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IN

One-to-One Scale: Witnessing the Walker Art Center's Idea Houses I and II (1941-1947)

Escala 1:1 Las Idea Houses I y II del Walker Art Center (1941-1947) y la formación del visitante-testigo

investigación
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Abstract
Drawing on previously unexplored archival material, this research paper examines how the Walker Art Center in Minnesota designed full-scale house models during the 1940s to showcase a new lifestyle to the American public. It argues that visitors to these exhibitions were not passive observers seeking entertainment, but witnesses that provided visual and oral testimony. By insisting on the physical integrity of these models—that is, their functional and mechanical viability—the museum sought to provide empirical evidence for how architecture could play a role in modern lifestyles.

Keywords: model home, exhibition, domesticity, witness, empiricism

Resumen
A partir de material de archivo previamente inexplorado, este artículo examina cómo durante la década de 1940 el Walker Art Center de Minnesota se sirvió de maquetas domésticas a escala real para mostrar al público estadounidense un nuevo estilo de vida. Se argumenta que el visitante de estas exposiciones no era un observador pasivo que buscara entretenimiento, sino un testigo que proporcionaba evidencias visuales y orales. Al insistir en la integridad física de estos modelos (su viabilidad funcional y mecánica), el museo buscó proporcionar evidencia empírica de cómo la arquitectura podría desempeñar un papel en la creación de estilos de vida modernos.

Palabras clave: maqueta, exhibición, domesticidad, testigo, empirismo

Idea House II, c. 1948. Photograph by Ezra Stoller. William Friedman and Hilde Reiss, designers. Source: Walker Art Center archives. © Ezra Stoller/Esto

Idea House I was the first house built by a museum in the United States.[1] It predates, by several years, other exhibition houses, such as Art and Architecture's Case Study House (Los Angeles, 1948–1966) and the Museum of Modern Art's House in the Museum Garden (New York, 1949-1954);[2] and it differs from the commercial model homes of this period by the fact that it was designed, built, furnished and managed by the Walker Art Center's curators. Its main purpose was therefore not to showcase specific products or materials sponsored by industry, but to demonstrate a particular way of life, provided by architecture, to the public.

The Walker Art Center sought to distance the project from commercial model homes by claiming that the Idea House was selling ideas rather than objects. These exhibitions were conceived as spaces where visitors could come and learn new concepts in design, building materials, furnishings and technology, applying them as desired to their own homes, preferably with the help of an architect. Rather than a prototype to be replicated, these exhibitions were advertised as a repository of ideas that could potentially be applied to any home and modified by users and builders alike: "The theme of the *Idea House* is *ideas*. The house is not presented as a *model* or *ideal* plan for

any given family nor for any average family."[3] Its plans were never made available to purchase; when the media, visitors and commercial sponsors alike wrote to the Walker Center to request blueprints, they were systematically refused. Plans, sections and details were neglected as documents for media transmission:

> "This house was built by us purely as an educational exhibition of ideas and not as a *model* home. We believe that every house, regardless of the price, is an individual problem for owner and architect. We have not wished, therefore, to encourage the reproduction of this house."[4]

This provocation establishes this article's point of departure: if the Idea Houses were abstract concepts, why would their designers invest such effort in ensuring their physical integrity? When this question was posed to Walker Art Center Director Defenbacher, his response was clear: "Because we are trying to develop a new type of civic museum, one that is *actually*—not mythically—interested in art in everyday life."[5] Conceived against the backdrop of the Great Depression and the postwar housing crisis, Defenbacher reimagined the museum experience as an active event, one that could engage with pressing, everyday issues by encouraging close interaction between exhibition and visitor. In other words, he claimed that a one-to-one scale model home—rather than a set of drawings—could transform the museum from a potentially elitist cultural institution with a specialized audience into a popular institution organized around everyday issues and accessible to a broad public.

This form of domestic simulacra driven by the one-to-one scale model has recently drawn attention among architecture historians, who have examined and theorized other postwar model homes in different ways: as *consumer products* that blur the line between exhibition and advertisement, high and low culture, art and commerce;[6] as *educational tools* meant to improve quality of life through social emancipation, economic growth or cultural development;[7] as works of art destined to *form taste* (good design, good living) and cultivate an artistic ethos of individual expression;[8] and as tools to *exercise soft power* during the Cold War.[9] Indeed, Idea Houses I and II opened the door to many of these debates, mainly because they functioned as mediators between a wide-ranging set of actors, including manufacturers, appliance vendors, a museum, a local bank and mass-media publications.[10] However, this article examines the museological practices and aspirations of Idea Houses I and II, mainly in relation to discussions on the nature of scientific experiments and the production of "matters of fact,"[11] a term borrowed from science and technology studies. The reason for this is twofold: First, Idea Houses I and II took the simulacra of domestic life one step further than many of the model homes that followed.[12] Not only were they fully equipped, functioning houses, but they were also designed to maximize the immediacy of the visitor's experience, making the museum's presence disappear as much as possible. Second, because this form of scholarship opens up a little-known case study to questions that the current historiography on museological practices and model homes has overlooked: Were model homes built as stage sets for the simulacra of everyday life, or were they fully functioning houses? Why did curators spend all that money and effort in reproducing the habitability conditions of a house built for a museum? Was this a strategy to persuade museumgoers of a legitimate domestic experience? And what kind of subjective experience was formed through the model home exhibition?

