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Publication Date

2020

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Designing the Tract House: Home Builders and the New American Domestic Landscape,
1934-1959

By

Elaine Brown Stiles

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Architecture

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Margaret Crawford, Chair

Professor Emeritus Paul Groth

Associate Professor Greg Castillo

Professor Margaretta Lovell

Summer 2020

Abstract

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In the brief twenty-year between the late 1930s and the late 1950s, US home builders rehoused millions of Americans, reshaping the dominant character of domestic space and decisively shifting in the nation's residential landscape from the city to the suburbs. Existing scholarship on the common, suburban tract house tends to treat the products of this housing revolution as interchangeable, rote objects and to address their makers as monolithic, anonymous capitalist forces. As a result, the common suburban tract house remains an undisciplined object that falls outside dominant histories of design.

There is, however, a rich design story behind common suburban tract houses. Seeing this story requires writing a design history of tract housing that looks at these objects not according to the prevailing standards of professional architecture or architectural design, but in the context of the design objectives, design values and design environments of their makers. This study examines the emergence of a culture of design practice among large-scale home builders in the decades bracketing World War II in order to construct a better understand the process of commoditized housing design and foster better interpretation and contextualization of common suburban tract houses as design objects.

Between the establishment of the Federal Housing Authority (FHA) in 1934 and the late 1950s, home builders engaged in vigorous discourse on the nature and goals of their work in trade and popular shelter publications and the proceedings of building industry conventions and gatherings. The study draws on that discourse to examine how the political economy of housing development in the pre- and post-World War II periods, from an emerging US housing policy to treating housing as a commodity - shaped the builders' design objectives, conceptions of "good design," and the physical form and character of period housing. The study also examines builders' design methods and practices, recasting the borrowing, adaptation, and merchandising of housing models as key elements of builders' design work.

The study repositions the nature of authorship for tract housing, recognizing the builder as a design director who worked in tandem with multidisciplinary design teams and, most

importantly, directly and indirectly with consumers to coproduce housing models. In these efforts, builders tailored their work to specific local conditions, reconciling economic, cultural, geographic, and social factors into the form of a material object. These dynamics make tract houses inescapably local material cultural expressions even when in dialog with national design trends. The collaborative authorship and coproduction dynamics of tract housing design and the localized adaptation of their forms also position tract houses as a form of vernacular architecture created in a dynamic and rapidly changing marketplace – a market vernacular. Like other forms of vernacular architecture, tract houses can be read as indices of cultural and social patterns at local and regional scale, as well as indicators of the diffusion and acceptance of design ideas.

The power of the local in tract housing design goes beyond the object itself, however. Even in the face of a rapidly organizing and nationalized home building industry, local markets remained important testing and proving grounds for new building and design ideas. The San Francisco Bay Area of California was a critical center of housing design leadership in the period. This study examines the work of three design leaders in the home building industry from the Bay Area – Henry Doelger, David Bohannon, and Earl Smith –to demonstrate how local design and production experimentation advanced the methods, practices, and habits of the larger national building culture during both World War II and the postwar periods. The Bay Area was an important point of diffusion for the “California method” of building, involving engineered design, precutting, selected preassembly, and staged sequential construction, later to gain fame in the Levitt & Sons’ Levittown, New York development. The region was also the first location for widespread construction of FHA-insured tract housing with cost-saving elements of Modern styling, pioneered by Earl Smith.

Smith, Bohannon and Doelger were able to influence national home building through the increased organization and professionalization of the home building industry in the mid-twentieth century, facilitated primarily through the National Association of Home Builders. Through networks of builder-to-builder exchange and industry-centered research, home builders codified and diffused bodies of design knowledge and best practices in design and production to solidify their position as the primary answer to Americans’ housing needs. The result was the emergence of a distinct design community that intersected with, but fundamentally differed from professional architecture and a burst of housing design development and creativity brought about not by architects, but by home builders.

ACKNOWLEDGEMENTS

This dissertation, like any long-term project, is not the work of one individual. It was conceived, researched, and written in partnership and community with many others. Chief among these have been my dissertation committee members, Margaret Crawford, Paul Groth, Greg Castillo, and Margaretta Lovell. Each of you has given me tremendous gifts over the past nine years through your teaching and mentorship, and I am grateful for your good counsel, good humor, and encouragement.

The seeds of this dissertation were planted while I was working as a program officer in the Western Regional Office of the National Trust for Historic Preservation in San Francisco in the late 2010s. I had the pleasure and honor to work there with two of the finest women in the field of historic preservation, Anthea M. Hartig and Christine Madrid French. Thank you to both of you for your guidance, mentorship, and friendship and for opening my eyes to the complexities and richness of new landscapes. Working with you both on the TrustModern program first piqued my interest in the suburbs and the stories they held. Since then, many other fine colleagues have encouraged my interest, including my many fine colleagues in the Vernacular Architecture Forum. I also owe a debt to Richard Harris, whose 2008 published talk, “Tulips in Winter: A Sales Job for the Tract House” was a major inspiration for the direction of this work.¹

While working on this dissertation, I was fortunate to be surrounded by a talented and supportive group of student colleagues at the University of California, Berkeley who read drafts, gave comments, cheered me on, and kept me going. Valentina Rosas-Krause, Alec Stewart, Jaime Gomez, Trude Renwick, Noah Allison, Stathis Gerostathopoulos, and Eric Peterson, thank you for welcoming me into your writing group while I was in the final stages of this work. The sense of community you gave me while working on the dissertation from afar was invaluable. Mia Ritzenberg-Crary, Abingo Wu, Swetha Vijayakumar, and Peter Ekman, thank you for all the good conversations, check-ins, and words of encouragement along the way. Thank you as well to the members of the student Berkeley Americanist Group, convened by Margaretta Lovell, for their collegiality. I began a teaching position before finishing this study, and I also owe thanks to my colleagues at the School of Architecture, Art, and Historic Preservation at Roger Williams University for their support and for spurring me on. I would especially like to thank Ginette Wessel, Leonard Yui, and Anne Proctor for their support, good advice, and always lending a kind ear.

I have always said a good archivist or librarian is worth their weight in gold, and if this dissertation isn't proof of that, I don't know what is. Researching home builders is not always an easy task, and many repositories and archives big and small helped make this project possible. A great debt of thanks goes to Rick and Megan Prelinger and their magical Prelinger Library in San Francisco. Every Wednesday for months, I visited this treasure trove of

¹ Richard Harris, “Tulips in Winter: A Sales Job for the Tract House,” *Buildings & Landscapes: Journal of the Vernacular Architecture Forum* 15 (October 1, 2008): 1–10, <https://doi.org/10.2307/27804880>.

publications, ephemera, and archival material on the home building industry and the work in the library formed the central basis of my research. I carefully worked my way through decades of trade journals available almost nowhere else west of the Mississippi River, gaining an invaluable portrait of the discourse among builders in the mid-twentieth century. The Prelingers' vision and community spirit in collecting, salvaging, and making these materials available to the public at no cost, and with no restrictions on use, has earned my deep admiration and gratitude. The David D. Bohannon Organization in San Mateo, California, the San Lorenzo Village Association in Alameda County, California, and Waverly Lowell at the Environmental Design Archives in the College of Environmental Design at UC Berkeley were critical in the research on David Bohannon's career and developments. Marcus Gonzalez and Dana Smith at the History Guild of Daly City, Daly City, California, historian Rob Keil, and the staff at the Westlake branch of the Daly City Public Library generously provided archival access and research on the work of Henry Doelger. The historians at the San Francisco Planning Department, Preservation Division, especially the late Mary Brown, laid much of the ground work for the research on Henry Doelger's developments in the City and County of San Francisco. Duncan Smith, son of home builder Earl Smith and Dave Weinstein at the Eichler Network generously made family archives and research materials available on Smith's career and houses. Diane Curry, Curator & Archivist and John Christian, Assistant Archivist at Hayward Area Historical Society, in Hayward, California; Nancy Hadley, Senior Manager of Archives & Records at the American Institute of Architects in Washington, DC; and staff at the Library of Congress were helpful with research that covered a variety of builders and the relationship between the building industry and the professional architecture community. Thanks are also owed to David Eifler and the staff at the Environmental Design Library in the College of Environmental Design at UC Berkeley for their assistance and advice on source materials for this research.

As the mother of two small children at the outset of this project, having a "third place" to work was essential to making progress. Julie's Coffee and Tea in Alameda, California and the Old Lyme Phoebe Griffin Noyes Library in Old Lyme, Connecticut were second homes for much of the writing of this dissertation, and provided a welcome haven in which to focus.

In closing, I've saved the deepest thanks for last. There are a few people who, if it was not for them, I would not have started, let alone finished this project. To Claire Dempsey, my teacher, mentor, and friend for almost twenty years, thank you for saying to me on more than one occasion, "When are you going to go get a PhD?" Your confidence in me gave me confidence in myself, and your good advice over these many years has never steered me wrong. To my dear friend, Eliana Abu Hamdi, you taught me what friendship truly means as you supported me, pushed me, made me laugh, kept things real, and were simply there for me no matter what through this long experience. I am so grateful for you. And finally, the biggest thank you to my husband, Rob Stiles, and my children, Milo and Madeline, who gave up many hours with me, put up with many grumpy moments, and still managed to cheer me along. Thank you for your love, your "you can do it" chants, and keeping me grounded when I needed it. I love you all very much!

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INTRODUCTION

In April 1949, the building and architecture trade publication *Architectural Forum* devoted an entire issue to the work of merchant builders for the first time. “Ten years ago,” the article stated, “this would have been impossible. Enough noteworthy builder houses to fill 70 editorial pages did not exist.”¹ The introduction to the issue explained that before 1939, the work of merchant builders, which amounted to about half of all housing starts each year, was “peripheral” in both design and scale, consisting of houses that were “little more than overstyled boxes.”² By the late 1940s, however, things had changed. Across the nation, *Architectural Forum* reported, speculative home builders were embracing new design approaches, incorporating new methods of production, experimenting with elements of modern and contemporary design, and engaging with a variety of design professionals.

The changes *Architectural Forum* observed constituted a transformative period in American domestic design that had profound impacts on the American landscape. Between 1940 and 1950, the US gained 7,443,000 new homes, with private builders constructing 96 percent of that figure.³ In roughly the same period, the increase in the number of nonfarm homeowners exceeded the total gains in home ownership from the preceding 150 years.⁴ In short, the American home building industry rehoused millions of Americans in the brief twenty-year period between the late 1930s and the late 1950s, effecting a decisive shift in the dominant residential landscape from the city to the suburbs.

The historical explanations for this great rehousing are well documented. The Great Depression and World War II effected massive housing shortages in the US due to economic stagnancy, mass migrations, and freezes on civilian building. Postwar housing development boomed in response to demonstrated need as well as stabilized mortgage credit markets and greater consumer access to credit through federal mortgage insurance programs administered by the Federal Housing Administration. Federal mortgage insurance standards and development guidelines incentivized construction of affordable, single-family dwellings within the reach of most working- and lower-middle-class buyers in the period, ushering millions of families into homeownership for the first time. Advancements in building technology, construction techniques, and material innovations supported faster, better quality housing construction for lower levels of the socioeconomic scales than builders had focused on in the past.

Until recently, the architectural historical narratives accompanying this transformation have largely focused on tracks that one might call “the big” and “the beautiful.” Gargantuan examples of postwar suburban housing development such as William Levitt’s Levittowns in New

¹ “The Builder’s House 1949,” *Architectural Forum* 90, no. 1 (April 1949): 81.

² “The Builder’s House 1949,” 81.

³ Joseph B. Mason, *History of Housing in the U.S., 1930-1980* (Houston: Gulf Pub. Co., Book Division, 1982), 31.

⁴ Martin Mayer, *The Builders: Houses, People, Neighborhoods, Governments, Money*, 1st ed (New York: Norton, 1978), 8; quoting Lou Winnick on housing statistics between 1940 and 1956.

York (1947) and Pennsylvania (1952) or Louis Boyar, Mark Taper and Ben Weingart's Lakewood, California (1949-1953) dominate accounts of the affordable end of the period housing scale. Levittown and Lakewood are often stand-ins for disembodied and abstract influences on housing design in the period: federal housing standards, period political economy of housing, technical innovations in building, new materials, social and cultural factors, the influence of modern design, and consumer influence to name just a few. Alternatively, scholarship on suburban dwellings focuses on the artistic house through the work of builders who used professional, usually Modernist architects or the efforts of professional architecture to influence common housing design. Popular and scholarly works on the careers of California builder Joseph Eichler, southern California architect E. William Krisel, and the canonization of *Arts & Architecture* magazine's Case Study House series (1945-1962) exemplify this second approach. Scholarship on the common, seemingly anonymous suburban built environment tends to treat its makers as monolithic, anonymous capitalist forces and the houses as interchangeable, "you've seen one, you've seen 'em all" objects. As a result, the common suburban tract house is among what the material culture scholar Judith Attfield called "wild things," – undisciplined objects that fall outside dominant histories of design.⁵

As recent works by scholars such as Dianne Harris, James Jacobs, and Barbara Miller Lane have shown, the design environment and design products of the American home building industry in the mid-twentieth century were considerably more complex than previous scholarly treatment has allowed. There is, in fact, a rich design story behind the common suburban tract house, and it is a story centered on home builders as designer. Between the establishment of the Federal Housing Authority in 1934 and the late 1950s, home builders engaged in vigorous discourse on the nature and goals of their work and the issues that drove their design approaches. Through increased organization and professionalization, home builders developed bodies of design knowledge, articulated sets of design values, and fostered design practices to answer consumer demand and neutralize threats to its affordable housing markets. The result was the emergence of a distinct design community that intersected with, but fundamentally differed from professional architecture and a burst of housing design development and creativity brought about not by architects, but by home builders. Common suburban housing design in the period was a negotiation between producer and consumer, in which one figure – the builder – reconciled factors as diverse as popular national design trends, local housing markets and housing culture, technological and material innovations, government standards, and financing models. These negotiations and reconciliations took place amidst the pressures of a national housing crisis, an emerging US housing policy, racial politics, and the specter of government-sponsored public housing for working and lower-middle class Americans.

This study examines the emergence of a culture of design practice among large-scale home builders in the decades bracketing World War II in order to better understand the process of commoditized housing design and better interpret and contextualize common suburban tract houses as design objects. The central questions in this study revolve around how builders

⁵ Judy Attfield, *Wild Things: The Material Culture of Everyday Life*, Materializing Culture (Oxford: Berg, 2000), 5.

conceived of their design work, understood their design environment, and established design values and objectives. Existing scholarship on suburban housing development weighs heavily toward consideration of the house-as-object or the subject-object relationship between house and home buyer. When scholarship considers builders, it typically positions them as producers and retailers of housing, but treads uncomfortably around the role of the builder in design. Discomfort over disciplinary definitions of design effectively excludes critical figures and a collective force in the creative process during a major period of change in American housing culture. Understanding the nature of suburban housing design requires not just expanding the definition of what is and is not designed, but also who is or is not a designer. Suburban homes were designed, and builders were often their chief designer.

This is not strictly a story about individual builders or their buildings, however. Design scholar Richard Buchanan argues that “The history of design is not merely a history of objects. It is a history of the changing views of subject matter held by designers and the concrete objects conceived, planned, and produced as expressions of those views.”⁶ This conceptual space in which designers work, Buchanan argues, should be primary in considering designers’ output because this positionality shapes the formation of design values and objectives, what forms of building knowledge are useful, and the range of potential design solutions. This study begins with an examination of the relationship between builders’ conceptual design environment and their design methods and practices - what design scholar Lucy Kimbell called the nexus of minds, bodies, artifacts, and institutional arrangements “within which designs and their users are constituted.”⁷ Collectively, these actions form what Kimbell calls “design as practice,” in which design can be understood “as a set of contingent, embodied routines that reconfigure the socio-material world, and which are institutionalized in different ways.”⁸ Builders institutionalization of their design practice is another major focus of this study, which delves into how builders organized their staffing models and design labor patterns, utilized research, and engaged in design development activities.

Within the home building industry, certain builders and regional building markets shouldered the bulk of the risk in experimenting with new techniques, materials, and house plans or forms to improve their products. Housing economist Sherman Maisel estimated in 1950 that approximately one-third of builders in the industry took on the role he described as “design leaders.”⁹ These builders and their local markets functioned as de facto design laboratories for the remaining two-thirds of builders who might lack the resources or risk tolerance to experiment with new designs or methods. Existing scholarship bends more heavily toward the vast horizontal spread of Los Angeles in discussing wartime and postwar suburban

⁶ Richard Buchanan, “Wicked Problems in Design Thinking,” *Design Issues* 8, no. 2 (1992): 19, <https://doi.org/10.2307/1511637>.

⁷ Lucy Kimbell, “Rethinking Design Thinking: Part II,” *Design and Culture* 4 (July 1, 2012): 131, <https://doi.org/10.2752/175470812X13281948975413>.

⁸ Kimbell, 141.

⁹ Sherman J. Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area* (Berkeley: University of California Press, 1953), 110–11, 258.

growth and innovation.¹⁰ However, the San Francisco Bay Area of California was a critical center of design leadership in the period. Local design and production experimentation in the Bay Area advanced the methods, practices, and habits of the larger national building culture during both World War II and the postwar periods.

