



GEORGE BICKFORD BRIGHAM, JR.

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George Bickford Brigham, Jr.

**ARCHITECT AND INVENTOR OF THE ANN ARBOR
MID-CENTURY MODERN HOUSE**

Jeffrey Welch

University of Michigan Professor of Architecture, George B. Brigham, Jr., turned 56 in 1945. In this significant year, his wartime research had led to the construction of a prefabricated, demountable, seven-unit dwelling with a flat roof.¹ There could not be a simpler or more naked little building than this rectilinear house with carport, set beside the Engineering Research building on the central campus. Yet for George Brigham it was a distinct departure from his previous practice and a hard-headed rationalizing of basic ideas about materials, interior design and architectural construction. In this research he had been responding to the needs of war, as well as planning for the post-war era to come. His little building could be expanded in units of 8' x 16', it could be put together and then taken apart easily with a minimum of loss, and it could be moved from one location to another by truck on normal roads. Government funded research gave him the opportunity to try out new, possibly patentable designs. The by-product was an intense analysis of interior arrangements for comfort, use and movement. In July 1945 this model house was moved to a site just outside Ann Arbor city limits on the Pontiac Trail, and, serendipitously,

it is still there, still standing and unaltered to this day!

Over the previous 20 years, George Brigham had been a practicing architect, starting out in Southern California, and then in Ann Arbor after joining the Michigan faculty in 1930. He obtained his license to practice in Michigan in 1935. His houses in California echoed the dominant Spanish Colonial style and they combined architectural styles, in keeping with accepted practice. But dissatisfaction with his own house, built in Pasadena in 1926--he adapted English Gothic to Spanish Colonial--led to his eventual rejection of "the dance of the styles."² In Ann Arbor in 1936, he designed a radically new kind of residence for Dr. Walter Badger, formerly a UM professor of engineering who had become a vice president at Dow Chemical Company. The Badger House reflected the influence of the "International Style" of architecture, a term coined for the Museum of Modern Art (MoMA) exhibition of modern European architecture in 1932. The International Style implied quite identifiable elements: lots of glass, openness, white exterior walls, a flat roof. His use of these modernist architectural



YOUTZ UNIT HOUSE, U OF M CAMPUS, 1944

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BADGER HOUSE, 1936

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YOUTZ UNIT HOUSE, PRESENT DAY

Jeffrey Welch

elements in the Badger House showed an awareness of recent work by Richard Neutra, the noted Austrian emigre practicing in Southern California since 1923. Neutra's Lovell House (1929) produced an instant sensation, and it was featured in the MoMA exhibition.³ The Badger House employed all these modernist elements but on a much less grand scale, and it embodied a declaration of independence both for the architect and for his client. Located on a generous and secluded riverside site, this house defined itself against its site and setting, and against all previous Ann Arbor architectural practice. Soon after, however, Brigham retreated from this stance of radical purity, in favor of designs that acknowledged the presence of the neighbors and of the landscape.

Richard Neutra visited Ann Arbor in 1931 in the course of a world lecture tour. His message encouraged architects to forsake traditional practice by engaging in a creative search for the new style now coming into being. Since past styles, in their time, were steppingstones to the present, modern architects should be looking to the future: "All the historical style creators have been sincere in their work and if one is to follow in their examples he must be also."⁴ A vital architecture should respond to the modern world, to the brand-new practical and aesthetic consequences of technological innovation. As an example, he pointed to the rich color combinations produced by popular neon signage across America. Now they presented a wholly new challenge to young designers.



BRIGHAM WITH STUDENTS, 1940

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Neutra's message only confirmed the search for a contemporary style that Brigham had been pursuing since his student days at MIT, his stint teaching at the California Institute of Technology, and his work on architectural projects in Southern California and Michigan.

In 1940, the Michigan State Planning Commission appointed Wells Bennett, Dean of the College of Architecture, and George Brigham to a committee to study tourist camps. The chairman of this committee, architect Kenneth Black, a UM graduate practicing in Lansing, noted that in some states, new tourist camps with tiled baths, stall showers, inner spring mattresses, and room service, costing as much as \$350,000, were now being built to take advantage of what had become a \$300,000,000 business.⁵

The appointment acknowledged Brigham's interest in the design and construction of small houses. Certainly, it coincided with his development of a new course for senior and advanced students for the spring term of 1939. "Architectural Design and Building Clinic," as it was called, offered students an opportunity to gain professional experience by working together with clients to design small buildings for domestic use. It was an answer to the dearth of available internships in architectural firms, which traditionally provided exposure to the professional work environment. This practical, hands-on approach also echoed laboratory work required of advanced students in other disciplines. In addition to providing designs for clients, students in this course were asked

to design and build models at 1/4 full size, mix concrete, and lay bricks and blocks. By 1944, students in the architectural clinic were designing non-commercial buildings valued at upwards of \$6,000.⁶