This article argues that the Walker model homes operated as "probatory" technologies, persuading the exhibitiongoer through their physicality, their seemingly unmediated (but staged) modes of inhabitation and through visual and written testimonies disseminated in mass-media publications. As a result, the experience of the exhibitiongoer shifted from that of a passive *observer* or *spectator*—in need of being entertained—to an active *witness*—who was meant to test the product directly and provide testimonial evidence.

The Establishment of "Matters of Fact"

Idea Houses I and II were presented as if undesigned, as if they lacked an architect. Neither Malcolm Lein and Miriam Bend[13] nor Hilde Reiss and William Friedman[14] were clearly mentioned by the Walker or by the media as being the main authors of these constructions. Likewise, the houses' inventories typically cited only their furniture's manufacturers, rather than the names of their designers—even if such names included significant contributors such as the Eameses, George Nelson or Eero Saarinen. Unlike the House in the Museum Garden exhibition inaugurated at MoMA in 1949, which celebrated Marcel Breuer's model home as a "custom-built, architect-designed solution,"[15] the Idea Houses were not conceived as masterpieces by an individual. Rather, they were advertised as the direct outcome of precise industrial tools and machinery, as if no human agency would have been necessary in the process of designing and building the houses.

This shift of agency from humans to objects could be regarded as a way to suppress subjectivity and to secure certain, solid and unbiased knowledge—an ambition that aligns with Defenbacher's decision to substitute architectural drawings in favor of one-to-one scale models. Taking this hypothesis as a point of departure, we must examine the complex mechanisms that Idea Houses I and II used to persuade exhibitiongoers and secure the legitimacy of their design proposals. Borrowing from the historians and philosophers of science Steven Shapin and Simon Schaffer and their analyses of scientific experimental practices, I propose a distinction between three different technologies used to produce and secure knowledge:[16] First, a *material* technology, concerned with the physical integrity of the experiment; second, a *literary* technology, by means of which the experience of the experiment is made known through texts and images to a wider range of witnesses who were not physically present; third, a *social* technology, relying on specific social relationships to constitute, protect and maintain a legitimate collective discourse. As we shall see, this categorization should not be taken as being constituted by discreet, independent categories and each of them should be seen as being embedded in the others.

Dishwasher at Idea House II, 1947. Photograph by George Miles Ryan Studio. Source: Walker Art Center Archives. Permission granted by the Walker Art Center

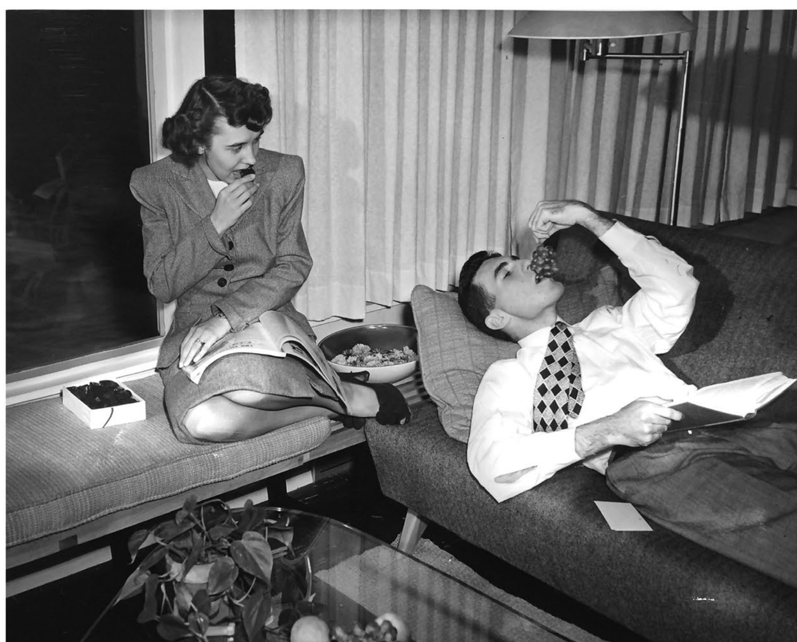
We must start by indicating the obvious: That matters of fact in these exhibitions depended on the physical integrity of the houses and on the empirical experience of the visitor. The houses needed to not only showcase their exterior appearance, but to also demonstrate their structural, mechanical and economic viability. As Defenbacher argued, "Idea-House II was built to *demonstrate* the most advanced ideas in home planning and equipment."[17] Visitors had to be able to turn on any faucet and verify the supply of hot water, test the instant power of the modern gas kitchen, listen to the modern radio, the phonograph and the silent gas refrigerator and experience the comfort of the air conditioning and thermostat. The construction of these appliances was, in fact, crucial to the design of the houses. As carefully described by the Walker Center's publications and by the media, technological innovations were considered integral to the success of the project. *The New York Times* called attention to the garbage chute connecting the upstairs bedroom to the utility room;[18] *Progressive Architecture* made reference to a "factory-fabricated, one-piece unit"[19] that included all the usual fixtures in one piece of equipment; and *Everyday Art Quarterly* called the gas equipment one of the "greatest advances in comfort"[20] for modern housing. The whole system of heating, cooling, humidifying and dehumidifying was fully functional and thus self-evident. The capacity for the house to produce matters of fact crucially depended on its physical performance or, more precisely, on the collective agreement that this performance was suitable for all practical uses. Essentially invisible things, such as the ambient temperature or the noise of the appliances, were important in constituting a collective agreement upon the correct functioning of the house. Among the senses, sight was dominant, but not unique. The Idea House needed to be seen, but also sensed, heard and tested.

