapening the attempted illusion

with overdue trickery.”¹² In contrast to the solemnity of commercial architecture, movie theatres were designed to be riotously loud.

The image of central Chicago during the postwar years is one of a vibrant commercial and residential area. The Chicago frame was accepted as fundamental. Surfaces were designed according to vogue, function, and budget. Air conditioning, ventilation, and insulation methods were continually refined. However, to the eastern establishment,

*the architecture of Chicago was lost in a deluge of meaningless vulgarity; her vast moving-picture theatres, her classic stadium [Holabird and Roche, 1925], the dull and merely grammatical Gothic of the University of Chicago [Henry Ives Cobb]—all these represented a sad falling away from her heyday of energy and originality.*¹³

Chicago’s corporate and industrial clients tended to be conservative, choosing to display their wealth through their good taste. They were shrewd and progressive in business matters but nostalgic for tranquil, romantic, and pastoral surroundings. Suburban Chicago is a record of their personal and unique visions, designed by, among others, Howard Van Doren Shaw¹⁴ and his assistant/associate David

Adler.¹⁵ These architects produced Tudor, French Provincial, English Cotswoldian, and Georgian-style residences and oversaw details of landscaping, interiors, and even furnishings. The modular standardization of Chicago’s commercial and apartment architecture, adapted for public housing by German architects in the U.S. during the postwar years, did not appear in private residential design until the late twenties. It was not until the mid-twenties that what later would be called the International Style would be sparingly illustrated in American periodicals. Only a few illustrations of works by Schindler, Neutra, and Lescaze (far from Chicago) gave any indication of contemporary American progressive architecture; the only available periodical that consistently illustrated such design was the British publication, *Architect’s Journal*.¹⁶ Modern residential design required daring clients and daring lending institutions as well—rarities to be sure.

Though architectural and social critics like Lewis Mumford and Catherine Bauer tried to fight against complacent eclecticism, Chicago architects—and, more broadly, the American architectural establishment—firmly resisted reform. In 1929, after three complacent decades, this situation was about to change.

1. Carol Herselle Krinsky, "Sister Cities: Architecture and Planning in the Twentieth Century," *Chicago and New York: Architectural Interactions* (Chicago: Art Institute of Chicago, 1984), 59.
2. Carl W. Condit, *Chicago, 1910-29: Building, Planning and Urban Technology* (Chicago: University of Chicago Press, 1973), 108-114, 168-170. Raymond Hood (1881-1934) was born in Rhode Island and educated at Brown University (1898-1899), M.I.T. (B.S., 1903), and the Ecole des Beaux Arts (1905-10, intermittent period). He served as a draftsman for Bertram Goodhue for a period of time and then went to New York in 1914. Placzek, *Macmillan Encyclopedia*.
3. Graham (1866-1936) was raised in Michigan, educated at Coe College and Notre Dame, and was the public relations member of the firm. Anderson (1870-24) was a New York State native, who was educated at Harvard (B.A.), Johns Hopkins University (post-graduate engineering), and the Ecole des Beaux Arts (Diplome). Probst (1870-42) and White (1870-36) were both Chicago natives. Adolf K. Placzek, ed. *Macmillan Encyclopedia of Architects* (New York: The Free Press, 1982).
4. John A. Holabird was a West Point graduate, a member of the Army Corps of Engineers, and the Ecole des Beaux Arts (1912). He met John Root, Jr. at the Ecole des Beaux Arts (1913 Diplome; Cornell University, 1909) and they both returned to Chicago to work for Holabird and Roche. Placzek, *Macmillan Encyclopedia*.
5. "Chicago Daily News," in *Architecture* (January 1930) and in *Architectural Forum* (January 1930); "Palmolive Building," in *Architectural Forum* (May, 1930), and in *Architecture* (January 1930); "333 North Michigan Avenue," in *Architectural Record* (February 1929) and in *Architecture* (January 1930); "Michigan Square Building," *Architectural Forum* (January/February 1934); Frank A. Randall, *A History of the Development of Building Construction in Chicago* (Urbana: University of Illinois Press, 1949); and "Holabird and Root, Masters of Design," *Pencil Points*, 19 (February 1938): 65-97.
6. Talbot F. Hamlin, "A Contemporary American Style," *Pencil Points* 19 (February 1938): 99-106; Rosemarie Haag Bletter and Cervin Robinson, "Skyscraper Style," *Progressive Architecture* 56 (February 1975): 68-73.
7. "Palmolive Building," *Architectural Forum* 52 (May 1930): 655-666; "The Chicago Daily News Building," *Architectural Forum* 52 (January 1930): 21-59, 107-114; "Michigan Square Building," *Architectural Forum* 140 (January/February 1974): 48-55; David Lowe, *Lost Chicago* (New York: Crown Publishing, 1989), 215; and "Recent Work of Holabird and Root," *Architecture* 60 (January 1930): 1-40.
8. The dates of the following buildings indicate the year of their completion: Wrigley Building, 1921, Graham, Anderson and Probst; London Guarantee, 1923, A. A. Alschuler; 333 North Michigan Avenue Building, 1928, Holabird and Roche; Palmolive Building, 1929, Holabird and Root; Daily News Building, 1929, Holabird and Root; Board of Trade, 1929, Holabird and Root; Sheraton Hotel, 1929, W. W. Ahlschlager; Merchandise Mart, 1930, Grahm, Anderson, and Probst; Michigan Square Building, 1930, Holabird and Root. M. W. Newman, "Soaring Twenties," *Architectural Forum* 140 (January/February 1974): 48-55.
9. Condit, *Chicago, 1910-29*, 162.
10. Randall, *History of Development of Building*, 257. John Craib-Cox, "Houses in the Sky," *Architectural Review* 162 (October 1977): 228-229.
11. George L. Rapp (1878-1942), who received his architectural degree from the University of Illinois (1899), joined with his brother Cornelius W. Rapp (1861-27) to form a partnership in 1906. They designed office buildings and hotels, but they specialized in theater design. During the twenties they built over 400 theaters nationwide when they worked with the Balaban and Katz chain. Rapp and Rapp built office buildings at 100 East Ohio Street (1924), 32 West Randolph Street (1926), and 203 North Wabash Avenue. They also built the Bismark Hotel (1926). Randall, *History of Development of Building*; Placzek, *Macmillan Encyclopedia*.
12. John Ebersson, "A Description of the Capitol Theater, Chicago," *Architectural Forum* 42 (June 1925): 373.
13. Lewis Mumford, "American Architecture Today: Construction, Decoration, Landscape," *Architecture* 56 (November 1927): 244.
14. Howard Van Doren Shaw (1869-1926), a native Chicagoan, was trained at Yale (1890) and M.I.T. (1893). He started a private practice in 1895 after working for Jenney and Mundie for a short period (1894). His life and work is identified with Lake Forest and its "aristocratic" landed-estate and country-club set. Shaw personally supervised all his constructions and never had more than fifteen draftsmen in his small office. He frequently traveled to Europe, helped form the Arts and Crafts Society of Chicago, was a member of Cliff Dwellers and the Chicago Chapter of A.I.A., was Chairman of the Illinois State Arts Board, and was a trustee of the Chicago Art Institute. Leonard K. Eaton, *Two Chicago Architects and Their Clients: Frank Lloyd Wright and Howard Van Doren Shaw* (Cambridge: M.I.T. Press, 1969); "Howard Van Doren Shaw," *Architectural Record* 60 (July 1926): 71-73.
15. David Adler (1888-1949) was educated at Princeton University (1904), Polytechnikum, Munich, and Ecole des Beaux Arts. He had a number of different architectural associates during his career; he joined Shaw in 1917 and took over his practice in 1926. Lance Wright and Colin Amery, "Chicago," *Architectural Review* 162 (October 1977): 249; Placzek, *Macmillan Encyclopedia*; and Art Institute of Chicago, *Chicago Architects' Design* (New Haven: Eastern Press, 1982): 89.
16. Marian E. Bliss, "The International Style in Chicago," (M.A. diss., University of Chicago, 1974), searched American architectural periodicals from 1925-37 for examples of International Style buildings and projects in Europe, America, and Chicago. In the index of her thesis Bliss lists articles, illustrations, and geographic locations as well as illustrations. It is amazing how little of this early European movement was seen or known by the American architectural public.

3

APPRENTICESHIP, NORTH SHORE HOUSES, AND THE NEW BAUHAUS

During the early 1920s Keck apprenticed to a number of Chicago architects, including William Pruyn (1921), Daniel H. Burnham and Company (1922), John Ebersson (1924), and Schmidt, Garden, and Martin (1924–26). Keck was the sole draftsman employed by William Pruyn “who produced standardized plans by the yard” for walk-up apartment buildings.¹ While serving as Pruyn’s assistant designer Keck moonlighted on several private house projects for the builder J. Willis Jackson, who constructed about six of Keck’s eclectic quasi-English provincial stone or brick half-timbered designs.²

After a year and a half at this job Keck went in search of a different drafting experience and joined the larger firm of Daniel H. Burnham and Company.³ He spent nearly six months working on two major projects: the Burnham Building (today the State of Illinois Office Building) and 720 North Michigan Avenue (the Central Life Building). The University of Illinois then asked Keck to teach architectural design to engineering students during the 1923–24 academic year. He left Burnham and Company and used his spare time to plan a trip to Europe. In the fall of 1924 Keck and his wife began their journey in England, but, due to complications in Lucile’s pregnancy, the couple was forced to cut their travels short after less than a month. They returned to Chicago for Lucile’s medical care.

Once back in the city Lucile’s health improved and Fred took a drafting job with John Ebersson, whose eclectic movie-theatre designs were similar to the Rapps’. Keck worked on the 79th Street Avalon Theatre. Its Moorish flavor, created from plaster, paint, and lights, was the product of extensive research from various sources, especially the Burnham Library. After graduation, Keck began purchasing architectural books and subscribing to numerous architectural periodicals: *American Architect*, *Architectural Forum*,

Architectural Record, *Pencil Points*, and *Progressive Architecture*.⁴ This personal collection gave the young architect his first exposure to contemporary design and modern construction and contained numerous examples of historical and contemporary construction, exotic locales and sites, details, ornament, floor plans, and measured drawings of European and American buildings. The contemporary competition, publication, and discussion of the 1922 Chicago Tribune Building in local print media and architectural offices offered Keck yet another opportunity to contemplate modern architecture.

Keck remained with John Ebersson a short time before joining Schmidt, Garden and Martin,⁵ located in Sullivan’s Auditorium Building. The firm specialized in large institutional facilities. Its head designer, Hugh Garden, had apprenticed with Adler and Sullivan during the same period as Frank Lloyd Wright, with whom he later worked. Garden also spent a brief time in the offices of H. I. Cobb and Howard Van Doren Shaw. Keck was one of a number of young apprentices who designed and drafted eclectic details for Garden.

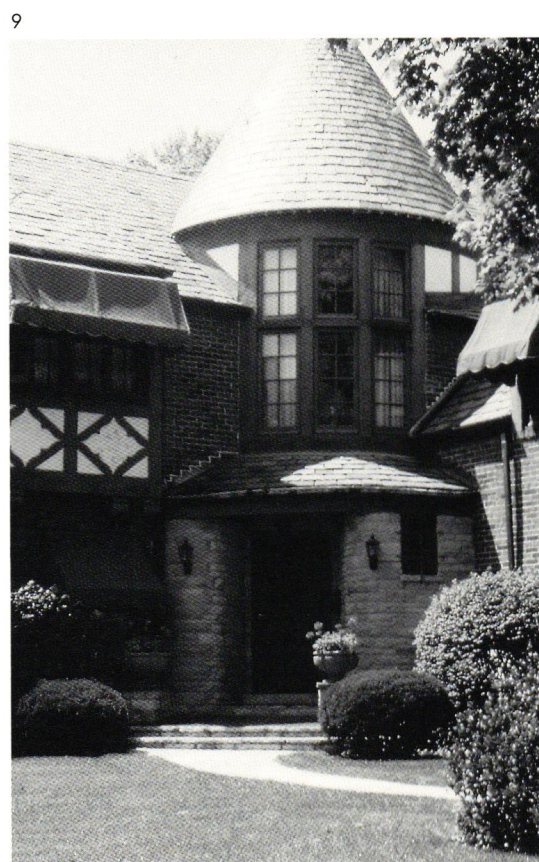
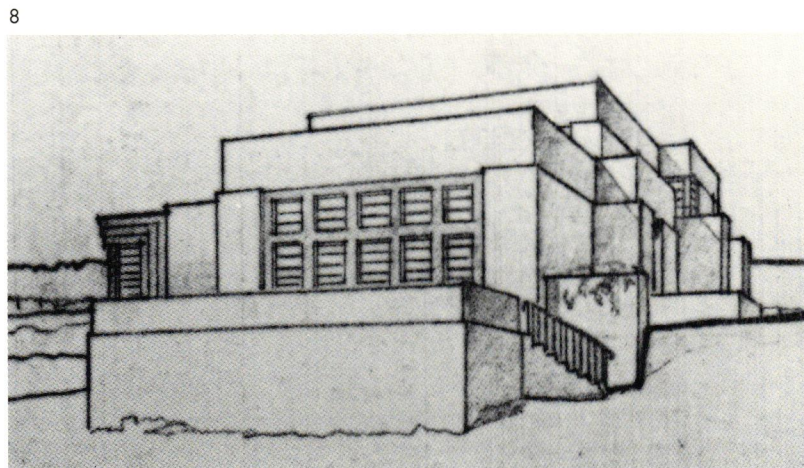
In 1926, Keck went into private practice, opening an office with Vale Faro on the fifth floor of the Auditorium Building. Keck had met Faro, who was interested in contemporary European architecture, in the sixth-floor office of Schmidt, Garden and Martin. “Of the two men Faro had a deeper understanding of Modern design, but Keck had a much larger store of enthusiasm.”⁶ The two architects spent a year designing houses in a style drawn from English and colonial American sources. One of their best early derivative projects was the Hans Gaebler House (fig. 6) in Watertown, Wisconsin.⁷ The drawings reveal Keck’s use of details from earlier designs for J. Willis Jackson, as well as historical details adapted from buildings he

had seen in England.⁸ His English drawings and watercolors depict half-timbered houses in Hereford, Ludlow, Chester, and Chepstow along with details of brick patterns, doors, windows, chimneys, timbered ceilings, lamps, and even hardware. The modestly scaled, half-timbered Gaebler House was built of brick with a graduated slate roof.⁹ Unlike the massing of colonial structures or popular eclectic pastiches such as those by Howard Van Doren Shaw, Keck's building was a simple cubic volume with virtually no roof overhang.

In 1927, Keck and Faro designed an unbuilt project for S. P. Bradley for Watertown, Wisconsin (fig. 8). This concrete-block house with a flat, slate roof was set into a steep site. Perspective drawings show a decidedly non-colonial design and appear vaguely like Frank Lloyd Wright's Wasmuth illustrations of the Hardy House in Racine, Wisconsin. A simple cubic building, the Keck and Faro scheme appeared to have a European-inspired attitude toward materials—concrete blocks were apparently intended to be plastered and painted white.

After Faro returned to Schmidt, Garden and Martin, Keck continued in private practice. During the late twenties and early thirties Keck's eclectic houses were inspired by American colonial and English brick style,¹⁰ modified by client requests and banker demands. Many of the original drawings of this period have been destroyed and none of the client correspondence exists. But extant drawings, photographs, and on-site inspection reports reveal this as a period of education and experimentation for Keck. For example, the 1928 M. O. Hopkins House (fig. 7) was an American colonial brick and clapboard design; the 1929 J. Willis Jackson House in Chicago used a central Palladian window. These projects were primarily of brick or cut stone, with double pitched roofs, symmetrically balanced facades and gabled second-story windows; many were half-timbered and shuttered.¹¹

A fine example of Keck's colonially inspired architecture (fig. 9) was built on the Indian Hills Estates of Wilmette, Illinois, for Joseph Kaszab, Jr., owner of a lumber mill. In 1935 Keck was asked to design an expensive traditional house with brick and half-timbering. The house, with complicated herringbone and basket brick patterns, had two wings wrapping a spiral stair-



- 6 Hans Gaebler House, Watertown, WI, 1926
- 7 M. O. Hopkins, Deerfield, IL, 1928
- 8 S.P. Bradley House, Watertown, WI, 1927
- 9 Joseph Kaszab House, Wilmette, IL, 1935

case hall with a French Provincial candle-snuffer slate roof. Keck even designed a copper weather vane in the shape of a sailboat for the roof. Kaszab requested that wood interiors be provided by his mill. The dining room had Jacobean-style, hand-carved, pleated oak wall panels and exposed oak timbers set against white plastered ceilings. This house, like earlier projects, showed Keck's control of design ideas similar to those of Shaw.

Keck's residential structures frequently incorporated a second-story window that broke through the edge of the roof to continue the vertical plane of the ground floor wall. Frank Lloyd Wright had similarly projected entire upper stories through his roof planes, but, like Shaw, Adler, and other domestic architects, Keck confined his projections to window units. These non-colonial gable elements were expressed as cubic forms with either a gabled or flat roof. Keck's colonial-inspired houses generally were simple, clean-edged boxes except for gutter projections at the roof line and wall planes.

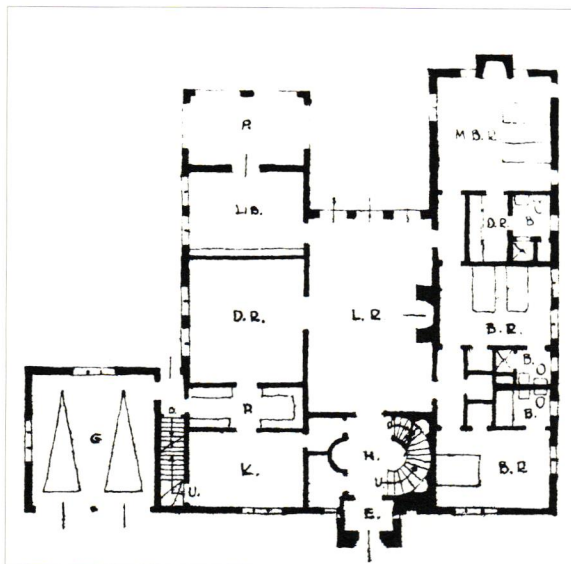
During his early years in private practice, Keck was able to convince only a few clients to build in a modern European style. The N. B. Lauren House in Flossmoor, Illinois (fig. 10) and the L. B. Nash House (fig. 11) and F. R. Warren House (fig. 12) on the Indian Hills Estates, Wilmette, Illinois were all white, plastered, cubic, and angled structures with geometric Art Deco details. It is impossible to determine from the Keck archives whether the modern idiom was introduced by the architect or the client. However, Keck's clients must have been sympathetic partners in challenging the status quo of residential architecture, and Keck must have actively pursued opportunities to build in this idiom. As Stuart Cohen and Stanley Tigerman have remarked of Keck's efforts, this work was "done by an architect who wanted to do a modern house for a client who was not yet fully sold on the idea of a modern house. The result was an awkward quality seen in...the struggle to resolve new visual values within an older system of forms."¹²

Except for exposure through *Vale Faro* or books purchased from Broes Van Dort, Keck had little opportunity to see any amount of modern architectural design firsthand in midwestern America. However, in 1928 and 1929 a designer and member of the

10



11



10 N. B. Lauren House, Flossmoor, IL, 1927
 11 L. B. Nash House, Wilmette, IL, 1931, first floor plan
 12 F. R. Warren House, Wilmette, IL, 1930

12



Austrian Werkbund—Marianne Willisch—came to Chicago to display and sell Austrian mass-produced designs.¹³ She traveled from Missouri to New York lecturing about and exhibiting goods produced by the Austrian Werkbund. By the mid-thirties, she settled in Chicago where, with Paul Schweikher, she organized the Chicago Workshops, a cooperative of artists and architects. Modeled after the Austrian Werkbund, its shop and exhibits were housed in the Arts Club at the Wrigley Building and later in the Diana Court of the Michigan Square Building, sites often visited by Keck.¹⁴ The simple, clean-lined products sold and exhibited by Willisch during the early thirties tended to be custom designed and hand crafted in expensive materials, more formal in design than the rather garish, “jazz-age” objects of the then favorite Art Deco style.

An enthusiast for Austrian design, Keck employed Willisch as interior designer for the 1934 Crystal House. Beginning with the Dr. Maurice Rice House of 1941, he worked with her almost continuously until the 1970s. Together, they worked closely with clients to determine their needs. If, as was often the case in the thirties, appropriate modern furniture was not available, either Keck or Willisch had custom pieces built by craftsman.¹⁵

Willisch exposed Keck to the Austrian and German werkbunds as well as to other major names in the European avant-garde. The arrival of Laszlo Moholy-Nagy in Chicago cemented Keck’s personal relationship to the German Werkbund and Bauhaus. In 1937, Walter Gropius recommended Moholy-Nagy to Norma K. Stahle, Executive Director of the Association of the Arts and Industry, as a potential director for a new Chicago school to be inspired by the Bauhaus philosophy and curriculum. A decade earlier, in 1928, the association had helped finance an Industrial Arts School, run under the auspices of the Chicago Art Institute, whose goal was to train designers who would serve various industries: printing, architectural modeling, interior decorating, costume design, along with furniture, textiles, ceramic, and wallpaper making. But the commercial and especially the industrial community were dissatisfied with the Art Institute training. Industrial design needs were not being met by its outdated curriculum, which emphasized fine arts—painting and drawing. Thus, with Moholy-

Nagy’s appointment, the association adopted Bauhaus principles and proposed workshop and hands-on experience as more appropriate for industrial design needs. Stahle and Moholy-Nagy gathered financial support, machinery, and materials from individuals, businesses, industry, and manufacturers to make the New Bauhaus, as it was first known, a reality.¹⁶ The merchant-prince Marshall Field’s former Prairie Avenue home was converted into classrooms, and in 1938 Moholy-Nagy opened the New Bauhaus.

Moholy-Nagy proposed that the New Bauhaus would offer a four-year education in practice and theory, embodying principles and methods to meet the needs of and to integrate the artist with industry. The objectives of the curriculum were

*an acceptance of the machine as an instrument worthy of the artist, a recognition of good design for mass production, a bridging of the gap between the artist and the individual system, a dissolution of the division between the “fine” and the “applied” arts, and acknowledgment of the differences between mere skill in technique and creative invention.*¹⁷

After the compulsory preliminary course, students entered one of the specialized workshops: wood, textile, color, light, modeling, or display. As at the Dessau Bauhaus under Walter Gropius¹⁸—who served as a sponsor¹⁹ and mentor/advisor for the Chicago school—two additional years could provide a student with an M.A. in Architecture. A close collaboration of art, current scientific thought, and technology would create an organic concept of architecture unifying interior and exterior design.²⁰ In other words, at the New Bauhaus, renamed the School of Design in Chicago in 1939, “the education of the designer became correlated with architecture.”²¹

Keck was on the informal steering committee of the Association of the Arts and Industry and proved to be instrumental in getting Moholy-Nagy to Chicago. Keck was appointed head of the Architecture Department at the New Bauhaus where he taught architecture and engineering half-time from 1939 to 1944.

In Moholy’s group Keck proved to be a convinced and trustworthy comrade-at-arms, ready to work without compensation whenever the school was in financial straits. In the classroom he remained objective and strove to attain criteria that were

*independent of his own artistic interpretations. In this respect he resembled Gropius, as distinguished from Wright....His questions stimulated thinking about the fundamentals of architecture and provoked creative communication and conceptual development.*²²

*[At the New Bauhaus, Keck's studio course] moved from a space modulator to simple three-dimensional relationships to an "orthographic projection" on plan, elevation, section, and perspective. Physical, psychological, and socio-economic factors were coordinated in a step by step development from the "primitive" dwelling of rural inhabitants to the complex requirements of a city settlement.*²³

By the time of Keck's resignation in 1944 the New Bauhaus still had not fully accomplished its educational goals, in part because of small enrollments in the first years and especially because of the Second World War, when few students were able to complete the four- to six-year training period leading to the Master of Architecture degree.²⁴ (The Armour Institute, now the Illinois Institute of Technology, would later accomplish that goal.) During its formative years, when Keck assisted Moholy-Nagy, the School of Design employed Gropius, Alvar Aalto, Alexander Archipenko, Gregory Kepes, R. Buckminster Fuller, Henry-Russell Hitchcock, Richard Neutra, Man Ray, Herbert Read, William Wurster, Marianne Willisch, Ralph Rapson, and Robert Bruce Tague as guest lecturers and teachers.²⁵ Keck was the local contact to the Swiss architectural historian-critic, Sigfried Giedion, who first visited Chicago in 1937. The Kecks entertained Giedion and introduced him to the Chicago architectural world.²⁶

Ludwig Mies van der Rohe's 1937 arrival in Chicago provided Keck with his last major European Werkbund influence. In 1937 John Holabird was on a search committee with Henry T. Heald, President of the Armour Institute, to find an architectural professor. The position offered its recipient free rein to develop a

new architectural curriculum and contracts for the design of new school buildings. Mies was appointed Director of Architecture in 1938 and immediately hired Ludwig Hilbersheimer and Walter Peterhans.²⁷ In 1939, Heald commissioned Mies to design a new campus in south Chicago that would bring scattered departments and facilities of the old institute together on one site. Mies thought "the structure of building was more important than the building's use," arguing that while functions changed, structures remained constant. His American projects, essays in pure form, were less experimental than his German designs.²⁸ Mies seemed to have little interest in the social concerns that occupied Keck and that, at the Bauhaus, had engendered an architecture built to influence society and the individual. Instead Mies obeyed a technical order. His institutional and commercial buildings were superb exercises in proportion, space, and details, but, like his Farnsworth House, they were almost unlivable architectural monuments.

All of Mies's major Chicago projects relied on the engineering character of the skyscraper cage. The Chicago frame provided him with a universal ordering principle applicable to any building type, commercial or residential. It was not used as a romantic ideal but as a rigid architectural device allowing for individual interior free-plan arrangements. Mies inspired Chicago architects to revive and take license with the straightforward structural expression of the Chicago frame. Keck used this system to structurally modulate and simplify his residential designs during the forties and fifties. Like Mies's walls, Keck's were simple infill membranes that emphasized their thinness as well as evoked their industrial or custom-made character. Keck left a residential design legacy of structure, formality, and space that was influenced by the technology and engineering of the Chicago School. He assembled the industrial aesthetics of the Werkbund and Bauhaus to create a design machined to clients' needs.

NOTES

1. Narcisco Menocal, *Keck and Keck: Architects* (Madison, Wisconsin: Elvehjim Museum of Art, University of Wisconsin 1980), 31.
2. I am most grateful to Jeff Dean, State Historical Society of Wisconsin, Madison, who interviewed and recorded the Kecks on 8 November 1972, 23 September 1973, and 27 October 1974, and from whose tapes so much invaluable early Keck material has been gleaned.
3. Daniel H. Burnham is one of the major names in downtown Chicago commercial architecture. Daniel H. Burnham, Jr., was a partner with his father (1910–12), formed a partnership with Graham, Burnham and Co. (1912–17), formed his own company D. H. Burnham and Co. (1917–28), then joined with his brothers to form Burnham Brothers (1928–33). Frank A. Randall, *A History of the Development of Building Construction in Chicago* (Urbana: University of Illinois Press, 1949); Adolf K. Placzek, ed., *Macmillan Encyclopedia of Architects* (London: Free Press, 1982); and Carl W. Condit, *Chicago, 1910–29: Building, Planning and Urban Technology* (Chicago: University of Chicago Press, 1973).
4. Keck consistently purchased architectural books that were unavailable elsewhere in Chicago from G. Broes Van Dort Company at 22 East Van Buren Street. The following books were part of Keck's 612 Michigan Avenue office library. Some still have Van Dort's company sticker attached, and some have the dates inscribed when Keck purchased the books: *Ausgeführte Bauten und Entwürfe von Frank Lloyd Wright*. Berlin: Ernst Wasmuth, 1910. Canesi, G. and A. Ramelli. *Architect une Luminose*. Milan: Hoepli, n.d. Keck purchased in 1937. Dicker, Richard. *Terrassen Typ*. Stuttgart: Wedekind and Co., 1929. *Decorative Art*. New York: Albert and Charles Boni, 1930. Kleiner, Leopold. *Neue Werkkunst Josef Hoffmann*. Berlin: Leipzig und Wein, 1927. Klopfer, Paul, ed. *Moderne Bauformen Monatsefte Für Architektur*. Stuttgart: Julius Hoffman, 1910. Keck purchased in 1938. Korn, Arthur. *Glas in Bau und Als Gebrauchsgegenstand*. Berlin: E. Pollack, n.d. *L'Art International D'Aujourd'hui*, vol. 1, 2, 3, and 15. Le Corbusier. *Towards a New Architecture*. New York: Payson and Clarke Ltd., n.d. Keck purchased, 1927. *Le Style Moderne*. Paris: Librairie des Arts Decoratifs, 1925. *Moderne Cafes, Restaurants Und Vergnugungstatten*. Berlin: Pollak Verlag, n.d. Moussinac, Leon. *Interiors*. Vols. 2 and 4. Paris: Librairie Centrale des Beaux-Arts, n.d. Neutra, Richard J. *Amerika*. Vienna: Schroll and Co., 1930. Noyes, Eliot F. *Organic Design in Home Furnishings*. New York: Museum of Modern Art, 1941. Robertson, Howard and F. Yerbury, eds. *Examples of Modern French Architecture*. London: Benn, 1928. Saylor, Henry H., ed. *Architectural Styles for Country Houses*. New York: McBride and Co., 1919. Taut, Max. *Bauten und Plane*. Berlin: Hubsch, 1927. Wendingen publications on Wright (2 vols.) and on G. Rietveld, 1927. Yorke, F. and F. Gibbard. *The Modern Flat*. London: Architectural Press, 1937. Keck bought the Wasmuth edition of Wright early in his career. When Catherine Bauer Wurster died in November 1964, he gave the book to the University of California-Berkeley in her memory. Interview with William Keck, 19 August 1984. Keck reviewed Bauer's *Modern Housing* and Wright's *The Disappearing City* for the *Journal of Land and Public Utility Economics* in May 1935 and May 1933 respectively. By the early thirties a number of buildings designed by Keck had been published in American periodicals, which in turn were seen by European architects and architectural publishers. For example the Stuttgart publisher Julius Hoffman wrote and sent a photo clipping to his Chicago dealer, Van Dort, inquiring about the architect who had designed the building illustrated in the clipping. Responding to Hoffman's inquiry (16 May 1930) Van Dort wrote that the architect in question was G. F. Keck who was "very busy drawing some of the finest designs for exteriors and interiors for different buildings, residences, ball-rooms, skyscrapers, etc." but was not constructing anything because of the economic situation. Keck would be "willing to send some (drawings) for publication for a certain reimbursement....The modern style in Europe is a little different than the one in America and the reconstruction of this style would no doubt interest a number of Europeans and I would advise you to get in touch with Mr. Keck by all means and make him a proposition of some sort." "Scrapbook," M83-28, State Historical Society of Wisconsin (SHSW).
5. Richard E. Schmidt (1865–1958), the son of an important surgeon, was born in Bavaria. He trained as an engineer at M.I.T. (1885). Hugh M. C. Garden (1873–1961) had no formal academic training but was a gifted draftsman with Cobb and Shaw and Wright. Edgar Martin (1875–1951) left the partnership in 1925, the same year Keck left to start a private practice. Carl A. Erikson, who had been in the office for a number of years, became a partner in 1926. The office of Schmidt, Garden, Martin/Erikson was known for its innovative structural techniques, functional buildings, and extremely fine hospitals. In fact they built over 300 hospitals during their partnership. Schmidt wrote *The Modern Hospital* in 1914. "Evanston Hospital," *Architectural Forum* (January 1920); "Hospital Planning," *Architectural Forum* (December 1922); "Grant Hospital Nurses' Home," *Architectural Forum* (December 1928); "Soundproofing the Hospital," *Architectural Record* (August 1929); Placzek, *Macmillan Encyclopedia*; and Randall, *History of Development of Building*.
6. Menocal, *Keck and Keck*, 31.
7. The Gaeblers were close friends of the Liebermanns and of the Kecks; in fact, Fred and Lucile were godparents to the Gaeblers' sons. Max Gaebler, Unitarian Minister in Frank Lloyd Wright's Unitarian Meeting House in Madison, Wisconsin, conducted the memorial services for both Fred and Lucile. Interview with Gaebler, 10 August 1982.
8. Watercolors given by Keck to the State Historical Society of Wisconsin on 22 January 1976, M74-44, ICON.
9. Keck had searched Watertown and the surrounding area for old corn cribs and barns from which he could acquire the oak timbers for the exterior and interior beams.
10. J. Willish Jackson and Newton B. Lauren were real-estate speculators who insisted that the houses Keck designed be traditional in style. Jeff Dean interview with

- Fred Keck, 27 October 1974.
11. H. E. Steel (1929), E. Scherer (1930), John W. Keck (1932), Wallace Buffmire (1935), E. L. Wilde (1935), and J. W. Garretson (1935).
 12. Stuart E. Cohen and Stanley Tigerman, *Chicago Architects* (Chicago: Swallow Press, 1976), 20.
 13. Mrs. John Alden Carpenter, Head of the Chicago Arts Club (1918–31), after a difficult experience with the male leadership of the Vienna Werkbund, invited Marianne Willisch to come to Chicago and be the Vienna Werkbund's sales- and spokesperson. Interview with Willisch in Evanston, Illinois, 23 July 1982. Willisch died in the fall of 1984 and a memorial gathering of her friends took place at the Arts Club, 13 December 1984. An archives of her designs for Keck, Edward Dart, Harry Weese Associates, Leo Steif and Company, Yerkes and Grunsfeld, Winston Elting, Morgan Yost, and Hirsch and Lowenstein is housed at the Chicago Historical Society and at the Chicago Art Institute.
 14. The Arts Club of Chicago was the only club or formal organization to which Keck belonged. The objectives of the Arts Club when founded in 1916 were "to encourage, foster, and develop higher standards of art; to promote the mutual acquaintance of art lovers and art workers; [and] to maintain in the city of Chicago a club house and to provide therein galleries and exhibition facilities in support of the foregoing purposes." In 1941 "it seemed that the province of the Arts Club was eminently that of bringing to Chicago those examples of contemporary work which had come up for exhibition and discussion elsewhere, and which were most closely identified with what appeared to be the art of the 20th Century in the making." The Arts Club was housed at 610 S. Michigan Avenue (1918–23), 410 N. Michigan Avenue (1924–36), the South Wrigley Building on N. Michigan Avenue (1936–51), and then moved to its present site at 109 E. Ontario Street, whose interiors were designed by Mies van der Rohe. The Arts Club of Chicago, *60th Anniversary Catalog* (Chicago: Arts Club of Chicago, 1975), 5, 13.
 15. Alfred Mattaliano was the principal craftsman for Wells Furniture Makers. When Willisch needed a custom-made piece of furniture, Mattaliano or his son, Frank produced it. Mattaliano later opened his own custom furniture shop where he was the exclusive craftsman for Mies van der Rohe's furniture designs. Tapp, DeWilde and Wallace (1920–35) or Tapp (1936–49), and W. H. Howell Co. were the major sources in America for modern chrome steel and wooden furniture. The Howell Co. "imported sample chairs [of Mies and Breuer in 1929] and adapted the designs for production by the firm." The company also "employed freelance designers to create arm chairs, sofas, tables, desks, and smoking stands." Modern lighting fixtures could be obtained from Victor S. Pearlman Corporation; Keck designed a number of floor and ceiling lights that were manufactured by Pearlman. Interview with Willisch, 28 July 1983; correspondence with William Keck, 31 July 1984, and interview 19 August 1984; Chicago Furniture exhibition, Chicago Historical Society, July 1984; and Sharon Darling, *Chicago Furniture, Art, Craft, and Industry, 1933–83* (New York: W. W. Norton, 1984), 279, 284, 311–314, and 339.
 16. Early financial support came from the Container Corporation of America and Marshall Field, Julius Rosenwald, H. F. McCormick, Mrs. C. V. Hickox, H. Swift, William Wrigley, Jr., Mrs. Rockefeller McCormick, T. E. Donnelley, E. Grahm, and C. H. Swift. Jeff Dean interview with Fred Keck on 23 September 1973.
 17. From a speech Keck gave before a group of Institute of Design alumni on 18 August 1955. Files in the Keck office, 612 N. Michigan Avenue, Chicago. Such persons as E. Bielawsky, K. Bredendieck, C. Chermayoff, D. Dushkin, C. Eckart, M. Ehrmann, R. Gerard, F. Levstik, C. W. Morris, A. Schiltz, H. H. Smith, and R. Wolff were members of the faculty at one time or other.
 18. Walter Gropius came to the United States to teach at Harvard; he became Head of Harvard's Graduate School of Design. Willisch and others had recommended Gropius to Norma Stahle as the most appropriate person to head the new design school. When Gropius came to Chicago to lecture to the Association of the Arts and Industry, Stahle asked that he form and head a new Bauhaus in Chicago. He instead recommended Moholy-Nagy. "He is the best man you can get....[He] is endowed with rare creative power....[He] is not only a painter of international fame...but has worked for years with industrial firms." From a letter of 8 May 1937, quoted by Hans Maria Wingler, *The Bauhaus: Weimer Dessau, Berlin, Chicago* (Cambridge: M.I.T. Press, 1980): 192; and interview with Willisch, 28 July 1983.
 19. Other sponsors for the New Bauhaus were John Dewey, Joseph Hudnut (Dean of Graduate School of Design at Harvard), Alfred Barr, Jr., (Museum of Modern Art), W. W. Norton (Publisher), and William Bachrach (Chairman of the Committee on Education, Chicago Association of Commerce). Chicago School of Design catalogue, 1939, inside cover.
 20. Laszlo Moholy-Nagy, "The New Bauhaus, American School of Design," *Design* 40 (March 1939): 19–21.
 21. Laszlo Moholy-Nagy, *The New Vision* (New York: George Wittenborn, 1947), 21.
 22. Wingler, *The Bauhaus*, 198.
 23. Sibyl Moholy-Nagy, *Moholy-Nagy: Experiment in Totality* (Cambridge: M.I.T. Press, 1969), 171.
 24. Interview with Robert B. Tague, 22 July 1983.
 25. Wingler, *The Bauhaus*, 203. Rapson and Tague taught at the School of Design while they were draftsmen in Keck's office; Rapson became head of the Architecture Department when Keck resigned in 1944.
 26. Nory Miller, "Keck at 81, 'Hit of the Show,' after 56 Years," *Inland Architect*, 20 (May 1976), 10.
 27. Mies held his position until his retirement to private practice in 1958. Hilberseimer served as director of Chicago's Department of City and Regional Planning from 1938–57.
 28. Ludwig Hilberseimer, *Contemporary Architecture: Its Roots and Trends* (Chicago: P. Theobald, 1964), 201–209.

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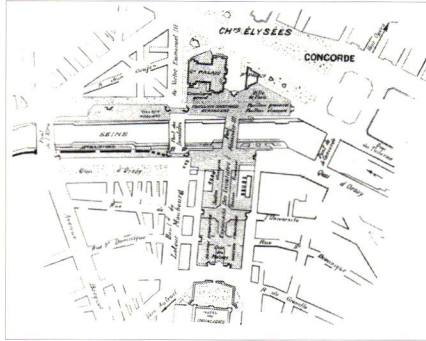
THE CENTURY OF PROGRESS: CHICAGO, 1933

The machine aesthetic of Werkbund exposition architecture was found at the 1925 International Exposition of Modern Industrial and Decorative Art in Paris. But Paris's fifty-four Art Deco exhibits, displaying products intended as "manifestations...of industrial and decorative art" springing "from a new inspiration,"¹ had greater impact on world design than the buildings themselves. Twenty-six nations took part in the festivities but the United States chose not to participate on the "pretext that the United States produced no art that was modern and therefore had nothing to exhibit."² Secretary of Commerce Herbert Hoover, however, sent a commission to the Fair "to make a report on such of its features as would be of interest to American manufacturers."³

The Paris Exposition, laid out along the cross-axis of the River Seine, extended from the Invalides Esplanade over the Alexander III Bridge (fig. 13). Its Beaux-Arts plan incorporated new buildings and existing architectural monuments—the Grand Palais, the Place de la Concorde and the Invalides—to contain and close the site. To facilitate rapid construction and keep costs in check most new fair structures were made of reinforced concrete combined with other industrially manufactured materials. The buildings had flat surfaces, doors and windows without trim, and linear silhouettes. "No structure was added which did not perform some necessary function in the structure of the building."⁴ Surface designs, color, glass, tiles, bas-relief sculpture, and plantings enhanced the appearance of the fair's modern buildings.

The most innovative architecture at the exposition was designed by Robert Mallet-Stevens, Auguste Perret, Le Corbusier, and Konstantine Melnikov. Mallet-Stevens's clock tower and tourist information structure (fig. 14) stood at the fair entrance beside the Grand Palais. Its unadorned surfaces and cantilevered planes

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13 International Exposition of Modern Industrial and Decorative Art, Paris, site plan, 1925
14 Robert Mallet-Stevens, clock tower, International Exposition, 1925

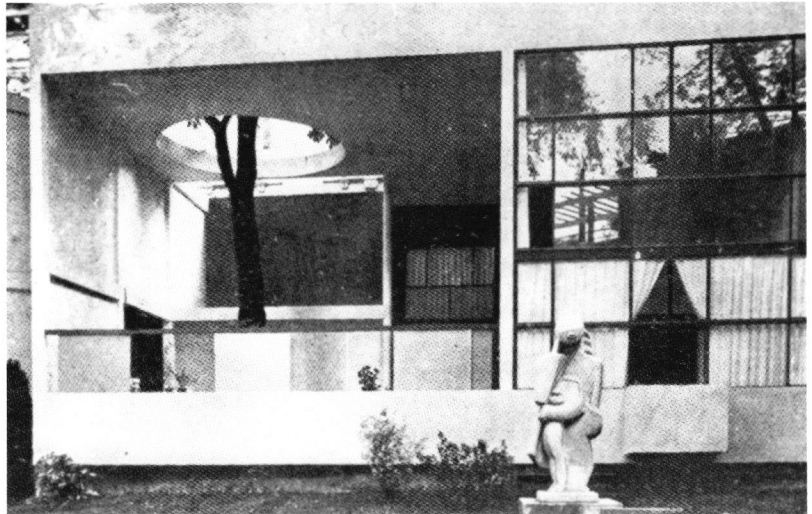
relied on a de Stijl vocabulary and were reminiscent of the works of the Dutch architect Dudok. Perret's Exposition Theater, on the Invalides Esplanade, created the silhouette of a cold-storage warehouse; a half cube of sheer concrete walls decorated with four non-tapering columns appeared to support its projecting roof. Le Corbusier's Pavilion de l'Esprit Nouveau (fig. 15), located in an out-of-the-way, fenced-in site, hindering public access, had a cellular plan and double-cube massing similar to the architect's Citrohan and Domino projects. One living room wall was fully glazed and a tree in the garden court broke through a circular hole in the flat roof. Like the other Art Deco *ensembliers*, Le Corbusier's furniture and wall and floor coverings created an overall atmosphere tending toward absolute purity. The surfaces were dominated by white with a scattering of primary colors.⁵

Konstantine Melnikov's Russian Pavilion was unlike any other building at the fair and received the most sarcastic criticism (fig. 16). Some of the press joked that its packing boxes must have been mislabeled, leading workmen to assemble the pavilion incorrectly; others suggested that the building itself was an assemblage of the shipping crates. The constructivist pavilion had industrially fabricated window units, some of which louvered out; irregularly angled walls; and a roof reminiscent of Vladimir Tatlin's construction, *Monument to the Third International*. The building had neither curves nor ornament.

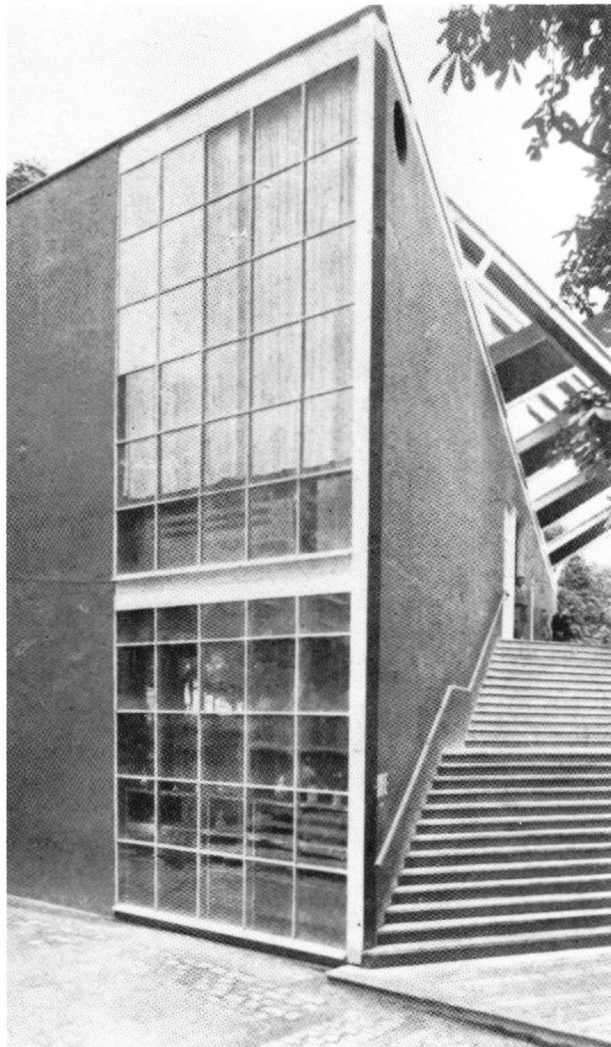
As John Loring described the fair, "For all its bright, fanciful originality, its brilliance of craftsmanship, its seductive exoticism of materials, its unbridled luxuriance and its unmatched elegance, the Art Deco of the 1925 Paris Exposition was not modern. Its spirit and its splendors belonged to the world and bore the clear traces of eighteenth-century [French] traditions."⁶ Hoover's commission, members of the American Institute of Architects, and a group of Chicago architects and businessmen all returned to America with official and personal on-site inspections and reports.

The Art Deco fair's modern European architecture—its materials, forms, and spectacular use of electric lights—served as inspiration for Chicago's 1933 Century of Progress International Exposition.⁷ This fair was conceived in 1927 by Charles and Rufus Dawes⁸ to honor and illustrate one hundred years since

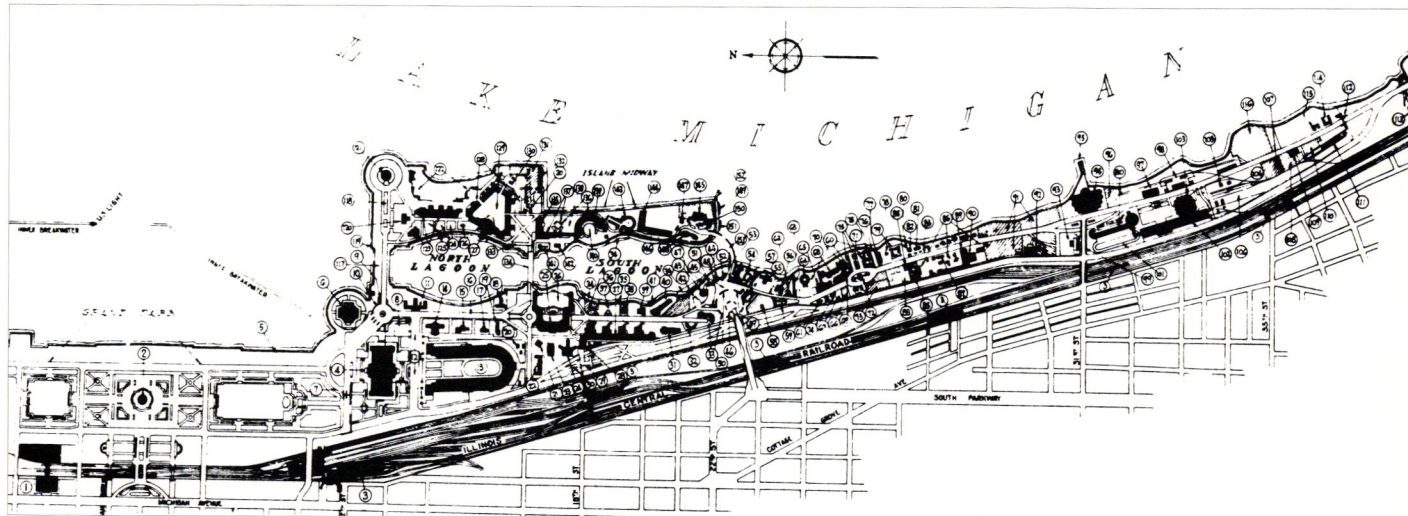
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15 Le Corbusier, Pavilion de l'Esprit Nouveau, International Exposition, 1925
16 Konstantine Melnikov, Russian Pavilion, International Exposition, 1925

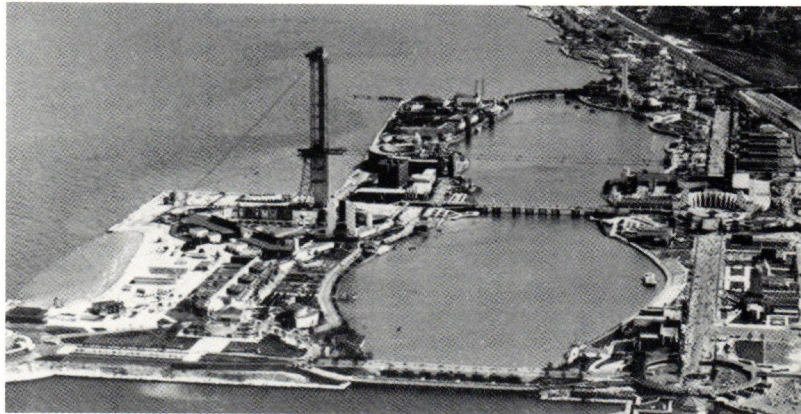


Chicago's founding in 1833. The fair would celebrate scientific advancements and their impact on the city. But following the economic crash of 1929, Chicago—like the rest of the nation—was paralyzed by economic, social, and political chaos. Construction virtually stopped, real-estate values plummeted, and unemployment rose to unprecedented levels. Nonetheless, the city resolved to build a privately financed exposition.

The wealthy Chicago magnates Julius Rosenwald, William Wrigley, Jr., and Robert R. McCormick were named the fair's guarantors. With the Dawes brothers, these men selected an architectural commission of reputable American practitioners noted for their experience and ability to cooperate:⁹ Harvey W. Corbett, Paul P. Cret, Edward H. Bennett, John A. Holabird, Daniel H. Burnham, Jr., Raymond M. Hood, Arthur Brown, Jr., and Ralph Walker, who were all graduates of the Ecole des Beaux Arts, Paris.¹⁰ Their first meeting, in May 1928, produced the following statement to the Board of Trustees:

*The architecture of the buildings and grounds of the Exposition of 1933 will illustrate in definite form the development of the art of architecture...not only in America but in the world at large. New elements of construction, products of modern invention, and science, will be the factors of the architectural composition. Artificial light...will become an inherent component of the architectural composition. The extraordinary opportunities of the site for the use of water will be developed to the maximum.*¹¹

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The fair was erected on newly created land along the Chicago lakefront south of Thirteenth Street and north of the 1893 Columbian Exposition site (fig. 17). A three-mile-by-quarter-mile strip (426 acres) was leased from the South Park Commission with the understanding that it would be returned to the commission six months after the fair closed. Paul Cret laid out part of the north fairgrounds with an axial plan informed by existing classical buildings—the Field Museum (1920), Shedd Aquarium (1928–29), and Soldiers Field (1923–25). The rest of the fair site ran south between the lake shore and the Illinois Central tracks (fig. 18). President Rufus Dawes and the commissioners appointed Lenox Riley as Director of the Exposition, Daniel H. Burnham, Jr., as Vice-President of the fair and Chief of Construction, Louis Skidmore as Chief of Design, and Joseph Urban as Color Director.¹²

17 A Century of Progress International Exposition, Chicago, IL, 1933, site plan

18 Century of Progress, aerial view

"Planning" was an oft-heard term during the Depression—the New Deal administration would extend public planning with Greenbelt and Homestead communities that removed industry and the benefits of the city to the countryside while maintaining the advantages of a rural environment—and a concept espoused in Chicago following the Columbian Exposition. A Century of Progress International Exposition, planned with ready access to transportation, power, labor, materials, and industrial equipment, was nevertheless an unresolved planning solution. Its asymmetrical site plan disregarded the north end's Beaux-Arts formality and created the impression of a disjointed composition built up of a strident group of independent parts. The planners ignored "Europe's mystical, theosophical justifications for the asymmetrical...[and] abandoned the restraints of classic symmetry in both site and pavilion planning out of a simple appreciation for the 'new' and the pragmatic fact that it made the job easier."¹³

Members of the Architectural Commission divided the site among themselves; all but one of their major building designs of 1929 were constructed. Buildings designed by others had to have commission approval. Skidmore was in charge of the Design Division of the Exhibits Department. His job was to assist, advise, counsel, and cooperate with exhibitors whose products would be housed in commission buildings—Electrical Group, General Exhibits Building, Hall of Science, Travel and Transport Building, and Agricultural Building.¹⁴

Unlike the cohesive German Werkbund exhibitions, whose architecture served as a model for an improved social condition, "the formal and artistic manifestations of reductionism...seen at A Century of Progress was...an expression of America's fascination with technology." For the thirties "machines were symbols of progress and modernity."¹⁵ The Architectural Commission adopted and advocated the use of new construction techniques as well as products of modern science, which had been crucial to a century of developments in Chicago's architecture. In response to a lack of federal, state, and local government subsidy, and in an attempt to cut costs, fair designers and architects adopted a rigid economy with a "spirit of innovation and experiment in planning, construction,

and materials" that ultimately benefitted the building trades for years to follow.¹⁶ The fair's temporary nature prompted commissioners to require that architects use experimental but fireproof materials and incorporate easy means of demolition.

The man-made site called for buildings constructed on a piling system to support reinforced concrete foundations. Floors were metal or plywood deck, depending on the live load. Laminated Douglas fir proved most economical and was used for roofs and terraces. Large unbroken wall areas required a surface material flexible enough to absorb pressures of expansion and contraction, lightweight enough for easy erection, and rigid enough to withstand wind. These surface materials also had to take paint and be fairly waterproof. The principal buildings generally incorporated a twenty-foot modular steel-cage construction surfaced with manufactured components and prefabricated materials: asbestos cement board, steel plate paneling, ribbed metal siding, Masonite, plywood, gypsum wall board, and stucco.¹⁷ The resulting buildings, with brilliantly painted walls as thin as cardboard boxes, were angular structures that carried the stamp of the factory and expressed their process of construction. F. C.

Rotherwell wrote about this Art Deco:

*Beauty in design answers sincerely the demands of utility and necessity, and follows faithfully the laws of physics and structure...the beauty of angles, geometric shapes, straight, swift lines....These simple forms represent an abstract idea of the staccato pace, the mechanical power and the scientific basis beneath the complexities of modern life. Steel, asbestos, [plywood], glass, these are our creative materials....Mechanics has shown the essential beauty of the boiler, the dynamo, the coil spring.*¹⁸

The Color Director, Joseph Urban, used a water-base casein paint to enhance the solidity and sculptural quality of exterior planes and volumes; to relate buildings that differed in character, shape, and mass; to hide less aesthetic materials; and to heighten the carnival atmosphere. The unfading and pure colors applied to the wall surfaces were predominately white, blue, orange, and black. Silver, aluminum, and gold were used on roof areas.¹⁹

Urban was also consulted on interior colors, interior and exterior lighting, and other decorative aspects of

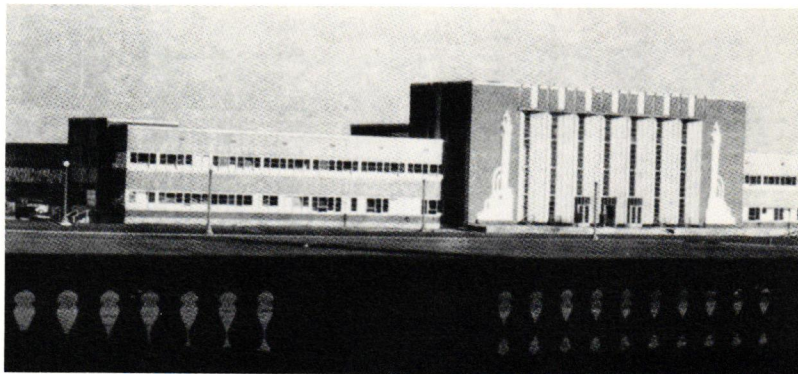
the fair site. Elaborate geometric patterns, similar to those found at the Paris exposition, were applied over the saturated matte paint to accentuate entrances, edges, or exhibit themes of individual buildings. Neon tubes edged buildings and outlined lettering; they also created abstract illusions. Electrical flood lighting added to the overall design. Powerful banks of search lights punctured the night sky and reflected on steam clouds, smoke, and fireworks to striking effect. Inside the lighting was less spectacular. Troughs hid the light source and diffused, indirect illumination fell on the displays and exhibits. Urban relied on lighting technology provided by the General Electric Company and Westinghouse Electric.²⁰

The first completed fair structure was the 1931 Administration Building (fig. 19) by Bennett, Burnham and Holabird. Located at the northern end of the site, it housed offices for management and drafting rooms for the Department of Works. This was the only major building with extensive windows and a fully operating heating system. Cret's Hall of Science (fig. 20), located at the south end of the Avenue of Flags, was one of the largest buildings at the fair and relied on stepped-pyramids and geometric, projected fins to modulate its attenuated walls. The Electrical Group (fig. 21) by Raymond Hood had curved walls of ribbed sheet metal siding and flat surfaces of gypsum. Hood also faced the exterior of the Hall of Social Science with gypsum board but finished the interior with aluminum-primed plaster board. The west entrance's Art Deco surface patterns and sculptural decoration rivaled New York's Chrysler Building or Rockefeller Center's interiors. Bennett and Brown's tall United States Government Building, with its dome and pylons, stood at the edge of the north lagoon and enclosed a Court of States (fig. 22). State exhibits were housed as separate units along the periphery of this court and a colonnade provided access to the individual states identified by their flags and seals.

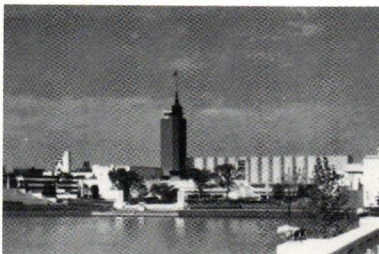
Bennett, Burnham, and Holabird's Travel and Transport Building (fig. 23) was unusual in appearance as well as construction technique.

It had as its principal feature a suspended dome 205 feet in circumference. The spider effect was produced by twelve trussed towers and a system of tension cables which supported the "breathing

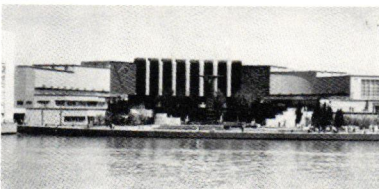
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19 Bennett, Burnham, and Holabird, Administration Building, A Century of Progress, 1931

20 Paul P. Cret, Hall of Science, A Century of Progress

21 Raymond Hood, Electrical Group, A Century of Progress

22 Bennett and Brown, United States Government Building and Court of States, A Century of Progress

dome." The entire construction was ingeniously arranged to allow for expansion and contraction due to temperature changes and to varying live loads caused by snow.²¹

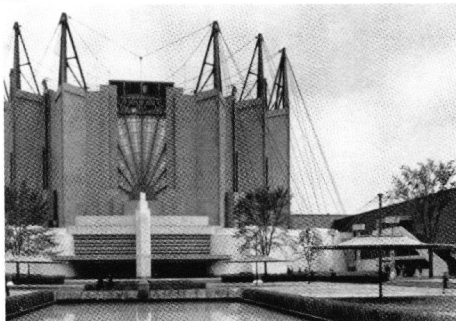
Supporting towers rose 150 feet above a dome carried by cables that fell into catenary curves. The design drew upon Buckminster Fuller's use of tension cable in the 1927 4-D House (later called the Dymaxion House)²² and was also stylistically akin to Le Corbusier's project for the Congress of the Soviets.

Albert Kahn, intimately associated with the Detroit Auto Industry, designed the General Motors Building (fig. 24) in a stripped down, functional vocabulary that both suited the exposition and followed his prior architectural designs. The structure was visually disjointed with a silhouette broken by projections and indentations. Its construction, like that of Holabird and Root's Chrysler Building, incorporated steel-clad wallboard, reinforced concrete floors, and steel decked roofs.

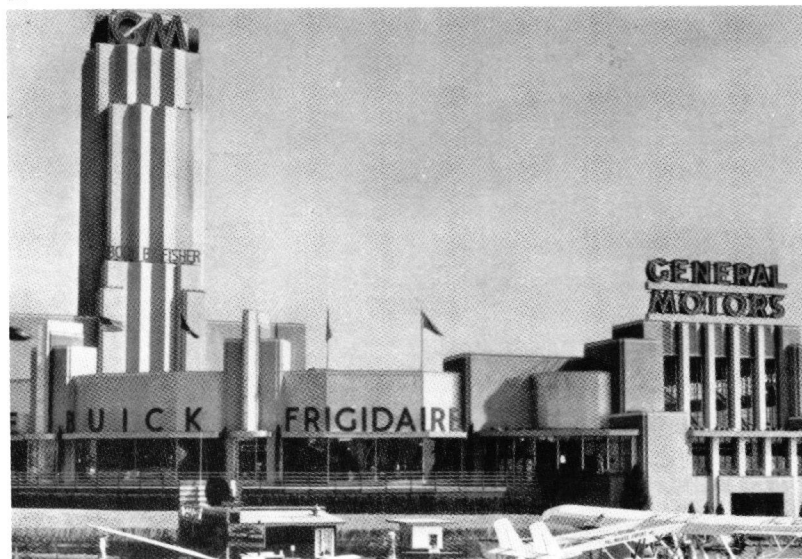
One of the Architectural Commission's earliest design concepts was for a vertical skyscraper fair in which all the buildings had either a tower or vertical slab. However, because the man-made site could not support the load of tall structures, A Century of Progress was essentially horizontal. Its largest buildings were designed with entry ramps leading to the second floor and exits on grade. Observation gondolas built on the site's east-west axis provided a prominent vertical element, in the spirit of the 1889 Eiffel Tower and the 1893 Ferris Wheel. This skyride (fig. 25), designed by Joshua d'Esposito²³ and paid for by Goodyear-Zeppelin, Mississippi Valley Steel, and Otis Elevator, had 628-foot towers. These carried double-decker gondolas across a third of a mile of steel cable. The observation galleries atop the towers were but one of the amusements provided by the fair, which also included the fan dances of Sally Rand, Ripley's Believe-it-or-Not Odditorium, the Streets of Paris, the Enchanted Island, and numerous concessionaires and food vendors.

One of the most popular attractions at A Century of Progress was the Home and Industrial Arts Exhibit (fig. 26). In the 1930s, architects had turned their talents to detached, single-family houses, especially low-cost, standardized, prefabricated designs. The Depression was felt most acutely in the area of housing and it

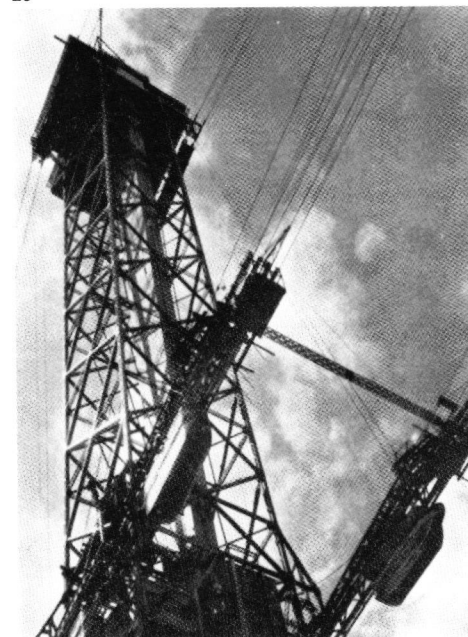
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23 Bennet, Burnham, and Holabird, Travel and Transport Building, A Century of Progress

24 Albert Kahn, General Motors Building, A Century of Progress

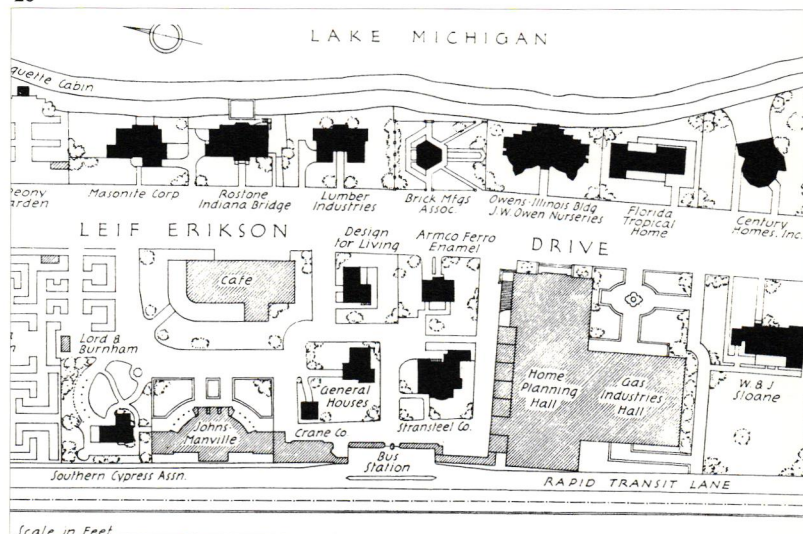
25 Joseph d'Esposito, Skyride, A Century of Progress

was here that the most positive innovations were made. These designs offered services and utilities while at the same time the architects reduced the original construction cost as well as the expenses of maintenance through a more efficient building technique. Designers and manufacturers...approached the problem in different ways—some by seeking economies through factory fabrication of the entire structure; others through a better selection of materials or through prefabrication of combined kitchen and bathroom units; still others through a better utilization of space inside the house or through the inclusion of an increasingly greater number of household conveniences.²⁴

New directions in American housing design were a major part of the Home and Industrial Arts Exhibit. Twelve different units demonstrated comfortable, convenient, low cost, and durable houses at an average price of \$5,000. "They were first and last carnival architecture, built for distinct and temporary purposes, designed in bold forms to house special exhibits, to arrest attention, and to stimulate the imagination."²⁵ (A review of Keck's contributions to the Home and Industrial Arts Exhibit—the House of Tomorrow and the Crystal House—is in chapter 5.)

