

# The Historic Dimension Series

*A student publication series by the UNCG Department of Interior Architecture*



*Innovative construction techniques join modern design and aim to meet the nation's post-WWII housing shortage with Carl Strandlund's affordable steel house.*

## The Steel House: "A Sensationally Good Idea"

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When The Second World War had come to a close, America was facing changing trends in residential housing needs and philosophy, coupled with an ongoing housing crisis. Soldiers returning home from the war to the family, friends, and lives they had left only a few years before found a very different and unprepared nation not ready to meet the needs of the returning veterans. With a rising marriage rate and an even faster growing birth rate, the need for housing became even greater. In 1945, the national housing shortage totaled more than four million dwellings and the demand only increased with the GI Bill of Rights providing guaranteed home loans and mortgages to any veteran that had served at least 90 days in the service. World War II provided the United States the final measure needed to emerge from over a decade of unemployment, poverty, and eroded self-esteem, but it had not solved the nation's housing shortage. Prepared to meet this need, Carl Strandlund, vice-president of the Chicago Vitreous Enamel Products Company, turned to the American domestic setting of the first part of the 20th century to play a significant role in the design and development of his product, the prefabricated porcelain enameled steel house.

### The Progressive Movement and Domestic Architecture

The first half of the 20th century began with the emergence of the Progressive movement; a direct refutation of the frivolous and more

elaborate adornments and philosophies of the Victorian mindset of the 19th century. Beginning in the late 1890's, American middle-class women recognized the need for changes in traditional domestic practices. Their efforts to acknowledge household duties as *domestic science* and to conduct their kitchens as if it were a laboratory further reinforced the need "to promote better health, better families and more satisfied women," (159) as Gwendolyn Wright describes in her book *Building the Dream*. Domestic design was dramatically changed and an emphasis on uncluttered space and easy-to-clean smooth surfaces emerged. Simplicity reigned while adornments became passé; their detailed components were only areas for which dust and germs could collect and therefore served no purpose to the modern housewife. Function became a driving force in house arrangement and design, resulting in built-in furniture and storage. The first two decades of the 20th century saw the emergence of smaller homes of a more simple design as compared to their Victorian predecessors. Homes of the 20th century embodied the Progressive movement's modern theories; home designs based on these theories ensured an optimum healthy environment and every modern convenience to its occupants. Heat, electricity, and bathrooms became the common expectations and were the driving force behind the development of society's views and desire for cutting edge modernism and technology in the everyman's domestic life.