If the criterion for certainty was empiricism, then eyewitnessing was an important source of evidence. Upon arrival, the visitor was given an "Explanatory Guide" and was directed towards the entrance of the house. Both Idea Houses were constructed as independent structures on the property of the Walker Museum and could be accessed by car and foot—which allowed visitors to have a direct, private experience, independently of the museum itself. This way, visitors could have an unmediated experience of the house without commercial or educational intervention. Such unmediated experience had to be a collective act. The multiplication of witnesses through collective experience secured the multiplicity of views and transformed a private sensory experience into a publicly witnessed and agreed-upon fact. In one interview, Hilde Reiss, one of the designers of Idea House II, mentioned the big crowds that formed in front of the house.[21] People gathered next to the houses, holding their commercial pamphlets and guides, and together reported and assessed their collective experience through a public process.

The number of visitors that attended these exhibitions was certainly impressive.[22] Yet such experiences were somewhat limited on their own and needed to be complemented with other technologies. Publications spread the word, increasing public interest and the flow of visitors and communicating factual evidence through literary technologies. These technologies aimed to substitute direct witnessing with virtual witnessing and were therefore a powerful tool for constructing matters of fact and validating the exhibitions. They consisted of two different types of evidences: narrations and textual reports of individual experiences, as well as photographs that provided detailed visual evidence and circumstantial detail regarding the types of domestic practices that took place within the house.[23]

Witnessing the Performance of Everyday Life

The technologies of virtual witnessing were especially sophisticated in Idea House II. In 1947, the Walker Center held a series of contests to invite people to spend a full weekend in the house. The museum's purpose was not only to achieve the maximum media coverage on the project, but also to get personal feedback from the "testing" of the house. The article announcing the competition, which was published in the *Minneapolis Sunday Tribune* in September 1947, described this contest as an opportunity to try out the livability of the house. This test was to be carried out under very particular circumstances that in no way mimicked what could be considered an everyday experience.



Weekend visitors at Idea House II, 1947. Clockwise from top-left to bottom: Members of the Keng Young Family in one of the house's bedrooms; Lois Miller, Helen Tully and Dorothy Vine in the main bedroom; members of the Hann Family in one of the house's bedrooms; members of the Hann Family in the living room. Photograph by Rolphe Dauphin for the Walker Art Center. Source: Walker Art Center Archives. Permission granted by the Walker Art Center

Rather, it was advertised as a holiday package for the upper middle class, in which the experience of the house would be highly mediated:

> Each group may move into the house on a Sunday night, stay that night, all day Monday and move out the following Tuesday morning. During that time, each group will have a maid at its disposal, will have all their meals prepared and served for them, the dishes washed, the beds made. There'll even be between-meal snacks furnished. The institute would like to get reactions from those who "try out" the house.[24]

Included was an organized tour of the house; meetings with a newspaper columnist, a radio commentator and a photographer; and prearranged times for meals and parties with friends—this tight schedule defined the sequence of events that were programmed to happen in the house. In other words, the selected witnesses were required to report the livability of an experience that was prearranged and therefore performative and extraordinary. When D.S. Defenbacher sent the future guests the official invitation, he wrote:

> All you need to bring is yourselves, a spirit of adventure, and the usual street and lounging clothes. There will be no activities requiring long dresses. Obviously, you should bring along some eye appeal in night wear. If you don't wear any, I'm the last to object, but you might look amazing in the newspapers.[25]

Indeed, being photographed was an important part of the experience. The Walker Art Center compiled around one hundred photographs of these experiences, including very intimate domestic scenes, such as an old woman bringing breakfast to her husband in bed, or a couple eating grapes while gazing at each other. Everyday life was being performed for the gaze of the media. These moments, carefully recorded through photographs, became detailed and vivid images of the type of domestic environment promoted by the U.S. postwar suburban housing boom campaign: informal meals at a snack bar that separated a clean kitchen and a neatly organized living room, large sliding