The scope of housing need, design culture, and market profile of the San Francisco Bay Area made it fertile ground for a leadership role in housing design development. The population of the Bay Area grew by 70 percent between 1930 and 1950, swelled by the massive military buildup in the region as the official point of embarkation for troops to the Pacific theater and the tremendous development of war industries and influx of industrial workers.¹¹ The rapid construction of large numbers of dwellings necessary during the World War II build-up in the region jump-started the large-scale housing industry there, allowing them to experiment with design and production techniques with the assistance of government financing guarantees. Between 1940 and 1950, the Bay Area gained 247,000 units of housing, one-fifth of which were dedicated to war-related housing – a figure representing probably the largest concentration of war housing in the nation. By the postwar period, Bay Area builders were more than ready to build market housing on a large scale.¹²

The design leadership of the Bay Area did not escape contemporary observers, who regularly called out the region for its innovative methods, strong design sense, and housing quality. In 1947, *Collier's* magazine profiled the “new breed of builder” working in the San Francisco Bay area building market who built houses by the hundreds, set them in planned communities, employed factory-like building methods, and employed hundreds of laborers as well as architects, economists, accountants, and planners. These builders stood in stark contrast to, “the average builder, as generations of Americans have known him,” who “carries his office in his hat, does his bookkeeping at home nights, owns no equipment, has no labor force.”¹³ Sherman Maisel observed in his study of the Bay Area housing market in the early 1950s that “Bay area builders have generally been more dynamic and inventive and have done a far better job in improving their product than housebuilders as a whole.”¹⁴ The same held true in the 1950s when NAHB Executive Vice President Frank Cortright singled out San Francisco, along with Los Angeles and New York, as a center of design and merchandising innovation.¹⁵

¹⁰ See for example Greg Hise, *Magnetic Los Angeles: Planning the Twentieth-Century Metropolis* (Baltimore: Johns Hopkins University Press, 1997); Marc A. Weiss, *The Rise of the Community Builders: The American Real Estate Industry and Urban Land Planning*, *The Columbia History of Urban Life* (New York: Columbia University Press, 1987).

¹¹ Metropolitan Transportation Department and Association of Bay Area Governments, “Population by County, 1860-2000,” Bay Area Census, accessed June 19, 2018, <http://www.bayareacensus.ca.gov/historical/copop18602000.htm>.

¹² Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area*, 12–13.

¹³ Lester Velie, “Housing: No Answer in San Francisco,” *Collier's*, January 11, 1947, David D. Bohannon Organization.

¹⁴ Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area*, 113.

¹⁵ Frank Cortright, “Today’s Tough Selling Market Is the Smart Builder’s Big Chance,” *House & Home*, September 1956, 142.

Among those profiled in the April 1949 issue of *Architectural Forum* were two builders from northern California: David D. Bohannon and Earl Smith. Bohannon and Smith, along with local colleague Henry Doelger, were some of the largest and most influential home builders in the nation in the 1940s. Their work presents a cross section of large-scale home building activity in a single market, illustrating the range of design development available to consumers in a single locale and how builders used product design development to negotiate competitive environments.

More importantly, Doelger, Bohannon, and Smith's careers offer a window into how local and national discourse on home building intersected and reciprocally influenced each other. As James Jacobs has argued, the mid twentieth century marked an emergence of national trends in domestic design through factors such as FHA housing standards. But other scholars, such as architectural historian Thomas Hubka, stress that even amidst an increasingly national housing culture, builders' work remained inherently tied to local conditions. Hubka argues strongly for the significance of builders' mutual influence, contending that while new ideas in common home building did trickle down from elite taste or professional architectural discourse, they more often circulated in a side-to-side manner from builder to builder.¹⁶ In light of this, Hubka calls for more attention to the influence of the local on the national, as opposed to the national on the local.¹⁷ This study examines interactions and mutual influences between local and national design influences in the home building industry, as well as the role of increased professional organization, communication, and networks of design exchange in gathering, distributing, and institutionalizing home building design information and methods. Doelger, Bohannon, and Smith's work influenced builders around the country because of their close connection to the increasingly organized system of design exchange among builders in the period through professional organizations like the National Association of Home Builders and the home building trade media. The patterns of exchange these institutions fostered through their programs, publications, educational initiatives, research programs, and annual convenings are the most overlooked formative factors in period mass housing design. These circuits of exchange and influence engage with the largest questions, and ultimate significance, of this study regarding the dynamics of vernacular building and design culture and relevant frameworks and scales for interpreting the common suburban tract house as a designed object.

Historical and Architectural Historical Perspectives on Twentieth Century Suburban Development

The literature on the history and architectural history of twentieth-century suburban development grows continuously and, as it grows, pursues greater balance between necessary reductism in addressing a common national landscape type and the complexity and difference one encounters in these landscapes at the local level. Pioneering historical works such as Kenneth Jackson's *Crabgrass Frontier: The Suburbanization of the United States* (1985), Dolores

¹⁶ Thomas C. Hubka, *Houses Without Names: Architectural Nomenclature and the Classification of America's Common Houses* (Knoxville: Univ Tennessee Press, 2013).

¹⁷ Hubka.

Hayden's *Building Suburbia: Green Fields and Urban Growth, 1820-2000* (2004), Robert Fishman's *Bourgeois Utopias: The Rise and Fall of Suburbia* (1987), Robert Fogelson's *Bourgeois Nightmares: Suburbia, 1870-1930* (2007), and John Stilgoe's *Borderland: Origins of the American Suburb, 1820-1939* (1988) took the massive, sprawling subject of suburbia and condensing it into periodized, representative accounts of political economic, cultural, and social trends and events, characteristic neighborhood and building types, and largely middle-class, white inhabitants. These authors present suburbs not only as a reaction against the excesses of modern urbanism, but also as a planned form of urban growth incentivized by government and sorted by race and class. From this research, we understand how innovations in transportation and building technology fueled suburban growth, as did consumers' desires for greater privacy, "natural" living environments, and middle-class status.¹⁸ These works also offer foundational critiques of suburban spaces and social landscapes, particularly the social, economic, and racial inequities in the "sorting" process of suburbanization, the excesses of consumer capitalism, and critiques of the suburban built environment as compared to alternative housing strategies.

Critiques formed the entire subject of historical works that followed, including Gail Radford's *Modern Housing for America: Policy Struggles in the New Deal Era* (1996) and Lizbeth Cohen's *A Consumer's Republic: The Politics of Mass Consumption in Postwar America* (2003). Both works illustrate the political aspects of housing development and consumption in the pre- and post-World War II eras, highlighting the struggles between progressive housing reformers and capitalist building interests in shaping emerging US housing policy and the gradual equation of consumption – including home ownership – with citizenship.¹⁹ This dissertation benefits from the broad-spectrum narrative on the historic, sociocultural, and economic roots of the suburbs, their rapid growth, and what this landscape represented for Americans, but pushes beyond these often universally-applied narratives to better understand local specificities and the design nexus with the broader political economy of the period.

Architectural histories of twentieth-century suburban development similarly documented broad trends and common design values in suburban development, though often treating the buildings as a monolithic whole and paying little attention to their makers. Works such as Gwendolyn Wright's *Building the Dream: A Social History of Housing in America* (1981) and Dolores Hayden's *Building Suburbia: Green Fields and Urban Growth, 1820-2000* (2004) detail many of the inputs for suburban housing in the mid-twentieth century, including market and social science research; standards espoused by Modernists; the influence of the FHA, and the national politics involved in the bend toward detached single-family housing. Clifford Clark's *The American Family Home* (1986) stands out for positioning mid-twentieth-century suburban housing as a design endeavor based on neutral, functional analysis and shaped by cost,

¹⁸ Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1985); Dolores Hayden, *Building Suburbia: Green Fields and Urban Growth, 1820-2000*, 1st Vintage Books ed (New York: Vintage Books, 2004); John R. Stilgoe, *Borderland: Origins of the American Suburb, 1820-1939* (New Haven: Yale University Press, 1988).

¹⁹ Gail Radford, *Modern Housing for America: Policy Struggles in the New Deal Era*, Historical Studies of Urban America (Chicago: University of Chicago Press, 1996); Lizbeth Cohen, *A Consumer's Republic: The Politics of Mass Consumption in Postwar America*, 1st ed (New York: Knopf, 2003).

technology, and efficient production techniques. As surveys, however, these accounts rely on broad trends and forces rather than actors and outstanding, but atypical case studies like Levittown, New York or Park Forest, Illinois to define the conversation. The result is an overemphasis on the seeming universality of suburban housing and little that speaks to the diversity of suburban housing forms on the ground.

A steady and growing stream of scholarship over the last thirty-five years has enriched and at times, challenged earlier historical and architectural narratives by more closely examining the relationships between producers, institutions, and consumers in coproducing the suburban built environment. Barbara Kelly's *Expanding the American Dream: Building and Rebuilding Levittown* (1993) was an important, early inquiry into the dialogic relationship between builders and buyers in matters of housing design and meaning. In her examination of Levittown, New York, Kelly positioned the homeowner as a co-producer of the domestic environment, with producer and consumer mutually influencing each other. Kelly discusses the Levitts' strategy of reproducing a set of design values accepted and desired in the lower-income market, but the primary focus of her work was on how homeowner changes to houses over time served to assert their identities in the suburban landscape over time.²⁰ Greg Hise's *Magnetic Los Angeles* (1997) offered new perspectives on the diverse institutional origins of the minimum house standards later diffused by the FHA, as well as the role of period political economy in pushing this housing type and suburban development. His research traces builders' and housing reformers' efforts to "isolate, codify, and manufacture a standard, low-cost minimum house" for wage earners from the Progressive era through to the Modern movement, as well as the planned decentralization of Los Angeles into a series of suburban industrial nodes. Hise demonstrates the intense design development interest in the period focused on creating more efficient, volume housing production primarily through the work of philanthropic, governmental, and industrial entities. This study expands the scope of that work by examining these developments from the perspective of the home building design culture that vetted, adapted, and executed these ideas on the ground.²¹

Beginning in the 2000s, a group of urban scholars interested in suburban environments began reexamining the dominant, relatively cohesive narratives of suburban development history. Thomas Sugrue and Kevin Kruse's edited volume *The New Suburban History* (2006) redefined the focus of suburban scholarship from one of universalism to one of fragmentation.²² Earlier suburban history, they maintained, was too narrow in its demography and geography, reifying a stereotype of suburban zones as primarily white, homogenous, conformist, and bourgeois. Previous work overlooked, or simply neglected, the presence of minorities and blue- and pink-collar enclaves, but more importantly downplayed the proliferation and fragmentation of local government within metropolitan areas, and by

²⁰ Barbara M. Kelly, *Expanding the American Dream: Building and Rebuilding Levittown*, SUNY Series in the New Cultural History (Albany: State University of New York Press, 1993).

²¹ Hise, *Magnetic Los Angeles*.

²² Kevin Michael Kruse and Thomas J. Sugrue, eds., *The New Suburban History*, Historical Studies of Urban America (Chicago: University of Chicago Press, 2006).

extension, the suburban landscape.²³ As the body of new suburban history grows, the diversity, complexity, and intertwined nature of social, political, and economic aspects of suburban development in the US past and present grows ever more apparent. The usefulness of examining the fragmented patterns of metropolitan suburbs is demonstrated through works like Becky Nicolaides' *My Blue Heaven: Life and Politics in the Working-Class Suburbs of Los Angeles, 1920-1965* (2002), Robert Self's *American Babylon: Race and the Struggle for Postwar Oakland* (2003) and Kruse and Sugrue's independent works, *White Flight: Atlanta and the Making of Modern Conservatism* (2005) and *The Origins of the Urban Crisis: Race and Inequality in Postwar Detroit* (2005), respectively.²⁴ Other works such as Andrew Weise's *Places of Their Own: African-American Suburbanization in the Twentieth Century* (2004) and Wei Li's *Ethnoburb: The New Ethnic Community in Urban America* (2009) pushed back against notions of homogeneity, at least in aggregate, in suburban landscapes. Collectively these works reveal the fragmented economic, social, and political diversity of the suburban landscape and the impact of suburbanization on metropolitan politics and power.

Architectural historians also became increasingly interested in the political economy and diversity of suburban districts in the early 2000s. The first decade of the new millennium brought a rash of new scholarship on the suburban built environment and its makers, some directly informed by new suburban history scholarship. Many of these studies focused on drawing attention to suburban sites with progressive architectural or planning pedigrees or complicating the story of exceptional, large-scale sites like Levittown. These works by turn gave glimpses into the economic and political dynamics affecting the building industry or the discrete design decisions of individual builders. Interest in the Modernist houses of California developer Joseph Eichler, designed by Jones & Emmons and Anshen & Allen, for example, sparked works such as *Eichler: Modernism Rebuilds the American Dream* (2002). Other examinations of well-known builders and developments included Gregory Randall's *America's Original GI Town: Park Forest, Illinois* (2000), and Diane Harris's edited volume, *Second Suburb: Levittown, Pennsylvania* (2010). Harris's *Second Suburb* volume stands out with essays by Richard Longstreth and Curtis Miner discussing the market dynamics and values shaping housing design in the period.

Another branch of scholarship looked closely at the subject-object relationship and the cultural and social significance of common suburban housing to its users, but stopped short of addressing design process. John Archer's excellent study *Architecture and Suburbia: From English Villa to American Dream House, 1690-2000* (2005) offers a broad, theoretically-informed investigation of the psychosocial relationship between individuals, suburban

²³ Kruse and Sugrue, 5.

²⁴ Becky M. Nicolaides, *My Blue Heaven: Life and Politics in the Working-Class Suburbs of Los Angeles, 1920-1965*, Historical Studies of Urban America (Chicago: University of Chicago Press, 2002); Robert O. Self, *American Babylon: Race and the Struggle for Postwar Oakland*, Politics and Society in Twentieth-Century America (Princeton, N.J.: Princeton University Press, 2003); Kevin Michael Kruse, *White Flight: Atlanta and the Making of Modern Conservatism*, Politics and Society in Twentieth-Century America (Princeton, N.J.: Princeton University Press, 2005); Thomas J. Sugrue, *The Origins of the Urban Crisis: Race and Inequality in Postwar Detroit: With a New Preface by the Author*, 1st Princeton Classic ed, A Princeton Classic Edition (Princeton: Princeton University Press, 2005).

environments, and commoditized housing. Archer ultimately discounts the importance of the finished individual house as a meaningful entity, instead positioning the house and its suburban environs as a zone of opportunity for individuals to shape as they desired. Archer gives a nod to design values and makers in acknowledging the flexibility of twentieth-century suburban housing in allowing these changes, but is ultimately focused on users rather than makers in the suburban context.²⁵ Dianne Harris's *Little White Houses: How the Postwar Home Constructed Race in America* (2013) explores the communicative power of suburban housing design, arguing that period representations of the ordinary postwar house, its contents, and surroundings did the cultural work of constructing, recreating, and reinforcing established norms of white middle-class domesticity. In her exploration, Harris delves into rhetorical, iconographic strategies in period representations of middle-class suburban housing, but stops short of the underlying design thinking or methods that created these elements.²⁶

Builders, Housing Design, and Suburban Development

Examination of the role of the builder and the design dynamics of suburban housing have been few, and those looking at the mid-twentieth century even fewer. Works that have taken up questions of authorship and design method demonstrate the productivity of these line of inquiry in interpreting and understanding the suburban built environment. Sam Bass Warner's seminal work *Streetcar Suburbs: The Process of Growth in Boston, 1870-1900* (1962) focused on transportation-related drivers of growth in mid-to-late nineteenth-century Boston, but Warner also delved into questions of design decision making. His research examined who made decisions to build and what they decided to build, as well as the building patterns created by the repetition of these individual decisions. Warner studied builder design values and expertise, singling out the influence of builders' knowledge of their local geographies and markets on what and where they built homes. He also examined the market conditions that underwrote builders' decisions, citing their stylistic and formal conservatism and repetition of popular plans as a form of sales insurance.²⁷ Gwendolyn Wright's *Moralism and the Model Home* (1980) addressed a similar set of questions about how builders, architects, reformers, and the public decided what was appropriate for American homes at the turn of the twentieth century. Wright credited the interaction between architects and non-architects (including builders) not only with affecting change in the built environment, but also looked at the effects of politics and consumer input on housing design in the Progressive Era.²⁸ Carolyn Loeb's *Entrepreneurial Vernacular* (2001) offered historical context on the development of professional home building industry in the US during the 1920s and how the industry responded to and framed period housing issues. Loeb's work stands out for its consideration of authorship, shared bodies of

²⁵ John Archer, *Architecture and Suburbia: From English Villa to American Dream House, 1690-2000* (Minneapolis, Minn.: University of Minnesota Press, 2005).

²⁶ Dianne Harris, *Little White Houses: How the Postwar Home Constructed Race in America* (Minneapolis, Minn.: University of Minnesota Press, 2013).

²⁷ Sam Bass Warner, *Streetcar Suburbs: The Process of Growth in Boston, 1870-1900*, Publications of the Joint Center for Urban Studies (Cambridge: Harvard University Press, 1962).

²⁸ Gwendolyn Wright, *Moralism and the Model Home: Domestic Architecture and Cultural Conflict in Chicago, 1873-1913* (Chicago: University of Chicago Press, 1980); Clifford Edward Clark, *The American Family Home, 1800-1960* (Chapel Hill: University of North Carolina Press, 1986).

knowledge, design values, and the impact of political economy on design in the period. Marc Weiss's *The Rise of the Community Builders: The American Real Estate Industry and Urban Land Planning* (1987) similarly stands out for its investigation of the history and political economy of suburban development in the pre-World War II era and recognition of the home building industry as a major actor in shaping the American landscape. Weiss's work looked at how the home building industry and government actors jointly shaped land use and controls that protected large-scale community builders' projects, became public policy, and set the standard for modern residential development in the ensuing decades. Weiss focuses on issues of planning and land use controls rather than housing design or production, but demonstrates the usefulness of examining the private home builder as an active agent, rather than reactive producer, in the design of the suburban landscape in the twentieth century.