All the model houses, except the Lumber Industries House, relied on a modern European vocabulary unfamiliar to the American public. They were stripped of ornament, sloping roofs, basements, and attached garages. Most provided living/dining room combinations, and all but one were designed to function without servants. By the thirties Americans had discovered outdoor living and sunbathing, so decks and terraces became an integral part of the model designs, as they had been in Germany a decade earlier.

The exhibition houses were constructed on reinforced concrete slabs with steel frame or wood stud walls. As the following list indicates, a variety of materials were chosen for wall surfaces: "reinforced brick; Homasote, a new material that claimed to be fire-, water-, and vermin-proof; Masonite, or pressed wood, made from waste wood exploded into fibers and formed into boards; Rostone, a composition of limestone and shale; enameled steel nailed to a steel frame; porcelain enamel panels; pressed steel; California redwood; and plate glass."²⁶ The houses



26 Home and Industrial Arts Exhibit, site plan, A Century of Progress 1933

were planned for a steady flow of traffic and built to demonstrate various companies' products including construction materials and modern conveniences. Most were equipped with an electric dishwasher, refrigerator, range, washer, and air-conditioning.

Howard T. Fisher,²⁷ director of General Houses, spent two years studying building materials and methods as a reaction to the academic nature of architectural schools. He sought out manufacturers interested in his ideas of prefabrication and in 1931 formed General Houses, the first commercial integration of housing prefabrication interests. By 1933 the business had a staff of twenty-seven persons responsible for research, design, production, sales, and erection. Fisher's exposition house (fig. 27) was a prefabricated dwelling.

Copper-bearing, steel alloy panels, expanded steel joists for floors and ceilings, windows and doors,

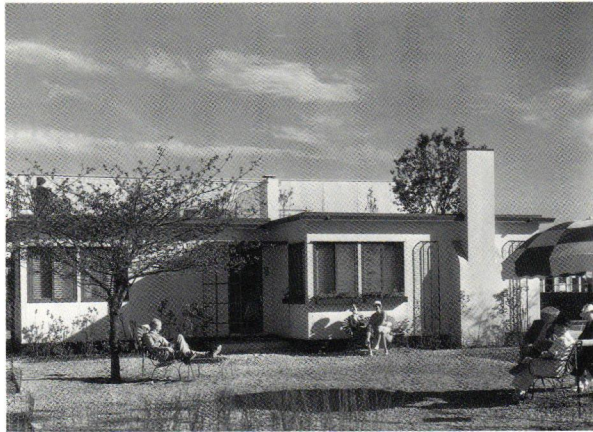
insulation and all other materials were assembled neatly and conveniently on the site. The house was then put together with something of the efficient, time-saving technique of the automobile assembly line.²⁸

Paul Schweikher,²⁹ (designer and site planner for General Houses) and Marianne Willisch (of Chicago Workshops) furnished Fisher's 1934 steel house. They believed that the furnisher "must accredit what the architect had done in the way of construction and not only give it proper recognition, but use and amplify it as to background so that the interior and exterior of the house would appear as one unit."³⁰ At least four different house models were available from General Houses, Inc. Each came "fully equipped with complete kitchen, heating, wiring and plumbing and sold for from \$1,500 to \$5,000, depending on size."³¹ The company also provided a complete system of parts that afforded flexibility to owners and architects who wanted to take advantage of General House's standardized system.

Two other steel houses were exhibited at the fair: the Stransteel House (fig. 28), a system of steel superstructures designed by H. A. O'Dell and W. C. Rowland³²; and the Armco Ferro-Enamel House (fig. 29), designed by Robert Smith, Jr.³³ The Stransteel scheme could be "adapted admirably to your preferred style of architecture...Italian Villa, French Chateau, English Cottage, or any other influence."³⁴ The example at the fair was a French Art Deco town house. With two-by-eight-foot exterior porcelain-enamel-finished steel panels (glass-iron Macotta) bolted to steel framing, it was one of the most expensive model houses, costing \$7,900.³⁵ The Armco Ferro-Enamel House, at \$5,000, had no frame. Its three-and-one-half-foot walls were "compounded of long box-like steel units, filled with rock wool and surfaces finished with vitreous enamel."³⁶ These units, "approximately five feet wide, were welded in the shop, assembled in the field by sheet metal screws"³⁷ and had mastic-sealed joints similar to those of the Stransteel design.

At least three of the model houses used lumber and wood. W. H. Mason, a former chemist with Thomas A. Edison, developed a fabricated panel called Masonite, which was used extensively at A Century of

27

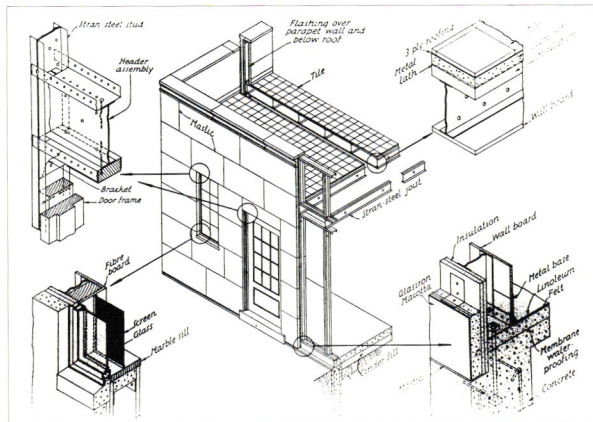


27 Howard Fisher, General Houses Steel House, A Century of Progress

28 H. A. O'Dell and W. C. Rowland, Stransteel House, A Century of Progress, detail of wall construction

29 Robert Smith, Jr., Armco Ferro-Enamel House, A Century of Progress

28



29



Progress as a skin for the large exhibition buildings. The Masonite House (fig. 30), designed by two of Masonite Corporation's Chicago consultants, Frazier and Faltrey,³⁸ promoted other Masonite products. The house had standard wood studs, joists, and subflooring, but its exterior design owed much to German Werkbund and Bauhaus forms, especially those of the Stuttgart Weissenhof Siedlung.

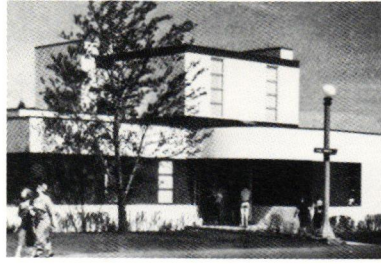
The Design for Living House (figs. 31, 32) by New York architect John C. B. Moore and his Chicago associates Richard Wood and Clements Horsley, used the same architectural vocabulary as the Masonite House.³⁹ Prefabricated four-by-nine-foot Homasote wallboard panels were bolted to a wood frame in an on-site assembly process that took only sixty-four hours.

The Lumber Industries House (fig. 33) by Ernest A. Grunsfeld, Jr.⁴⁰ was the exhibit's most conventional design, down to its wood-shingled sloping roof. It was built to "demonstrate many new and old uses of wood both in construction, and finish. It was built of ordinary wood stud and joist construction, with exterior walls of broad shiplap siding...and corners rounded by means of bent plywood behind which were concealed downspouts."⁴¹ Walnut, fir plywood, birch, knotty pine, white oak, red cypress, and maple were used for interior surfaces.

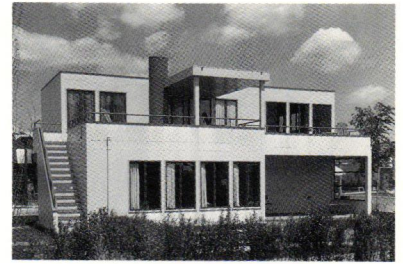
Three houses at the fair used concrete, brick, or man-made stone. Robert Weed's⁴² roof-decked Florida Tropical Home (fig. 34), made completely of reinforced concrete, was conceived to take advantage of semi-tropical climates and open-air living. "The projecting cantilevered slabs which projected some four feet over all exterior openings were an integral part of the ceiling slabs and were designed to supplant awnings. Hence windows could be left open during ordinary rain."⁴³ The exterior was stuccoed portland cement and the interior was plastered.

The Rostone House (fig. 35) by Walter Scholer (a Lafayette, Indiana architect who worked for Rostone) demonstrated a new structural system of largely shop-fabricated materials, primarily a "stone-like substance called Rostone, a synthetic product composed of shale, alkaline earths and limestone quarry waste... [that came] in a wide range of colors and color treatments. [This building material] was produced in slabs, panels, and other forms to precise dimensions."⁴⁴

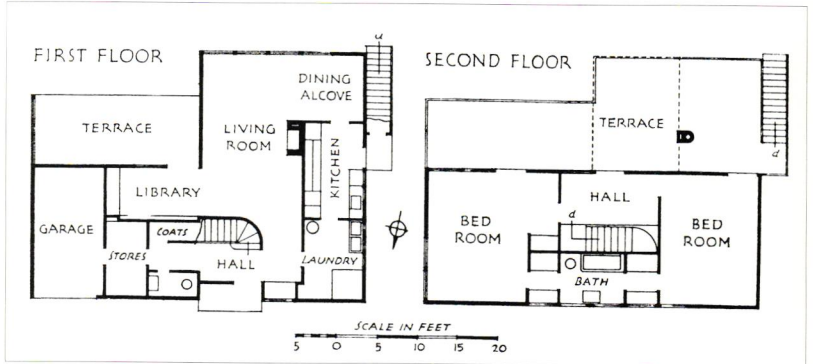
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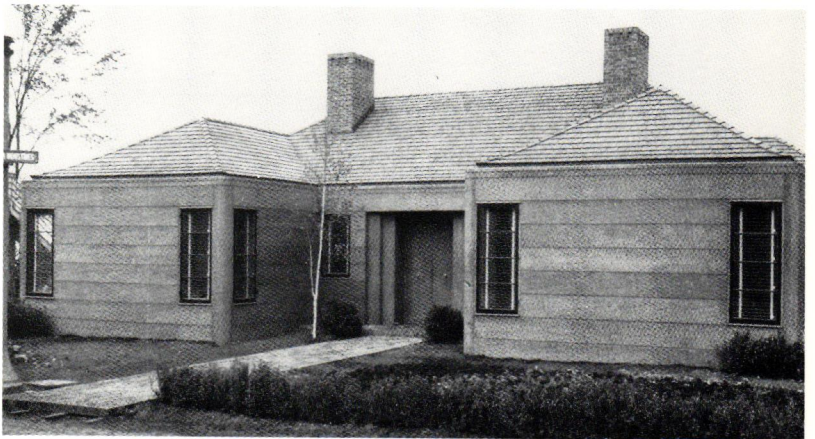
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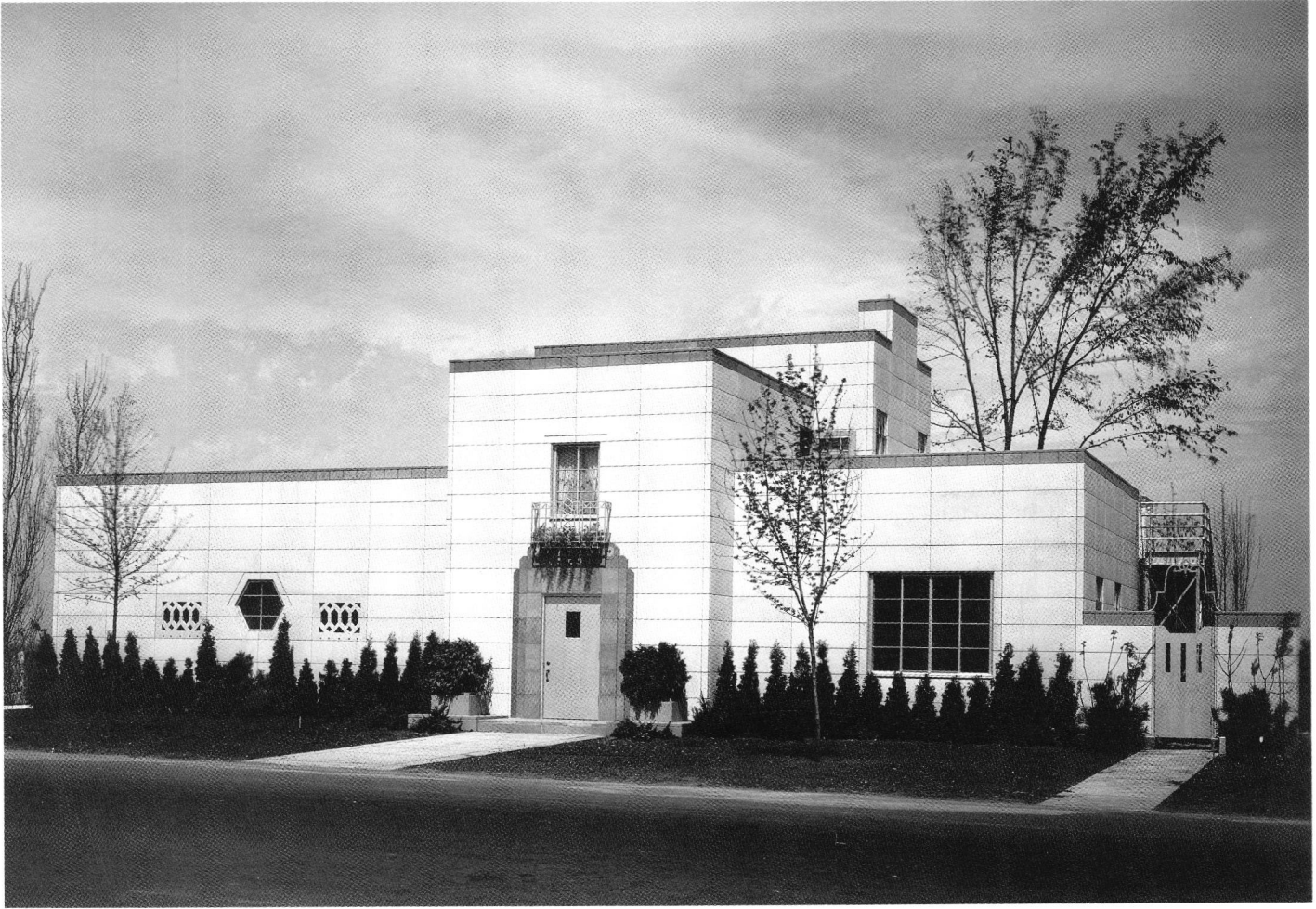
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34



- 30 Frazier and Faltrey, Masonite House, A Century of Progress
- 31 John C. B. Moore, Design for Living House, A Century of Progress
- 32 Design for Living House, plan
- 33 Ernest A. Grunsfeld, Jr., Lumber Industries House, A Century of Progress
- 34 Robert Weed, Florida Tropical Home, A Century of Progress



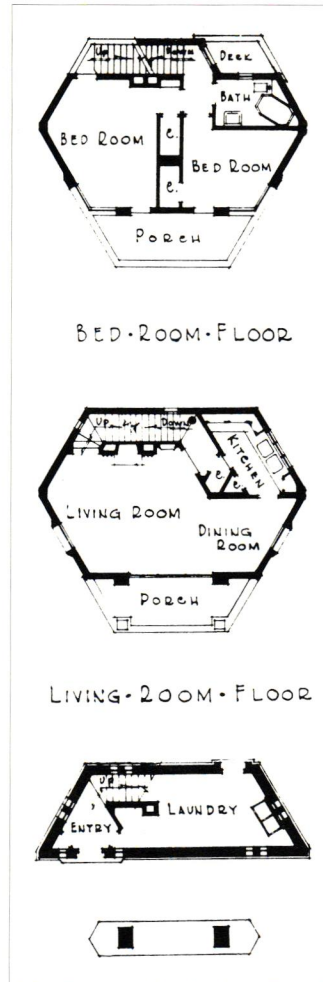
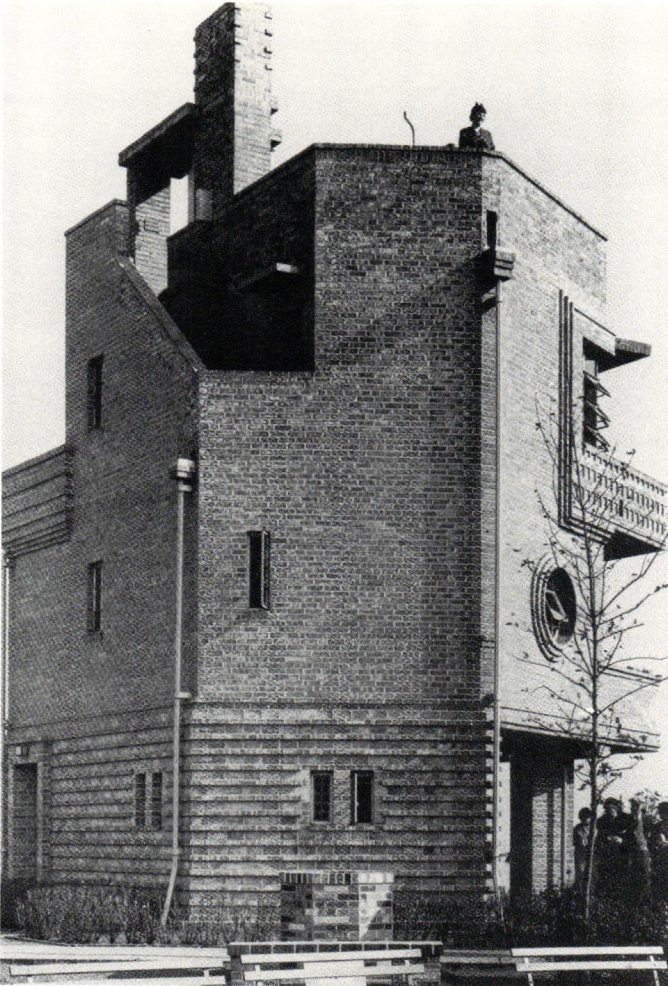
Buff-colored slabs measuring 48x17x2 inches were bolted to a vertical structural steel frame-work; colored Rostone slabs or tiles were used for interior walls, floors, stair treads, roof decks, and copings.

Andrew Rebori's⁴⁵ expensive Brick House (figs. 36, 37) broke from traditional masonry residential construction with its reinforced brick construction, irregular angles, and pronounced height. "Interior walls, stairs, bookshelves and other built-in features were brick, structurally integral with the outside walls or partitions."⁴⁶ The roof and formal garden to the front of the house were both brick. Floors were ground off, waterproofed, waxed, and polished in a terrazzo manner.

At the Paris International Exposition planted gardens and fountains had helped soften the angular geometric planes of its new architectural style. But A

Century of Progress revealed few of the fine proportions that marked its European predecessor. Instead, a monumental scale of stripped and machined utility prevailed. Neon light and intense color gave the 1933 fair a carnival atmosphere. Buildings and exhibits were constructed for commercial advertising purposes in keeping with the enterprise's private financing. Frank Lloyd Wright turned down an offer to participate saying "the whole performance was petty, strident, and base...[and] nothing had happened except gesture and gaudy—sometimes bawdy—self-indulgence."⁴⁷ Cret and the Architectural Commission could have mitigated the fair's stark gaudiness if they had only incorporated the lakeshore; instead A Century of Progress turned its back to the lake and opened its gates to the city. Fountains and plantings were deemed

35 Walter Scholer,
Rostone House,
A Century of Progress



36 Andrew Rebori,
Brick House,
A Century of Progress
37 Brick House, plan

too expensive and the lakeshore would not beckon visitors from the east. Consequently the fair lacked a sense of anthropometric space or scale and was primarily a commercial environment.

The fair was a no-holds-barred venture for businessmen. Its profits and popularity convinced trustees to reopen the show for a less successful second year (26 May–31 October 1934). In its second round, concessionaires and amusement proprietors overextended themselves and sustained terrible financial losses. But in its two-year existence 38 million paying visitors attended A Century of Progress. It kept 100,000 people employed, brought in \$400 million worth of business to Chicago, and restimulated the city's economy.

NOTES

1. Franklyn Paris, "The International Exposition of Modern Industrial and Decorative Art in Paris," *Architectural Record* 58 (October 1925): 373, 375.
2. *Ibid.*, 373.
3. "Hoover Appoints Commission," *New York Times* (16 February 1925): 6.
4. Helen A. Read, "The Exposition in Paris," *International Studio* 82 (November 1925): 96, 97; "The Paris Exposition of Decorative Arts," *The American Review of Reviews* 72 (October 1925): 436, 437.
5. Aldous Huxley said Le Corbusier's Pavillon de l'Esprit Nouveau was "a mixture of greenhouse and hospital ward furnished in the style of a dentist's operating chamber." Bevis Hillier, *Art Deco of the Twenties and Thirties* (London: Studio Vista, 1968), 9.
6. John Loring, "American Deco," *Connoisseur* 200 (January 1979): 50.
7. Alfred Granger, *Chicago Welcomes You* (Chicago: A. Krock, 1933), 235.
8. Charles G. Dawes (1865–1951), an Evanston resident, had organized the Central Trust Company of Illinois and worked for the war effort in administrative management. When he became the first director of the U.S. Bureau of the Budget he helped find solutions to Germany's complex economic problems. For that solution, known as the Dawes Plan (1924), he was awarded the Nobel Peace Prize (1925). He served as Vice-President under Calvin Coolidge (1924). He and his brother Rufus Dawes were involved in utilities, Pure Oil Company, and the banking industries. *Webster's Biographical Dictionary* (Springfield, MA: Merriam Co., 1943).
9. Carl W. Condit, *Chicago 1930–70: Building, Planning and Urban Technology* (Chicago: University of Chicago Press, 1974), 6.
10. Arthur F. Woltersdorf, "Carnival Architecture," *American Architect* 143 (July 1933): 10. Harvey Wiley Corbett (1873–1954) was born in California and trained at the University of California, Berkeley (1895) and the Ecole des Beaux Arts (1900). He worked under Cass Gilbert in New York (1901) before going into private practice (1903). He had a partnership with Wallace K. Harrison, was a collaborator with Hugh Ferriss, and tried to define a modern American style in architecture. Paul Philippe Cret (1876–1945) was born in France, trained at the Ecole des Beaux Arts (1903), came to Philadelphia (1903), and became an American citizen (1927). He had an illustrious international career. Edward Bennett (1874–1954) was born in England, trained at the Ecole des Beaux Arts (1901), worked in San Francisco, then joined the firm of Daniel H. Burnham (1903–12). He served as consultant to the Chicago Planning Commission (1910–30) and was involved with over forty city plans both in the United States and Canada. Arthur Brown, Jr. (1869–1934) was born in California, formed the partnership of Brown and Wolcott (1912–17), and was an architectural consultant to Pure Oil Company in Chicago. Ralph Thomas Walker was partner in the firms of Voorhees, Grelin and Walker, Voorhees, Walker, Foley and Smith, and later Voorhees, Walker, Smith and Smith. Adolf K. Placzek, ed., *Macmillan Encyclopedia of Architects* (London: Free Press, 1982).
11. Louis Skidmore, "Planning and Planners," *Architectural Forum* 59 (July 1933): 29–30.
12. Condit, *Chicago 1930–70*, 5. Joseph Urban (1872–1933) was born in Austria. He trained at the Vienna Academy and was close to the Austrian Secession movement. He came to the United States in 1911 and thereafter became well-known for his scenic designs and decorations for theaters, the Boston and Metropolitan operas, hotel lobbies, and private houses. His most significant building was the New School for Social Research (1929–30) in New York City. Urban directed the New York branch of the Wiener Werkstatte and was a close friend and associate of Raymond Hood. Placzek, "Scenic Art of Joseph Urban: His Protean Work in the Theater," *Architecture* 69 (May 1934): 274–90; and Woltersdorf, "Carnival Architecture," 10.
13. Forrest F. Lisle, Jr., "Chicago's Century of Progress Exposition: The Moderne as Democratic, Popular Culture," *Society of Architectural Historians* 31 (October 1972): 230.
14. "The organization of the designing and supervising staff was developed in a highly pragmatic way—first, to provide practical as well as aesthetically satisfying designs and, second, to work out the means by which such designs could be translated into physical reality as rapidly and economically as possible. In the fall of 1930 the landscape architect Ferruccio Vitale was added to the architectural commission as chief landscape designer, and shortly thereafter Alfred Geiffert was appointed as his assistant. Joseph Urban was appointed director of color in the spring of 1932, Otto Teegen was named as his assistant, William Muschenheim as consultant, and Shepard Vogelgesang as supervisor of interior color. By the fall of 1932 Lee Lawrie had been retained as sculptural consultant and Walter D'Arcy Ryan as director of illumination. The Architectural Commission and its various consultants theoretically had no jurisdiction over the design of buildings erected by private exhibitors, but such designs were subject to commission review and approval. The respective design divisions of the exhibits and concessions departments worked closely with the individual exhibitors, and it was here that Louis Skidmore demonstrated his capacity for administering the complex activities of design teams: his advisory group in the Exhibits Department guided over five hundred exhibitors in the design of displays as well as of special exhibition buildings, in the process requiring that all designs be submitted for criticism, revision, and final approval." Condit, *Chicago: 1930–70*, 18.
15. Stuart E. Cohen and Stanley Tigerman, *Chicago Architects* (Chicago: Swallow Press, 1976), 10, 17.
16. Condit, *Chicago: 1930–70*, 6–8. Though the fair opened in 1933 during the worst period of the Depression, when families had gone months and even years without an income, when land values had dropped from five billion dollars in 1928 to two billion in 1933, and when large office buildings were torn down because taxes on them could not be paid, on an average over 100,000 people attended the fair daily. The fair was a financial success that paid dividends to the shareholders and gave a psychological boost to Chicago with

- FHA guaranteed home mortgages and building industry stimulation. Chicago became the spark plug of the nation. Harold Mayer and Richard Wade, *Chicago: Growth of a Metropolis* (Chicago: University of Chicago Press, 1973), 360–364.
17. Nathaniel A. Owings, "New Materials and Building Methods for Chicago Exposition," *Architectural Record* 71 (April 1932): 279–287; Bert M. Thorud, "Engineering Research and Building Construction," *Architectural Forum* 59 (July 1933): 65–69.
 18. F. C. Rotherwell, quoted in Loring, "American Deco," 50.
 19. William Muschenheim, "The Color of the Exposition," *Architectural Forum* 59 (July 1933): 2–4; Otto Teegen, "Painting the Exposition Buildings," *Architectural Record* 73 (May 1933): 366.
 20. Walter D'Arcy Ryan, "Lighting the Exposition," *Architectural Forum* 59 (July 1933): 47–50.
 21. Harvey Wiley Corbett, "The Significance of the Exposition," *Architectural Forum* 59 (July 1933): 21.
 22. Robert Marks, *The Dymaxion World of Buckminster Fuller* (Carbondale: Southern Illinois University Press, 1960), 87.
 23. Joshua d'Esposito (1878–1954) was born in Italy. He took his engineering degree at the Royal National Institute of Nautical Engineering and served as a draftsman and assistant chief engineer for the Pennsylvania Railroad until he went to Chicago in 1910. There he worked as an engineer on projects for the Chicago Union Station Co., Chicago Daily News, Chicago Subway, and the Public Works Administration. He was chief engineer at A Century of Progress. Biography clippings file, Chicago Historical Society.
 24. Theodore Larson, "New Housing Designs and Construction Systems," *Architectural Record* 75 (January 1934): 3.
 25. Ethel B. Power, "Echoes from the Chicago Fair," *House Beautiful* 74 (September 1933): 109.
 26. *Ibid.*, 93.
 27. Howard T. Fisher (1903–) was born in Chicago and educated at Harvard College (1926) and Harvard University (graduate degree in Architecture, 1926–28). He was president and chief architect and engineer of General Houses, Inc., from 1928–40. He later worked in Washington, DC (1940–47), formed a partnership with associates (1947–64), and taught at Harvard University from 1964 until his retirement. Cohen and Tigerman, *Chicago Architects*. From 1936 through the war years, most of the mill work for General Houses was fabricated by Curtis Companies. They produced complete panels for walls, floors, ceilings, and partitions, which were attached to a steel-frame system. Fisher and General Houses were active in the war housing effort. Burnham Kelly, *The Prefabrication of Houses* (Cambridge: Technology Press of M.I.T., 1951), 39–47.
 28. Dorothy Raley, *A Century of Progress: Homes and Furnishings* (Chicago: M. A. Ring, 1934), 63; Cohen and Tigerman, *Chicago Architects*, 94; and "Acorn Knoll Estates," *Architectural Record* 81 (March 1937): 18–19BT.
 29. Robert Paul Schweikher (1903–) was born in Denver. He had a broad educational experience: University of Colorado (1921–22), Art Institute of Chicago ateliers (1922–23), Illinois Institute of Technology (1924–26), and Yale University School of Architecture B.F.A. (1927–29). During this time he worked as a draftsman in the offices of Grazer and Bollenbacher (1923–25) and David Adler (1925–27). He traveled in Europe (1929–30) and visited the Stuttgart Weissenhof Siedlung and Van der Vlugt's Van Nelle Tobacco Factory in Holland. He was chief designer with Philip B. Maher (1931–33) and a designer with Howard Fisher's General Houses (1933–34) before he formed a partnership with Theodore W. Lamb and Winston Elting (1934–42). He was in the U.S. Reserves (1942–45), then formed a partnership with Elting (1946–52). He became Professor of Architecture at Yale University (1953–57) and Professor of Architecture and Head of the Department of Architecture, Carnegie Mellon University, (1957–69), then opened a private practice (1970–). Murial Emanuel, ed., *Contemporary Architects* (New York: St. Martin's Press, 1980); and Betty Blum, "A Regale of Tales: An Interview with Architect Paul Schweikher, Who Knew Just About Everyone," *Inland Architect*, (November/December 1984): 36–41.
 30. Raley, *Century of Progress*, 64; see also Sharon Darling, *Chicago Furniture, Art, Craft and Industry: 1933–1983* (New York: W. W. Norton, 1984), 282.
 31. "Houses Built with New Construction Methods," *Architectural Record* 73 (April 1933): 288, 289.
 32. H. Augustus O'Dell and Wirt C. Rowland were Detroit architects who designed the Stransteel House, a subsidiary of Great Lakes Steel Corp. The house and its construction system was originally developed for low-income families in the Detroit area. *Good Housekeeping* magazine was the consultant for the interior decoration for the model house.
 33. Robert Smith, Jr. was a Cleveland architect who worked for the American Rolling Mill and Ferro Enamel Corporation, whose houses were built by Insulated Steel. For the house at the fair, *Ladies' Home Journal* designed the interior.
 34. Raley, *Century of Progress*, 101.
 35. "The Modern Houses of the Century of Progress Exposition," *Architectural Forum* (July 1933): 55; Tim Synder, "Lustron: A Prefabricated Ranch House of Porcelainized Steel," *Fine Homebuilding* (August–September 1984): 26–30.
 36. F. C. Brown, "Chicago and Tomorrow's House?" *Pencil Points* 14 (June 1933): 250.
 37. "Modern Houses," 53.
 38. Raley, *Century of Progress*, 91.
 39. "Modern Houses," 53. John C. B. Moore (1897–) was educated at the Ecole des Beaux Arts (1927, Diplome). He was a draftsman for Delano and Aldrich (1921–23, 1927–29) before he went into private practice (1929–37) and a partnership with Hutchins (1937–).
 40. Ernest A. Grunsfeld, Jr., a Chicago architect trained at M.I.T., the Ecole des Beaux Arts, and the American Academy of Rome, designed the Max Adler Planetarium (1930) that stood at the northwest corner of the Century of Progress grounds. He was a member of the Chicago and Illinois Housing Commission that was responsible for most of the Urban Renewal at the south side of Chicago during the 1960s. He was a close friend of Keck and asked Keck to teach him watercolors. Biography clippings file, Chicago Historical Society; interview with William Keck, August 1984.

41. "Modern Houses," 59.
42. Robert Law Weed (1897–1961) was a Miami-based architect who was an early practitioner of the modern movement in residential architecture. He designed the University of Miami campus and many of its major buildings as well as commercial and residential projects in the greater Miami area. *Architectural Record* (May 1936); *American Architect* (August 1935).
43. Raley, *Century of Progress*, 54.
44. C. Theodore Larson, "New Housing Designs and Construction Systems," *Architectural Record* 75 (January 1934): 24; see also Raley, *Century of Progress*, 118–121.
45. Andrew N. Rebori (1886–1966) was born in Chicago and educated at both M.I.T. and the Armour Institute (1905–11). He was awarded travel prizes from the Boston Society of Architects (1907) and M.I.T. (1908). He worked in the offices of Cass Gilbert (1910) and Jarvis Hunt (1911–18). Later, he had a private practice (1932–66) and taught at the Chicago Art Institute and I.I.T. His early notoriety came with his eclectic period styles and especially with his Art-Deco and Moderne projects. Cohen and Tigerman, *Chicago Architects*; Frank A. Randall, *History of the Development of Building Construction in Chicago* (Urbana: University of Illinois Press, 1949); George S. Koyl, *American Architects' Directory* (New York: R. R. Bowker, 1962); *Architectural Record* (September 1923); and *Architectural Forum* (November 1930).
46. "The Trend of Progress in House Design," *American Architect* 143 (July 1933): 27.
47. Frank Lloyd Wright, "Another Pseudo," *Architectural Forum* 59 (July 1933): 25.

5

THE HOUSE OF TOMORROW AND THE CRYSTAL HOUSE

Four years before Fred Keck became involved in the Century of Progress International Exposition, he designed the Art Deco-inspired Miralago Ballroom and Shops (figs. 38, 39). The project was built in No-Man's Land, Cook County, Illinois for Bills' Realty, who had commissioned other projects from Keck, including houses in the Indiana Hills subdivision of Wilmette. Miralago, a two-story building housing eight shops and a dance hall, was sited on a bluff overlooking Lake Michigan. It was financed by a syndicate of owners, which included Keck himself (he provided two percent of the funds amounting to \$2,000).

From the exterior, Miralago's white cement stucco with black trim resembled the works of Weissenhof Siedlung architects.¹ In the words of Stuart Cohen and Stanley Tigerman, the building "represented a remarkable formal sophistication, and, excepting the work of Richard Neutra and Rudolph Schindler, it was as accomplished as any American work then built in what would be called the International Style. The building was constructed of steel columns and reinforced concrete floor slabs cantilevered at the second floor to permit the continuous glazing of the first floor shop fronts."²

The ballroom interior, on the other hand, was in a cohesive and pure Art Deco style (fig. 40). The burnished and dull silver leaf patterns of the ballroom ceilings complemented the deep blue ceiling of the promenade; floors were maple, linoleum, and black terrazzo; walls and curtains were green; jet black Vitrolite covered the columns, baseboards, and trim; and the furniture—orchestra chairs, sofas, benches, and tables—were decorated in silver leaf, black, or orange. Keck also designed chromium-plated brass hardware, hand-forged Monel metal stair rails, and light and door fixtures (figs. 41, 42). The Miralago Ballroom and Shops opened on 15 August 1929 to a youthful clientele. Less than three years passed before

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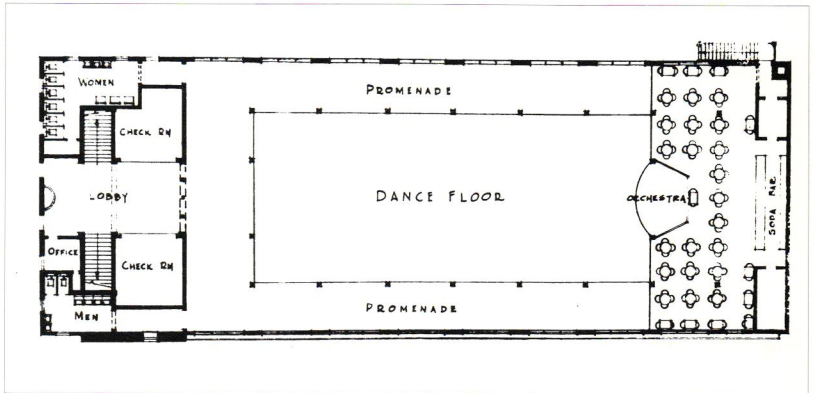


38 Miralago Ballroom and Shops, No Man's Land, Cook County, IL, 1929

39 Miralago, Ballroom plan

40 Miralago Ballroom, interior

39



40



a fire damaged the structure so extensively that it had to be razed.³

A year after Miralago was destroyed, Fred Keck submitted designs for an experimental exposition house to Nathaniel Owing (Exhibit Director of A Century of Progress) under the name "Century Homes, not Incorporated." Keck ran this business from his architectural office at 612 North Michigan Avenue. The House of Tomorrow (fig. 43) was one of twelve houses built for the Home and Industrial Arts Exhibit.⁴ Keck designed the project during February and March 1933 and it opened with the fair at the end of May.

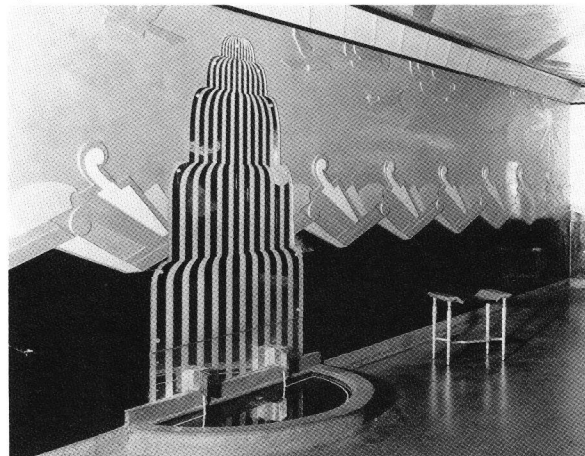
The House of Tomorrow adopted the steel-frame construction of Chicago loop architecture, an inexpensive and utilitarian building system that, for European International Style architects, represented the intellectualized order of a technological society.⁵ Built on concrete foundations and fiber-concrete floor slabs, this experimental building had a structural steel frame and shop-fabricated, fiber-concrete covered joists that could be bolted together on site. Tension cross bracing stabilized the walls and the "red top" steel joist construction. Slender columns supported the outer edges of the floor slab "wheels." It took only forty-eight hours to assemble the frame, which was then sheathed in fixed, tinted, storefront glass of Zouri construction. The dimensions of the prefabricated materials and the number of rooms determined the house's twelve-sided plan (figs. 44, 45).

Visitors who paid ten cents to tour the house received a brochure written and illustrated by the architect. Keck compared his House of Tomorrow to John Richards's Octagon House. The form and the engineering of Keck's structure also begged comparison with R. Buckminster Fuller's Dymaxion House (fig. 46). Fuller's scheme, published and unveiled at Marshall Field's department store in 1929 to promote modern furniture, was also seen at the Chicago Arts Club a year later.⁶ In the House of Tomorrow the cantilevered floors were supported by the structural central stair and utility core. None of its walls were load-bearing. This design was similar to that of the Richards's House, whereas the core of the Dymaxion House served only the utilities. For Keck the minimum perimeter Octagon House was more efficient.⁷ The House of Tomorrow had sun decks with metal pipe railings, an airplane

41



42



41 Miralago Ballroom, stairwell

42 Miralago Ballroom, lobby fountain

(opposite)

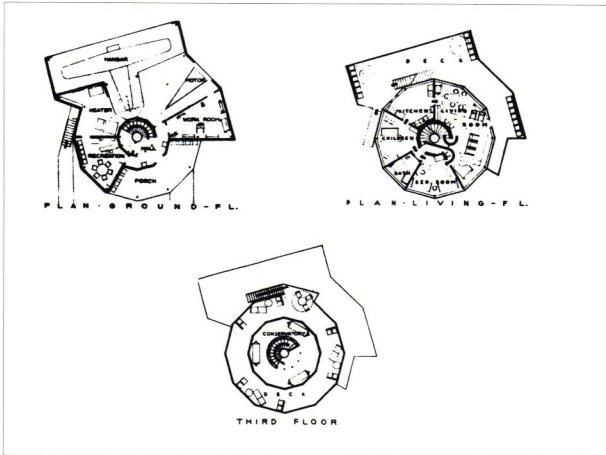
43 House of Tomorrow, A Century of Progress, 1933

44 House of Tomorrow, plans

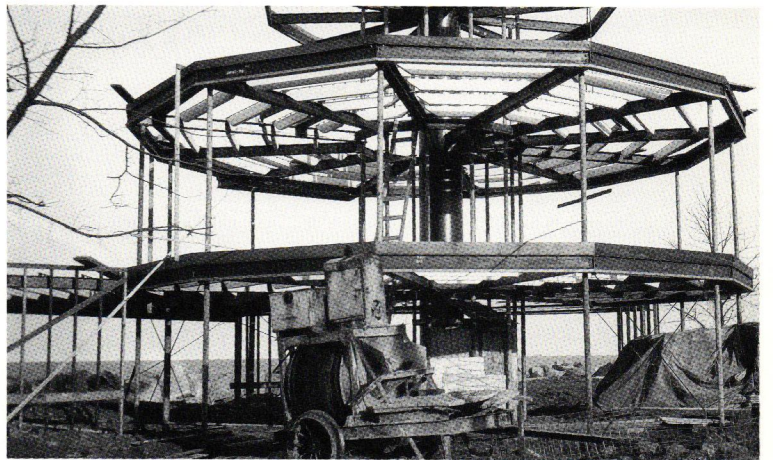
45 House of Tomorrow, during construction



44



45



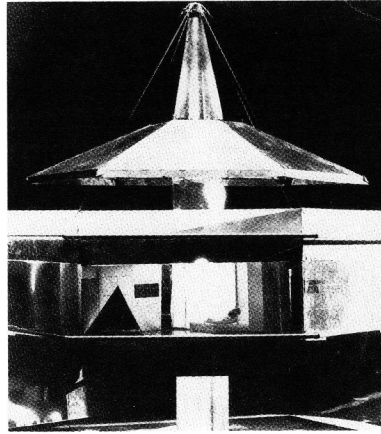
hangar and car garage with electrically operated doors, a fully electric kitchen, central air conditioning, and metal baseboards with plenty of outlets. White aluminum Venetian blinds, floor-mounted roller shades, and curtains attached in front of the extensive exterior glass walls deflected infra-red but admitted ultra-violet rays into a cooled and more healthful interior (fig. 47). A structural steel frame was exposed in the central stairwell area and solarium.

Many of the House of Tomorrow's interiors were finished with Cararra plate glass: the stairway had polished black glass walls, one glass kitchen wall was soft gray, and the bathroom was finished entirely with white glass. Other walls were lacquered synthetic wall board or insulation board. The children's room was painted turquoise and its floors were green rubber tile; the living/dining area and master bedroom had floors of one-inch walnut or pine blocks polished to a rich luster; the floor of the workshop was orange; the recreation/laundry room had ultra-marine blue ceilings, lipstick-red curtains, and red, orange, and green overhead air ducts. The interiors were designed by Irene Kay Hyman. Although she died suddenly a few days before the structure was completed, the House of Tomorrow was completed in exact accordance with her plans. When *A Century of Progress* reopened in 1934, part of the house was resheathed with polished sheet copper (fig. 48) and its interiors were transformed by Mabel Schamberg to present an entirely new image. A palette of gray, soft brown, cream white, pastel blue, and salmon made the previously bold interior much less intense.⁸

The structural concept of the House of Tomorrow arose from the Octagon and Dymaxion houses and the engineering properties of modern construction materials. Preliminary drawings had been submitted to the Director of the Fair Exhibits by Keck during February 1933, but the completed design was definitely the result of a collaborative office effort. The drawings for the house itself are in one drafting style—that of William Keck—and those for the furnishings in another—that of Leland Atwood.⁹

Keck hired Atwood in 1933 as chief draftsman after being introduced to him by another young architect, Robert Paul Schweikher. Atwood had previously worked with Schweikher as an associate designer/

46



46 R. Buckminster Fuller, Dymaxion House, 1929

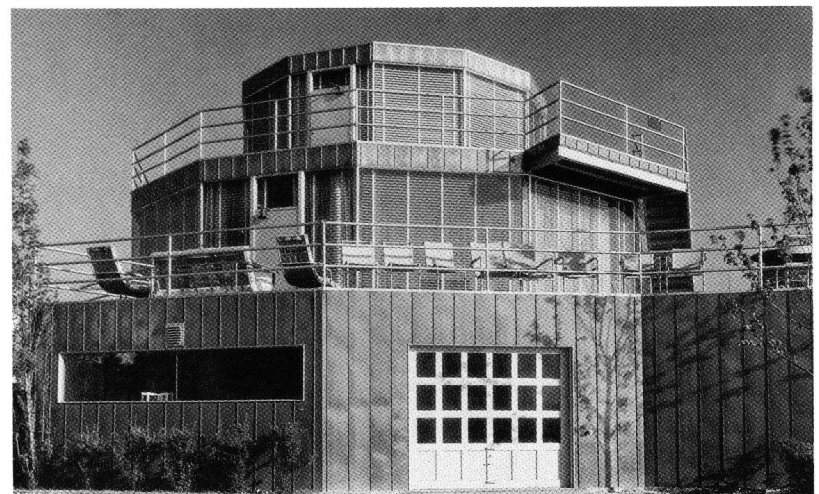
47 House of Tomorrow, living room

48 House of Tomorrow, copper clad for the 1934 Century of Progress

47



48



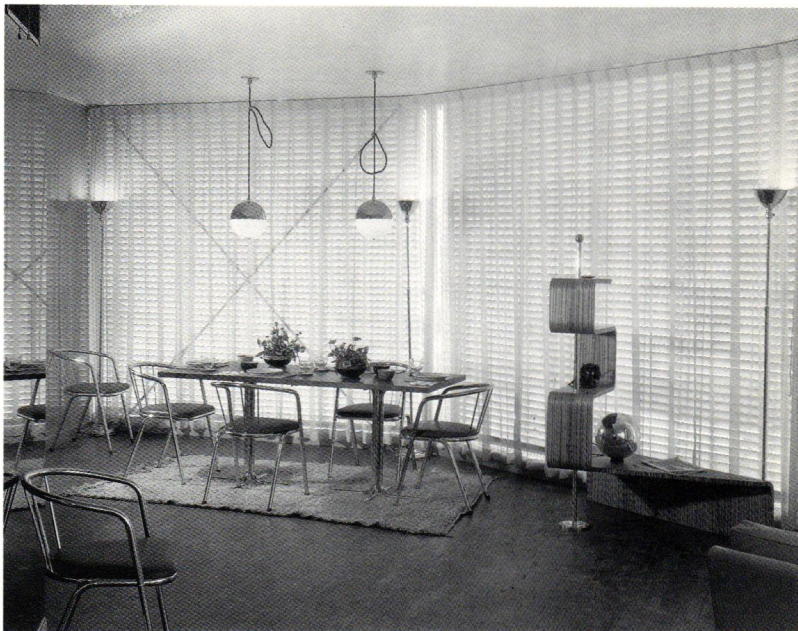
draftsman (1925–28) and chief draftsman (1928–33) at Wolcott and Work. Like his friend Schweikher,¹⁰ Atwood was very interested in modern European design; Mies van der Rohe's 1929 Barcelona Pavilion especially impressed the two young architects. A 1926 prefabricated house design by Atwood was "appropriated, more or less with Lee's knowledge, if not consent" by his friend Buckminster Fuller as the basis for the Dymaxion House.¹¹ Schweikher was a draftsman on Fuller's project.¹²

During the 1920s and 1930s, architectural offices rarely gave employees credit or acknowledgement for their contribution to projects. Since Atwood neither completed his architectural studies nor became a licensed architect, he could not take credit for the design work he did while in Keck's employ.¹³ When furniture could not be found to suit the progressive character of the House of Tomorrow, Keck and Atwood designed their own. The pieces, inspired by illustrations in periodicals, were fabricated by various companies: Tapp, de Wilde and Wallace, Inc. made the wooden furniture, W. H. Howell Company made the chrome-plated metal tubular pieces, and other suppliers provided lamps, light fixtures, and appliances. The designers' use of rare and exotic woods was inspired by Art Deco, and their light fixtures and movable wardrobes relied on Werkbund Bauhaus aesthetics (figs. 49–52).¹⁴

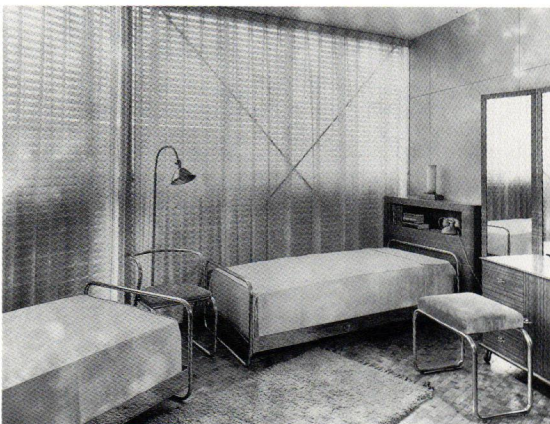
For the 1934 reopening of A Century of Progress, Keck, president and sole officer of Modern Homes, applied to the Fair Commission to build a second house alongside the 1933 models at the Home and Industrial Arts Exhibit. He was denied permission in February 1934. A month later, Caleb Spalding, a friend of Atwood who would help finance the project, reapplied on behalf of Keck and Atwood but was also denied a permit. Finally, on 10 April, blueprints of Keck and Atwood's Crystal House (figs. 53–58) were accepted by the Commission. Ralph Nichols, builder of the House of Tomorrow, completed work on the Crystal House in time for the Fair's opening, 25 May 1934.¹⁵

If Keck's House of Tomorrow seemed a synthesis of the unbuilt Dymaxion House's form and the International Style's symbolic technological imagery, then Keck's Crystal House fulfilled the promise of sophisticated technology that the House of

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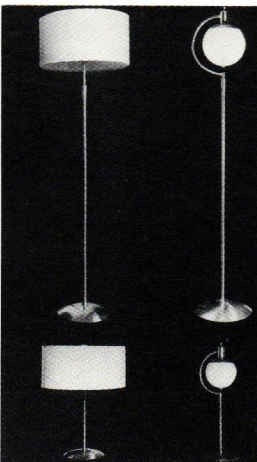


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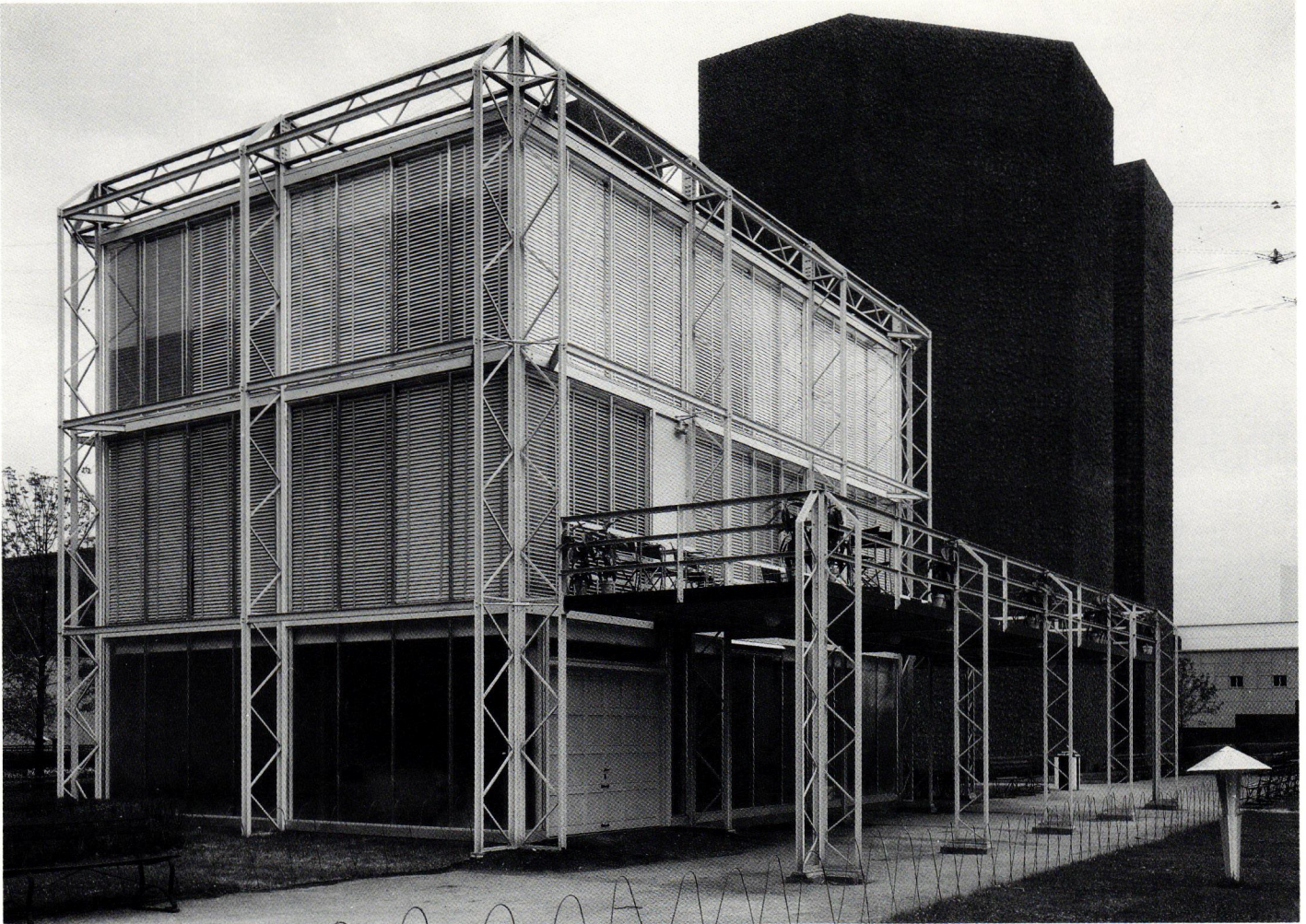
49 House of Tomorrow,
dining room
50 House of Tomorrow,
bedroom
51, 52 Pearlman Lamps

51

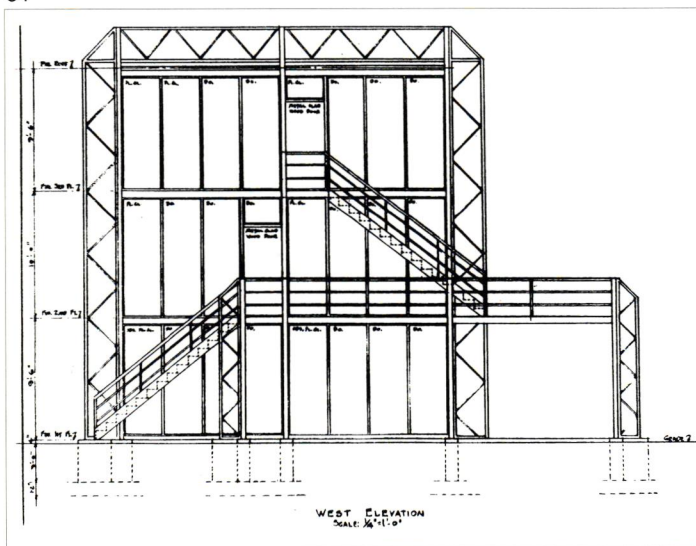


52





54



55



53 Keck and Atwood,
A Century of Progress,
Crystal House, 1934

54 Crystal House,
exterior steel truss

55 Crystal House,
construction view

*Tomorrow had implied. The steel and glass house that Keck built for the reopening of the fair in 1934 was the most remarkable building of its day.*¹⁶

Progressive Architecture stated:

*It combined the ultimate constructivist aesthetic with truly progressive structural and material technology. Designed as a symbolic evocation of life in a "machine age," technology and content were fused together in this structure at a level of intention and realization promised but never achieved in European or Russian architecture of the period.*¹⁷

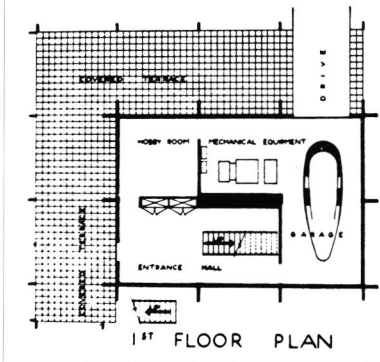
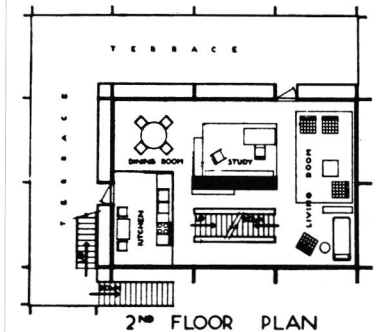
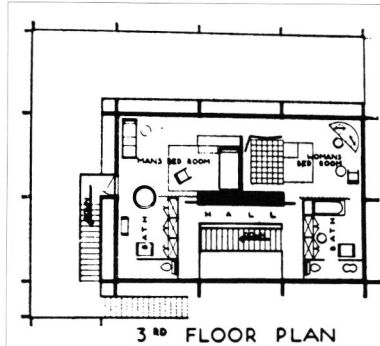
The Crystal House's sophisticated technology and constructivist aesthetic were used

*to provide maximum interior living area [twenty-seven by forty feet] with the minimum use of space; to invent a new general design or a new pattern of home where home serves the occupants, and not the occupants the home; to provide a scientifically healthful, light cheerful residence which capitalizes nature's fickle moods to man's incessant advantage, night and day; and to design a house in such qualities in such a manner and of such materials that lends itself to mass production...for individual expression...[and] that his ideal home may be within the reach of the masses.*¹⁸

The three-story structure was sheathed in plate glass and supported structurally by a lightweight, welded latticework of exposed steel columns and trusses anchored to a reinforced concrete slab. For reasons of economy, efficiency, and structural rigidity the latticework was shop welded and transported to the site for assembly. Shop welding and on-site construction were also used for steel-plate floor sections and for stairs. But due to wind sway and the fragility of the glass, the sectional roof, wall, and lattice-type column trusses, "designed with four-inch 13.8-pound channels as chords and one inch squares as diagonals,"¹⁹ were later welded on site (fig. 54). All the shop-welded steel was delivered to the site pre-painted and retouched after the assembly process was completed (fig. 55).

The truss frame was the only load-bearing element in the Crystal House; it carried both floors and walls. Three types of plate glass were installed in a manner similar to that in the House of Tomorrow: non-transparent ripple-glass for the ground floor, aqua-tinted glass for the first floor, and clear glass for the top floor.

56



56 Crystal House,
plans
57, 58 Crystal House,
construction views

57



58



Acusti-Celotex fiberboard ceilings and interior partitions absorbed sound in the virtually open interior. An open stair and enclosed central utilities shaft (for heat and cold air return, stack and water supply pipes) extended three floors through the house (fig. 59). Partitions enclosed the kitchen and bathrooms while elsewhere movable wardrobes served as closets and space dividers. The living room floor had easy access to wide decks that wrapped two sides of the structure. Instead of wall- or ceiling-mounted fixtures, extensive outlets in the metal baseboard trim allowed electrical appliances to be plugged in as required.²⁰

A recirculating air-conditioning system heated, humidified, and filtered the Crystal House using continuous window-base vents. Because of its extensive glazing, solar heating had to be considered. In an effort to improve upon the 1933 House of Tomorrow, aluminum Venetian blinds were designed for exterior installation to cut down on heat trapped indoors between the blinds and the glass.²¹ Because the Keck office could not find a supplier for either the heavyweight blind or for their internally operated control mechanism, the blinds were installed on the interior in a recessed channel along the upper inside edge of the glass.²² Curtains helped soften the mechanical appearance of the external trusses, and shades afforded privacy (fig. 60).

The Crystal House was furnished with designs by both Atwood and Keck and pieces fabricated by the Chicago Workshops: Mies van der Rohe's Tugendhat chair, Le Corbusier's bentwood armchairs and lounge, and lamps, mirrors, chrome stools, and dining room pieces inspired by Walter Gropius and Marcel Breuer.²³ The Chicago Workshops also chose additional accessories in a light toned color scheme for the model house. In the living room area floors were covered by natural Chinese matting and coffee-colored handwoven Moroccan area rugs were used to define distinct zones of space. The living-room furniture included four light-colored, pigskin cushioned Tugendhat chairs, a number of black cane "MR" chairs (figs. 61, 62); and a chromium daybed covered with black suede and caracul fur placed beside a Macassar ebony wall panel and writing table with chrome legs. The dining-room furniture was light ash with sea-green chair seats; its curtains were natural linen. A fully



60



59 Crystal House, central utilities and stairs
60 Crystal House, living room

equipped modern electrical kitchen completed the second floor.²⁴

Each of two third-floor bedrooms (a woman's and a man's) had a bath and was closed by brown or white linen privacy curtains. The two rooms had chromium chairs with leather cushions and Cuban mahogany tables, desks, and cupboard wardrobes. Moroccan wool rugs were laid over Chinese matting. Leland Atwood said of the interiors:

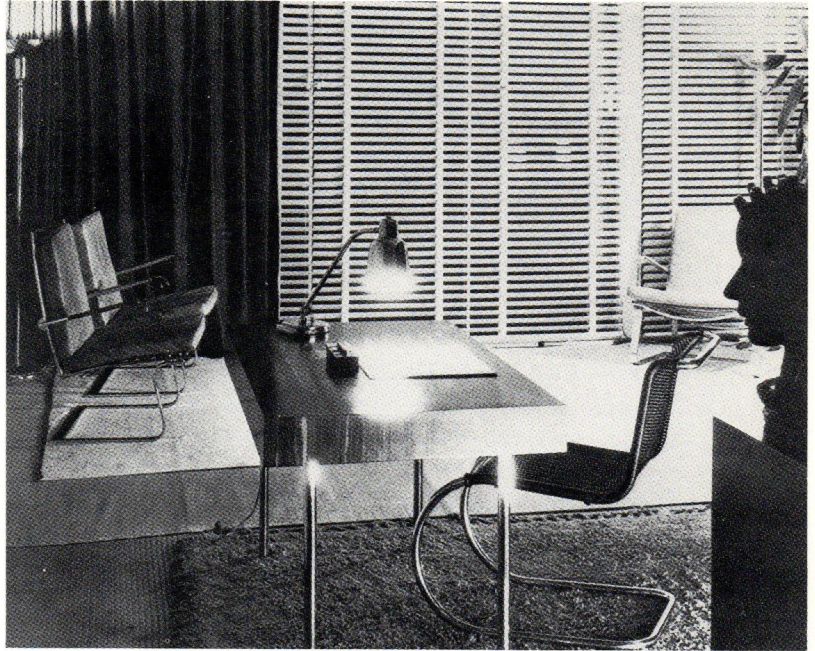
*It had been the aim [of the designers] to bring out such values as beauty of surface and grain of fine woods, in combination with the interesting textures of the materials, rather than to stress a superficial color scheme...so that the house gave an impression of restful quiet and at the same time did not lack color or subtlety of contrast in form and materials.*²⁵

Where a Silver Arrow automobile and a Curtiss-Wright Sport Biplane had been part of the House of Tomorrow's equipment, Buckminster Fuller's prototype Dymaxion Car built by Gulf Refining Company was exhibited at the Crystal House.