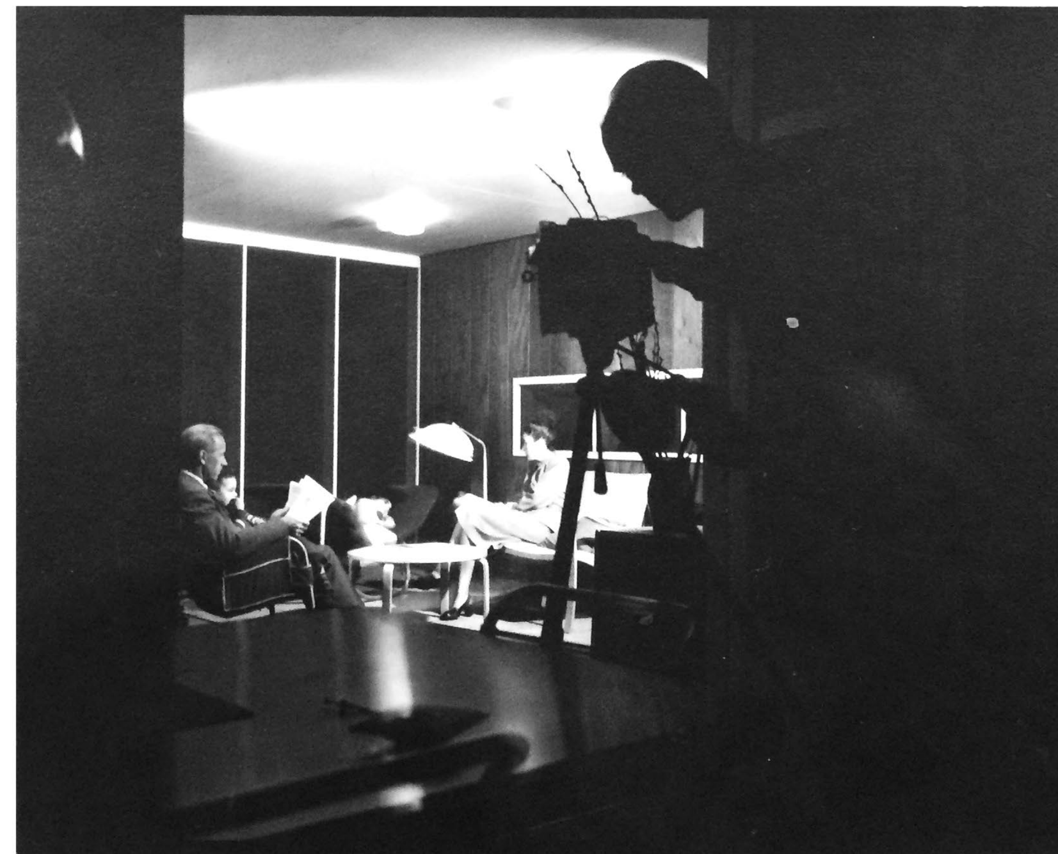
Weekend visitors at Idea House II, 1947. Clockwise from top-left to bottom: Lois Miller, Helen Tully and Dorothy Vine at the snack bar; members of the Card family in the living room; member of the Card family in the children's area; members of the Hann family around the phonograph. Photograph by Rolphe Dauphin for the Walker Art Center. Source: Walker Art Center Archives. Permission granted by the Walker Art Center

Weekend visitors at Idea House II, 1947. Members of the Card Family in the living room of Idea House II. Photograph by Rolphe Dauphin for the Walker Art Center. Source: Walker Art Center Archives. Permission granted by the Walker Art Center

glass doors and open living rooms that promised a new type of visibility (so that the mother could watch her children playing safely outside in their fenced-in garden), children having their own private space for their activities and technologies such as the radio and the phonograph organizing everyday life.[26] The photographs from the Idea House weekend contest aimed to reveal a seemingly unmediated depiction of such "family togetherness."[27] By featuring subjects that appeared to be unaware of the camera and who never looked directly at it, these photographs portrayed the camera as a self-acting machine capable of producing images, uncorrupted by human manipulation. Seen from this perspective, the photograph was an ideal record of events: mechanical, self-acting and not subject to human biases.

Nevertheless, to consider the camera as a transparent device is to neglect the agency that this instrument had on participant behavior. "If any newspaper pictures are to be taken of me, I shall be very temperamental," noted the contestant Young in a letter to the museum director. "I do not want to look like a seed sack with a string around the middle. All the other members of the Young family are very photogenic."[28] Visitors acknowledged that the presence of the camera affected their actions and some of the photographs revealed participants being caught unexpectedly glancing at the camera. In a state of distraction, the Idea House subjects performed quotidian activities while making a statement about the house itself and the types of domesticities that it generated. Photographs were used as mechanical evidence of the livability of the house, but simultaneously revealed the artificiality of their own construction.

Some traces of the way in which these photographs were taken can be seen in an article that ran in *Life* a few months later. The magazine arranged for the Stensruds, a local family with two children, to live in the house for a week and document their reactions in an article. Two photographs show the Walker Art Center's photographer shooting *Life*'s photographer at work. In one, the camera hides inconspicuously behind the scenes, in the dark, framing the domestic scene in the distance and aiming not to interfere. The other shows the opposite. The photographer displays the camera and the flash in a remarkable manner, both arms in the air and calling for attention. The photographed subjects, in turn, look directly at him.