As a result of the Progressive movement,

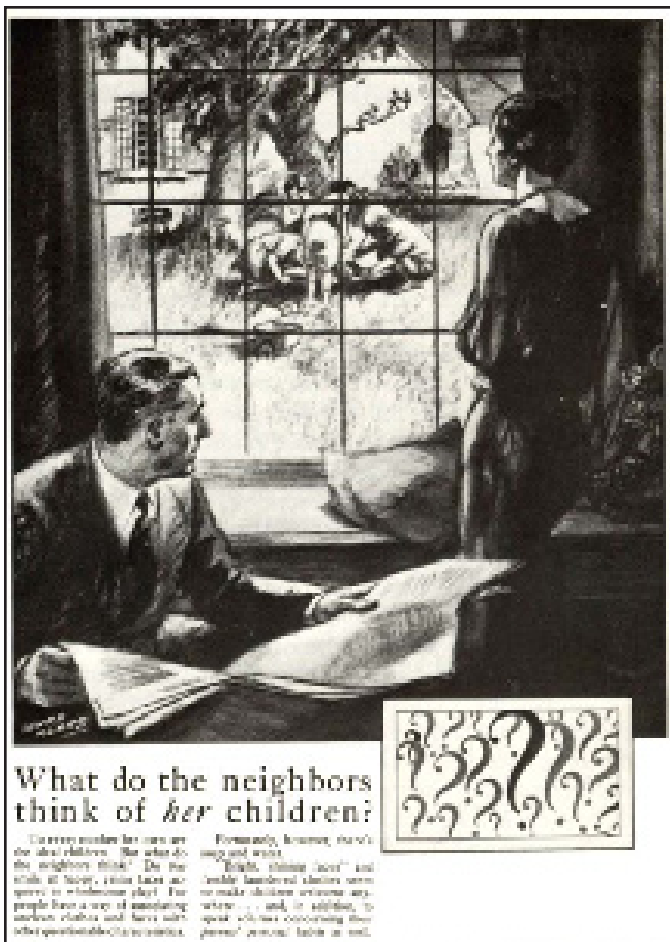


Fig. 2: This 1928 advertisement from the New York Cleanliness Institute illustrates the nation's growing emphasis on sanitation.

kitchens became smaller yet more efficient. Smaller families translated into smaller square footage for homes. Single purpose rooms were no longer considered efficient or functional as space for utilities and bathrooms were now the priority. According to Wright, a direct correlation can be drawn concerning the overall square footage and kitchen size of the early 20th century house and the reduction in household production. Society had moved toward efficiency and many believed that technology in the form of electricity was now *the modern servant*, allowing women more time to free themselves of domestic duties. Wright found in her research that "there was no longer a need for places to store away quilts, home-canned vegetables, and dowry linens for future use. Even the home economist declared that the modern housewife's principal role was that of consumer, not producer" (171) and provides explanation for the transitioning role and desires of women in 20th century America.

Therefore, with the onset of World War II, women were prepared to take their role even further outside the traditional domestic stage. They had already begun in small numbers to work outside of the home despite the overwhelming national unemployment rate prior

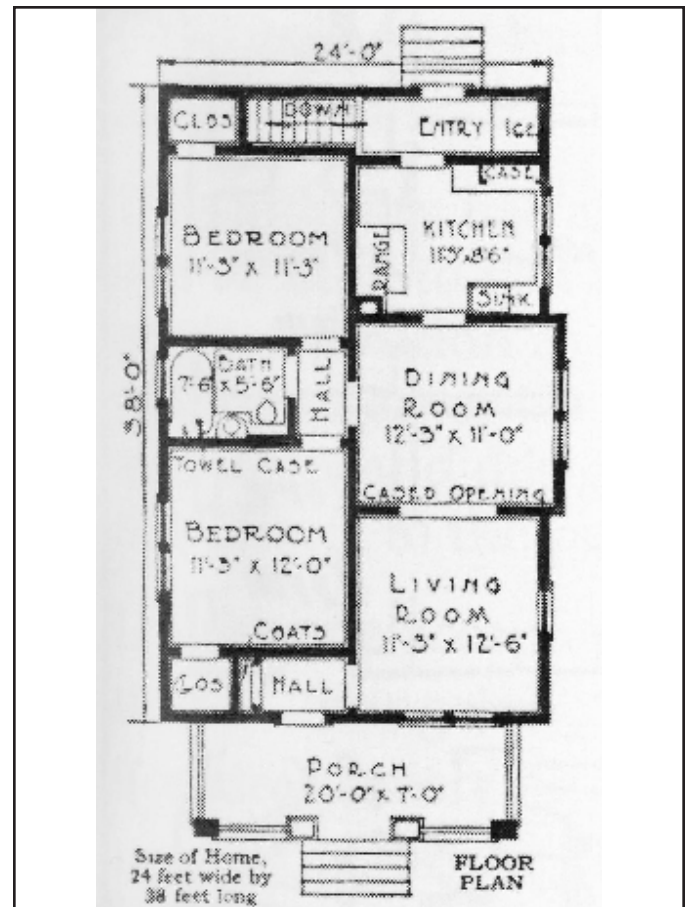


Fig. 3: Floorplan of a 1927 Sears Kit bungalow displays the room configuration and accommodations for modern conveniences that would later be incorporated into the Lustron design.

to the war. Some envisioned a better society with a more fiscally sovereign family unit created by the extra income that could be produced by the workingwoman who managed to juggle her responsibilities in the home with that of her other obligations. During the war, women became the head of their households and often found themselves filling the position that their male counterparts would have held had they not been in active military service. Other opportunities existed for the housewife to engage in activities outside of her domestic setting, including enlisting as a volunteer with the Red Cross and the United Service Organization (USO). At the same time, women's household roles changed to reflect this new independence and they often prepared less formal meals and turned toward prepared foods and cereals, as well as simple sandwiches, to serve their family. In their desire to "have time for their non-domestic activities, [women] wanted both simpler houses that were easier to keep clean and more labor-saving appliances," (173) as Wright points out.