Perhaps not surprisingly, one of the earliest historical works studying the significance of the home building industry in the period was by an industry insider-turned-historian. Ned Eichler's *The Merchant Builders* (1982) was one of the earliest works to champion interest in the home builder as a critical figure. The son of California developer Joseph Eichler, historian Ned Eichler gave an in-depth, insider's account of the structure, organization, and decision-making processes of large-scale merchant builders based on his family's business and his later career in real estate development and finance. Eichler made a strong case for the usefulness of studying the building industry, arguing that understanding this industry in the mid-twentieth century was fundamental to understanding the way Americans lived today. Eichler's work gives important insight into that profession and its design thinking, outlining the pragmatic, economic, and political frameworks influencing builders' decisions. As a historian, however, Eichler focuses on issues of real estate development process rather than frameworks for design.²⁹

As architectural historical scholarship on the suburban environment has increased, new sets of questions about the role of the home building industry and builders in the design and character of suburban domestic architecture have emerged. Christopher Martin's 2000 dissertation, "Tract House Modern: A Study of Housing Design and Consumption in the Washington Suburbs 1946-1960," delved into how a single building firm adopted and adapted new design ideas – in this case, Modernism – for their markets. Martin demonstrated on a small scale the mixture of consumer taste, local market economics, and personal preferences inherent in one genre and geographic locale in period mass housing design.³⁰ Sian Winship's 2011 master's thesis, "Quantity and Quality: Architects Working for Developers in Southern California, 1960-1973" takes a broader approach, looking at the skills and bodies of building knowledge required for architects who designed tract housing for developers in the third

²⁹ Ned Eichler, *The Merchant Builders* (Cambridge, Mass: MIT Press, 1982).

³⁰ Paul Adamson, *Eichler: Modernism Rebuilds the American Dream*, 1st ed (Salt Lake City: Gibbs Smith, 2002); Gregory C Randall, *America's Original GI Town: Park Forest, Illinois* (Baltimore, Md.; London: Johns Hopkins University Press, 2003); Christopher T. Martin, "Tract-House Modern: A Study of Housing Design and Consumption in the Washington Suburbs, 1946--1960" (Ph.D., The George Washington University, 2000), <http://search.proquest.com/dissertations/docview/304619634/abstract/E6F4A694FB5F4419PQ/1?accountid=14496>.

quarter of the twentieth century in southern California. Her research gets at some of the key understandings for interpreting suburban tract housing as design objects, including framing them in as an exercise in product design, with significant influences from commercial and retail architecture.

Recent works have more directly taken up Ned Eichler's call to study the home builder and the home building industry as critical figures in the shaping of the American domestic built environment while also beginning to define the multiple design inputs builders reconciled in their work. James Jacobs' *Detached America: Building Houses in Postwar Suburbia* (2015) draws on vernacular architecture methods and building industry literature and discourse to offer a national perspective on postwar housing design, focusing on national trends in the spatial and evolutionary growth of common national housing forms. Jacobs explores the themes and trends that had the greatest effect on spatial organization of new house plans, but most importantly, begins to characterize the reciprocity between builders and consumers in making these buildings. As a national survey rooted in seeking commonalities, however, Jacobs' research stops short of addressing design decision making at smaller scales, giving little attention to issues of the builder as a design force.³¹ Anna Vemer Andrzejewski's "Selling Suburbia: Marshall Erdman's Marketing Strategies for Prefabricated Buildings in the Postwar United States" stands out for its call to investigate home builders as critical figures in postwar suburbanization and to take an integrative look at the implications of marketing in builders' housing design work.³² Barbara Miller Lane's, *Houses for a New World: Builders and Buyers in American Suburbs, 1945-1965* (2015) looks more intently at how the figure of the builder and his practices contributed to this landscape. Lane's work breaks new ground in its intense focus on makers and users rather than institutional forces. Like Jacobs, she argues that builders in concert with buyers 'made' the tract house developments and shaped housing design of the period. Lane establishes many important points, including positioning home builders' work as conforming to vernacular design processes and the divide between building culture and architecture culture in their approaches to building and design. Her research offers detailed portraits of builders and their work across the nation, highlighting the diversity of suburban housing design. This in itself is an important finding. However, Lane's investigations offer little about how builders made design decisions, their design values, or the complex political and economic aspects of the design environment in which builders functioned. In the end, Lane questions whether builders can be called designers, citing a rather narrow conception of what constitutes a designer – namely one that closely resembles the knowledge and skills of an architect.³³ Such hesitancy to address the blurring of these two career categories sparked, in part, this study.

³¹ James A. Jacobs, *Detached America: Building Houses in Postwar Suburbia*, Midcentury : Architecture, Landscape, Urbanism, and Design (Charlottesville [Virginia]: University of Virginia Press, 2015).

³² Anna Vemer Andrzejewski, "Selling Suburbia: Marshall Erdman's Marketing Strategies for Prefabricated Buildings in the Postwar United States," in *Making Suburbia: New Histories of Everyday America*, ed. John Archer, Paul J.P. Sandul, and Katherine Solomonson (Minneapolis: University of Minnesota Press, 2015).

³³ Barbara Lane, *Houses for a New World: Builders and Buyers in American Suburbs, 1945–1965* (Princeton: Princeton University Press, 2015).

Methodological Perspectives

To answer the question of who is, and who is not, a designer and what is, and is not, an act of design in the context of commoditized housing, the study puts aside common definitions framed by professional architecture or the fine arts. These disciplinary categories rely on the concept of single authorship and measure design value primarily by original creative expression. The fields of vernacular architecture studies, industrial design history, and environmental design usefully expand these categories to include cooperative authorship; technical solutions as components of design; and variations on central, accepted schemas as meaningful design practice. This study also relies on the closely-related organizational concepts of design culture and cultures of building, which usefully decenter the object and the individual maker to examine design practices within the context of sociocultural, political, and economic design environments; production; and design exchange.

Approaching common suburban tract houses as the products of vernacular design and the makers of these buildings as engaged in vernacular design processes offers a productive framework for approaching builders' work. Numerous scholars of the built environment over the past forty-five years have proposed that speculative, merchant builder housing is part of vernacular architecture and that such housing is useful in understanding period social and cultural landscapes. Architect Amos Rappoport's *House Form and Culture* (1969) posited that common house forms were the consequence of a range of socio-cultural factors then modified by climatic conditions, materials and method of construction available, technology, and vision of the ideal life.³⁴ Although Rapoport's work discussed primarily pre-industrial and/or non-Western patterns and dwellings, he tentatively applied the same conditions to popular housing, noting that the differences between popular and architect-designed housing can give insight into needs, values, and desires of modern people.³⁵ This modern vernacular in Rapoport's estimation is a type of dwelling born of the specific need of a group in turn "felt" by an entrepreneur.³⁶ Cultural landscape scholar J.B. Jackson positioned the merchant builder similarly, describing him as someone who had come up with a "good working definition of vernacular architecture" as a "confrontation between aspirations" and "the realities of the environment – natural, social, economic."³⁷ Dell Upton goes further, positioning contemporary commoditized domestic architecture as the reflection of the understanding of the builder as to what clients desired – an understanding based on concrete and abstract, perhaps tacitly understood factors.³⁸ Upton interprets builders' artistic expression as a deconstructivist and postmodern layering of allusions and fragmented references, sometimes borrowed from architects, but ultimately repurposed to create a visual commodity that resonates with moral, social, and cultural conceptions of "home;" values of social belonging; and notions of

³⁴ Amos Rapoport, *House Form and Culture*, Foundations of Cultural Geography Series (Englewood Cliffs, N.J.: Prentice-Hall, 1969), 47.

³⁵ Rapoport, 127.

³⁶ Rapoport, 131.

³⁷ John Brinckerhoff Jackson, *The Necessity for Ruins: And Other Topics* (Amherst: University of Massachusetts Press, 1980).

³⁸ Dell Upton, *Architecture in the United States*, Oxford History of Art (New York: Oxford University Press, 1998), 250.

citizenship.³⁹ The positioning of the home builder as an arbiter, mediator, or reconciler between ideals and realities supports the central premise of this study that the builder and his or her design practices are a critically overlooked area in the history of suburban development and design, as well as in the study of period suburban cultural and social landscapes. How builders developed their design competencies and negotiated these spaces via design - or in the words of Henry Glassie, how buildings were “thought” versus made - is one of the methodological bases of this study.⁴⁰

To investigate these values and relationships, this study relies on the related concepts of cultures of building and design culture for points of entry and areas of analysis. Architecture scholar Howard Davis defines a culture of building as the coordinated systems of “knowledge, rules, procedures, and habits that surrounds the building process in a given place and time.”⁴¹ Consideration of a culture of building necessitates understanding of how elements such as regulation, finance, information, and consumer expectations influence local design values, practices, and estimation of useful knowledge.⁴² These shared perspectives, processes, and bodies of knowledge, Davis argues, shape the form and character of everyday buildings.⁴³ In the context of home building, localized cultures of building also engage with a larger design culture. Design scholar Guy Julier describes design culture as collectively-held norms of practice transmitted and reinforced within and across specific contexts through communicative channels.⁴⁴ Julier proposes a conceptual framework for the study of design culture that focuses on the “domains” of value (economic, cultural, political, social, or symbolic) that influence design, the factors that define or drive these domains, the circulation of design information, and finally, the resulting design practices.⁴⁵ Studying cultural linkages and information flows through objects reveals the “cartography” of their making. The study of design culture in the context of American home building, as with other classes of design objects, is the study of the interrelationships between design, production, and consumption, and how each of these “nodes” come together to shape design and production practices.⁴⁶

Research Methods

This study investigates home builders’ design culture in the mid-twentieth century by examining the political, economic, and social contours of their design environment; their articulation of design values; common design methods and design labor arrangements; and channels of design exchange. Temporally, the study focuses on the period of significant professionalization and production growth in the housing industry between the late 1930s and the late 1950s. The roughly twenty-year period of rapid change between the mid-1930s and the

³⁹ Upton, 254–55, 265, 282.

⁴⁰ Henry H. Glassie, *Folk Housing in Middle Virginia: A Structural Analysis of Historic Artifacts*, 1st ed (Knoxville: University of Tennessee Press, 1975).

⁴¹ Howard Davis, *The Culture of Building* (New York: Oxford University Press, USA, 2000), 5.

⁴² Davis, 3–4.

⁴³ Davis, 5.

⁴⁴ Guy Julier, “From Visual Culture to Design Culture,” *Design Issues* 22, no. 1 (2006): 70–71.

⁴⁵ Julier, 72–74.

⁴⁶ Julier, 76.

late 1950s redefined the design environment, values, practices and methods, and network structure of the building industry and its design products. The passage of the 1934 National Housing Act, which established the foundation for the postwar housing and mortgage credit markets, spurred considerable change in the organization and scale of home building. The resulting shift in focus from smaller-scale, contract building of middle- and upper-class single-family developments to speculative, larger-scale developments of smaller, more affordable homes in the early 1940s marks the beginning of the shift in builders' design culture and local cultures of building. A succession of events including the onset of World War II and the series of national housing acts passed by the US Congress between 1949 and 1955 further shaped builders' design environment. The exigencies of war and legislative acts affected a widespread transition to large-scale, highly efficient, single-family housing production in the US. Simultaneously, the home building industry was increasingly organizing and pursuing aspects of professionalization through the educational, programming, and research efforts of the National Association of Home Builders, established in 1941. The study closes in the late 1950s, when the US had largely established its national housing policy favoring single-family suburban housing development, and the building industry had largely adapted to its structures. The late-1950s also mark a shift in the organization of large-scale home building businesses from locally-focused, single-proprietor building operations to more consolidated, corporatized national and regional-scale home building companies.

The decision to focus at the local market level on the methods and practices of large-scale builders - generally meaning builders who constructed more than 100 houses a year - rather than mid-size and smaller builders stems from three considerations.⁴⁷ First, large-scale builders typically served as national and local design leaders in the home building industry. With their larger rate of capitalization, larger staffs, and greater ability to absorb and distribute financial risk, large-scale builders represented the leading edge of design in the industry. Second, large-scale builders tended to be the most active figures in the building industry at both the local and national levels, participating in discussions about design, politics, market economics, and production principles and enacting the results of those discussions locally. Third, large-scale builders repeatedly intervened in the market place and left a dominant mark on the domestic landscape. Large-scale builders constitute a statistical minority in the home building industry - only about 720 large building firms operated in the nation during the study period - but collectively, these large firms built more than 30 percent of housing constructed during the period.⁴⁸ This is in contrast to the larger, but less influential, number of smaller-scale home builders, or self-builders who impact the built environment only once.⁴⁹

The primary source materials for analysis of builders' design culture and practice are dialogs and debates on these issues in four widely-circulated building industry trade journals: *American Builder*, *National Real Estate and Building Journal*, *The NAHB Correlator*, and *House & Home*. These journals offer representative sampling of views from different editorial and

⁴⁷ Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area*, 22.

⁴⁸ Maisel, 22.

⁴⁹ Maisel, 19.

organizational perspectives within the industry. *American Builder*, for example, tended to address the smaller and mid-scale builder in its editorial coverage even as it covered the full range of building issues, while National Association of Home Builders' *The NAHB Correlator* focused on high-growth areas of the industry and the large and mid-size builder. The *National Real Estate and Building Journal*, published by the National Association of Real Estate Boards, addressed itself to "realtor-builders" as the breed emerged in the 1930s, and continued to cover important issues in building through the 1940s. *House & Home*, started by the editors of *Architectural Forum* in 1952, sought to bring home builders into conversation with professional architecture. These two publications triangulate builders' views with those allied, intersecting professions. Over the roughly twenty-year period of this study, these journals featured editorial views from publishers and industry leaders, political and policy analysis in the context of the industry, and advice to builders on topics ranging from market conditions to design values. To contextualize these conversations, a second layer of research examines the larger research and policy discussions shaping common housing in the period. This work included analysis of period publications and guidance from institutions such as the Federal Housing Administration, scholarly works by period housing economists and scholars, and technical reports from independent housing research centers like the Southwest Research Institute and Small Homes Council at the University of Illinois.

Trade journals also form the basis for discussion of common design methods or practices and builder use of design labor. The journals cited regularly polled their readership on their design and production methods, featured analysis of builders' innovations and experiments from around the nation, and summarized trends from industry gatherings such as the NAHB's annual convention. The journals provide a representative sampling of the ideas circulating within the industry during the period as well as a basis for analysis of local practices against national design discourses.

Research on case study figures Henry Doelger, David Bohannon, and Earl Smith involved archival research, oral history, architectural field work, and reconstructing portions of their careers from media sources such as trade journals and the popular press. Researching individual builders like Bohannon, Doelger, and Smith presents methodological challenges, most notably the shortage of archival or primary source material for builders compared to other design professionals. Few archives of builders' business records, design work, or even marketing materials survive, and many of those that do are fragmentary. Researchers must draw from a variety of sources to recreate a history of building activities, business operations, and professional relationships. The David D. Bohannon Organization in San Mateo holds a small company archive of the firm's work, which provided information on Bohannon's activities and influence during the study period. A small family archive of Earl Smith's work exists in the stewardship of his son, Duncan Smith. Oral history accounts collected by local historian Rob Kiel relate that most of the Doelger Homes records were destroyed shortly before Doelger's death, although a smattering of ephemera and material exists in San Francisco Bay Area archives. As prominent local and national figures in the building industry, however, all three developers appeared regularly in industry trade journals and the popular press. These accounts provided substantial information on the three developers' design and building activities. Though these

resources may seem scant in comparison to those left behind by architects and architecture firms working at similar scales in the period, large-scale builders leave a considerably larger wake of archival material to draw from in contrast to smaller-scale builders.

Another methodological challenge in researching individual builders was the nature of available archival materials. Most surviving materials have a marketing-related agenda, and even newspaper and magazine accounts of the builders' work often closely reflect the marketing and press materials generated by the builder's firm. Building industry journals are no less immune, serving to promote the work of the building industry on the national stage. These journals supplied home building industry members with industry-informed political, economic, and design rhetoric that served the industry's interests locally and nationally. Journals such as *House & Home* also had a distinct agenda to better integrate the field of professional architecture into the home building industry. On the plus side, building industry journals tended to rely on completed projects in its features and design discussions, as the industry was wary of design ideas that had not been tested "on the ground." In an industry that thrived on self-promotion and the co-branding of builder and product, however, it is important to treat most claims with a critical eye and field or fact check major claims and representations.

Study of how builders aggregated, exchanged, and institutionalized design information as the building industry organized and strove to professionalize its practices draws on the efforts of the NAHB. The NAHB advanced these agendas through a series of programs from the late 1940s through the late 1950s with significant involvement from San Francisco Bay Area builders. The proceedings of major industry gatherings such as the NAHB's annual convention, a variety of trade and research publications, and the development of the National Housing Center in Washington, DC in 1955, model how information circulated among builders. The NAHB no longer maintains an institutional archive dating back to its founding, making published accounts the primary source of data for these programs and activities.