The Stensruds family at Idea House II, 1948. *Life* magazine photographer. Source: Walker Art Center Archives

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TO FIND OUT, A FAMILY TRIES ONE FOR A WEEK

Idea House CONTINUED

THE CHILDREN THOUGHT IT WAS SWELL

LIVING ROOM HAD GOOD AND BAD POINTS

THE SPACIOUS PORCH WAS WONDERFUL

EVERYBODY LOVED THE BREAKFAST BAR

"How Livable is a Modern House?" *Life* (Oct 1948). Source: Walker Art Center Archives

Idea House II kitchen, c. 1948. Photograph by Ezra Stoller. William Friedman and Hilde Reiss, designers. Source: Walker Art Center archives. © Ezra Stoller/Esto

"Idea House Girls Dread Going Home," *Minneapolis Morning Tribune* (Nov 11, 1947). Source: Walker Art Center archives

DOROTHY VINE, HELEN TULLY, LOIS MILLER
Ready for bed in two-day stay at Walker "Idea House"

'AH—THIS IS THE LIFE'

'Idea House' Girls Dread Going Home

By GERI HOFFNER
Minneapolis Tribune Staff Writer

Three Minneapolis business girls who for two days have been making themselves at home in Walker Art center's "Idea House" are reluctantly getting ready to return to their own apartment today.

The girls, Lois Miller, a personnel interviewer, Helen Tully, a public relations assistant, and Dorothy Vine, a traffic clerk, ordinarily live in a four-room apartment at 610 Franklin avenue W.

But Sunday, as a reward for writing one of the four best letters to D. S. Defenbacher, director of the center, they moved themselves, complete with a number of suitcases, into the compact, ultra-modern "Idea House."

Monday—about 36 hours after they had moved in—they still were discovering new things about the house, which was designed by William Friedman and his wife, Hilda Reiss.

"It's so comfortable," they said first. "And we've never seen so much closet and storage space. Behind almost every wall and under every built-in chair or bench, there's room to put things."

place. We decorated it ourselves—pink paint in the bathroom, yellow in the kitchen. We'll have to change it immediately after this."

For the next three week-ends, three other groups will spend two days each at the "Idea House."

A couple with two children will be the next occupants.

The photographs chosen to illustrate the *Life* article followed the first approach—they were framed as naturalized replicas of unmediated behaviors. Using a comparative approach to formal analysis widely popular in art historical practices, the article placed photographs of the Idea House side by side with those of the (Stensruds's) own conventional home, using them as evidence to reveal "good" and "bad" features of the house. The camera operated as a self-acting machine, producing images that were apparently not corrupted by human manipulation. The images, in turn, aimed to provide a vivid, truthful impression of the house's livability.

Similar techniques can be found in the multiple publications concerning earlier weekend experiences: "Just Ask,"[29] "Idea House Girls Dread Going Home,"[30] "I Like It Here,"[31] "Adventure in House Planning,"[32] "Home, Sweet (Idea) Home"[33] and "Couple Relaxes in Idea House"[34] are all articles that survey those experiences by including direct testimonial evidence from people who empirically experienced the space. Even more conventional architectural journals not concerned with the media experience per se insisted on photographing the house as if being used. This was the case with the photographs by Ezra Stoller, Hedrich-Blessing and George Ryan Studios.[35] Vegetables in the sink as if ready to be cooked, cupboards full of silverware, the dishwasher open and full of plates and the bathroom and pantry doors open to proudly display a wide range of cleaning products—these are but some of the scenarios utilized to provide a detailed, naturalistic representation, full of circumstantial details.

Intricate Paths to the Public

The interior of the houses defined a space that was stipulated as public, but that had specific constraints in terms of accessibility and admission. Although the houses were open to everyone who could pay the entrance fee, staying over the weekend and participating in the program organized by the museum was rigorously restrictive. Not everybody could come in, not everybody's testimony was considered of equal worth and not everybody was thought to be able to influence the general consensus.

The contest organized to select the preferred witnesses stipulated that the potential visitors had to fit into one of the four following social categories: "A couple with two teen-age youngsters, a couple with a mother-in-law, two honeymooners, and a couple celebrating their wedding anniversary."[36] The winners of the competition, all white and middle class, reflected the mass audience imagined by the museum, which coincided with the target population at whom the federal government, popular media, developers and designers directed their postwar suburban home campaign. Unlike House I, which was designed during the manufacturing restrictions and financial constraints that characterized the period right after the Great Depression, House II was designed during the postwar housing shortage, a context that was characterized by the rapid proliferation of suburban prefabricated housing developments—aimed specifically at white and middle class Americans.[37] Within this context of excessive housing demand, home ownership incentives, racial and ethnic segregation and novel marketing techniques, the price of the Walker model home rapidly increased. Despite the well-intended goals of the art center's curators, who insisted upon the use of cheap, fast and durable construction methods and materials, the final cost of Idea House II was about 30,000 USD[38]—an amount that was well out of reach for the average middle-income home buyer (including the winners of the competition).[39]

Likewise, the four categories stipulated by the center reflected the social uniformity of the postwar suburban housing boom and its conventional focus on the white, heterosexual, nuclear and financially stable "average family," comprised of a working father and a "good" mother who was constantly attending to the emotional needs of her (two) children.[40] Only one of these four classifications was challenged by a group of contestants. Lois Miller, Helen Tully and Dorothy Vine introduced themselves as an "overlooked major factor"[41] in Defenbacher's household cross-section. Classifying themselves as a "three-girls-who-share-an-apartment"[42] type, who worked outside the home while also taking care of all household tasks, they claimed their relevance as a "fairly typical trio" in the American postwar domestic scenario and were consequently selected. All the other contestants fitted into the predefined premises established by the museum, eventually building up a social group that intended to be perceived as inclusive and variable, but which instead had been carefully selected and controlled.