Brigham's interest in small buildings led him to bring two war-time research projects to the campus in October 1943. These were the first architectural research programs to be established at a university in the country. One project sought to perfect an existing design by Philip Youtz, for a small, prefabricated, demountable house, designated by Brigham as the "Youtz Unit House." The second project focused on "The Brigham Building System," specifically on the design for an insulated, prefabricated plywood wall panel, sturdy enough to withstand high winds, small enough to be handleable by one person, and large enough to be economical. Research funding came from the Consumer Products Branch of the Office of Production Research & Development of the War Production Board. As it happened, Philip Youtz supervised this office. On average, four or five research projects were allotted to each of the states: in Michigan, Brigham was working on two of four government funded projects in the state. Within a very short time, Youtz was praising Brigham for his imaginative modifications to the Youtz Unit House and urging him to build a full-scale model of a "unit" in the laboratory. When this single unit was moved outdoors to a site on level ground, two new units were added onto it, creating a fuller space and requiring a floor designed to allow for a heating system. Architecture students and several department colleagues worked together with

Brigham to fabricate and assemble the elements.⁷

This research occasioned an ever-widening series of new questions. Soon, Brigham expanded his vision to include the production of eight different building sizes. In its next reincarnation, the three-unit group was dismantled and relocated beside the University of Michigan Engineering Research Building, where four more units with parts manufactured in factories in Detroit and Grand Rapids were added to the extant three. Completed in November 1944⁸, the seven-unit house was ready for the 2nd Ann Arbor Conference on Architectural Design and Practice, February 3-4, 1945. Like the first one, the second conference drew key academic and government leaders to Ann Arbor, including Joseph Hudnut, Dean of the Graduate School of Design at Harvard; George Howe, architect in charge of the Public Building Administration in Washington, D. C.; and William Wurster, noted California architect and Dean of the School of Architecture and Planning at MIT. Brigham presented the results of his research in his paper, "Prefabrication."⁹ He summarized research work leading to the seven-unit model house, and, in his quiet way, called for the wholesale reform of standardized building products. A module of 3' 4" to 3' 6"—rather than the traditional 4' module—better accommodated standard-size doors, windows, passageways and the width of bathrooms. The new module would greatly reduce the need for hand-finishing work at the building site.

Brigham continued his research after the war-time contracts ended in October 1945. Funding for

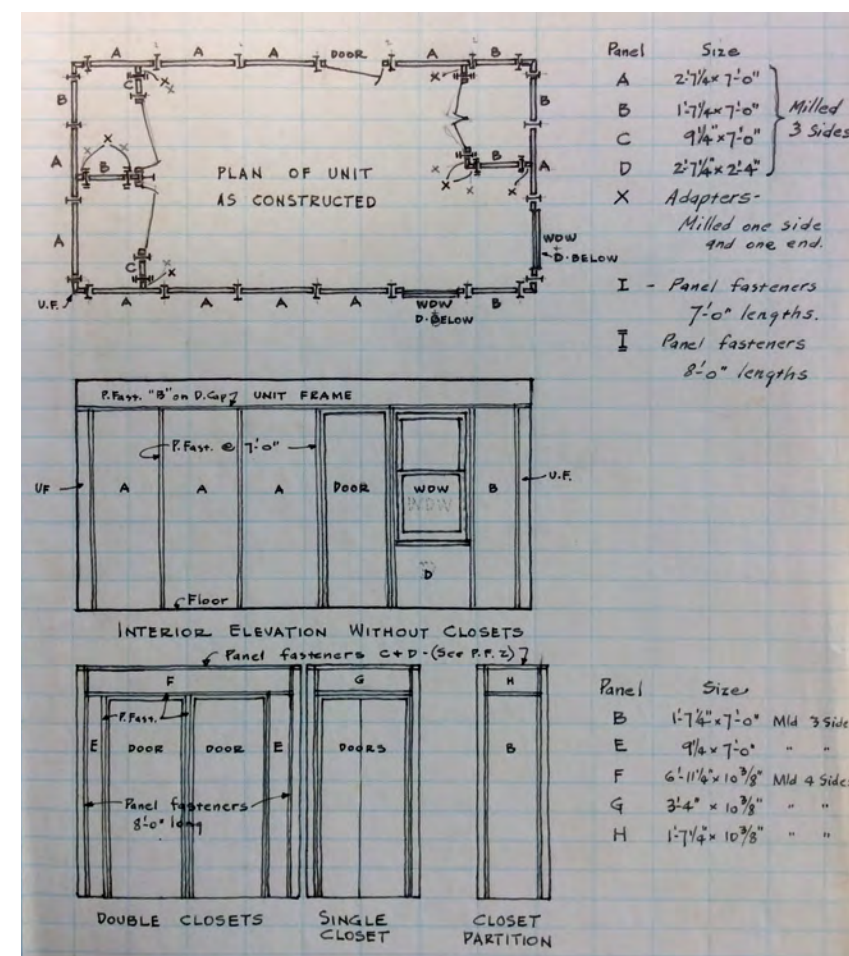
ongoing research was provided by commercial sources. By 1947, the proposed plan to build eight different sizes of the Youtz Unit House had grown into a plan for a subdivision of thirty-four houses. The new idea proposed using houses of different configurations: half of them would be built using conventional methods of construction and half using the Brigham Building System with prefabricated parts. Altogether, he wanted a wide variety of houses to be used as experimental spaces by residents who would live in a unit for a time and then play musical chairs. This proposal appeared in the report: *Proposed Housing Research on Effects of Space Arrangement and Material on Housework*.¹⁰ Dean Bennett's name on the report's cover conveyed university support for the proposal, while the content of the report came straight from Brigham's studio, including the text, his drawings of the different interior configurations for the houses, and the vision for a large, experimental community of cooperating householders. The report specified that the Huron View subdivision should be used. Located west of Pontiac Trail and just north of the Huron River, this land had been platted in relatively small lots. As yet it remained wholly undeveloped. In league with this plan, the seven units of the Youtz Unit House model were disjoined, trucked out to, and reassembled on a small lot close by the Huron View area. Having purchased this building from the government for \$1,000, Brigham paid \$1,000 to finish the house, arranged for moving it, and added two units, at \$500 each. It was purchased by an enthusiastic young couple for \$5,500.