Significance & Contribution

As design products, the dwellings that resulted from the burst of creativity and innovation in home building in the mid-twentieth century have found little favor among architectural critics, historians, or housing scholars. The common, mid-twentieth century suburban tract house is irrevocably, and justly, tied to the history of gross inequity and racial discrimination in US housing policy and in housing markets across the nation. In the age of global climate change, the low density of suburban spaces and detached single-family housing also attracts criticism on environmental grounds. As a design product, however, it is hard to deny the economic and social success of the affordable, mid-twentieth-century suburban tract house. These products and their designers, more than any other design force, transformed the American domestic landscape and housing culture in ways that still define our concept of "home" in the US.

Understanding tract houses through their makers and the conditions of their creation is a traditional approach in writing histories of architecture, but the method proves fruitful in this case. The insights that this study provides into builders' design community and its practices offer an interpretive framework for taming the undisciplined, "wild" nature of the common

suburban tract house in design history. Examining how builders understood and negotiated the political economy of the housing market in the mid twentieth century extends the political context of the housing industry and housing development not just to matters of race, class, and gender, but also to the form and shape of tract housing. Reading what builders have to say about design counters one of the biggest misconceptions about the project of rapid tract housing development: that builders paid little attention to matters of design. Internal dialogs in building industry trade literature demonstrate that far from being disinterested, builders considered design as critical to their success.

Documenting the nature of builders' design work also recasts notions of what constitutes design in the context of tract housing. Recognizing adaptation and creative transformation as design acts creates a more contextualized and appropriate framework for analysis for tract houses, one where continuity, simplicity, flexibility, and optimized design were as important as novel artistic expression. The same is true for recasting the notion of who is and who is not a designer and by extension, the general question of authorship for tract housing. The collaborative nature of tract housing design within building firms and exchange between builders and consumers on matters of design have important implications for interpreting and understanding the nature of commoditized housing. These include the balance of influence in the relationship between producer and consumer, and therefore production and consumption in the commoditized design market.⁵⁰ The interplay between official design communities, producers, consumers, and government illustrate the potential and limits of various actors and agendas in the shaping of the built environment.

Profiling the home building design community adds to a growing body of scholarship on American suburban development focused on its demographic, political, and economic diversity and sociocultural meanings. Within the building industry local markets remained important testing and proving grounds for new design or production ideas. Robust local building markets such as the San Francisco Bay Area took the lead in experimenting with new production methods and models, and their calculated experimentation at the local level, rather than national standards or models, drove the diffusion of nationally-recognizable housing types and production methods. These dynamics of design diffusion argue strongly for shifting the focus of scholarly attention away from the national building market – if such a thing existed – and paying more attention to the influence of the local on the national in mid-twentieth century home building.

Understanding patterns of design exchange among builders also complicates the notion of a passive “trickle-down” effect from artistically-driven architectural design or a “top-down” imposition of design ideas from national regulatory agencies like the FHA. When we examine how builders vetted design information, it is clear that builders borrowed, tested, and accepted

⁵⁰ The geographer and suburban scholar Richard Harris eloquently described the various areas of knowledge study of suburban tract housing can contribute to in Richard Harris, “Tulips in Winter: A Sales Job for the Tract House,” *Buildings & Landscapes: Journal of the Vernacular Architecture Forum* 15 (October 1, 2008): 1–10, <https://doi.org/10.2307/27804880>.

or rejected ideas based on their own design values, market experience, and gauging of consumer acceptance. The influence of local markets on national design discourse if anything suggests a “bottom up” effect where local experimentation and adaptation of art-driven design ideas and government standards informed a loose national building design culture and practice. This design discourse forms the heart of home building design culture in the period – one created by and sustained by home builders as designers.

These are important perspectives when one considers that commoditized architectural design continues to define the majority of American domestic architecture. A better understanding of commoditized architectural design is critical to planning the future of suburban places. In the wake of increasing global environmental crises, calls for greater social equity in housing and housing access, and planning reforms driven by these concerns, a period of increasingly intense reexamination of the suburban built environment has ensued. Examinations from prominent architects and planners such as Andres Duany and Elizabeth Plater-Zybeck to Ellen Dunham-Jones and June Williamson have variously considered how to remove and remake or thoughtfully reuse decentralized, energy inefficient, and high resource consumption urban edge districts. Suburban communities are cognizant of the deficits their land use patterns present in terms of environmental sustainability, and are pursuing projects and plans that will recentralize and urbanize many suburban places. As the nation enters an era of “suburban renewal,” this study offers planners, architectural historians, and historic preservation practitioners situates the material cultural expression of mid-twentieth-century suburban buildings and landscapes as having significance that is subtle and local as well as national or representatively iconic.

Chapter Outline

The first two chapters of this dissertation examine the context of large-scale suburban homebuilding practices between the late 1930s and late 1950s. Chapter 1 examines builders’ design environment, objectives, and values in designing housing products, drawing from national discussions in the building industry about the nature of their design work and its continued development and improvement. Builders’ design objectives are examined against the back-drop of the era’s housing economy, an emerging national housing policy, and the changing culture of building in the industry as home builders sought to modernize and expand production. Through builders’ conversations with each other in building industry press and at building industry events, this chapter identifies a series of underlying design values - or those factors of relative worth, utility, and importance - that emerge to inform builders’ design decisions. The chapter demonstrates that builders’ design environment, and therefore design values, were driven by two critical factors: the status of the house as a salable object and the political and economic realities of the housing market in the period. Builders’ unifying mission was to find the most efficient, cost-effective, and acceptable combination of materials, form, function, aesthetics and amenities acceptable in builders’ target markets. The result was the rapid development of a diverse array of modest housing forms targeted toward the lower middle and working classes – houses that were not just design products, but also products of the political economy the design environment.

Chapter 2 draws upon technical assistance literature and educational programming provided by the building industry and its leading builders to develop a basic model for builders' market-based design methods and processes, from choosing a market to developing a product, optimizing that product for production, and merchandising the design to meet market expectations. Home builders were simultaneously housing designers, producers, and retailers. As such, they practiced a form of design more closely aligned with industrial design and retail merchandising than professional architecture. Hitting on the right combination of elements to create a "best-selling" house was a complex design task, and to do so, builders relied on integrated design teams made up design and production specialists, as well as formal and informal market research. This chapter argues that the market nature of suburban housing development kept builders engaged with vernacular design processes even as the industry began drawing on more research-based methods. The focus in scholarship on the influence of FHA development standards, national design media, and professional architecture on suburban housing overshadows the importance of the local and builder-led design development work. Suburban housing design drew from national design discourses and regulatory frameworks, but local housing markets were design laboratories and zones of experimentation taking these standards and reshaping them based on dialogic, vernacular design processes. Local conditions and builders' own bodies of design knowledge and creative power were the prevailing factors in shaping designs.

Chapters 3 through 5 discuss the San Francisco Bay Area of California as a locus of home design and building industry leadership in the mid-twentieth century through the work of David Bohannon, Earl Smith, and Henry Doelger. These chapters detail the history, design and production methods, design talent, and product catalogues of the three builders and collectively profile the landscape of an active, local home building market with strong national ties. Doelger and Bohannon were early adopters of production optimization techniques, utilizing "assembly line" methods long before the onset of World War II and their use at places like Levittown, New York. Bohannon, an early president of the National Association of Home Builders, was responsible for perfecting and actively promoted these techniques, known in the period as the "California method" of building, across the nation. Earl Smith, who also served as president of the NAHB, was a staunch promoter of the virtues of Modern design in building affordable housing. His inexpensive signature "flat-tops," so-named for their flat roofs, were the first house models in the nation with "contemporary" styling to garner approval for mortgage insurance through the FHA. While none of these men "invented" the ideas they popularized, they took the lead in substantially developing these innovations and influenced the production of affordable suburban homes throughout the country. Looking at national leaders like Doelger, Bohannon and Smith and their practices in the context of national design discourse sheds light on the intersection of national and local factors in period housing design and how builders balance the influence of tradition, governance, and geographic realities in their work. The comparative investigation of their different professional backgrounds, staffing models, target markets, and product types also allows exploration of the diversity of design expression, market focus, and design methods involved in creating the suburban domestic environment. The chapters also illustrate the influence of California builders in design dialogues and education efforts.

Chapter 6 demonstrates the ways builders such as Doelger, Bohannon, and Smith collected, curated, and disseminated their collective design and building expertise in the period. The increase in design exchange and education in the building industry in the 1940s and 1950s was in pursuit of a more modern, professional public profile for the industry. The chapter examines the design education and research activities of the NAHB as a hub for such knowledge exchange. Four key programs – the annual NAHB Convention (started 1945), the NAHB Trade Secrets House program (1950-1953), the NAHB’s National Housing Center in Washington, DC (1955), and the NAHB Research House Program (1957-1969) – demonstrate the importance of builder-to-builder exchange in design decision making and development.

A brief conclusion summarizes new interpretive perspectives on common suburban tract housing based on the findings of the study, arguing for more accurate periodization of design development and production practices, broader analysis of the political economy of tract housing design, and more acknowledgment of the complex nature of home builders’ design and building culture.

CHAPTER 1: THE SUBURBAN HOME BUILDING DESIGN ENVIRONMENT, 1934-1959

In 1950, the National Association of Home Builders (NAHB) and *Architectural Forum* cosponsored what the NAHB called “the largest and most important Architectural Contest in the history of the home building industry.”¹ Held during the midst of the postwar home building boom, the goal of the competition was to engage more professional architects in production housing design during a critical period in American housing development. However, the competition was also open to unlicensed designers, draftsmen, and design students. The contest brief asked entrants to design a home based on a widely-acceptable and marketable low-cost schema: a 1,000-square foot, detached, single-family home with three bedrooms priced at no more than \$11,000.² The contest required that entries conform to what were then typical housing development conditions. Designs had to use only commercially available materials and be suitable for siting on a sixty-by-100-foot lot, meeting the spirit - if not the letter - of Federal Housing Administration (FHA) and Veterans Administration (VA) construction and spatial regulations. While aesthetics and presentation were important, the judges would ultimately make awards based on the way entrants resolved the design problem, or as they put it, the “thinking behind the designs.”³ The criteria for judging entries included elements of particular importance to builders: the functionality of the layout, aesthetic appearance, the extent to which the design facilitated ease and economy in construction, suitability for large-scale production, and acceptability to the home-buying public.

The contest attracted more than 2,700 entries from professional architects, unlicensed architectural designers, architectural draftsmen, and design students. Architect Pietro Belluschi chaired the judges’ panel, which consisted primarily of architects, including Charles M. Goodman, Whitney R. Smith, Philip Will, Jr., O’Neil Ford, and L. Morgan Yost. Two home builders, Cy Williams of Long Island, New York and Fritz Burns of Los Angeles, also sat on the jury. After weeks of reviewing submissions, the judges on both sides of the builder-architect divide expressed long-held concerns about design change in housing. They were disappointed in the overall quality and scope of imagination in the designs on the one hand, and a lack of consideration for production-driven efficiencies in plan and suitability for popular use on the other. In the end, however, the jury awarded sixty-three prizes, with top honors going to the best designs at the national level, and the remainder to the best designs within seven regional housing markets and approximately fifty metropolitan building markets across the US. Architects and architecture graduate students at institutions such as Harvard University and the Massachusetts Institute of Technology swept the national prizes with distinctly Modern designs.

¹ “\$100,000 House Design Competition,” *NAHB Correlator* IV, no. 10 (October 1950): 1.

² “House Design Competition: Competition Report,” *Architectural Forum* 94, no. 3 (March 1951): 111.

³ “\$100,000 House Design Competition,” 1–2.

All involved agreed that the contest had been a general success and was a step forward in fostering understanding and respect between home builders and architects. But under the surface of this conciliatory tone, clear divisions remained. As one of two builders on the jury, Fritz Burns, signaled unease from one of the nation's leading builders with the winning entries. Burns wrote,

In future architectural contests I think a chapter should be taken from horse shows wherein "working horses" are judged separately from fancy breeds. The plans most suited to builders should compete in the "working horse category; the architects' plans in the more refined advancements of the fancy breeds. Builders and architects cannot hope to think identically – certainly most architects do not want to think in the same channel as builders and builders cannot always afford to think with the architects – not in the sense that most architects prefer houses which necessarily cost more, but rather that architects address their appeal to the more advanced thinking group which does not comprise the popular market.⁴

The popular market, Burns observed, was restricted by the natural conservatism involved in making a life-long purchase as well as the impact of the design and style of existing houses, whose number dwarfed that of new houses by a factor of fifty to one.⁵ These market realities, Burns suggested, fostered underlying differences in the design objectives, values, and environments of practice between builders and architects, as well as different definitions of what constituted "good design."

The conversations among builders surrounding the NAHB-*Architectural Forum* design contest raise questions about the housing design environment and builders' objectives and values. The contest occurred amidst a period of active discussion among home builders in which they collectively articulated shared goals, practices, and useful bodies of building knowledge. Builders also shared information on negotiating a new and rapidly changing design environment. This period of increased discourse and articulation of builders' understanding of these facets of their work occurred in reaction to the rapidly shifting housing markets of the pre- and post-World War II periods. As the contest reflected, design was an important issue to home builders in the period. As a tool, good design reduced unit production, material, and labor costs; took advantage of cheaper, more efficient materials; and adapted to large-scale, systematized building methods.⁶ As a salable commodity, the right design produced more marketable products, attracted more potential buyers, and distinguished builders from their competitors. But the conversations around the contest also demonstrate that builders had a distinct idea of what constituted good design based on their understanding of their particular

⁴ "House Design Competition: Jury Report," *Architectural Forum* 94, no. 3 (March 1951): 212.

⁵ "House Design Competition: Jury Report," 212.

⁶ Sherman J. Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area* (Berkeley: University of California Press, 1953), 191.

design objectives and the political, economic, and market realities that shaped their work – or their design environment.

Discussions among home builders in industry journals and conferences and builders' individual public statements also demonstrate a design culture and set of design values driven by the consumerist nature of the housing market, and builders' simultaneous roles as designers, producers, and retailers. This chapter draws on design discourse within the mass-market home building industry in the decades bracketing World War II to explore builders' understanding of their design environment, formulation of design objectives, and articulation of design values that responded to these conditions. This research informs a basis for critical analysis and evaluation for houses as design objects outside the typical standards of architectural design, describes builders' emerging national culture of building, and frames an understanding of common suburban tract houses as products of national political economy and local consumer markets. This chapter looks at three key drivers in builders' design environment – answering demand, creating demand, and negotiating local markets – as a backdrop for a series of design values - continuity, simplicity, uniformity, and flexibility, and optimization - that ultimately guided builders' design work.

The Builder's Point of View: The Home Building Design Environment and the Uses of Design

Builders entered the housing market in the mid-twentieth century with three key objectives: first, to answer demand by producing large amounts of quality, affordable housing quickly; second, to keep sales momentum brisk with new products; and third, to negotiate between new prevailing elements of an emerging national housing and design culture with the character of their local markets where sales actually happened.

Answering Demand –US Housing Policies and the Economy House Movement

From the late 1930s through the early 1950s, the first problem – answering demand – was the most pressing in the face of acute housing shortages and the national housing policy debates of the Depression, World War II, and early postwar periods. The creative conditions of these shortages and policy debates are generally well-understood. A perfect storm of stressors combined in the 1930s and 1940s to affect a national housing crisis in the US both in terms of quantity and quality. Widespread migration and curbed housing production during the Great Depression and World War II periods, combined with high rates of family formation in the immediate postwar period, effected major housing shortages and high housing demand across the nation. At the same time, the nation's housing stock, particularly on the affordable end of the scale, was rapidly deteriorating from age and disinvestment. Assessments of national housing needs in the immediate postwar period estimated that builders needed to produce large numbers of houses – from 500,000 to 750,000 per year, and by some estimates up to a million per year.⁷ California alone estimated that the state needed 635,000 houses in the first

⁷ W.C. Bober, "The Home Building Wave of the Future - Part II," *American Builder*, February 1943, 75; William P. Atkinson et al., eds., *Housing... USA As Industry Leaders See It* (New York: Simmons-Boardman Publishing Corporation, 1954), chap. 4, "A Million Homes Annually."

five years after the war to address increases in households, replace substandard dwellings and temporary war housing, and achieve a manageable housing vacancy rate.⁸

A series of legislative interventions sought to remedy the “housing problem” over the course of the 1930s and 1940s. Chief among these was the 1934 Housing Act, which fundamentally changed the housing market in the US. The act established the FHA and its signature program of insuring consumer mortgages on housing that met certain development standards, also set by the agency. Federal intervention in the housing market increased access to home mortgage credit, but also broadened the number of people able to afford a home by underwriting long-term, amortized mortgages, sometimes with minimal down payment amounts. Intended to stabilize housing markets, this legislation also intentionally opened new consumer markets for home builders, who had historically served the upper-middle and more prosperous classes. In addition to stimulating employment in the badly suffering housing industry, FHA programs aimed to improve housing standards and increase housing production in lower-income sectors of the market where the need was greatest. These actions shifted the focus of the home building economy, creating an impetus to produce high volumes of houses within the reach of 70 percent of American wage earners.⁹

In tandem with these stressors and solutions, the format and focus of home building were also changing. In the early twentieth century, what housing historian Carolyn Loeb called a mutually-supportive professional housing network coalesced among realtor-developers, social reformers, engineers, financial institutions, government leaders, and materials suppliers to promote more widespread home ownership. Allied national associations of building interests such as the National Association of Real Estate Boards (NAREB), American City Planning Institute (later American Institute of Planners), the American League for Civic Improvement, and the Building Trades Department of the American Federation of Labor collaboratively pursued a loose consensus on optimal planning, design, and production practices for home building in support of these goals. At the local level, the widespread formation of building associations with ethical standards underwrote claims to professional competence and expertise and created a more formalized and accessible network of home builders. The activities of this non-state network of national and local building interests established ready conduits and patterns for sharing bodies of building knowledge. National experts formed the tip of a pyramidal organizational structure that diffused the ideas and methods sanctioned by their expertise to the local level.¹⁰ As Loeb has demonstrated, this network diffused community development features that would become pervasive in housing development after World War II such as neighborhood unit planning; standardization of house form, plan, and materials; and an

⁸ Northern and Southern California Project Committees on Postwar Home Building in California, “Postwar Housing in California : Based on Findings of the Northern and Southern California Project Committees on Postwar Home Building in California.” (Sacramento: California State Reconstruction and Reemployment Commission, 1945), 7.