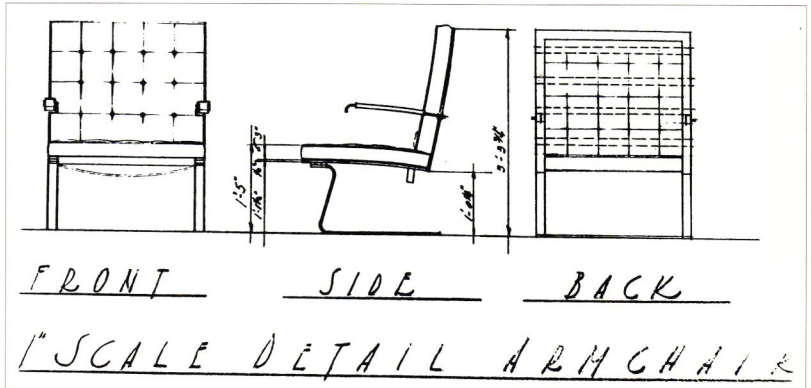
The Home Planning Division of the 1933 fair had proposed four major qualifications for the demonstration houses: durability, convenience, livability, and cost-efficiency. Keck adhered to the guidelines despite the fact that his models upset conventional notions of residential designs. Keck was the only architect to use the transparent quality of glass as a means of integrating the outside environment with the interior. He also incorporated novel construction practices. Except for Fisher's General Houses Steel House, furnished by Marianne Willisch and Chicago Workshops, the House of Tomorrow and the Crystal House had the largest number of custom furnishings. Despite their diverse appearance, all of the model homes showed the influence of European International Style aesthetic principles; they all had a "dependence upon the intrinsic elegance of materials, technical perfection and fine proportions, as opposed to applied ornament."²⁶

Keck's houses were not examples of accepted types. To quote the architect, they were designed "to demonstrate mechanical equipment and new building materials;...to not find a specific form to a house, but to find solutions to the many and varied contemporary requirements of a residence in a simple and direct

61



62



61 Crystal House, living room

62 Crystal House, house chair

manner." Equally important, they were intended to be mass-producible.

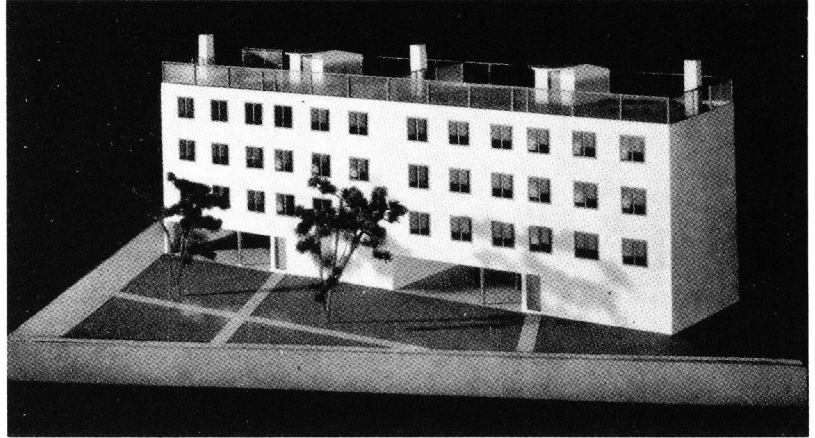
They were laboratory houses and were designed not primarily to be different or tricky but to attempt seriously to determine whether better ideas and designs for living could be found. Probably the most important function of the Crystal House was to determine how a great number of the people attending the exposition would react to ideas that entirely upset conventional ideas of a house.²⁷

The Crystal House was built in a highly inaccessible location on an island in the south court of the Electrical Group. It was financed principally by Phileo and Alice Spalding of Grand Rapids, Michigan, close friends of Atwood. Perspectives, photos, and detail drawings of the house and its furnishings—chairs, tables, desks, light fixtures, exterior tie rods, and china, book and clothes cases—exist in the Keck files but none of the drawings are initialed.

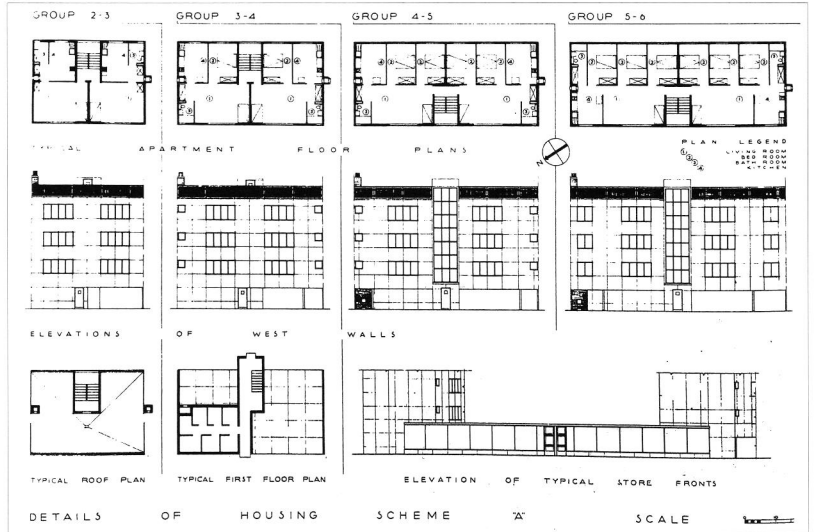
Harriet Atwood insists the Crystal House was entirely her husband's design.²⁸ Numerous current periodicals and even the exhibit brochure credit Atwood as furnishing designer of the House of Tomorrow and the original drawings confirm a similar contribution to the Crystal House. Other sources (*The Iron Age*, *American Architect*, *La Construction Moderne*, and *Chicago Tribune*) give Atwood credit as associate architect on the Crystal House. Nowhere is Leland Atwood given full credit for the Crystal House. In August 1934, two months before the fair finally closed, Atwood left the Keck office to become Head of the Art Department of Lake Forest Academy.

After the fair, the House of Tomorrow and the Rostone, Florida Tropical, and Armco Ferro-Enamel houses were purchased by Robert Bartlett, a Chicago real-estate developer. He moved them by barge during June 1935 from the exposition site to a new subdivision, Beverly Shores, Indiana, where they still stand along the Indiana Dunes National Lakeshore.²⁹ Even though Modern Homes charged visitors to view the Crystal House (as Keck had done with the House of Tomorrow), it was not a financial success. At the close of the fair, the building was dismantled by its contractor, Ralph Nichols, who auctioned the materials and some of the interior furnishings to pay off debts incurred during its construction.³⁰

63



64



63 Keck and Schweikher, Chicago Housing Project, 1932, model
64 Chicago Housing Project, plans and elevations

Following the 1932 Museum of Modern Art traveling International Exhibition of Modern Architecture, Henry-Russell Hitchcock and Philip Johnson curated an exhibition of projects entitled *Work of Young Architects in the Middle West*. The show opened in New York City in April 1933 and was exhibited during June in the Home Planning Hall at A Century of Progress.³¹ Keck assisted in the installation of the show, and was among the architects included in the exhibit. He and Robert Schweikher exhibited their model of a Chicago Housing Project (figs. 63, 64), a design that used “prefabrication, duplication, standardized parts, rapidity of construction, available materials and facilities, structural steel frame, and site orientation so as to attain the utmost advantage of sunlight.”³²

Museum exhibitions of modern architecture were rare, however, and the American audience perceived them as somewhat elitist. The utopian architecture on display was financially out of reach for the majority of the population—82% of the wage-earning population made less than \$1,949 a year in 1933. Construction was also slow—137 private houses were built in Chicago during 1933 as compared to 42,932 in 1926.³³ The Depression economy, in conjunction with conservative lending institutions, made building extremely difficult. In 1935, the editors of *Architectural Forum* and *Fortune Quarterly* surveyed the American public on style preferences in residential design; 35% preferred modern, 42% wanted early American, and

17% chose English. A year later the clientele for modern design dropped by two-thirds. A 1936 questionnaire by *Architectural Forum* to one hundred building and loan associations, forty life insurance companies, and about thirty savings banks revealed that the Franklin Society of New York was the only institution that consistently financed modern homes. Mortgage associations simply refused to invest in modern residential architecture.³⁴

The House of Tomorrow and the Crystal House were radical designs when compared with the other Century of Progress houses. They are also singular in Keck’s career. The former had irregular wedge-shaped rooms, an awkward interior organization, and intense colors. The latter had open volumes and sophisticated and understated appointments in expensive materials. Both were products of modern engineering technology. Keck would never repeat the exact steel frame systems found in the House of Tomorrow and the Crystal House nor would his future houses have quite the same sense of utopian architectural aesthetics. The model houses were not, however, intended to carry symbolic weight. Instead they were conceived to solve contemporary construction problems, explore concepts of prefabrication, and provide greater flexibility in spatial planning and family living conditions. As investigations of these issues, they are unique in the history of early twentieth-century American residential architecture.

NOTES

1. This black trim possibly related to Frank Lloyd Wright's prairie houses' wood trim (Ward W. Willits's House was but a few miles from Miralago). It was also similar to the trim used by Le Corbusier and J. J. P. Oud on their Weissenhof projects at Stuttgart, 1927.
2. Stuart E. Cohen and Stanley Tigerman, *Chicago Architects* (Chicago: Swallow Press, 1976), 20.
3. "Miralago in No Man's Land," *Western Architect* 38 (November 1939): 205–206. Insurance litigation went on until 1938; correspondence file, "Miralago," M73–26, Box 7, State Historical Society of Wisconsin (SHSW), Madison.
4. George Fred Keck, President and Partner of Century Homes, not Incorporated, submitted preliminary drawings of the House of Tomorrow to the Director of the Fair Exhibits during February 1933. A building permit was issued on 17 March 1933. Dates on the drawings are 6 February; 6, 13, 21 March; and 6 April 1933. The House of Tomorrow was constructed by Ralph Nichols, a Chicago contractor. Operators of the House of Tomorrow in 1933 were Hicks, Wansley, Ottley, and Blietz. Contractually there were three partners in Century Homes, not Incorporated in 1933: Esther F. Schnell, 42.5%; Martha C. Maxwell, 42.5%; and G. F. Keck, 15%. From an audit report (31 December 1933) the three partners shared in a net profit after expenses of \$30,852.86. The cost of building the House of Tomorrow had been \$4,211.45. "A Century of Progress International Exposition Papers: 1923–35," University of Illinois-Circle Campus, file 1-8587 and 1-8588; "George Fred Keck," file 10-535; and correspondence file, "House of Tomorrow," M73-26, Box 4, SHSW.
5. Colin Rowe, "Chicago Frame," *Architectural Review* 120 (November 1956): 285–289.
6. David Ibata, "World's Fair Homes of 1933 Proved Fairly Prophetic," *Chicago Tribune*, 1 August 1982, section 14, n.p.; *Sixty Years on the Arts Club Stage: Sixtieth Anniversary Catalogue* (Chicago, 1975), 8–9; Cohen and Tigerman, *Chicago Architects*, 24.
7. Cohen and Tigerman, *Chicago Architects*, 22.
8. *House of Tomorrow, America's First Glass House* (Chicago: Century of Progress Exhibition Commission pamphlet, 1933); Edith Weigle, "Furniture for the Interior Ultra-Modern in its Design," *Chicago Tribune*, 11 June 1933, part 6, 5; Louise Bargelt, "House of Tomorrow at Century of Progress Has Walls of Glass," *Chicago Tribune*, 11 June 1933, part 6, 5; "A Century of Progress International Exposition Papers: 1923–35," University of Illinois, Circle Campus, file 15-150, "G. F. Keck."
9. Leland Atwood studied at the University of Michigan in the College of Engineering and Architecture (1919–22). Without finishing his architectural degree he joined the firm of Cowles and Mutsheller in Saginaw, Michigan as draftsman and designer. Atwood then worked with Russel S. Wolcott, Chicago (1924–28). In 1928, Wolcott formed a partnership with Robert Work, where Atwood continued his association as draftsman/designer until March 1933. Atwood began working for Keck in 1933. From 1936 to 1939, he worked as draftsman, writer of specifications, and building superintendent for D'Arcy Company, Evanston, Illinois. From February 1942 to December 1944, he was an engineer for the American Steel Foundries, Cast Armor Plant, East Chicago, Indiana. In 1946, he headed a program producing cast concrete practice bombs for the Air Force and T-6 pontoons for the Navy (Wailes Bageman Company, Los Angeles, California). From 1946 to June 1948, he was an engineer for the S. Healy Company of Chicago and Detroit, which designed and constructed sewers. Atwood formed a partnership (June 1948–52) with Bertrand Goldberg—Atwood and Goldberg, Chicago—designing office buildings, residences, and remodelings. Atwood learned in 1951 that all members of an architectural partnership must be registered with the State of Illinois. Since he was not registered and was unable to obtain his registration, he left Goldberg in 1952 to work in Birmingham, Michigan. He worked as an engineer and manager of a building materials and construction business owned by Bill Favorite. In 1954 he joined a young Birmingham architect, Bill Kapp. He died in 1956. Taken from Atwood's 1951 curriculum vitae that was sent to the Superintendent of Registration, Department of Registration and Education, Springfield, Illinois as part of his application for an architectural license. "Wolcott and Work," Architectural Drawing Archives, Chicago Historical Society, Chicago, Illinois; correspondence with Caleb S. Atwood, July 1985; and interview with Harriet B. Atwood, 2 June 1985. A drawing for a bedroom dressing table and a living room table are each signed by Leland Atwood. The lettering is the same as that on all the other furniture designs for both the House of Tomorrow and the Crystal House. Correspondence with William Keck, 4 June 1986; correspondence with Caleb S. Atwood, July 1985; original drawings in the collection of Caleb S. Atwood; and architectural drawings of Fred Keck, projects 175 and 183, vaults of SHSW.
10. Keck worked with Paul Schweikher in 1932 on the Chicago Housing Project (see page 53) that was similar to Mies van der Rohe's apartment block for the Weissenhof Siedlung, Stuttgart, 1927, which Schweikher had seen in 1929. It was to be built with prefabricated materials on a structural steel frame and was sited to use passive solar heat. He later worked with Schweikher, Theodore W. Lamb, and Winston Elting on a Federal Works Agency Project for the Defense Housing Corporation (November 1941–October 1943). "A Chicago Housing Project," *Architectural Record* 73 (March 1933): 159–163; *Architecture in Context, the Avant-Garde in Chicago's Suburbs* (Chicago: Graham Foundation and the Art Institute of Chicago, 1984); correspondence files, "Defense Housing Corporation," M73-26, box 2, SHSW; Robert Boyce, *George Fred Keck: Midwest Architect*, (diss., University of Wisconsin, 1986); Betty Blum, "A Regale of Tales," *Inland Architect* (November/December 1984): 36–41; correspondence with Paul Schweikher, 6 August 1985.
11. Correspondence with Harriet Atwood, 20 August 1984. An original drawing for the "Dymaxion House" signed by Atwood is in the collection of his son

- Caleb Spalding Atwood, Houston, Texas; interview with Harriet Atwood, 2 June 1985; Blum, "Regale of Tales," 36; correspondence with Caleb S. Atwood, July 1985.
12. Sharon Darling, *Chicago Furniture, Art, Craft, and Industry, 1933-83*, (New York: W. W. Norton and Co., 1984), 282; Dorothy Schweikher introduced Leland Atwood in 1933 to Harriet Balding, whom he married in February 1934; she had dated William Keck. Interview with Harriet Atwood, 2 June 1985; correspondence with Paul Schweikher, 6 August 1985.
 13. Paul Schweikher discussed working as chief designer for Philip Maher. A similar relationship existed between Keck and Atwood. Blum, "Regale of Tales," 38.
 14. Tapp, DeWilde and Wallace, (1920-35) sold ready-made contemporary designs through the Merchandise Mart (1932-42) but would execute custom designs for architects and decorators. Formal drawings for some of the furnishings for the House of Tomorrow (a card table of chrome-plated metal, wood, and glass; a lounge chair; details of a bench, beds, dressing table, cabinets, dining room table, and other chairs; and a chrome and wood tea cart) are in the vaults of the SHSW. None of the drawings are signed or initialed. Darling, *Chicago Furniture*, 284; correspondence files, "The House of Tomorrow," M73-26, SHSW.
 15. "Century of Progress International Exposition Papers: 1923-35," University of Illinois, Circle Campus, files 1-8586, 1-8588, and 10-13336; Louise Bargelt, "Glass and Steel House of Future Erected at Fair," *Chicago Tribune*, 8 July 1934, part 6, 6.
 16. Cohen and Tigerman, *Chicago Architects*, 22.
 17. "George Fred Keck: 1895-1980," *Progressive Architecture* 62 (February 1981): 22.
 18. Dorothy Raley, *A Century of Progress: Homes and Furnishings* (Chicago: M. A. Ring, Co., 1934), 35.
 19. "Welded Framework for the Crystal House," *The Welding Engineer* 19 (June 1934): 15-16.
 20. Ibid.; correspondence files, "Crystal House," M73-26, Box 2, SHSW; Bargelt, "Glass and Steel House," 6; "A Century of Progress International Exposition Papers: 1923-35," University of Illinois, Circle Campus, file 15-150.
 21. Robert B. Tague, *Keck on Architecture* (Colorado Springs, Colorado: Colorado Springs Fine Arts Center, 1947), 8.
 22. By 1935, Keck had developed and installed such blinds in at least five houses: Herbert Bruning, project number 195, 1935; W. H. Fricker, 206, 1936; Bertram J. Cahn, 213, 1936; Keck, Gottschalk, Keck apartment, 216, 1936; and Williard Bellack, 221, 1937. Air pollution, however, destroyed the metal clips and made the blinds inoperable. Interview with William Keck and correspondence files, M73-26, SHSW.
 23. In a number of drawings, Keck and Atwood adapted Mies van der Rohe's perspective methods. None of the furniture drawings is signed but a few are dated—30 April, 3 May, and 8 May 1934. Correspondence files, M73-26, "Crystal House," and vaults, SHSW. At the end of the fair in 1934, the Kecks used many of the furnishings in their apartment and office. These pieces were given to the Elvehm Art Museum, Madison, Wisconsin, at Lucile Keck's death in 1984. "World's Fair Notes," *Chicago Tribune*, 30 July 1934, 8.
 24. Raley, *A Century of Progress*, 36.
 25. Ibid., 37.
 26. Henry-Russell Hitchcock, Jr. and Philip Johnson, *The International Style: Architecture Since 1922* (New York: W. W. Norton & Co., 1932), 13.
 27. Taken from three undated publicity statements written by Keck, Atwood, and Lydia Allison. Correspondence file, "Crystal House," M73-26, Box 2, SHSW.
 28. Interview and correspondence with Harriet Atwood, 20 August 1984; 8 October 1984; 2 June 1985; architectural drawings in the vaults, SHSW, Madison; and vitae of Leland Atwood.
 29. "World's Fair Building Saved," *Chicago Sun Times*, 3 February 1980, 64.
 30. Modern Homes requested extra time to remove and sell the property for the benefit of its creditors (letter from lawyers Vose and Lind to the Fair Commission, 9 January 1935); "A Century of Progress International Exposition Papers: 1923-35," University of Illinois, Circle Campus, file 1-8586.
 31. At the same time parts of the exhibition were also seen at Chicago's Walden Galleries. Works by Howard Fisher, Hamilton Beatty, and a William Keck model of a Fred Keck eight-room house were included in this exhibition of Middle Western Architects.
 32. "Architects' Show Shuns the Ornate," *New York Times*, 11 April 1933, 17. In a telegram to Fred Keck (22 March 1933), Philip Johnson said, "Your model arrived. I want to thank you not only on the good model but the beautiful architecture. Please accept my thanks also for your part in organizing such a successful exhibition." From a scrapbook in the Keck office, and "A Chicago Housing Project," *Architectural Record* 73 (March 1933): 159-163.
 33. Miles L. Colean, *American Housing: Problems and Prospects* (New York: Twentieth Century Fund Housing Committee, 1944), 407; Carl W. Condit, *Chicago 1930-70: Building, Planning, and Urban Technology* (Chicago: University of Chicago Press, 1974), 286.
 34. Allon Fordyce and William Hamby, "Small Houses for Civilized Americans," *Architectural Forum* 64 (January 1936): 22; "Money for Modern," *Architectural Forum* 65 (June 1937): 72, 74.

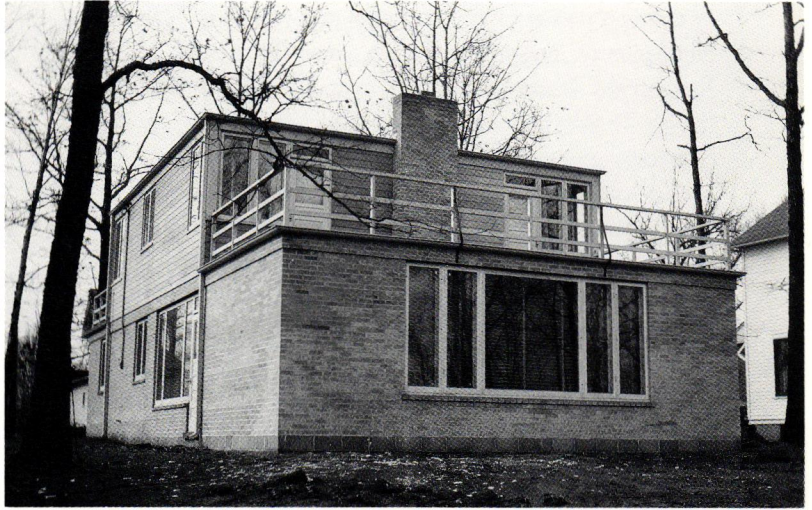
6

KECK'S ART DECO AND ART MODERNE RESIDENCES

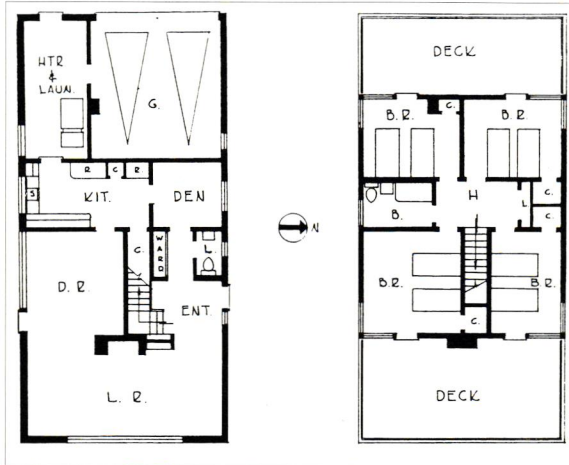
Fred Keck's progressive House of Tomorrow and aesthetically avant-garde Crystal House attracted a number of wealthy clients to the Keck practice. In the fall of 1933, the architect designed two inexpensive homes—one for his brother-in-law Dr. Albert B. Leigh of Kaukauna, Wisconsin (figs. 65, 66) and the other for James D. Peterson of Wilmette, Illinois.¹ Both had compact, efficient floor plans and simple cubic silhouettes. In these buildings, Keck used flat roofs, white stuccoed brick, and roof decks enclosed by welded pipe-rails. In form, the two small houses broke from the style of Keck's Century of Progress structures and were instead akin to the International Style favored by Henry-Russell Hitchcock and seen in the Century of Progress Masonite House and General Houses Steel House.

Keck's mastery of International Style and Art Deco were developed in his residential designs from 1936–39,² as in the Herbert Bruning House, Wilmette, Illinois (fig. 67).³ Keck was given complete control of the project from plot plan to curtain fabric choices. He designed the house, superintended its construction, and was assisted in its completion by his two draftsmen, William Keck and Robert Bruce Tague. The clients, a family of five, required accommodation for two guests, two servants, and two cars. They wanted the finished structure "to be of such a character that the children would not be ashamed of it when they reached the age of reason—*i.e.*, that it be simple, permanent and economically maintained."⁴ A welded Stransteel frame carried light Truscon steel floor decking covered with lightweight concrete. The house had Goodyear rubber floors, hung ceilings of either plaster or acoustical tile, and interior surfaces of plaster or rare wood veneer over a metal lath. Its exterior curtain walls were finished in reinforced cement stucco with lead-coated copper flashing; thermal insulation and sound-proofing were provided by walls filled with

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65 Dr. Albert B. Leigh House, Kaukauna, WI, 1933
66 Leigh House, plan

mineral wool; and zoned air conditioning served the entire house. To lighten the summer cooling load, Keck designed a flat concrete slab roof to carry a thin sheet of water. In hot weather the roof would help cool the house by evaporation. Additional climate control was achieved by a custom-designed window unit incorporating chain-activated external Venetian blinds, storm and regular sash, and interior curtains (fig. 68).

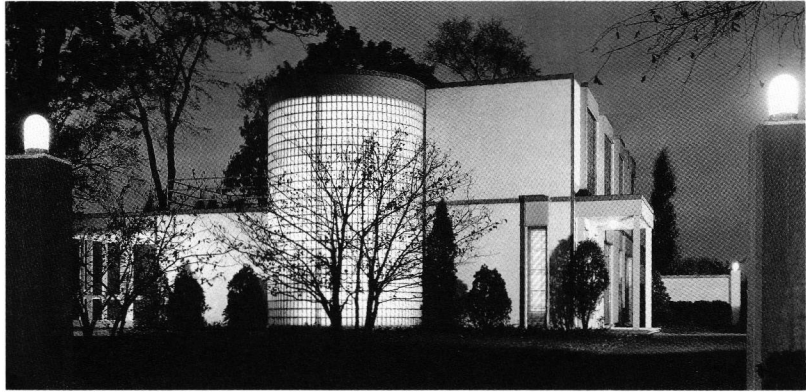
The house was carefully sited. Keck made a series of detailed studies of the sun's path and its angle of illumination on the property for the twenty-first day of four months: December, March, June, and September (fig. 69). To take advantage of the sun and yard, the house was placed in a north-south line on the southeastern corner of the lot. Major living areas had north-west orientation and easy access to the yard, roof deck, screened porch, or paved terraces. A two-story, glass-enclosed stairwell illuminated the south wall of the house.

Bruning's Art Deco and Moderne furnishings were designed by Keck and manufactured by Tapp, Inc. The wooden furniture included curly mahogany upholstered in mohair or leather, natural ebony upholstered in natural wool, plane tree burl with white leather, and French burry oak and natural Carpathian elm burl in blue leather. "The library couch had automobile type arms which, when not in use, folded snugly into the back" and the curtains were raw silk. The graceful curved stair in its Moderne glass-block tower (fig. 70) was a "monolith of reinforced black terrazzo poured and polished in place."⁵

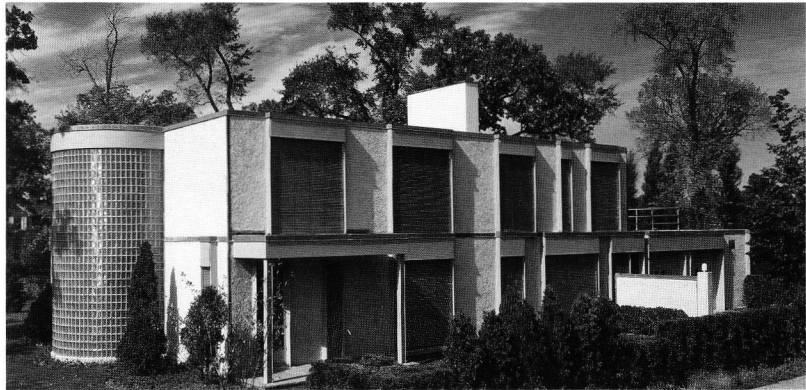
The Bruning House, with its white stucco planes, crisp, sharp copper edges, and translucent glass curves, signalled a radical break from Keck's earlier English and French style projects for Bills' Realty in the same subdivision. The Bruning plan conveniently and efficiently integrated leisure, recreation, sleeping, and service. If its modern design was a shock to neighbors living in revivalist and eclectic European style houses, it was nonetheless in line with other local progressive architecture, particularly that of Chicago architect Andrew Rebori. Like the Crystal House, Keck's Bruning House was a fine essay in American International Style.

During his tour of duty in France, Keck observed operable external metal and wood shutters, which later served as inspiration for his design of external

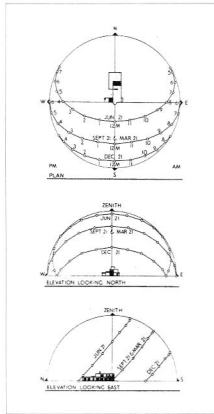
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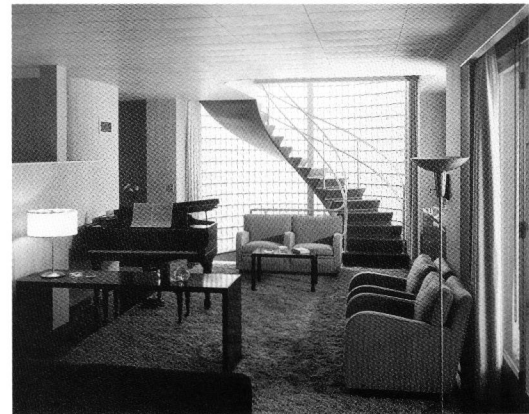
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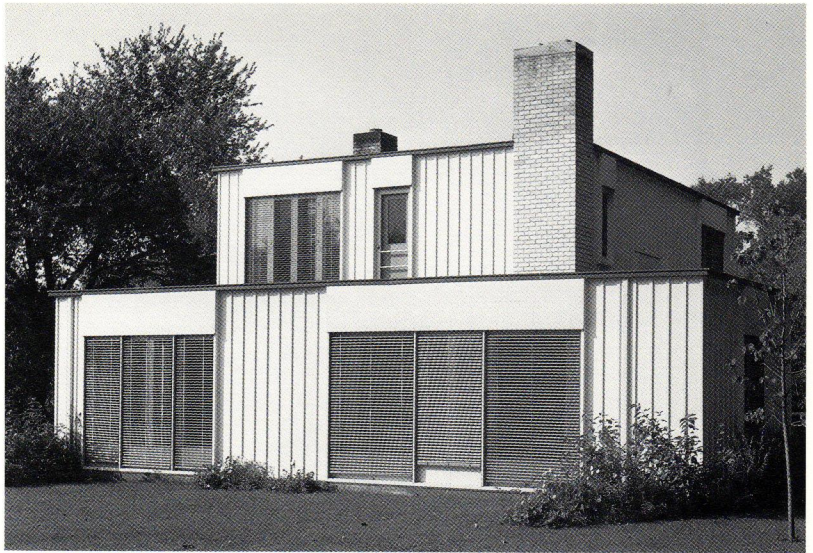
- 67** Herbert Bruning House, Wilmette, IL, 1935–36
- 68** Bruning House, view from the east
- 69** Bruning House, solar studies
- 70** Bruning House, interior view toward stair

blinds. In 1935, working with the National Lock Company, Keck developed an experimental external aluminum Venetian blind for solar protection. The product was manufactured by Chain Tape Venetian Blind Company, Rockford, Illinois. This Venetian blind was used not only in the Bruning project, but also in the Bellack House (fig. 72), the Fricker House (fig. 71), the Cahn House, and the Keck, Gottschalk, Keck Apartment. The blinds had a cubic pocket box housing at roof or ceiling level covered by a removable fascia plate to expedite servicing. Installed in a track, the blinds were raised or lowered by a metal bead chain and opened or closed by a worm gear operated from the interior.

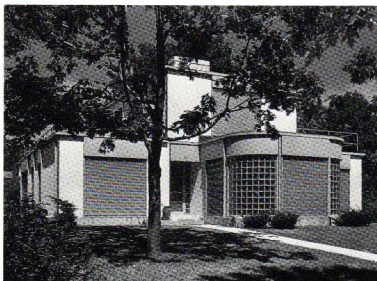
Fourteen summer houses and small brick houses were designed between the Bruning project and Keck's next stylistically important commission, the Morehouse House (fig. 73). In the spring of 1936 Keck began a house for his wife's college friend Anna Ely Morehouse and her husband Edward W. Morehouse, a progressive economics professor at the University of Wisconsin, Madison.⁶ Keck's three-story terraced design took advantage of its site, a steeply sloping and irregularly shaped lot in eyesight of Anna Morehouse's family home and Frank Lloyd Wright's E. A. Gilmore House (1908). Its silhouette was reminiscent of the House of Tomorrow, and its front facade borrowed elements from the Bruning House. Instead of Bruning's pure white surface, Morehouse had dark narrow wood strips set against white stucco (a detail first seen at the Miralago Ballroom) and a reentrant corner detail akin to Mies's later steel-frame details at Illinois Institute of Technology (fig. 74).⁷ The Morehouse House's wood stud construction with stucco surfaces combined traditional American carpentry practices with European constructivist and de Stijl architectural vocabularies to create an individual expression of the International Style.

Numerous drawings of the Morehouse House and its architectural specifications reveal Keck's comprehensive design including furnishings, lighting fixtures, desks, and book cases.⁸ Floor finishes were oak, walls plaster over metal lath, cabinetwork and trim light birch, and the brick fireplace was painted white. Although Keck proposed steel-paneled casement windows and external, pocketed, Venetian blinds, Anna

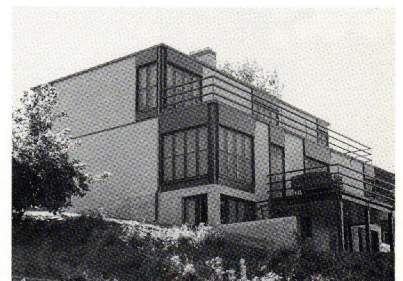
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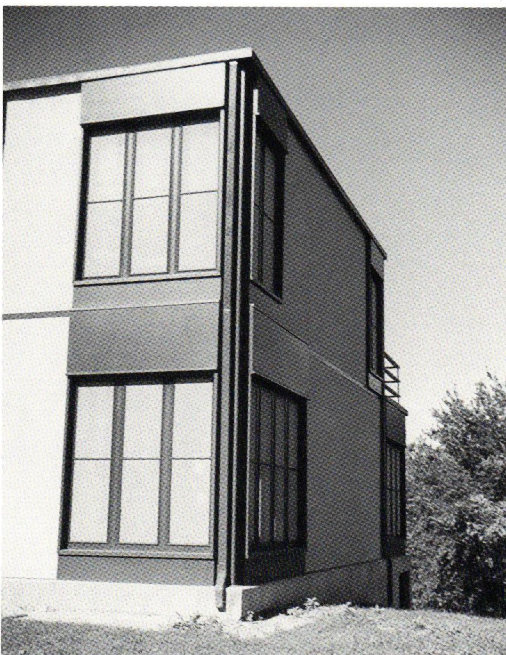
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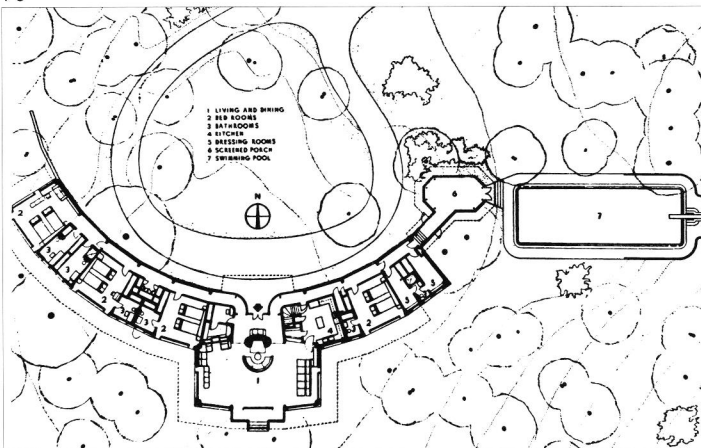
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- 71 William Fricker House, Whitewater, WI, 1936
- 72 Willard Bellack House, Neenah, WI, 1937
- 73 Edward W. Morehouse House, Madison, WI, 1936
- 74 Morehouse House, reentrant corner



75 Bertram J. Cahn
House, Lake Forest, IL,
1936
76 Cahn House, plan

Morehouse insisted on double-hung sash windows. As blinds were never installed their storage pockets create the reentrant corners.

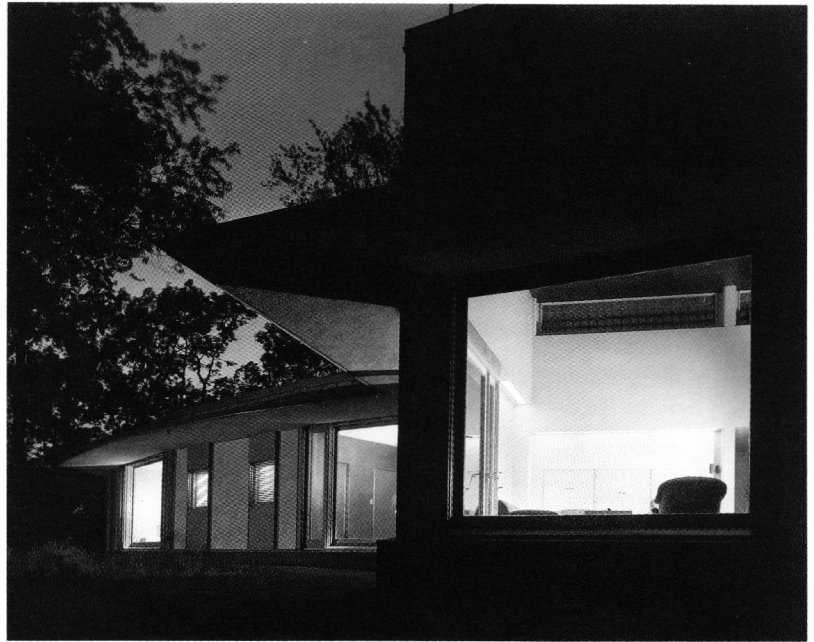
Keck designed Bertram and Irma Cahn's house in Lake Forest, Illinois, during the construction phase of the Bruning and Morehouse residences. Mrs. Cahn, heir to the Kuppenheimer clothier fortune, had seen the House of Tomorrow and asked Keck for

*a house for the day after tomorrow. She wanted a contemporary house suited to her property, convenience, and comfort; a house that could be closed in a few minutes, with nothing in it that would deteriorate while it was unoccupied, and could be opened as quickly; a house to be practically servant-less for present day informal living.*⁹

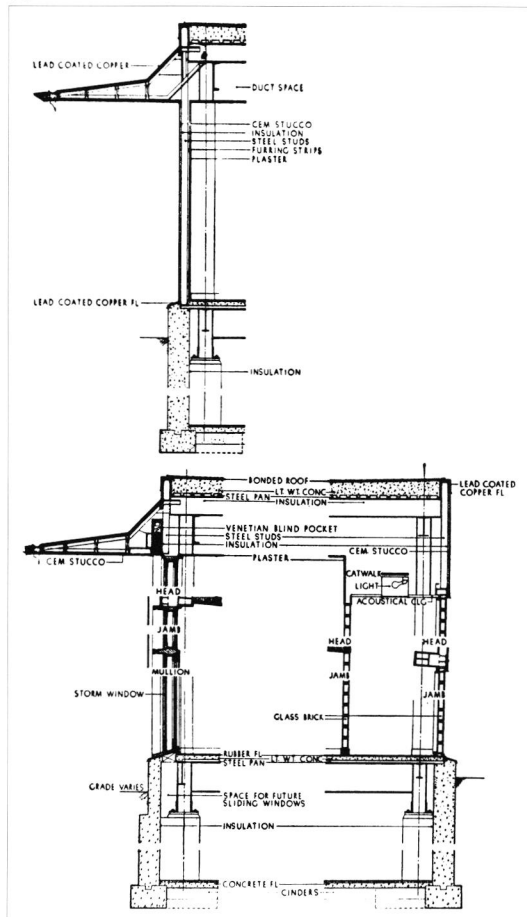
Keck laid out a crescent-shaped house (figs. 75, 76) to give a full southern view of the park lands on Cahn's thirty-acre site, which had been cleared of the existing Kuppenheimer House.¹⁰ The plan of the steel-frame structure afforded privacy to the bedroom wing and pool wing. A circular drive to the north gave access to a concave white stucco facade punctured by large expanses of glass brick. Operable metal-framed plate glass (which could be electronically dropped into the basement) was planned to cover the south, east, and west exposures of the house.¹¹ These walls generously lit the house and afforded broad views of the rising and setting sun. To control solar heat gain generated by black rubber floors, Keck added expansive projecting eaves and external, chain-driven, Venetian blinds (figs. 77, 78).¹² In winter, sunlight penetrated into the north wall of the house, but in summer the eaves prevented the sun from overheating the interior. To help regulate the internal temperature, both a forced hot-water and a split forced-air system were installed, "one to keep the house just above freezing when unoccupied, the other a year-round air conditioning system for use when occupied."¹³

Irma Cahn walked with a limp (the result of a childhood riding accident) and so she specified a carpet and rug-free design to avoid tripping.¹⁴ As she was also a heavy smoker, her husband requested as fire-proof a house as possible. Keck designed furnishings with built-in ash trays as a preventive measure and, like the built-in beds, laminated them with aluminum. Cabinetwork and storage units were also built in. The

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77 Cahn House,
view from southeast

78 Cahn House,
wall section

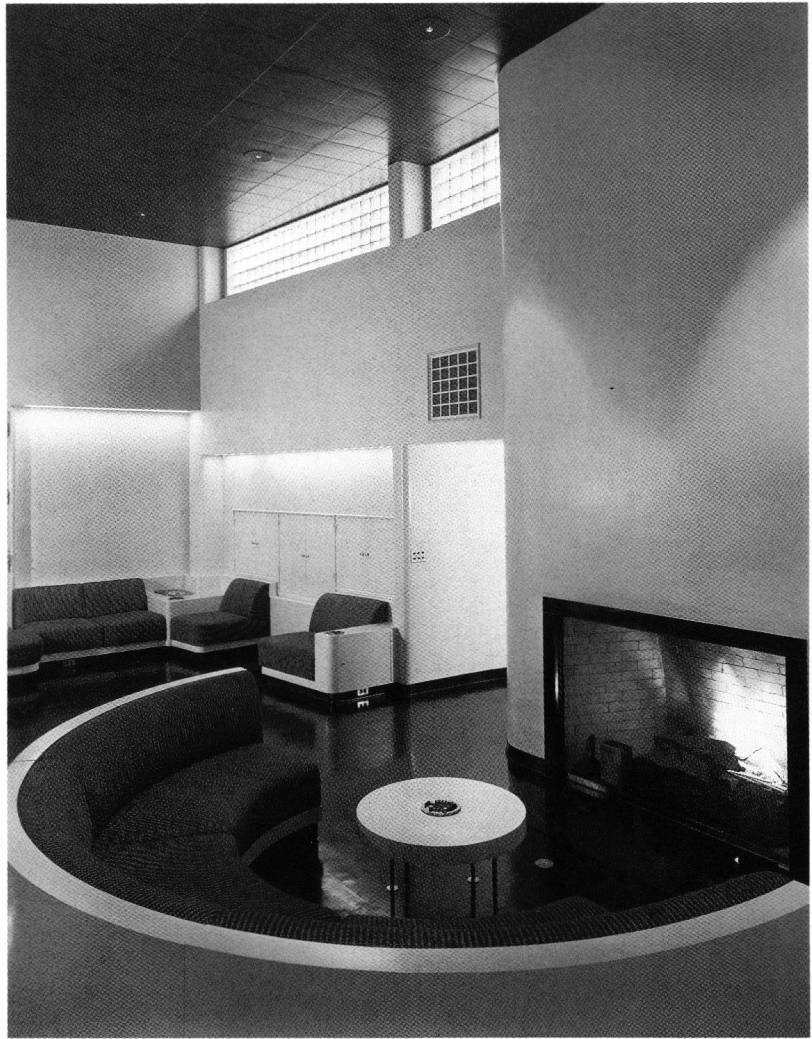
high-ceilinged living/dining room had a north-facing glass brick clerestory, eighteen recessed pinhole ceiling lights, and dark blue acoustical ceiling tiles to absorb sound (figs. 79–81). Walls and some furniture were painted bright yellow; aluminum chairs and couches were upholstered in either yellow fabric or in blue jute woven with leather. The master bedroom walls were intense green. Cahn said:

*We like the house because it is spacious, colorful, bright, restful, and in harmony with the surrounding landscape, and because it is a home....since it affords the fullest amount of comfort and contentment, it has made our way of living simpler, easier, and more responsive to our demands. It requires no effort in house keeping.*¹⁵

In 1939 Margaret Southwick, Language Arts Director of the Gary, Indiana public schools, had Keck design a modest split-level house of white painted concrete block at Ogden Dunes, Indiana (figs. 82, 83).¹⁶ An 11.5-foot ceiling extended over two-thirds of the ground area to include the living room, kitchen, study, and stair. This created a feeling of spaciousness in a very small house and helped cool it in the summer. Colored glass was used to transform the light; transparent blue plate served as the ceiling in the kitchen, and fixed peach-colored glass (that only the winter sun reached) filled the upper part of the southern living-room wall. Projecting eaves sheltered the walls and reduced glare on this steep-sloped, lake-view house.¹⁷

During the same year B. Lamar Johnson, a librarian at Stevens College, Columbia, Missouri, commissioned a house of similar materials (figs. 84–90).¹⁸ As part of a thorough research of contemporary architects, Johnson and his wife visited Keck's office during the summer of 1938. After seeing the Cahn and Southwick houses, among others, the couple hired Keck. In a move that would later become an integral part of his working method, Keck visited the Johnson family at home to observe their daily routines. The live-in "sociological study," a careful site visit, and many "need and want lists" provided Keck with the information he needed to design a house to meet the particular specifications of the family. The Johnsons entertained faculty and students, were interested in modern design, and wanted their home to be a model for the college community. The building faced south to incorporate Keck's solar

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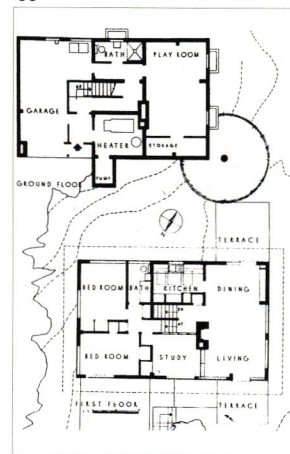
79 Cahn House,
interior view toward
entrance
80 Cahn House,
bedroom



82



83



81 Cahn House,
living room
82 Margaret Southwick House, Ogden
Dunes, IN, 1939
83 Southwick House,
plan

developments. The faceted curve of the block structure “followed roughly the contour lines of the property [a sloping wooded site overlooking a ravine]...and offered great possibilities for the play of sunlight on the house with changing shadows as the day progressed.”¹⁹ The many southern windows (fixed plate and transom) had low-set slots to draw cold air into the forced-air heating system (fig. 90), a technique adopted from the House of Tomorrow and the Crystal House. A one-inch-deep pan with peripheral parapets and ground-controlled spigot provided a pool of water on the roof that, through evaporation and reflection, helped cool the house in the summer (fig. 89).²⁰ Abundant trees made eaves unnecessary. A clerestory—monitor provided light and ventilation to the centralized kitchen.

Marianne Willis assisted with the interior decoration, which had the same intense Art Deco colors as those of the Cahn House. The plastered walls and ceilings were white except for the aquamarine blue and gray of the living, recreation, and dining rooms. The Johnsons wanted as much contemporary furniture as their budget would allow. Keck and Willis chose Masonite furniture by Design Research for the dining room and lamps and lighting fixtures of Keck’s own design. The architect’s built-ins appeared in the bedrooms and living room (fig. 88).

While Keck worked on the Johnson House he was actively involved with Laszlo Moholy-Nagy in the formation of the New Bauhaus. Around the same time, Johnson invited him to give a talk on modern architecture at Stevens College, which Keck supplemented with an exhibition of his latest projects, including the Cahn and Bruning houses.²¹

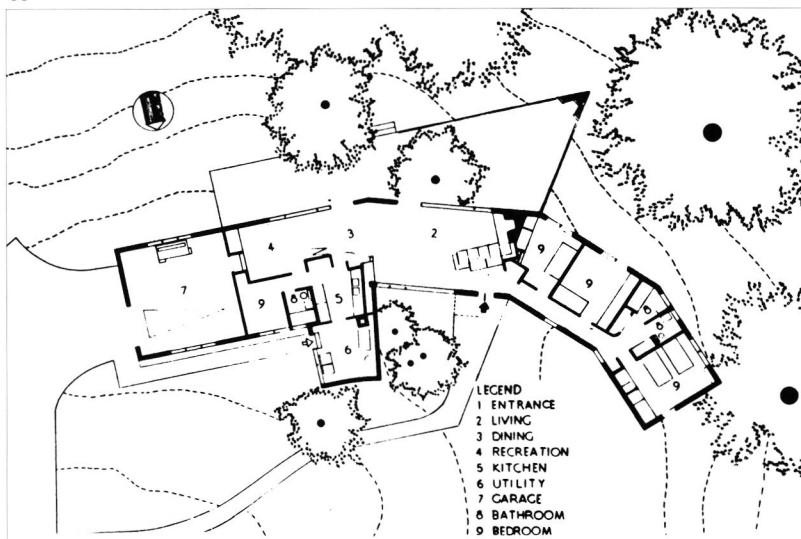
Keck’s last major 1930s residential commission was a three-unit apartment dwelling, the Keck, Gottschalk, Keck Apartment (figs. 91–97). From the rear garden the building’s affinity to the House of Tomorrow (fig. 43) and the Morehouse House (fig. 73) was readily apparent. Aesthetically linked to the International Style, this 1937 project

was cooperatively owned by the architect, his brother William, and a third party [Professor Louis Gottschalk] who gained in economy and convenience by pooling their resources to build three dwelling units within a single building, and putting

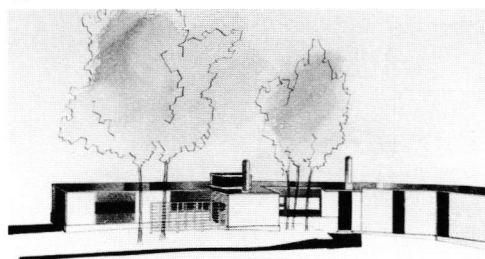
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84 B. Lamar Johnson House, Columbia, MO, 1938

85 Johnson House, plan

86 Johnson House, rendering

87 Johnson House, view from northeast

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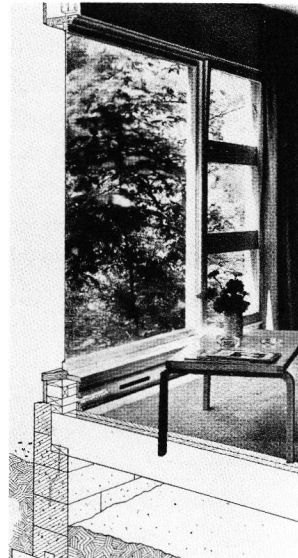




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88 Johnson House, living room with built-ins
 89 Johnson House, roof with layer of water
 90 Johnson House, montage of interior and heating system

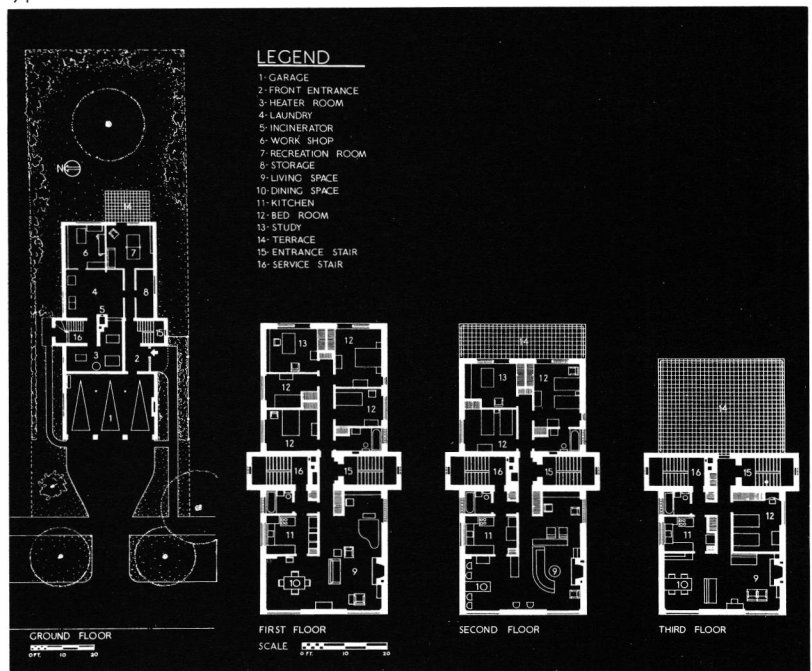
three units on one conveniently located piece of relatively high-priced land [University of Chicago campus, University Avenue] rather than placing houses on three less costly—but less convenient—lots.²²

The four-story structure had load-bearing walls that rose virtually uninterrupted to the roof (figs. 91, 92). The choice of richly colored but inexpensive red-orange brick complemented neighboring residences and insured a low-maintenance exterior. The front facade had a tripartite composition: two glazed vertical zones were separated by a vertical brick surface of similar width. The glass planes were divided horizontally by black painted wood fascias, which concealed pockets for external aluminum Venetian blinds. Because of airborne pollutants and acids, the blind's steel mounting clips corroded and created a constant maintenance problem; Keck was forced to replace the vertically adjustable devices with permanently attached exterior jalousies. These were also operated from the interior, but their slats could never be fully removed from view. The front and back step-terraced facades both had specially designed wood transom window units that opened inward.²³

A three-car garage, laundry room, workshop, and communal recreation room occupied the ground floor. Fred and William Keck had third- and fourth-floor apartments with small garden terraces. Built-ins were incorporated in all three apartments, but Fred and Lucile Keck furnished their apartment with pieces from the House of Tomorrow (figs. 93, 94, 96, 97). Keck originally planned the complex

so that without structural alteration the first and second [apartments] could each be altered to make two small flats, one either side of the staircase block and another flat provided in the rear of the ground floor....Each of the two halves of the large [apartments] already contained a bathroom, and the centrally placed staircase block would provide complete acoustic insulation between the two flats.²⁴

The houses described in this chapter, including the Keck, Gottschalk, Keck Apartment, testify to Keck's preoccupation with European avant-garde architecture. These residences relied on industrial products, which lent them a machined appearance. Like his



91 Keck, Gottschalk, Keck Apartment, Chicago, IL, 1937, plan

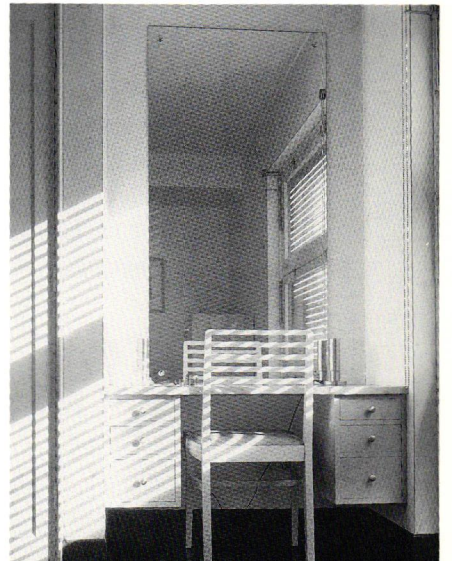
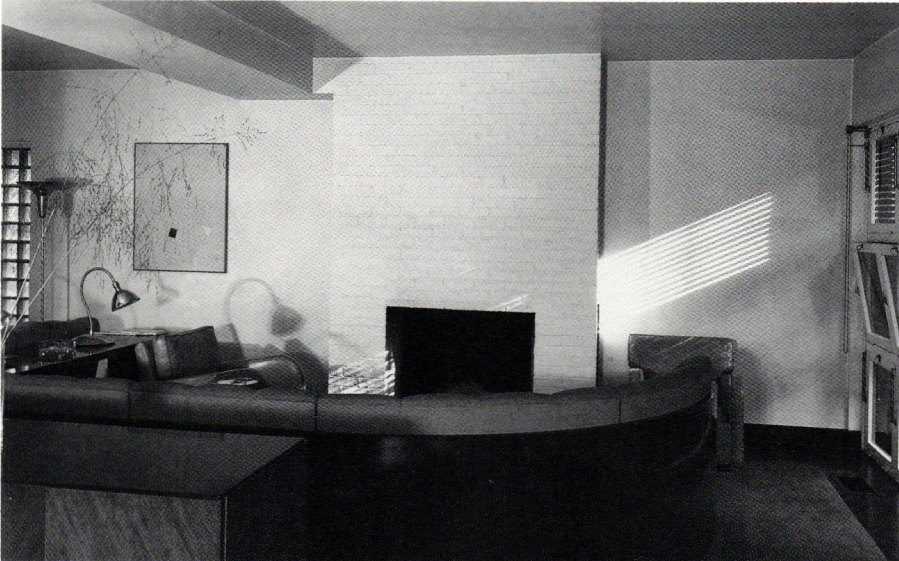
92 Keck, Gottschalk, Keck Apartment, view of northwest corner

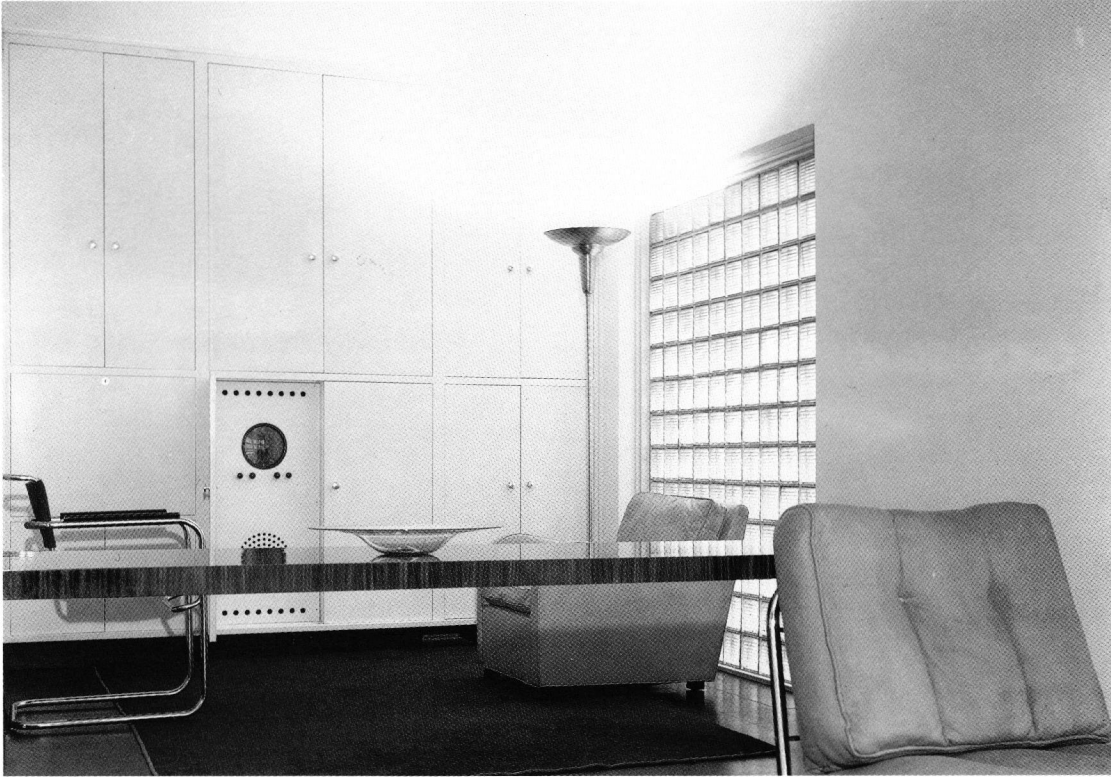
(opposite)

93 Fred Keck Apartment, dining room

94 Fred Keck Apartment, living room

95 William Keck Apartment, built-in dressing table

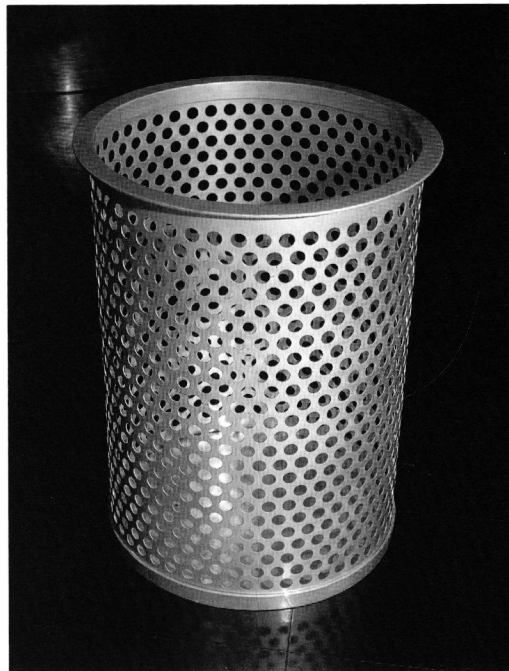




96 Fred Keck Apartment, view from living room toward library with radio phonograph
97 Fred Keck Apartment, aluminum waste basket

contemporaries, Keck was searching for a means to produce stylistically potent, low-cost housing for an economically depressed market.

During the forties, Keck's extensive experimentation, observation, and study of passive solar heating and prefabrication provided him with a strategy for approaching the private house that would last him twenty-five years. In later work, Keck would abandon the stylistic traits of these early designs—volumes influenced by German housing, intensified saturated colors of Art Deco, and the curves of Moderne furnishings. The next phase of his career brought materials, colors, and stylistic elements more closely akin to those characterizing Frank Lloyd Wright's Usonian houses.



NOTES

1. Project numbers 178 and 179. No reference to either of these projects exists in the correspondence files; however, the floor plans are in the vaults of the State Historical Society of Wisconsin (SHSW), Madison. Dr. Leigh, Lucile Keck's brother, changed his surname, Liebermann, to overcome anti-Semitism and improve his medical practice. Interview with William Keck, 20 July 1983.
2. It is also at this date when young draftsmen's initials are consistently found on the architectural drawings. Though he never had a large office, Keck employed a few young men, sometimes up to four, to assist with the office drawings.
3. A petition was circulated by the neighbors in 1936 to stop the building's construction. Jeff Dean interview with Fred Keck on 27 October 1974. In 1956, the Kecks designed additions and alterations requested by the new owner, W. B. Morse; correspondence file, "Bruning," project 195, Box 1, M73-26, SHSW.
4. "Architect Stages a One-Man Design Job in Chicago House," *Architectural Record* 83 (February 1938): 32.
5. *Ibid.*, 32-37.
6. During the 1920s, Edward W. Morehouse with his father-in-law, Richard T. Ely, a noted scholar, author, and activist, edited the *Journal of Land and Public Utility Economics* and together wrote *Elements of Land Economics* (1924). Ely was the founder of the Institute for Research in Land Economics and Public Utilities and served as Professor of Political Economy and Director of the School of Economics, Political Science, and History at the University of Wisconsin for thirty-two years. His youngest daughter, Anna, married Edward Morehouse, author of *Development of Industrial Law in the Rochester Clothing Market*, (1923). The Kecks were close friends of the Morehouses; when the house was being built, the two couples spent a day with Frank Lloyd Wright at Taliesin. During the forties and fifties Keck would frequently join Morehouse for a round of golf when he was in or passing through the Madison area.
- Benjamin G. Rader, *The Academic Mind and Reform: The Influence of Richard T. Ely in American Life* (Lexington: University of Kentucky Press, 1966); appointment books, M81-602, SHSW; and interview with William Keck, August 1984.
7. The reentrant corner has been considered one of Mies's major architectural details. He supposedly developed it and first used the detail on his American buildings. However, Keck had already used the reentrant corner by 1936. Stuart Cohen and S. Tigerman, *Chicago Architects* (Chicago: Swallow Press, 1976), 22.
8. Specifications are dated 20 August 1939. Correspondence files, "Morehouse," project 210, Box 6, M73-26, SHSW.
9. "George Fred Keck Architect: House for B. J. Cahn, Lake Forest, Illinois," *Architectural Forum* 71 (July 1939): 13. This is the first house design on which not only G. F. Keck's but also William Keck's and Robert Bruce Tague's initials are found; job folder, project 213, vault, SHSW.
10. Jens Jensen had landscaped the estate for the Kuppenheimers. Jensen had earlier landscaped the estate of Frank Lloyd Wright's Avery Coonley House in River Forest, Illinois. Knowing the work of Jensen and Wright, Keck actively sought organic relationships with his residences, especially when his clients could afford the landscaping he suggested.
11. Unlike Mies van der Rohe's Tugendhat House that had used such windows, the Cahn House never incorporated this part of the project. Keck installed fixed glass instead.
12. Keck had conducted studies of solar paths and greenhouse effects since his observations at the 1933 fair, but in 1940 he and his brother William made use of meteorological readings on winds and sun angles then being conducted exclusively at the University of Chicago weather station. Nory Miller, "Keck at 81, 'Hit of the Show' After 56 Years," *Inland Architect* 20 (May 1976): 8.
13. "House for B. J. Cahn," 13.
14. Kevin Johnson, "The Natural Thing to Do," *Chicago Reader* (27 November 1981): 30.
15. "House for B. J. Cahn," 13.
16. Margaret Southwick and Grace Stafford had previously commissioned Keck to design a cottage overlooking Lake Michigan near Northport, Michigan (1935-36). The cottage had water but no electricity, used a Franklin stove, and was shingled. In 1938, Southwick and her sister, Louise Eberlein commissioned him to remodel their Stevens Point, Wisconsin, nineteenth-century Italianate family home into apartments. Project 236, SHSW; correspondence files, "Coppis," and "Fisher," Box 2, M73-26; and "Southwick," Box 8, M73-26. The drawings are initiated by William Keck and Robert B. Tague.
17. "House in Ogden Dunes, Indiana: George Fred Keck Architect," *Architectural Forum* 72 (April 1940): 249.
18. Correspondence file, "Johnson," project 229, Box 4, M73-26, SHSW. William Keck and Robert Tague also initialed the drawings of this house.
19. Keck letter to Johnson, 12 August 1938; correspondence file, "Johnson." The specifications were dated 4 October 1938 and the family moved in at Easter time, 1939. B. Lamar and Agnes Johnson, "It's Fun to Go Modern," *Parents Magazine* 16 (May 1941): 47, 109-112.
20. Keck used adjustable roof drains and perforated splash boxes for ease of draining or filling during the fall and winter. "Water Cooled Roofs," *Architectural Forum* 84 (June 1946): 165-69.
21. Letter dated 22 April 1938; correspondence file, "Johnson," Box 4, M73-26, SHSW.
22. Robert Bruce Tague, *Keck on Architecture: An Exhibition Organized by the Taylor Museum of the Colorado Springs Fine Arts Center* (Colorado Springs: Colorado Springs Fine Arts Center, 1947), 10. The location was convenient for both Professor Louis Gottschalk and Librarian Lucile Keck for their University of Chicago jobs. Numerous commissions would come to Keck from his University campus contacts, as can be seen in the residential blocks of the area. Vaults of the SHSW.
23. Drawings of the building, its details, and structural additions (1947, 1951, 1952, and 1956) are at the SHSW, project 216.
24. "Flats," *Architectural Review* 88 (December 1940): 175.