The housing market recognized these needs, and with the development of model homes, the bungalow became a successfully marketed and well-accepted middle-class housing choice. The needs of women, their changing

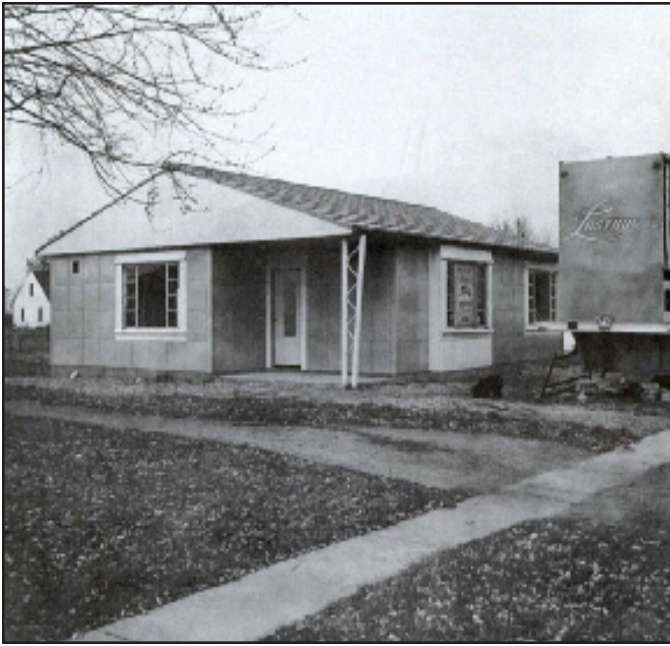


Fig. 4: This Lustron model home was the prototype for the more developed and marketed models, Newport and Westchester.

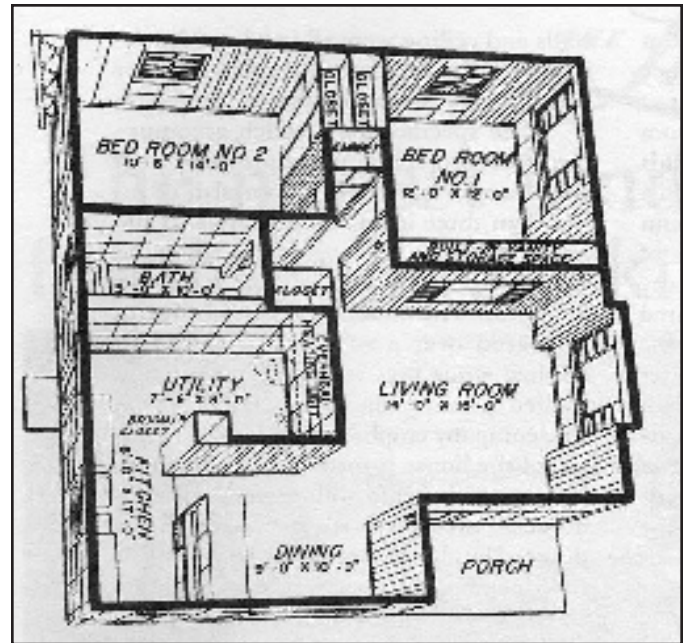


Fig. 5: Westchester two-bedroom floorplan.