⁹ Atkinson et al., *Housing... USA As Industry Leaders See It*, 132; Seward A. Mott, “Sound Subdividing Practice for Low-Cost Developments,” *National Real Estate Journal*, March 1937, 47.

¹⁰ Carolyn S. Loeb, *Entrepreneurial Vernacular: Developers’ Subdivisions in the 1920s*, Creating the North American Landscape (Baltimore: Johns Hopkins University Press, 2001), 177.

emphasis on urban edge development into commercial home building discourse beginning in this period.

Builders shifted development tactics with their focus on creating housing for more modest socioeconomic classes. Marc Weiss and Greg Hise have shown that during the 1930s the professional home building and real estate communities worked closely with planning reformers and government and institutional interests to conceive a residential development model characterized by urban decentralization, optimized housing production methods, and affordable single-family housing forms. Rather than lot sales and contract-based, lot-by-lot building, increasing numbers of builders experimented with large-scale speculative building or ready-made homes, designing for a more anonymous, imagined consumer. Builders capitalized on the dispersed efforts of realtors, engineers, housing reformers, federal government bodies, and materials suppliers who had been working since the 1910s to create a universal, affordable small home within the financial reach of lower wage earners.¹¹ The resulting “minimum house” concept was an approach to housing design that balanced functional zoning and multifunctional living areas, social informality and essential privacy, cost, and social and cultural acceptability.¹² These schema, which typically consisted of a five-room, two-bedroom plan, including a three-fixture bath and eat-in kitchen, formed a baseline for home builders around the nation engaged in building large-scale, affordable housing developments.¹³ As Marc Weiss stated, “The creation of the modern residential subdivision best symbolized in the 1950s by the Levittowns and Park Forests, was essentially accomplished by the late 1930s.”¹⁴ The FHA version of neighborhood development and minimum housing standards, first published in 1936, drew directly on these conversations, and as the most widely distributed set of such guidelines, set the standard for the type of housing production US housing policy would support.¹⁵ (Figures 1.1 through 1.3)

¹¹ Greg Hise, *Magnetic Los Angeles: Planning the Twentieth-Century Metropolis* (Baltimore: Johns Hopkins University Press, 1997), 57–58, 60, 63.

¹² Hise, 58; Small Homes Council, University of Illinois, Raymon Harrell, and James Lendrum, “Housing Research Paper 29: A Demonstration of New Techniques for Low-Cost Small Home Construction” (Housing and Home Finance Agency, 1954), 83–84, Prelinger Library, San Francisco, Calif.

¹³ James A. Jacobs, *Detached America: Building Houses in Postwar Suburbia*, *Midcentury: Architecture, Landscape, Urbanism, and Design* (Charlottesville [Virginia]: University of Virginia Press, 2015), 52.

¹⁴ Marc A. Weiss, *The Rise of the Community Builders: The American Real Estate Industry and Urban Land Planning*, *The Columbia History of Urban Life* (New York: Columbia University Press, 1987), 16.

¹⁵ Hise, *Magnetic Los Angeles*, 67–69.

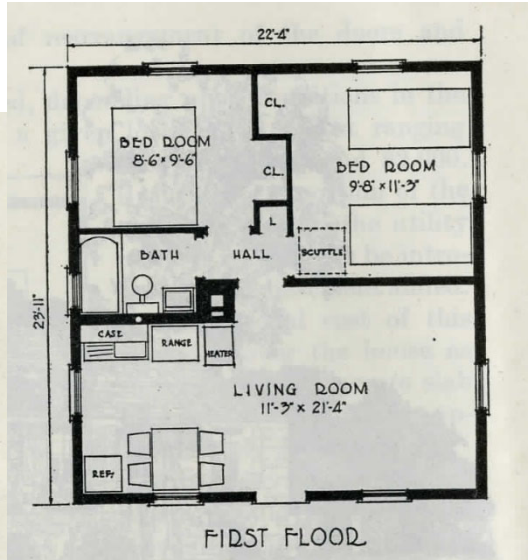
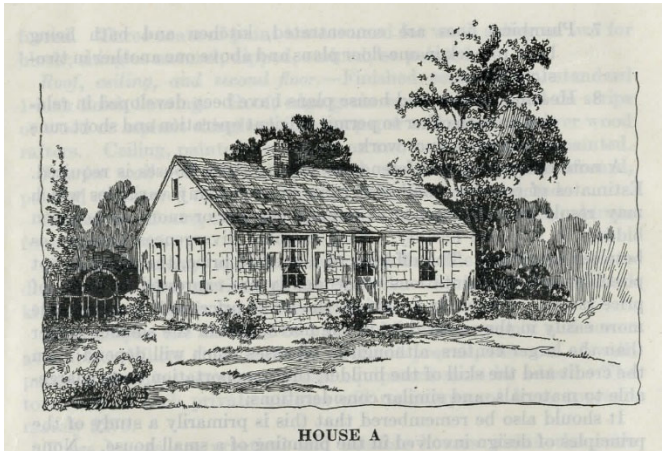


Figure 1.1. "House A" minimum house model and plan from FHA's "Principles of Planning Small Houses," 1936. This house was considered a minimum house for family of three, or a family with two small children.

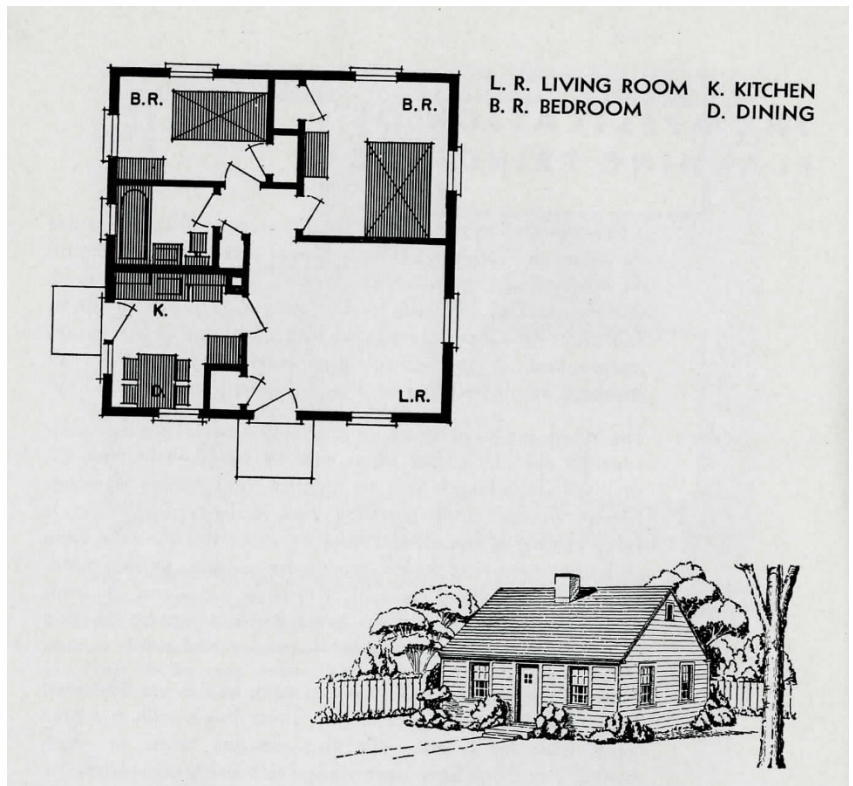


Figure 1.2. Basic plan, one story, two-bedroom minimum house from FHA's "Principles of Planning Small Houses," 1940.

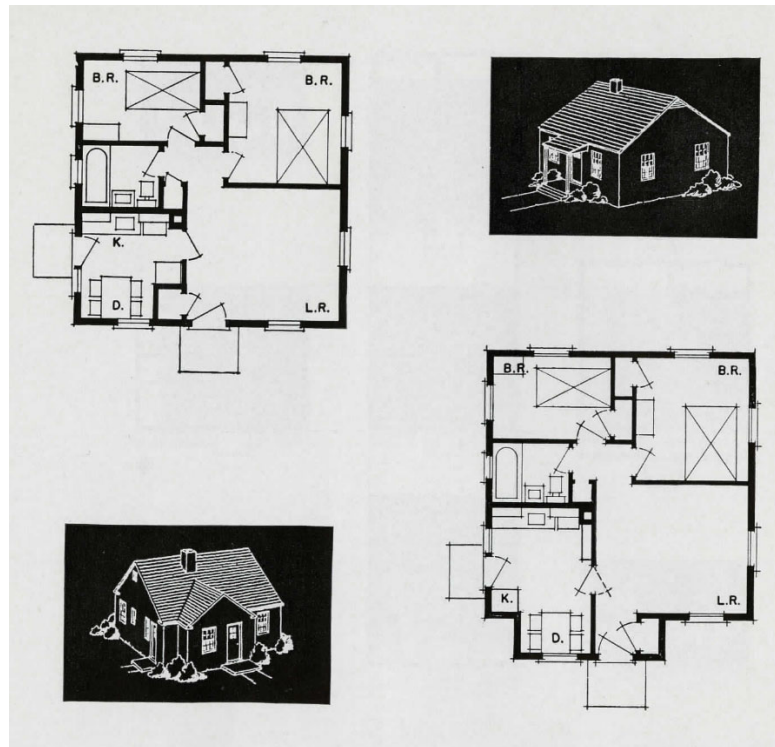


Figure 1.3. One-story, combined dining-cooking minimum house models from FHA's "Principles of Planning Small Houses," 1940.

The combined results of these political and economic trends and policies are what scholars such as James Jacobs have called the reinvention of the building industry. Builders were intimately involved in the creation of the FHA and its programs and lobbied hard for passage of the 1934 Housing Act as a way to revive their industry and insure its survival. The legislation turned out in their view to be the single most significant achievement in the history of American housing production.¹⁶ From the passage of the National Housing Act of 1934 through the immediate postwar period, home builders were heavily invested in developing designs and production methods that would simultaneously improve housing quality and answer the pressing demand for affordable, single-family housing. In the postwar period, home builders operationalized this unprecedented public-private venture into a rapid, large-scale consumerization of the housing market in line with the booming consumerism of the period. Gail Radford has pointed to the 1930s and 1940s as a critical decision-making period in which Americans first instituted the two-tier system of heavily government subsidized and supported middle-and upper-class housing production by the private sector and poorly-funded and regarded public housing programs for the poor. And indeed the 1937 and 1949 Housing Acts and the Servicemen's Readjustment Act 1944 reflected this dominance in their continued support of private enterprise housing production and indirect credit market subsidy at the expense of publicly sponsored and supported housing production. The for-profit, free-

¹⁶ Joseph B. Mason, *History of Housing in the U.S., 1930-1980* (Houston: Gulf Pub. Co., Book Division, 1982), 13.

enterprise building industry and its suburban, single-family development models emerged triumphant amidst the housing debates of the period.

The reality of the private building sector's victory from the perspective of builders was not nearly as smooth or certain, however. Private housing interests undoubtedly dominated public housing interests in the negotiations of US housing policy, but the building industry was not immune from the tensions created by public housing advocates, public criticism of their work in past decades, and the daunting task of pulling the nation out of a critical housing shortage. Builders were economically eager to capitalize on these new markets and politically motivated to be the solution to meeting national housing demand. In the midst of the New Deal liberalism of the Depression and World War II era, the homebuilding industry was a bastion of free-market thinking and activism, and home builders were at the center of political debates over the balance of capitalist versus social welfare approaches in sheltering the American population. The specter of government-sponsored housing loomed large for the industry in the wake of New Deal housing programs, government-sponsored wartime defense housing projects, and increasing public housing development. Public housing threatened not only to put builders in direct competition with government, but to potentially eradicate what, at least statistically, promised to be a vast new market of lower-income earners - then the largest proportion of income earners in the US.

Compounding this threat, home builders had an image problem. The industry drew heavy criticism from the housing reform, planning, and the architecture professionals over antiquated methods, inefficiency, low-brow and/or shoddy products, and technological ignorance. Writing about the housing industry before World War II, urbanist and housing expert Charles Abrams said, "The title of 'industry' was one of courtesy only, applied to a group of diverse handicrafts, hamstrung by irresponsibility, illiquidity, jurisdictional disputes, and techniques that barred any foreseeable hope of factory fabrication."¹⁷ Housing economist Miles Colean similarly wrote of home building in the late 1930s, "The housebuilding industry is old but not mature. Its patterns, established before the industrial revolution, remain those of a contractor-adventurer system of enterprise. . . More than any other industry, with the exception of agriculture it is still in the handicraft, small-scale, local stage."¹⁸ In their analysis of the public reputation of the home building industry, Richard Harris and Michael Buzzelli demonstrate that criticism of the housing industry in the period, ranging from the President's Conference on Home Building and Home Ownership in the early 1930s to the Congressional Joint Committee on Housing in the early 1950s, proved difficult to shift, even as the industry made strides in large-scale, rationalized production.¹⁹ Builders thus found themselves under constant pressure to produce high volumes of quality housing and assert itself as a viable answer to America's housing crises. Even in the wake of a housing shortage, the increasingly organized home building industry recognized it

¹⁷ Charles Abrams, *The Future of Housing* (New York and London: Harper & Brothers, 1946), 121.

¹⁸ Colean, Miles, *American Housing, Problems and Prospects*. (New York, 1944), 131, <http://hdl.handle.net/2027/mdp.39015007583654>.

¹⁹ Richard Harris and Michael Buzzelli, "House Building in the Machine Age, 1920s-1970s: Realities and Perceptions of Modernisation in North America and Australia," *Business History* 47, no. 1 (January 2005): 59–85, <https://doi.org/10.1080/0007679042000267479>.

had to substantially improve the design and construction quality of low-cost homes if they were to successfully curb public housing interests.

Fast-Forwarding Development During World War II

Beginning in the late 1930s, the building industry began pouring efforts into developing housing that represented the free-enterprise system and offered an alternative to public housing for the working and lower-middle classes. The World War II war emergency period proved to be a critical testing ground and formative creative period for developing these new housing models. Even before the US entered World War II in 1941, the war in Europe and Asia affected housing activities in the US. Large migrations of Americans to defense industry jobs and military service locations exacerbated existing housing shortages. Following creation of the US Housing Authority (USHA) and a program of low-rent public housing in the US in 1937, Congress authorized the USHA to use its remaining funds to construct defense worker housing projects that would revert to public low-rent housing at the end of the emergency period. Multifamily housing complexes sprang up in war-production centers around the nation, claiming ground for future public housing growth. The 1940 Defense Housing and Community Facilities and Services Act (known as the Lanham Act) simultaneously authorized \$2 billion in direct federal spending for developing war-industry-related housing and community facilities.¹⁷

It was these policies that led to the formation of the NAHB in 1941 as builders organized to lobby Congress for private builder participation in defense housing campaigns.²⁰ The forerunner of the NAHB, the Home Builders Institute of America, emerged in this period as an independent subgroup of land developers and home builders within the NAREB in 1941. (California builder David D. Bohannon was the institute's first president.) In 1943, the institute formally separated from NAREB and reorganized as the NAHB. The NAHB's first executive vice president, Frank Cortright, wrote that home builders were the last "great industry group" in the US to organize at the national level, and the timing of the efforts directly coincided with a period of upset and uncertainty in the field. Builders, Cortright wrote, had been "riding the flood tides of prosperity and suffering" through the work stoppages of World War I, the damage to their reputation by "irresponsible speculators" in the 1920s, the economic disaster of the Depression, and uncertainties of New Deal housing policies.²¹ The creation of the FHA and the reorientation of the housing market toward moderate- and lower-income classes pushed builders into new territory for which many were unprepared, and the war added a layer of pressure.

Following the attack on Pearl Harbor in December 1941, the federal government became directly involved in housing production. The Office of Production Management (OPM) banned private building to conserve materials for war-related needs. The federal government restricted home building to war-production areas and for buyers and tenants who worked in war industries. The chief project of the Home Builders' Institute upon its founding was to lobby

²⁰National Association of Home Builders, "History of the National Association of Home Builders of the United States (Through 1943)" (Washington, D.C.: National Association of Home Builders, 1958), 16–20.

²¹ Frank Cortright, "The Story of the National Association of Home Builders of the United States," *American Builder*, February 1946, 40.