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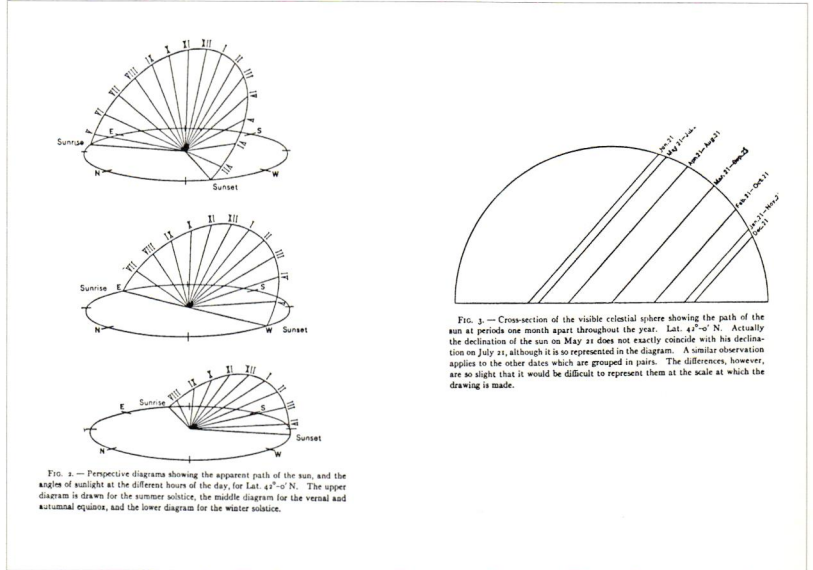
DEVELOPMENT OF A PASSIVE SOLAR HOUSE

In the 1930s an American housing shortage accompanied the Depression. Government agencies, architects, and engineers were pressed to cut construction costs, speed up residential construction, and improve public housing. Renewed interest in an old phenomenon—that heat is absorbed by wall or floor surfaces struck by sunlight—offered a means of reducing energy costs and creating efficient and comfortable living space. A number of studies concerning proper building orientation for solar gain began to appear in European journals. The most influential of these was a study by the Royal Institute of British Architects in 1931–32.¹ “The Institute published a clear, easy-to-follow reference manual on the sun’s daily and seasonal movements and the number of hours a day that its rays would strike windows facing in various directions.”² The Institute also developed a device called a heliodon that helped determine solar exposure on a model of a proposed building.

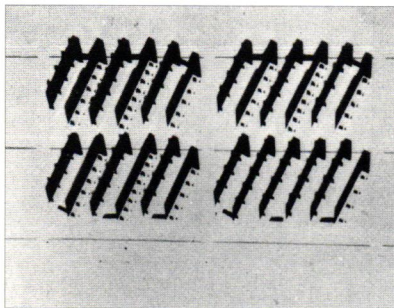
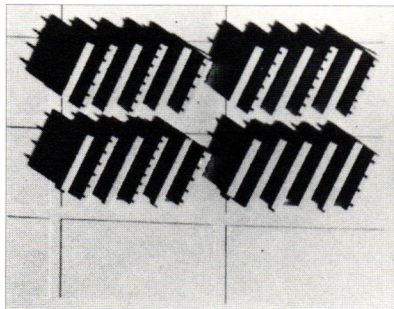
A few American architects, impressed by the Royal Institute’s studies, began to explore the topic of solar design. Architect and urban planner Henry Wright of Columbia University’s School of Architecture was most active in adapting the Institute’s research. His studies in American journals helped persuade other professionals of the importance of solar energy.³ Howard T. Fisher and Paul Schweikher at General Houses, Inc. were also instrumental in bringing RIBA’s work to the attention of American architects. Fisher’s *Architectural Record* article, “A Rapid Method for Determining Sunlight on Buildings,” was partially illustrated with RIBA diagrams and also drew from William Atkinson’s 1912 *The Orientation of Buildings, or Planning for Sunlight* (fig. 98).⁴

When Schweikher and Keck designed the Chicago Housing Project, a model of which was exhibited at A Century of Progress, they began by determining

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98 Solar paths, diagram taken from William Atkinson’s *The Orientation of Buildings or Planning for Sunlight*, 1912

99 Keck and Schweikher, Chicago Housing Project, 1932. Shadows at winter solstice: (above) 9am with sun at 12° altitude, (below) 12am with sun at 23.5° altitude

accurate solar angles for the city at different times of the year. Schweikher and William Keck sought assistance in computing and recording sun angles from the Adler Planetarium and used their research and photographs to insure "uninterrupted sunlight on the buildings over the greatest number of available hours and full sunlight on garden and play spaces at some time of the day."⁵ The alignment and orientation of individual dwelling units also improved air circulation (fig. 99).

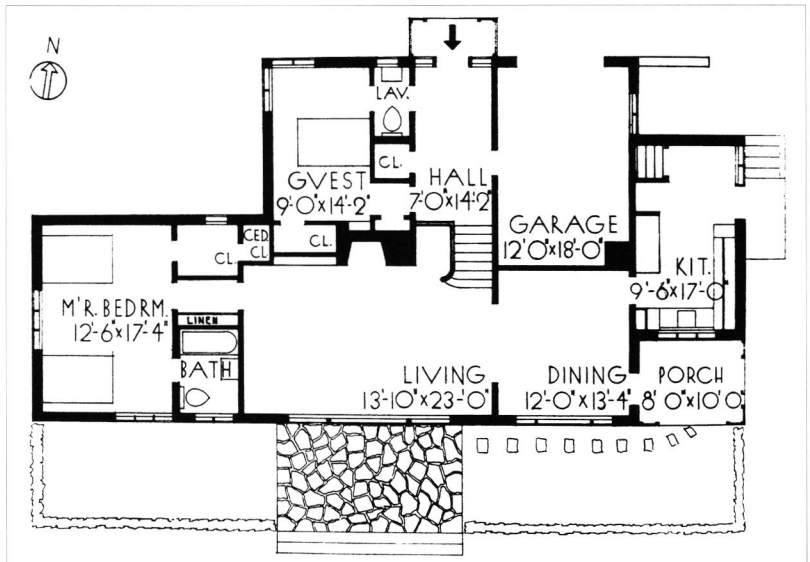
The next step in Keck's solar-influenced design process involved trapping solar heat for energy savings. Relatively inexpensive large sheets of glass, readily available on the market, could be combined with structural steel to support roofs and create window-walls. When the House of Tomorrow—ninety percent glass—was being constructed, Keck noted the project's greenhouse effect; the sunlight illuminating the interior also heated the concrete floor slab, which in turn radiated heat after the sun set. But because the building had extensive areas of uninsulated glass, heat loss was rapid. Keck's observations of this early house greatly influenced his subsequent developments. He was the first American architect to consistently apply solar principles to residential architecture despite opposition to the idea of an all-glass house.

When Keck designed the 1935 E. L. Wilde House in Watertown, Wisconsin, he set it into the rise of a hill and gave its main facade a southern exposure (figs. 100, 101). The street-side north entrance was partially bermed to retard heat loss and buffer winds. Living spaces, on the south side of the house, received maximum sunlight. In later years Keck would cite Socrates on the advantages of solar orientation:

Now in houses with a southern exposure, the sun's rays penetrate the porticos in winter, but in summer, being less inclined, they afford shade. If, then, this is the best arrangement, we should build the south side loftier to get the winter sun, and the north side lower to keep out the cold winds. To put it shortly, the house in which the owner can find a comfortable retreat at all seasons and can store his belongings safely is presumably at once the most pleasant and the most beautiful.⁶

To mitigate the effects of light and heat Keck continued development of an external Venetian blind to provide a visually unobstructive heat barrier. In 1935 Libby-

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100 E. L. Wilde House, Watertown, WI, 1935, plan
101 Wilde House, exterior

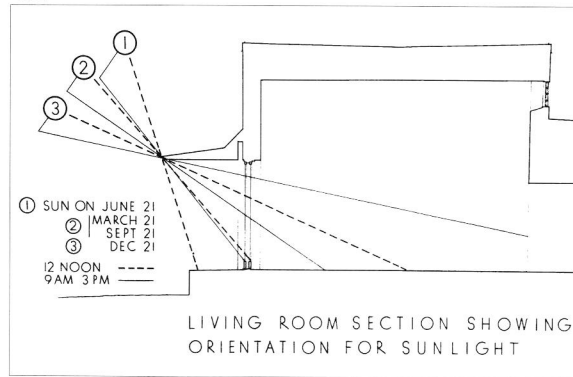
Owens-Ford Glass Company introduced a double-pane glass enabling the manufacture of windows capable of halving the heat loss associated with single-glazed units. Consequently, Keck specified double-glazed windows for his residential projects. But, like the early Venetian blinds, the glass had maintenance problems. When the organic seal between the panes deteriorated the windows fogged and required frequent replacement.⁷

Keck also developed and attached projecting sun screen louvers above windows and extended the roof eaves, design details that accounted for the difference between winter and summer sun angles. One of the first examples of this roof projection can be seen in the Cahn House (fig. 102).

The next major solar design element incorporated by Keck was a shallow roof pool. Although first developed for the Bruning House, its application was more fully thought out in his design for the Johnson House. On these and subsequent houses, a built-up felt and pitch roof topped by gravel carried approximately one inch of water. A spigot and splash pan located above the roof line provided a means to augment rainfall (fig. 89), and drains controlled water depth and winter drainage. Through reflection and evaporation the design reduced solar heat transmission as much as eighty percent.⁸ In summer, the pool became a breeding ground for mosquitoes and algae and required periodic drainage; in winter, if the pool was not properly drained, the contraction and expansion of ice created great booming noises that made it sound as if the house would momentarily implode.

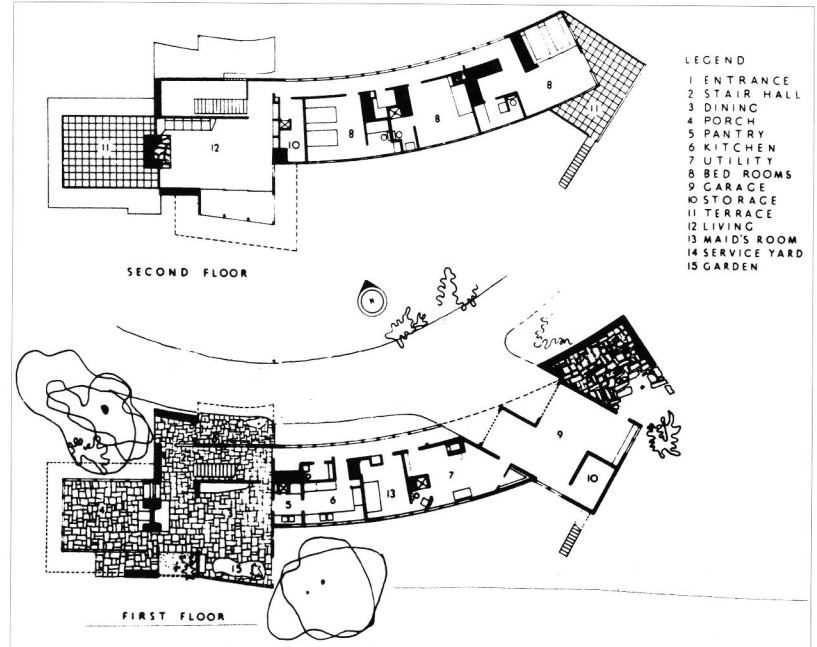
While building the Morehouse House, Keck and the Morehouse couple spent a day with Frank Lloyd Wright at Taliesin. Wright, intrigued by Japanese and Korean radiant floor heating methods, had incorporated copper water pipes in the concrete flooring of his Jacobs House (1937), only across town from the Morehouse site. When hot water was forced through the pipes, the result was an evenly heated, draft-free interior. The ancient method (the principle can be traced back to early Roman architecture) had been revived in 1907 by Arthur Henry Barker, an Englishman who used piped hot water in the walls of churches and houses. Barker's *The Theory and Practice of Heating and Ventilation* (1912) and *Heating and Air Condi-*

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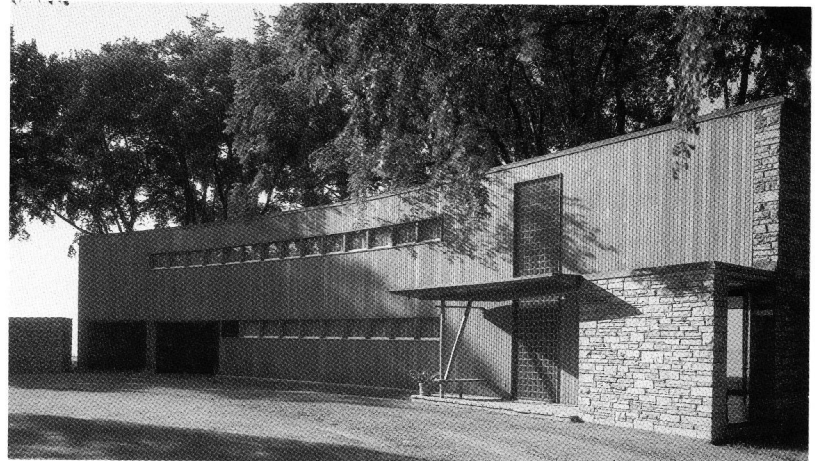


102 Cahn House, diagram of solar paths in summer and winter
103 William Kellett House, Menasha, WI, 1939, plan
104 Kellett House, view towards entrance

103



104



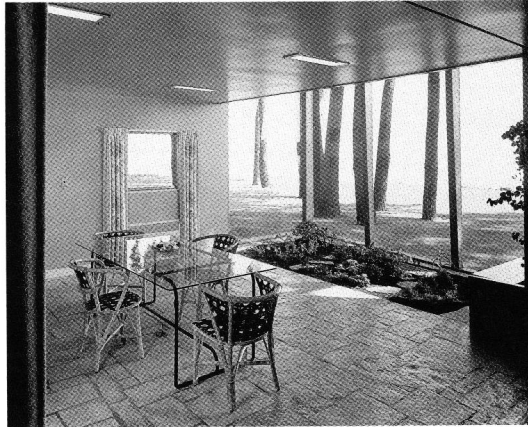
tioning (1932) may have prompted Wright to adopt radiant floor heat.⁹

Keck first applied such a system in the William Kellett House (figs. 103, 104), Menasha, Wisconsin, 1939–40.¹⁰ In November 1939, William Keck wrote General Electric for information on electric panel heating applicable “to a slab laid directly on grade.” The Company responded by suggesting a system similar to the one used by Wright at the S. C. Johnson Administration Building, which had circulating hot-water pipes embedded in the floor slab.¹¹ The Standard Distributing Corporation of Chicago, involved with the Johnson project, took Kellett to Wright’s Jacobs House and the Johnson offices. Keck’s enlightened patron wanted his modern efficient house to include radiant floors and so the Kellett House had copper coils laid in its cement and flagstone main floor slab (figs. 105–107). Kellett, uncertain about the radiant floors, had his plant engineers design a forced hot-water system with base-board radiation for the second floor.

To take advantage of the view of Lake Winnebago and the Fox River, and to preserve the site’s large trees, Keck curved the Kellett plan. Its south wall, a two-story solarium of 17.5x5ft fixed glass, allowed early morning and winter sun into the core of the house. Smaller, specially made aluminum sash windows, screens, and storm windows, could be raised for storage in a pocket above the window unit. Visor-like southern roof overhangs designed to deflect the summer sun had rectilinear openings that repeatedly pierced the water-carrying roof above the window wall.¹² These pressure-relief openings prevented heavy winds from blowing the projecting roof off the house.

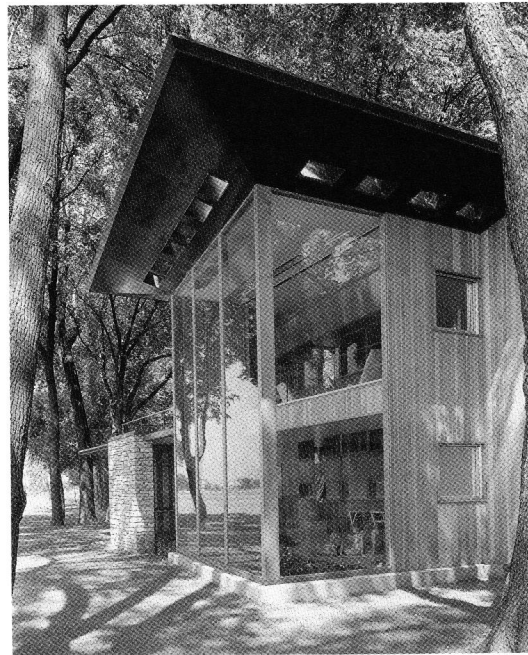
In the early 1940s, and especially during the Second World War, iron and copper were expensive and unavailable to home builders. Keck responded to the shortage by adapting ceramic flue tile for his radiant floors.¹³ The result was a contained hot-air system closely related to Korean and Roman prototypes and first used in the twentieth century in the Liverpool Cathedral, designed in 1904 by Sir Giles Gilbert Scott.¹⁴ Keck obtained clay sewer pipe from the Clay Products Association. Laid in a bed of sand, the pipe was then covered with a surface of cement to create heating circuits similar to wrought iron or copper pipes. The floor, which eliminated drafts and reduced

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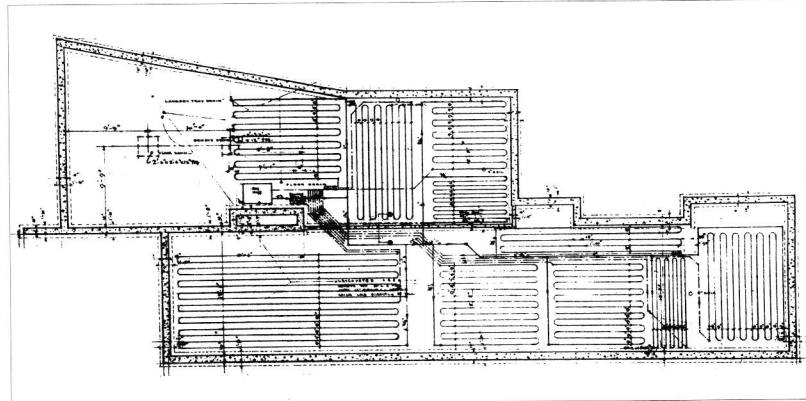


105 Kellett House, interior of dining room with flagstone floor
106 Kellett House, exterior of dining room showing roof overhang
107 H. W. Kadell House, Highland Park, IL, 1941, plan of in-floor hot-water pipes

106



107



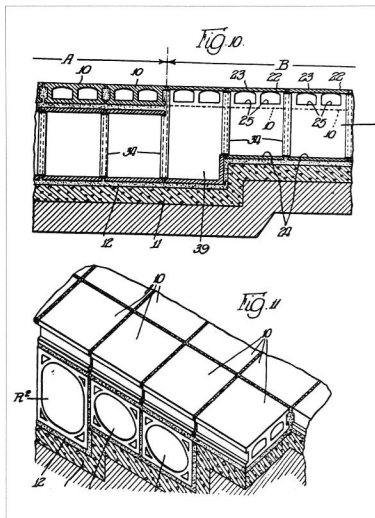
energy consumption from other sources, was especially suitable for family living. It did, however, have drawbacks; the concrete slab was slow to respond to rapid temperature changes—time was required to both bring the floor up to temperature and cool it down; the earth adjacent to the concrete had to be insulated to avoid heat loss; and, as initially installed, the complex sewer pipe system was awkward to construct.¹⁵

In 1944 Keck, with Clay Products Association, developed and patented a “RadianTile” panel heating system using numerous hollow vitrified tile blocks each designed for a specific function.¹⁶ The blocks, laid end to end to form a continuous duct, were interconnected by metal sleeves (figs. 108, 109). Each room panel received warm air from a perforated feeder duct along one wall and air returned to the furnace by a closed duct on the opposite wall (figs. 110, 111). The RadianTiles served as the actual floor finish and came in various standard sizes. Since rugs would reduce the efficiency of the gridded tiles, families seldom hid the rich red floor. RadianTiles were long-lasting, low-cost, and fire-, pest- and rot-proof. The floor was easy to operate, efficient, and healthful.¹⁷

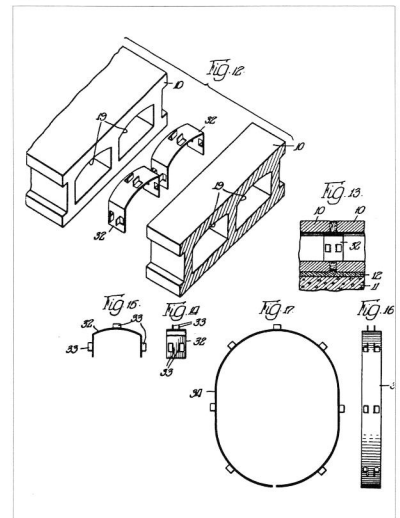
In February 1946, John Harkness and Walter Gropius from the Architects’ Collaborative wrote Keck for information about his “system of hot air blown through tile floors.”¹⁸ Until labor costs prohibited this type of ceramic tile heating, William Keck continued to lay out the RadianTile systems. He also designed systems for other architects and for Clay Products Association clients.

One of Keck’s solar design innovations was prompted by stylistic rather than engineering concerns and affected the plans of his residences. He now consistently elongated his houses so that all major rooms would have a southern exposure. This arrangement required a narrow corridor on the north side as both a circulation link and a utility core. The Howard Sloan House of Glenview, Illinois (1940) was Keck’s first comprehensive solar design.¹⁹ The house of white, painted vertical tongue and groove had high projecting shed roofs of dark brown cedar shingles above the single-pane clerestory of the dining room and the adjacent porch (figs. 112–114). The *Chicago Tribune* called it a “solar house,” coining the term and intimately

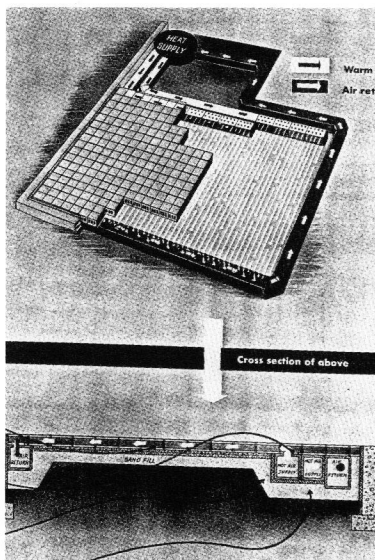
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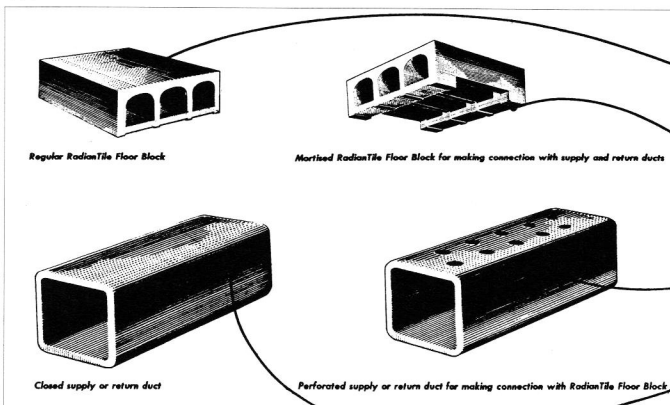


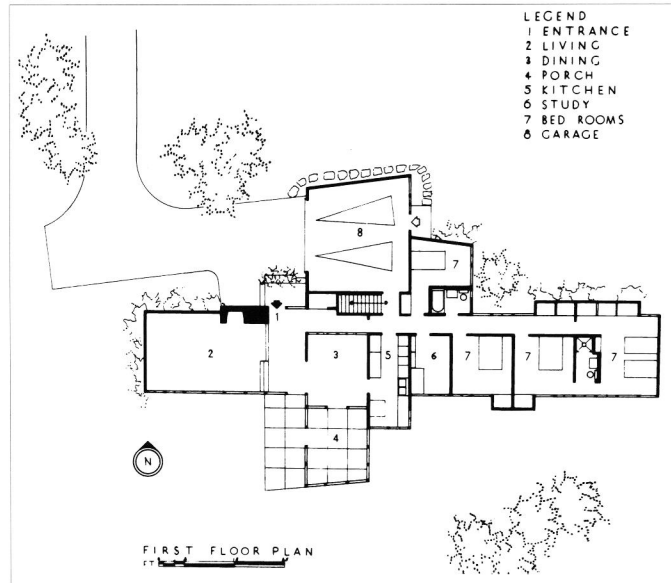
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108, 109 Ceramic RadianTile patent drawings. RadianTiles were produced by Clay Products Association in 12x12, 12x16, and 16x16in sizes. They were used as headers, return pipes, and the actual floor surface for a closed hot-air system. **110, 111** RadianTile layout for Green’s Ready-Built

111

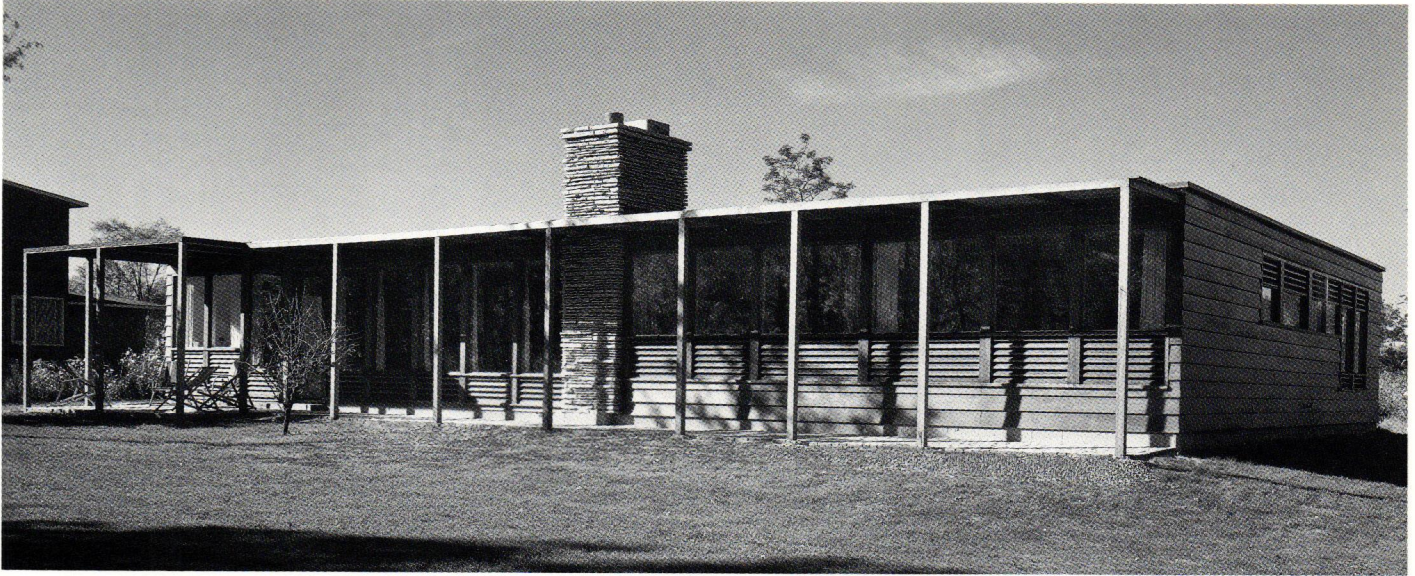




112 Howard Sloan House, Glenview, IL, 1940

113 Sloan House, interior view of dining room and clerestory

114 Sloan House, plan

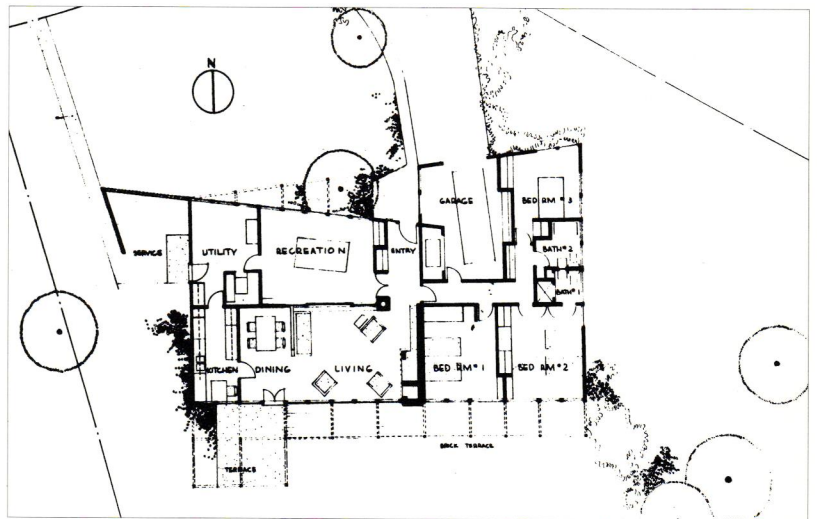


linking Keck to the history of American solar architecture. A Chicago real-estate developer and a good promoter, Sloan decided to open his home to public view for a period of four months. After visiting Keck's prototype, many people were convinced by its solar design. Sloan's promotion scheme paid off when his later housing development, Solar Park²⁰—"the first completely sun oriented residential community in the United States"—sold out quickly.²¹

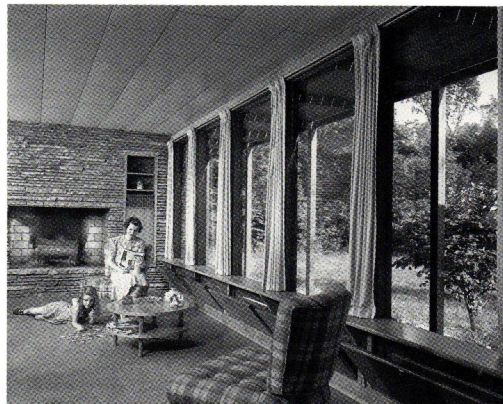
In February 1942, after William Sloan bought his brother's home, Keck designed another house for Howard Sloan. This Solar Park residence (figs. 115, 116) was equipped with a flat roof and overhanging eaves, a full south wall of fixed Thermopane windows with ventilation louvers, and a north wall set at about a ten-degree angle to the plane of the south wall. It was sheathed with stained horizontal clapboard. Clay Products Association installed the forced hot-air RadianTile floor heating system free of charge so that the new concept and design could be tested.

Keck designed at least twelve houses for Sloan, all of which combined fixed single or Thermopane windows, wide roof overhangs, solar orientation, minor insulation, flat or single slope roofs, and radiant floor heat. Another Keck development was the design of ventilation louvers for use with fixed plate glass windows. Inward-opening screened louvers on the second Sloan House (fig. 117) made windows rain- and burglar-

116



117



115 Howard Sloan House, Solar Park, Glenview, IL 1942

116 Sloan House, plan

117 Sloan House, interior showing open vents along the fixed south wall

proof, eliminated unsightly screens, and facilitated ventilation when drapes were closed. Keck's wooden, fixed louvers played a stylistic as well as a functional role in his solar houses.

Since no one had conducted tests or studies of solar houses, their efficiency could not be proven. However, professionals and lay people alike knew that Chicago—like other northerly midwestern cities—enjoyed sunny days about half the winter, and that, even in grey weather, five to fifty percent of the sun's heat penetrated the clouds. The Kecks learned from the United States Weather Bureau that the University of Chicago was conducting tests to tabulate daily solar energy gain behind glass.²² To prove that heat gain can be studied outside the laboratory and inside a glass house, Keck persuaded Libby-Owens-Ford and the Illinois Institute of Technology to run a year-long test on his Duncan house, designed and built in 1941 (figs. 118, 119). This inexpensive wood frame building was to be the testing grounds for Kimsul, a cellulose insulation developed and marketed by Kimberly Clark and given to Keck by the company President, William Kellett (aluminum was substituted in the final construction). The building had double-glazed windows on its south elevation equalling approximately fifty percent of the floor area and a single slope roof extending along the south elevation (figs. 120, 121). The year-long tests, financed by Libby-Owens-Ford, began on 23 October 1941 and were conducted under the guidance of Professor James C. Peebles and William C. Knopf, Jr.²³ On one of Peebles's temperature charts for a sunny day in January,

when the outside temperature ranged from 5 degrees below to 17 degrees below zero, the sun-ray heat entering the living room automatically shut off the furnace at 8:30 am and interior temperatures during the day ranged above 85 degrees Fahrenheit, at times necessitating the opening of windows, despite the fact that the furnace was not in operation from 8:30 am until 8:30 pm.²⁴

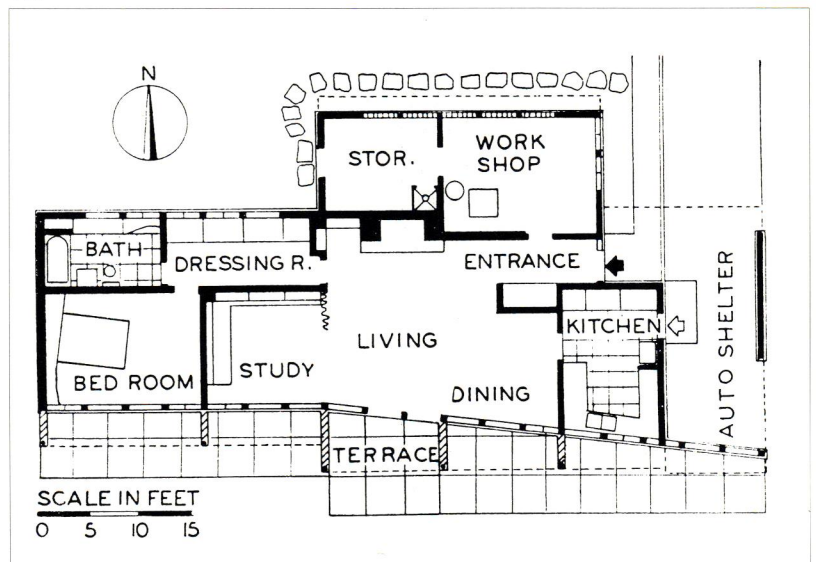
Part of the gain was due to the hot water in the dark brown concrete floor slab, which continued to radiate heat even when the furnace was shut off.

The glass was a heat trap in the sense that it was highly transparent to radiant heat in wave lengths derived from very high temperature sources, and was

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118 Hugh D. Duncan House, Flossmoor, IL, 1941

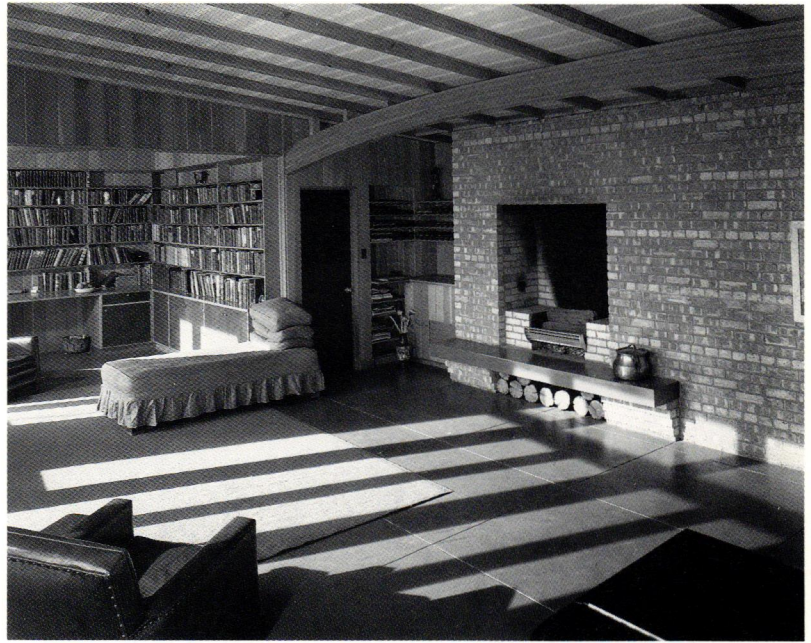
119 Duncan House, plan

relatively opaque to radiant heat from low or moderate temperature sources. Upon this premise rested the principle of insolation or the design of buildings to utilize solar heat for comfort purposes.²⁵

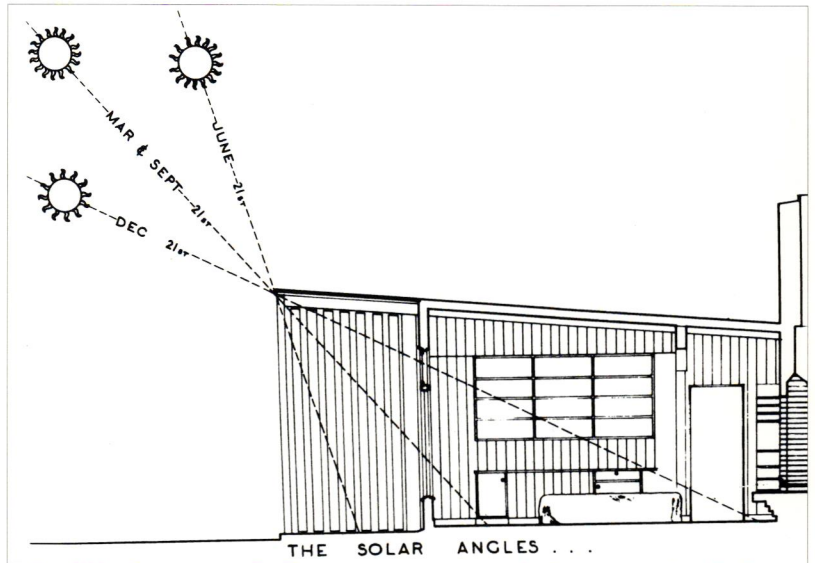
The test revealed a number of unexpected variables that prevented a controlled study and precluded accurate evaluations. The most critical variable was the lack of a mechanical control for the radiant floor heat that could have been synchronized with the solar heat gain. Labor shortages prevented caulking around doors and window frames. Their subsequent shrinkage away from the walls generated excessive cold air infiltration. Wind velocity was greater than had been anticipated due to the exposed location of the house. Peebles and Knopf "granted that the excessive heat losses could not be reliably calculated and utilization of solar heat was not too efficient,"²⁶ but they did concede that "the preponderance of evidence indicated that the solar heat input in the test house offset most, and probably all, of the heat lost through the extra window areas and kept the total heating cost at a reasonably low figure."²⁷ On the other hand "the cooling effect in the summer was the direct result of radiant cooling of the concrete floor [and the double glazing]....The lag which cut down the efficiency of the heating system in the winter time increased the efficiency of the comfort in the summer."²⁸ Another advantage of the solar house was its generous interior light, which both benefitted the occupants and contributed to the home's sense of spaciousness. No artificial light was required during daylight hours.

News articles about the Duncan House in the architectural and lay press greatly increased solar architecture's popularity. The office of Fred Keck was hard pressed to carry out all the commissions that began to pour in. Finding the time to do the work was only one of the difficulties Keck had to face; the Second World War made house construction materials scarce.

120



121



120 Duncan House, diagram showing solar paths and roof projections

121 Duncan House, interior showing winter sun paths

NOTES

1. "Orientation of Buildings: Being the Report of the Royal Institute of British Architects' Joint Committee on the Orientation of Buildings," *Journal of the Royal Institute of British Architects* 39 (10 September 1932): 777-799.
2. Ken Butti and John Perlin, *A Golden Thread: 2500 Years of Solar Architecture* (New York: Van Nostrand, 1980): 181.
3. Henry Wright (1878-1936), designer of Radburn, New Jersey and numerous other garden cities, was Associate Professor and Head of the School of Architecture at Columbia University. He later served as a consultant for the Public Works Administration in Washington until his death. He was author of numerous articles on residential architecture and town planning. *Architectural Record* 80 (August 1936): 83.
4. Howard T. Fisher, "A Rapid Method for Determining Sunlight on Buildings," *Architectural Record* 70 (December 1931): 445-454. In an unlabeled Keck folder in the iconography vault of the State Historical Society of Wisconsin (SHSW), Madison are two undated studies, one for a fourteen-story building and another for a school for Adeline Tetlow of Rockford, Illinois, that use Fisher's method to determine sunlight angle and duration. William Atkinson, *The Orientation of Buildings or Planning for Sunlight* (New York: John Wiley & Sons, 1912).
5. "A Chicago Housing Project," *Architectural Record* 73 (March 1933): 159-63; interview with William Keck, 19 August 1984.
6. Taken from an undated speech "Orientation of Solar Principles" given by Keck and in a documents folder in the 612 North Michigan Avenue office, though part of the quote was published in Robert Tague, *Keck on Architecture: An Exhibition Organized by the Taylor Museum of the Colorado Springs Fine Arts Center* (Colorado Springs, Colorado Springs Fine Arts Center, 1947, 22).
7. From a talk given by William Keck before the American Section of the International Solar Energy Society convention held at Kansas City, Missouri, on 3 October 1979.
8. "Products and Practice: Water Cooled Roofs," *Architectural Forum* 84 (June 1946): 165-169. The American Society of Heating and Ventilating Engineers Research Laboratory began controlled tests of such roofs in 1940.
9. "An Old Idea is Latest in Heating," *Business Week* (27 April 1940): 48, 50-51. This article suggests that it was probably Frank Lloyd Wright who was the first American architect to use radiant floor heat.
10. To try to persuade Kellett of his merit as an architect Keck asked him to call and inquire of Howard Myers, editor of *Architectural Forum*; James Fitch, editor of *Architectural Record*; Geoffry Baker, editor of *House and Garden*; and John McAndrew, chairman of the Architectural Department, Museum of Modern Art, if Keck could not build him a famous house and contribute to the field of modern architecture. Taken from a letter to Kellett from Keck dated 24 January 1939; correspondence file, "William Kellett," project 243, Box 4, M73-26, SHSW.
11. Taken from a letter to General Electric Co., dated 6 November 1939, and from a letter from General Electric to the Kecks, dated 16 November 1939. Correspondence file, "William Kellett," Box 4, M73-26, SHSW.
12. "What Houses Will be Like After the War," *House Beautiful* 84 (July 1942): 30-31. Correspondence with William Keck, 4 June 1986.
13. In a letter to the Radiant Heating Committee of Clay Products Association, 31 March 1943, John Cook, the association's secretary, wrote: "This subject first came to my attention on 17 February 1941, when H. M. Sloan of the H. M. Sloan Realty Company called at our office to make inquiry about any material that we might furnish to provide warmth to the building....Sloan and Keck [his architect] went ahead with this type of heating in several houses [files were shipped to Sloan for his own house in April 1942]....On 23 February 1943, the Committee held a conference with Keck and entered into an agreement with him whereby he would supervise necessary research work to develop floor or panel heating by the use of products made by this company." Correspondence file, "National Clay Products," Boxes 1 and 2, M73-26, SHSW.
14. David Watkin, *English Architecture* (New York, 1979), 172.
15. "Clay Units Save Metal for Radiant Heating," *Practical Builder* (July 1942): 9; and "Panel Heating with Clay Tile Ducts and Floor," an unpublished undated carbon copy statement by Keck, correspondence file, "National Clay Products," Box 2, M73-26, SHSW.
16. Keck applied for a patent, 528,334, on 27 March 1944.
17. *RadianTile: A Panel Heating System Using Warm Air* (Cannelton, Indiana: Cannelton Sewer Pipe Company, 1946); and *Design Computations for a RadianTile Panel Heating System*, revised copy (Clay Products Association, 29 December 1948); correspondence file, "National Clay Products," Box 2, M73-26, SHSW.
18. Letter to Keck, 12 February 1946, correspondence file, "National Clay Products," Box 1, M73-26, SHSW.
19. Howard M. Sloan, "Insolation and House Design," *Pencil Points* 25 (February 1944): 76-82; *Architectural Record* 89 (January 1941): 91-93. Sloan's niece's family still lives in the house.
20. Correspondence file, "Howard M. Sloan," project 298, Box 8, M73-26; "Houses for the Solar Park Development, Glenview, Illinois," *Architectural Forum* 80 (March 1944): 84-94.
21. Butti and Perlin, *Golden Thread*, 185.
22. Talk given by William Keck before the American Section of the International Solar Energy Society convention at Kansas City, 3 October 1979.
23. In a letter (13 February 1941) to Keck, L. E. Grinter, Vice President of I.I.T., listed a number of observations and means by which Peebles would carry out the Duncan House study:
 - "1) Daily observations of intensity of solar radiation, with pyrheliometer or similar instrument.
 - 2) Temperature records in each room, at or near the floor line, and at or near the ceiling.
 - 3) Record of outdoor temperature on windward side of house, and also on leeward side.
 - 4) Humidity observations inside the house; two points should be sufficient, using recording psychrometers.
 - 5) Record of wind velocity and direction, using recording wind gauge if possible.
 - 6) Observations on general weather conditions, such as: a) clear or cloudy, with record of total hours of sunlight per day; b) time of sunrise; c) time of sunset; d) rain or snow with record of time, duration and amount; e) daily

notes on condition of surrounding territory, with particular reference to presence or absence of snow; f) relative humidity; g) smoke or fog. 7) Daily record of fuel consumed, possibly with record of 'on' and 'off' cycles of heater. 8) Temperatures of water leaving and returning to the heater. 9) Record of power required to drive water-circulating pump. 10) Record of total sash perimeter in movable windows. 11) Estimates of heat losses through these window cracks. 12) Periodic examination of roof and wall insulation, with particular reference to possible accumulation of moisture. 13) Observations of possible water or frost accumulation on

fixed and movable glass."

Correspondence file, "Hugh Duncan," project 268, Box 2, M73-26, SHSW.

24. Report by Libby-Owens-Ford, "Solar Heating for Post War Dwellings Foreseen as Result of Findings in Year's Survey Just Completed," correspondence file, "Libby-Owens-Ford," 1, Box 5, M73-26, SHSW.
25. *Ibid*, 5.
26. "Products and Practice: Solar Heating," *Architectural Forum* 78 (August 1943): 8; see also "Dream Houses—United States and British," *Newsweek* 22 (6 September 1943): 102–104.
27. Libby-Owens-Ford, "Solar Heating for Post War Dwellings," 7. Correspondence file, "Libby-Owens-Ford," Box 5, M73-26, SHSW.
28. Fred Keck, confidential report to Libby-Owens-Ford and Illinois Institute of Technology, 3 April 1943. Correspondence file, "Libby-Owens-Ford," Box 5, M73-26, SHSW.

8

PREFABRICATION AND BUILDING THE SOLAR HOUSE

World War II shifted the nation's priorities away from building and, as a result, architects concentrated their efforts on pursuing the problem of postwar housing. Prefabrication, a construction method that had been linked to economic recovery, was of special interest, since it effectively reduced production costs and lowered house purchase prices to individual buyers. New building materials, products, and mechanical devices funded by federal contracts and developed by government agencies and industry were adapted for use in postwar housing. The goal was to achieve a standardized yet flexible design that could account for individual family needs and allow for easy modification.

As early as 1909 Walter Gropius wrote, "The idea of industrializing house construction can be realized by repetition of the same component parts in every building project....The possibilities of assembly of these interchangeable parts satisfies the public desire for a home with an individual appearance."¹ Gropius reiterated his position often: at the Weissenhof Siedlung (1927); in speaking about an expandable portable copper house (1931)²; in his call for systematic solutions linked with industry (1934)³; and in a collaborative design with Konrad Wachsmann—the Packaged House System—manufactured by General Panel Corporation of New York (1943–45).⁴ In 1929 R. Buckminster Fuller had exhibited his mass-producible "4-D" or Dymaxion House in Chicago, and in 1940 introduced the Dymaxion Deployment Unit—a steel housing unit modeled after cylindrical grain elevators and intended for use by the United States Army in the Pacific and the Near East.⁵

A Century of Progress introduced many prefabricated housing systems; some were prototypes, others examples of existing products. By January 1934, prefabricated houses were marketed by various companies: American Houses, New York; Columbian Steel Tank

Co., Missouri; Frameless-Steel Construction System and Universal House Corp., both of Ohio; General Houses, Chicago; Horsley Structures, Oregon; and Wheeling Steel House, West Virginia.⁶ Throughout the thirties, experimental housing construction was researched by public and private agencies: United States Forest Products Lab, Bureau of Standards, United States Farm Security Administration (USFSA), Tennessee Valley Authority (TVA), Pierce Foundation Housing Research Division (1931), Purdue Research Foundation Housing Project (1935), and Bemis Foundation (1938).⁷

During the thirties, the U.S. government was the largest producer of standardized dwellings. From 1933–36 the Federal Government Resettlement Administration constructed low-cost greenbelt cities and homestead projects. With assistance from the Forest Products Laboratory of Madison, Wisconsin, the USFSA and the TVA developed a four-by-eight-foot stress-skin plywood panel. This unit of variable thickness was used to produce sections of a factory-assembled low-cost house. The house was transported by truck to various sites to house dam construction workers, sharecroppers, and Dust Bowl evacuees like those described by John Steinbeck in *The Grapes of Wrath*. The American Standards Association in conjunction with the Modular Service Association launched a 1938 program to create standard dimensions for building materials.⁸ Government-sponsored, low-cost, community housing projects were made possible "by the elimination of all purely decorative features, by a reduction in the number of gables, beams, and rafters, and by using standard designs which permitted precutting and prefabrication at small portable saw mills."⁹

Government architects and designers, freed from stylistic concerns, directed their energies to the organization and planning of the sites. A new product—

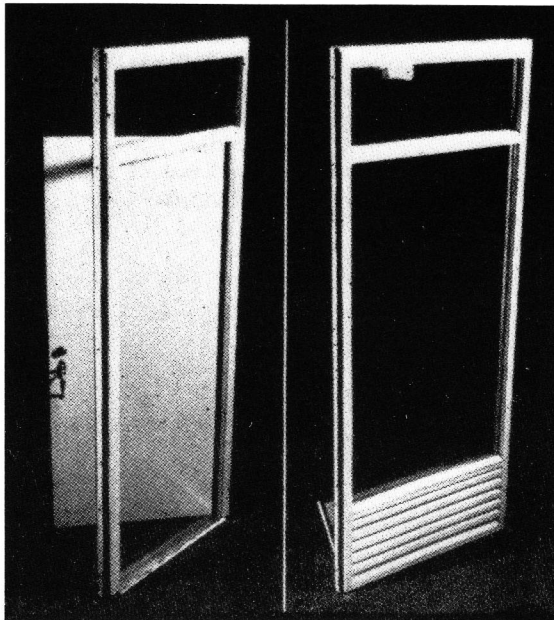
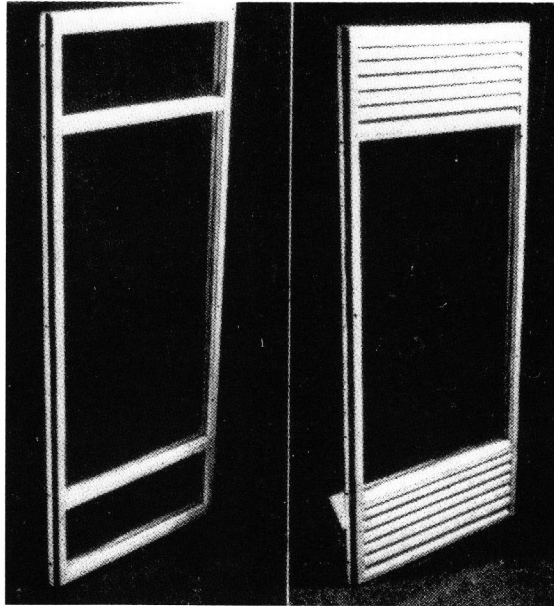
plywood—allowed for the rapid production of housing units. Independent architects first realized and exploited this material's aesthetic potential.

Frank Lloyd Wright developed his Usonian house during the 1930s as a low-cost, low-maintenance, site-specific solution to the housing question. Like his contemporaries, Wright adapted the aesthetics of European—especially Dutch and German—housing. Dispensing with garages, basements, attics, and radiators, the spacious Usonian house had a flat roof, natural materials and textures, southern exposure, radiant floor heating, and built-in furniture. It could be constructed on site and was based on a gridded unit system that incorporated sectional masonry walls and a hearth. Each of Wright's houses was unique, but common components made for a sameness as seen in the Willey, first Jacobs, Winkler-Goetsch, and Pope houses. Edward Stone, William Wurster, and Paul Schweikher all designed houses that incorporated Wright's construction techniques with International Style aesthetics. Keck's houses of the thirties and forties show similar influences and offer some of the finest examples of American prefabricated architecture.

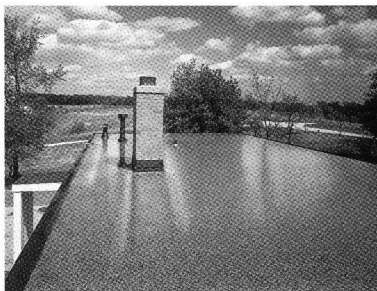
Keck had long been interested in improving the quality of low-cost housing for a mass market. Before joining the navy reserves in 1942, Paul Schweikher introduced Keck to Edward Green and Arlin Thor, home builders in Rockford, Illinois who mass-produced wooden ammunition boxes for the government. Green and Thor were impressed by Keck's solar house, a practical design well-suited to assembly-line production. Keck found the two men to be enlightened, progressive industrialists, and together they formed a partnership to develop postwar prefabricated housing. By contract Keck was to devote a third of his work time to the Ready-Built project, for which he would receive \$400 a month. The agreement also specified that all patents would be property of the partnership.¹⁰

The company already manufactured a prefabricated "Cape Cod" unit, but specialized in Keck's pioneering solar prefabricated house, a series of screwed or bolted stressed-skin plywood units that offered easy assembly and disassembly (fig. 122).¹¹ Wall panels measured eight feet whereas the roof sections were twelve or twenty-four feet in length. Fixed Thermopane windows with copper-screened ventilating louvers

122



123



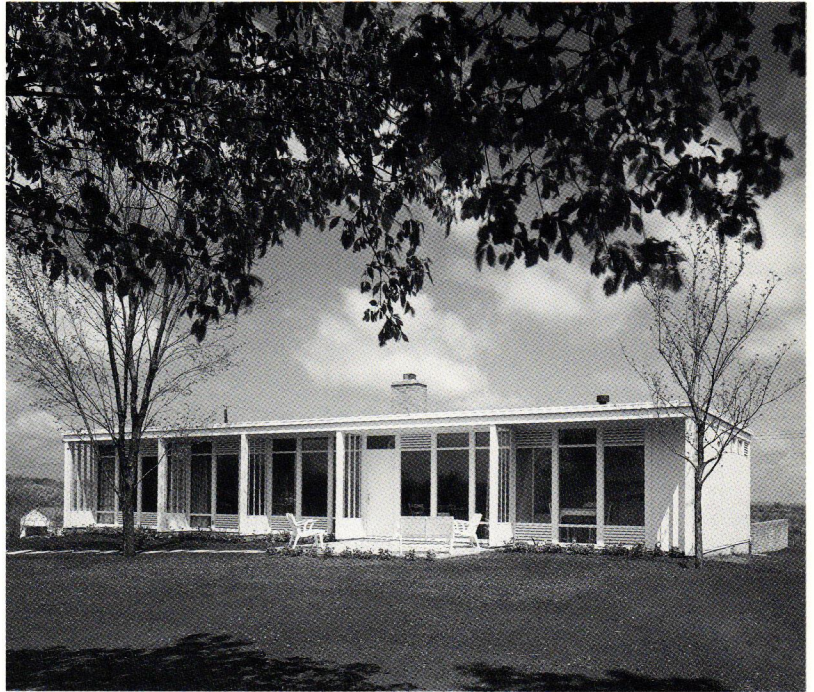
122 Green's Ready-Built, 1942, different prefabricated wall units
123 Green's Ready-Built, water on roof

allowed for both light and airflow. The house was equipped with Keck's forced-air RadianTile floor and water-carrying roof (figs. 123, 124). In the summer "when there was too much solar heat no sun would enter the house. [But] in the winter when [the sun rose only above the horizon] it would shine full into the house to act as an auxiliary heating system....With the combination of radiant heat and solar heat...fuel bills [could be] cut as much as one-third."¹² Folding partitions provided privacy, divided larger rooms, and varied the plan organization. All fourteen Ready-Built models came with equipped kitchens and were priced from \$7,500 to \$20,000, excluding land. As described by the company,

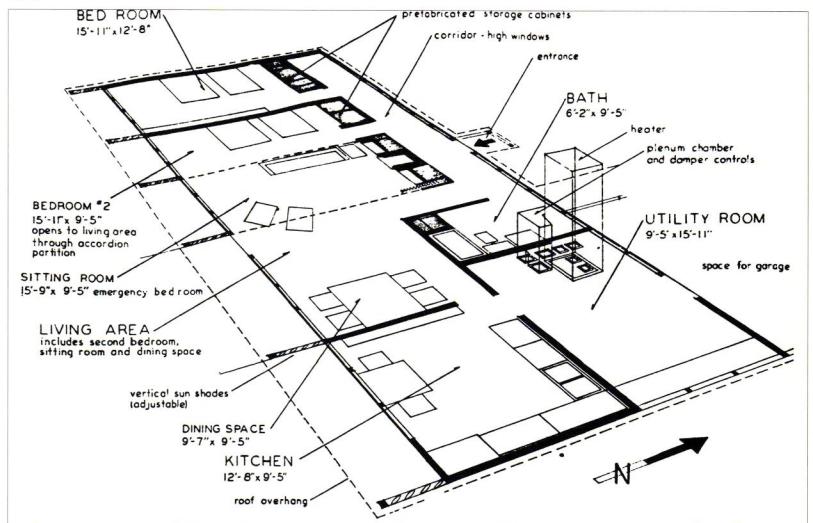
The smallest of the models had overall dimensions of 36'x19'6" and a total area of 696.3 square feet. It comprised a living room, one bedroom and kitchen plus utility room, bath, and storage area [fig. 126]. Six of the homes contained four rooms each [living room, two bedrooms, and kitchen], plus bath, utility room, storage area and garage. Six of the homes were five-room homes [living room, three bedrooms, and kitchen]. Three of these homes had one bath and the other three had two baths. Each of the five-room homes likewise had a utility room, garage, and storage area. The largest of the fourteen models contained a living room, four bedrooms, two baths, and a kitchen as well as a utility room, garage, and storage areas. [It] had overall dimensions of 94'6"x39'3" and a total area of 2,331.55 square feet.¹³

The modular construction of the Ready-Built Solar House provided built-in flexibility. Even though Green advertised a set number of models, the prefabricated panels could hypothetically be assembled in any combination. The house could grow with the family (fig. 125). Keck and Green's design incorporated research about postwar American families and their aspirations, drawn from Green's own research as well as from studies compiled by home economists, sociologists, psychologists, and the building industry.

The first model house was assembled during April 1945 on a pre-landscaped 144-by-164-foot lot in Bradley Heights, a wooded northern subdivision in Rockford, Illinois. "The government granted special priorities on materials for the house, which was to be



125



126



- 124 Green's Ready-Built, Rockford, IL, 1945, exterior
- 125 Green's Ready-Built, optional floor plans
- 126 Green's Ready-Built, smallest assembled model

used for experimental and show purposes."¹⁴ The southern wall was 58.5-foot long with a three-foot roof overhang. Two bedrooms, a living/dining room, and a kitchen were located along this wall with a linking hall, bath, and utility room along the north wall. The kitchen was fully equipped (range, refrigerator, electric sink, garbage disposal unit, under-sink automatic drying compartment, ventilating system, and built-in cupboards) and built-in wardrobes were used in all areas (figs. 129, 130). Marianne Willisich was in charge of furnishings.

The house was sold with a registration number (like a car or major appliance) and a warranty (honored by the dealer) covering routine service to panel joints, the furnace, the roof, and even the paint job.¹⁵ Green's Ready-Built did business in Illinois, Indiana, Wisconsin, Missouri, and Minnesota and distributed models through established real-estate dealers operating under franchise agreements.¹⁶ The company excavated and constructed foundations, connected utility services, delivered the prefabricated sections, and provided personnel to erect the house. Units were typically ready for occupancy sixty to ninety days after receipt of the order (figs. 127, 128).

Green began mass production of his Ready-Built houses in 1947, after the war. Without precise records from either the dealers or the factory, it is difficult to determine the exact number and style of the solar houses that were built. But well over a hundred of Keck's designs were scattered throughout the five-state distribution area.

Aesthetically, the Green's Ready-Built houses were similar to Wright's Usonian houses, especially the first Jacobs and the Winckler-Goetsch houses. Spatially, Keck's design resembled Mies van der Rohe's fluid domestic interiors at the 1931 Berlin Housing Exposition. In Green's Ready-Built, Keck exploited

the open plan to bring back visually the space the home owner could no longer afford physically....The need was for an enclosed space or series of enclosed spaces flexible in usage, adaptable to varied needs rather than planned for a unique family at a specific period of their lives.... Here was a plan flexible to a high degree...providing a changeable space for growing children, self-sufficient quarters for an adult son or daughter,

127



127, 128 Green's Ready-Built, construction in progress, 1946

128



possibly married, or an apartment for another member of the family.¹⁷

This planning strategy, using a rational and flexible grid, prefabricated storage units, and folding panel room dividers, was a consistent aspect of Keck's architecture of the 1920s. The buildings were characterized by their modular, plywood panel, cage constructed walls, flat roofs, projecting eaves, slab or radiant tile floors, and, most importantly, south siting.¹⁸

A number of moderately priced, but important, commissions preceded the engineered Ready-Built. With the 1939 William Kellett House (figs. 103-106), Keck initiated a new aesthetic. Its relatively informal design depended on an International Style vocabulary expressed in organic materials, a strong reliance on site, and a non-orthogonal geometry. A 1939 summer house for Dr. Jack R. Buchbinder in Fish Creek, Door County, Wisconsin also marked a new phase in Keck's architectural design thinking. Dr. Buchbinder, a wealthy Chicago surgeon, disliked the "coldness" of the International Style. This sentiment gave Keck the opportunity to depart from the conventions of contemporary design. The architect created a modern house for his client on a heavily wooded site overlooking Green Bay. The house was intended as a summer retreat although heating units in the fireplaces allowed for year-round use. The sloping site had been chosen for the Buchbinders by their close friend, Jens Jensen.²⁰ Discussing housing with Buchbinder, Keck said:

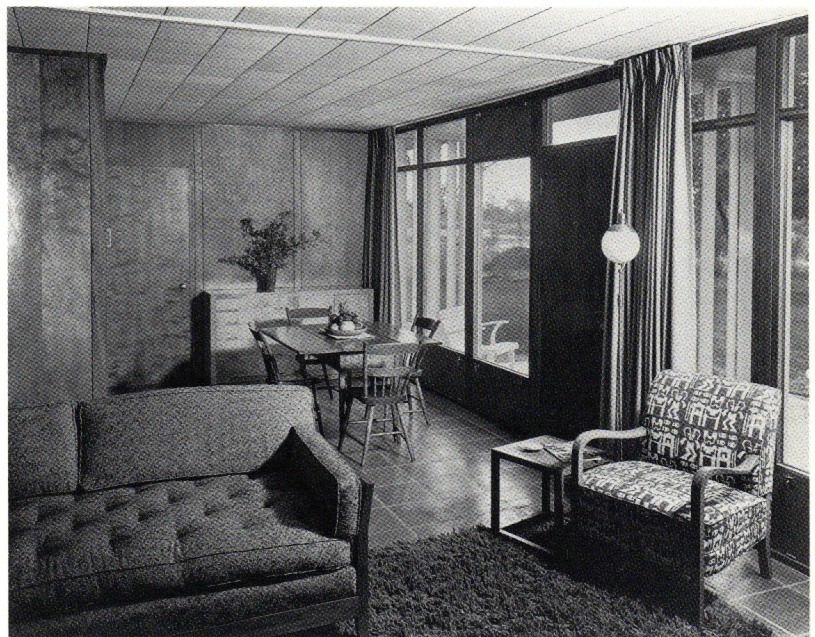
I hold no brief against square smooth white boxes. The approach to contemporary architecture is and must be more fundamental; must stand on broader premises if it is to have the right to exist as a legitimate philosophy capable of solving man's need of enclosed space conveniently disposed.²⁰

Embracing its hillside site, the Buchbinder House was rich in form and materials. Door County limestone (largely uncut) was laid in natural sedimentary courses along the east and west walls to contrast with vertical, natural fir, tongue-and-groove panels (figs. 131, 132). But it was the house's projecting eaves, single-pane window-walls, and dark red, asphalt-shingled roofs with high clerestories that broke most radically from Keck's earlier architecture. The shed and gabled roofs and large windows (figs. 133, 134) "were designed to extend the open panorama to the sky itself, taking

129



130



129 Green's Ready-Built, bedroom with prefabricated wardrobe

130 Green's Ready-Built, view toward dining room

advantage of the dramatic patterns of storm clouds and northern lights."²¹ But as Dr. Buchbinder wrote, the design had its drawbacks:

*I have no intention of roasting to death, you know. If I can be in the living room only when the sun is down or if I can use my study only in the wee hours of the morning, then what is the use of having it? If we can not use the sun porch except for breakfast, why did we go to the expense of it?*²²

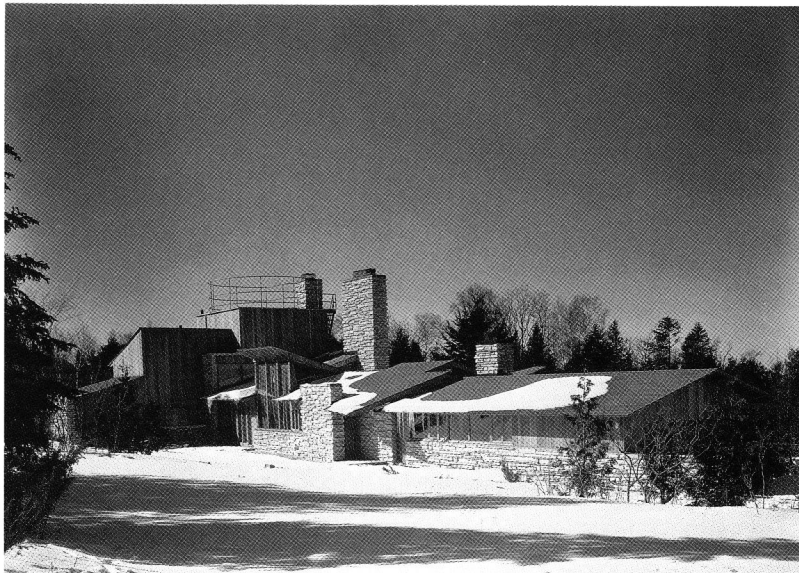
The high roofs and glass walls made an overly efficient solar collector; Keck suggested blinds and drapes to alleviate unwanted heat gain.