The idea of developing an entire subdivision of well-built experimental houses was not so far-fetched. In 1947, there was an acute need to accommodate the influx of new students after the war, often with their families in tow. For example, university students living in crowded temporary housing at Willow Village, 15 miles away, had to be bussed into school each day. The idea of providing a nearby subdivision of small, inexpensive, easy-to-construct houses, which could also be demounted and moved off the site when required, was, in actuality, a practical answer to lingering post-war housing needs in Ann Arbor. Furthermore, a local man, Charles Irvin, an officer at the Ann Arbor Federal Savings and Loan, who was also a member of the American Institute of Real Estate Appraisers, declared the unit house not only mortgageable but also a solid investment. At one point, Irvin negotiated with Brigham regarding the rights to build a series of unit houses in northern Michigan.

Also, by 1947, the next phase of architectural research at the university was taking shape, on behalf of the Unistrut company of nearby Wayne, Michigan. Unistrut's owner, Charles Attwood, Class of 1917, attended the June reunion meeting of architecture alumni in which a call came for a research project for the College of Architecture.¹¹ Attwood's company needed the exposure, and the university offered an interface between the construction industry and Unistrut's fabrication of metal trusses and parts for industrial and residential uses. Post-war hiring needs accommodated this plan. Starting in 1946, the College of

Architecture brought in new faculty to handle increased enrollment. For guidance in this process, Dean Bennett convened a special committee to advise on strategic hiring, particularly for leadership positions in his department. At George Brigham's behest, Dean Bennett invited Philip Youtz to consider taking on the architectural research program at the university. Youtz had recently started up his own architecture firm in New York, however, and his cordial welcome to the campus notwithstanding,

he declined the offer. Among those recommended by the committee were Walter Sanders and C. Theodore Larson, both instrumental in the new research program. In a few years, both men had designed homes for themselves, using Unistrut parts.¹² In 1955 a Unistrut-framed research building rose into being, its spidery trusswork providing a sharp contrast to the brick and limestone masonry of Lorch Hall, then the home of the College of Architecture. These different buildings, set side-by-side, reflected



UNIT HOUSE SKETCHES, 1944
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BRIGHAM HOUSE, 1941

Bentley Historical Library, University of Michigan

emerging ideological differences dividing traditionalists and modernists in the College of Architecture and Design at mid-century.

At mid-century, the study and practice of architecture faced a reckoning, as the new modernist ideas contested with more widely held traditional approaches. European modernists celebrated the machine as the appropriate metaphor for the new age. This meant paring away all extraneous ornament, creating open and unadorned interior spaces, and designing volumes rather than masses. More traditional American modernists, however, already familiar with the assembly line and more sensitive to the impersonality of the machine, resisted a machine aesthetic. In their eyes, the architect should aspire to be a "master builder" intent on bringing spiritual sustenance to the design of whole cities as well as to

the design of individual buildings. They were not building "machines for living" but rather human-oriented structures that shaped "the temper of human lives" through the agency of the architect-designed environment: "that silent environment of the spirit, that man-made supplement to Nature which, as we know, has moulded man and his destiny on earth." Harvard Dean Joseph Hudnut held forth in this way at the Ann Arbor Conference in 1945, using the conference to clarify this difference between American and European modernists.¹³ Because Cranbrook Art Academy President, Eliel Saarinen, was located very close to Ann Arbor, his eminence *via* his celebrated architectural projects, both built and unbuilt, provided a firm example of the very best humanist work that American modernist architects could bring into being.¹⁴ Brigham fully understood these contending

positions. His designs reflected a perfect awareness of prevailing influences in American practice: Frank Lloyd Wright's early Chicago School, and Usonian manifestations; Eliel Saarinen's Arts and Crafts sensitivity to material, color and craftsmanship; and the white surfaces, proud verticality and austere interiors of the International Style. At this time, Mies van der Rohe was just beginning to tighten his hegemonic grip on modern ideas and practice, but even here Brigham's research into the design of prefabricated houses had him already grappling, in a fundamental way, with the Miesian concept, "less is more."

Like most architects at mid-career, George Brigham embodied a mixture of traditional and modernist values. Even by 1940 he had discarded the look of the International Style. Vertical cinderblock walls painted white were traded in for more natural materials, like exterior dark wood siding and brick, and a friendlier relationship with the natural setting. His own house at 517 Oxford Road projected a bungalow look, in spite of its central two-story block. But starting in 1948 his new houses, for example the Whitaker House at 406 Lenawee, showed evidence of a new direction. By arranging a ribbon of large windows on the second floor, he was able to move the living/entertaining space up above the carport, utility and recreation rooms, onto a horizontal plane. His unit house research, involving considerations of interior arrangements, and the wall and floor surfaces exposed to daily wear and tear, had led him to advocate for single-level living spaces for the convenience of the housewife.