Congress to allow private-sector builders to participate in wartime housing development. Even after they were successful, builders faced steep challenges. All building projects required review and authorization from the OPM for use of priority-controlled materials, and housing units had to adhere to a maximum value or sale price of \$6,000.²² (Figure 1.4) On top of these provisions, President Franklin Roosevelt appointed Charles F. Palmer, developer of the Techwood Homes, the first public housing project in the United States, as the coordinator of defense homes development. (Figure 1.5) In 1942, Palmer plainly stated his intentions and hopes for the future of defense housing at the National Public Housing Conference, stating, “During the past 18 [sic] months, the greatest public housing program in our history has been put in the works. The theory, of what we would like to do is developing steadily under the surface of our daily work. After the war, public housing ought to expand almost explosively!”¹⁸ Perhaps in response, *American Builder* editors warned the same year that, “the unmistakable next danger is that the public housing promoters who are strategically spotted throughout the defense housing setup will grasp the emergency as an excuse to go much farther.”²³ Builders turned decisively to the suburbs as their field of engagement during and after the war. The editors of *American Builder* forecast in 1943 that “Mass housing in suburban and rural areas will continue to offer private building an opportunity to fill the demand for low-cost units. Here the public housers will be met on their own ground – providing for those in the lower third of income level....”²⁴



Figure 1.4. Typical examples of war worker housing on Southwood Avenue in Sunnyvale, California developed by David Bohannon.

²² City of Sunnyvale, California, “Context for Evaluating the Southwood Historic District,” February 20, 2009, 7–8, City of Sunnyvale, California Community Development Department, <http://sunnyvale.ca.gov/Portals/0/Sunnyvale/NonCouncilReports/hpc-2008-0926.pdf>.

²³ *American Builder* and Building Age, *Defense Homes Handbook: Portfolio of Low Cost Homes and Rental Housing Units* (Chicago: Simmons-Boardman Publishing Corporation, 1942), 10.

²⁴ “Ahead: The World’s Finest Homes!,” *American Builder*, October 1943, 83–85; “Looking Ahead to the Post-War Home,” *American Builder*, September 1942, 18.



Figure 1.5. Techwood Homes in Atlanta, Georgia, constructed 1936, demolished 1996. Source: Library of Congress.

Builders who wished to stay in business during the war scrambled to adjust to the wartime restrictions with new designs and construction methods that allowed them to compete with government-led housing efforts. The design methods, production techniques, and housing models builders developed during this period would prove instrumental in postwar housing production. On the material side, builders adopted and refined techniques to improve production speed and cost efficiency such as the increased use of power equipment, pre-cutting lumber on site, and prefabricated and panelized building parts, door and window units. Materials restrictions and skilled labor shortages incentivized producing large quantities of similar houses so that cost, materials, and labor were more controlled and predictable.²⁵

The scale of production also shot up. In 1949, *Architectural Forum* stated that, “In providing a place for these [war industry] workers to live, the evolution of the building industry was greatly speeded. The volume builder appeared.”²⁶ Where in the past, a large-scale builder might construct several dozen houses a year, large-scale builders during the war were erecting thousands of houses per year to keep up with the demand. As housing industry historian Joseph Mason noted, “Speed was of the essence, financing was available, and the bigger the project the better.”²⁷ Wartime building conditions and housing markets induced greater numbers of builders to change their development practices to conform with what the industry termed “operative building,” or building speculatively at large scale for sale or rent, rather than on an individual contract basis. These larger-scale builders, their methods, and their products would become the dominant public face of the home building industry in the postwar period and beyond. By the end of the war, large-scale builders had highly-refined design and construction

²⁵ “Today’s Conditions Accelerate the Trend Toward Operative Building,” *National Real Estate and Building Journal*, April 1946, 15.

²⁶ “The Builder’s House 1949,” *Architectural Forum* 90, no. 1 (April 1949): 81.

²⁷ Mason, *History of Housing in the U.S., 1930-1980*, 31.

systems and a strong handle on what design characteristics were most suitable for producing large volumes of efficient, affordable housing.

The Postwar Economy House

The significant housing shortages and strong effective demand of the first five years after World War II created a seller's market that exceeded even wartime scales. The HHFA estimated that the US would need 1.5 million homes per year for more than ten years to fill existing needs and eliminate deficient housing.²⁸ Builders plunged into this market with their new skills and techniques. By builders' own admission, years of pent up demand and attractive financing necessitated little improvement in building products and methods beyond those developed in during the late Depression and wartime periods.²⁹ The federal government also reinforced this continued focus on small-scale, efficient homes. FHA mortgage insurance standards incentivized construction of small homes valued at less than \$6,000 with lower mortgage insurance premiums, higher loan-to-value ratios, and longer mortgage terms than houses above that valuation.³⁰

Production and sales rates did not always occur in a steady upward trajectory, however. By 1948, the housing industry was closing in on its longtime goal of reaching one million housing starts annually. But rising prices and continued political attention to continued housing shortages kept pressure on the industry. Between 1947 and 1948, rising material and labor costs pushed up the average house price in the United States by 10 to 20 percent. Builders experienced a small slowdown in sales for these more expensive houses as postwar housing shortages began to abate and interest rates rose.³¹ Congress, for its part, remained concerned that the building industry continued to serve too small a segment of the housing market and that the rate of production – which helped shore up the postwar economy - could not continue unless builders did more to tap into lower-income housing markets.³² Congressional studies on the nation's housing market between 1945 and 1948 concluded that more than six million lower-income Americans outside rural areas were still living in substandard housing.³³

At the same time, after decades of ad hoc measures, Congress was debating the country's first comprehensive national housing policy. The proposed Housing Act of 1949 was to include federal financial assistance for low-income housing development, but how much was uncertain.

²⁸ Housing and Home Finance Agency, "A Summary of the Evolution of Housing Activities in the Federal Government" (Washington, D.C: Office of the Administrator, Housing and Home Finance Agency, 1950), 12, Ephemera, Homes, Prelinger Library, San Francisco, Calif.

²⁹ Frank Cortright, "Today's Tough Selling Market Is the Smart Builder's Big Chance," *House & Home*, September 1956, 142.

³⁰ AIA Committee on Single Detached Unit Housing, Report of The Committee on SDUH for the Seventy-Second Convention of the AIA, Louisville, KY, May 1940

³¹ "Builders Plan Low-Cost Homes Next Year to Keep Strong Market from Slumping," *The Berkshire Eagle*, October 15, 1948, 2.

³² Housing and Home Finance Agency, "A Summary of the Evolution of Housing Activities in the Federal Government," 12.

³³ Elaine B. Stiles, "No Simple Dwelling: Design, Politics, and the Mid-Twentieth-Century American Economy House," *Buildings & Landscapes: Journal of the Vernacular Architecture Forum* 26, no. 1 (2019): 81.

NAHB Executive Vice President Frank Cortright wrote in the late 1940s that America's for-profit builders were under slanderous attack from "left-wing crackpot" public housing advocates. Providing shelter for lower income groups – that is, houses within reach of the average gas station attendant and meter maid - he stated, was to be the Association's "most important single objective."³⁴ The industry's ability to produce quality, low-cost houses was again to be a resounding capitalist, free-enterprise response to what they saw as encroaching socialist housing agendas. (Figure 1.6)

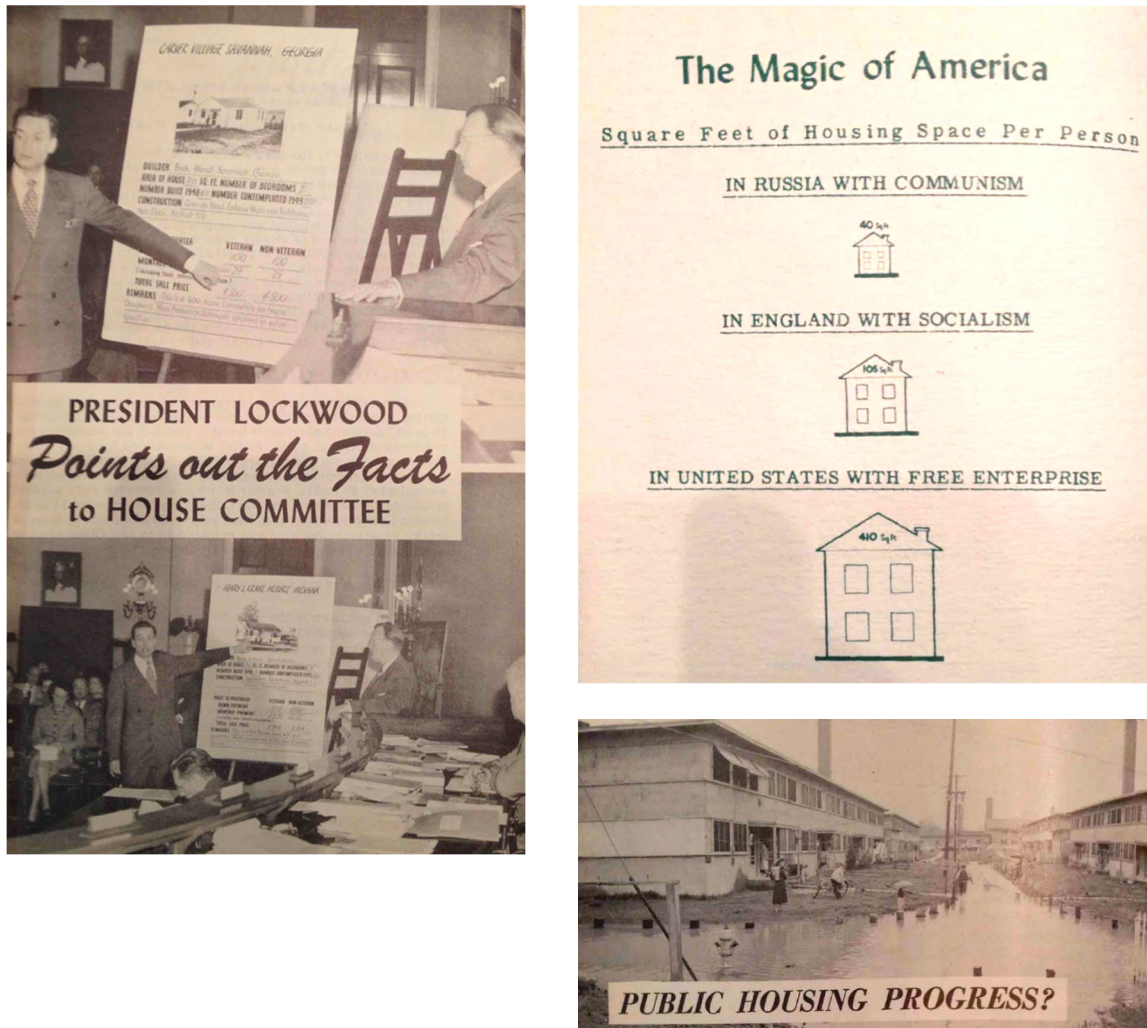


Figure 1.6. NAHB leadership presenting members' economy house plans before the U.S. House Banking and Currency Committee, 1949, graphic demonstrating superiority of privately built housing over other forms based on square footage, and image of flooding in unidentified public housing complex. Source: *NAHB Correlator*

In advocating for itself, the home building industry deployed its houses - their main interface with the public - as tangible statements on the power of free markets and unfettered

³⁴ Frank Cortright, "Housing Has Been Called the Nation's Foremost Domestic Problem," *NAHB Correlator*, February 1948, 2-4.

production. The NAHB launched a housing development campaign among its members, urging them to build what they called “economy houses” – small, efficient, and inexpensive houses within the financial reach of lower wage earners. (Figure 1.7 through 1.11) Through educational activities, demonstration homes, and a network of economy housing committees around the country, the NAHB fostered widespread development of housing that could compete and ideally replace public housing for working and lower-middle-class Americans. A newly formed Technical Services Division within the NAHB collected, curated, and distributed information on economy housing design to the membership.

The typical economy-house model consisted of a single-story dwelling with a compact plan including a kitchen, living room, and two or three bedrooms. Designed for efficiency and economy of construction, the homes often eliminated the basement and an entry buffer and kept circulation spaces small. The “economy house” was a calculated, alternative to the federal “minimum house” standards, offering more space, better materials, and more amenities than minimum housing standards dictated. Many economy houses included small extras such as designated dining areas situated in interstitial spaces between kitchens and main living areas, fireplaces, durable interior finishes, and attached garages as gestures to middle class standards. The NAHB was convinced that “widespread construction of Economy Housing will not only block public housing, but constitute an immense new field of profitable activity for the home building industry.”³⁵ As a result, the largest sector of the home building market in the late 1940s focused on these types of dwellings both to answer demand and solidify the private home building industry’s claims to lower-income markets.

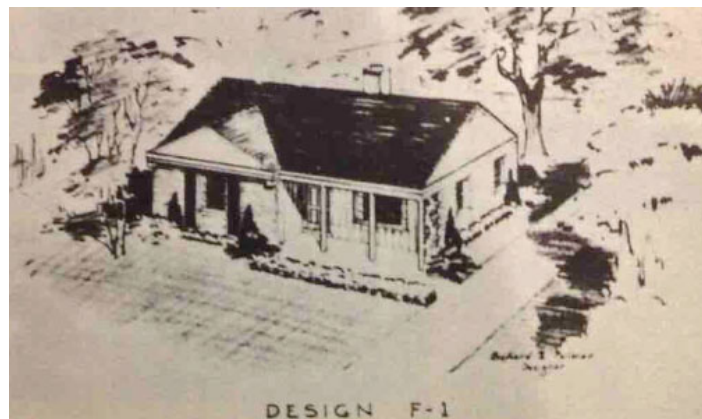


Figure 1.7. “The Detroit Plan F”, Builders’ Institute of Detroit; home price in 1948: \$4,000-\$8,000;
Source: *NAHB Correlator*.

³⁵ “What Is ‘the Economy House’?,” *NAHB Correlator*, March 1948, 22.



Figure 1.8. Economy home constructed by William Blackfield in Contra Costa County, CA; price in 1949: \$8,500-\$9,100. Source: *NAHB Correlator*.



Figure 1.9. "The Park Avenue," economy home in Seattle, WA; builder unknown; price in 1952: \$7,250-\$7,950. Source: *NAHB Correlator*.



Figure 1.10. Two economy "Cleveland Plan" houses constructed by Alex Bruscinio's Expan-Homes company in Cleveland, Ohio; price in 1948: \$7,500. Courtesy of Google.

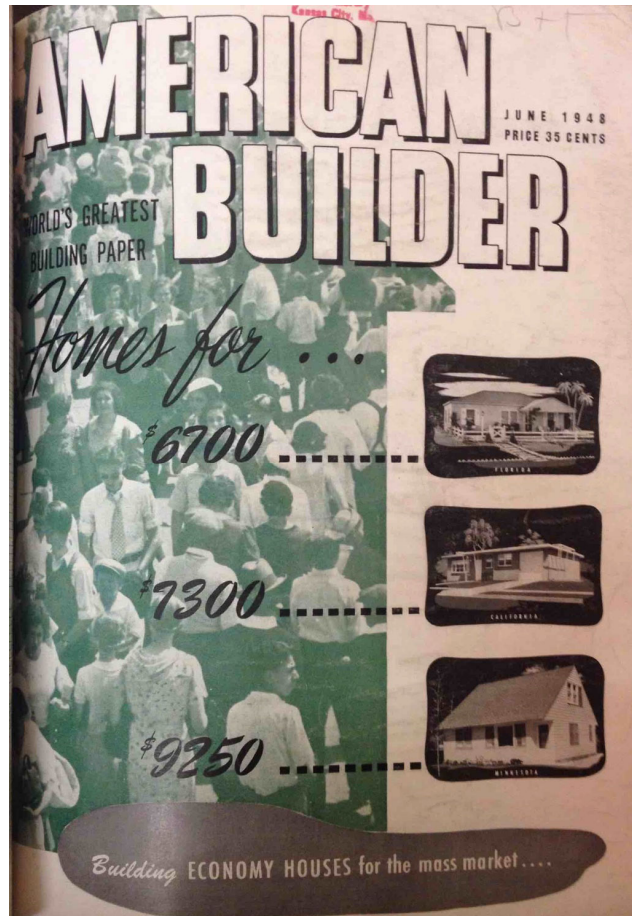


Figure 1.11. Cover of the June 1948 issue of the *NAHB Correlator* showing members' economy homes.

Home builders were successful in their efforts to stymie government support for public housing, and the 1949 housing act authorized federal financial assistance to local communities for lower income housing development focused only on populations “beyond the reach of private enterprise.” The 1949 act declared that the objective of supplying a “decent home in a suitable environment for every American family” meant “maximum encouragement and assistance to private enterprise in serving the major part of housing needs.” The act further solidified the building industry’s position by authorizing a comprehensive federal program of housing research to support these efforts. The Housing Act of 1950 concentrated the benefits of federal aid to private housing for development of low-cost family housing for rent and sale, offering the liberal FHA mortgage insurance terms for lower-priced sale and rental housing with more than two bedrooms.³⁶ In this context, the economy suburban housing tract, which had its most gargantuan expression in places like Lakewood, California or Levittown, New York, functioned as an idiosyncratically American model of a privatized form of public housing - a heavily subsidized model that employed planned unit development forms, reform-minded economy in design, and efficient production models - wrapped in pro-capitalist rhetoric.

³⁶ Housing and Home Finance Agency, “A Summary of the Evolution of Housing Activities in the Federal Government,” 14–15.