The plan organization showed a departure from Keck's earlier work. A glass-enclosed west dining room and recreation room, and an east entrance and bedroom wing deflected away from the major north-south axis of the house. The plan expressed an open and flowing relationship between interior living spaces, outdoor terraces, and the landscaped site. The natural limestone floors and terraces seemed to dissolve any physical barrier between indoors and outdoors. The bedrooms, studio, and a roof terrace were located in a three-story unit on the south end of the house. This unit was characterized by vertical panels, horizontal stone, pipe rails, and ship's ladders.

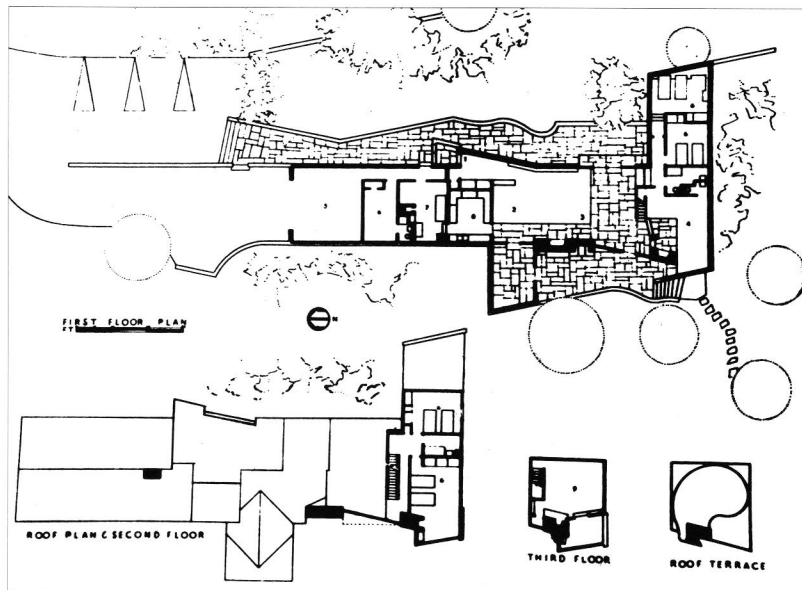
Keck's architecture of 1939–40 was increasingly influenced by a Wrightian organic sensibility while retaining some of the hallmarks of his earlier designs, particularly the irregularly shaped plan of the House of Tomorrow. He used unpainted fir or cedar siding, natural stone masonry, exposed beams, and knee braces or scissor trusses to support the roofs. He also took advantage of the landscaped suburban sites.

While Keck was building the Buchbinder and Sloan houses, *Coronet* magazine commissioned a house for its September 1940 issue. The three-bedroom *Coronet* House (fig. 135)—built with vertical tongue-and-groove and random course masonry—relied on the same architectural components as the Hugh Duncan House (figs. 118–121) and the later Green's Ready-Built units. Its plan was organized in three zones: bedrooms, services, and living/dining area. A flat-roofed clerestory rose above the building's central core, illuminating the kitchen, living, dining, and recreation rooms. North service-area walls were angled to the body of the house, and a glazed south wall opened onto a

131



132



131 Dr. Jack R. Buchbinder House, Fish Creek, WI, 1939, view toward entrance
132 Buchbinder House, plan



133 Buchbinder House, view from northwest

134 Buchbinder House, living room with scissor beams

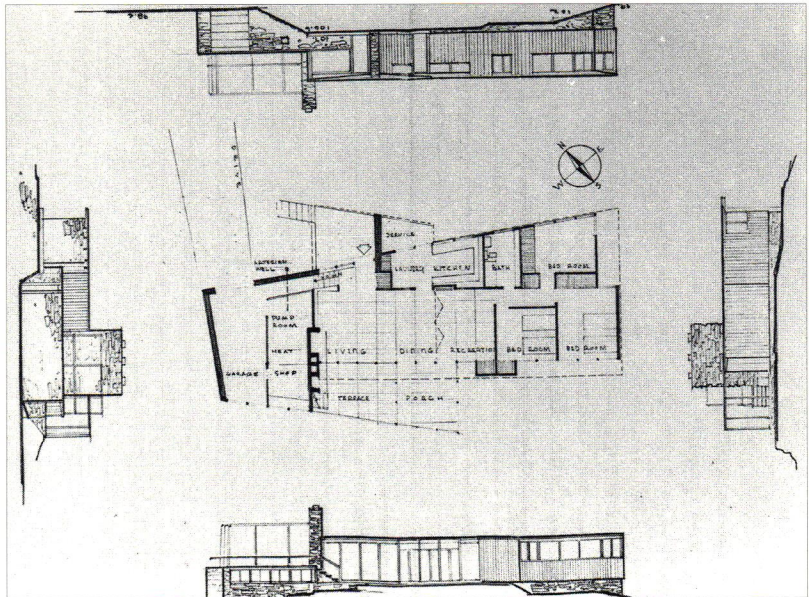
screened terrace off the living and recreation rooms. The *Coronet House* incorporated a radiant hot-water floor subdivided into a two-by-four-foot grid that served as the design's basic module. It was designed to meet contemporary requirements in a practical, comfortable, and economical fashion, with a projected construction cost of \$5,000.²³

The Dr. Maurice Rice House in Stevens Point, Wisconsin resembled the earlier Buchbinder project. Mrs. Rice's father, Oscar Weber, had known the Keck family since his childhood and had once asked Keck to design his house. It was Weber's son-in-law and daughter who ultimately commissioned the architect.²⁴ In the early stages of the Rice House design, Keck suggested the couple visit the Kellett and Buchbinder houses. He sent Mrs. Rice books and magazines about modern architecture—*Modern Architecture* (a Pelican book published in England), issues of *Architectural Forum*, and a book by Le Corbusier. He also suggested she read books by and about Frank Lloyd Wright, saying they

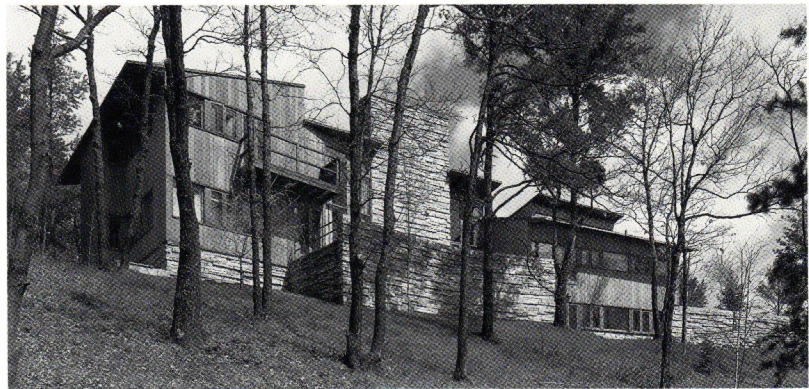
*were very difficult to read. So is the Le Corbusier I include...and remember that Le Corbusier called the house "a machine for living in." It is more than that, but you might find something of interest in the book. Architects are notoriously bad writers; as a rule they express themselves much better through their fingertips and pencils and drawings than their writings. Critics and other writers have not written much on architecture of the newer kind, largely I think, because its appearance had such a bad reception from most people.*²⁵

The Rices had a sloping lot overlooking the Plover River, and their house was sited to take account of climate and lighting conditions (fig. 136). The north wall was virtually closed to the elements, while the south and west exposures incorporated high shed roofs and projecting eaves. Keck used horizontally laid sandstone, vertical tongue-and-groove fir, exposed beams and knee braces, and large Thermopane windows. The dining room, living room, and study were interconnected and their common flagstone flooring extended out to north and south terraces (figs. 137, 139). Keck incorporated a radiant floor, like those in his earlier solar houses, in the Rice design. A forced hot-water grid of copper pipes laid in a flagstone-finished

135



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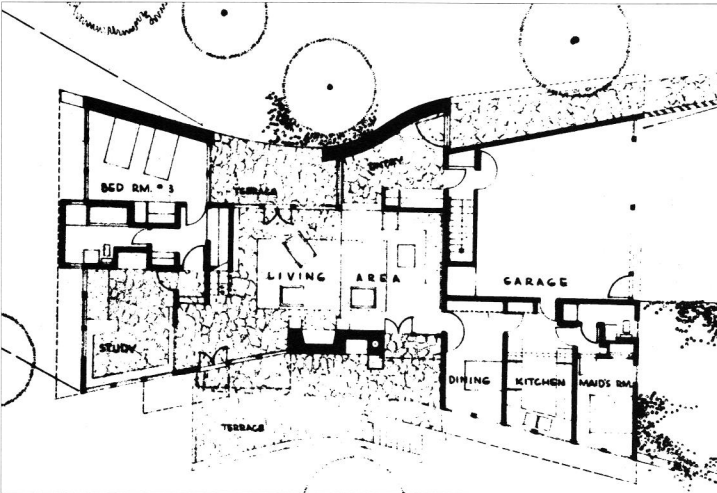
concrete slab also provided the hot water for the family use. (Problems with this heating system were not resolved until new thermostats were developed in the 1950s.) A Waupaca, Wisconsin landscape architect who had studied with Jens Jensen at the Clearing designed low-maintenance yards, and Marianne Willis helped Mrs. Rice with the interior decoration.²⁶

Keck started on the John L. Bennett House (figs. 140–143) in Barrington, Illinois in May 1941, only three months after the Duncan project. Bennett once wrote, "as engineer and architect, Keck's plans combined both interest and usability."²⁷ The Bennett House extended along the crest of a rolling moraine. Unlike its five major predecessors (Kellett, Buchbinder, Sloan,

135 Dr. Emile Quenneville House, Quebec, Canada, 1944, adapted from *Coronet House*
136 Dr. Maurice Rice House, Stevens Point, WI, 1940



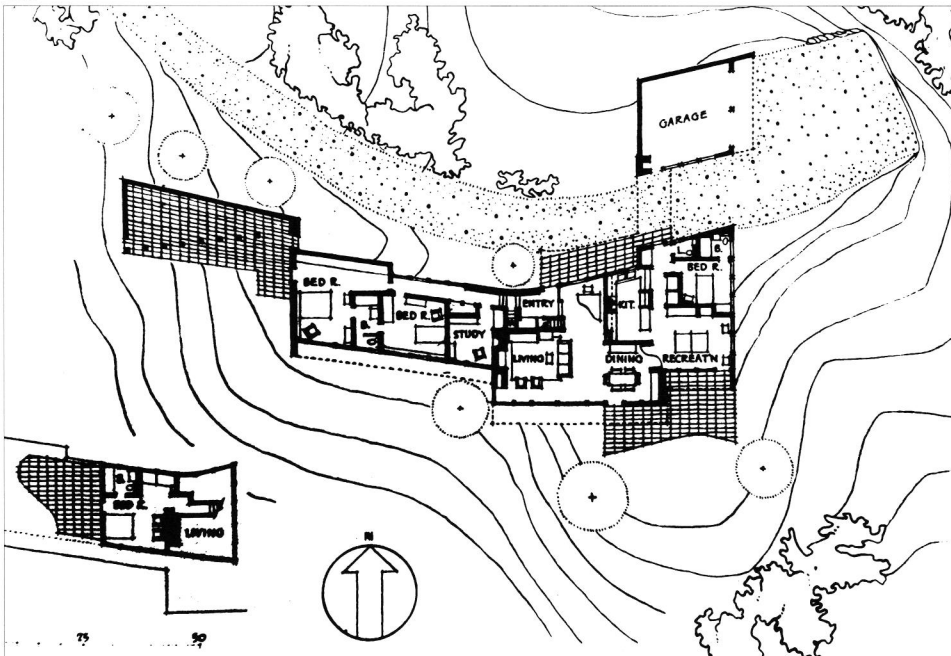
138



139



137 Rice House,
view of north wall
138 Rice House,
plan
139 Rice House,
living room



140 John L. Bennett
House, Barrington, IL,
1941

141 Bennett House,
plan

Rice, and Duncan houses) it incorporated a water-carrying roof (like that of the *Coronet House*). Its raised clerestory, however, was incorrectly constructed by the contractor and caused leakage problems. On its southern face a visorlike roof protected the house interior from direct summer sun while two large terraces provided outdoor living space. Black and gray slate covered concrete floors that incorporated a forced-flow, radiant, hot-water system of wrought iron pipes. The house was finished with glacial stones taken from the moraine; its vertical pine exterior was painted white and interior plastered walls were neutral in color (fig. 142). Willisch's sparse interiors were intended to be subordinate to the seasonal changes in landscape color. Willisch designed some of the furniture and Keck was responsible for a number of lighting fixtures and most of the built-ins (fig. 143).²⁸

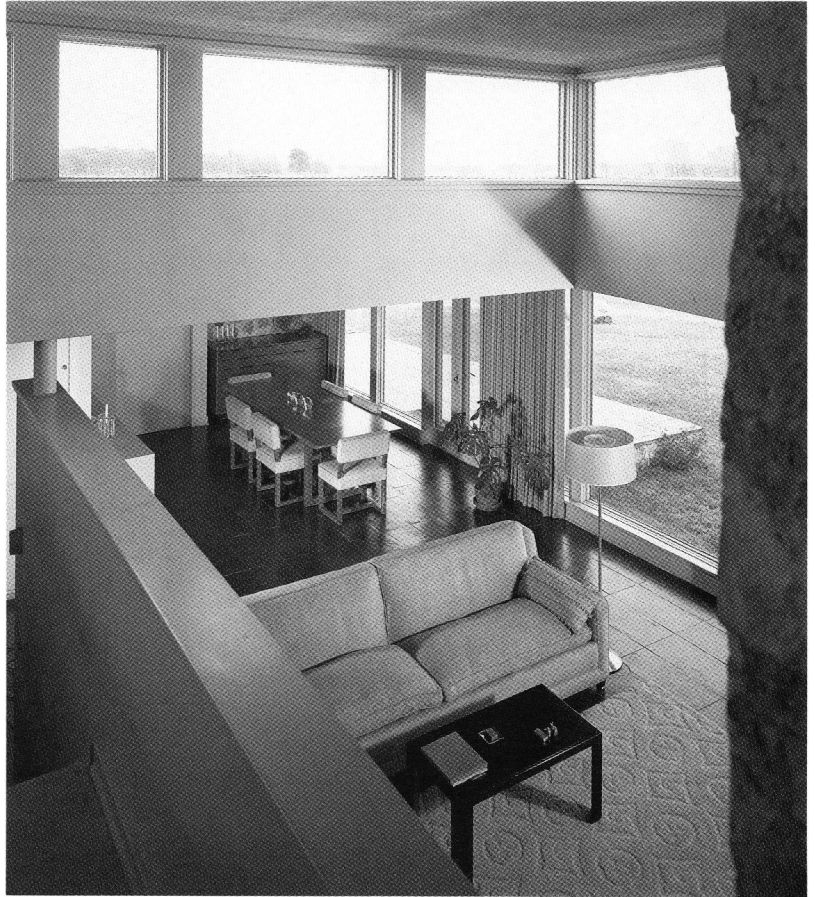
In 1941, during the construction phase of the Bennett House, Keck also built the Hans Greven House (figs. 144, 145) and Bradford Shank House in Flossmoor, the H. W. Kadell House in Highland Park (figs. 146, 147), and the Richard Pulliam House in Lake Forest (figs. 148, 149). Both Flossmoor schemes relied on the Duncan House plan, while the Kadell and Pulliam houses resembled Keck's earlier Sloan House design.²⁹

During this period Keck received a commission from a non-American, Dr. Emile Quenneville, of Granby, Quebec. Quenneville wanted Keck to alter the *Coronet House* to suit his family's needs. He sent Keck a copy of marked *Coronet* plans showing the desired changes. Due to the war the project was slow to be completed. In the 1944 Quenneville House (fig. 135), Keck rearranged the service areas, reduced the living areas, and expanded the original *Coronet* plans to include a garage.³⁰

From June 1941 to April 1942, Keck worked on nineteen different houses, three of which received widespread publicity: the Pete Keck House in Oconomowoc, Wisconsin, the Howard Sloan Solar Park and Meadowbrook subdivisions in Glenview, Illinois, and the Wesley Hanshe House near Racine, Wisconsin. These designs were similar to Keck's other work during the forties.

Standard-sized, single-pane plate glass helped define both the modular design and shape of the Pete

142



143



142 Bennett House,
living room with
clerestory

143 Bennett House,
kitchen

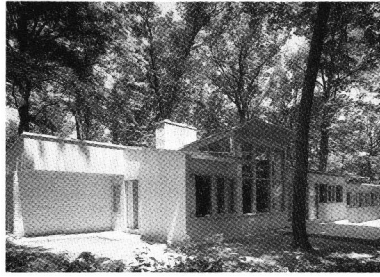
Keck House (figs. 150–152), which Fred Keck built for his brother. Projecting eaves and screened bedroom balconies modulated the effects of southwestern summer sun.³¹

Howard Sloan, like Edward Green, was a leading promoter of progressive house designs. His development projects, though small, had remarkably advanced planning concepts. Sloan worked with many architects, but particularly promoted Keck, who designed no less than fifteen houses for the developer's subdivisions in less than two years. *Architectural Forum* wrote "the Sloan developments at Meadowbrook and Solar Park, considered from the viewpoint of house merchandising in relation to trends in design, were probably the most important in the United States [in the pre-war period]."³² Both developments were interrupted by the war.

Stylistically, Solar Park was built in the modern idiom while Meadowbrook offered an equal number of modern and conventional units. After visiting Solar Park houses, Sloan's prospective buyers were sold on the extensive solar-oriented windows, standard radiant heat, and ventilation louvers. They also were pleased with the single-level, basement-free design. Keck's Solar Park houses were long and narrow. Main rooms were oriented to the south and utility and service areas were located to the north (fig. 153). Roofs were either flat or angled but all had projecting eaves. At least two of the houses were split level (fig. 154). According to Sloan's informal studies, it was the louvered south Thermopane walls that provided the greatest benefit to the home owner. The Keck Solar House was easy to look at, easy to live in, and easy to care for; it was safer and healthier than any conventional house.³³ Its Utopian character was rooted in the optimism of New Deal government projects.

Keck's last important prewar commission was the 1942 Hanshe House. Wesley Hanshe, a carrot farmer, had seen the *Coronet* House and asked Keck for plans. The architect wrote to Hanshe proposing to modify the scheme. The final design was an orthogonal version of the *Coronet*—a solar house of standard wood construction with a water-carrying flat roof. To accommodate the specific needs of the farmer, Keck incorporated a basement utility and bath for quick clean-up after a day's work in the fields.³⁴ However, it

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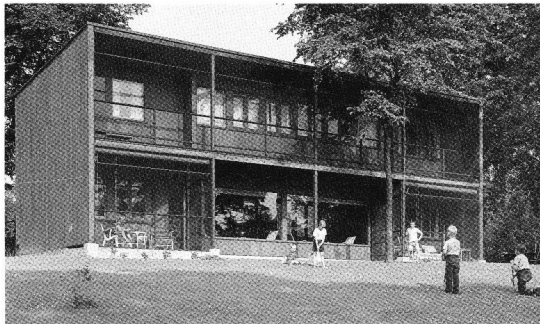
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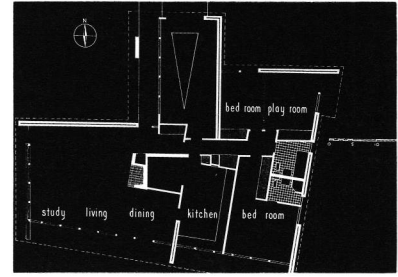
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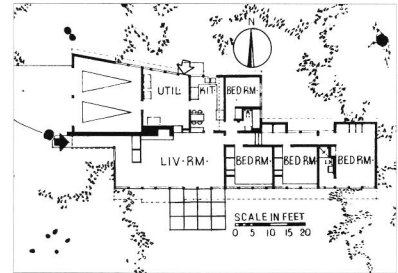
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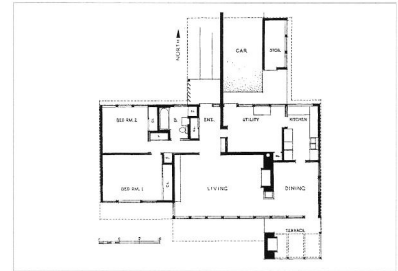
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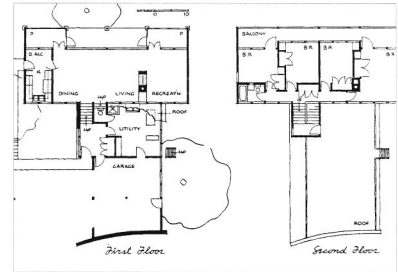
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149



151



- 144, 145 Hans Greven House, Flossmoor, IL, 1941
- 146, 147 H. W. Kadell House, Highland Park, IL, 1941
- 148, 149 Richard Pulliam House, Lake Forest, IL, 1941
- 150–152 Pete Keck House, Oconomowoc, WI, 1941

was the south window-wall that most pleased the Hanshes (figs. 155, 156). Hanshe wrote Keck:

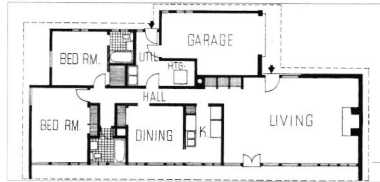
*Your large windows actually bring the outdoors in and the indoors out....There is a light change.... One really is inside but the light is such that the lighting of the rooms resembles outdoor light. The light is uniform throughout. The windows instead of being "bright spots" in a room...have tempered all the light. We enjoy watching the birds in the spring, the squirrels the year around, or the rabbits in that big wood pile. [Who would ever have] thought of being in bed and watching the night plane go through against a back drop of brilliant star-light sky...or a moonlit night with fresh snow on the ground. To our utter amazement we find things about the house which we like better each day and other features popping up which we never noticed before. How can you sell a man on anything like that?*³⁵

In December of 1940, Fred Keck drafted a house design to incorporate a wallboard manufactured by the United States Gypsum Company. The Trans-Duo House attempted to give more freedom of action to various members of the American family unit of parents with fixed habits, children who had more independence, adolescents who needed their own rooms, a young married couple who had not achieved financial independence from parents, and elderly persons who needed independent quarters (figs. 157, 158).³⁶

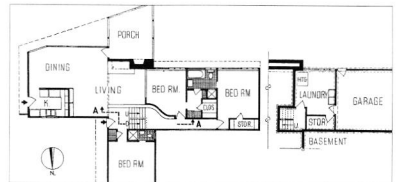
The partially prefabricated Trans-Duo House was conceived and constructed along lines similar to those of the earlier Green's Ready Built project. Sited according to solar principles, it had fixed glass, ventilation louvers, hot-water radiant floor heating, prefabricated exterior wallboard by U.S. Gypsum, and modular partition cabinets for flexible interior space division. U.S. Gypsum wanted Keck's work to "encourage and publicize original thinking, designing and planning...to illustrate and explain how new materials and construction methods...could contribute to lower costs, greater strength, better fire protection, and more comfort and safety."³⁷ A variety of the company's products were used, depending upon budget constraints.

In November 1941, Keck, Paul Schweikher, Winston Elting, and Theodore Lamb were selected by

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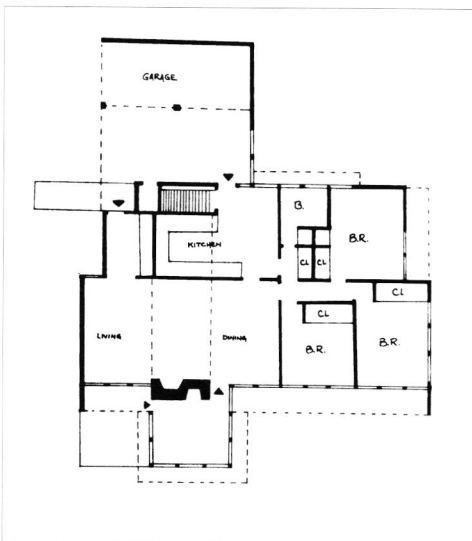
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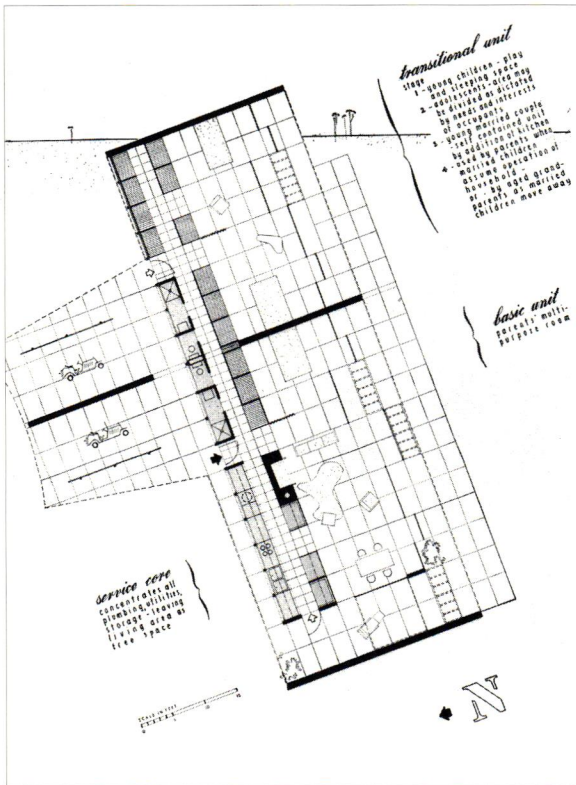
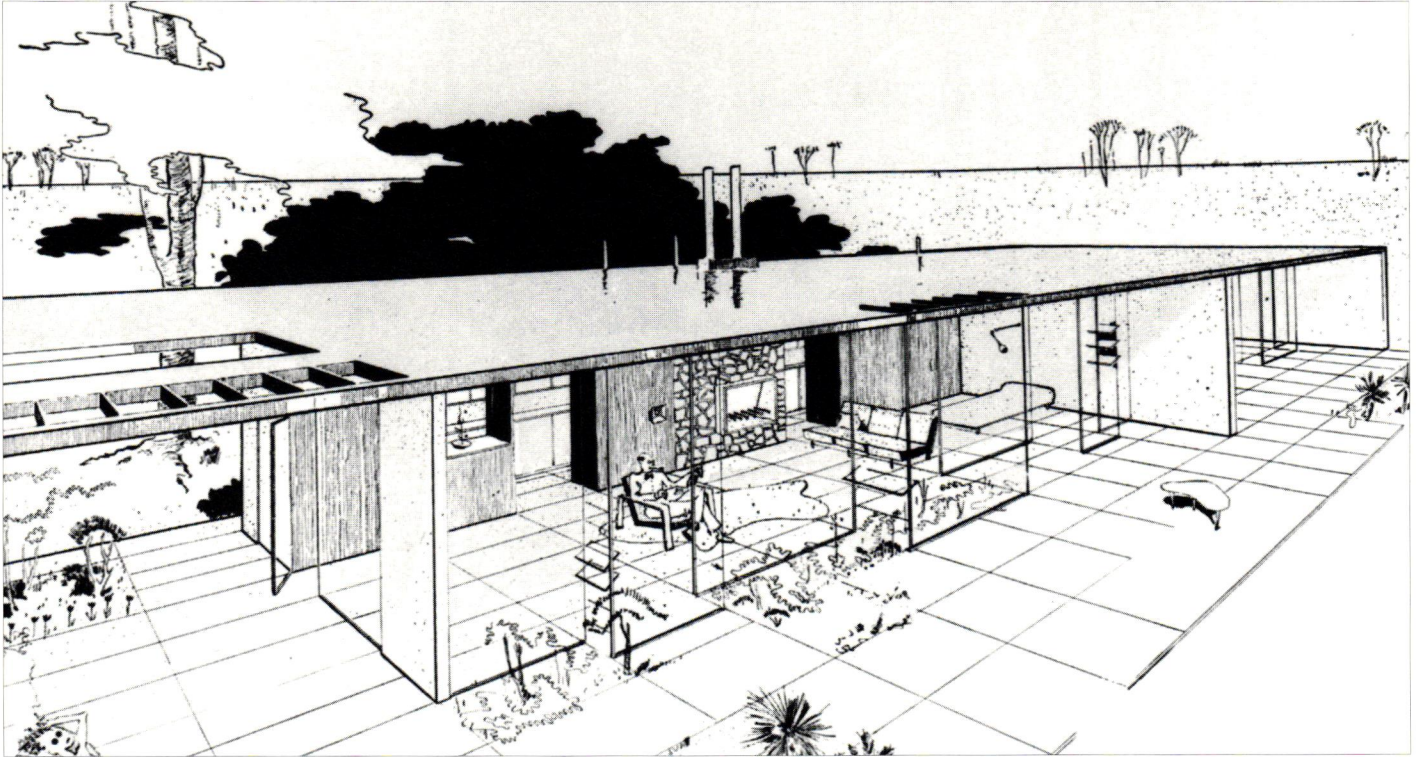
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156



- 153** Howard Sloan's Solar Park House Number Two, Glenview, IL, 1942, view and plan
154 Howard Sloan's Solar Park Three Level House, Glenview, IL, 1942, view and plan
155 Wesley Hanshe House, Racine, WI, 1942
156 Hanshe House, plan



157 Trans-Duo House, 1941
158 Trans-Duo House, plan

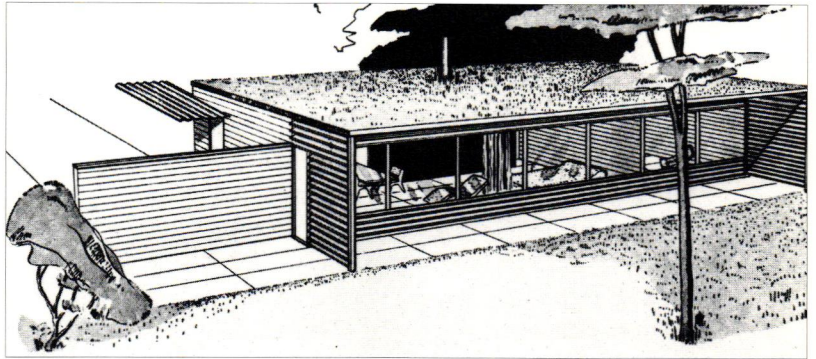
the Federal Works National Housing Agency to assist in designing defense housing. Green's Ready-Built was contracted in February, 1942 to produce the Kishwaukee Homes Housing Project, built in an area southeast of Rockford. The nondescript, rapidly constructed houses were built between June and September of 1942 for defense personnel working in the area. Keck's involvement with the project was minor compared to that of Elting and Lamb, and in the correspondence concerning the project Schweikher is seldom mentioned. The project was completed in October 1943 but Keck continued his working relationship with Ed Green as the designer of Green's Ready-Built House.³⁸

Writing to the Surface Combustion Corporation of Toledo, Ohio, who published and illustrated the Green's Ready-Built House in a booklet titled "Let's Plan a Peacetime Home," Keck said:

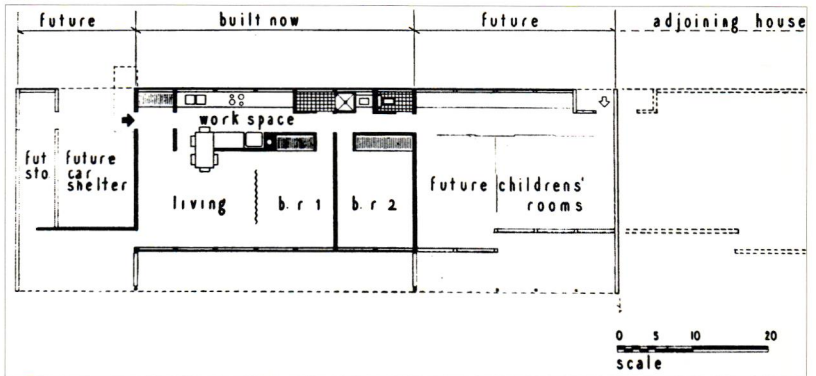
The house as laid out in the sketches is comparatively small with one fixed permanent bedroom and two folding partitions, which makes this small plan equivalent to a three-bedroom efficiency house. Note also in the plan that additions can be made on each end of the house. On the bedroom end the rooms can be extended to include as many more bedrooms and baths as may be necessary. On the kitchen/utility room end additional storage rooms and garages may be added without the owner moving out of the house, and they can be added at any time his pocket book permits. With this kind of house...the fuel bills have been cut as much as one-third...there is a feeling of spring in the house on winter days,...the added light...is a health measure especially good for the eyes,...[and the floors are] such that the tiniest infant can play and not feel drafty.³⁹

Two years after the assembly of a demonstration house and after wartime restrictions on private house construction were removed, the Ready-Built entered the market in the spring of 1947. Keck kept busy through the war refining his solar ideas, developing postwar housing designs, and consulting with companies that would be involved in peacetime construction. He created "A Design for Better Living" for the Celotex Corporation (1942); discussed his U.S. Gypsum Company's "Manufactured House" in *American Lumberman*

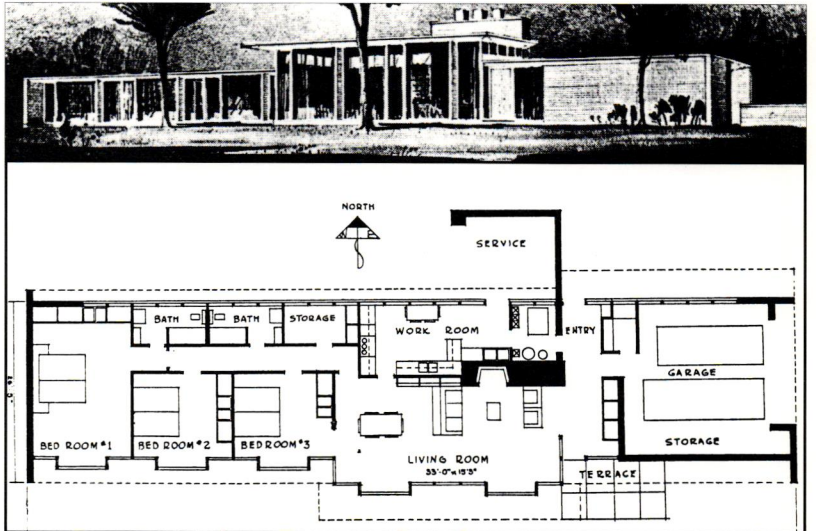
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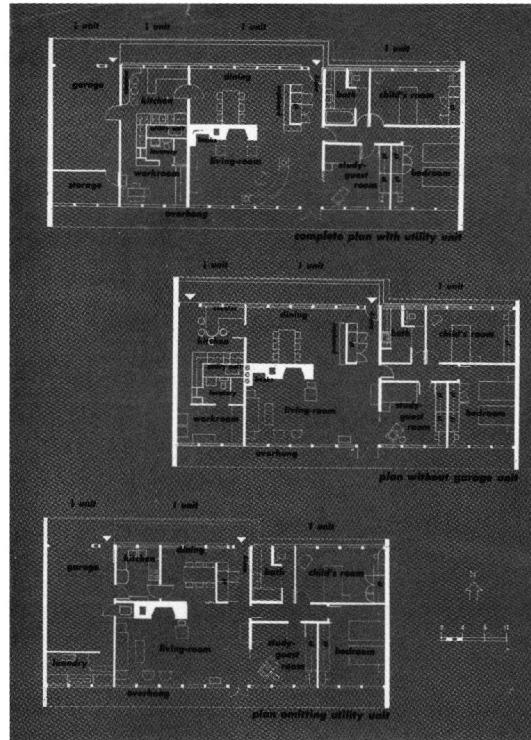
159, 160 Home for Tomorrow's Happy Living, 1942
161 Illinois State Solar House, 1945

(1943); designed a "Home for Tomorrow's Happy Living" (fig. 159, 160) for Revere Copper and Brass Inc. (1942) and "The Illinois State Solar House" (fig. 161) for Libby-Owens-Ford (1945); and wrote about solar housing in *Reader's Digest* (January 1944).⁴⁰ He also received two magazine-sponsored house commissions for *Ladies' Home Journal* and *Mademoiselle* (fig. 162). Each design was an adaptation of the Green's Ready-Built as influenced by the Sloan and Duncan designs. The projects for the popular magazines reached a wide audience who would subsequently seek out Keck as their architect.

The postwar years were busy for the Keck office. From 1945–50, Keck was involved in over 100 house projects, including twenty remodelings and two large Hyde Park, Illinois, community projects.⁴¹ The Sidney H. Davies House, an inexpensive design published in *Parent's Magazine* and *Architectural Forum*, is representative of Keck's work during this period. Davies had worked as a contractor building an air field in Puerto Rico and served two years in the South Pacific in the Navy, experiences that introduced him to life in open houses with lots of light and vistas. When Davies returned from the war, he and his wife hired Keck to give them a home in keeping with their tropical lifestyle. The Davies House had principal rooms along the south and service areas to the north (figs. 163, 164). An evenly modulated south wall was protected by projecting eaves and end wing walls. The interior and exterior design reflected Keck's insistence upon order and simplicity. As usual, the house incorporated fixed Thermopane windows, ventilation louvers, clay tile radiant forced hot-air heating, and extensive built-in storage units. The eastern and western brick cavity walls were filled with mineral wool insulation. Davies said that the family "got more enjoyment out of the one glass wall in each room than from any other feature [of the house]."⁴² The glazing made the house seem exceptionally spacious. Sidney H. Davies and Sons, Contractors would later build a number of Keck designs.

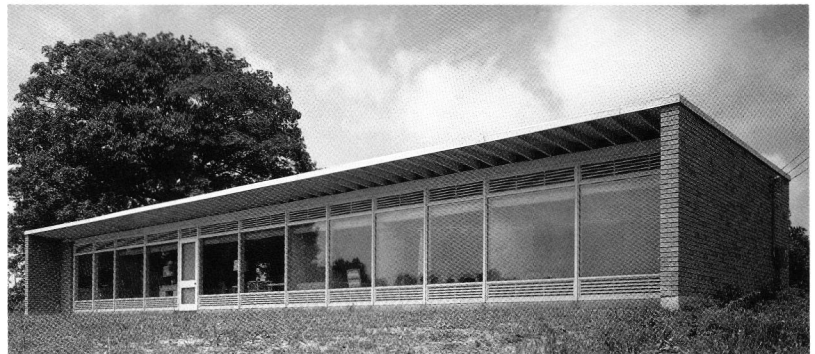
The design of the 1947 Joseph D. Krueger House in Highland Park (figs. 165–167) was almost identical to the Pete Keck House design (figs. 150–152). Both had sites facing a lake; both relied on a dimensional module given by fixed glass. Krueger had lakeside

162

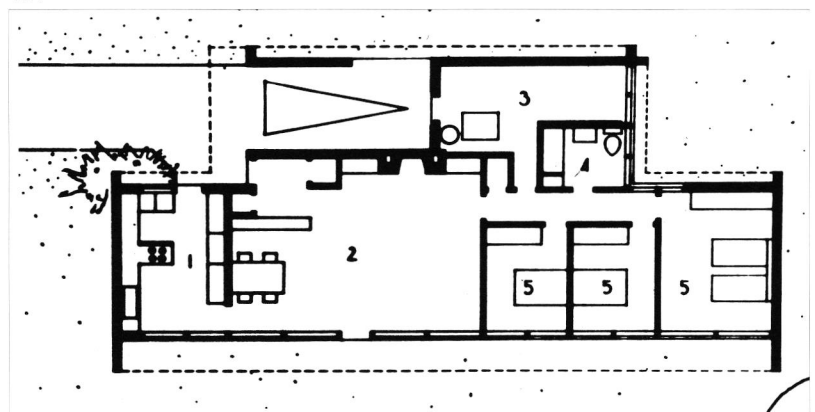


162 *Mademoiselle*
House for the
Midwest, 1946,
floor plans
163 Sidney H. Davies
House, Northfield, IL,
1946
164 Davies House,
plan

163

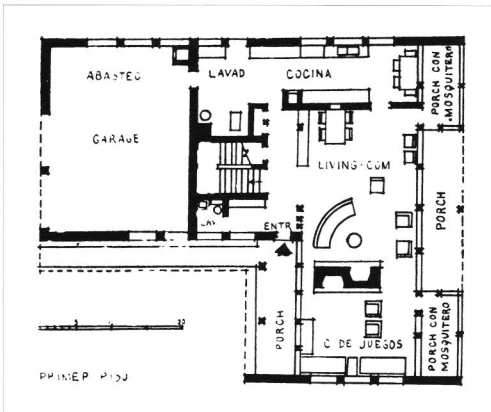


164

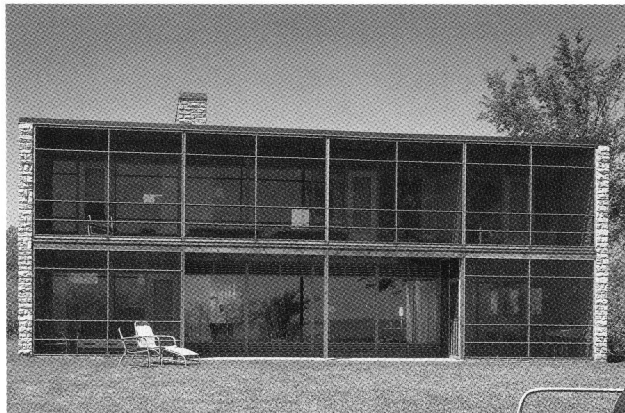




166



167



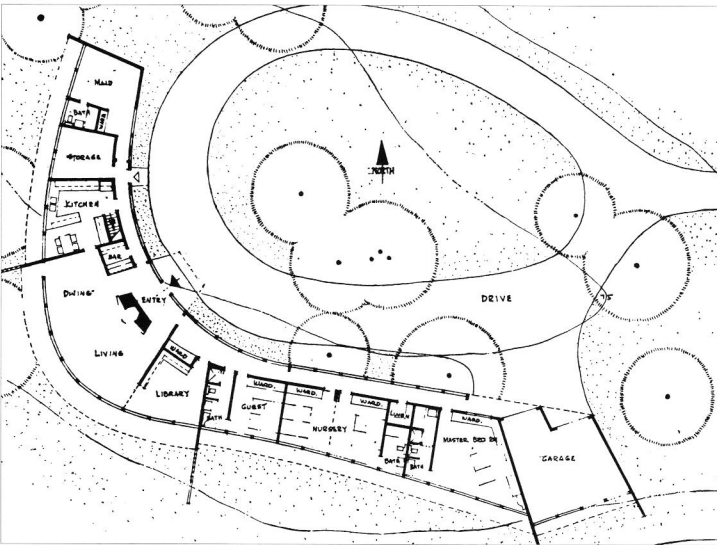
165 Joseph D. Krueger House, Highland Park, IL, 1946, living room

166 Krueger House, first floor plan

167 Krueger House, lakeside view



169



170



screened porches, exposed interior ceiling joists, and a utility core and stairway on the public side of the house. Its materials and structure—hollow core masonry end walls, standard wood construction, exterior fir tongue-and-groove, and interior fir plywood—were akin to most of the Solar Park houses and the Hanshe House.⁴³

In addition to his moderately priced solar projects, Keck designed a few houses for large private sites. The 1947 Jerrold T. Kelly House had an irregular but fluidly curving plan to take advantage of a view to the Lake of the Woods and fixed Thermopane south and west walls to highlight a changing seasonal panorama (figs. 168–172).⁴⁴ This high-budget four-bedroom house had a flat roof, roughly textured white stuccoed walls (north and east), copper roof flashing and expansion joints, radiant hot-water heating, and operable screens, which offered privacy and helped to break the length of the southern curved facade. The aesthetic of the Kelly House was similar to that of the earlier Bertram J. Cahn House (fig. 75).

A 1948 house for Abel E. Fagen (figs. 173, 174), built on an eighty-acre suburban farm, also took advantage of its southern exposure, with an angular wall designed after Wright's poly-wog geometry in Usonian projects. The architects "made a point of the angular placement of windows, not only for the view, but also for the feeling of space and for the reflective values of the glass, which added a note to the spatial feeling in the house, and ridded it of the monotony of the rectangular unit."⁴⁵ Natural stone and wood enhanced the Wrightian organic aesthetic in this, the last Keck house to exhibit a strong Wrightian influence. The interior walls were plaster or stone; cork-covered floors were heated by radiant hot water; and vertical wooden louvers were placed beside fixed Thermopane. Alexander Archipenko, Keck's colleague at the Chicago School of Design, created a glass screen for the dining area (figs. 175–177); and Willis designed the interiors with Mildred Fagen, an amateur sculptor and painter.⁴⁶

The 1951 Sigmund Kunstadter House in Highland Park, Illinois forges a link between the projects just discussed and Keck's standard solar house of the 1950s and 1960s (fig. 178). Located on a densely forested site⁴⁷ landscaped by Raymond Hasekamp (a pupil of

171



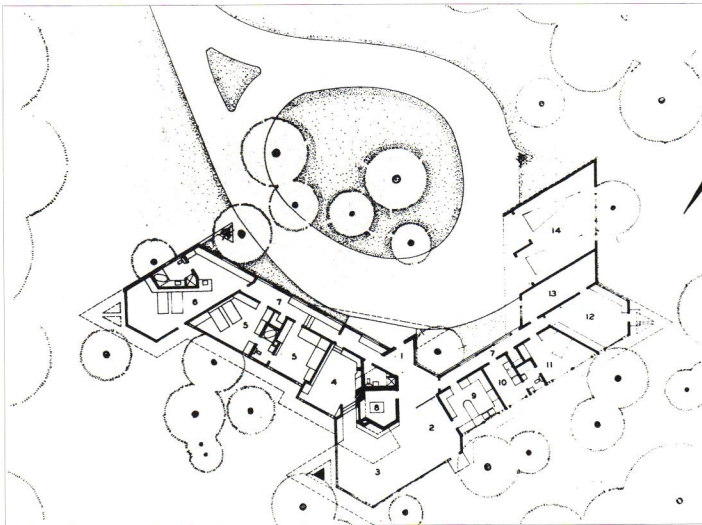
172



- (opposite)
168 Jerrold T. Kelly House, Barrington, IL, 1947
169 Kelly House, plan
170 Kelly House, living room
171 Kelly House, exterior
172 Kelly House, living room



173 Abel Fagen House, Lake Forest, IL, 1948



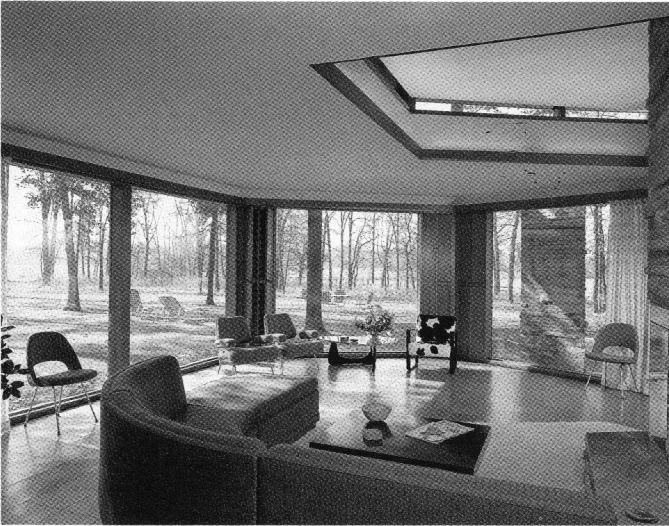
174 Fagen House, plan

(opposite)

175 Fagen House, living room

176 Fagen House, living room

177 Fagen House, bedroom



Jens Jensen), this \$110,000 house—a solar design of modular construction similar to the Green's Ready-Built—won the 1953 Honor Award for the Best House Design of the American Institute of Architects, Chicago Chapter, and the 1955 National A.I.A. Award.⁴⁸ Its design was generated by a rectilinear structural cage of bays, rather than by its site or by aesthetic whim (figs. 179), and recalled the linear and crisp geometry of Keck's early 1930s work. Eight bays projected or receded to distinguish between different functional zones and to provide privacy. Large overhangs and an extended unbroken fascia unified the composition and provided a sense of protective shelter on both the south solar and north entrance walls (fig. 181). The standard wood-frame construction was surfaced with vertical tongue-and-groove straight cedar with a slight gray pigmentation for both color and weather protection. A large limestone mass containing fireplaces separated the living and dining rooms. Slate, cork, and vinyl covered the radiant hot-water floors. On the southern exposure, floor-to-ceiling fixed Thermopane and wooden louver walls provided ventilation and vistas of the wooded site. Keck and Willis designed furnishings including a sofa, built-in suspended lighting, and bed headboards (fig. 180).

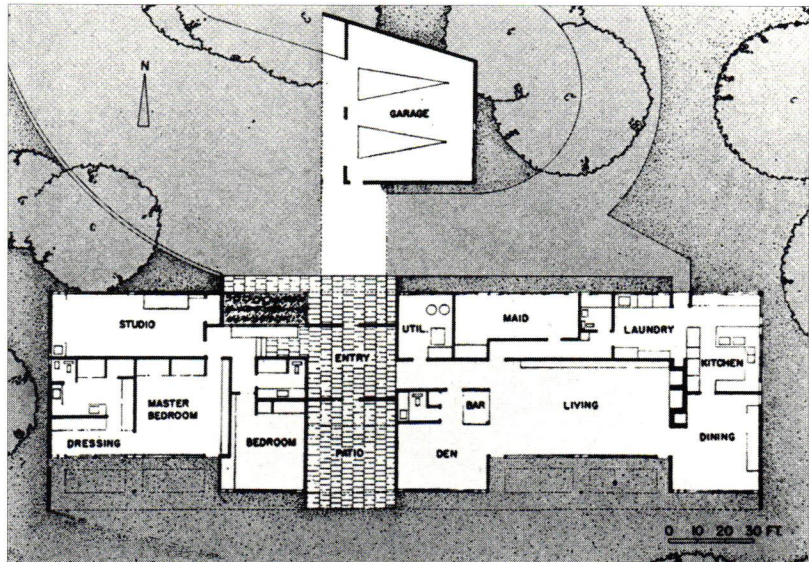
By 1951, Keck had designed, built, and tested individual solar houses as well as an entire solar subdivision. He adapted and subsequently discarded certain Usonian-like aesthetics in favor of his prewar planar aesthetic. By this time he had joined in partnership with his brother and their practice was thriving. Partly due to the demands of a busy office, Keck resigned from his position at the Chicago School of Design. He continued to teach, but his lessons were now taught in the less formal setting of his own office, where a periodic turnover of young draftsmen sought out his advice and experience.

In January 1950 a major exhibition of Keck's work originated at the Taylor Museum in Colorado Springs. After a month at the Taylor, the show traveled to the Layton School of Art, Milwaukee; the University of Minnesota Institute of Technology, Minneapolis; and the University of Chicago.⁴⁹ It was on exhibit for a month in each location. As a result of these exhibits, publication in periodicals, and awards, Keck became widely known as the designer of the solar house.

178



179



178 Sigmund
Kunstadter House,
Highland Park, IL,
1951
179 Kunstadter House,
plan



180 Kunstadter House,
interior view from bar
to living room

181 Kunstadter House,
exterior seen from
southwest

NOTES

1. Walter Gropius in Sigfried Giedion, *Walter Gropius: Work and Teamwork* (New York: Reinhold Publishing, 1954): 193.
2. "Transition in German Architecture," *Architectural Forum* 58 (February 1933): 133–152.
3. Walter Gropius, "The Formal and Technical Problems of Modern Architecture and Planning," *Journal of the Royal Institute of British Architects* 41 (May 1934): 694.
4. Giedion, *Walter Gropius*, 192–200.
5. Robert Marks, *The Dymaxion World of Buckminster Fuller* (Carbondale: Southern Illinois University Press, 1960), 35–36.
6. Theodore Larson, "New Housing Designs and Construction," *Architectural Record* 75 (January 1934): 3–36.
7. Aute Lee Carr, *A Practical Guide to Prefabricated Houses* (New York: Harper and Bros., 1947), 9.
8. By the First World War there was a desire in America to standardize products in order to simplify manufacturing and reduce costs. The National Bureau of Standards was established in 1921. Miles L. Colean, *American Housing: Problems and Prospects* (New York: Twentieth Century Fund, 1944), 133–135.
9. Paul Conkin, *Tomorrow's a New World: The New Deal Community Program* (New York: Cornell University Press, 1959): 172.
10. The contract was signed in May 1943. Correspondence file, "Green's Ready-Built," project 306, Box 2, M73-26, State Historical Society of Wisconsin (SHSW). "Prefabrication Progresses to a New Design Level Incorporating Contemporary Planning Ideas with Factory Processed Parts," *Architectural Forum* 83 (July 1945): 128.
11. "Prefabricated Home will be on Display in City Late in Month," *Rockford Morning Star*, 8 April 1945; Mary Roche, "Houses Warmed by the Sun," *New York Times*, 15 March 1945, sec. 6, 32; "Green's Ready-Built Homes, Inc.," (September 1946), 5; correspondence file, "Green's Ready-Built," Transfile, Box 2, M73-26, SHSW.
12. Fred Keck, "General Distribution of the Manufactured Solar House"; correspondence file, "Surface Combustion Corp.," Box 8, M73-26, SHSW.
13. "Green's Ready-Built Homes," 5; correspondence file, "Green's Ready-Built," Transfile, Box 2, M73-26, SHSW.
14. "Solar House Built Totally in Factory," *New York Times*, 19 April 1945, 5, 24.
15. Burnham Kelly, *The Prefabrication of Houses* (Cambridge: Technology Press of M.I.T., 1951), 412.
16. "Green's Ready-Built Homes," 5.
17. Robert Bruce Tague, *Keck on Architecture: An Exhibition Organized by the Taylor Museum of the Colorado Springs Art Center* (Colorado Springs: Colorado Springs Fine Art Center, 1947), 17, 18.
18. George Fred Keck, "A House to Grow With," *Coronet* 14 (August 1943): 25.
19. Jens Jensen landscaped the Kuppenheimer estate in Lake Forest, Illinois, out of which the site for the Bertram J. Cahn House was taken. Jensen had earlier founded the Clearing in Door County, Wisconsin. With his death, Mrs. Buchbinder, who was very active in this small cultural community, asked Keck to run the Clearing. Jensen had been fond of Keck, liking his ability, integrity, and the fact that he never compromised.
20. Fred Keck, letter to the Buchbinders, 10 January 1950; correspondence file, "J. R. Buchbinder," project 244, Box 1, M73-23, SHSW.
21. "Planned for Space and Freedom," *Architectural Record* 92 (November 1942): 65.
22. Dr. Jack R. Buchbinder, letter to Fred Keck, c.1942; correspondence file, "J. R. Buchbinder," project 244, Box 1, M73-26, SHSW.
23. G. F. Keck, "A House to Live In," *Coronet* 8 (September 1940): 106–114. No correspondence file exists for this project 261, and the final drawings for the *Coronet* House are dated October. The commission had to have come to Keck during the summer of 1940, at the time the Buchbinder and Sloan houses were being built.
24. Keck had been doing some remodeling work in Stevens Point for Margaret Southwick (October 1938), William Fisher (April 1939), and Donald W. Copps (March–September 1940), all of whom were acquainted with Oscar Weber. Interview with Dr. Maurice and Elizabeth Rice; Keck architectural drawings, project 263, vaults, SHSW.
25. Fred Keck, letter to Elizabeth Rice, 12 August 1942; correspondence file, "Dr. Maurice Rice," Box 7, M73-26, SHSW.
26. Interview with the Rices, 6 July 1982; correspondence files, "Dr. Maurice Rice," Box 7, M73-26, SHSW.
27. John L. Bennett, letter, 3 April 1944; correspondence file, "John L. Bennett," project 269, M73-26, SHSW.
28. "High on a Windy Moraine," *House and Garden* 86 (November 1944): 80–81; "Solar House for a Sunny Hilltop," *Architectural Record* 95 (March 1944): 58–65.
29. "A Portfolio of Modern Houses," *Architectural Forum* 77 (August 1942): 67–82; correspondence file, "Bradford and Louise Shank," project 275, Box 7, M73-26; "Hans Greven," project 276, Box 3, M73-26; no file exists for the Kadell House, project 274; "Location: Lake Forest, Illinois," *Pencil Points* 24 (May 1943): 44–49; project 293: SHSW.
30. Correspondence file, "Dr. Emile Quenneville," project 273, Box 7, M73-26, SHSW.
31. "House in Oconomowoc, Wisconsin," *Progressive Architecture* 27 (July 1946): 64–67; project 277. The Pete Keck House was also illustrated in *Pencil Points* (1946) and in *Nuestra Arquitectura* (February 1948), and was used by Libby-Owens-Ford for advertising purposes.
32. "Two Developments in Glenview, Illinois," *Architectural Forum* 80 (March 1944): 85.
33. Howard M. Sloan, "Insolation and House Design," *Pencil Points* 25 (February 1944), 76–82; project 298.
34. Jean Hulburd, "Cool in Summer, Warm in Winter," *Better Farming* 125 (August 1955): 58–59, 76.
35. Wesley Hanshe, letters to Fred Keck; correspondence file, "Wes Hanshe," project 297, Box 10, M73-26, SHSW.
36. "George Fred Keck Plans the Trans-Duo," *Architectural Forum* 75 (October 1941): 54–57; "The Manufactured House," *American Lumberman* (1 May 1943); correspondence file, "U.S. Gypsum Co.," project 262, Box 12, M73-26, SHSW.
37. "GFK Plans Trans-Duo," 54–57.
38. Correspondence file, "Defense Housing Corporation," Box 2, M73-26, SHSW.
39. Keck, "General Distribution of the Manufactured Solar House," correspondence

- file, "Surface Combustion Corporation," Box 8, M73-26, SHSW.
40. Maron J. Simon, ed., *Your Solar House* (New York: Simon and Schuster, 1947): 72-73; "Houses for the People," *Pencil Points* 26 (September 1945): 59-66; Richard Pratt, "Water on the Roof," *Ladies' Home Journal* 61 (July 1944): 110+.
 41. Project 344, the Sidney C. Wohl House, is the first design in which William Keck's name appears with Fred Keck's. The first five years of their partnership brought them to project 450. Architectural drawings, vault, SHSW.
 42. "Designed Especially for a Rigorous Climate," *Parent's Magazine* 23 (August 1948): 57-59, 100-101; see also "Seven Post War Houses," *Architectural Forum* 87 (September 1947): 107-109; correspondence file, "Sydney H. Davies," Transfile 2, project 338, Box 1, M73-26, SHSW.
 43. "Lake Shore House," *Architectural Forum* 86 (April 1947), 102-103; "Houses: Broad in Vision though Narrow in Land," *Architectural Record* 104 (December 1948): 92-96; project 355.
 44. "Straight Lines or Panoramic Curves," *Architectural Record* 101 (May 1947): 132-133; the correspondence file for the Kelly House, project 358, has been lost.
 45. "A House with 'Emotional Content,'" *Architectural Record* 109 (March 1951): 106.
 46. Correspondence file, "Abel E. Fagen," project 387, Box 18, M73-26, SHSW.
 47. The Kunstadter site originally belonged to the Ward Willits, for whom Frank L. Wright had built a famous house that still stands a little distance to the west. "Zonate Plan Yields Amenity in Living," *Architectural Record* 115 (February 1954): 196-201; correspondence file, "Sigmund Kunstadter," project 448, Box 10, M73-26, SHSW.
 48. William Keck was a member of A.I.A.; George Fred Keck was not.
 49. Dr. Irving Cowan was the contact person who helped schedule the Keck exhibition at the Layton School of Art. He had seen Keck's work in *Home of Tomorrow*, and contacted him in June 1946. Keck visited the Cowans and was commissioned to design a house, which was completed in Fox Point in January 1948. Dr. Irving Cowan, letter to Fred Keck, correspondence file, "Dr. I. Cowan," project 357, Box 18, M73-26, SHSW.

9

THE SOLAR HOUSE REFINED

In the 1950s, Keck's architectural practice reflected the prosperity of the times; returning Second World War soldiers needed housing. Throughout the decade, his office averaged twenty-two projects a year, up from ten in the 1930s and sixteen in the 1940s. United States Bureau of Census publications show an almost fifty-percent increase in the American population between 1930 and 1960, with nearly half of the population under twenty-four years of age. American cities expanded into the suburbs.

Keck continued to work closely with his clients and their families. He requested a "want and need list" to include room types and numbers, an inventory of possessions in use and in storage, and a description of each family member's activities. He asked to spend at least one night with the clients to observe their lifestyle and speak privately with each family member. Keck wanted to learn how the family used and perceived their environment and the structure and spaces in their home. Most importantly, he wished to improve their environment through architecture.

After visiting the site, Keck would request a surveyed plot diagram to include all large trees and other notable physical features present on the site. From this documentation and interviews with the clients, Keck would engineer a solar house to reflect the specific family's needs. Keck explained his idea about the modern house to John Crowley, building editor of the Michigan paper, *Muskegon Chronicle* :

Basically a house should be a comfortable place in which to live, organized to house the activities of the family in a contemporary manner, and to take full advantage of its site and the potentialities it offers. And it must be planned and organized to the climate....As a comfortable place to live it must take advantage of the most up-to-date devices for comfort in its construction. A house is difficult to

design for it must house people of various age groups, whose interests differ and change. Children, as they grow up, change interests quickly. Adults have evolved definite patterns and do not change. Often these activities conflict and a plan must be sought to give greater latitude to each of the traditions....The site selected for the house is important together with its contour and the vegetation on it....The entire house is a common sense approach to living today, with an eye to the possibilities [and] needs of tomorrow. For such a house will live for a long time on its site, and the best solution to its planning is the one that anticipates the future needs of its occupants.¹

Before Keck designed a "House for the Midwest" for *Mademoiselle* in 1945, the magazine editors surveyed approximately 2,000 of its readers to ascertain their views on the subject of the ideal house. The majority of respondents (college-educated women between the ages of twenty-two and twenty-nine, most of whom were married) wanted a single-level suburban house with three bedrooms, combined living/dining room, fully modern kitchen, utility room, built-in storage, and tile bathroom. The price was to be from \$7,500 to \$10,000.² The opinions of these women were important. By the 1950s, most client correspondence concerning the planning stages of Keck's residential work was written by women. By the mid-1960s daily communication concerning projects was increasingly handled on the telephone, leaving little written documentation of individual residential projects.³

During the fifties Keck's architecture became more formal and refined, although the modular dimensions of his geometric compositions remained tied to the sizes of standardized building parts and prefabricated units, especially Thermopane windows. Large windows that stretched like a membrane over a geometric

frame now virtually dematerialized Keck's walls. Although originally adopted for passive solar heating purposes, Keck began to use these elements on every exposure, not only the southern one. The availability of more efficient heating and cooling systems, improved Thermopane products, and inexpensive fuel made solar paths less important design constraints than site and landscape conditions, and Keck responded by giving occupants the greatest amount of "picture window" possible.