The kitchen as command center necessitated an easily accessible play place for the children close by on the same floor and the same held for clothes washing and the other housekeeping activities. There was no reason to have to go up or down stairs to accomplish these simple repetitive tasks. A second consideration involved attractive building sites. Because many of the best remaining Ann Arbor lots rose upward on gentle hills (because the streets were put through on the lowest, most level areas) this two-level solution (car below, family above) provided an excellent suburban answer in these new automobile-oriented neighborhoods. His Whitaker House ignored the street entirely. Its large windows looked out over the roofs of other houses, thus offering a leafy view, privacy for the homeowner, and a penthouse feel.

In 1951, the White House at 819 Avon Road added a new dimension to the two-level plan. This house was arrayed on a ridge, its central projecting block two stories high. On the lower level, a garage faced the street, offering a simple, direct access to the street, while alongside the garage a rising stairway to the main entrance gently retreated to a hardly visible front door. At the Whitaker House, the steep stairway down to the road set a very similar challenge to arrive at a hidden front door. Both these entrances were like barriers, separating the private house from the public street. In addition, at the White House, the room above the garage functioned as Professor White's largely windowless study. Brigham positioned the central kitchen/dining room area behind the study. On the left, a north



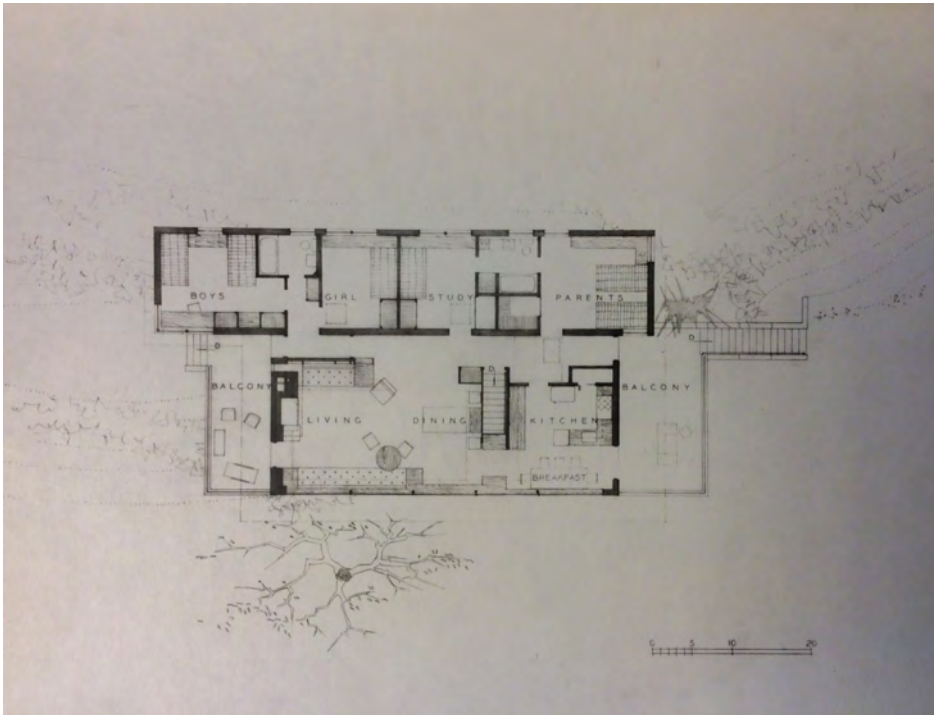
WHITAKER HOUSE, PRESENT DAY

Jeffrey Welch



WHITE HOUSE, 1950

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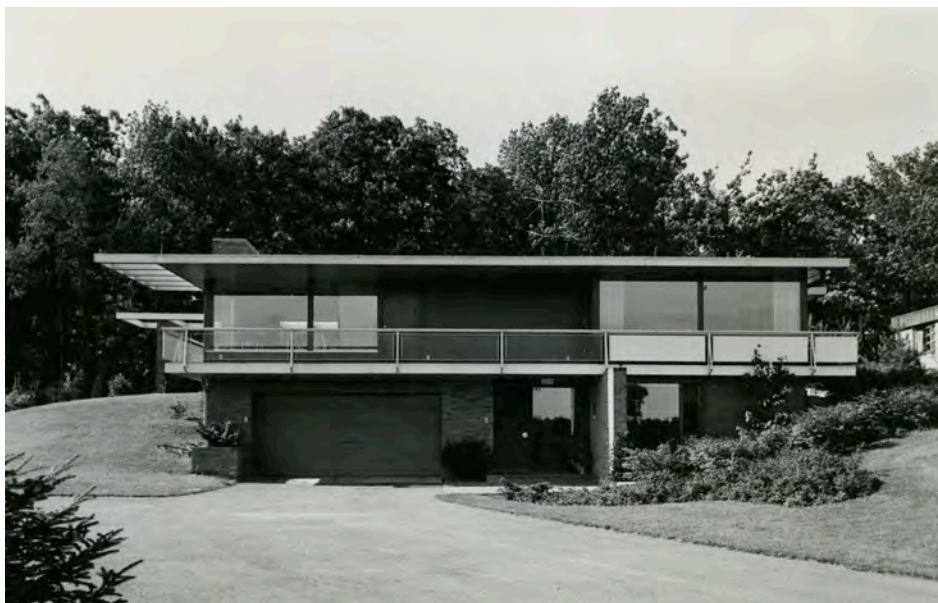
WHITAKER HOUSE PLAN

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wing, set back on the ridge, housed a bedroom area with its corresponding smaller windows. To the right, the solid brick wall shielded a substantial living room/entertaining space. Narrow clerestory windows lined the top of this brick wall for ultimate privacy. Probably both clients asked for designs that turned away from the street, but the single wraparound window in Professor White's study and the gently rising staircase to the upper-level front door suggested an uneasy acknowledgment of a social obligation to the street. With his next project, the Furstenberg House on nearby Belmont Road, Brigham resolved this question.