roles as housewives, and their desires to broaden their experiences were the momentum behind these new designs and approaches. Yet, as architecture began to recognize these societal changes and swiftly sought to provide the solution, economic depression hit the nation making it even more difficult for homeownership to prosper. Complicating matters, mortgages prior to WWII were often difficult to secure for the middle-class citizen, and the government did very little to assist with affordable housing options. Many families resided with other family members as homeownership was unaffordable or unattainable and rental units were scarce. In 1933, there were 1000 foreclosures per week nationally and residential construction plummeted. The New Deal brought about low-interest, long-term loans, a drastically different animal than the 7-year, 50% mortgage coverage of the previous decades. Residential construction was on the rise again, and the nation's housing crisis seemed to have found a solution, until World War II broke out and construction came to a halt due to lack of demand, materials and labor.

### The Lustron Vision Becomes a Reality

The War had ended and the year was 1946. Tide detergent was introduced on the market, *It's a Wonderful Life* was playing in movie theatres, and Carl Strandlund was embarking on a new venture, the steel house. With steel still under regulation by the federal government, Strandlund was faced with the obstacle of convincing the government to relinquish the material for further production of gasoline stations and other commercial uses, allowing his company, Chicago Vitreous Enamel Products (Chicago Vit), to sustain. Strandlund hoped that the steel house, a concept first put forth by the steel

industry at the 1933 Century of Progress Exposition in Chicago, would provide the government the ultimate reason to release steel to Chicago Vit.

The material, porcelain-enameled steel panels, had been the select building choice for gasoline stations prior to the war. These panels were desirable because of their smooth surfaces that provided for easy clean-up, maintenance, and prefabricated design. Chicago Vit had aspirations of returning to their pre-war gasoline station production, but the need for housing and the government's intervention to resolve the problem overturned this initial goal. In an effort to secure steel for Chicago Vit's production lines, Strandlund found himself faced with a new and exciting opportunity. Traditional residential building materials, wood and masonry, were scarce so there was difficulty in meeting the newest demands of the federal government to produce 1,200,000 new homes in 1946 alone. With the support of Wilson Wyatt, the Housing Administrator under President Truman, and after a multitude of negotiations, Strandlund was given an unlimited supply of steel if it could be utilized to solve the nation's housing crisis.

Strandlund employed the firm of Blass and Bechman to design the Lustron home prototype in late 1946. Thomas Fetter, in his book, *The Lustron Home*, tells how M.H. Bechman recalled that Strandlund saw the house as a "durable variation of an established housing type, the bungalow." (18). The bungalow, as previously mentioned, embodied the qualities of the Progressive movement that had shaped residential housing in the first part of the 20th century. Strandlund capitalized



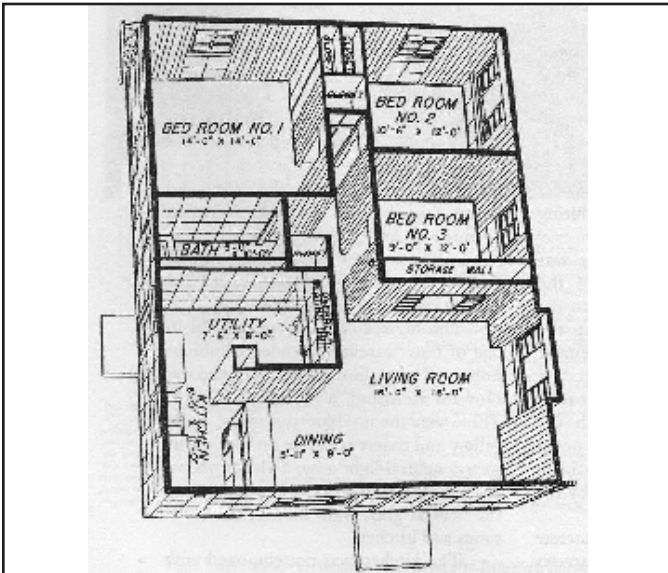


Fig. 6: Westchester three-bedroom floorplan.

on the housing desires that had developed during the Progressive movement and incorporated these theories in the designs and floor plans of the Lustron homes so that they reflected the characteristics that had emerged as the predominant trends in residential construction prior to the war. His designs emphasized efficiency of space with easy to clean surfaces, smaller more functional and flexible rooms, a sanitary environment, and the inherently low maintenance of both the interior and exterior elements of the structure. The prefabricated steel house was in itself the technological innovation desired in new construction housing.