He continued to incorporate radiant floor heating, at times by means of electric coils rather than hot air or hot water. Gabled roofs were used in a few houses, but flat roofs with skylights—illuminating baths, halls, and kitchens—or shed roofs were most common. Unadorned cylindrical Transite flues rose above the roof line in place of the more traditional and bulky chimney masses in Keck's earlier houses. For ventilation, adjustable aluminum louvers ran from floor to ceiling alongside fixed Thermopane instead of the fixed wooden louvers placed horizontally at floor or ceiling level in Keck's prior houses.

Keck's palette was subdued and neutral—cabinetwork of clear birch washed with gray or white pigment, white laminate counter tops, gray-white interior walls. The exterior was generally faced with vertical tongue-and-groove cedar that had been pigmented and sealed to a silver-gray. Undressed gray concrete block frequently replaced brick, while slate floors were gray in tone. Exposed metals included copper for exterior use and chrome-plated brass inside the house.

Family rooms typically spilled into other areas of the interior. Most bedrooms had built-in drawers, shelves, and closet space. According to Marianne Willisch, "Space was the most expensive part of our architecture. I used a minimum of furniture to create a maximum of space. The outcome was a formal informality."⁴

The Walter Gray and Harold Levin houses, two projects that share a common property line in Olympia Fields, Illinois, are representative of Keck's 1950s residential work. The 1954 Gray House (figs. 182–186) was constructed with a delicately scaled, white-painted, welded steel frame of four-inch columns spaced about twelve-and-one-half feet on center and attached to a reinforced concrete foundation. The frame formed a

182



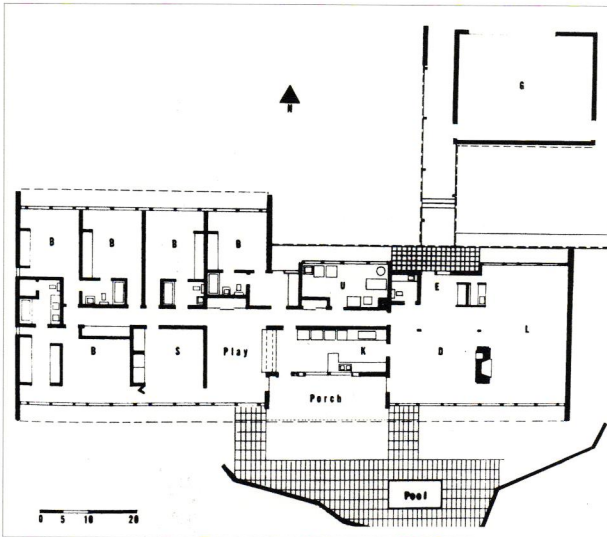
183



182 Walter Gray House, Olympia Fields, IL, 1954
183 Gray House, interior hallway



185



186



184 Gray House,
living room
185 Gray House,
plan
186 Gray House,
montage showing
construction detail

series of regular bays sheathed along the east and west elevations by a curtain wall of one-inch black slate panels bolted to the welded structure. Fixed Thermopane (58 by 116 inches) and adjustable aluminum louvers comprised the south and north walls. The roof was covered by gypsum board, tar, and gravel. The slate, interior walls, and ceilings were sprayed with insulation before the application of cement plaster over metal lath.

The exposed steel frame created a pattern of open and closed cubic interior volumes. Keck separated the living/dining area from the five bedrooms with the kitchen and service areas, which together acted as a central buffer zone. A long central corridor with a plastic luminous ceiling linked the zones of the house (fig. 183). It gave access to bathrooms and also held the mechanical core.

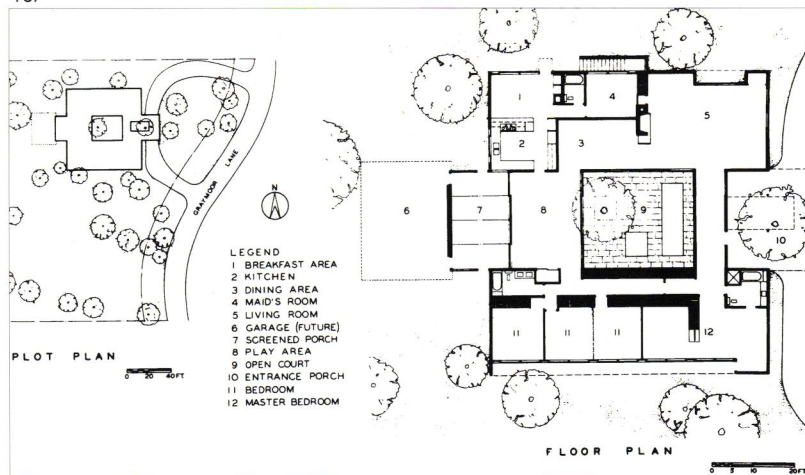
Radiant hot-water heat was set in the ceilings and in floors faced with wood parquet, vinyl, or ceramic tile (fig. 186). Built-in cabinetwork was designed for the bedrooms, kitchen, and hall; a creamy gray, marble-faced masonry fireplace provided a partial barrier between the living and dining rooms (fig. 184). All the major rooms had a southern exposure, but Keck also used glass extensively on the northern facade, since this orientation had finer exterior views and a greater degree of privacy.

Willisch's interiors added to the comfort and luxury of the Gray House, which was similar to the Kunstadter House in all aspects except materials.⁵ Kunstadter was organic in texture and warm in palette; Gray was machined, efficient, almost cold and detached. If the former embraced and became part of the landscape, the latter sat man-made and self-contained, a challenge to nature.

During construction of the Gray House, Keck designed a home for Harold Levin on a contiguous property. In 1958, the Levin House received a *House and Home* Merit Award in the large house division (over 2800 square feet). Levin had a square perimeter enclosing a central courtyard (figs. 187–189). As one of the *House and Home* jurors said:

[In a house] with a court like this, you are throwing away floor space, but you are buying a different kind of space—the kind you cannot get under a roof. You get a different feeling when you can look

187



188



187 Harold E. Levin House, Olympia Fields, IL, 1955, plan
188 Levin House, exterior or bedroom wing
189 Levin House, view into courtyard from living room

189



through an open space to another part of the house. In the daytime there is moving scenery in the change of light and clouds. At night the illumination of the court is open to all kinds of interesting ideas.⁶

In this version of the solar home, the courtyard served as a sun trap, turning the house inward and thereby creating a spatial variety previously unseen in Keck's architecture.

Unlike the detached garage on the Gray property, Levin's open porte cochère provided covered access and entry to the house. The play area, courtyard, and porte cochère created a central buffer between the living and sleeping areas. The plan's repetitive module gave the house a spacious quality derived from simple geometry.

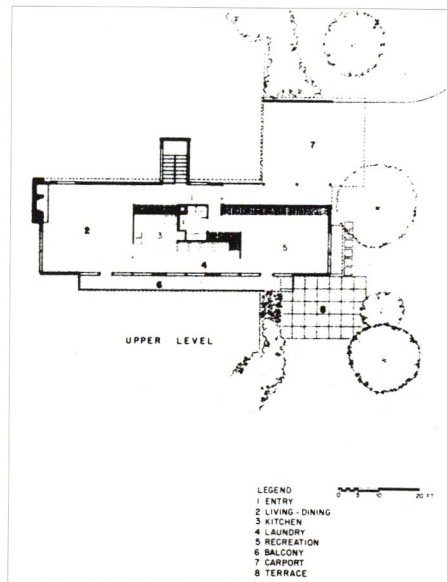
Like the Gray House, Levin was built on a radiant floor slab. Unlike Gray, its exterior was sheathed with vertical silver-gray pigmented tongue-and-groove fir. Floor-to-ceiling fixed Thermopane and adjustable aluminum louvers—identical in size to those used on Gray—modulated the south and north walls, and the south wall was protected from summer sun by projecting eaves. Skylights on the crimped copper-edged flat roof illuminated the bathrooms; Transite flues projected upward.

Keck's office produced many variations on the Gray and Levin models, for example, the 1952 Robert Feldman House in Benton Harbor, Michigan (figs. 190, 191). The two-story house of standard wood frame was built on concrete block foundation. The site, a steep bluff overlooking the St. Joseph River and undulating sand dunes, dictated that the principal orientation of the house be to the west. Because of the narrow and steep lot, the main entrance and garage were located on the upper level. The kitchen separated the recreation room from the more formal living and dining rooms; bedrooms were placed below at ground level. Exterior walls were stained tongue-and-groove redwood, as were some interior surfaces. A few interior walls were painted plaster. Dorothy Feldman wrote most of the correspondence to Keck, and Joseph, one of the Feldman's three sons, wrote to propose ideas for his bedroom.⁷ During the initial planning phase, Robert Feldman wrote to inquire if all of Keck's clients had to record the lengthy lists of wants, needs, and

190



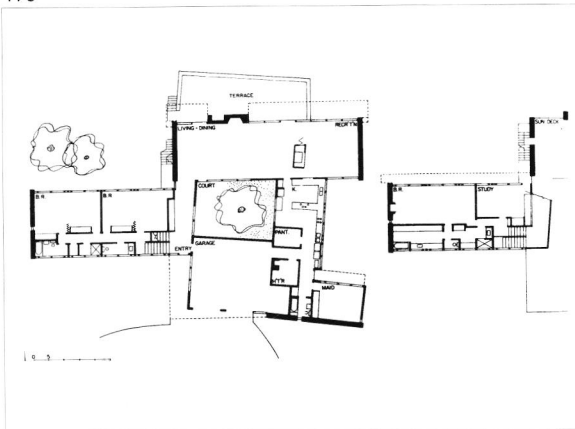
191



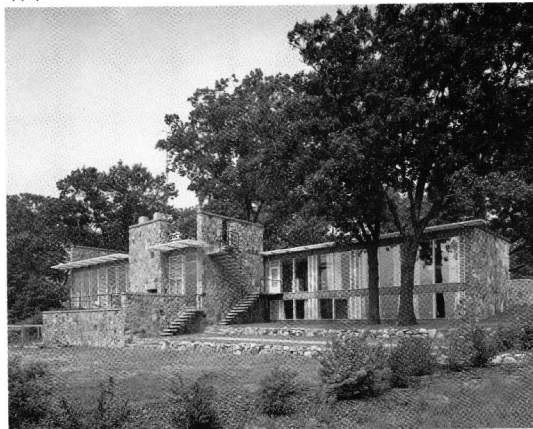
190 Robert Feldman House, Benton Harbor, MI, 1952
191 Feldman House, plan



193



194



192 Herman Grossman House, North Muskegon, MI, 1951
 193 Grossman House, plan
 194 Grossman House, exterior view from lake

uses intended for various rooms of a house. Indeed the practice had become standard in the relations between Keck and his clients.

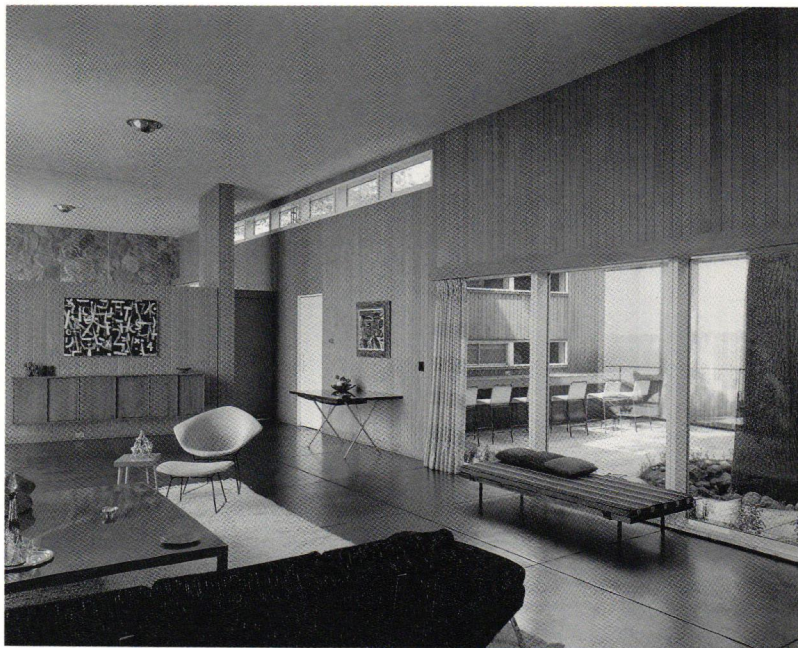
Herman Grossman, owner of a large furniture store in North Muskegon, Michigan, employed Keck in 1951 to design a large two-story house on Lake Muskegon. William Keck and Robert Tague were associate architects on this bleached gray cypress and gray/pink granite house. The expensive structure wrapped around an internal court, the site of a large old oak tree (figs. 192–194). Three wings—living, sleeping, and utilities—spread like a pin wheel from this central space. A unique exterior cantilevered stairway gave access to the roof of the living room, and a southern sun deck afforded the family and their friends a distant view of Lake Muskegon. The roof also carried a sheet of water for cooling.⁸ In discussing solar homes in general, and the Grossman House in particular, Keck said,

orientation of the house meant only that...the problems of the climate were taken into consideration....The most important single fact was the location of the sun, but also important were the directions of prevailing winds both summer and winter. In summer we have too much solar energy...and sunshine into the house must be avoided to help keep the house as cool as possible.⁹

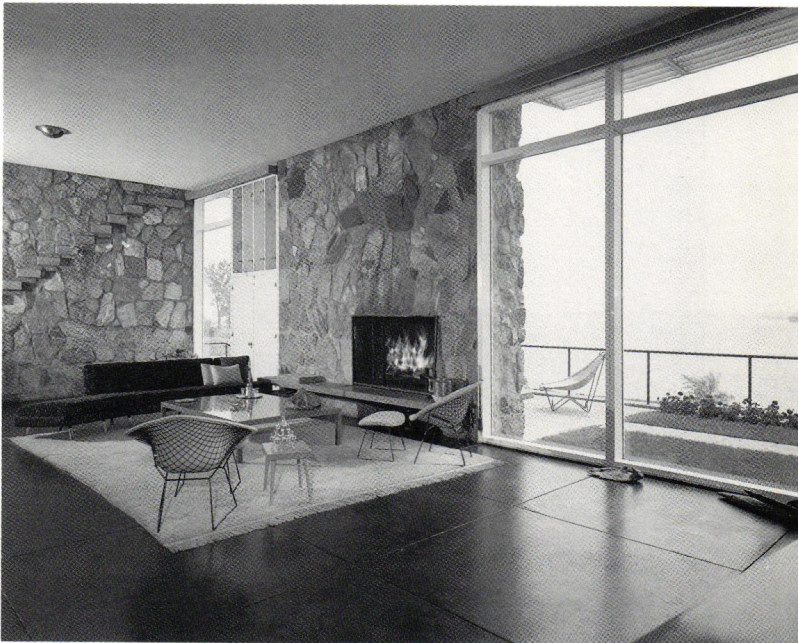
Wooden sun shades were placed above the large window walls on the lake side. The high-ceilinged living/dining/recreation room was contiguous with that of the split-level bedroom wing (figs. 195, 196). The now standard radiant floor was black, waxed, and scored on ground level, and oak was used to finish the floors of the upstairs master bedroom suite.

Dr. Robert Bloom's two-story house (197–199), built down the shore line from the Grossman's, was supported on concrete block and steel posts. The single-story, standard wood construction house was elevated on pilotis to gain a better view, and its on-grade section (like those of Le Corbusier and vernacular American houses in the Deep South) provided exterior sheltered living and parking space. The Bloom House had a grid of fixed floor-to-ceiling Thermopane and louvers on its southern elevation. Bleached red cedar, concrete block, hardboard, white plastered walls, and masonry radiant hot-water floors contributed to the

195



196



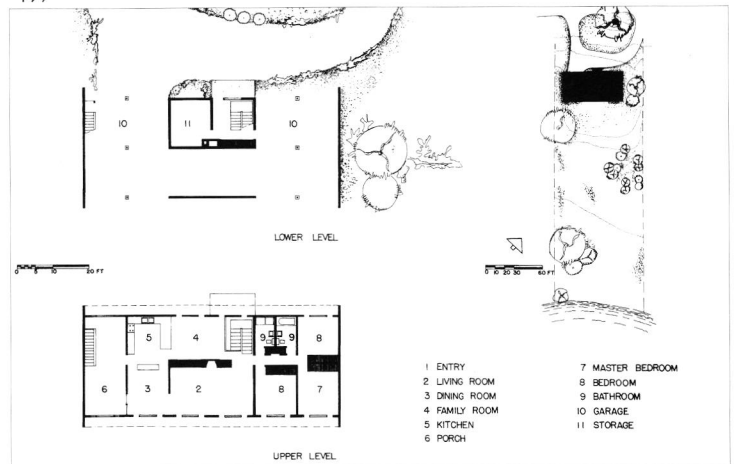
195 Grossman House, living room, view toward courtyard
196 Grossman House, living room, view toward lake



198



199



design's restrained simplicity and its relatively low cost of \$25,000. Keck said these materials gave the house a "clean, well-finished, tailored look."¹⁰

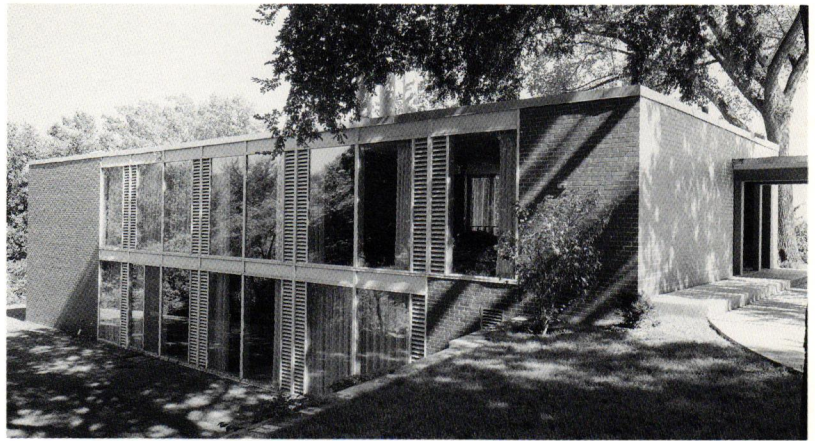
A rather large house (about 4,000 square feet) with similar lines but different materials was built for Dr. Donald J. Buser in Bittendorf, Iowa (figs. 200–202). The Buser House was built of dark hard-burned brick with white paint and aluminum trim. It had a flexibly zoned plan that functioned well for a socially active family. It was tailored to its uneven terrain and positioned to preserve existing trees on the site. An upper level detached garage, connecting porte cochère, entranceway, and living room were connected to bedrooms by a catwalk that crossed over lower level living and dining areas (fig. 201). These lower level rooms, where daily family living and formal activities took place, opened on all three sides to terraces and yards. The house had interconnected zones for easy circulation, yet each area retained its privacy. The fixed Thermopane and the open two-story living area contributed to the spaciousness of the Buser design.¹¹

Keck built at least four houses with organizing central court, entranceway, or core. He first adopted this plan in the Levin House and subsequently adapted it to other schemes: the Dr. Robert P. Hohf House focused on a large enclosed court illuminated by skylights and a shallow clerestory; the Dr. Jack Teplinsky plan was bisected by a large reception hall that accessed all areas; and the James Schramm House had a large entry gallery that linked the two halves of the house and provided display space for the client's large collection of European and American modern art. All three houses were of standard wood construction.

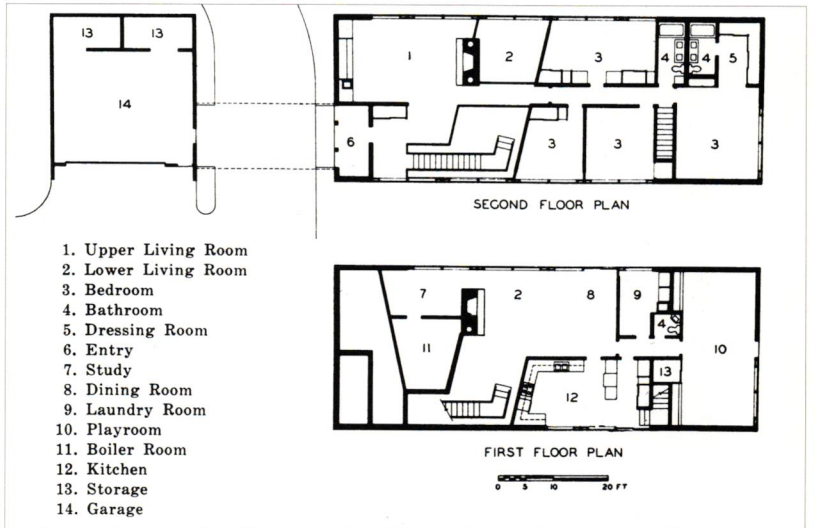
In the Hohf House, Kenilworth, Illinois (figs. 203–205), a post-and-beam system noticeably modulated the design. Interior shoji screens were supported by the internal atrium's posts, and freestanding posts along the fixed Thermopane north wall carried a projecting flat roof. Unlike the Levin court, the Hohf court was enclosed by skylights and a clerestory that flooded the interior with light. The tile floors, shallow pool, and exposed structure gave the house an oriental-like luxury and relaxed formality.

The structure of the house included a concrete foundation...brick and cedar exterior walls, wood and plaster interiors. The roof was built-up. Floors were

200



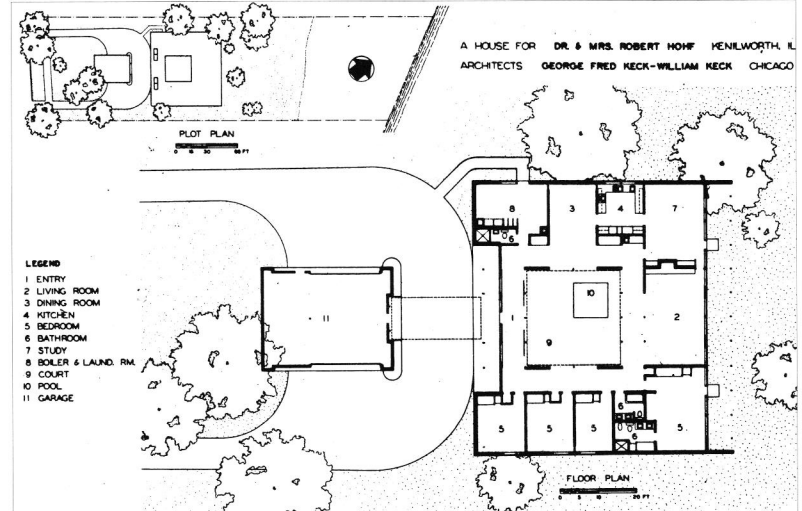
201



202



- (opposite)
- 197 Dr. Robert Bloom House, N. Muskegon, MI, 1959, living room
 - 198 Bloom House, lake-side facade
 - 199 Bloom House, plans
 - 200 Dr. Donald J. Buser House, Bittendorf, IA, 1957
 - 201 Buser House, plan
 - 202 Buser House, view of catwalk from lower living room



203 Dr. Robert P. Hofh
House, Kenilworth, IL,
1957, exterior seen
from garden

204 Hofh House,
interior courtyard

205 Hofh House, plan

variously vinyl tile, quarry tile, or carpet. Flashing was copper. Heating was by a hot water radiant system.¹²

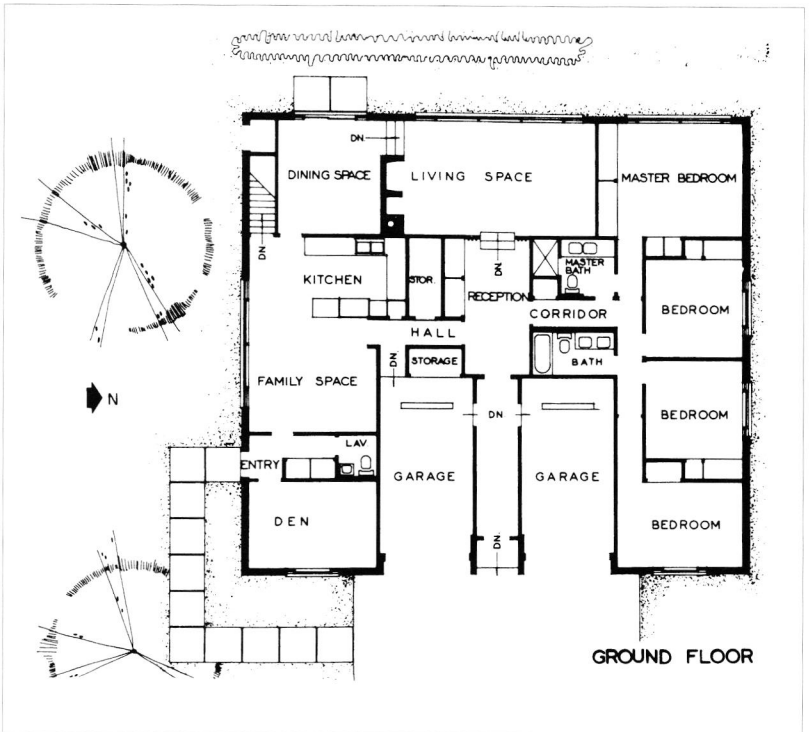
Like many of Keck's other contemporary designs, the Hof House was connected to its detached garage by a porte cochère. Built of corrugated aluminum, it lent a bit of fanciful whimsy to the overall design.

To reduce the bulk of the Teplinsky House in Highland Park, Illinois (figs. 206–208), Keck integrated two garages into the body of the building. A deep central hall/reception area, flanked by the garages, accessed the core of the house. Teplinsky was a psychiatrist who consulted clients at home, and so Keck designed a study with a private entry at the southeast corner of the plan. This room was adjacent to the family room to facilitate its future conversion to other uses.

The south and west fixed Thermopane window walls gave ample interior lighting and opened to a lawn area for outdoor living and dining. Inside, the living room was approximately one foot lower than the other areas in the house. Willisch designed a number of furnishings and helped with the interiors. Gray-green slate, dark metallic-colored brick veneer over a wood frame, natural wood floors and walls, and white painted drywall and exterior trim created a dramatic contrast and an interior atmosphere of comfort and luxury.¹³

James and Dorothy Schramm of Burlington, Iowa were a retired couple with an Art Moderne house commissioned from and built by Holabird and Root in the mid-1930s. Wanting a smaller less formal house, they sold their home, saved a portion of the land overlooking the Mississippi River, and commissioned Keck to design a new residence (figs. 209–211).

The approach to the house was via a steeply sloping road. Keck grouped the utility vents and other roof perforations in two areas to prevent visual obstructions interfering with a visitor's first impression of the house. Keck set the entrance back from the two wings of the house and designed the entrance hall to serve as an exhibition space. The Schramms had a large valuable art collection which was frequently on exhibit around the country; they needed an informal living/gallery space but also ample and secure art storage. The gallery bisected the plan to link the bedrooms to the living area and provide cross ventilation in summer.



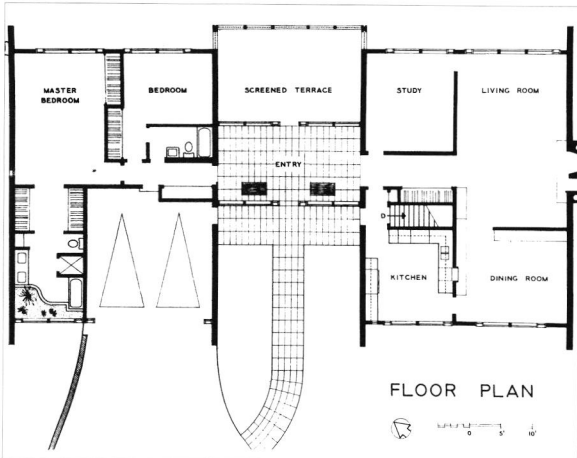
206 Dr. Jack Teplinsky House, Highland Park, IL, 1962, front entrance
207 Teplinsky House, plan



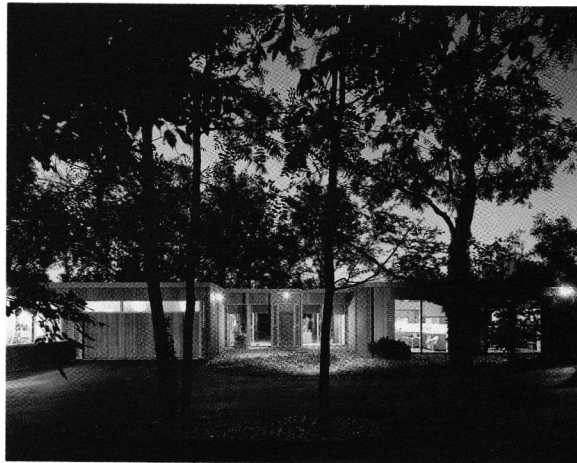
208 Teplinsky House,
living room



210



211



209 James Schramm House, Burlington, IA, 1964, entry hall
 210 Schramm House, plan
 211 Schramm House, view of entrance

The structure of the Schramm House was wood frame with brick veneer exterior walls on a steel-reinforced cement block foundation. Painted plaster walls and ceilings, wood and plaster partitions, and oak and carpeted floors characterized the interiors. The slope of the site was used to give a very large storage area on the lower level...[that] could be converted into comfortable living accommodations if required.¹⁴

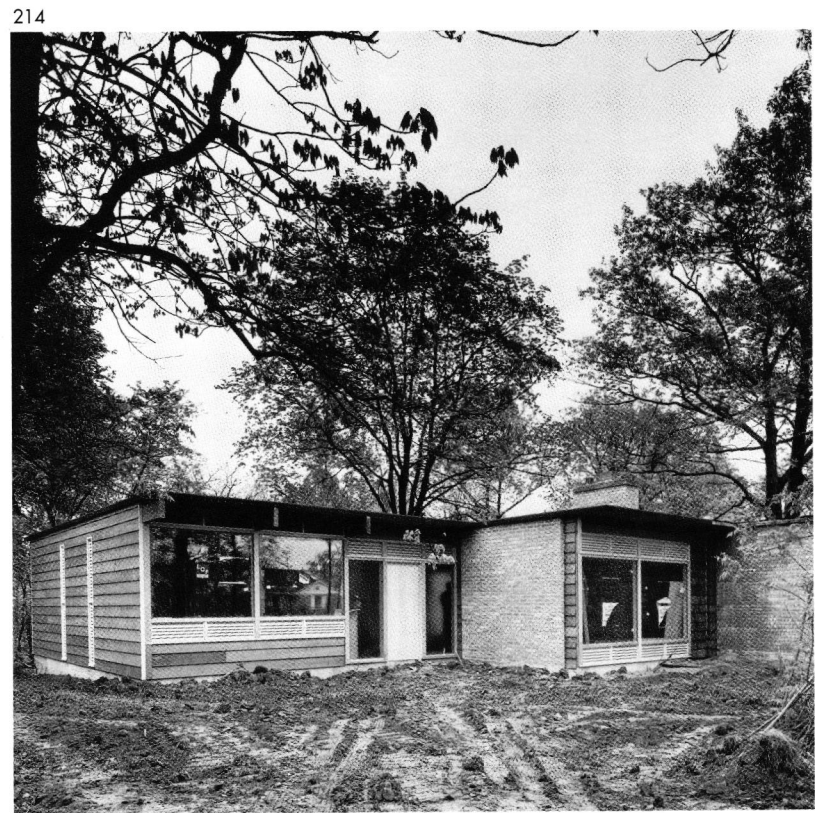
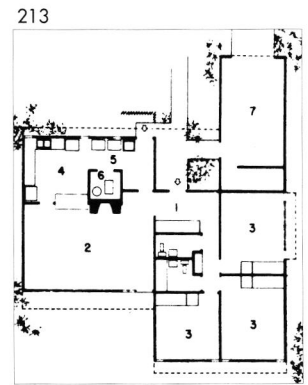
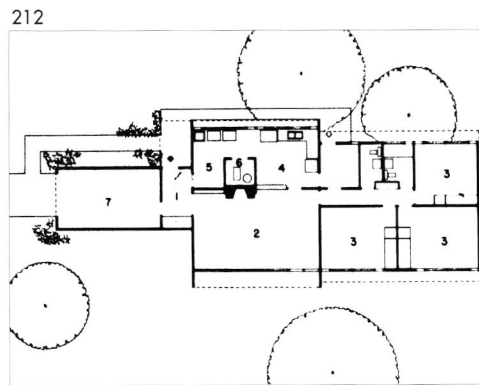
The Schramms wanted a low-maintenance home with informal spaces for their family. When children and grandchildren visited, they used the lower level storage areas as a dormitory. The house cost about \$75,000.

Each of the preceding houses was tailored to its site. Each had informal gathering areas for family TV, play, and entertaining. All but one had radiant floor heat, and most relied on some passive solar heat. Perhaps more important for the Keck office, each was published, and a number received design awards from the American Institute of Architects.

In addition to these formal residential commissions, Keck designed house plans for real-estate developer Harold Friedman's 1952 Forest Crest Subdivision in Glencoe, Illinois. These houses resembled Keck's work from the 1940s. In fact, the nine-and-one-half-acre subdivision was surveyed and plotted before the war (the plot map is dated March 1942) even though construction did not begin until 1952. The Kecks provided five plans for Friedman, who used siting variations and admixture with other schemes to create the development's visual variety (figs. 212, 213).

By 1 September 1952, twenty-two houses, each with vertical tongue-and-groove cedar siding and a rust-hued brick masonry fireplace, were under construction. Carports or garages were standard (detached or included into the mass of the house); screened porches and roof decks were also typical. All the units had skylights, fixed Thermopane with louvers, and steel pipe hot-water radiant floor heating. Only a few had basements. One plan had four bedrooms while the rest had three. The average price for the "tract-like" house was less than \$30,000 (fig. 214).

Friedman supervised the building, which used poor quality materials and craftsmanship. Buyers were left with a relatively unrefined product. (There were a number of lawsuits against Friedman because of the



212, 213 Harold Friedman's Forest Crest Subdivision, Glencoe, IL, 1951, house plans

214 Forest Crest Subdivision, single-family house

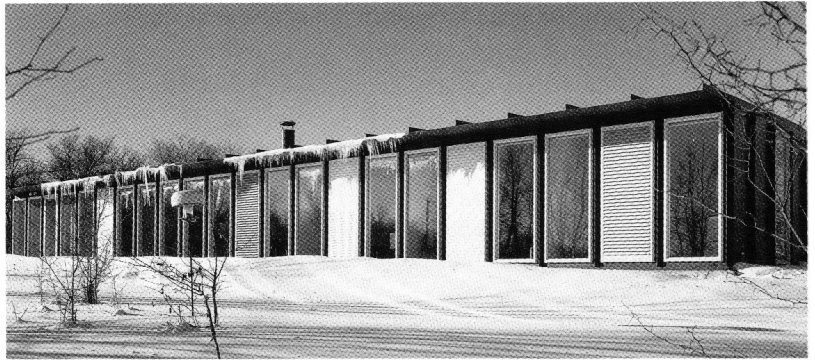
poor construction.) A few Forest Crest Subdivision clients asked Keck to revise or remodel the standard plans to suit their particular needs: the Deutschs (1954) added a study and a play porch to their chosen design; the Katzes (1956) added another bedroom and bath, and turned a courtyard into a dining room; the Rucks (1956) added a porch; the Schatzes (1957) wanted a different entrance; the Weinsteins (1958) added a bath and glazed their screened porch; and the Elisbergs (1964) added a carport and master bedroom and extended the family room. Construction for all these houses (original or remodeled) was done by the Chicago Construction Company.¹⁵

In 1959, Keck designed a house for Dr. Edward Isaacson in Highland Park, Illinois (figs. 215–217). Its design was related both to the tract or standardized designs of the Chicago Construction Company and the engineering and aesthetics of the Green's Ready-Built design. It was a prefabricated house where exterior walls and roof were $3/16$ inch thick channel-shaped steel panels, four feet wide, which were structural as well as being the finished surface. The entire structure was welded together, to form a rigid stressed steel shell. Suitable openings in the panels were provided in the shop for glass, sky lights, ventilators, vents, etc. The prefabricated steel shell idea was developed primarily for economy of material and speed of erection, thereby reducing labor costs.¹⁶

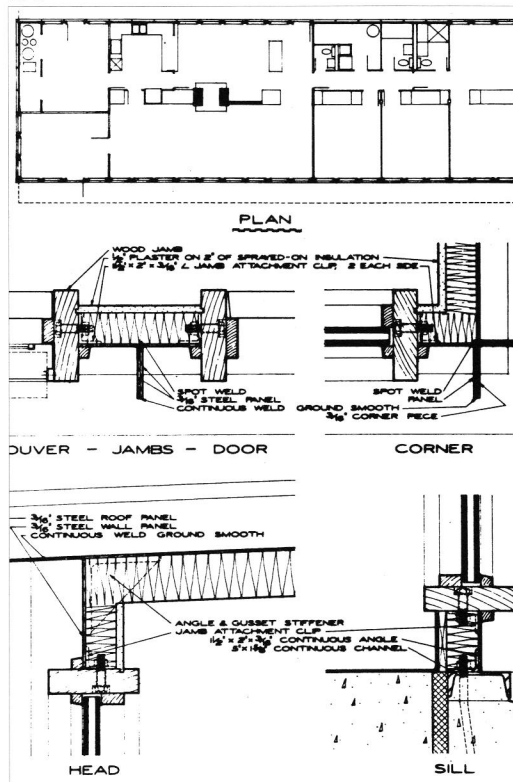
It took only three days to assemble and arc-weld the house, which sat on a gently sloping sparsely wooded hill. The principal rooms were located to the south along a glazed surface protected from the elements by a four-foot roof overhang. Before completing the interior surfaces, the exterior walls were sprayed with two inches of insulation, the roof with three inches. Interior walls were painted plaster or tongue-and-groove clear cedar. Ceilings had additional sprayed-on acoustical insulation troweled to a travertinelike finish. Parquet finished floors were laid on a concrete slab. Floor-to-ceiling fixed Thermopane and baked-on white enamel, adjustable, aluminum louvers recalled a modular rhythm first seen in the Green's Ready-Built.

Modular prefabricated steel plate units allowed for orderly planning. In many ways the conception and construction of the Isaacson House echoed Keck's

215



216



215 Dr. Edward Isaacson House, Highland Park, IL, 1959
216 Isaacson House, plan and details
217 Isaacson House, construction

217



1933 and 1934 experiments at A Century of Progress. Like Harold Friedman's Forest Crest Subdivision, the Isaacson House was directly related to the aesthetics of Keck's architecture of the forties. The warm colors and textures characterizing these two projects were a far cry from the neutral machine aesthetics of the Gray, Levin, and Bloom houses. Despite this difference, they all exhibited the same practical and efficient planning sensibility.

Keck's use of curved or oval plans engendered some of his most formal and stunning houses. The 1939 Kellett House (figs. 103–106) can be regarded as a precedent for at least four subsequent schemes that are in many ways the most splendid of Keck's late career. Each house was based on a segment of a circle. The 1953 Edward McCormick Blair House of Lake Bluff, Illinois and the 1959–61 Seba Payne House of Bucks County, Pennsylvania were large expensive projects (each about 9,500 square feet), whereas the 1960 Thomas Florsheim House of Glencoe, Illinois and the 1960 Milton Hirsch House of Highland Park, Illinois were more modest (about 3,500 square feet).

Without exception, each was finely detailed. As usual, the houses boasted numerous built-ins, skylights, and Transite flues. In plan, the kitchen/utility area was separated from the sleeping areas by a more formal and public living area. Each house had a recreation room. Zones of activity were connected by curving hallways that inscribed the segmented circular geometry of the plan, and individual rooms were organized around radii generated from the primary curving arc. The space of these individual rooms was defined by segments of the parent circle. The gentle curves of the Blair and Payne houses generated nearly rectangular rooms, whereas those in the Hirsch House were more wedgelike. In the Blair, Payne, and Florsheim houses, the circular plan opened outward (like the Cahn and Kelly houses) but in the Hirsch House the plan was reversed for an interior orientation.

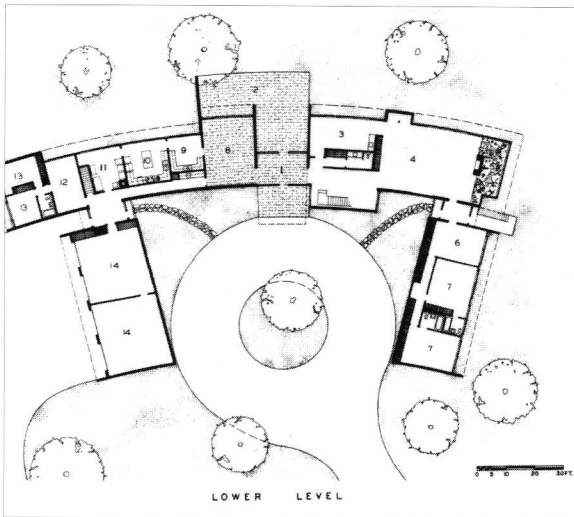
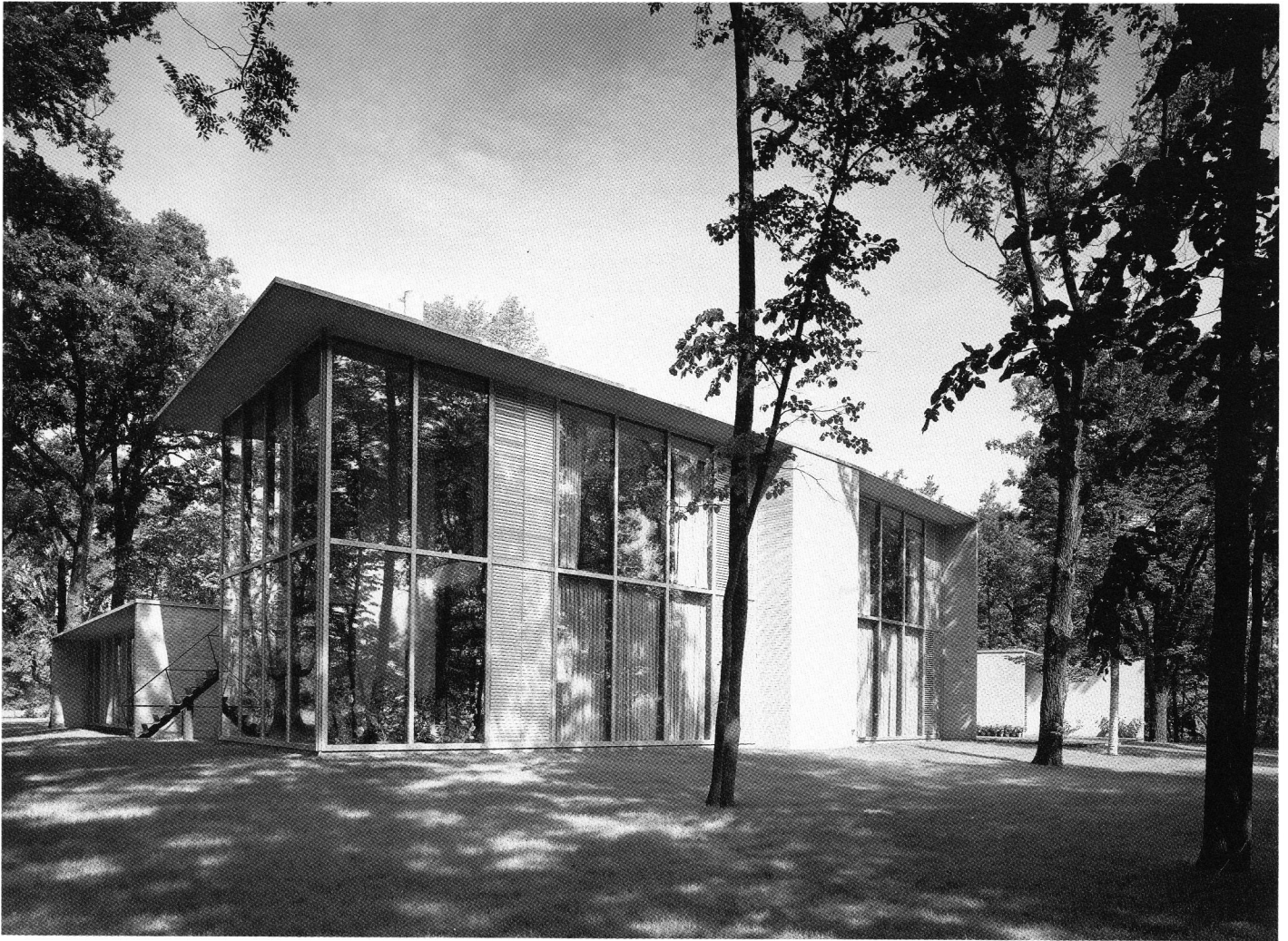
The Blair and Payne houses were built on high points of large secluded tracts accessed by long winding roads through rolling meadows and timber. At Blair, the arcing entrance facade was bone-white brick, while at Payne it was gray slate. Keck used a structural steel cage to cantilever the roof eaves and

balconies and to reduce the apparent weight of the houses while enhancing their linearity. The steel window frames and slate facing abutted their steel cages much the same way as they had in Keck's earlier Morehouse House (figs. 73, 74), and the result also resembled Mies's I.I.T. buildings. To create a sharp clean edge at the eaves, the roofs were contained by a tightly crimped metal flashing. Cream-colored Roman travertine was used to sheath the interior chimney masses.

The Blair House consisted of four zoned units: garages; servant's quarters, service, kitchen, and dining; living room and master bedroom; and the boys' living quarters (figs. 218–221). A two-story solarium and chimney were on the south end of the building. Sliding glass doors separated the solarium from the living room on the first floor and the master bedroom on the second floor. Two single-story rectilinear wings were generated by a radius from the circle; the southern wing was used as the living and sleeping area for the Blairs' sons and the northern mass was a four-car garage. Guests entered the main structure from a circular drive between these two elements.¹⁷ Willisich designed and completed the Blair interiors.

Seba Payne, who lived in Glencoe, Illinois, knew the Blair House fairly well. Payne wanted to build in Bucks County, Pennsylvania, where she could be close to her children and grandchildren. Her husband, Frank, had been a high-level manager at Bethlehem Steel and his offices were but a few miles away from the house site. In designing the house Keck worked closely with Bethlehem Steel to incorporate many of the industry's products with indigenous materials taken from the site.

The varying topography of the Payne site led to the design of long and rather high random stone masonry retaining walls to support the driveway and entrance. Guests approached the house by means of a bridge spanning the retaining walls, then entered under a porte cochère. Northwest balcony terraces extended the full arc of the house. Accessible from every room, they provided great sweeping vistas of Bucks County (figs. 222–224). Service areas, a caretaker's quarters, and covered outdoor terraces were located below the main floor of the structure. Payne was responsible for most of the extensive site landscaping.¹⁸



218 Edward McCormick Blair House, Lake Bluff, IL, 1953, view of living room from lake
219 Blair House, lower level plan



221



220 Blair House,
interior stairway to
master bedroom

221 Blair House,
living room

(opposite)

222 Seba Payne
House, Bucks County,
PA, 1959–61,
northern view showing
convex arc

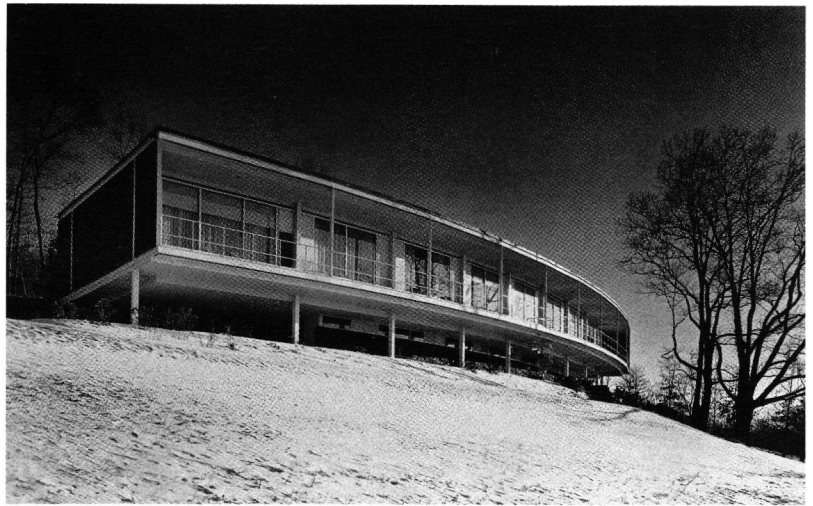
223 Payne House,
plan

224 Payne House,
aerial view

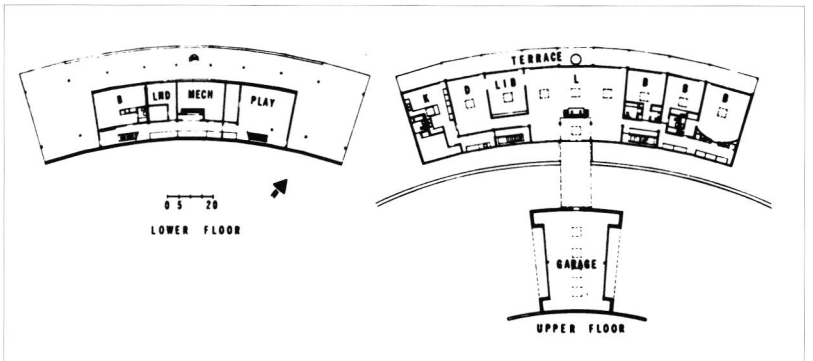
The Florsheim House was a smaller, five-bedroom house. Its north wall wrapped around the southern edge of the circular cul-de-sac of Redwood Lane. Exposed, stained fruitwood beams were used in the living and dining rooms. This curved, brick, public facade had no windows (figs. 225, 226) but the south wall, like that of the Kunstadter House (figs. 178–181), which it most closely resembled, had Thermopane openings along a straight line to fenced-in south lawns.¹⁹

The Hirsch House (figs. 227–229), with its tight, inward-oriented plan-arc, is directly related to the earlier and larger Blair and Payne projects. Hirsch knew and liked the Dr. Robert Hohfs House (figs. 203–205). At Hirsch, Keck combined the arc of the Payne House with the internal courtyard of the Hohf scheme. The Hirsch plan was constrained by a steep wooded bluff that dropped to Lake Michigan, and it was equally informed by the client's desire for privacy and off-street parking. To take advantage of the northeastern view toward the lake, Keck opened every room in that direction and minimized the number of openings along the public side of the house. Only the living room opened to both the southwest entrance drive and the small northeast private yard. The purple-black brick used in the Hohf House was requested by the Hirsches. Keck used a system of wooden posts and beams to modulate the overall design.²⁰ An aluminum porte cochère (fig. 228) connected the drive-through garage to the house (as in the Hohf House) and its white painted posts and fascia contrasted with the black walls. Concrete-slab hot-water radiant floors were covered with oak parquet, terrazzo, or asphalt tile. Like other Keck clients, the Hirsches had a growing art collection. Their interiors were equipped with recessed picture mouldings, recessed directional lighting, and sculpture stands or cases.

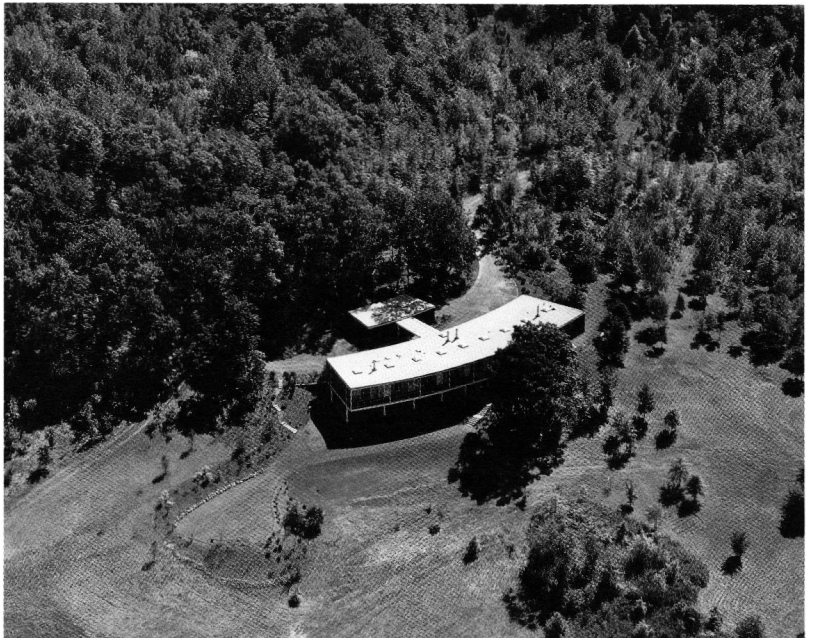
The Weinrib House was the last Keck scheme to utilize the curve as a thematic generating element. The Weinrib plan was a fully enclosed oval measuring about 120-by-80 feet (fig. 231). The shape derived from the Weinrib's desire for year-round swimming. A centrally placed elliptical pool could be reached (literally as well as visually) via sliding glass doors in virtually every room in the house. All the major rooms also opened to the yard. With the pool room's steel and

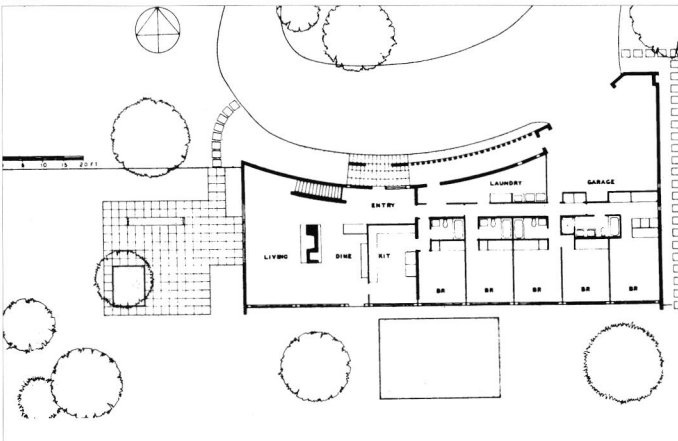


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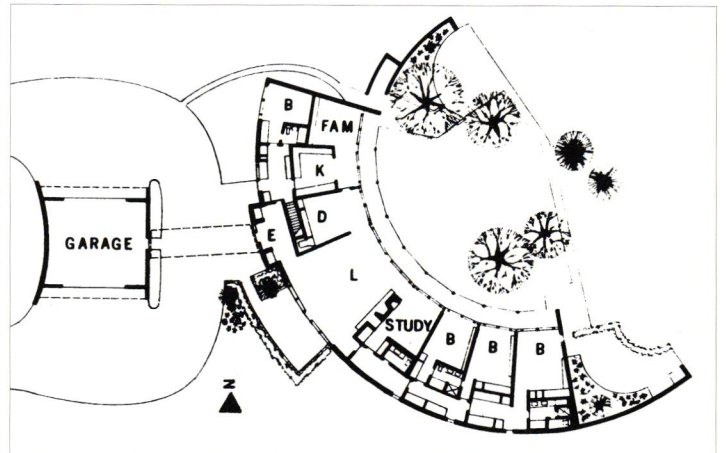


224





225 Thomas Florsheim
House, Glencoe, IL,
1960
226 Florsheim House,
plan



227 Milton Hirsh House, Highland Park, IL, 1960

228 Hirsh House, view from porte cochère toward house

229 Hirsh House, plan

glass skylight (manufactured and installed by Fisher Skylights of New York) the family could take advantage of indoor-outdoor living in the heart of the house. Steel beams supported by a wooden roof construction carried the retractable skylight (fig. 230). The southern segment of the house opened onto a sunbathing court where brick piers inscribed a larger concentric curve and gave privacy to the sunbathers. To mask irregularities in the curving exterior walls the house was veneered with bone-white chipped-face brick; the surface gave the mass a remarkably crisp silhouette. Like the Hirsch, Payne, and Hohf houses, the Weinrib House had a drive-through garage connected to the house by a porte cochère. Here it was made of reinforced concrete.²¹

Gray and off-white dominated the interior palette, and the same colors were found on the aluminum louvers and fascia of the house and garage. Marianne Willisch designed the interiors. Keck designed a large sunken tub for the master bedroom. There was also a sauna, a temperature-controlled storage room for a large collection of wine, and two fireplaces—one in the master bedroom, the other in the recreation room. Windows were fixed Thermopane with adjustable aluminum louvers along side. The heating, cooling and air-conditioning system also serviced the pool area.

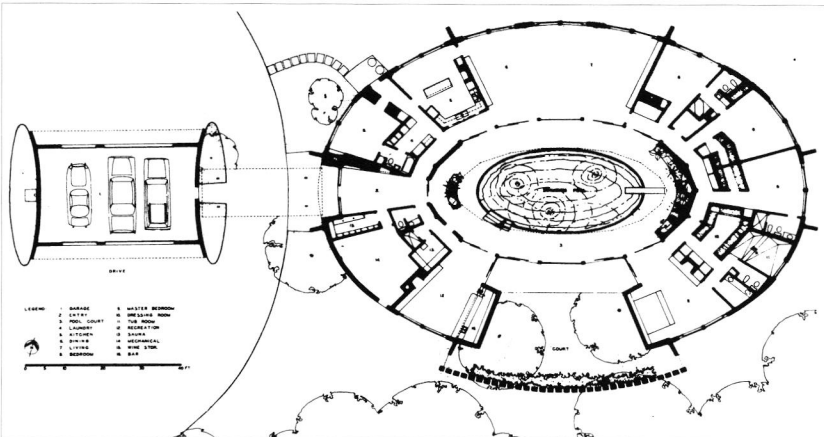
Whether experimental or not, the houses produced in the Keck office between 1952 and 1966 tended to be refined and razor sharp. Their precise details and wall joints implied a machined product that was in fact accomplished through fine handcrafting. Fireplaces and flues were housed in compact masses; raised fireplaces appeared as though cut by a very sharp tool. Electrical outlets ran in a single band at the base and behind the plane of the wall. Welded steel or cast concrete stairs rose seemingly unsupported to upper levels. These structures were marked by a simple geometry, rooms described as modules of a larger form. Thanks to Thermopane expanses, interconnected interior spaces flowed outdoors to incorporate the site.

During the postwar years, William Keck took over much of the responsibility for the daily workings of the office, and Fred spent more of his time with public relations. He also took time to lecture at colleges and universities, to attend architectural conferences, and to travel. With fewer daily office responsibilities and greater financial independence Keck and his wife explored the American West at least eleven times and ventured to Europe eight times between 1946 and 1975.²² On their cross-country drives they sometimes stopped to talk with clients, but generally the trips provided rest and visual stimulation.

On his first trip to England, Keck had carried a sketch pad and watercolors to record architectural details, especially of historic structures. He still took watercolors on his postwar journeys, but he now brought a 35-mm camera as well. By the sixties most of his free time was devoted to painting landscapes from nature as well as from slide images. In contrast to the increasingly machined aesthetic of his architecture, Keck's creative activities outside the office were looser and more spontaneous, as shown in his painted watercolor landscapes.²³ For client presentations, Keck used his watercolor skills to prepare a rendering of the project (base drawings were the work of an office draftsman, usually Robert Tague.) Whereas these images were by nature very controlled, the watercolors Keck produced for himself tended to be very experimental, ranging from very abstract to very naturalistic images. Using thin washes to thick impasto surfaces, he painted all sorts of sites and locations: the Acropolis, Stonehenge, the Grand Canyon, the Swiss Alps. Keck painted thousands of watercolors—both at home and on his journeys—and exhibits of his work brought him a small income. While the sensibility in these richly colored paintings seems unrelated to his architectural aesthetic, the pleasures of painting gave Keck a valuable and much needed break from the pressure and discipline of the office.



231



230 Norman Weinrib House, Highland Park, IL, 1961, interior pool with retractable roof
 231 Weinrib House, plan

NOTES

1. Fred Keck, letter to John J. Crowley, December 1952; correspondence file, "Herman Grossman," Box 10, M73-26, State Historical Society of Wisconsin (SHSW).
2. From correspondence file, *Mademoiselle* project 330, Box 5, M73-26, SHSW; Hugh Stubbins had designed a house for the northeast that was published in the February 1944 issue.
3. For example, Jerome Frautschi did most of the written correspondence, but it was Ellen Frautschi and Keck who carried out the weekly communiques by phone. In addition to the correspondence there were about eleven on-site inspections during 1966. Interview with Ellen Frautschi, 14 August 1982; 1966 Appointment Book, Box M81-602, SHSW.
4. Interview with Marianne Willisch, 23 July 1982.
5. "Slated: The Curtain Wall," *Architectural Record* 123 (Mid-May 1958): 122-127.
6. "Custom House Winner of 1958 Homes for Better Living Awards, Olympia Fields, Illinois," *House and Home* 14 (July 1958): 104e; project 532; the Levin House also received the National A.I.A. Award for Merit (1958) and the Chicago Chapter of A.I.A. Honor Award (1959).
7. Correspondence File, "Robert and Dorothy Feldman," project 473, Box 10, M73-26, SHSW; "Michigan House Puts Bedrooms on Lower Level," *Architectural Record* 118 (November 1955): 168-171.
8. Correspondence file, "Herman and Rosalind Grossman," project 445, Box 10, M73-26, SHSW; "Interior Court, Terraces at Rear," *Architectural Record* 120 (November 1956): 182-186.
9. Fred Keck, letter to John J. Crowley, Building Editor of the *Muskegon Chronicle*; correspondence file, "Herman and Rosalind Grossman," Box 10, M73-26, SHSW.
10. Correspondence file, "Dr. Robert and Ruth Bloom," project 625, Box 15, M73-26, SHSW; "A Raised Cottage for a Lakeside Site," *Architectural Record* 130 (November 1961): 156-158; the Bloom House was also published in *Vitrum* (February 1963) and *Deutsche Bauzeitung* (January 1965).
11. "A New Twist to Two-Story Zoning," *Architectural Record* 126 (December 1959): 125-128.
12. "An Enclosed Court Highlights a New Keck House," *Architectural Record* 129 (February 1961): 133-136. The Hohf House received the Citation Award for Excellence in Architecture from the A.I.A. in April 1961. Correspondence file, "Dr. Robert P. Hohf," project 571, Box 20, M73-26, SHSW.
13. Sidney H. Davies and Sons, Contractors, built the Teplinsky House, which received an Honor Award in 1967 from the Chicago Chapter of A.I.A.. The Kecks designed the south lawn landscape plantings. Correspondence file, "Dr. Jack and Marilyn Teplinsky," project 666, Box 24, M73-26, SHSW; "A House Planned for Cars as Well as People," *Architectural Record* 141 (February 1967): 143-146.
14. "Schramm Residence: Burlington, Iowa," *Architectural Record* 139 (Mid-May 1966, 1966): 64-67; see also interview with William Keck, August 1984. Correspondence file, "James and Dorothy Schramm," project 689, Box 23 and 24, M73-26, SHSW
15. Keck was in Europe when the subdivision was being built; William Keck superintended the job. Interview with William Keck, 21 July 1983; correspondence file, "Chicago Construction Company—Harold Friedman," Transfile 2, project 466, Box 1 and 2, M73-26, SHSW. "Robert Deutsch," project 506, Transfile 2, Box 2; "Harold A. Katz, project 548, Box 26, M73-26, SHSW; "Seymour Ruck," project 551; "Albert C. Schatz," project 575; "Ira P. Weinstein," project 591; and "Dr. Edward Elisberg," project 690. There is no correspondence file for the last four projects, but the drawings are in the vault, SHSW; Albert Jedlicka, Jr., "A Place in the Sun," *Chicago Daily News*, 6 September 1952, 5.
16. Taken from "Description of House," (no date), correspondence file, "Dr. Edward Isaacson," Box 10, M73-26, SHSW. Davies and Sons were the general contractors for this project, 638. The house was twenty-eight by eighty-eight feet and used about twenty tons of steel in its construction.
17. Interview with William Keck, 21 July 1983; "A Residence of Exceptional Distinction," *Architectural Record* 121 (February 1957): 183-188; project 500.
18. William Keck made thumbnail sketches and measurements of Payne's antique furniture that she wanted to use in individual rooms. Charles Horning, Bethlehem Steel's Superintendent of Real Estate, served as the Kecks' on-site inspector, though Fred Keck flew to Pennsylvania for bi-monthly conferences about the construction. In the end Joseph Illick, the general contractor with whom there were many heated arguments, was fired (August 1961) and Horning completed the details of the job. The house itself cost about \$225,000 and took about two years to build. (The job specifications were dated 30 January 1959, and Payne moved into the house during December 1961.) This house was the most expensive single-family residence Fred Keck ever designed and built. Correspondence file, "Mrs. Frank (Seba) Payne," project 607, Box 22 and 23, M73-26, SHSW; "Curving House Designed for Sweeping View," *Architectural Record* 131 (mid-May 1962): 102-105.
19. Correspondence file, "Thomas Florsheim," project 634, Box 18, M73-26, SHSW; Davies and Sons were the contractors.
20. Interview with Seymour Persky, law partner with Milton Hirsch and current owner of the house, 23 July 1982; correspondence file, "Milton Hirsch," project 642, Box 19, M73-26, SHSW; "A Crescent House to Encompass a Lake View," *Architectural Record* 133 (mid-May 1963): 98-101.
21. Interview with Mrs. Weinrib, 21 July 1983; correspondence file, "Norman Weinrib," project 654, Box 25, M73-26, SHSW; "Sliding Roof Gives House Year-Round Use of Patio," *Architectural Record* 137 (February 1965): 157-160.
22. Interview with William Keck and appointment books, Box 1, M81-602, SHSW. Fred Keck gave lectures at University of Wisconsin at Madison (1946, 1961), East Lansing (1947), Chicago Institute of Design (1947, 1949), Cornell (1948, 1960), M.I.T. (1950), University of Pennsylvania (1951), Columbia (1953, 1959, 1964), Tulane (1955), Chicago Museum of Science and Industry (1955), Princeton (1955), Notre Dame (1971), Chicago Art Institute (1973), and Ball

State (1977). He attended conferences in New York, Washington, Dallas, New Orleans, Kansas City, and Milwaukee. He traveled to the American West in 1946, 1947, 1959, 1960, 1961, 1962, 1966, 1969, 1970, 1972, and 1975, and went to Europe in 1952, 1957, 1960, 1964, 1967, 1968,

1970, and 1974.
22. Keck had a near fatal heart attack during the summer of 1963 so that his doctors demanded that he slow down. Painting became a creative release for him. He exhibited at the Renaissance Club, the Chicago Art Institute, and the Arts Club. At his death in 1980, thousands of bun-

dled, wrapped, and tied-together watercolors were given to the SHSW, M74-44, ICON. Robert Tague said that the watercolors were an "emotional release from the discipline of architecture" for Keck. Interview with Robert Tague, 22 July 1983.