Creating Demand – The “Quality House” and Design Exploration

The building industry had plenty on their side in producing housing, including government incentives, a plentiful supply of inexpensive suburban land, and favorable credit terms. But it was still up to them as individuals and an industry to design, construct, and profitably sell houses. Almost immediately following home builders’ victories in the national housing policy debates, another market challenge presented itself. In the early 1950s, builders saw a slowdown of the postwar seller’s market in the face of rising incomes and overproduction of low-cost housing.³⁷ The minimum or economy houses of the previous decade represented a considerable improvement over earlier, substandard housing, but economy houses began to lose their appeal as the American middle class and its housing expectations grew.³⁸ Rising prosperity and more liberal credit markets made buyers want to “trade up” from their starter homes to something larger and less basic. These shifts presented both a problem and an opportunity for builders. *Architectural Forum* reported in 1950 that the supply of housing priced in the reach of middle (not lower) income families – at the time, those earning an annual income of between \$4,000-\$10,00 - was lower than any other market segment. It seemed probable, the editors stated, that since the war, “there has been too much concentration on the ‘Economy House,’ and not enough on the ‘Quality House.’”³⁹

Builders’ design discourse shifted in this period again as they looked to design as a tool for keeping sales brisk in the postwar “quality” or “rehousing” market. At a round table of NAHB, FHA, and HHFA representatives in 1953, NAHB President Alan Brockbank expressed doubts that the industry could continue to sell at the volumes it realized in the late 1940s and early 1950s. He saw better design as a way to open up new housing markets and attract buyers ready to replace their existing homes.⁴⁰ The problem facing the housing industry had shifted from how to alleviate a national housing shortage to how to provide housing “so much better than the old that we can tap a new *rehousing* market for nearly half a million homes a year. Our problem is to help Americans not only maintain but raise their standard of living.”⁴¹ Design discourse among home builders began turning from the inexpensive, expedient houses that dominated the immediate postwar years to the “quality houses” targeted at the center and upper middle segments of the homebuying market.⁴² The “quality house” in builder’s terms was a dwelling with a slightly higher price point, more amenities, and more design investment than economy models – in essence a return to builders’ preferred market positioning and clientele before World War II. Housing researcher C. William Smith of the Southwest Research Institute wrote in 1951 that in the sellers’ market just after the war, builders could produce what he called

³⁷ “Are You Building for Yesterday’s Market or Are You Getting Ready for the Coming Boom in Quality Houses?,” *House & Home* 6, no. 5 (November 1954): 106–7.

³⁸ James A. Jacobs, *Detached America: Building Houses in Postwar Suburbia*, Midcentury: Architecture, Landscape, Urbanism, and Design (Charlottesville [Virginia]: University of Virginia Press, 2015), 6.

³⁹ “The House Market,” *Architectural Forum* 92, no. 4 (April 1950): 120.

⁴⁰ Alan Brockbank, “Better Design Or Else,” *House & Home* 4, no. 3 (September 1953): 146.

⁴¹ “Architects, Builders, Lenders, and Suppliers Agree on Tomorrow’s Best-Selling House,” *House & Home* 3, no. 5 (May 1953): 122; “Are You Building for Yesterday’s Market or Are You Getting Ready for the Coming Boom in Quality Houses?,” 106–7.

⁴² “The House Market,” 119–20.

“houses of inferior design” because of the limited housing supply and available choices for consumers. Builders thus saw no reason to spend money on architectural design because the market was “satisfied.” However, he observed, “better builders are upsetting the market” and “It is only a matter of time until all builders must spend some time and some money on product design, instead of building “the easy way” with the same designs their fathers used. They must give the public what it wants if they hope to remain in business.”⁴³ This trend continued throughout the 1950s. Herman York, an architect who served on the board of directors for the NAHB Research Institute, noted in 1959 that customers, “no longer confronted with the problem of finding mere shelter,” were becoming more selective, even in the lower price ranges. Mortgage lenders were also increasingly interested in issues of design quality as a protection on investment, particularly in a mortgage market of small initial equity investments and long mortgage terms.⁴⁴

The early 1950s marked a period of greater design exchange within the home building industry and between homebuilders and design professionals as builders negotiated the shift in the housing market. The NAHB began collaborating with the AIA to improve overall design quality and its relationship with the architecture community. The 1950 AIA-NAHB design contest was one example of how builders sought to expand their design repertoire to meet changing consumer demands, even if some builders remained uncomfortable or skeptical of the results. The director of the NAHB Technical Services Division, Carl Lans, was a registered architect, and had a hand in fostering better relationships and cooperation with professional architecture during his tenure. In 1950, the NAHB and AIA began a series of talks to foster greater exchange between builders and architects, focusing on issues such as design quality, home building processes, and how to approach home design as product design.⁴⁵ Though the two organizations never formed a truly joint committee structure, the NAHB’s “Design and Construction Committee” and the AIA’s “Committee on the Home Building Industry” worked through the early years of the 1950s on promoting the use of architectural services in mass home building and addressing structural and cultural stumbling blocks to cooperation.

At the 1950 NAHB Convention, a “Design Clinic” panel attracted 3,000 attendees who came to listen to hear experts including Doug Haskell from *Architectural Forum*, Maxine Livingston from *Parents Magazine*, the NAHB’s Carl Lans, and Jim Lang from *Practical Builder* on what consumers desired in housing. The need for new design approaches in the period was reflected in trade publications such as the *NAHB Correlator* - the monthly journal of the NAHB - which began devoting more and more space to matters of design. A new monthly “Design Clinic” feature presented conversations among builders and architects serving on the NAHB-AIA collaborating committees on a single building problem or question each month. Questions included what factors were “retarding progress” in design in various regional markets, how builders could sell progressive design with less risk, the definition of “contemporary design,”

⁴³ C. William Smith, *New Frontiers for Home Builders*. (San Antonio: Housing Research Foundation, Southwest Research Institute, 1951), 41–42, <https://babel.hathitrust.org/cgi/pt?id=uc1.b4310508;view=1up;seq=15>.

⁴⁴ Herman York, AIA, NAHB Research Institute board member, Untitled manuscript, 1959, AIA Archives, p. 4

⁴⁵ Carl Lans, “Builders and Architects Agree on Mutual Objective,” *NAHB Correlator*, December 1950, 12–13.

and what features of contemporary design met with the greatest customer acceptance in various regions.⁴⁶ The goal in these discussions for most builders was not radical change in design direction, but a gradual absorption of new design ideas that attracted consumers but remained practical and profitable for builders. NAHB Technical Services Division director Lans articulated builders' objectives in these conversations and explorations. The trick was "pleasing the purchaser [with the familiar] while educating him to accept and desire something different and new."⁴⁷

Attention to architectural design culture was a significant step for builders. As Christopher Martin has argued, architects, as experts, were more aligned with and engaged in housing policy reform and demonstration projects aimed at large-scale, government-sponsored housing projects than the single-family, mass produced housing. The connection between architectural Modernism or progressive architecture and socialism was also firmly planted in many building industry members' minds, reinforced both by the housing projects they observed in pre- and post-war Europe and the diaspora of Modernist architects they were familiar with from European countries. Architecture allied itself with the large, centralized government housing projects for many good reasons –idealistic, economic, and practical – but in doing so, they placed the profession firmly in the opposing camp where builders were concerned.⁴⁸ As will be explored further in Chapter 2, the relationships between builders and architects in the period – or lack thereof – was a meaningful factor in builders' design culture and practices.

Negotiating the Local

Federal housing programs introduced common standards, and the building industry's increased design discourse in the decades bracketing World War II also expanded and regularized aspects of home design across the nation. Even in the age of the mass market housing, however, builders and housing observers understood that housing remained an inherently local enterprise. Housing economist Herman Maisel observed in 1950, "Houses are sold in a local market. They are attached to the ground; they meet with many prejudices and peculiarities of local taste and custom."⁴⁹ *Architectural Forum* similarly reflected this reality in 1949 when editors wrote that,

⁴⁶ NAHB-AIA Collaborating Committee, "Design Clinic: What Factors Are Retarding Progress in Design in Your Area?," *NAHB Correlator*, January 1951, 21–23; NAHB-AIA Collaborating Committee, "Design Clinic: How Can the Operative Builder Sell Progressive Design Without Too Great a Risk and How Can the Architect Help?," *NAHB Correlator*, February 1951, 17–19; NAHB-AIA Collaborating Committee, "Design Clinic: What Is Your Definition of Contemporary Design?," *NAHB Correlator*, March 1951, 113–16; NAHB-AIA Collaborating Committee, "Design Clinic: What Features of Contemporary Design Have Met with the Greatest Customer Acceptance in Your Area?," *NAHB Correlator*, April 1951, 113–16.

⁴⁷ Lans, "Builders and Architects Agree on Mutual Objective," 12.

⁴⁸ Christopher T. Martin, "Tract-House Modern: A Study of Housing Design and Consumption in the Washington Suburbs, 1946--1960" (Ph.D., United States -- District of Columbia, The George Washington University, 2000), 106, 109, <http://search.proquest.com/dissertations/docview/304619634/abstract/E6F4A694FB5F4419PQ/1?accountid=14496>.

⁴⁹ Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area*, 217.

In the zenith of mass production, housebuilding stands as the only surviving *local* industry of any consequence. . . While a Ford is a Ford is a Ford, a low-cost house is one thing in Chicago, another in Minneapolis, still another in Tucson – and two very different things in two adjoining Long Island developments.⁵⁰

Chicago builder Stanley Pepper concurred in *American Builder* in 1944, writing, “Private building business knows the answers to its business locally. There is no national picture in the home-building industry.”⁵¹

Local home building markets were influenced by their own sets of political, regulatory, climactic, geographic, taste, and social factors. Local aspects of housing culture and market – from average family size to style preferences - remained a central component of builders’ conceptual design space and productive work. Individual builders within a single market often adjusted to more specific conditions as well, specializing in certain geographies, price points, or house forms targeted to a specific segment of the area market.⁵² Even the FHA did not institute truly universal national standards for housing, issuing regionally-specific guidance documents and standards. The FHA also relied almost exclusively on local FHA district staff and insurance brokers to parse local standards and approve mortgage insurance for housing projects.⁵³

These positions reflect the fact that builders had long relied on intimate local knowledge and informal exchange with consumers to make design and production decisions. In his study of the design dynamics of urban and suburban home builders in the late nineteenth and early twentieth centuries, Thomas Hubka posits that builders’ design approaches were based on the maintenance of tradition and the repetition of slowly evolving building solutions tailored to local conditions.⁵⁴ Builders and buyers developed a “local consensus” of house plans and types suited to the needs of specific geographies and markets.⁵⁵ By reflecting local environments and needs, these “unified majorities of similar dwellings” reflected “standards of appropriateness and popular acceptance in common housing environments.”⁵⁶ Differences between builders’ work within a single market reflected the strategies of individual builders and the range of popular house design features and conventions the local market would support.⁵⁷ Housing scholar Carolyn Loeb similarly found that by onset of the Depression, American home builders across the nation had established their own distinctive pattern of proven, flexible, but controlled, built forms that served as a basis for their local building market.⁵⁸

⁵⁰ “House Builders By Size,” *Architectural Forum*, April 1949, 83.

⁵¹ James Hawkins, “Cooperation of Builder, Architect, and Developer Adds Up to Success,” *American Builder*, October 1944, 102. Paraphrased quote from Stanley Pepper, Chicago area builder.

⁵² Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area*, 178.

⁵³ See Martin, “Tract-House Modern,” 33, 35.

⁵⁴ Thomas C. Hubka, *Houses Without Names: Architectural Nomenclature and the Classification of America’s Common Houses* (Knoxville: Univ Tennessee Press, 2013), 40.

⁵⁵ Hubka, 37.

⁵⁶ Hubka, 33–34.

⁵⁷ Hubka, 91.

⁵⁸ Loeb, *Entrepreneurial Vernacular*, 2.

The exchange processes Hubka observed in earlier periods between builders and buyers and builders and each other also continued uninterrupted, though the processes took new paths and forms. As Avigail Sachs has shown for architecture, a mass market for housing required architects to jettison personalized design and the direct designer-to-client relationship. Instead, architects had to seek out more collective notions of their users through methods such as environmental design research. Builders, however, already operated based on collective notions of their users, drawing from cumulative market experiences and increasingly, their own housing research programs to create products with dependable performance and appeal. (Builders' housing research practices and programs are discussed in Chapters 2 and 6.) James Jacobs has characterized the dynamic between builders and buyers in the period as a process of mutual education wherein builders trained consumers to become savvy buyers and builders learned to market to them effectively.⁵⁹ Builders in the period, acknowledged this dynamic, and the power of consumers within it. Writing in *American Builder* in 1948, architect Rudolph Matern of Matern & York Architects (Long Island, New York), reported on a trip he took to see the new "modern – functional – contemporary – or what have you" architecture of the West Coast. He reported that,

A new American style of architecture is now being evolved. It is not being evolved through architects' abstract dreams, but directly across the salesman's desk. This means that home buyers – contrary to all polls – are voting in this new style of domestic architecture.⁶⁰

These designs, he insisted, were "growing and developing on the sound basis of home buyers' preferences. . . a digest of the best of the old and the best of the new."⁶¹ (Figure 1.12) The 1949 issue of *Architectural Forum* dedicated to merchant builder houses predicted that mass-scale housing industry carried the promise of "recent development of the chain stores and big department stores" which shifted economic power from manufacturers to retailers, and by extension, to the consumer.⁶²

⁵⁹ Jacobs, *Detached America*, 2.

⁶⁰ Rudolph A. Matern, "Home Buyers Are Voting in a New Type of Architecture," *American Builder*, December 1948, 80–81.

⁶¹ Matern, 81.

⁶² "The Builder's House 1949," 81.

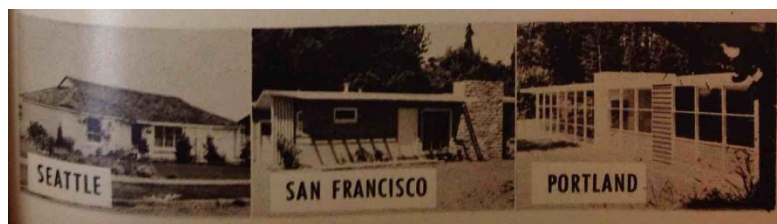
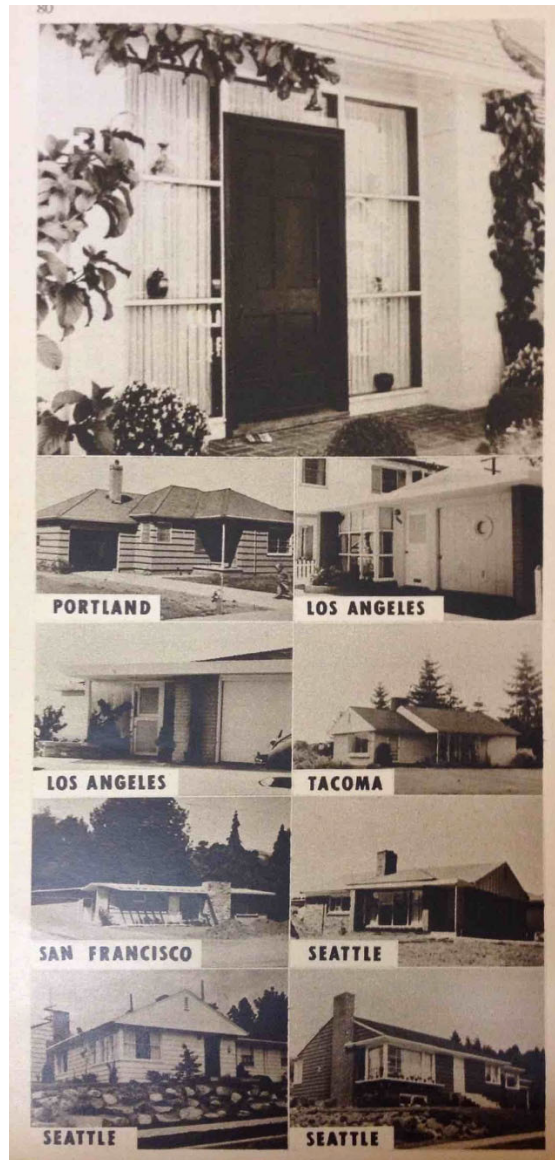


Figure 1.12. Illustrations of “modern” western US tract houses from Rudolph Matern’s 1948 article, “Home Buyers Are Voting in a New Type of Architecture,” in *American Builder*, December 1948, pages 80–81.

Design Values: Builders' Responses to Their Design Environment

The three key drivers in builders' design environment – answering demand, creating demand, and negotiating local markets – fostered a national design discussion among builders as to how best achieve their design aims. In building trade media, at professional gatherings, and in the context of industry programming, builders collectively articulated a set of design values they saw as essential to producing a “good house from the multiple perspectives of producer and consumer. Because the home building business was inherently local, builders' discussions focused less on specific issues of aesthetics and style than around design factors such as continuity, simplicity, uniformity, and flexibility, and optimization that would support efficient and economical large-scale production, market acceptability, and profit. These values, when properly balanced, helped manage market risk and improve production volume while allowing room for creative experimentation and adaptation to local conditions. As a gauge to builders' design culture, these core design values are a more accurate and telling reflection than FHA housing guidelines or even common architectural trends in mass housing.