The first model home, used to seduce the government into supporting Strandlund's concept, was the Esquire model. With a total of only 990 square feet in size, the model home designed by Blass and Bechman utilized existing parts designed for commercial use but was assembled to form a small two-bedroom ranch house that would evolve into the Lustron Corporation's biggest selling model. With a few modifications, the Esquire model soon became the Winchester and was available in both Standard and Deluxe versions, as well as two- and three-bedroom floor plans. The architecture and appearance of the Lustron home was designed to simulate a modified ranch style on the exterior.

The earliest versions were equipped with a multitude of technological conveniences from built-in steel cabinets and shelving (similar to the wooden built-ins often found in Bungalow designs), to sliding doors and pocket doors to save room, an all-electric kitchen and a new heating system. The radiant heating panel that was designed as the Lustron Home's heating source was new on the technological scene. The system dispersed heat from the ceilings and walls while claiming energy efficiency. With slight additions in insulation techniques, Lustron homeowners, even today,



Fig. 7: Image of the Lustron efficiency kitchen.

applaud this approach. Additional amenities included a Vanity bookcase, a China-pass-thru between the kitchen and dining area (another feature often found in the bungalow style), a bay window, bathroom vanity, kitchen panels and tile flooring. These amenities became stock features in the Winchester Deluxe models. The standard models had a different heating system, relied on the builder to supply floor-covering materials and generally had scaled down or non-existent versions of the more elaborate features. Both the Deluxe and Standard Westchester models, and any later designed models; all featured the Thor dishwasher-clotheswasher appliance. Despite the fact that the appliance was never entirely successful and suffered from engineering and functional flaws, it was yet another technological benefit incorporated in the Lustron Home. Dishwashers were on the brink of becoming a household norm and met society's desire for the cutting edge in technology.

Lustron developed a total of three models. The Westchester, Newport and later, Meadowbrook were available in two- and three-bedroom floor plans ranging in size from 23' by 31' for the smallest Newport to 31' by 35' for the three-bedroom Westchester deluxe. All three models were designed with small kitchens no larger than 6' by 17' with a utility area immediately adjacent. This smaller design reflected the change in kitchen and domestic needs discussed earlier in regards to the Progressive movement. Their small size also provided affordability, a key component to the Lustron Corporation's potential success.

### The Lustron Home in North Carolina

The Lustron Corporation marketed and priced their product based on a national zone approach. Prices originally ranged between \$4190 for the two-bedroom Newport to \$7737 for the three-bedroom Westchester Deluxe, depending on what region of the country the



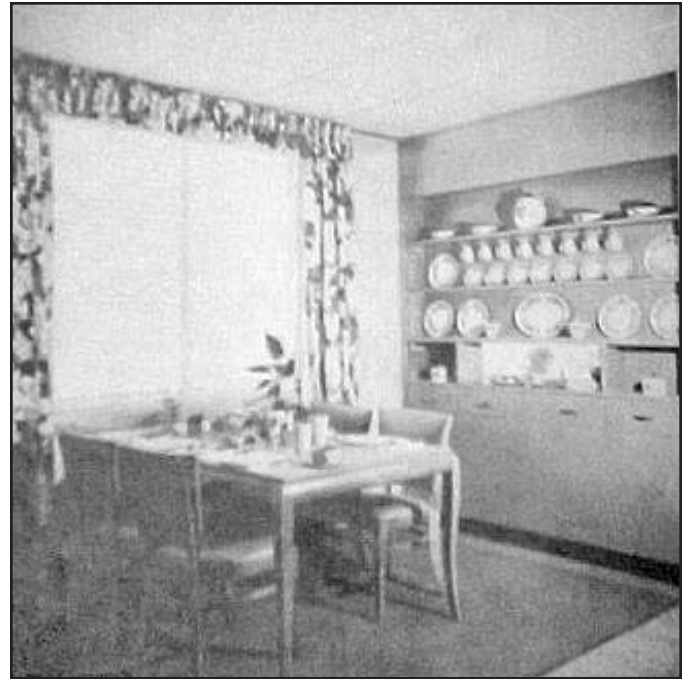
*Fig. 8: Lustron homes included efficiency sized kitchens with modern conveniences and designs that flowed into the dining room spaces.*