With the Furstenberg House (1952), Brigham's mid-century modern house form arrived at full maturity. This was evident in its harmonious synthesis of elements: the low horizontal roofline; two-story arrangement of garage below and

living space above; and a welcoming entrance on the lower level. The house addressed the street with a shallow second floor deck, its railing softening the effect of the large Thermopane windows in the facade. While the design of the house invited scrutiny, its roof eaves and the recessed entrance area beside the garage assured a modicum of privacy from the public gaze. The influence of the International Style in the vertical elevation was rendered informal by means of a sleek Wrightian horizontality. Attention to details of wood and masonry inside and outside the house reflected an Arts and Crafts delight in materials and craftsmanship. Lastly, the architect had worked together with the client to tailor the design to meet family desires, in particular as a site for entertaining. All the newest architectural and technological features, such as the built-in stereo



FURSTENBURG HOUSE, 1952

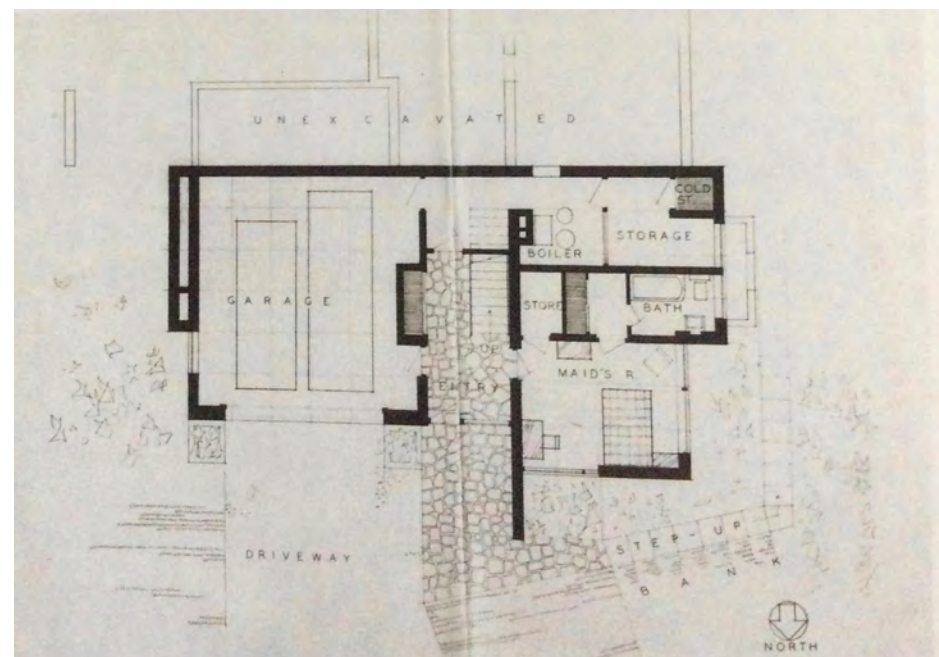
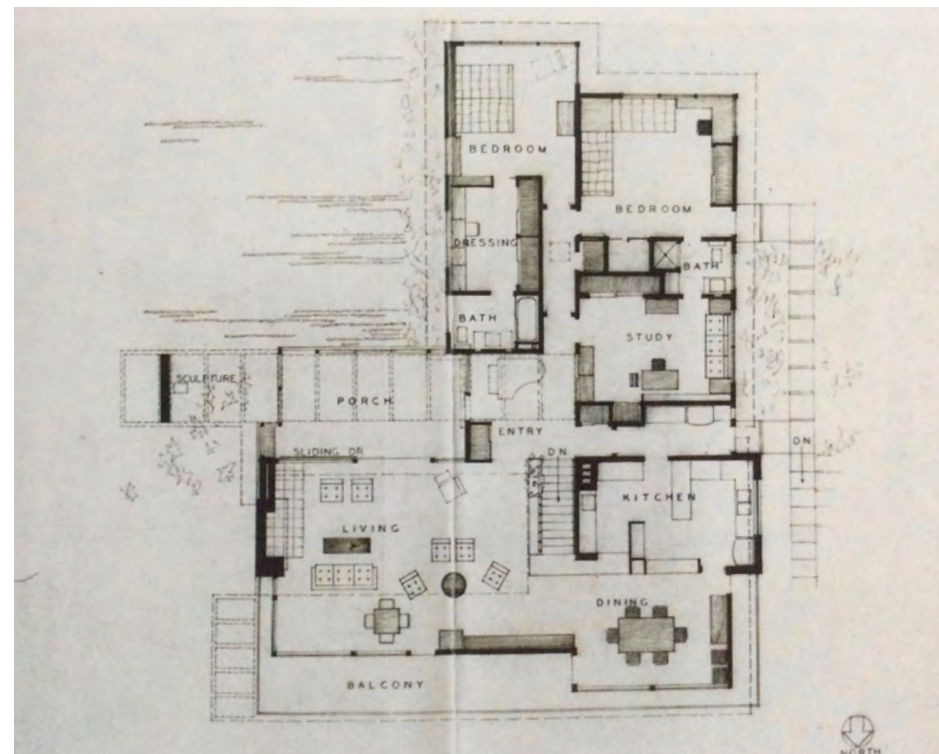
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system and television set, graced this ultra-modern, post-war American home.¹⁵