10

BEYOND THE SINGLE-FAMILY HOUSE: COMMERCIAL, COMMUNITY, AND URBAN SCALE DESIGN

The fifties and sixties were a period of new opportunities for the office of George Fred Keck, William Keck, Architects. They continued to design award-winning single-family detached houses, but with the Chicago urban renewal projects they increased their non-residential commissions. The brothers became more involved in the Hyde Park-Kenwood area, designing several Chicago Housing Authority (CHA) projects.

Following the Second World War, Chicago experienced rapid suburban growth. Flight by middle- and upper-income white families from inner-city neighborhoods of grand brick and brownstone houses affected many areas including South Chicago and Hyde Park, where the two Keck brothers and their families lived. Large old houses were sold or subdivided and then rented to an influx of poor who came to Chicago in search of jobs.

Slums formed and in 1949 the federal government Housing Act authorized urban renewal projects to “clean up” those areas most radically affected by changing demographics. This congressional act effectively empowered white city councils to forcibly remove unsightly “blemishes” from the urban fabric. Bulldozers and wrecking balls were sent in. Entire city blocks in South Chicago were leveled and City Hall sold options to realtors and contractors for new apartment complexes to replace the demolished single family housing. Chicago devoted only a fraction of its Congressional funds for urban renewal to low-income housing construction.¹

The Kecks’ interest in multi-family housing was initially prompted by the social, political, and economic conditions that had their origins in the Depression and reached critical proportions in the 1950s. But the Kecks’ concern was also motivated by a desire to improve, aesthetically as well as physically, Hyde Park,

the neighborhood they shared with the University of Chicago campus.

Chicago’s urban renewal program actually began in 1947, two years before Congress passed the Housing Act. The University of Chicago in Hyde Park and the Illinois Institute of Technology in South Chicago, both firmly entrenched in slum areas, found themselves on an increasingly confrontational course with their surrounding, primarily African-American, neighborhoods. By the late fifties, the University of Chicago had already begun to erect high fences as protective barriers while simultaneously making use of the Housing Act and Federal Housing Authority (FHA) funds to finance rehabilitation and land clearance in the surrounding area.² After the leveling of much of the northerly slum sections around Kenwood and the 1959 formation of The Woodlawn Organization (TWO), which served the Woodlawn neighborhood south and west of the University, the University of Chicago concentrated on rehabilitation rather than urban renewal rebuilding in the Hyde Park area.

TWO was the first community development corporation formed in the United States. An organization of African-American community groups, TWO fought against City Hall, absentee landlords, and the University of Chicago for neighborhood self-improvement. In the 1960s the organization won the support of the university, the city, and the Illinois Housing Development Authority. TWO upgraded its community services, improved business and shopping centers, and, most importantly, rehabilitated housing for occupation by local Woodlawn residents.³

Lake Meadows, one of the largest early redevelopment projects in South Chicago, was designed in 1955 by Skidmore, Owings and Merrill for the New York Life Insurance Company on land cleared by the

Chicago Land Commission. Lake Meadows was a low-density project of high-rise rental units for middle-income families. Five twelve-story housing slabs were constructed on a ten-acre site with an additional ninety acres dedicated to a shopping center and row housing.⁴ The unimaginative apartments, like so many sponsored by the CHA in the area around I.I.T., resembled veterans' hospitals in their aesthetic sterility. Despite their efficient and practical design, these projects frequently created as many sociological problems as they set out to eradicate.

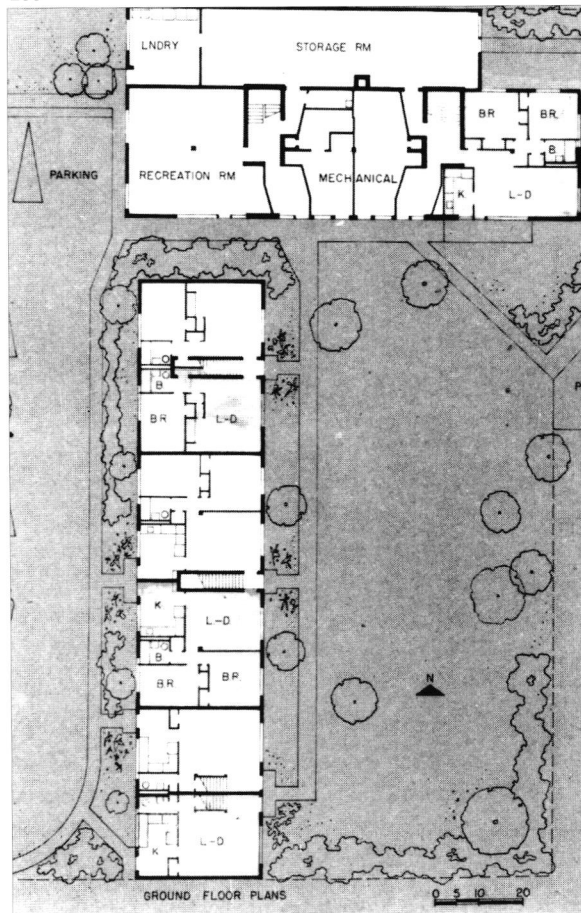
Not all Chicago urban renewal projects were for the economically disadvantaged, nor were all aesthetically disappointing. In 1949, Fred and William Keck and associate architect Robert Tague, designed Pioneer Cooperative (figs. 232, 233), a large multi-family apartment building, to help reverse the downward trend of their neighborhood. The building, located at 54th and Dorchester, was built on a vacant tax-delinquent plot rather than a site bulldozed by the city for urban renewal.

The venture was started by a like-minded group [principally University professionals], each owner holding shares in proportion to the size of his apartment. Costs were held to a minimum. Although a variety of apartment sizes was required, no particular number was specified, the idea being to keep land cost per unit in line with reasonable rentals in a non-profit set-up. A scheme housing twenty-three families in units ranging from one-bedroom suites to six-room row houses resulted. A typical tenant-owner in a four room apartment made a down payment of \$5,470 and paid a \$95 fixed monthly charge...which covered amortization, taxes, insurance, maintenance and required reserve.⁵

The cooperative nature of the enterprise meant that financing was arranged through both private and public (FHA) funds.⁶ The FHA supervised the construction, and certain design changes were required to satisfy federal codes. A variety of apartment types were incorporated into the project, which consisted of two buildings linked in an L-shaped arrangement. One third of the site was devoted to these structures, another third as open green space, and another third for parking. Large east and south windows afforded views



233



232 Pioneer Cooperative, Chicago, IL, 1949

233 Pioneer Cooperative, plan

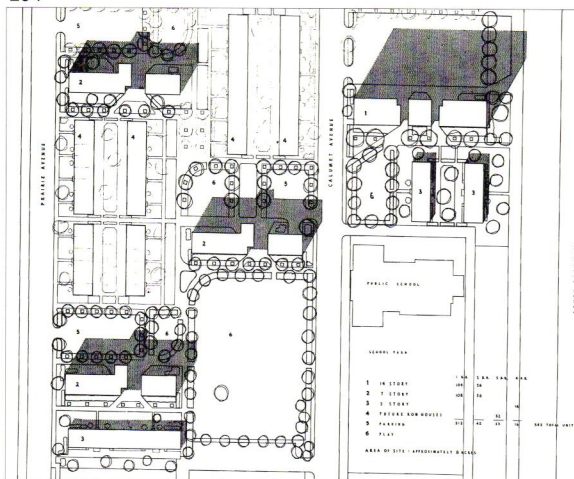
of a private garden courtyard. The architects incorporated exterior cantilevered balconies on the south facade for access and ventilation. The row houses also opened onto the garden. Both buildings used a combination of concrete frame and red brick bearing wall with poured-in-place concrete slab floors containing a radiant hot-water system. Ceilings were painted exposed concrete.⁷ The use of projecting galvanized metal and chain link fences on the balconies and treated common brick gave the apartment complex a sharp, clean image reminiscent of earlier European housing projects. This aesthetic was akin to Keck and Schweikher's Chicago Housing Project of 1932, as well as Keck's own University Avenue apartment.

The Keck office had submitted designs for CHA projects in 1949 but the plans were rejected. After Public Housing Authority conferences in Washington and New York in 1950, and with the help of William and Catherine Bauer Wurster, the Keck designs were reconsidered. Elizabeth Wood, urban and public housing authority, author, and Executive Secretary and Operating Head of the CHA from 1937–54,⁸ approved Relocation Housing Project 9 in 1950, and Prairie Avenue Courts was the result.

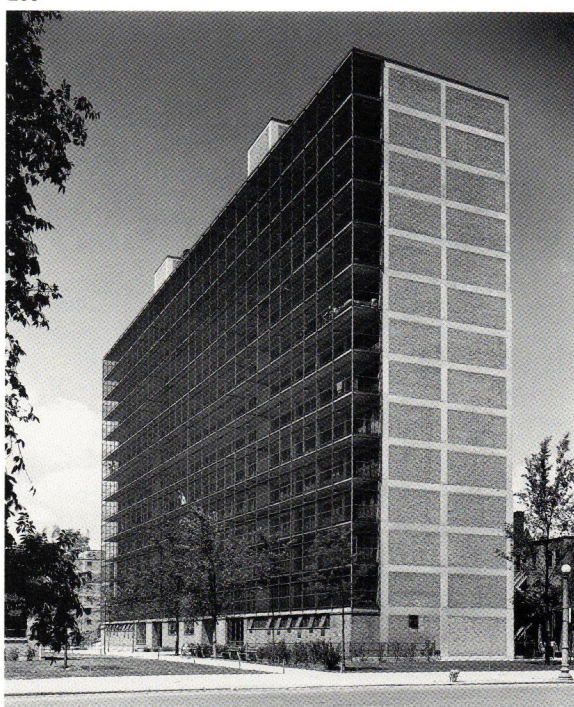
Prairie Avenue Courts (figs. 234, 235) was built south of 26th Street, between Prairie Avenue and South Parkway. Prairie Avenue was a much larger project than the contemporary Pioneer Coop discussed above. It housed about 350 families on seven and one-half acres in a combination of fourteen-, seven-, and two-story buildings. This scheme consisted of one- to four-bedroom units laid out with north-south orientation to take advantage of light and ventilation. Solar angles were studied to control overall lighting quality; the site plan insured the greatest sunlight for parks, playgrounds, and buildings, and left parking lots in the heaviest shadow.⁹ The tall apartment blocks faced south to take advantage of passive solar heating. On the south face of the fourteen-story Prairie Avenue building, external corridor-balconies regulated the summer sun, provided access to individual units, and also helped air flow through the apartments. The three seven-story buildings had similar six-foot-wide balconies on the north.¹⁰

Built for low-income families, economy was a major consideration. The high-rise buildings were constructed

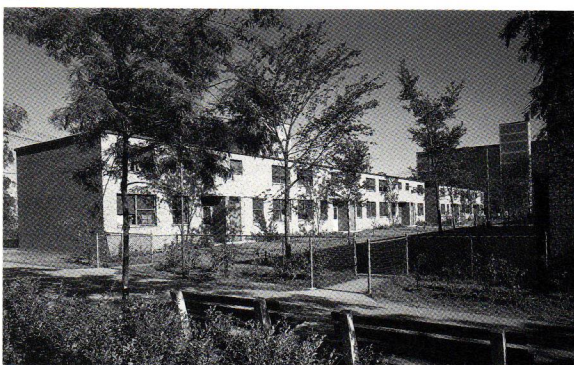
234



235



236



234 Chicago Housing Authority, Prairie Avenue Courts, Chicago, IL, 1950, site plan

235 Prairie Avenue Courts, high rise

236 Prairie Avenue Courts, two-story apartments

of a thin reinforced concrete cage filled with hollow brick and concrete block while the two-story buildings (fig. 236) were load-bearing wall structures built of brick and block. Red brick, red painted fire escapes, and brightly painted external balconies created a lively geometric pattern.¹¹

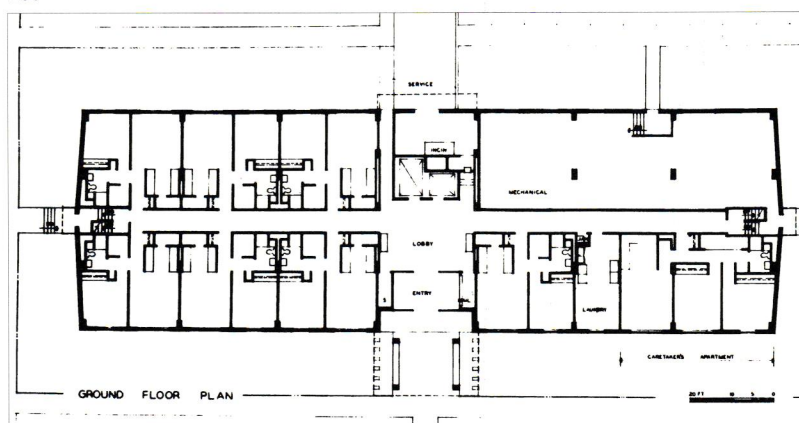
Prairie Avenue Courts attracted diverse family groups and stabilized the neighborhood environment. The 274 high-rise units accommodated smaller families than the sixty-eight two-story units, which had three to five bedrooms. Cheerier than many of the later CHA projects, the massing of the Prairie Avenue complex and its lawns, playgrounds, and balcony-corridors provided a place for neighborly interaction. One of the most successful of the Kecks' urban renewal projects, Prairie Avenue Courts was recognized in 1957 by a Chicago Chapter A.I.A. Merit Award, as was Pioneer Cooperative a year later.

Elizabeth Wood was fired in 1954 for actively trying to racially integrate the Chicago housing projects. To fill the Wood vacancy, the Mayor appointed William B. Kean as Executive Secretary and Colonel C. E. (Buck) Humphrey as assistant in January 1955. Humphrey later became Director of the CHA. William Keck had worked under Humphrey in the U.S. Army Corps of Engineers during the Second World War; he was actively involved in obtaining the Kecks multiple housing projects from the CHA.¹²

In 1960 the Kecks designed the nine-story Drexel Square Apartments on Hyde Park Boulevard for low-income elderly people under the auspices of the Chicago Dwellings Association (figs. 237, 238). In 1963 the office worked on the thirteen-story, fifteen-unit CHA Elderly Housing on West Franklin Boulevard and Drake Avenue (figs. 239, 240).¹³ Neither of these projects were in Hyde Park, but both urban renewal sites were located close to existing green space—Washington Park and Garfield Park. Both projects had fifty-percent lot coverage, a modular design, and a central corridor to access efficiency and one-bedroom units. They were similarly constructed of reinforced concrete blocks with red brick veneered walls. Like most of the CHA construction, the project was financed through funds set aside by the FHA and the Illinois State Housing Authority and obtained under Section 203 of the National Housing Act.¹⁴



238



237 Drexel Square
Apartments, Chicago,
IL, 1960
238 Drexel Square
Apartments, plan

The Hyde Park-Kenwood Urban Renewal Project was one of the largest in the United States. Much of the redevelopment was activated by the South East Chicago Commission (SECC) founded in 1952, the Hyde Park-Community Conference formed in 1950, the University of Chicago, and grass-roots citizen groups. Julian H. Levi, a client and neighbor of the Kecks, was Executive Director of the SECC.¹⁵ Under Levi, the group took legal action against slum lords. They pressured insurance companies to cancel policies on problem-ridden buildings and properties with chronic housing violations; worked with police to reduce crime; gained project approval and aid from city agencies; nudged legislators into proposing measures to facilitate repairs, conservation, and clearance; and made federal rehabilitation financing available to homeowners for “do-it-yourself” improvements to existing buildings in renewal areas.¹⁶

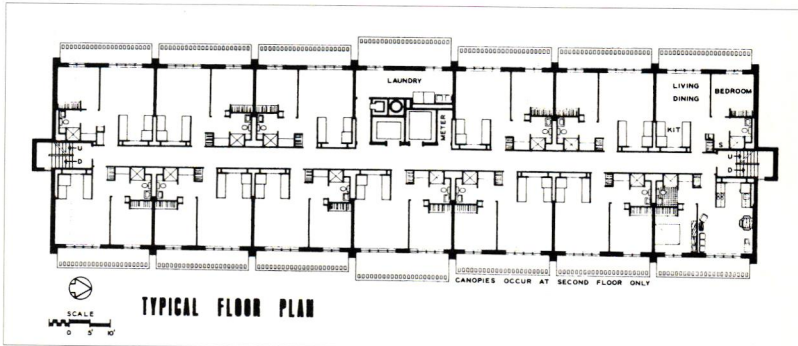
During this same period, Keck was one among many architects and housing specialists from across the nation asked to Washington, D.C. for meetings with Public Housing Authority officials. Mayor Richard Daley appointed Keck to the CHA in 1963,¹⁷ and his brother William was named chairman of the Hyde Park-Kenwood Community Conference Planning Committee, which “proposed specific kinds of projects or overall objectives that were needed in the area.”¹⁸

The Kecks designed and built two large commissions as part of the Hyde Park-Kenwood redevelopment: the University of Chicago Apartment Building on the corner of Dorchester and 57th (1966–67), and the Amalgamated Clothing Workers project at Harper Square, between Dorchester and Lake Park Avenue and between 48th and 49th (1967–72). The seven-story University of Chicago commission was designed for families but would eventually be put to use as a women’s dormitory (fig. 241). It had a reinforced concrete cage with concrete block in-fill that was faced with rich orange-red brick; a thin, pale cream stringer banded the rectilinear mass every second floor. The building was raised above the street on pilotis to create an exterior ground-floor terrace. On the east and west ends of the block, projecting Anderson casement bay windows with fixed central bays broke the severe silhouette and increased air flow into the corner apartments. All the apartments—four three-bedroom units

239



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241



239 CHA Elderly Housing, Chicago, IL, 1963

240 CHA Elderly Housing, plan

241 University of Chicago Apartment Building, Hyde Park, IL, 1965

per floor—had cross ventilation because of their corner plans. Mechanical equipment, storage, laundry facilities, and the heating system were located in the basement. To save on hot water costs and reduce the inefficiency of one large unit, the Kecks ganged boilers so that some would turn off when only a reduced load was needed.¹⁹

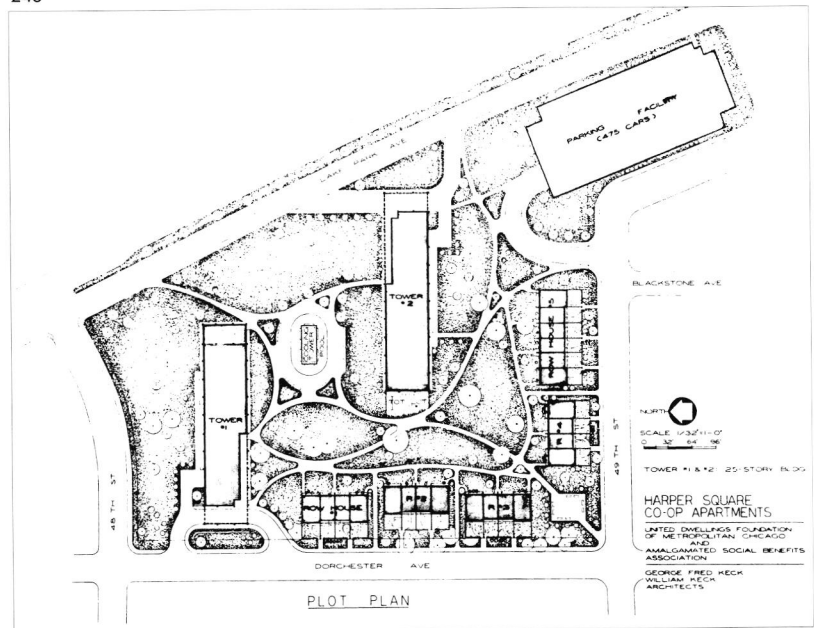
Harper Square was the first project sponsored by the Amalgamated Clothing Workers of America outside the New York metropolitan area and the largest single commission ever to come to the Keck office. The scheme included two twenty-five-story apartment blocks of 569 units, five two-story row house buildings with a total of twenty-two units, and a ramp-type parking facility for 475 cars (figs. 242, 243). The project was built on a seven-acre site, which had been designated a high density residential area. It was on the farthest northeast corner of the Hyde Park-Kenwood urban renewal project. Adopting the Prairie Avenue Courts model, the Kecks enclosed the site with the row houses, the parking ramp, and the heavily traveled Lake Park Avenue. By restricting cars to the street edges and to the entrances of the project, the Kecks created a veritable garden court with a sense of internal security created by heavy plantings and earth berms. A large play ground, park, elementary and high school, library, and shopping facilities were close at hand. As a cooperative non-profit concern, rent (in the form of assessments) covered operating costs, maintenance, mortgage interest, reserves for replacements, and taxes.

The interior dimensions of the high-rise units were spacious in comparison to the minimum standards required for public housing. Each of the one- to three-bedroom units had generous living/dining rooms, ample kitchens, and bedrooms big enough to accommodate twin beds. Each block had its own central laundry facility and two separate service cores. Since each of the four elevator and stairway cores was linked to only six dwelling units, the problems of long corridors were eliminated. One of the towers had a large community room while the other block housed a day-care and nursery school facility.²⁰

In contrast to the high-rise blocks, Harper Square's two-story row houses were standard wood construction with brick or tongue-and-groove siding. All five turned



243



their backs to the street, and instead faced a fenced garden court; separate fenced service entrances opened onto the street. Each building contained a number of four-bedroom apartments, and their siting allowed larger families quick access to the open garden space. From the tree-lined street these suburban-looking row houses in muted earth tones did not seem a part of the Harper Square complex.

In addition to these large-scale projects, the Kecks had a variety of commissions for many other row houses and duplexes in the Hyde Park-Kenwood area. In 1962, they designed a twelve-unit, two-building row house project on the corner of 48th and Woodlawn for the University of Chicago and Midway Properties Trust (figs. 244, 245). The design vocabulary of this project was consistent with that of the Kecks earlier two-story single-family residential work, for example the Buser and Schramm houses. Each unit had a twenty-by-thirty-foot backyard enclosed by a paling fence. A large lawn area was commonly owned by all tenants. Facades projected or indented and were individualized by flange walls. Off-street parking was provided at the back of the units, adjacent to the shared green space. Individual laundry facilities and heating systems were located in the basements. Each of the three- and four-bedroom, one-and-one-half-bath apartments was sold to an individual family.²¹

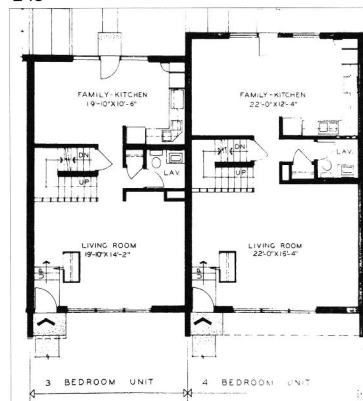
In 1964, the Kecks designed a very closed and efficient four-bedroom duplex for faculty of the University of Illinois on 55th and Dorchester (fig. 246). The university had hired Webb and Knapp Incorporated to redesign a multi-block project into high-rise and row houses on the same site. The duplexes, being a more intimate and private type, stood in contrast to the row houses. The Keck project was surfaced with tan brick and its garage, laundry, storage, and utility area took up the ground floor. The living/dining room, kitchen, study, and half-bath were on the second floor, with bedrooms and bath on the third level.²²

A year later, the Kecks used the same basic duplex plan in a grouping of four structures around a shared internal yard. The open space ran between the buildings, which were sited on the 53rd block of University Avenue. Each unit had service yards on the street, and its main rooms opened to a backyard. Parking was located in the rear. Basements contained utility rooms

244



245



246



(opposite)
242 Harper Square
 (Amalgamated Clothing
 Workers Apartments
 and Row Houses),
 Chicago, IL, 1967–72
243 Harper Square,
 site plan

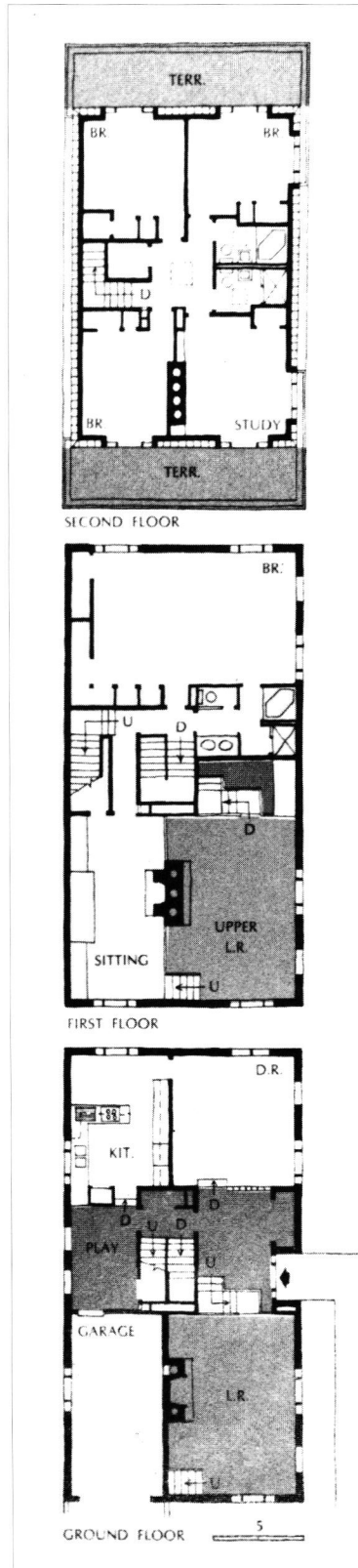
244 Row Houses on
 48th and Woodlawn,
 Chicago, IL, 1962–63
245 48th and Wood-
 lawn, first-floor plan
246 Duplex, 55th and
 Dorchester, Hyde
 Park, IL, 1964



and storage; in the four-bedroom types, a multi-use room was supplied. Typical units had a first-floor living/dining room and kitchen with an additional half-bath in the four-bedroom type. Unlike the earlier duplex, here the bedrooms with transom windows cantilevered toward the street. Sheathed in gray tongue-and-groove and contrasting purple-black brick, the facades created a plastic and aesthetically inviting composition.²³

The Kecks designed at least two other multi-unit projects in Hyde Park based on the modular arrangement developed in their duplexes and row houses.²⁴ However, the majority of their Hyde Park neighborhood commissions entailed remodeling existing residential structures.²⁵ The Kecks designed new entrances; enlarged or improved kitchens, baths, bedrooms, and basements; consulted on questions of building materials, plantings, and furnishings; and generally made themselves available to their neighbors in an effort to improve the aesthetics and social conditions of their environment.²⁶ The office work was in line with a proposal to revitalize old buildings and thereby retain part of the character that set Hyde Park and Kenwood apart from other Chicago "slums."

Urban renewal planning commissions rarely allocated land for private construction, even though single-family detached homes were the most frequent prey of bulldozers and wrecking balls. Toward the end of the



247 Norman Karlin House, Hyde Park, IL, 1964
248 Karlin House, plan

1960s individuals began to have access to property in the Hyde Park-Kenwood project area, and detached houses began to appear amidst the high-rise buildings, row houses, duplexes, and community service buildings. The Kecks designed a number of these private projects: two three-house groupings in the 800 block of 49th Street; a single house for Dr. Maurice Gleason (1952–54); one for Fernando Pineda (1972); and an especially handsome town house for Norman Karlin on South Blackstone (1964). The multi-level Karlin House (figs. 247, 248), set among three-story walk-ups, had purple-black brick facing, white trim, and a mansard copper roof.²⁷ Its sharp edges, taut surface, and studied details continued the restrained contemporary residential genre used successfully by the Kecks since the 1950s.²⁸ Trees, yards, terraces, and garden plantings were present, as in all Keck projects built for families who wanted to live close to the city center but also yearned for some aspects of suburban life.

The Kecks, especially William, also gave time to the design and construction supervision of a neighborhood community project, the Hyde Park Neighborhood Club (figs. 249, 250).²⁹ Located on the 5400 block of Kenwood, the building had originally been designed as an office and classrooms. A gym and locker room facility were subsequently added to improve the club, which was later expanded again with a library, kitchen, social room, and additional classrooms.

As they remodeled single-family residences and built high-rise and row housing, the Kecks also worked on commercial commissions such as the stores at CHA's Altgeld Commercial Center (fig. 251), the Hyde Park Shopping Center, the Hyde Park Coop Supermarket (figs. 252, 253), and the Hyde Park Federal Savings and Loan Shopping Center. Additional projects included a movie theater in the Harper Building, the Nachman Candy Store, apartments in the remodeled Harper Crest Hotel, and the Lehnoff Dance Studios.³⁰

One of the Kecks' most successful projects in the Hyde Park urban renewal area was a three-story structure for the Chicago Child Care Society Building (figs. 254, 255). The society, founded in 1849 after a cholera epidemic orphaned large numbers of children, provided care for nursery-aged children of working-class parents and also housed a Cook County adoption agency. The reinforced concrete and glass

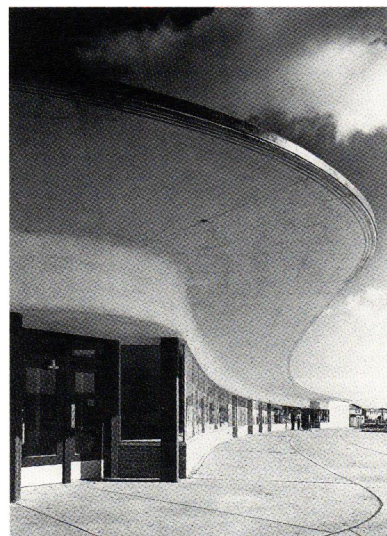
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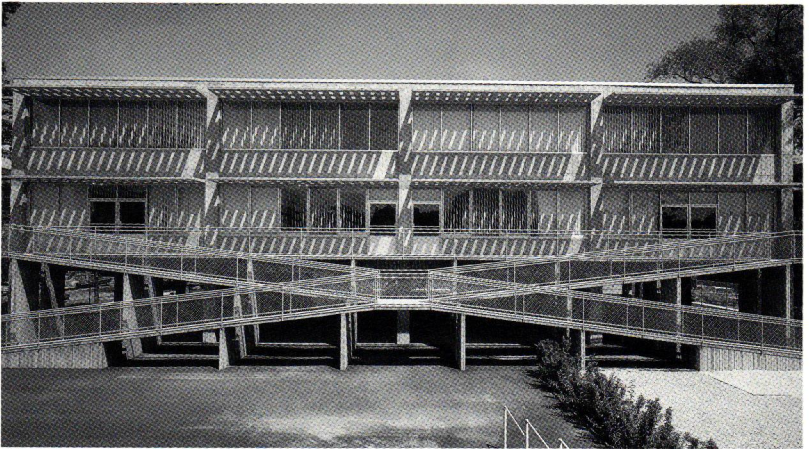
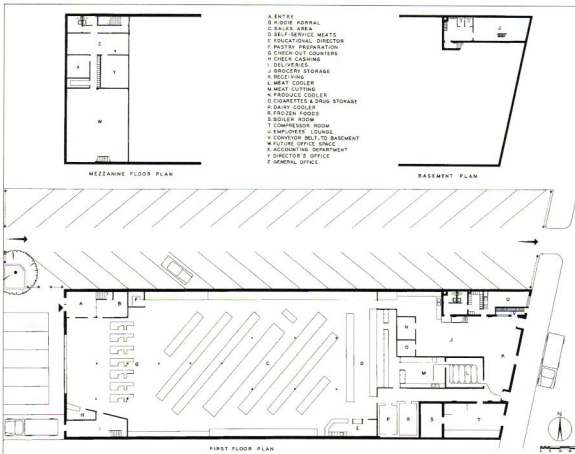
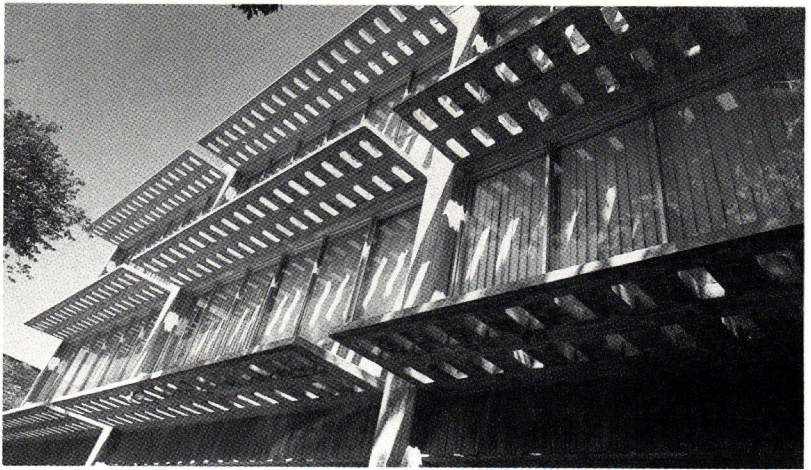
251



249 Hyde Park Neighborhood Club, Chicago, IL, 1950–65, rear view showing gymnasium

250 Hyde Park Neighborhood Club, entrance

251 Atgeld Commercial Center, Chicago, IL, 1946



building was raised off its small site to provide an all-weather playground space. First-floor classrooms opened onto a double ramp connecting to the fenced-in playground below. The concrete floors were covered with vinyl tile, ceramic tile, or terrazzo, and the ceilings with acoustical plaster. Principal child-care rooms faced south.

To temper the stark concrete structure and modulate sunlight the Kecks developed a cantilevered, perforated concrete overhang. The element resembled wooden visors used on earlier residential designs. Keck described the concrete elements:

We continue to be concerned with the functional uses of sunlight and with attempts to equalize its seasonal effects. Here we went one step further, continuing to hold to the functional elements, but making them available also for decorative use.

- 252** Hyde Park Coop Supermarket, Hyde Park, IL, 1954
253 Hyde Park Coop Supermarket, plan
254 Chicago Child Care Society Building, Hyde Park, IL, 1959, detail of sun visors
255 Chicago Child Care Society Building

*The aspects and shadows on sunny days constantly changed the patterns of light and shade as the sun ran through its arc each day. [These perforated shades] did away with the heaviness typical of institutional concrete buildings, and introduced a new lightness.*³¹

The structural frame of the building was reinforced concrete; the roof was framed with steel joists and concrete deck; the sashes were aluminum with sheet glass; and the partitions, like the ceilings, were plastered.

Contemporary with the Child Care Society Building were commissions for a medical clinic, an industrial laboratory, and a candy manufacturer's warehouse. Dr. Robert Reagan of Benton Harbor, Michigan, who had commissioned the Kecks to design a house (1949), asked them to design a small clinic with adjacent off-street parking. The 1955 Reagan Medical Offices (figs. 256, 257) was built of a simple steel frame with precast concrete floors and ceilings and exposed load-bearing concrete block walls. Interior partitions were also exposed block. Both the north and south walls had projecting roof lines, relieving the rectilinear building silhouette.³²

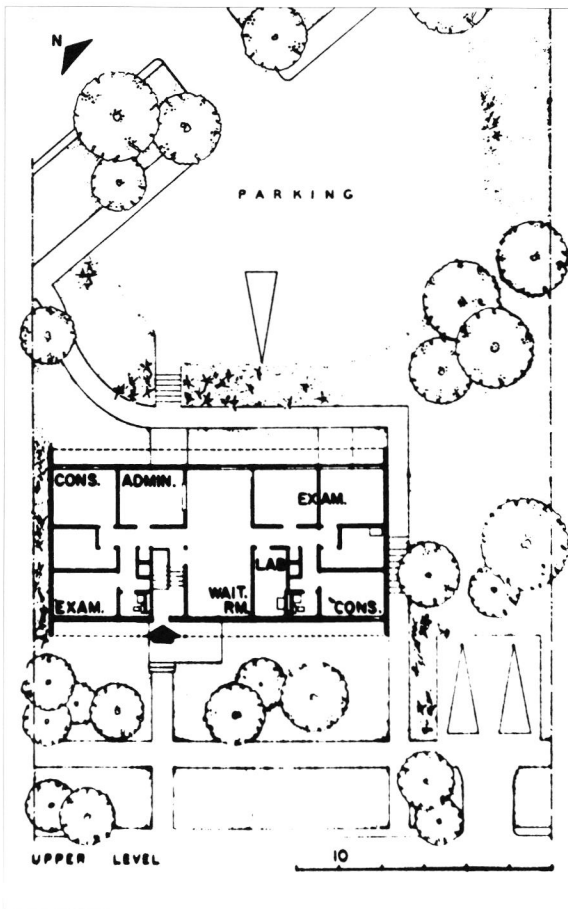
For National Clay Pipe Manufacturers in Crystal Lake, Illinois (figs. 258, 259), the Kecks designed a laboratory for experimental research. The program required an open floor area, natural and artificial illumination, ample wall space for laboratory benches and equipment, and extensive conduits for electrical, water, air, and gas service. A clerestory and skylights were included in the stark and simple but flexible and efficient building. Exposed brick cavity walls were laid and bonded with extreme care to illustrate the company's high-quality materials and workmanship.³³

Peerless Confection Company on West Schubert Street, Chicago commissioned Keck to improve their cooking rooms and loading docks and expand their warehouse and factory building. This was a much larger and more involved commission than either the Reagan Medical Offices or the National Clay Laboratory, but its engineered planning was similar to that of these two buildings. Robert Picken of Peerless first retained the Kecks in 1956 to remodel his old factory. As the candy market grew, the Kecks enlarged the building. By 1977, the company was housed in an enormous warehouse with closed surfaces (fig. 260).³⁴

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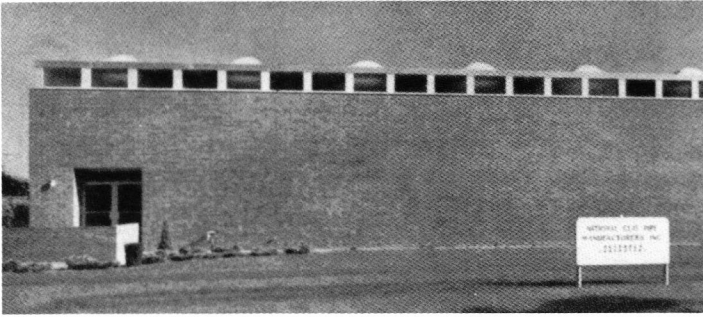


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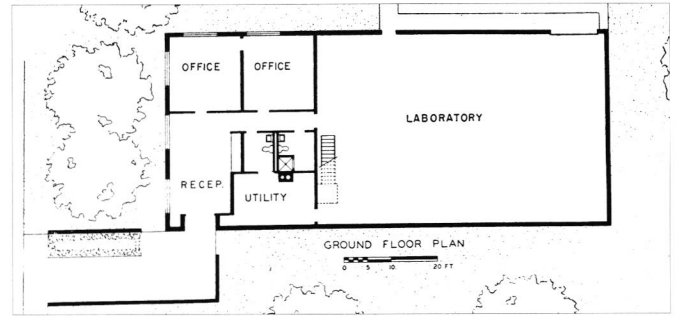


256 Dr. Robert Reagan Medical Offices, Benton Harbor, MI, 1955
257 Reagan Medical Offices, plan

258



259



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258 National Clay
Pipe Manufacturers
Laboratory Building,
Crystal Lake, IL, 1957
259 National Clay
Pipe Laboratory, plan
260 Peerless Candy
Factory, Chicago, IL,
1977, factory ware-
house

NOTES

1. Martin Anderson, *The Federal Bulldozer* (Cambridge: M.I.T. Press, 1967).
2. David B. Carlson, "Urban Renewal: Running Hard, Sitting Still," *Architectural Forum* 116 (April 1962): 99–101, 183.
3. Ford Foundation, *Community Development Corporations* (New York: Ford Foundation, 1973): 24.
4. "Eight Chicago Apartment Projects," *Architectural Forum* 103 (November 1955): 143; Marshall Burchard and David B. Carlson, "Slum Blight: Chicago's Number One Target," *Architectural Forum* 116 (May 1962): 120.
5. "Chicago: Wide Variety of Apartment Sizes," *Architectural Record* 115 (June 1954): 176. The first apartment building Keck designed and built was in Elmhurst, IL (Cruger Apartment Building, project 121, 1926–27); *Architectural Record* 71 (March 1932): 185–186. In 1948, at the same time the Kecks were building the Abel Fagen House, they built a rather nondescript twenty-two-unit cooperative apartment (project 372) on the northeast corner of their block, 5510 Woodlawn Avenue. This two-building complex gave them practical experience for the aesthetically more successful Pioneer Cooperative. "Chicago Cooperative Has Exterior Corridors," *Architectural Record* 110 (December 1951): 146; "Pioneer Coop," project 406, large drawings, vault, State Historical Society of Wisconsin (SHSW), Madison.
6. Fred Keck invested about \$16,000 in the Coop and remained an active member of the group for a number of years; correspondence file, "Cooperative Residences, Inc.," Box 1, Transfile 2, SHSW.
7. A number of engineers and Robert Bruce Tague worked on the project. Perry Construction Company, who constructed many of the Keck detached houses, built Pioneer Cooperative. "Chicago: Wide Variety of Apartment Sizes," 177; correspondence file, "Cooperative Residences, Inc.," Box 1, Transfile 2, M73-26, SHSW. "Pioneer Cooperative, Inc.," Box 26, M73-26, SHSW.
8. Robert Greenberg, "Trumbull Park: Act II: Elizabeth Wood Story," *Nation* 18 (September 1954): 230–232. William Wurster worked at M.I.T.; Catherine Bauer Wurster was a close professional colleague of Elizabeth Wood.
9. Samuel R. Lewis and Associates, Frank J. Kornacker and Associates, and W. G. Atkinson, Landscape Architect, worked with the Kecks on the project. "Architectural Concepts of Housing Proved Valid," *Architectural Record* 119 (January 1956): 158–161.
10. In the winter the sun penetrates the apartments twelve feet beyond the balcony corridor. Julian Whitlesey, "New Dimensions in Housing Design: Prairie Avenue Courts," *Progressive Architecture* 32 (April 1951): 64–65; "High Apartments or Low," *Architectural Forum* 96 (January 1952): 104–107: project 410, large drawings, vaults; and publicity statements, correspondence file, SHSW.
11. Samuel R. Lewis and Associates were the mechanical engineers and Frank J. Kornacker and Associates were the structural engineers. "New Look for Prairie Avenue," *Chicago Construction News* (29 January 1953): 7; Nory Miller, "Keck at 81, 'Hit of the Show' after 56 Years," *Inland Architect* 20 (May 1976): 11.
12. Colonel C. E. Humphrey, a native of Iowa City, joined Skidmore, Owings and Merrill in 1946. He joined the planning and construction department of the CHA (1953), became the Deputy Director (1957), and then the Director (1967–73). From an unmarked newspaper clipping at the Chicago Municipal Reference Library, and interview with William Keck, August 1984.
13. The folders and drawings for both projects, 650 and 681, were unavailable for research; however, on-site inspection in August 1984 reinforced the impression of the rather common nature of these elderly housing units.
14. "Chicago Provides Middle Income Housing," *American City* (March 1956): 199, 201.
15. Correspondence file, "Julian and Marj Levi," project 675, 1962, Box 5, M76-43, SHSW.
16. Stuart Chase, "We Can Do Something About It," *Reader's Digest* (May 1953): 41–45; "Rapid Progress in Hyde Park-Kenwood," *Architectural Record* 128 (November 1960): 140–143.
17. Appointment books, Box 1, M81-602, SHSW.
18. James V. Cunningham, Jr. and Grace Tugwell, "Chicago Checks Urban Blight," *American City* (June 1958): 109–10; "Keck Named Chairman of Conference Group," *Hyde Park Herald*, 5 February 1958, 10.
19. Kolbjorn Saether and Associates were the consulting engineers and Nachman-Vragel and Associates were the consulting utilities engineers; Kevin Johnson, "The Natural Thing to Do," *Chicago Reader* 11 (27 November 1981): 35. All correspondence for this project was with Winston Kennedy of the Community and Real Estate Office, University of Chicago; correspondence file, "University of Chicago Apartment Building," Box 4 and 5, M76-431, SHSW; project 745, large drawings, vaults, SHSW.
20. Most of the Harper Square information comes from a Keck public relations statement dated 14 September 1973. Because of a legal suit, all the major folders/files on Harper Square were in the Keck office in Chicago and not open to the public.
21. "Buyers Prefer Four-Bedroom Town Houses," *Architectural Record* 137 (April 1965): 206–207. The Kecks served as their own construction engineers on this project; project 669, architectural drawings, vault and correspondence file, "48th and Woodlawn," Box 18 and 19, M73-26, SHSW.
22. The duplex was on the corner of 55th and Dorchester. In the same area were row houses designed by Harry Weese and I. M. Pei, who worked under Webb and Knapp. Correspondence file, "55th and Dorchester," Transfile 1, M73-26, large drawings, project 685, vault, SHSW; on-site inspection, August 1982.
23. Project 716, August 1965, 5217 University Avenue, Chicago; architectural drawings, vault, SHSW; on-site inspection, August 1982.
24. Keck designed two complexes in 1966 for Arthur M. Gordon: a two-building, six-unit complex in the 5400 block of Kenwood, project 729; and a two-unit row house in the 5400 block of Blackstone, project 744. These units were rather luxurious apartments with four bedrooms, two and one-half baths, and bay windows. Architectural drawings, vault, SHSW. In 1951, the Kecks had designed a house for Gordon in Chicago Heights, Illinois, project 405;

- "A Suburban Lot with Privacy at a Premium," *Architectural Record* 116 (October 1954): 172-173.
25. Architectural drawings and correspondence files, SHSW.
 26. David B. Carlson, "Urban Renewal: Running Hard, Sitting Still," *Architectural Forum* 116 (April 1962): 99-101, 183.
 27. Project 698, 1964; "Karlin House, Chicago," *Architectural Record* 141 (mid-May 1967): 76-77.
 28. Three houses of this type are: Jerome and Ellen Frautschi, Madison, WI (project 738, 1966); Dr. A. B. Lorincz, Woodlawn, Chicago, IL (project 762, 1967); and Dr. Robert A. Wolf, Munster, IN (project 849, 1973); "Dr. Robert A. Wolf House, Munster, Indiana," *Architectural Review* 62 (October 1977): 256.
 29. The Kecks were involved with the Neighborhood Club during 1950, 1953, 1956, 1958, and again in 1965. Correspondence file, "Hyde Park Neighborhood Club," project 423, Box 20 and 26, M73-26, SHSW. Interviews with William Keck, 9 July and 20 July 1982. Part of William Keck's more active role in the neighborhood is related to his and Stella's adoption of daughter Margaret in 1956. Margaret was Stella's parentless second cousin, whom the Kecks had met on a trip to Scotland.
 30. CHA's Altgeld Commercial Center (Thaddeus Stevens Shopping Center) project 317, 1946, and 651, 1961; "Essential Services for 1,500 Families," *Architectural Forum* 88 (May 1948): 133; Hyde Park Shopping Center, project 616, 1959; Hyde Park Coop Society, Inc., project 503, 1954. *Architectural Record* 117 (March 1955): project 176; Hyde Park Federal Savings and Loan Shopping Center, project 655, 1961; the Harper Building, project 667, 1962; Nachman Candy Store, project 670, 1962; Harper Crest Hotel, project 680, 1962; and Lehnoff Dance Studios, project 683, 1963. Virtually no correspondence exists for these projects; see Architectural Drawings, vault, SHSW.
 31. "Concrete for Shade and Pattern," *Architectural Record* 138 (November 1965): 159-160. Marianne Willisch designed the spare interiors. Structural engineers were George Kennedy and Associates, and mechanical engineers were Samuel R. Lewis and Associates. "Two Kecks," *Architectural Review* 154 (November 1973): 332-333; project 617, architectural drawings, vault, SHSW; correspondence file, "Chicago Child Care Society," Box 16 and 17, M73-26, SHSW.
 32. "Small Medical Clinic on a Sloping Site," *Architectural Record* 124 (October 1958): 175-176. Correspondence file, "Dr. Robert Reagan," project 521, Box 11, M73-26, SHSW.
 33. "Economical Design for Research," *Architectural Record* 127 (January 1960): 174-176. Correspondence file, "National Clay Pipe Manufacturers, Inc.," project 569, Box 11, M73-26, SHSW.
 34. Peerless Confection Company, projects 559, 692, and 883, architectural drawings, vault, SHSW.

CONCLUSION

GEORGE FRED KECK, 1895–1980

There were no organized architectural coteries in America during the twenties and thirties where modernist notions of utopian universalist aesthetics were espoused. However, there were attempts by a few American architects to replicate the architectural forms and design vocabulary that were then being constructed in Europe. Structures, especially residences, built in America relied heavily on an architectural philosophy that stressed pragmatism and functionalism. For the most part such structures indicated the architect's unresolved struggle between new visual forms and older American practical architectural designs.

Few Americans were actively involved with the same Platonic architectural argument that engaged the Bauhaus. Fred Keck, along with Howard T. Fisher and Andrew N. Rebori in Chicago, arrived at the same architectural statement of modernity as their German counterparts did. Among American architects, it was Fred Keck who consistently designed and built residences that incorporated an International Style machine aesthetic of clean-edged box silhouette, spatially fluid, sparsely furnished interiors, and technological appearance. To this he married Wright's organic aesthetic of carpentry fabricated of natural materials and siting incorporating environmental factors. The Usonian house was Wright's essay on the International Style, but it was Keck's mass-produced and better crafted Green's Ready-Built that made a Usonian-type product available to a wider public.

While European residential architecture was designed as stage sets, theoretical spaces, monuments, and public architecture, American houses were designed for family living and as an expression of Jacksonian individuality. American residential architecture was based less on Platonic theory and tended to be practical, functional, and Aristotelian. However, this is not to say that Keck and other American archi-

tects did not design residences that sometimes could not be differentiated from European International Style designs: the Century of Progress Home and Industrial Arts Exhibit, for example, could not deny its theoretical parentage. Still, Keck's architecture, like other mid-western architects' work, was uniquely American, a quality that got in the way of European theorists.

Keck's architecture expressed America's socio-economic changes. It was not based on an immutable classical ideal but rather on American experimentation that would not be bound by a theoretical formula. Keck, like the naturalized Americans Richard Neutra, Rudolf Schindler, Walter Gropius, and Mies van der Rohe, created an American residential architecture whose parentage is both European and American. But unlike the work of his colleagues, Keck's contribution to modern architecture has been ignored.

Throughout his productive career, Fred Keck sought the best solution for planning and construction of specific projects. There was no single style into which his work fell. Instead, individual problems were solved through technology developed and tested by both himself and the construction industry. Using his engineering and architectural training; incorporating a stylistic vocabulary gleaned from an awareness of published and illustrated projects by foreign and domestic architects; relying on a close collaboration with his brother William, associates, and assistants in the office, especially Robert Bruce Tague; and incorporating environmental factors of the individual client's site, Keck designed and built functional and contemporary residences. He avoided any prejudice as to what a project should look like until all the ingredients affecting the project had been collected, studied, and adapted. Technical factors often dictated the style of a structure more frequently than did any aesthetic or architectural style.

During the first twenty years of his career, Keck's residential designs rather closely followed contemporary European styles when an enlightened client allowed him greater freedom. Simple, crisp-planed, sharp-cornered, white-stuccoed boxes with dark roofs were built in the Indian Hills Estates for Bills' Realty in Wilmette, Illinois. The Miralago Ballroom, then one of the finest Art Deco designs in America, was built for Bills' Realty during the same period of North Shore suburban expansion. Keck's 1933 House of Tomorrow unified his engineering concepts with Le Corbusier's *machine à habiter* to produce a steel-caged, glass-walled structure that was the most far-sighted and revolutionary residential design produced in America to that point.

Using the concepts and materials incorporated in the House of Tomorrow and his and Atwood's 1934 Crystal House, Fred Keck then designed and built a number of Art Moderne-inspired houses. Buildings such as the Cahn and Bruning houses used curves, glass blocks, architect-designed furnishings, white-stuccoed walls, and site orientation to take advantage of passive solar heating. Then, as though the Moderne and its cool, impersonal, machined ingredients held nothing more for him, Keck turned to a vocabulary of natural materials, palette, and textures and designed houses that became an organic part of their sites. These "Wrightian" houses, begun in 1939—the Buchbinder, Rice, and Fagen houses—were more fully thought out, better engineered, more cleanly designed, and better built than any of Wright's contemporary Usonian houses. Since either Fred or William Keck personally supervised the construction of each of the projects, they had better quality control.

By the end of the thirties Keck's designs became more thin-edged and more frequently departed from strict rectangularity. The Second World War and a scarcity of construction materials interrupted the building trades, but the war developed new products, processes, and technologies that Keck incorporated in his postwar buildings. During the war, Keck designed and developed a concept taken from the thirties—the prefabricated house. Each unit was standardized and gridded so that a buyer, starting with a floor plan from among many options, could easily expand the house using in-stock parts. By 1946, when his brother joined

him as a partner, the office of George Fred Keck, William Keck, Architects, had become known for its solar architecture—houses that incorporated large double glazed south walls, radiant heating floors, overhanging eaves, fixed wood or adjustable aluminum ventilating louvers, flat roofs with evaporating water, and interior spaces engineered for maximum efficiency and practicality. Keck was a pioneer in solar residential architecture, not because he discovered some new or revolutionary thermal principle, but because he synthesized old ideas with new materials, better construction processes, and clean, sharp-edged designs to evolve a more livable house.

During the fifties and sixties the function of the Keck-designed house began to mirror the changed social conditions of America. Except for in a few large expensive projects (the Blair, Payne, and Hirsch houses), maid's rooms and separate formal dining rooms disappeared. A combined living/dining room, a recreation or children's activity room, and patio terraces became the rule. More emphasis was placed on healthy outdoor living and activities in which the whole family would participate. In regard to the daily development of the design and supervision of the construction of the house, more and more of the correspondence was written by the woman of the household, and the children were personally consulted as to their wants and needs.

Keck no longer designed compromise projects of "traditional" form. The houses were compositions dictated by forms and methods of contemporary state-of-the-art construction and by the conveniences required by an enlightened client. Keck's sensitivity was aesthetically different from that of his former assistants and colleagues: Paul Schweikher, Ralph Rapson, Bertrand Goldberg, and Stanley Tigerman. Only Neutra, Raphael Soriano, and Craig Ellwood consistently used similar design aesthetics. Steel frame was exploited in their houses but was handled in a more machined, cold, and impersonal manner than Keck's work, as in his 1954 Walter Gray House.

Keck designed houses whose inception was based on the premise that modernity was possible through the studied application of progressive technology. The Gray, Blair, and Payne houses, however, were almost too monumentally European. Their large-scale spaces

were spare, pristine, and coolly impersonal as they incorporated visually simple and uncomplicated surfaces. But far finer and more intimately livable designs were built for the Levins and the Blooms. The same International Style design vocabulary of a reserved neutral palette applied to cell-like spatially fluid boxes was used, but they were more personal and private in scale.

Fred Keck's observations were always fresh and original. He was always observing the world around him with a fresh eye, noting how people lived, seeing how natural forces operated, thinking of architectural solutions to people's problems, and conjuring harmonious combinations of materials in elegant proportion, balance, and scale. [He said of his residential architecture that] if they performed their functions well and if they pleased the senses, [then they] may be read as good works of art. As

*works of art, they can be whatever a good book can be—intelligent, readable, serious, biographical, gay, witty, tragic—what you will. They can be what a human being can be and can enter into his moods. The practicing architect, when he produces his works, contributes to them the artistic substance of which he is capable.*¹

As one client wrote of her residence, "It is not just a house, it is a new way of living. Our souls are still expanding to encompass it all."²

George Fred Keck poured his artistic substance, his concern for honesty in design, and his professional pride and respect for his own conception of what good architecture should be into his residences, thus leaving a rich legacy of his personality in those creations. It is for these homes that Fred Keck should be admired, set apart, and reevaluated as one of twentieth-century America's best residential architects.

NOTES

1. Rev. Max Gaebler, eulogy at George Fred Keck's memorial service, Chicago Arts Club, 2 December 1980.
2. Lucie Panshin, letter to Fred Keck, Christmas 1947; correspondence file, "Alexis and Lucie Panshin," project 364, Box 7, M73-26, State Historical Society of Wisconsin, Madison.

AWARDS AND HONORS

- Edward W. Morehouse House, Madison, WI (1936–37, project 210). Designated an Architectural Landmark by Madison Landmarks Commission, 1974.
- Keck, Gottschalk, Keck Apartments, Chicago, IL (1937, project 216). Designated an Architectural Landmark by Chicago City Council, 1957.
- Coop Housing Project, Chicago, IL (1949–51, project 406). Chicago A.I.A. Citation of Merit, 1958.
- Chicago Housing Authority Prairie Avenue Courts, Chicago, IL (1950–51, project 410). Chicago A.I.A. Citation of Merit, 1957.
- Sigmund Kunstadter House, Highland Park, IL (1951, project 448). Chicago A.I.A. Honor Award, 1953; National A.I.A. Award of Merit, 1955.
- Edward McCormick Blair House, Lake Bluff, IL (1953–55, project 500). Chicago A.I.A. Honor Award, 1958.
- Walter Gray House, Olympia Fields, IL (1954, project 514). *Architectural Record* Award of Excellence in House Design, 1958.
- Harold E. Levin House, Olympia Fields, IL (1955, project 532). Chicago A.I.A. Honor Award, 1959.
- Dr. Robert P. Hohf House, Kenilworth, IL (1957–58, project 571). Chicago A.I.A. Citation of Merit for Excellence in Architecture, 1961.
- Mrs. Frank E. (Seba) Payne House, Bucks County, PA (1959–65, project 607). *Architectural Record* Award, Excellence for House Design, 1963; Chicago A.I.A., Citation of Merit, 1964.
- Chicago Child Care Society Building, Hyde Park, IL (1959–62, project 617). Chicago A.I.A. Award, 1964.
- Milton Hirsch House, Highland Park, IL (1960–61, project 642). *Architectural Record* Award, Excellence for House Design, 1963; Chicago A.I.A. Honor Award, 1964.
- Norman Karlin House, Chicago, IL (1964–65, project 698). *Architectural Record* Award, Excellence for House Design, 1967; Chicago A.I.A. Citation of Merit, 1967.
- Harper Square—Amalgamated Clothing Workers of America, Apartments and Row Houses, Chicago, IL (1967–72, project 756). Chicago Beautification Committee, “In Appreciation of an Outstanding Effort Made in Behalf of the Campaign for the Beautification of the City of Chicago,” 1972.
- Lawrence College, Appleton, WI, awarded George Fred Keck an Honorary Doctorate, 1950.
- Outstanding Contribution to Houses for Better Living, A.I.A. with *Life and House and Home*, Honor Award and Award of Merit, 1958.
- American Section of the International Solar Energy Society, “In Honor and Distinctive Recognition as Pioneers in Passive Solar Architecture,” 1979.
- University of Illinois, Chicago, IL. “The First Illinois Medal in Architecture to George Fred Keck and William Keck, FAIA, Recognizing in Each a Lifetime of Professional Dedication and Excellence,” 1980.

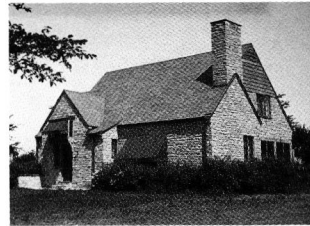
CLIENT LIST

Project numbers as assigned by the Keck office.