In addition to fitting within one of the four aforementioned categories, potential contestants had to write a one-page letter to D.S. Defenbacher explaining the reason why they wanted to experience the house and test its livability.[43] The letters were ordered and graded by taking into account a series of conventions and preconceived ideas about who is a good witness. The selected proposals were "sincere and serious requests from people intending to build modern houses."[44] They corresponded to people who wished to study the workability and comfort of the new arrangements and gadgets, and were individuals that had a certain level of economic prosperity and cultural knowledge. Statements that insisted on empirical evidence were highlighted, hand-written letters were usually discarded and spelling mistakes were corrected and considered negatively.[45] Rejected applicants included people who wanted to throw a party, relax or who openly admitted that they wanted to make their neighbors envious. What was

Member of the Keng Young Family in one of the children's bedrooms in Idea House II. Note the emphasis on the personal objects–the books, tennis racket, photo camera. Photograph by Rolphe Dauphin for the Walker Art Center. Source: Walker Art Center Archives. Permission granted by the Walker Art Center

at stake in these filtering mechanisms was the negotiation between typically acceptable subjects and subjects who were, at the same time, atypical enough to substantiate the country's professed individualist values. In the photos of the selected contestants, for example, one can see participants in the Idea House performing quotidian activities, but also showing certain eccentricities and peculiarities. Some are portrayed eating informally on the floor, others talk through hidden windows; records, books, clothes and other objects that represent individual hobbies and interests are also highlighted.

At this same time, the theories of Anna Freud and Edmund Burnett were being widely used by U.S. corporations and governments to make products and political speeches as pleasant as possible to consumers and voters. What had begun as a practical application of psychoanalytic concepts and techniques eventually evolved into techniques to study consumer behavior—such as the qualitative research used in the focus groups pioneered by the Institute for Motivational Research (founded in 1946 in New York).[46] It is in this context of exacerbated consumerism and individualism that the social filtering mechanisms developed by the museum can be discussed as cultivating both normality—in the sense of normalized acceptable behavior—and individualism. Perhaps this is why this performance of the everyday needed to take place in a museum, one of the places where the bourgeois understanding of individuality was cultivated in the figure of the artist. Insofar as the people who inhabited the house performed activities that were deemed appropriate by the museum, they were making its values real.

From the Observer to the Witness

Idea Houses I and II are not only the origin of the museum model home exhibition in the U.S., nor a mere curiosity within the history of architectural exhibitions, but a relevant case study for historically situating shifts in forms of displaying and receiving information. Such an attitude follows scholarship on the protocols of museum spectatorship and exhibition architecture, but also the lead of figures that have asserted that our forms of attention, observation and truth are historically situated, contingent and contested. This is the case with Jonathan Crary—who has offered significant insights on the relationship between nineteenth century art history and the history of optical devices such as the camera obscura, the stereoscope and the phenakistiscope[47]—and Orit Halpern—who has traced the impact of cybernetics on postwar modes of observation and data visualization.[48]

To study the dominant modes of observation and truth that were developed around Idea Houses I and II is to pay attention to the ways in which a museum promoted a shift from older forms of spectatorship, based on the passive and distant reception of information, to an active and probatory form of cognition. These houses utilized complex material, literary and social technologies to convince museumgoers of the role of architecture in encouraging a new way of life for the suburban American family. Such "convincing" was built around the illusion of creating an unmediated and unbiased visitor experience through full-scale, fully-functioning models, photographs showing evidence of the space being used and testimonies collected through the publicity contests, which together shaped a visitor experience based on empirical experience. Rather than a passive spectator carried away by dramatic, dazzling forms of entertainment, the subject of these exhibitions was a *witness* that provided testimonial evidence. Such a witness categorized certainty and veracity, as derived from sense experience, made accessible to a broad public and transformed into collectively agreed-upon evidence by virtue of visual, written and oral testimonies. To this end, the houses were used, seen, touched, heard and felt. The architecture of the Idea Houses was not only being passively observed and consumed, it shaped a different form of subject experience: the witness.