product was sold in. These costs did not include the cost for foundation, utilities, or freight charges. In North Carolina, a Lustron home could be purchased for a price between \$4440, again for the two-bedroom Newport, to \$7087 for the three-bedroom Westchester Deluxe. Price varied even within the state of North Carolina.

According to Lustron Corporation documents, 35 Lustron Homes were sold within the state of North Carolina. Feters has been researching the Lustron Home for over 20 years and has recorded the model, color and, when available, serial number of 2000 of the 2498 Lustron homes constructed in the United States. He has identified only 13 of the 35 that were constructed in North Carolina. Greensboro was home to three Westchester two-bedroom models. One of these was demolished in 2000. Of the two survivors, one has grey porcelain enamel siding and the other, blue siding with yellow trim. The unusual colors of the Lustron Home, designed by colorist Howard Ketchum, included dove gray, pink, surf blue, desert tan, maize yellow, blue-green, green and white and have become a trademark and a unique characteristic of the architecture and style of the product.

## **Conclusion**

The Lustron Home in design and theory met the needs of America's housing shortage. It provided cutting edge modernity and also met what had developed



*Fig. 9: The Lustron dining room with pass-through to kitchen in built-in.*

as the expectations in housing design of the first half of the 20th century. The prefabricated design, once perfected, could have provided the mass production of housing to meet the government and nation's needs. Yet, difficulties in the production and execution of the product left Strandlund abandoned when the federal government chose to no longer financially support the Lustron Corporation through subsidies and loans. In short, the Lustron Corporation, which evolved out of Chicago Vitreous Enamel Products Company, could not afford to continue production lines on their own and manufactured their last steel house in 1950, only 4 years after Strandlund first made his initial pitch to Wilson Wyatt. In a somewhat disheartening unfolding of events, it was at this point that Strandlund had finally perfected the operations of his steel house production methods but had no money to continue his efforts.

Over the course of the Lustron Corporation's existence, the company received over 404,061 letters and inquiries of support and interest. People who had attended the model home openings across the eastern half of the country lined up to view "the house America is talking about," as the company slogan proclaimed. Today, the Lustron home still embodies the trends that developed out of the Progressive movement and homeowners have learned to adapt to the new housing trends of more recent generations. Cleverly designed additions have enlarged the Lustron home for many current homeowners with second bathrooms and additional space, the desires that have become necessities of our modern society.

Present day Lustron homeowners, some who have lived



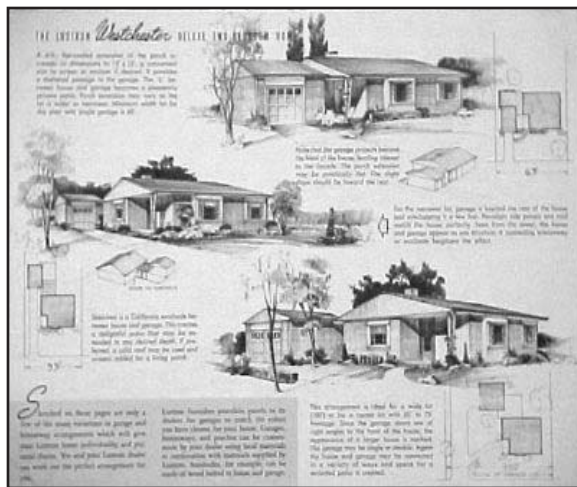


Fig. 10: Variations on the Westchester Deluxe two-bedroom models. Greensboro's Lustrons are both Westchester two-bedroom models.