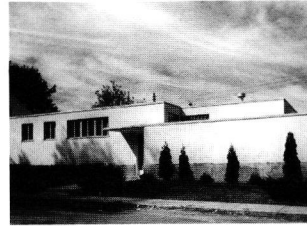
- | | | | |
|---|---|--|---|
| 112 Hans Gaebler, Thomas Avenue, Watertown, WI, 1926 | 145 Miralago Ballroom and Shops, No-Man's Land, Wilmette, IL, 1929 | 175 House of Tomorrow, A Century of Progress, 1933 | 197 Arthur F. Trebilcock, Shorewood, Madison, WI, 1936 |
| 113 Harry A. Smith, Wilmette, IL, 1926 | 146 Eisenbrand, Wilmette, IL, 1929 | 176 Restaurant for Hazel M. Thorud, A Century of Progress, 1933 | 198 H. MacNair (remodel), S. Woodlawn Avenue, Chicago, IL, 1936 |
| 114 Whitmore | 147 H. E. Steel #2, Indian Hills, Wilmette, IL, 1929 | 177 Bradford-Exhibition, A Century of Progress, 1933 | 199 A. G. Crandall, Griffith, IN, 1936 |
| 115 Quinn, Chicago, IL | 148 J. H. Prentice, Indian Hills, Wilmette, IL, 1929 | 178 Dr. Albert B. Leigh, Spring Street, Kaukauna, WI, 1933 | 200 Perry Construction Co. (N. Keller House), Chicago, IL, 1936 |
| 116 R. R. Canterbury, Highland Park, IL, 1926 | 149 M. A. Follansbee, Wilmette, IL, 1929 | 179 James D. Peterson, Cherokee Road, Wilmette, IL, 1933 | 201 Perry Construction Co., Alman House, Chicago, IL, 1936 |
| 117 John Wyllie, Vernon, Glencoe, IL, 1926 | 150 B. F. Bills, Wilmette, IL, 1929 | 180 Saginaw Hotel (remodel), Saginaw, MI, 1933 | 202 Olsen, Palos Park, Chicago, IL, 1936 |
| 118 Canterbury | 151 W. W. Holmes, Wilmette, IL, 1929 | 181 Isobel Bates, Barrington, IL, 1933-34 | 203 Frank Murphy, 50 Irving Avenue, Chicago, IL, 1936 |
| 119 Aitken, Deerfield, IL, 1926 | 152 J. C. Tucker, Center Avenue, Wilmette, IL, 1929 | 182 Mrs. Bert M. Thorud, Fish Bar and Restaurant, A Century of Progress, 1934 | 204 R. F. Overmyer, Hoyme Avenue and 100th Street, Chicago, IL, 1936-37 |
| 120 S. P. Bradley, Watertown, WI, 1927 | 153 Leighton-Steich, Wilmette, IL, 1929 | 183 Crystal House, A Century of Progress, 1934 | 205 Nelson Reck, Ogden Dunes, IN, 1936 |
| 121 Cruger Apartment Building, Virginia Avenue, Elmhurst, IL, 1926-27 | 154 Dr. E. E. Graham, Indian Hills, Wilmette, IL, 1929 | 184 Federal Service, Model Farm House, A Century of Progress, 1934 (not built) | 206 William H. Fricker, Case Street, Whitewater, WI, 1936-38 |
| 122 Newton B. Lauren, #16, Flossmoor, IL, 1927 | 155 Henke-Jackson | 185 Jeffris Theatre, Janesville, WI, 1934 | 207 J. W. Hanrahan, Chicago, IL, 1936 |
| 123 Newton B. Lauren, #42, Flossmoor, IL, 1927 | 156 C. E. Holzworth, Indian Hills, Wilmette, IL, 1930 | 186 E. L. Wilde, Elizabeth Street, Watertown, WI, 1935 | 208 Harvey Robinson (remodel), Lawrence Avenue, Chicago, IL, 1936 |
| 124 J. Alton Lauren, #34, Flossmoor, IL, 1927 | 157 Carlson Brothers, Big Bear Lake, Polk Co., WI, 1930 | 187 Wallace Buffmire, Calfax and Lawndale, Evanston, IL, 1935 | 209 William V. Morgenstern, Ogden Dunes, IN, 1936 |
| 125 Jennings, Flossmoor, IL, 1927 | 158 Weinstock, Kenilworth, IL, 1930 | 188 Wisconsin National Bank, Watertown, WI, 1935 | 210 Edward W. Morehouse, Ely Place, Madison, WI, 1936-37 |
| 126 Seggebruck, Chicago Heights, IL, 1927 | 159 S. B. Williams, Indian Hills, Wilmette, IL, 1930 | 189 Albert E. Chapman, Phoenix, AZ, 1935 | 211 Riverview Park, Chicago, IL, 1936 |
| 127 Bills' Realty Co., Wilmette, IL, 1927 | 160 E. L. Perkins, Wilmette, IL, 1930 | 190 J. W. Garretson, Kenilworth, IL, 1935 | 212 Morris A. Mueller, Chicago, IL, 1936 |
| 128 Bills' Realty Co. #2, Wilmette, IL, 1927 | 161 Pat Keating, Wilmette, IL, 1930 | 191 Morris A. Mueller, S. Pleasant Avenue, Chicago, IL, 1935 | 213 Bertram J. Cahn, 270 S. Western Avenue, Lake Forest, IL, 1936-37 |
| 129 Gaines, Wilmette, IL, 1928 | 162 Ralph W. Wagoner, Indian Hills, Wilmette, IL, 1930 | 192 Beryl R. McNabb, Oakley Avenue, Chicago, IL, 1935 | 214 Joseph Sendecke, Hoyme Avenue, Chicago, IL, 1936 |
| 130 M. O. Hopkins, Beakley Court, Deerfield, IL, 1928 | 163 Frank Warren, Romona Road, Wilmette, IL, 1930 | 193 Aragon Hotel Restaurant, S. Cornell Avenue, Chicago, IL, 1935 | 215 James Kasdan, Hawthorne Avenue, Louisville, KY, 1936 |
| 131 Brown, 1928 | 164 Arthur Stanten, Wilmette, IL, 1930 | 194 Joseph Kaszab, Jr., Locust Road, Wilmette, IL, 1935 | 216 Keck, Gottschalk, Keck Apartment, 5551 University Avenue, Chicago, IL, 1937; addition, 1947, 1951, 1952, 1956 |
| 132 Roy C. Toomus, Downers Grove, IL, 1928 | 165 L. Byron Nash, Wilmette, IL, 1931 | 195 Herbert Bruning, Blackhawk Road, Wilmette, IL, 1935-36 | 217 Nelson Reck, Ogden Dunes, IN, 1937 |
| 133 Bradford Gill, 1928 | 166 Fred W. Jameson, Indian Hills, Wilmette, IL, 1931 | 195a William B. Morse, Blackhawk Road, Wilmette, IL, 1956 | 218 Nelson Reck, Ogden Dunes, IN, 1937 |
| 134 F. W. Bills, Wilmette, IL, 1928 | 167 W. W. Ross, Blackhawk Road, Wilmette, IL, 1931 | 196 Grace Stafford and Margaret Southwick, Lake Michigan, Northport, MI, 1935-36 | 219 same as above |
| 135 B. J. Denman | 168 Otto A. Schultz, Wilmette, IL, 1931 | | 220 Mrs. L. B. Nash, Oahu, Honolulu, 1937 |
| 136 J. W. Pearson, Wilmette, IL, 1928 | 169 Ladies' Home Journal, Summer Home, 1931 | | 221 Willard Bellack, Forest Avenue at |
| 137 Roy F. Best, Wilmette, IL, 1928 | 170 Jefferson County Court House, Jefferson, WI, 1932 | | |
| 138 R. Dierker, Wilmette, IL, 1929 | 171 John W. Keck, E. Water Street, Watertown, WI, 1932 | | |
| 139 E. P. McLean Holland, MI, 1929 | 172 G. H. Hafemeister Store and Office Building, N. Third Street, Watertown, WI, 1932 | | |
| 140 H. E. Steel #1, Indian Hills, Wilmette, IL, 1928 | 173 J. D. Peterson, Cherokee Road, Wilmette, IL, 1932 | | |
| 141 Devine-Mueller Apartment, Eggleston Avenue, Chicago, IL, 1929 | 174 Standard Oil Company of Indiana: | | |



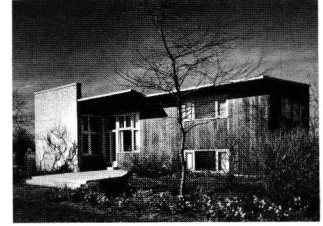
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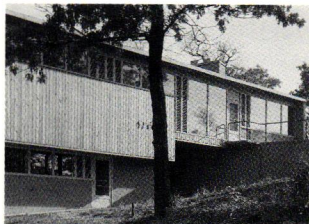


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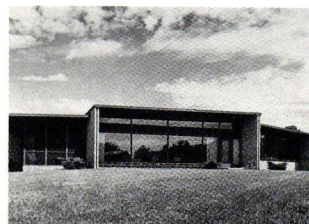


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- 11th Street, Neenah, WI, 1937
- 222 A. L. Cash, Ogden Dunes, IN, 1937
- 223a Nurses Home for Forest Lawn Sanatorium, Jefferson County, WI, 1937
- 223b same as above
- 224 Nelson Reck, Ogden Dunes, IN, 1938
- 225 Lewis Norman, Ogden Dunes, IN, 1938
- 226 Claude Smith, Lombard, IL, 1938
- 227 H. W. Bills (remodel), Wilmette, IL, 1938
- 228 Margaret Southwick and Louise Eberlein (remodel), Stevens Point, WI, 1938
- 229 B. Lamar Johnson, Columbia, MO, 1938-39
- 230 Benjamin Bills (Library), E. Chestnut, Chicago, IL, 1938
- 231 L. Byron Nash, Northpoint Point, Northport, MI, 1938
- 232 C. E. Sorensen, Hillside, Barrington, IL, 1938
- 233 Edward A. Kayser (remodel), Wilmette, IL, 1939
- 234 Roger Hammer, Reddingdale, New Castle, IN, 1939
- 235 H. W. Bills, Geneseo, IL, 1939
- 236 Margaret Southwick, Ogden Dunes, IN, 1939
- 237 William Fisher (remodel), Stevens Point, WI, 1939
- 238 Nelson Henry, Ogden Dunes, IN, 1939
- 239 William Fisher (remodel), Stevens Point, WI, 1939
- 240 Warden Apartment Hotel (remodel), Fort Dodge, Iowa, 1939
- 241 H. C. Twitchell (remodel), Harper Avenue, Chicago, IL, 1939
- 242 R. Ripberger, Melrose Avenue, Kenilworth, IL, 1939
- 243 William Kellelt, Winnefox Point, Menasha, WI, 1939
- 244 Dr. Jack R. Buchbinder, Fish Creek, WI, 1939; additions, 1953
- 245 Bills' Realty, Northbrook, IL, 1939
- 246 Bills' Realty, Northbrook, IL, 1939
- 247 William C. Powell, Chatham Road, Glenview, IL, 1940
- 248 John R. Dewson, Libertyville, IL, 1940
- 249 Donald W. Copps, Stevens Point, WI, 1940
- 250 F. B. Kinne, Northbrook, IL, 1940
- 251 Bert Donaldson, Chatham Road, Glenview, IL, 1940
- 252 J. A. Haefner, Chatham Road, Glenview, IL, 1940
- 253 Howard Sloan, Glenview Road, Glenview, IL, 1940
- 254 J. E. McKeown, Hunter Road, Glenview, IL, 1940
- 255 H. A. Simmons, Dartmouth Place, Evanston, IL, 1940-41
- 256 Elsie Morrison, Lake Shore, S. Milwaukee, WI, 1940
- 257 O. C. Metzger, Chatham Road, Glenview, IL, 1940
- 258 Watertown Historical Society, Shelters for the Octagon House, Watertown, WI, 1940
- 259 David L. Robinson, Lockport, IL, 1940
- 260 John W. Keck, Solon Springs, WI, 1940
- 261 *Coronet House*, 1940
- 262 United States Gypsum Co. Exhibition Rooms, 1940
- 263 Dr. Maurice and Elizabeth Rice, Stevens Point, WI, 1940
- 264 Eastgate Hotel (remodel of Robin Hood Room and entrance), Chicago, IL, 1940-41
- 265 Walter S. Marx, Balsam Road, Highland Park, IL, 1940
- 266 John Angle, Ripley Street, Gary, IN, 1941
- 267 M. Brasseur, La Grange, IL, 1941
- 268 Hugh D. Duncan, Sylvan Court, Flossmoor, IL, 1941
- 269 John L. Bennett, Cuba Road, Barrington, IL, 1941
- 270 Stanley Fraser, Chatham Road, Glenview, IL, 1941
- 271 J. E. S. O'Connell, Hunter Road, Glenview, IL, 1941
- 272 Fred Fisher, E. View Road, Highland Park, IL, 1941
- 273 Dr. Emile Quenneville, Granby, Quebec, 1941-48
- 274 H. W. Kadell, Priscilla Avenue, Highland Park, IL, 1941
- 275 Bradford Shank, Sylvan Court, Flossmoor, IL, 1941
- 275a Dr. Allan Goldberg (additions to Shank House), 1965
- 276 Hans Greven, 1628 Sylvan Court, Flossmoor, IL, 1941
- 277 Pete and Cathy Keck, Oconomowoc, WI, 1941; additions, 1949.
- 278 Dr. Robert H. Sykes Professional Center, Skokie Highway at Wilmette Avenue, Wilmette, IL, 1941
- 279 Al Kusler, Clam Lake, WI, 1941
- 280 United States Gypsum House, 1941
- 281 Stanley C. Stewart, Hunter Road, Glenview, IL, 1941
- 282 Jack Kinsey, Pleasant Avenue, Highland Park, IL, 1941
- 283 A. M. Brown, Woodpath Avenue, Highland Park, IL, 1941
- 284 J. T. Fitzgibbons, Countyline Road, Highland Park, IL, 1941
- 285 Lawrence Potter, Summit Road, Wheaton, IL, 1941
- 286 A. O. Missner, Hunter Road, Glenview, IL, 1941
- 287 Circle Bar Beauty Parlor (remodel), Chicago, IL, 1940-41
- 288 A. H. Buchner, Redwood Lane, Glenview, IL, 1941
- 289 Dr. H. O. Brown, Glenview, IL, 1941
- 290 Dr. J. H. Johnston, Home Avenue, Park Ridge, IL, 1941
- 291 Arthur Carstens, Spruce Avenue, Highland Park, IL, 1941
- 292 T. A. Tenhune, Meadow Brook Village, Glenview, IL, 1941-42
- 293 Richard E. Pulliam, E. Morningside Drive, Lake Forest, IL, 1941
- 294 S. Hirsch, Grandview, Highland Park, IL, 1941-42
- 295 Roofing Set for United States Gypsum Co., 1940-41
- 296 Harold E. Brown, Redwood Lane, Glenview, IL, 1942
- 297 Wesley Hansche, Racine, WI, 1942
- 298 Howard M. Sloan, Redwood Lane, Glenview, IL, 1942
- 299 G. W. Lindstrom (Noblis), Hunter Road, Glenview, IL, 1942
- 300 Federal Works Agency, project 11113, Rockford, IL, 1942
- 301 Payne W. Ranney Debolt, Redwood Lane, Glenview, IL, 1942
- 301 Martha Nordgren, Pinnock, IN, 1942
- 302 Continental Radio, 1942
- 303 United States Gypsum Details, 1942
- 304 Celotex Company House, 1942
- 305 Clay Products Association, 1945-46
- 306 Green's Ready-Built Homes, Rockford, IL, 1942
- 307 Holton Haughey, Coeur D'Alene, ID, 1944
- 308 Dr. E. E. Graham, Wilmette, IL, 1942
- 309 Alma B. Grimes, Bates Street, Birmingham, MI, 1944
- 310 Watertown Country Club, Watertown, WI, 1944
- 311 Libby-Owens-Ford Glass House, 1944
- 312 *Ladies' Home Journal House*, 1944
- 313 Clinton R. Flick, Waukesha, WI, 1944
- 314 W. K. Gilbert, Mundelein, IL, 1944-48
- 315 Don Ozmun (additions), Mt. Prospect, IL, 1944, 1949
- 316 Charles A. Koepke, Minneapolis, MN, 1945-49
- 317 Altgelt Commercial Center, Chicago, IL, 1946
- 318 Charles E. Aldrich, Kenney Street, Morton Grove, IL, 1944
- 319 Container Corporation of America, Circleville, OH, 1944
- 320 Edward J. Matson, Highland Park, IL, 1946
- 321 Koepke, Highland Park, IL, 1946
- 322 Zellmer, Waukesha, WI, 1944-45
- 323 Bassett & Vollum Store, Broadway Avenue, Chicago, IL, 1944, 1946
- 324 Ross Dority, Ann Arbor, MI, 1945
- 325 Air Distribution System for International Oil Burner, Street Louis, MO, 1945
- 326 Tom Jones (remodel), Sheridan Road, Kenilworth, IL, 1945
- 327 R. H. Macy and Co., Exhibition House, Herald Square, New York, NY, 1945
- 328a Dr. H. C. Taylor, Indian Queen on the Potomac, MD, 1945-48
- 329 Donald Dusky, House for Ingersoll Steel and Disc. Co., Kalamazoo, MI, 1945
- 330 *Mademoiselle House*, 1946
- 331 Dr. Robert Lehner, Main Street, Racine, WI, 1946
- 332 Illinois Solar House For Libby-Owens-Ford Glass Co., 1945
- 333 Walter Matthias, Inverness, Palatine, IL, 1946-47
- 334 J. C. Meyer (remodel), Chicago, IL, 1946
- 335a Joseph D. Krueger, Lake View Terrace, Highland Park, IL, 1946-47, 1951, 1955
- 335 same as above
- 336 Ralph Ettlinger, Sheridan Road, Highland Park, IL, 1946
- 337 R. A. Weingardt, W. Hazel Dell, Springfield, IL, 1946
- 338 Sidney H. Davies, Drury Lane, Northfield, IL, 1946
- 339 Margaret Yates, Sawyer, MI, 1946
- 340 Carl Milam, Barrington Road, Barrington, IL, 1946
- 341 H. L. Westerdale, Webster Road, Detroit, MI, 1946
- 342 Charles Huckins, West Grant Street, Hinsdale, IL, 1946
- 343 Leslie C. Elson, Sheridan Road, Highland Park, IL, 1946-47
- 344 Sidney C. Wohl, Roger Williams Avenue, Highland Park, IL, 1946
- 345 Harold Cruger (remodel), Arlington, Elmhurst, IL, 1946
- 346 Russell A. Stamm, Thatcher Road, River Forest, IL, 1946
- 347 Bern Miller, Finley at Harding Road, Lombard, IL, 1946
- 348 Burton Greenfield, Highland Park, IL, 1946
- 349 L. A. Rauch, Judson at Marshman Street, Highland Park, IL, 1946-47
- 349a Proposed alterations, 1947-54
- 350 T. Friedlander, Oconomowoc Lake, Okauchee, WI, 1946
- 351 Alexander Schreiber, Taylor Road, Barrington, IL, 1948-49



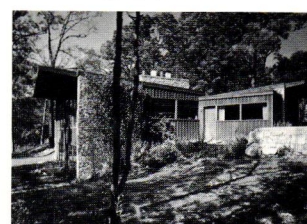
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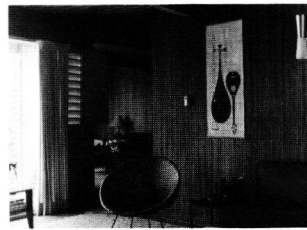
- 352 M. Lester Reinwald (remodel), S. Blackstone, Chicago, IL, 1946
- 353 John Salerno Store (remodel), Rush Street, Chicago, IL, 1946
- 354 Lewis Krafft, Irving Park Road, Elgin, IL, 1947
- 355 N. Goldowsky (remodel), Meadow Road, Glencoe, IL, 1946
- 356 Victor Chapman, Grand Beach, MI, 1946-47
- 357 Dr. Irving I. Cowan, Fox Lane, Fox Point, WI, 1946-47
- 357 Watertown Country Club Buildings, Watertown, WI, 1947
- 358 Jerrold T. Kelly, 218 Brinker Road, Barrington, IL, 1947
- 359 Ival Mainard, Elgin, IL, 1947
- 360 Lester Reinwald (remodel), S. Blackstone Avenue, Chicago, IL, 1947
- 361 Sam Loginsky, Jackson Street, Glencoe, IL, 1947-48
- 362 Dr. Harland L. New, Touhy Avenue, Park Ridge, IL, 1947
- 363 Fred C. Roehl, Oconomowoc, WI, 1947
- 364 Alexis J. Pahshin, Indian Hills, E. Lansing, MI, 1947
- 365 W. B. Perry (apartment project), Phoenix, AZ, 1947
- 366a R. E. Wynbrandt, Sunnyside Avenue, Glencoe, IL, 1947-48
- 366b R. E. Wynbrandt, Hohlfelder Road, Glencoe, IL, 1948-1950
- 367 H. Albert and W. Taylor, Fairview Subdivision, Paw Paw, MI, 1947
- 368 Perry Construction Co., Apartment Building, Western Avenue near 110 Street, Chicago, IL, 1946-48
- 369 Grant B. Burman, Polo, IL, 1947
- 370 Milton Frater, Watertown, WI, 1947
- 371 John D. Spence, Bensenville, IL, 1947-48
- 372 Coop Apartment, 5510 Woodlawn Avenue, Chicago, 1948, 1959
- 373 William Spurgeon (remodel), Avingdon Street, Kenilworth, IL, 1947
- 374a North Shore School (remodel), Chase Avenue, Chicago, 1945-48; (remodel) 1959-60
- 375 Parkview Millwork Co., NW Highway, Chicago, IL, 1948
- 376 Virgil Hoff (remodel), Route 1, Homewood, IL, 1949
- 377 House for Wilson Housing Co., E. Mason Street, Milwaukee, WI, 1948
- 378 Philip Hartung, Jr, Van Buren Avenue, Teaneck, NJ, 1947-48
- 379 Dr. Anne Benjamin, Dune Acres, IN, 1939, 1949
- 380 Harold Freidman (remodel), Lincoln Drive, Glencoe, IL, 1953
- 381 Howard A. DeMeyer, Indiana Avenue, LaPorte, IN, 1948
- 382 G. P. Schroeder, Independence, IA, 1948, 1950, 1971
- 383 Bernard W. Roos, Hinsdale, IL, 1948
- 384 Wilson Housing Co., Triplex Solar House, N. Boyd Way, Fox Point, WI, 1948
- 385 Dr. C. E. Cameron Dental Office, N. Michigan Avenue, Chicago, 1948
- 386 Fred Jensen, Newman Road, Racine, WI, 1948
- 387 Abel E. Fagen, W. Devonshire Lane, Lake Forest, IL, 1948
- 388 E. R. Hansberry (remodel), Crystal Lake, IL, 1948
- 389 C. M. Huckins, Hinsdale, IL, 1948
- 390 Jack Glagman, Muscoda, WI, 1948
- 391 Dr. Robert E. Reagan, Windsor Road, Benton Harbor, MI, 1949; additions, 1959
- 392 Donald Hayworth, Harrison Road, E. Lansing, MI, 1949
- 393 Sidney Dry (remodel), S. Bennett Avenue, Chicago, IL, 1949
- 394 Ezra Levin, Elmwood at University, Champaign, IL, 1949
- 395 Hubert Green, Goodenow Road, Beecher, IL, 1949
- 396 Martin E. Wells (remodel), Pine Wood Inn, Grand Beach, MI, 1949
- 397 Fred C. Yerges, Waterloo, WI, 1949
- 398 Raphael Kateen, Stewart Road, Kenwood, OH, 1949
- 399 Robert F. Wright, Palos Hills, IL, 1949-50
- 400 Ed Whitehorn, Northville, MI, 1949
- 401 Drs. Sam Needelman and Johanna Neuman, Beverly Shores, IN, 1949
- 402 E. W. Green, Roscoe, IL, 1949
- 403 Lloyd Randall, Sturgeon Bay, WI, 1949
- 404 S. R. Garber, Catalpa Avenue, Chicago, IL, 1949-50
- 405 M. Gross, Gary, IN, 1949-50
- 406 Coop Housing Project, 5400 Dorchester, Chicago, IL, 1949-51
- 407 Avery O. Craven, Dune Acres, IN, 1949
- 408 Dr. E. E. Graham, Colorado Springs, CO, 1949
- 409 A. O. Berger, Glencoe, IL, 1949-50
- 410 Prairie Avenue Courts, Chicago, 1950
- 411 William E. Neuman, Yorkshire Drive, Du Page County, IL, 1950-51
- 412 Elmer Kneip, Lake Geneva, WI, 1949
- 413 Hollis Baker, additions to the L. B. Nash House (231), Northport, MI, 1949
- 414 L. J. Oosterhuis, Seitz at Midland Avenue, Mayville, WI, 1949
- 415 Dr. Maurice Rice, additions to #263, Stevens Point, WI, 1949
- 416 M. F. Crowley, Lopas Street, Menasha, WI, 1949
- 417 Solar House Promotion—Frame Construction, Hugh Duncan House, 1949
- 418 Solar House Promotion—Brick and Frame Construction, Hugh Duncan House, 1949
- 418 Leonard Fieroh, 69th Avenue, Palos Heights, IL, 1951
- 419 Arnold Gilbert, Sylvan Court, Homewood, IL, 1950-53
- 420 Arthur Caplin, Highland Park, IL, 1950-52
- 421 Manuel Fink, Longwood Avenue, Glencoe, IL, 1950 & 1956
- 422 C. Collier (apartments remodel), Kimbark Avenue, Chicago, IL, 1950
- 423 Hyde Park Neighborhood Club, Kenwood and 55th, Chicago, 1950
- 423a additions, 1956, 1958
- 423b additions and remodeling, 1965
- 424 John Bixby, Flossmoor, IL, 1950
- 425 J. J. Breslin, Wausau, WI, 1950
- 426 John Frets, Dune Acres, IN, 1950
- 427 Lawrence Grubman, Estes Avenue, Chicago, IL, 1950
- 428 Solar House with Three Bedrooms, 1950
- 429 John Breslin Restaurant, Wausau, WI, 1950
- 430 Robert Crocraft, Hunter Road, Glenview, IL, 1950
- 431 Norman Glickman, Sylvan Court, Homewood, IL, 1950
- 432a Joseph Frumkin, W. 185th Avenue, Lowell, IN, 1950; additions, 1960
- 433 Robert F. Picken (remodel), E. 56th Street, Chicago, IL, 1950
- 434 Gerald Gidwitz (remodel), Lemoyne and Woodbing Avenue, Highland Park, IL, 1950
- 435 Alvin C. Gottlieb, Oak Park, IL, 1950
- 436 Coop Apartment, 5520 Woodlawn Avenue, Chicago, IL, 1950
- 437 H. E. Anderson, Bensenville, IL, 1950-51
- 438 Russell Stamm, Theater Road, River Forest, IL, 1950-51
- 439 Jack Telander, Hinsdale, IL, 1950
- 440 Leander J. McCormick, Lake Forest, IL, 1950
- 441 Daniel J. Boorstin, Cambridge Avenue, Flossmoor, IL, 1950
- 442 Marshal Goldman, S. Evanslawn Avenue, Aurora, IL, 1951
- 443 John S. Dempsey, Flossmoor, IL, 1951
- 444 Richard Schaub, Whiting, IN, 1950
- 445 Herman Grossman, 815 Tostenabe Lane, North Muskegon, MI, 1951; additions and alterations, 1959, 1961, 1962
- 446 Lorraine Creel, Palos Park, IL, 1951; alterations 1961
- 447 Multiple Dwelling for Edward Creagh, 1951-52
- 448 Sigmund Kunstadter, 1436 Waverly Road, Highland Park, IL, 1951
- 449 International Brotherhood of Electrical Workers (remodel), W. Madison Street, Chicago, IL, 1951-52
- 450 Art Gordon, Country Club Road, Chicago Heights, IL, 1951-52; alterations 1954
- 451 Jack Olivier, Sherbrooke, Quebec, 1951
- 452 Glenn Smith, Palos Oaks, IL, 1951-52
- 453 George H. Watkins, Cambridge Avenue, Flossmoor, IL, 1951-52
- 454 Cassius Winkelman, Wausau, WI, 1951
- 455 Small House Project, 1951
- 456 Club House for American Legion Post 91, Oconomowoc, WI, 1951-52
- 457 Solomon Sachs, Lapier Street, Glencoe, IL, 1951-52; additions 1953, 1965
- 458 Joseph Taylor, Tottenham Road, Birmingham, MI, 1952
- 459 Dr. J. W. Stracke, 1951
- 460 Don McNeill, Healy Road, Dundee, IL, 1951-52, 1954
- 461 Frederick Weiss, Holbrook Road, Flossmoor, IL, 1951
- 462 Charles C. Doe, Flossmoor, IL, 1951
- 463 L. A. Sulzenfuss, Lombard, IL, 1951-52
- 464 Bryon Drachman, 9 Thornwood Drive, Flossmoor, IL, 1952
- 465 Dr. Maurice Gleason, S. Ellis Avenue, Chicago, IL, 1952-54; new roof, 1957
- 466 Harold Friedman—Chicago Construction Co., five different house plans for Forest Crest Subdivision, Glencoe, IL, 1951
- 467 Hy Hammer (remodel), Itasca, IL, 1952-53
- 468 Linstead, 1952
- 469 Wayne H. Scheppele, Ridgewood Avenue, Bensenville, IL, 1952-53
- 470 Atkinson—State Park Project, 1952
- 471 Dr. Clarence Shaw, Rivermont Road, Chattanooga, TN, 1952



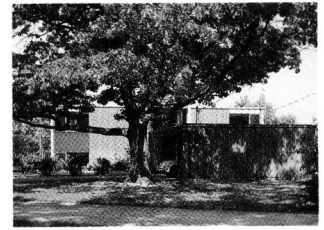
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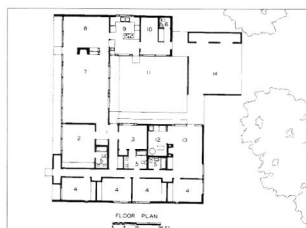
- 472 Christine Hahn, Dwight, IL, 1952
473 Robert Feldman, Miami Road, Benton Harbor, MI, 1952-53; addition, 1960
474 Walter Blucher, Flossmoor, IL, 1952
475 J. R. Callaway Brown, Dune Acres, IN, 1952; alterations, 1969
476 Dr. Anne Benjamin Office, N. Michigan Avenue, Chicago, IL, 1952
477 George Beers, Cambridge Avenue, Flossmoor, IL, 1952
478 Edwin D. Tukey, Barrington, IL, 1952-53
479 Hefty, 1952
480 R. B. Smith, La Grange, IL, 1952; alterations 1956
481 Jeanne Chandler, Oconomowoc, WI, 1953
482 George Carlson, Vernon Avenue, Glencoe, IL, 1953
483 Olympia Woods Development Trust House, Olympia Fields, IL, 1953-54
484 M. P. Christensen, Racine, WI, 1953
485 Bandshell for the City of Watertown, WI, 1953
486 A & R Corporation Building (E. E. Anderson), S. Halstead, Chicago, IL, 1953-54
487 Ralph Wagner (remodel), Cedarville, MI, 1953
488 H. J. Hilland (remodel), Waupaka, WI, 1953
489 Patterson, 1953
490 Louis Jaffe, Elmwood Park, IL, 1953-54; additions and alterations, 1965
491 A House, 1953
492 Harry Holly, 1953
493 Apartment Building remodeling, S. Western Avenue, Chicago, IL, 1953-54; additions, 1958, 1964
494 William Garb, Commonwealth Drive, Benton Harbor, MI, 1953-63
495 Lyle F. Yeges, Downers Grove, IL, 1953
496 House for Bildrock Company, 1954
497 Herman Grossman Department Store (alterations), Muskegon, MI, 1953
498 Perry Goldman, N. Harding Avenue, Chicago, IL, 1953-54
499 Mark Van Gelder, Highland Park, IL, 1953-54
500 Edward McCormick Blair, Sheridan Road, Lake Bluff, IL, 1953-55
501 Robert Elmore, Country Club Road, Olympia Fields, IL, 1954
502 Northbrook Residential Trust, Northbrook IL, 1954
503 Hyde Park Coop Supermarket, Parking Lot, Chicago, IL, 1954
504 Edward Krause Store Building, Muskegon, MI, 1954-55
505 Richard A. Teninga, Olympia Woods, IL, 1954
506 Robert D. Deutsch (remodel), Carol Lane, Glencoe, IL, 1954
507 Art Boecler, Olympia Fields, IL, 1954
508 Grant C. Keck, Mill Neck, NY, 1954-55
509 Gerald Eble, Terre Haute, IN, 1954
510 Theodore Stone (remodel), S. Woodlawn Avenue, Chicago, IL, 1954
511 Reba Banks (remodel), North Muskegon, MI, 1954
512 Lawrence Hill, Ashtabula, OH, 1954-55
513 Carl Lavin, Plain Center Road, North Canton, Ohio, 1955-57, 1958, 1964, 1968
514 Walter Gray, 7 Graymoor Lane, Olympia Fields, IL, 1954; new roof, 1961
515 Louis Corbetta, Winnetka, IL, 1954
516 Mayflower Hotel (remodel), 1954
517 Milton Rusteen, Wilmette, IL, 1954-55
518 Zisook Row Houses, 83rd Street, Chicago, IL, 1955
519 85th Street Apartments, Chicago, IL, 1957
520 Zisook Row Houses, 49th Street, Chicago, IL, 1954
521 Dr. Robert Reagan Medical Offices, Benton Harbor, MI, 1955
522 Federal Housing Authority #335, S. Shore Drive Apartment Building, Chicago, IL, 1955
523 Perry Construction Co., type "A", "B", and "C" house plans and plot plan, Olympia Fields, IL, 1955
524 Perry Construction Co., type "AA", "BB", "CC", and "DD" house plans and plot plan, 1955
525 George Newman, Flossmoor, IL, 1955
526 Walter Placko, Dune Acres, IN, 1955-56
527 Paul Weinger, Dean Avenue, Highland Park, IL, 1955
528 George Shropshear (remodel), S. Drexel, Chicago, IL, 1955
529 Ben Marcus, Bear Lake, N. Muskegon, MI, 1955-59
530 Dwight Foster Museum, Fort Atkinson, WI, 1955
531 Koehneman, 1955
532 Harold E. Levin, Graymoor Lane, Olympia Fields, IL, 1955
533 Henry Kazmierczak, S. Coles Avenue, Chicago, IL, 1955
534 David Minsk, 1955
535 Robert Misch, Maple Avenue, Highland Park, IL, 1955-57; addition 1965
536 Zisook Six-Room House, E. 83rd Street, Chicago, IL, 1955.
537 Zisook Six-Room House, 1955
538 same as above
539 Air Cavity Chimney For Clay Pipe Industry Research, 1955
540 John Schroeder, Park Avenue, Charlevoix MI, 1955
541 David Upton, Street Joseph, MI, 1955-56
542 Ogden White, Lake Forest, IL, 1956
543 Thomas E. Hogan, Olympia Woods, IL, 1956
544 Charles L. Heater (remodel), Flossmoor, IL, 1956
545 Leonard Gilbert, Oak Street, Winnetka, IL, 1955-56
546 John Galvin Ohio Steel Foundry, 1955
547 Dr. James Skinner, Ridgeway Street, Joseph, MI, 1956, 1958, 1960
548 Harold Katz, Terrace Court, Glencoe, IL, 1956
549 D. E. Daggitt, Ridgeway Street, Joseph, MI, 1956
550 F. Hagemann, Olympia Fields, IL 1956
551 Seymour Ruck (addition), Carol Lane, Glencoe, IL, 1956
552 William Sipp, Route 53, Itasca, IL, 1956
553 Anonymous House Plan, Olympia Woods, IL, 1956
554 Raymond Zuchowski, E. 83rd Street, Chicago, IL, 1956
555 Six-Room House, Yates Avenue, Chicago, IL, 1956
556 same as above
557 Business Building, W. Madison Street, Chicago, IL, 1956; remodel, 1956
558 Lewis Weinberg (remodel), Elder Lane, Winnetka, IL, 1956
559 Peerless Confection Co. (alterations), W. Schubert Street, Chicago, IL, 1956-57
560 A. J. Borah, alterations to J. T. Kelley House #358, Brinker Road, Barrington, IL, 1956
561 William Pfender, Freeport, IL, 1956, 1960
562 New Market Hotel (remodel), Blue Island Avenue, Chicago, IL 1956
563 William Morse, 1956
564 Robert Picken (addition), E. 56th Street, Chicago, IL, 1956
565 Sam Basofin, N. Keating, Lincoln Wood, IL, 1957
566 John Rivenburgh (remodel), Highland Park, IL, 1958-59
567 Troy Knowles, Highland Park, IL, 1957
568 Edward R. Fink, Glencoe, IL, 1956
569 Laboratory Building for National Clay Pipe Manufacturers, Terra Cotta Avenue, Crystal Lake, IL, 1957-58
570 Coop Housing, Hyde Park, IL, 1956
571 Dr. Robert P. Hohf, Sheridan Road, Kenilworth, IL, 1957-58
572 John S. Patton, Deep Creek Lake, MD, 1957-58
573 Donald Buser, Elmhurst Lane, Riverdale, IA, 1957
574 Western Red Cedar Lumber Assoc., Modern Living Home, 1957
575 Albert Schatz (addition), Terrance Court, Glencoe, IL, 1957
576 Coop Apartments (remodel), 5711 Blackstone Avenue, Chicago, IL, 1957
577 Perry Graves, Robinson, IL, 1957
578 Lewis Krafft (remodel), Irving Park Road, Elgin, IL, 1957
579 Ernest Allen, Sawyer, MI, 1957
580 Office Building for Clay Products Association, NW Highway and Route 14, Barrington, IL, 1957
581 Channing Lushbough (remodel), Kimbark Avenue, Chicago, IL, 1957
582 House for Meadow Lane Homes, Dolton, IL, 1957
583 Robinson Clay Products Company, Supervision Office/Warehouse, Lehigh Avenue, Chicago, IL, 1957
584 William Keck Summer House, 1957
585 Keck Realty House (remodel), 2nd Street, Watertown, WI, 1957
586 George Watkins (remodel), S. Woodlawn Avenue, Chicago, IL, 1957
587 House for Roberts Construction Company, Flossmoor, IL, 1958
588 Villa Park Trust and Savings (remodel), 1957
589 I. M. Klotz, Farmouth, MA, 1957-58
590 Ward Halstead, 1957
591 Ira P. Weinstein (alterations), Forest Crest Subdivision, Glencoe, IL, 1958
592 Houses for Dorchester Homes, Meadowland Subdivision, Dolton, IL, 1958
593 same
594 same
595 Don Smith, Crawford Avenue, Markham, IL, 1958
596 Johnson, Henning & Sons House, 1957
597 Armen Avedisian, Taft Road, Hinsdale, IL, 1958-59



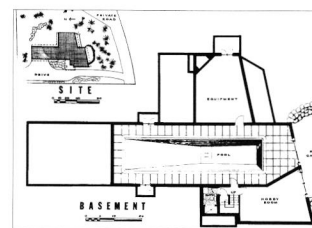
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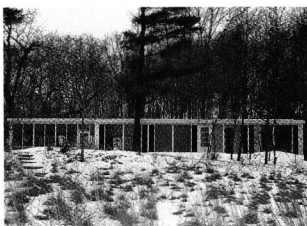


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- 598 Lauren Engineering Company Gas Station, 1958
- 599 Emil J. Seliga (remodel), S. Talman Avenue, Chicago, IL, 1958
- 600 Don Smith, Valley View, Glen Ellyn, IL, 1958
- 601 Joseph D. Krueger (additions to project 335), Lake View Terrace, Highland Park, IL, 1958
- 602 Kaiser Aluminum, Ravenswood, WV, 1958
- 603 Komarek-Greaves and Co. (repair and remodeling of lab and new offices), N. Mozart Street, Chicago, IL, 1958–59
- 604 Don Smith Row Housing, 76th and Constance, Chicago, IL, 1958
- 605 William E. Cain, Pear Tree Road, Darien, CT, 1958–60
- 606 Thomas L. Ruth, Drake Road, Barrington, IL, 1959; additions, 1963, 1968, 1977
- 607 Mrs. Frank E. (Seba) Payne, Bucks County, PA, 1959–65
- 608 Drs. Jeanne and Eli Lipman, Kenilworth Avenue, Wilmette, IL, 1958–59; additions, 1965
- 609 Apartment Building (remodel), University Avenue, Chicago, IL, 1958–59
- 610 Dr. Mortimer Bortin, E. Juniper Lane, Mequon, WI, 1958
- 611 Redevelopment Project 6-A, 30th and Michigan, Chicago, IL, 1958
- 612 Row Houses, Hyde Park, IL, 1958
- 613 W. C. Shephard, S. Blackstone Avenue, Chicago, IL, 1959
- 614 Allen Yablin (remodel), N. Keating, Lincolnwood, IL, 1959
- 615 Nursing Home—Solomon Sachs, 1959
- 616 Hyde Park Shopping Center, 1959
- 617 Chicago Child Care Society, Hyde Park, IL, 1959; 1962
- 617 alterations to Church of the Disciples of Christ for use by the Chicago Child Care Society, 1959
- 618 Illinois Central Project (Richard N. Eiger), 1959
- 619 J. Altan Lauren Apartment Building, 67th and Oglesby, Chicago, IL, 1959
- 620 Walker Bowman, Valparaiso, IN, 1959
- 621 Stotland Furniture Company, Cottage Grove Avenue, Chicago, 1959
- 622 Richard Henszey (remodel), Oconomowoc, WI, 1959–60
- 623 Henry Shames (remodel), Hazel Avenue, Glencoe, IL, 1959–60
- 624 A. E. Carlson, Evanston, IL, 1959
- 625 Robert Bloom, 919 Lake Avenue, North Muskegon, MI, 1959–60
- 626 Men's Club for Roland Ryan, 1959
- 627 1, 2, 3 House for Progress Development Corporation, Deerfield, IL, 1959–60
- 628 Laverne Burchfield, Chesterton, IN, 1959–60
- 629 Gustavus F. Swift, Jr. (remodel), E. 56th Street, Chicago, 1959–60
- 630 Jean LaBorde, Idlewild Street, Kaukauna, WI, 1960
- 631 James Turner, S. Kenwood Avenue, Chicago, IL, 1959
- 632 Warren Gableman, Risser Road, Madison, WI, 1960
- 633 Loren Ecklund, Marine-on-Street Croix, MN, 1960
- 634 Thomas Florsheim, 730 Redwood Lane, Glencoe, IL, 1960
- 635 Ken Settelmyer, Park Lane, Silver Lake Dells, IL, 1960
- 636 Gerald Lindquist, N. Shore Drive, Grand Haven, MI, 1960, 1966, 1970
- 637 Robert Weiss (remodel), Carroll Parkway, Flossmoor, IL, 1960
- 638 Dr. Edward Isaacson, 2747 Ridge Road, Highland Park, IL, 1959
- 639 Joe Weix, Jr., Oconomowoc, WI, 1960
- 640 Speculative House for Rosenthal, 1960
- 641 J. Stanley Wilson, Rockwell Street, Homewood, IL, 1960–61
- 642 Milton Hirsch, 65 Prospect Avenue, Highland Park, IL, 1960–61
- 643 Fred Sicher, Beverly Shores, IN, 1960
- 644 David Scoular, Phoenix, AZ, 1960
- 645 A. E. Fagen, water garden addition, W. Devonshire Lane, Lake Forest, IL, 1960
- 646 Thomas M. Koenig, Blackthorne Road, Deerfield, IL, 1961, 1972, 1973
- 647 Joe Weix, Jr., Oconomowoc, WI, 1960–61
- 648 J. S. Stein, Newport, CT, 1960
- 649 Donald Atlas, Sheridan Road, Evanston, IL, 1960–62
- 650 Drexel Square Apartments, Cottage Grove at E. Hyde Park Boulevard, Chicago, IL, 1960
- 651 Thaddeus Stevens Shopping Center, Chicago, IL, 1961
- 652 W. Phillips, Richmond, IL, 1961
- 653 Jack Steindler, North Muskegon, MI, 1961–62
- 654 Norman Weinrib, Partridge Lane, Highland Park, IL, 1961–62, 1963
- 655 Hyde Park Federal Savings and Loan, E. 53rd Street, Chicago, IL, 1961
- 656 Modern Glass and Maintenance Corporation (alterations), E. 53rd Street, Chicago, IL, 1961
- 657 John Nemeth, 7 Graymoor Lane, Olympia Fields, IL, 1961
- 658 Philip Danielson, Belvedere, CA, 1961
- 659 Wayne Ecklund (remodel), Watoma Avenue, Chicago, IL, 1961
- 660 Leon Despres (remodel), E. 56th Street, Chicago, IL, 1961
- 661 David Blumberg (remodelings), Highland Park, IL, 1961, 1962, 1963, 1971
- 662 Caryl E. Cameron (remodel), Kenilworth, IL, 1961
- 663 Elizabeth Rose (remodel), Woodlawn Avenue, Chicago, IL, 1961
- 664 Chicago Construction Company (Harold Friedman), 1961
- 665 H. G. Weinstein, Route 176, Libertyville, IL, 1961–62
- 666 Dr. Jack Teplinsky, Arlington Avenue, Highland Park, IL, 1962
- 667 Harper Building (remodel), Harper Avenue, Chicago, IL, 1962
- 668 Wesley Mitchell, Three Oaks, MI, 1962
- 669 Row Houses, 48th at Woodlawn, Chicago, IL, 1962–63
- 670 Nachman's Candy Store (remodel), E. 53rd Street, Chicago, IL, 1962
- 671 Judge Hubert Will, Upper Mashota Lake, WI, 1962–63
- 672 Louis Kaberon, Lenox, Glen Ellyn, IL, 1962
- 673 Arnold Fields, 1962
- 674 Kirk Fowler, Bittendorf, IA, 1962
- 675 Julian Levi, Juddville Road, Fish Creek, WI, 1962–63
- 676 Joseph Evans (remodel), E. 56th Street, Chicago, IL, 1962
- 677 M. Crane and M. Norris (remodel), Woodlawn Avenue, Chicago, IL, 1962
- 678 Mrs. Theodore Stone (remodel), E. End Avenue, Chicago, IL, 1962
- 679 Donald Rowley (remodel), University Avenue, Chicago, IL, 1962–63
- 680 Harper Crest Hotel (remodel), S. Harper Avenue, Chicago, IL, 1962
- 681 CHA Elderly Housing, Franklin and Drake, Chicago, IL, 1963
- 682 Channing Lushbough, Spring Street, Evansville, IL, 1963
- 683 Lehnoff Studios #7 (remodel), 57th at Blackstone Avenue, Chicago, IL, 1963
- 684 Hewson Swift (remodel), Blackstone Avenue, Chicago, IL, 1963
- 685 Town Houses, 55th & Dorchester, Chicago, IL, 1963–64
- 686 William McNeill (remodel), S. University Avenue, Chicago, IL, 1963
- 687 C. A. Hutchinson (remodel), S. Harper Avenue, Chicago, IL, 1962–63
- 688 Proposed House, 49th at Greenwood, Chicago, IL, 1963
- 689 James Schramm, 2700 Main Street, Burlington, IA, 1964
- 690 Edward I. Ellsberg (additions), Glencoe, IL, 1963–64
- 691 Richard Philbrick (remodel), E. 56th Street, Chicago, IL, 1963
- 692 Peerless Confection, 1250 W. Schubert, Chicago, IL, 1965; remodeling, 1967
- 693 J. V. Hanlon (modeling to Pulliam House, project 293), E. Morning-side Drive, Lake Forest, IL, 1964
- 694 R. Golze, Bloomfield Township, MI, 1964
- 695 Alvin Barron, Skokie, IL, 1964
- 696 Nancy Gross Apartment Building, 1964
- 697 P. Hauser (remodel), Kimbark Avenue, Chicago, IL, 1963
- 698 Norman Karlin, 5812 S. Blackstone, Chicago, IL, 1964–65
- 699 Abel Fagen Swimming Pool (addition to project 387), Lake Forest, IL, 1964
- 700 Alvin Becker, Glencoe, IL, 1964, 1967
- 701 Fred Zimmer (remodel), Lake Forest, IL, 1964
- 702 S. Berry (remodel), University Avenue, Chicago, IL, 1964–65
- 703 Oconomowoc Apartment, 1965
- 704 Town houses, 49th and Greenwood, Chicago, IL; town house A, 1962–65; town houses B and C, 1964–65
- 705 Harvey L. Walner, Stonegate, Highland Park, IL, 1964
- 706 Project 6 B-C-D, 1964
- 707 La Salle-Maple Apartments, 1964
- 708 Edwin Rothschild, Ellison Bay, Door County, WI, 1964–65
- 709 Robert Butters, Milton Township, IL, 1964–65
- 710 H. Burr Steinbach (remodel), Chicago, IL, 1964
- 711 Mrs. Adel Morel (remodel), Chicago, IL, 1964
- 712 Wagen Realty "A", "B", "C," Chenequa Club Highlands, Chenequa, WI, 1965
- 713 same
- 714 same
- 715 L. David Minsk, Hanover, NH, 1965
- 716 Duplex Town Houses, 5217 University Avenue, Chicago, IL, 1965
- 717 Harold Friedman Urban Renewal Project 6, 1965
- 718 University of Chicago, 55th at Woodlawn, Chicago, IL, 1965
- 719 Quist, 1965
- 720 E. McCormick Blair (remodel), Sheridan Road, Lake Bluff, IL, 1965



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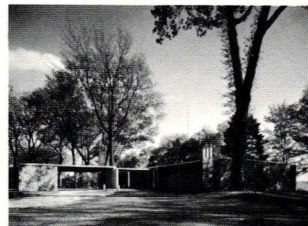


622

- 721 Lewis Weinberg, Fisher Lane, Winnetka, IL, 1965-66
- 722 Bernard Schulman, Sheridan Road, Glencoe, IL, 1965
- 723 Ben Marcus House #2, Scenic Drive, Whitehall, MI, 1965-66
- 724 Paul M. Plunkett, remodeling of Kaszab House (project 194), 1105 Locust Road, Wilmette, IL, 1965
- 725 Sam Bell, Shell Oil Company, 1965
- 726 Art Gordon, Ogden Dunes, IN, 1965
- 727 Charles Strauss Store (remodel), E. Wisconsin, Milwaukee, WI, 1965
- 728 James Twomey, Douglas Boulevard, at Kedzie Avenue, Chicago, IL, 1965
- 729 Art Gordon Town houses, Kenwood and Ridgewood, Chicago, IL, 1966
- 730 Weyerhaeuser, Tacoma, WA, 1966
- 731 Solomon Sachs (remodeling of project 457), Lapier Street, Glencoe, IL, 1966
- 732 Harold Friedman, Longwood Avenue, Glencoe, IL, 1966
- 733 Weyenberg Shoe Company Showrooms (remodel), Dallas, TX, 1966
- 734 William Polk (remodel), Woodlawn Avenue, Chicago, IL, 1966
- 735 Morey Gross 32-unit Apartment Building, Gary, IN, 1966
- 736 Edwin Rothschild (remodel), S. Blackstone, Chicago, IL, 1966
- 737 Blain Ehrle, Northville, MI, 1966
- 738 Jerome Frautschi, Shorewood Hills, Madison, WI, 1966
- 739 Broadview Hotel (remodeled for University of Chicago), 1966
- 740 N. J. Lau Boathouse, Upper Nehmabin Lake, WI, 1966
- 741 Mrs. Thomas Nicholson (remodel), E. 48th Street, Chicago, IL, 1966-67
- 742 Yale Brozen (remodel), S. Woodlawn Avenue, Chicago, IL, 1966
- 743 N. J. Lau, Upper Nehmabin Lake, WI, 1966-68
- 744 Art Gordon Town houses, 54th Place and Blackstone, Chicago, IL, 1966, 1967
- 745 University of Chicago Apartment Building, E. 57th Street, Chicago, IL, 1966-67
- 746 Weyenberg Shoe Store (remodel), Denver, CO, 1966
- 747 George Babcock (additions), Lincoln Street, Evanston, IL, 1966
- 748 Weyenberg Shoe Store (remodel), Cleveland, OH, 1966
- 749 George Nesbitt, Fox Lake, WI, 1966-67
- 750 Fred Lighthall (remodel), Kembark Avenue, Chicago, IL, 1966
- 751 William O. Swett, Lake Shore Drive, Holland, MI, 1969
- 752 Leonard S. Berman, Park Avenue, Highland Park, IL, 1966-67
- 753 George Wiss, Marion Road, Winfield, IL, 1967, 1968, 1971
- 754 Leon Diamond, Sunset Road, Winnetka, IL, 1967
- 755 Myron Segal (remodeling of Wynbrandt House, project 366), 1162 Hohfelder Road, Glencoe, IL, 1967
- 756 Harper Square—Amalgamated Clothing Workers of America, Apartments and Row Houses, between 48th and 49th streets, between Dorchester and Lake Park avenues, Chicago, IL, 1967-72
- 757 James Lazerwitz, 1967
- 758 Midlothian Currency Exchange, 1967
- 759 Hiram Pittman, E. 48th Street, Chicago, IL, 1967
- 760 William H. McNeill, S. University Avenue, Chicago, IL, 1967
- 761 Art Gordon Apartments, between 48th and 49th streets, between Ellis and Greenwood avenues, Chicago, IL, 1967
- 762 Dr. A. B. Lorincz Duplex, S. Woodlawn, Chicago, IL, 1967
- 763 John Hicks, Brinker Road, Barrington, IL, 1967
- 764 Roy Schweinfurth, Danube Way, Olympia Fields, IL, 1967
- 765 LaVerne Burchfield, Feed and Garden Center, Locust Street, Chesterton, IN, 1967
- 766 John McCausland, S. Ellis, Chicago, IL, 1967
- 767 Castle Corporation (James Braxton), Kimbark, Chicago, IL, 1967-70
- 768 CHA-Elderly Housing, Apartments (ILL 2-32), 43rd Street, Chicago, IL, 1967
- 769 Nunn-Bush Shoe Store—Thomas Florsheim, San Francisco, CA, 1967
- 770 Dr. Robert Moody (remodel), Greenwood, Chicago, IL, 1967
- 771 Nunn-Bush Shoe Store—Thomas Florsheim, Milwaukee, WI, 1967
- 772 Houses, Greenwood, Chicago, IL, 1968
- 773 Dr. Leo Sadow, E. 56th Street, Chicago, IL, 1968
- 774 Wayne Webb, (remodeling of Minsk House, project 534), Gemini Lane, Deerfield, IL, 1968
- 775 Dr. S. L. Nigro, Poplar Street, Elmhurst, IL, 1967
- 776 Infant Welfare Society, N. Wabash Avenue, Chicago, IL, 1968
- 777 Albert B. Friedman, 1968
- 778 Tower Homes (Richard Philbrick), E. 56th Street, Chicago, IL, 1968
- 779 John Tower, Arlington Heights, IL, 1968
- 780 Maloney Station (W. Kennedy), Cornell, Chicago, IL, 1968
- 781 Olivetti-Underwood Corporation Offices, S. Central Avenue, Chicago, IL, 1968
- 782 Dan Berser (remodel), Street Johns Avenue, Highland Park, IL, 1968
- 783 John Nemeth (remodeling of Gray House, project 514), 7 Graymoor Lane, Olympia Fields, IL, 1968
- 784 David J. Rogalla, W. Cuba Road, Barrington, IL, 1968
- 785 William Keck, E. Water Street, Watertown, WI, 1969
- 786 Dr. Sheppard Kellam (remodel), S. Woodlawn Avenue, Chicago, IL, 1969
- 787 Young Men's Jewish Council (alterations to the Max Straus Center), 1969
- 788 Royal Canadian Air Force Memorial Competition, Trenton, Ontario, Canada, 1969
- 789 Jim Stark, Canterbury Lane, Oakbrook, IL, 1969
- 790 Arthur Piolet (remodeling of Krueger House, project 335), Lake View Terrace, Highland Park, IL, 1969
- 791 Ben Marcus (cottage), Muskegon, MI, 1969
- 792 Ben Marcus Office, Peck Street, Muskegon, MI, 1969
- 793 Paul Kuenzle, Nikonha Place, Burlington, IA, 1969
- 794 LaVerne Burchfield (remodel), Chesterton, IN, 1969
- 795 Cook County Housing Authority, Skokie, IL, 1969
- 796 Woodlawn Tap & Liquor Store (remodel), E. 55th Street, Chicago, IL, 1969
- 797 Universalist Unitarian Church Nursery School, E. 83rd Street, Chicago, IL, 1969
- 798 Michael Auster (remodeling to Isaacson House, project 638), 2747 Ridge Road, Highland Park, IL, 1970
- 799 Neal C. Neitzel Property, W. Main Street, Watertown WI, 1970
- 800 Unknown Project
- 801 M. S. Dix, Lake Barkley, KY, 1970
- 802 Institute of Gas Technology, S. State Street, Chicago, IL, 1970
- 803 Byron Miller (remodel), Euclid Avenue, Chicago, IL, 1970
- 804 Harold Friedman Pool Addition, Longwood Avenue, Glencoe, IL, 1970
- 805 McGraw-Hill Publishing Company, 1970
- 806 Armen Avedisian (addition to Avedisian House, project 597), 701 Taft Road, Hinsdale, IL, 1970
- 807 Dr. Kyung Ahn, Mirmar Road, Munster, IN, 1970
- 808 Amalgamated Clothing Workers of America Child Care Center (remodel), W. 18th Street, Chicago, IL, 1970
- 809 Same as above, S. Ashland Boulevard, Chicago, IL, 1970
- 810 Amalgamated Clothing Workers of America Parking Facility, S. Ashland Boulevard, Chicago, IL, 1971
- 811 Manel Siegel, E. 47th Street, Chicago, IL, 1971
- 812 Dr. C. Phillip Miller, Kimbark, Chicago, IL, 1971
- 813 Shimer College (remodel), Mt. Carroll, IL, 1971
- 814 Max Strauss Medical Center (remodel), W. Wilson, Chicago, IL, 1971
- 815 House, Topeka, KA, 1971
- 816 Dr. K. N. Hildebrand, Fontana, WI, 1971
- 817 Edwin Rothchild (remodel), Blackberry Road, Door County, WI, 1971
- 818 Dr. Ameer M. Dixit, Watertown, WI, 1971
- 819 Sigmund Kunstadter (additions to Kunstadter House, project 448), 1436 Waverly Road, Highland Park, IL, 1971
- 820 Clyde Watkins (remodel), Hyde Park Boulevard, Chicago, IL, 1971
- 821 Victor Zarnowitz, S. Blackstone, Chicago, IL, 1971
- 822 H. G. Weinstein, Door County, WI, 1971
- 823 American Radio and TV Store, E. 53rd Street, Chicago, IL, 1971
- 824 Amalgamated Clothing Workers of America (remodel), S. Ashland Boulevard, Chicago, IL, 1972
- 825 Thomas M. Koenig (remodel of Koenig House, project 646) Blackthorne Road, Deerfield, IL, 1972
- 826 Kennedy, Ryan, Monigal and Associates, 57th at Dorchester, Chicago, IL, 1972
- 827 Cyrus C. DeCoster, Martha Lane, Evanston, IL, 1972
- 828 Win Kennedy, Dorchester Homes, S. Dorchester, Chicago, IL, 1972
- 829 Fernando Pineda, S. Harper Avenue, Chicago, IL, 1972
- 830 Drs. John and Susan Trimble, Acorn Lane, Hinsdale, IL, 1972
- 831 Housing Project, 49th & Drexel, Chicago, IL, 1972
- 832 City of Chicago Board of Education (remodel of Peter Cooper Elementary School), Board of Education, W. 19th Street, Chicago, IL, 1972
- 833 Chicago Housing Authority,



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- Chicago, IL, 1972
- 834 Ben Marcus Office (remodel), W. Walton Avenue, Muskegon, MI, 1972
- 835 Dr. Edward A. Wolpert, Spring Green, WI, 1972
- 836 Dr. Andrew J. Griffin (remodeling of Sicher House, project 643), Beverly Shores, IN, 1972
- 837 City of Chicago Board of Education (remodeling of C. H. Harrison Technical High School), Board of Education, W. 24th Boulevard, Chicago, IL, 1972
- 838 City of Chicago, Board of Education (remodeling of Charles G. Hammond Elementary School), W. 21st Place, Chicago, IL, 1972
- 839 Housing for the Elderly (Jack Weinberg), Drake and Franklin, Chicago, IL, 1972
- 840 Elmhurst National Bank, Elmhurst, IL, 1972
- 841 Dr. W. P. Henderson, Route 9, Bloomington, IL, 1973
- 842 Heitman Investment Company, Central, Evanston, IL, 1973
- 843 Dr. J. C. Daniels, Blackstone Avenue, Chicago, IL, 1973
- 844 Norman McLean, 1973
- 845 Mrs. Frank Untermyer (remodel), Sanders Road, Riverwoods, IL, 1973
- 846 David M. Smith (remodel), E. 56th Street, Chicago, IL, 1973
- 847 Row Houses, E. 56th Street, Chicago, IL, 1973
- 848 Jan N. Will, S. University Avenue, Chicago, IL, 1973
- 849 Dr. Robert A. Wolf, Oak Park Drive, Munster, IN, 1973
- 850 James Matthews & Co. (factory remodeling), N. Kimball Avenue, Chicago, IL, 1973
- 851 Abel E. Fagen (remodeling of Fagen House, project 387), 1665 W. Devonshire Lane, Lake Forest, IL, 1974
- 852 Robert Mason (remodel), Route 1, Soldiers Grove, MI, 1974
- 853 A.I.A. Research Corporation, Residence for Flood Hazard Conditions, Washington, DC, 1974
- 854 Windermere Hotel (remodel), E. 56th Street, Chicago, IL, 1974
- 855 Austin Congregational Baptist Church, Child Care Center, W. Ohio Street, Chicago, IL, 1974
- 856 Leon M. Des Pres and Richard Posner (re-roofing), E. 56th Street, Chicago, IL, 1975
- 857 Leon M. Des Pres (remodel), E. 56th Street, Chicago, IL, 1975
- 858 Wick, Warner, Ricketts, Dam, Bynny (roofing), S. Kenwood Avenue, Chicago, IL, 1975
- 859 Dr. Andrew J. Griffin, Lake Front Drive, Beverly Shores, IN, 1975
- 860 Dr. Chulsoo Kim, Hogan Hill Road, Elgin, IL, 1975
- 861 Grant Garrett (remodeling of Carstens House, project 291), Spruce Avenue, Highland Park, IL, 1975
- 862 Unknown Project
- 863 Blackhawk Steel Company Offices (remodel), W. 31st Street, Chicago, IL, 1975
- 864 Herbert L. Anderson (remodel), S. Kimbark Avenue, Chicago, IL, 1975
- 865 A. W. H. Adkins (remodel), S. University Avenue, Chicago, IL, 1975
- 866 John Maun, W. Marion Road, Arlington Heights, IL, 1975
- 867 Dr. Andrew J. Griffin, La Porte County, IN, 1976
- 868 David L. O'Leary (remodel) Cornell Avenue, Chicago, IL, 1976
- 869 M. C. Krueger and D. A. Rowley, 53rd and University, Chicago, 1976
- 870 Dr. Elliott D. Kieff (remodel), S. Kimbark, Chicago, IL, 1976
- 871 Edward Blair, Jr., E. Elm Street, Chicago, IL, 1976
- 872 Hugh M. Matchett, Ellis Avenue, Chicago, IL, 1976
- 873 Applegate, Leasing & Co., N. Michigan Avenue, Chicago, IL, 1976
- 874 Dr. Robert Smith (additions to Greven House, project 276), 1628 Sylvan Court, Flossmoor, IL, 1976
- 875 Carl H. Lavin (remodeling of Lavin House, project 513), Plain Center Road, North Canton, OH, 1977
- 876 Arthur Salm (remodeling of Drachman House, project 464), 9 Thornwood Drive, Flossmoor, IL, 1977
- 877 Dr. Vikstrom (remodel), E. Woodlawn Avenue, Chicago, IL, 1977
- 878 Jack Telander, Lake Bluff, IL, 1977
- 879 Row Houses, Kenwood and Ridgewood Court, Chicago, IL, 1977
- 880 Fox River Grove Library (remodel), Lincoln Avenue, Fox River Grove, IL, 1977
- 881 Karen Wellisch (remodel), S. Hyde Park Boulevard, Chicago, IL, 1977
- 882 Robert F. Picken (remodeling to Picken House, project 433), E. 56th Street, Chicago, IL, 1977
- 883 Peerless Confection Company (additions), W. Schubert Avenue, Chicago, IL, 1977
- 884 Thomas L. Ruth (additions to Ruth House, project 606), Drake Road, Barrington, IL, 1977
- 885 Bays English Muffin Corporation Factory (remodel), W. Jackson, Chicago, IL, 1977
- 886 Dr. J. Jaspan (remodel), Ridgewood Court, Chicago, IL, 1977
- 887 Barrington High School (remodel), W. Main, Barrington, IL, 1977
- 888 Unknown Project
- 889 Stuart A. Solin (additions to Gordon Apartment, project 761), between 48th and 49th streets, between Ellis and Greenwood avenues, Chicago, IL, 1977
- 890 Robert P. Snell (additions to Goldman House, project 442), S. Evanslawn Avenue, Aurora, IL, 1977
- 891 Foley Tire Company, W. Archen Avenue, Chicago, IL, 1977
- 892 Dr. John P. England, Udina, IL, 1977
- 893 Leonard Newberger (additions to Koenig House, project 646), Blackthorne Road, Deerfield, IL, 1977
- 894 Dr. Robert A. Wolf Office, Merrillville, IN, 1977
- 895 Dr. A. J. Griffin (remodeling of Griffin House, project 867), La Porte County, IN, 1978
- 896 Newell E. Stalbaum, Laurel Lane, Valparaiso, IN, 1978
- 897 Timothy and Mary Matthews (remodeling of Pulliam House, project 293), E. Morningside Drive, Lake Forest, IL, 1978
- 898 Warner A. Wick (remodel), Kenwood Avenue, Chicago, IL, 1978
- 899 Betty Ticus, W. Cuyler, Chicago, IL, 1978
- 900 Frank Goldschmidt, E. 57th Street, Chicago, IL, 1978
- 901 B.L.U.E. Condominiums, N. Wayne Avenue, Chicago, IL, 1978
- 902 James-Dennis C. Adamczyk, Arygle Avenue, Chicago, IL, 1978
- 903 Vera Popovich, W. 131st Street, Palos Park, IL, 1978
- 904 Marvin Lipson (remodel), S. Ingleside Avenue, Chicago, IL, 1978
- 905 Dr. Walter L. Palmer (remodel), E. 58th Street, Chicago, IL, 1978
- 906 Leo Shapiro (remodel), Bluff, Glencoe, IL, 1978
- 907 Zion R. Scott, Front Street, Beverly Shores, IN, 1978
- 908 Minna Duncan, Route 2, Cobden, IL, 1978
- 909 Dave Schneider, N. Kildare, Chicago, IL, 1978
- 910 Speculative Solar House, La Porte County, IN, 1978
- 911 Speculative Solar House 2-B, La Porte County, IN, 1978
- 912 Plywood Competition, 1979
- 913 Lou Oates (addition), E. Northpath, Wheaton, IL, 1979
- 914 Speculative Solar House 3-B, La Porte County, IN, 1979
- 915 Barry Karl (remodel), S. Kimbark Avenue, Chicago, IL, 1979
- 916 James W. Nesbitt (remodel), Drury Lane, Barrington, IL, 1979
- 917 Ben Marcus (additions), Scenic Drive, Whitehall, MI, 1979
- 918 Dr. Elsa L. Johnson, S. Woodlawn, Chicago, IL, 1979
- 919 Dr. Gerald Sapp, June Terrace, Barrington, IL, 1979

THE FOLLOWING PROJECTS WERE ASSIGNED NO PROJECT NUMBER

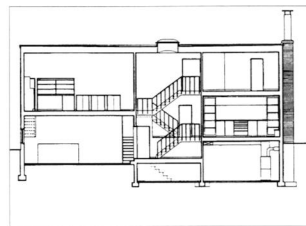
- R. J. Kreuser, Prairie View, IL, 1939
- Shellmar Products Company Factory Building, Mt. Vernon, OH, 1942
- Defense Housing Project, Rockford, IL, 1942 (Elting, Lamb, Schweikher, Keck)
- James D. Serrin (additions), Kalamazoo, MI, 1946
- Hedrick Construction Co., Early Avenue, Chicago, IL, 1946
- Dale Sheehan, Kenwood Avenue, Chicago, IL, 1947
- J. W. McCausland (remodel), Kimbark, Chicago, IL, 1948
- Richard Ericson, Park Ridge, IL, 1949
- J. W. Keck (remodeling of Keck Furniture Company), Watertown, WI, 1952
- Samuel Orr (remodel), 1952
- Olympia Fields Survey, 1953
- Chicago Construction Company—"Look Thru Wall"
- John Simpson Apartment Floor Plans
- Norman Swanson, Hinsdale, IL
- Wheaton College—Competition for an Art Center, Barrington, IL, 1979



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- _____. "Home in the Modern Style is now Possible at Minimum Cost." *Chicago Tribune*, 17 July 1932, n.p.
- _____. "Home Sweet Home of Future, Inexpensive and Efficient." *Chicago Tribune*, 19 August 1934, 4.
- _____. "House of Tomorrow at Century of Progress Has Walls of Glass." *Chicago Tribune*, 11 June 1933, part 6, 5.
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