Notes

1. World's fairs and international expositions across Europe and North America had previously built model homes. The historian Beatriz Colomina cites Le Corbusier's Pavillion de L'Espirit Nouveau (1925) as one of the earliest examples of European exposition dwellings, although a very different kind of predecessor could be found in the European exhibition villages used to promote colonialism, such as *L'Histoire de l'habitation humaine* at 1889 Exposition Universelle in Paris. In the U.S., an immediate predecessor to the museum model home was the commercial model home sponsored by industry, such as the model home built for the 1933 Century of Progress Exhibition in Chicago. For a general introduction to the model home, see Beatriz Colomina, "The Media House," *Assemblage* 27 (1995): 55-66, doi:10.2307/3171430; for a historical overview on the model homes erected in Europe and in the U.S. during the interwar period for international expositions, see Helen Searing, "Case Study Houses: In the Grand Modern Tradition," in Elizabeth A. T. Smith, ed., *Blueprints for Modern Living* (Los Angeles: MOCA; Cambridge, MIT Press, 1989): 107-129; on world's fair colonial villages, see Zeynep Çelik, *Displaying the Orient: Architecture of Islam at Nineteenth-Century World's Fairs* (Berkeley: University of California Press, 1992).
2. The Walker Art Center received numerous letters from art museums requesting information concerning the Idea House to potentially consider the same kind of program in their own contexts. One of those letters was written by Philip L. Goodwing, trustee and chairman of the MoMA Exhibition Committee, who, under the advice of Philip Johnson, requested financial advice from the Walker Art Center and recommendations on creating a similar exhibition in New York. The Idea House therefore could be considered a direct model for MoMA's more famous House in the Museum Garden. Walker Art Center Archives.
3. "An Explanation of the Idea House," *Minneapolis Tribune and Star Journal* (June 1, 1941).
4. D.S. Defenbacher to A. W. Ross. Letter (July 9,1941), Walker Art Center Archives.
5. D.S. Defenbacher to Mary Davis Gillies, interior decorating editor at the McCall Corporation. Letter (July 23, 1941). Walker Art Center Archives.
6. See Beatriz Colomina, "The Media House…".
7. See Fredie Floré & Mil De Kooning, eds., "Postwar Model Homes: Introduction," *The Journal of Architecture* 9-4, (2004): 411-412, doi:10.1080/13602360420003202 79.
8. See Barry Bergdoll, "At Home in the Museum?" *Log* 15 (2009): 35-48.
9. See Greg Castillo, "Introduction," in *Cold War on the Home Front: The Soft Power of Midcentury Design*, (Minneapolis: University of Minnesota Press, 2010).
10. The Idea Houses were presented by the Walker Art Center as an educational feature of its museum program. Unlike commercial homes, they were not sponsored directly by industry, nor were they designed to showcase specific products or materials. However, vendors and manufacturers contributed to the project by donating goods to the exhibition. Both houses charged a small entrance fee and Idea House II was made financially possible by a unique collaboration between the Walker Art Center and Northwestern National Bank. Both houses were extensively documented and illustrated in local newspapers, such as the *Minneapolis Tribune and Star*, and national magazines, such as *The New York Times Magazine*, *McCall's* or *Life*, which also included advertisements placed by contributing vendors. On the contribution of manufacturing companies to both houses, see Alexandra Griffith Winton, "'A Man's House Is His Art': The Walker Art Center's Idea House Project and the Marketing of Domestic Design 1941–1947," *Journal of Design History* 17- 4 (December 2004): 387-392, doi:10.1093/jdh/17.4.377.
11. I borrow this term from the history and philosophy of science. See Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 1985). This terminology has also been used in legal and media studies, particularly in relation to the formation of eyewitness evidence and testimony. See Jennifer L. Mnookin, "The Image of Truth: Photographic Evidence and the Power of Analogy," *Yale Journal of Law & Humanities* 10 (1998).
12. The degree to which other, more well-known model homes were built as fully functioning houses varies: The 1949-1954 MoMA House in the Museum Garden could not reproduce the vital role of landscape design because it was built in the courtyard of the museum. The 1952 We're Building a Better Life in West Berlin was roofless. The 1955 People's Capitalism in Washington was built inside the vault of Union Station's grand concourse. The 1957 Interbau Housing Exhibition in West Berlin housed model interiors (rooms) underneath a pavilion. The 1945-1966 Case Study Houses in Los Angeles were fully-functioning homes, but didn't run any publicity contests that could be equated to the ones led by the Walker Art Center.
13. Malcolm Lein and Miriam Bend were the architects of Idea House I. They were recent University of Minnesota School of Architecture graduates and Walker Art Center curators.
14. Hilde Reiss and William Friedman were the architects of Idea House II. William Friedman received his training in architecture and design at New York University, taught design at the New York Laboratory School of Design, worked for Norman Bel Geddes and went to the University of Minnesota before becoming the design director of the Walker Art Center in 1940. Reiss received her architectural training at the Bauhaus in Dessau under Mies van der Rohe. She came to New York City in 1933 and worked at various design firms until she was recruited in 1945 to become the curator of the Everyday Art Gallery and the editor of *Everyday Art Quarterly*.
15. MoMA, "The Museum of Modern Art Builds a House," [brochure] (1949), cited in Bergdoll, "At Home in The Museum?...", 45.