In 1950, Brigham designed the house for Dr. Albert C. Furstenberg, the long-time dean of the medical school, and Elizabeth, his wife. Up to that time, the Furstenbergs had been living in a charming but secluded English manor style house at the west end of Geddes Heights. The move from the Arboretum to Belmont Road in Ann Arbor Hills signaled a radical transformation for the family, both in public exposure and accessibility for visitors and guests. Their Belmont house was being built at the same time as the Frank Lloyd Wright Palmer House on Orchard Ridge Road, both houses using the same heating system of hot water circulating through pipes in the concrete floor. Certainly, Ann Arbor residents had an attractive

menu of modern residential design choices available to them. The review in the *Ann Arbor News* identified the Furstenberg House this way: "Ann Arbor Home Reaches Pinnacle of Modern Living: Large Slope of the Land Aids Building." The word "pinnacle" did not overstate the case. This house set the standard for Ann Arbor MCM houses for the next twenty years.

This stretch of Belmont Road could be considered ground zero for mid-century modern houses in Ann Arbor, given the fact that three other important houses went up at roughly the same time. On the east side, Walter Sanders designed a house for Oscar Eberbach, a successful businessman and city patriarch, the latest in a long line of Eberbachs. Next door to the west, Dr. Sibley Hoobler commissioned a house designed by Alden Dow, the



FURSTENBURG HOUSE PLANS

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CRANE HOUSE BY ROBERT METCALF, PRESENT DAY

Jeffrey Welch

Midland architect responsible for a Frank Lloyd Wright style house built in 1932 for his sister, Margaret, and her husband, Dr. Harry Towsley. (Dr. Towsley had recommended Alden Dow to Dr. Hoobler.) Across the street, Priscilla Neel, wife of the distinguished geneticist, James V. G. Neel, designed a modern house for her family. Neel studied with Walter Gropius at Harvard's Graduate School of Design in 1942. Here were four brand-new mid-century modern houses clustered on a single block. Still, Brigham's Furstenberg House set the standard for Ann Arbor mid-century modern house design. Proof of this claim does not depend on a comparison with the other Belmont homes, nor with the handful of other mid-century modern houses designed by Thomas Tanner, Richard Robinson and Charles Lane, that were built as of 1952. The proof was embodied in the Crane House at 830 Avon Road.

The Cranes had, at first, approached George Brigham for their new home. They had been living in a Brigham house at 1701 Hermitage Road since 1939. In the midst of planning a sabbatical leave, however, Brigham quite naturally recommended Robert Metcalf, a young, newly licensed architect just starting up his practice. Metcalf had attracted considerable attention with his own single-story modern house on nearby Arlington Boulevard.¹⁶ Furthermore, Brigham and Metcalf had been working together since 1948, so Metcalf would be well equipped to take on a project of this scale. The Furstenberg House provided the model for this new project. The siting of this house on a rising slope, its direct address to the street, the span of large windows across the second level, the central atrium (with its interior stairway) dividing the east and the west sides, a projecting deck

off the living room, the garage/utility room/office area for the famous physicist all on the ground level, the children's rooms at the east end far from the master bedroom, a private patio area behind the house—all these features were designed into this instantly influential Ann Arbor mid-century modern building. Metcalf would have suggested the lighter color of the brick, while the brickwork screen to the right of the atrium provided a classic Brigham touch. The Cranes moved into their new house in 1954.

Between 1954 and retirement from teaching in 1960, Brigham's work took yet another new direction. For two major commissions he designed houses using curving and circular forms. This freedom in architectural expression can be linked directly to his new role as real estate entrepreneur. Every sign pointed to continued demand for custom homes. For example, all 161 lots in the Ann Arbor Hills subdivision were sold by 1949, leading to the dissolution of the Ann Arbor Hills Corporation after 27 years in business.¹⁷ Then there was the startling *denouement* for Ruthven Place, a cul-de-sac, one street west of Oswego Street (where Brigham had built a duplex in the International Style in 1937). Ruthven Place was the brainchild of contractor John R. McMullen, who had purchased a long narrow lot from the Delta Kappa Epsilon fraternity in order to build eight three-bedroom houses (each to include a full basement, an attached garage, and a sidewalk). All eight houses were built and sold within a year. Intended for emeritus faculty, Ruthven Place was located close to the campus and to the Arboretum, its lots were modest but not cramped, and the houses were set relatively

near the street, affording residents an opportunity for social interaction. All in all, it was a perfectly calculated enterprise for the contractor and for the clients.¹⁸ It was also a sign that development would continue eastward along Hill Street and Geddes Avenue. In fact, just a little farther along Geddes Road, the Sanders family was deciding whether to sell undeveloped land they had been using for gardening.