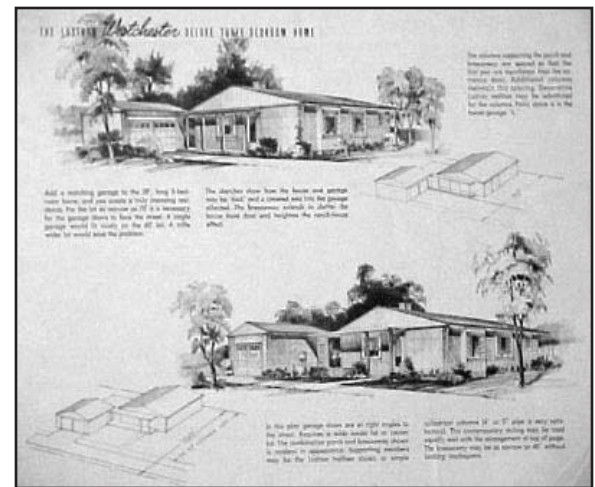


Fig. 11: Variations on the Westchester Deluxe three-bedroom models.

in their home since its construction, are working to organize for the preservation of these unique examples of the nation's built environment. The first Lustron Home Preservation Convention was held in Columbus, Ohio, June 19-20, 2004. This new preservation movement would agree with Wilson Wyatt's exclamation when he first saw the Esquire prototype in 1946; the Lustron Home was indeed "a sensationally good idea."

*The Historic Dimension Series is a collection of briefs prepared by UNCG students under the direction of Professor Jo Ramsay Leimenstoll. For information on other topics in the series, contact Professor Leimenstoll. email: jrleimen@uncg.edu, phone: 336/256-0303.*

## Bibliography

- Auer, M. J., Burns, J. A., & Jandl, H. W. (1991). *Yesterday's houses of tomorrow: innovative American homes 1850-1950*. Washington, DC: The preservation Press National Trust for Historic Preservation.
- Fetters, T. (2002) *The Lustron home: the history of a post-war prefabricated housing experiment*. Jefferson, NC: McFarland and Company, Inc. Publishers.
- Fish, J. (Producer). (2002, September 27). *Modern marvels: Home tech*. [Television broadcast]. New York: A&E.
- Gowans, A. (1986). *The comfortable house*. Cambridge: The MIT Press.
- Handlin, D. P. (1979). *The American home: Architecture and society, 1815-1915*. Boston-Toronto: Little, Brown and Company.
- Hayden, D. (2002). *Redesigning the American dream: gender, housing, and family life*. New York, W.W. Norton and Company.
- Lustron Home Preservation Convention website. Retrieved September 17, 2004 from [www.members.tripod.com/~Strandlund/index-10](http://www.members.tripod.com/~Strandlund/index-10).

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Ohio Historical Society website. Retrieved September 17, 2004 from [www.ohiohistory.org/etcetera/exhibits/kilroy.html](http://www.ohiohistory.org/etcetera/exhibits/kilroy.html)

Piranhagraphix website. Retrieved August 31, 2004 from [www.piranhagraphix.com/Lustron/Facts and Links.html](http://www.piranhagraphix.com/Lustron/Facts and Links.html)

Snyder, T. (1984, August/September). Lustron: a prefabricated ranch house of porcelainized steel. *Fine Homebuilding*, 22, 27-32.

Wright, G. (1981). *Building the dream, a social history of housing in America*. New York: Pantheon Books, 1981.

## Acknowledgments

- Figure 1: Piranhagraphix website, [www.piranhagraphix.com/lustron](http://www.piranhagraphix.com/lustron)
- Figure 2: Wright, p. 211.
- Figure 3: Gowan, p. 78.
- Figure 4: Getters, p. 20.
- Figure 5 & 6: Fetters, pp. 70-1.
- Figures 7-11: Lustron. A New Standard for Living website, [www.members.tripod.com/~strandlund/index-2.html](http://www.members.tripod.com/~strandlund/index-2.html)