16. These categories were used by Steven Shapin and Simon Schaffer in their publication *Leviathan and the Air-Pump: Hobbes, Boyle and the Experimental Life* to make visible the different technologies by which experimental practices and their intellectual products constructed "matters of fact." Even though the subject of concern here is not an experimental practice, I borrow this classification to make evident that these exhibitions were significantly concerned with fact-making and certain knowledge. See Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life*, 25-26.
17. D.S. Defenbacher, "A Man's House Is His Art," *Everyday Art Quarterly* 5, Idea House Issue (Autumn, 1947), doi:10.2307/4047101.
18. Mary Roche, "New Ideas," *The New York Times* (November 2, 1947).
19. "House," *Progressive Architecture* (February 1948), 45.
20. D.S. Defenbacher, "A Man's House Is His Art…"
21. Hilde Reiss, interviewed by Martha Ruddy at Reiss' home in Capitola, California (March 17, 2000). Walker Art Center Archives.
22. Over 36,000 people paid admission to see Idea House I; the first few weeks saw an average of 560 people per day. For Idea House II, the attendance oscillated between 100 to 200 people per day. See "Report on Idea House," undated, D.S. Defenbacher, in a letter to C.L. Harris, president of the New England Furniture Company. (June 1941). See also, Idea House II, "Daily Report." Walker Art Center Archives.
23. Shapin and Schaffer used the notion of "literary technology" to refer both to texts (forms of scientific prose) and images (detailed naturalistic representations). For them, as well as for me, the role of visual representation in the multiplication of witness experience is as important as textual analysis. See Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump…*, 60-65.
24. Cedric Adams, *Minneapolis Sunday Tribune* (Oct 5, 1947).
25. D.S. Defenbacher, to Miller, Trully and Vine. Letter (October 23, 1947). Walker Art Center Archives.
26. Historian Gwendolyn Wright explains how the architectural decisions that characterized the suburban developments of the late 1940s and 1950s not only reflected the builder's desire to reduce expenses and increase the speed of construction through modern building techniques, but also reflected a new way of life for the "average family" of the suburbs, as studied through surveys of potential buyers. Such "dream life" was characterized by the kind of activities and images described above. See Gwendolyn Wright, "The New Suburban Expansion," in *Building the Dream: A Social History of Housing in America* [e-reader version] (New York: Pantheon Books, 1981): 3884-3984.
27. This was the slogan that the magazine *McCall's* coined in 1954 to embody the "ideal of domestic social relations and priorities to which responsible Americans aspired." Dianne Harris, *Little White Houses: How the Postwar Home Constructed Race in America* (Minneapolis: University of Minnesota Press, 2013), 121.
28. F. Keen Young in a letter to Defenbacher (Nov, 1947), Walker Art Center Archives.
29. *Minneapolis Sunday Tribune* (Oct 5, 1947).
30. *Minneapolis Morning Tribune* (Nov 11, 1947).
31. *Minneapolis Morning Tribune* (Nov 20, 1947).
32. *Webster Journal* (Nov 27, 1947).
33. *St Paul Sunday Pioneer Press* (Dec 21, 1947).
34. *Minneapolis Daily Times* (Nov 25, 1947).
35. Some of their photographs were used in *McCall's Magazine*, *Progressive Architecture* and *Everyday Art Quarterly*.
36. "Do you like new houses?," *Minneapolis Sunday Tribune* (Sept 28, 1947).
37. See Dianne Harris, *Little White Houses: How the Postwar Home Constructed Race in America*. See also Gwendolyn Wright, "The New Suburban Expansion…", 3744-4095.
38. *Des Moines Sunday Register* (Nov 9, 1947). Other newspapers cite the amount that was spent by the Northwestern National Bank's Home Institute Unit—around 21,000 USD—but this figure was complemented with additional funding provided by industry. See *Nic-Lake Live Wire* (October 16, 1947), Earl Finberg, "Idea House II," in *Duluth News-Tribune* (Oct 19, 1947), "Idea House II," *Minneapolis Sunday Tribune* (Sept 28, 1947).
39. The U.S. census for 1950 found that the national median value of urban and rural nonfarm dwellings was 7,354 USD. By 1960, the median value of a similarly located home owned by whites rose to 12,900 USD. See Dianne Harris, *Little White Houses…*, 6. The Lustron Company, a major manufacturer of prefabricated houses after WWII, was selling its most economic model for 9,000 USD, and the average price was 10,500 USD. See Gwendolyn Wright, "The New Suburban Expansion…," 3822. The selected visitors for Idea House II also mentioned in the press that the cost of the house was out their price range. See *Des Moines Sunday Register* (Nov 9, 1947).
40. See Gwendolyn Wright, "The New Suburban Expansion…," 3991.
41. Lois Miller, Helen Tully and Dorothy Vine in a letter to D.S. Defenbacher (Sept 1947). Walker Art Center Archives.
42. Lois Miller, Helen Tully and Dorothy Vine in a letter to D.S. Defenbacher (Sept 1947). Walker Art Center Archives.
43. Cedric Adams, *Minneapolis Sunday Tribune* (Oct 5, 1947).
44. D.S. Defenbacher, in a letter to Mr. Cedric Adams, (October 29, 1947). Walker Art Center Archives.
45. By empirical statements I refer to direct references to observation and livability. For instance: "we are interested in comparing the ideas … by actual observation of the efficiency and practicability" See Idea House II, "Weekend Visitor: Applications" (Sept 1947–Jan 1948). Walker Art Center Archives.
46. See Adam Curtis, "Happiness Machines," in *The Century of the Self* [videorecording], BBC Two England, originally broadcast March 17, 2002.
47. See Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge: MIT Press, 1990); and Jonathan Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture* (Cambridge: MIT Press, 1999).
48. See Orit Halpern, *Beautiful Data: A History of Vision and Reason since 1945* (Durham: Duke University Press, 2014).

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