Brigham was long familiar with this piece of property just off Geddes Avenue at Highland Road, but it was radiologist Dr. Fred Hodges, on the lookout for a site for a new home, who initiated the train of events leading to their partnership. Behind the scenes, real estate operator T. R. Peirsol knew the Sanders family well; it was through him that Hodges and Brigham paid \$13,500 for the parcel soon to be developed into their Highland Lane subdivision. Five lots were platted and put up for sale at \$8,000 apiece. Subsequently, Brigham designed three of the four houses in this subdivision: for the Hodges family (1956) across two of the lots, for Charles Sawyer (1958), and for William Kennedy (1960).¹⁹

In his designs for the Hodges and Kennedy homes, Brigham used very "unmodern" curves. Client wishes superseded the by now orthodox tropes of modern design, like wraparound windows, flat roofs and rectilinear shapes. Brigham passed beyond adhering to the classic modernist look. He had adjusted to a purer expression of modernism, in which the "look" of buildings was less important than the ruthless reduction of waste in the use of materials and in methods of construction. This hard-won



KENNEDY HOUSE SWIMMING POOL DOME
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principle came from his hands-on research in prefabrication over a period of almost twenty years.²⁰ The Kennedy house presented a real departure for Brigham. At his client's request, he designed a swimming pool within a circular patio, and then built the living areas of the house around it. His signature achievement on this project was the dome over the pool and patio, designed to keep the temperature at a constant 75 degrees for winter poolside sunbathing. A network of light aluminum ribs formed panes designed to hold a double layer of Mylar. Forced air turned the Mylar panels into translucent plastic pillows that moderated the temperature below and carried away moisture.

Brigham retired from the College of Architecture and Design in 1959, retained a "furlough" status

as a consultant for an additional year, and was designated emeritus professor of architecture in 1960. Retirement brought more ease. He designed five houses in 1958, one in 1959 and two in 1960. He would occasionally undertake projects like a swimming pool building or a porch enclosure. It soon became clearer, however, where some of his energy was going. Together with designer John Taylor, he was feted for developing a folding shelter called the Paradome. Manufactured by Outdoor Fibre Products, Inc., of Chelsea, the Paradome was named product of the year by the State of Michigan in 1963.²¹ This was a perfectly realized prefabricated object. The twelve-section wall unit made of 3/8" polyurethane had vinyl hinges every 3'. The roof and floor were made of reinforced plastic. Twelve aluminum rods radiated



ADVERTISEMENT FOR PARADOME
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from the center like a parasol and firmly secured the transparent roof panels. There were no interior posts or braces in this rigid shelter, which came with two screened windows and a screen door. Additional units could easily be attached. The whole affair fitted into a box measuring 3' x 6' x 9." Weighing in at 86 pounds, the Paradome could be carried to a remote site and erected in twenty minutes by two people.

In 1970, George B. Brigham, Jr., was made a Fellow of the American Institute of Architects, an honor awarded to 10 percent of its membership. The award celebrated his extended and original research in the area of prefabrication for government and private interests, his contributions as a teacher of architecture and his prolific and creative career as designer of residential projects. Perhaps it was also understood that largely through his designs and the ongoing productivity of his protege, Robert

Metcalf, that a delightful Ann Arbor-originated mid-century modern form had come into being. Neither International Style nor Wrightian, this form synthesized these and other influences, including the painstaking research projects and extensive reflection on the arrangement of interior spaces. It was a form tailored to respond to Ann Arbor clients, whether progressive university professors or forward-looking citizens of the town, and Ann Arbor's climate and topography. His houses also retained a modest scale (in light of contemporary residential projects), reflecting the designer's concern for function, economy, comfort and beauty. For almost twenty years after 1952, the community of Ann Arbor's architects was like a brotherhood, as talented practitioners, like David Osler, James Livingston, Richard Robinson, Thomas Tanner, Ted Smith, Herbert Johe and so many others, designed

modern houses that respected their neighborhoods and cooperated with rather than clashed with the houses that came before. Even when houses did seek to be more independent, like the white Miesian Engel House (1963) by Edward Olencki on Override Road, or the white William Muschenheim House (1954) on Heather Way, the overall impact was collegial. Ann Arbor mid-century modern houses did not derive from an external source—neither California nor Chicago nor Boston; they were inspired in the studio of George Brigham and their geniality is the perfect expression of his character, the mid-western milieu in which he worked, and a ceaseless delight in creative experimentation. ■

NOTES

1. *Michigan Daily* July 11, 1945.
2. Ilma Brigham, "A Traditional Architect Goes Modern." George Brigham Papers, Bentley Historical Library, Box 2, "Biographical Information" file.
3. A photograph of the Lovell House appeared in the famous show at the Museum of Modern Art, titled "The International Style: Architecture Since 1922." In the book published concurrently with the show, Neutra's Lovell House was one of two contributions by American architects.
4. "Neutra Describes Modern Buildings," *Michigan Daily*, February 26, 1931, p. 2. "Inferiority Complex Held to Mar Our Art: R. J. Neutra, Architect, Finds Us Hindered by Combating Europeans' Idea of Us," *New York Times*, January 5, 1931, p. 4. Brigham and Neutra were friends from California days. It was Brigham together with Emil Lorch who invited Neutra to speak at the university. George Brigham Papers, Bentley Historical Library, Box 2, "Correspondence" file.
5. "Motor Courts Big Business: Forecast 300 Million Take in 1941," *Detroit Sunday Times*, August 25, 1940.
6. "Architectural Clinic Aids Students in Gaining Practical Experience," *Michigan Daily*, December 5, 1940. "Veritable Gold Mine: Architectural Clinic Aids Future Home-Owners," *Michigan Daily*, February 20, 1944.
7. George Brigham Papers, Bentley Historical Library, Box 3, "Youtz" files.
8. "U of M Completes Fabricated House," *Grand Rapids Press*, November 18, 1944, p. 12.
9. Papers Presented at the *Ann Arbor Conference on Architectural Design and Practice*, University of Michigan, February 3 and 4, 1945. Ann Arbor, Michigan: College of Architecture and Design, 1945.
10. "Proposed Housing Research on Effects of Space Arrangement and Material on Housework." <https://babel.hathitrust.org/cgi/pt?id=mdp.39015031500799&view=1up&seq=1&skin=2021>
11. "Architectural Alumni, Reunion Meeting," *Michigan Alumnus*, v. 53, no. 23 (July 12, 1947), p. 452. "There was a considerable discussion about research and a resolution passed recommending that Dean Bennett take necessary steps to instigate some research program utilizing faculty personnel for such work with student assistance."
12. "Engineers Devise 'Erector School,'" *Ann Arbor News*, December 16, 1951. "U-M Experiment on Schoolhouses Leads to Home," *Ann Arbor News*, October 3, 1953. The Sanders House. "Home on Huron River Bank Built with Nuts and Bolts," *Ann Arbor News*, January 22, 1955. The Larson House.
13. Joseph Hudnut, *Papers Presented at the Ann Arbor Conference on Architectural Design and Practice*, 1945, p. 8. Hudnut brought Walter Gropius from Germany to America in 1937, instantly putting his program at the Harvard Graduate School of Design at the forefront of modernism in the United States. By 1945, however, the two men were estranged by esthetic and programmatic differences.
14. Eliel Saarinen proved himself more American than all other (competing) American architects in two instances: first, by his second-place entry for the Chicago Tribune Tower competition in 1922, and second, by his winning entry in the Smithsonian Art Gallery competition in 1939. Though neither design was built, both the drawing for the skyscraper and the model for the art gallery were enormously influential. Dean Hudnut kept the model for the Smithsonian Art Gallery on display in Robinson Hall at Harvard from 1940 to 1945.

15. "Ann Arbor Home Reaches Pinnacle of Modern Living," *Ann Arbor News*, November 8, 1952, p. 8.
16. Ann Schriber, "Mentor's sabbatical launched career," *Ann Arbor News*, May 30, 1998.
17. "Ann Arbor Hills Co. Closes Its Books: All Property Sold," *Ann Arbor News*, September 24, 1949. Organized in 1922, the company offered 161 lots east of Arlington Boulevard for sale.
18. "Project Completed at End of First Year of Building: Ruthven Place Now Completed and Occupied: 8 Completed and Occupied Homes," *Ann Arbor News*, November 1, 1952.
19. George Brigham Papers, Bentley Historical Library, Box 2, "Hodges" file. "Semi-Circle Home Encompasses Functional Features," *Ann Arbor News*, June 15, 1957. See the Kennedy House file, George Brigham Papers, Bentley Historical Library, Box 1.
20. See "An Interview" conducted by a student for *The Michigan Journal* (laboratory newspaper of U-M Department of Journalism) 1957. In the interview, referring to curves in architecture, Brigham said that different architectural shapes "did not mean a rejection but a sign of attention to needs." Mary Hunt, "George Brigham, Ann Arbor's First 'Modern' Architect," *Ann Arbor*

Journal, August 1974, p. 6. Robert Metcalf, reflecting on his mentor, said of Brigham, "every house was an experiment." He was always looking "for a new way of building." George Brigham Papers, Bentley Historical Library, Box 3, "Speeches and Presentations" files. University of Michigan Professor of Architecture, Claire Zimmerman, writes about this aspect of American modernism in her article, "Albert Kahn in the Second Industrial Revolution," *AA Files*, No. 75 (2017), pp. 28-44. She distinguished American modernism from European modernism by showing that European modernists privileged the "look" of modern buildings while American modernist architect, Albert Kahn, in his search for efficiencies rather than a definitive form, expressed the purer spirit of American modernism. "Spurred by the pace of work in Detroit, AKA [Albert Kahn Associates] continually improved output and efficiency to serve both the client's and firm's own ends. [the look of] Any single building was subject to revision in the next of its kind; no work stood as the 'final word' on anything." (p. 37) Zimmerman's analysis explains why Albert Kahn was not and could not be included in the twentieth-century modernist canon.

21. "Folding Shelter Wins: 'Paradome,'" Produced by Chelsea Firm, Chosen State's Product of the Year," *Grand Rapids Press*, May 12, 1963, p. 11.

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About the Author

Recently retired to Ann Arbor, Jeffrey Welch was a teacher at Cranbrook Kingswood School in Bloomfield Hills, MI, for almost forty years. The incomparable architectural atmosphere at Cranbrook and living in and working in buildings designed by Eliel Saarinen have led to a book on the founding and history of Cranbrook. A graduate of Harvard College in 1971, he received a Ph. D. in English from the University of Michigan in 1978. His ongoing research now includes the career of Emil Lorch, the first head of the University of Michigan school of architecture, and topics related to Midcentury Modern architects and architecture in Michigan.