A Preference for Continuity

One of the primary design values informing mid-twentieth-century home builders' work was a preference for continuity in design, most visibly expressed in the relative conservatism of common housing schema and builders' reliance on proven housing models over experimental designs. This preference was a product of the challenges inherent in constructing the most long-lasting of durable goods as well as the strong traditions of home builder's culture of building. On a purely practical level, wholesale adoption of a new house designs had significant logistical and financial implications for builders. Before customers ever laid eyes on a new house model, builders had already invested time on new cost and materials estimating, increased labor time as crews adjusted to constructing new models, and spent time and money for entirely new advertising campaigns.⁶³ But larger forces were at work in this regard as well. Observing design and production methods in the housing industry in the late 1940s, economists Sherman Maisel and Hiram Davis both noted the strong pull of tradition in the home builders' methods and design habits. Referencing Hiram Davis, Maisel explained the phenomenon in 1950 thus:

The long and slow development of man's ideas about proper shelter obviously affects his ideas of shelter today. This is also true of construction methods. Present materials and methods have been tested through a long period of time. Although this fact does not preclude the introduction of radical innovations – the transportation industry proves the opposite – it does mean that technical progress, unless of a revolutionary type, is likely to be slower because knowledge of various possibilities has existed for many years and much time has already been spent on improvements.⁶⁴

⁶³ Sylvanus Felix and J. Crawford Butts, “Planning a Change in House Style,” *NAHB Correlator*, November 1955, 187–88.

⁶⁴ Maisel 179, Citing Hiram Davis, *Industrial Study of Economic Progress*, 1947

Builders' conservatism was also a product of the economic circumstances and financial structuring of the mortgage credit markets during the Depression, World War II, and immediate postwar period. In the wake of the excesses of the booming real estate market of the 1920s and the ensuing financial instability of the 1930s, the building industry was focused on achieving financial stability and rescuing their collective reputation. In tandem with the federal government, the housing industry adopted and promoted planning, financial, and design practices that helped underwrite financial stability and creation of housing products of "enduring value."⁶⁵ John Mowbray, Chair of the Housing Committee for the National Association of Real Estate Boards (NAREB) and President of the Roland Park Company in Baltimore, typified this approach when in 1937 he advised builders to choose house designs with simple, traditional forms and balanced plan elements. These kinds of designs – albeit conservative – were most likely to satisfy initial and subsequent buyers. Promoting what the industry considered best practices in the period, Mowbray also recommended that builders protect the architectural and design integrity of their districts with restrictive covenants and homeowner associations to monitor these covenants.⁶⁶ The goal was to focus on designs that would meet buyers' cultural expectations and ideas about housing norms in order to retain the salability and economic value of the homes for the long term.

Federal actions meant to revive the housing industry and stabilize the housing market through the New Deal also affected the penchant for continuity and conservatism. The advent of the twenty- or thirty-year amortized mortgage meant builders and lenders had to look decades into the future in assessing financial risk. Continued salability, which connoted continued, predictable acceptance by buyers, was an important factor in assessing that risk. The possibility of obsolescence and whether a potential buyer ten or twenty years in the future would readily accept the home meant going with a sure thing. At times, this institutional conservatism proved problematic for home designers. Housing appraisal standards in most parts of the United States, for example, tended to value the quantifiable status quo in terms of design and salability. A house form or model with a proven track record of sales and demonstrated acceptance was considerably more valuable in these rubrics than an untested newcomer to the marketplace. California architects Jones & Emmons, who designed Modern tract houses for companies like Eichler Homes, commented in 1957 that, "These [appraisal] evaluations can be, and very often are, based on local prejudices and points of view which lag far behind the best accepted concepts of housing."⁶⁷ In short, the prevailing values of modern real estate finance and the market-oriented nature of mass-market, speculative home building served to reinforce local traditions and regional vernaculars in housing development. Proven designs ensured a solid home investment for builder, lender, and buyer.

⁶⁵ "Home Exteriors WILL Be Different [Editor's Note]," *National Real Estate and Building Journal*, April 1945, np.

⁶⁶ John Mowbray, "Build Your Houses for Enduring Value, Part II: Architectural Design and Restrictions - Two Important Safeguards of Future Value," *National Real Estate Journal*, February 1937, 46–47, 66–68.

⁶⁷ A. Quincy Jones and Frederick Earl Emmons, *Builders' Homes for Better Living* (New York: Reinhold Pub. Corp, 1957), 195.

Conversations in building magazines during the later years of World War II reflected builders' confidence in continuity and their anxieties about disruption of the economic and production gains made during the late Depression and World War II with conservative, but proven house models. Builders were particularly vocal about, in the words of NAHB President Fritz Burns, "crackpot publicity about the radically different houses of the future."⁶⁸ The futuristic, visionary work of architects and planners kept idle during the war years was, in builders' assessment, a dangerous distraction from the real work at hand. Burns wrote in 1943 that consumers were not ready for these "houses from Mars." Even minor improvements in housing, he noted, achieved public acceptance "only after lengthy trying out or proving period backed in many instances with an ambitious, educational and advertising campaign."⁶⁹ Builders in the postwar housing crunch had no time for such things. Few builders thought the typical home buying public would suddenly embrace high Modernism or other dramatic changes in home aesthetics. "Whatever form construction practice or mass production of houses may take," said a 1943 article in *American Builder*, "you may rest assured that these houses will have to retain the sweetness and charm of the proven homes of the past. No hard, box-like, queer-looking structures can possibly fight their way against firmly rooted tradition."⁷⁰ But the publicity worried them. Too much focus on the radical, modernistic, or technological marvel house of the future could raise unrealistic expectations among consumers – expectations builders were not prepared to meet. (Figures 1.13 and 1.14) Fritz Burns, wrote the same year in *American Builder* that,

These radical structures will certainly not be ready to be built right after the war, whereas improved and successful housing of the traditional type will be. The screwballs won't be ready to build but they can do a great deal of harm by causing buyers to delay, thereby harming the business of those who are ready and able to go into production right away.⁷¹

The building industry offered its own vision for the postwar home in surveys and debates in industry journals. *American Builder*, for example, focused monthly for the entirety of 1942 on "Looking Ahead to the Post-War Home." The series queried builders, materials dealers, real estate financial groups, and regional FHA officials from around the nation on the character of home building after the war. The collective responses forecast dwellings that would "still look and feel like a home," but take full advantage of the new methods, materials, and technologies war industries introduced and made available. In 1943, *American Builder* followed up with a survey of 700 builders who built or sold more than 100 houses over a five-year period, again asking how the postwar home would be different from prewar building. Builders again responded that there would be little change in overall plan and form, with no intention of throwing over proven models.⁷² Change would have to be moderate, held "to the point where the public can absorb and digest the new lines," and feel comfortable putting down their

⁶⁸ Joseph B. Mason, "America's Builders Speak on Post-War Home Building," *American Builder*, May 1943, 34.

⁶⁹ Fritz Burns, "Let's Be Practical About House Design," *National Real Estate Journal*, June 1943, 21.

⁷⁰ Randolph Evans, "What Kind of a Post-War House?," *American Builder*, January 1943, 36.

⁷¹ Mason, "America's Builders Speak on Post-War Home Building," 35.

⁷² Evans, "What Kind of a Post-War House?," 36.

money.⁷³ If one statement summed up builders' attitudes toward postwar design, it was that of residential architect Randolph Evans who said, "We will have *evolution*, not revolution in home design."⁷⁴



Figure 1.13. Counter publicity against “screwball predictions” on postwar housing shown in *American Builder* in August 1944.

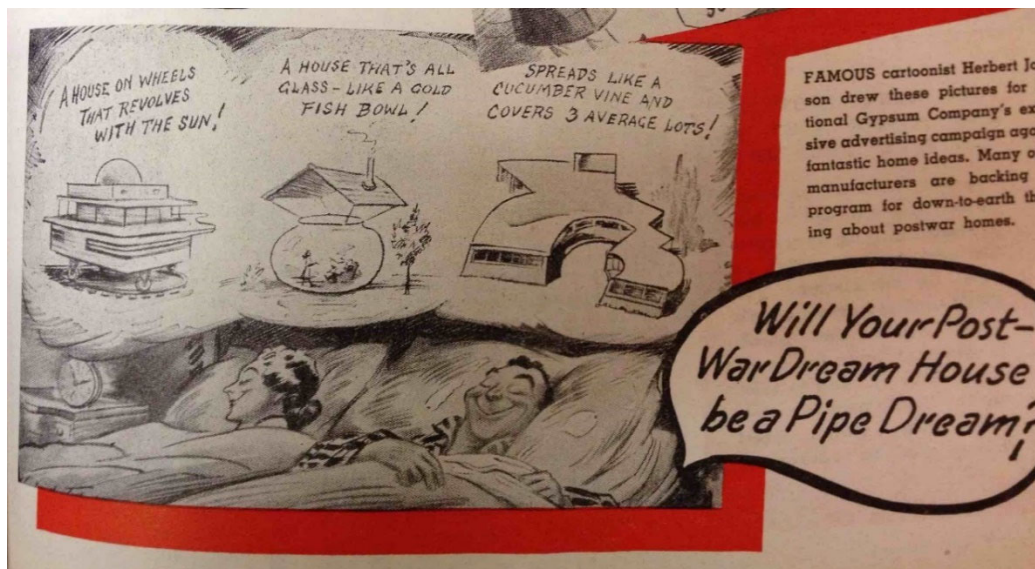


Figure 1.14. Cartoon published in the August 1944 issue of *American Builder* showing consumers dreaming about promises of “impractical miracle homes” of the postwar period.

Builders argued against significant change in housing form and aesthetics from a position of confidence in their understanding of their market places and consumer preferences and frustration for a lack of recognition of that expertise. After all, *American Builder* editors noted,

⁷³ Burns, “Let’s Be Practical About House Design,” 22.

⁷⁴ Evans, “What Kind of a Post-War House?,” 36. Emphasis in the original.

builders had successfully produced and sold more than half a million houses in 1941 [before the onset of World War II], and “hardly anyone seems to have given credit to builders for the understanding of public taste and public needs that this selling job required.”⁷⁵ Builders also emphasized the differences in their design objectives versus that of professional architects and planners engaged in theoretical or avant-garde design. Philip Norton, a builder of about 300 houses per year in Los Angeles, California summed up many views, stating, “I build to please people, not architects.”⁷⁶ Even in the late 1950s, when home builders were more likely to experiment with new housing designs, participants in a *House & Home* survey of builders, lenders, materials salesmen, and economists cautioned builders to avoid designers or architects “so filled with the creative urge that he would risk the success of a production model on ideas that have not been tested, approved, and pre-sold.”⁷⁷ The trick was to play it safe until the market told one otherwise.⁷⁸

The Virtues of Simplicity and Uniformity

Builders also privileged simplicity in individual suburban tract houses and a fundamental, if not wholesale, uniformity of housing in large-scale suburban developments. Historically, a variety of popular dwelling forms produced at a large scale – from urban rowhouses to three-flats and four-squares - were based on repetitive modules and rationalized, simplified forms, masked by modular adjustments and stylistic treatments.⁷⁹ The simplicity and uniformity of mid-twentieth-century suburban tract housing resulted from the same design and production considerations as earlier developer housing, but also from architectural and planning theories of the period.

As in previous decades, pragmatic considerations fostered the simplification and general uniformity of large-scale housing production design in the study period. In a period where the need to produce larger numbers of lower-cost dwellings in short periods of time was paramount, uniformity and simplicity made labor, materials, and profit more measurable and predictable.⁸⁰ On the design side, uniformity also made efficient use of design costs and design talent. Creating multiple house designs meant significant design fees amortized over only a small number of each model actually sold. Hiring an architect or using in-house staff to design a smaller number of more carefully designed models spread that design costs over a larger group of houses of superior quality.⁸¹ Using a limited number of house forms, plans, and detailing schemes also effected significant savings in production cost, time, and labor. The pre-cutting, staging, and systematized field assembly processes that made operative building more profitable were most efficient with a small number of floor plans and design schemes. They

⁷⁵ “Editorial: These Are the Men Who Will Build America’s Post-War Homes,” *American Builder*, May 1943, np.

⁷⁶ Mason, “America’s Builders Speak on Post-War Home Building,” 34.

⁷⁷ “Don’t Let Your Architect Try Out Unproven Ideas,” *House & Home*, September 1957, 128.

⁷⁸ “For Better Post-War Home Exteriors,” *National Real Estate and Building Journal*, February 1945, np.

⁷⁹ Loeb, *Entrepreneurial Vernacular*, 108, 200.

⁸⁰ “Design Clinic: How Can Monotony of Design Be Avoided in a Project of Homes Built from One or Two Basic Plans?,” *NAHB Correlator*, May 1952, 10.

⁸¹ Smith, *New Frontiers for Home Builders.*, 40–41.

were also most effective with simple structures that required a minimum of intricate building or finishing tasks.

The practical need of the building industry to produce high volumes of affordable housing coincided with housing reform ideologies and design theories that esteemed more simplified, functional forms. Gwendolyn Wright has chronicled how, beginning in the 1890s, decades of discourse among progressive housing reformers, home economists, and architects encouraged housing design based on notions of radical simplification and order. These notions included designs with clean lines and functional interior spaces based on empirical study rather than tradition. During the early twentieth century, the American middle class embraced simplicity as the epitomizing design value of their egalitarian, modern view of themselves. This simplicity stood in stark contrast to what middle class progressives saw as the extravagance of the wealthy and cheap sentimentality of the working classes.⁸² These ideas enjoyed wide dissemination in the decades before the Depression through the professional networks of realtors and real estate developers, who integrated ideas from Progressive Era housing reformers, social theorists, and planners into their development models. The architecture community supported this trend in home building. In its 1949 issue on “The Builder’s House,” *Architectural Forum* editors noted, “Cleanliness and simplicity are the essence of good design. Happily, the very cost-cutting operations of today’s house builders mitigate toward design simplicity.”⁸³

As a design value, simplicity manifested in common housing forms like the bungalow and four-square in the earlier twentieth-century as well as in the “minimum house” schema that formed a primary basis for merchant building output in the second quarter of the twentieth century. These house forms and plans emphasized simple outlines and ornament, a reduction in square footage and room count, more open plans, and more informal, multipurpose spaces. The design values embodied in these dwellings crossed class lines as they gained popularity and as builders adopted and adapted them for local markets.

Uniformity in grouped housing developments also had theoretical rationales. As Wright has observed about housing reform efforts in the late nineteenth and early twentieth centuries, common appearances, plans, and amenities across housing underwrote a larger social goal of more egalitarian community life and a buffer against class tensions.⁸⁴ A certain degree of uniformity of design in residential environments was thus a desirable social, as well as design, value.⁸⁵ Uniformity also conveyed an important aesthetic message to consumers, signaling the planned nature, and thus quality, of a housing development. While builders’ design discourse regularly included discussion of how to add more variety and visual interest to housing and development designs, period housing design experts advised builders not to strive for *too much*

⁸² Gwendolyn Wright, *Moralism and the Model Home: Domestic Architecture and Cultural Conflict in Chicago, 1873-1913* (Chicago: University of Chicago Press, 1980), 160.

⁸³ “The Builder’s House 1949,” 81, 104.

⁸⁴ Wright, *Moralism and the Model Home*, 234–35; Loeb, *Entrepreneurial Vernacular*, 147.

⁸⁵ See, for example, Sam Bass Warner, *Streetcar Suburbs: The Process of Growth in Boston, 1870-1900*, Publications of the Joint Center for Urban Studies (Cambridge: Harvard University Press, 1962), 85.

variation. Housing design specialist architect George Brigham, who also taught at the University of Michigan, cautioned builders in the *NAHB Correlator* in 1952 that too much variation “makes community look hodge-podge and restless” and that “Too much artificial variation is worse than standardization.”⁸⁶ Other experts concurred. In his 1951 study of the home building industry, C.W. Smith, director of the Housing Research Foundation at the Southwest Research Institute, wrote that bad housing projects suffered not only from bad planning, but from, “a conscious effort on the part of builders to achieve dissimilarity in the appearance of the houses. Apparently, this concept of what constitutes a good neighborhood is based on the dissimilarity of houses in older areas built up by custom contractors.”⁸⁷ This holdover from traditional home building practices was completely unjustified in Smith’s view. “Simply because older neighborhoods happened to be built up without any over-all plan and with no architectural similarity between the houses is no reason why we should try to duplicate those older neighborhoods today.”⁸⁸ All this accomplished, Smith held, was giving the impression of poor planning.

Builders were sensitive to criticism that their products and neighborhoods were monotonous. The method they developed for varying design at the scale of the individual houses in their planned developments typically took one of two tacks: functional or superficial variation. In professional building literature, most builders and allied designers recommended functional variation or ornamental treatments.⁸⁹ In one “Design Clinic” feature in the *NAHB Correlator*, “almost to a man” the panel discussants recommended use of plans that allowed for formal variety. Many of these design practices are well-known: varying roof forms and pitch directions, rotating or flipping plans to create a more varied streetscape, and small variations in interior arrangements and floor plans. Common superficial variations included series of simple ornamentation programs rotated through the development, varied color schemes, and landscaping. The use of heavy ornamentation as a key to differentiation of identical forms, such as one sees on Victorian rowhouses for example, was considered an amateur move.

The Need for Novelty

Builders’ structural and cultural focus on continuity did not preclude change in housing designs. Novelty, like continuity, was essential in the housing market. As architectural historian Howard Davis has observed, “The persistence and diffusion of type, and the innovation of type, are two sides of the same coin. In a healthy building culture, *tradition* and *innovation* are not contradictory but complementary concepts.”⁹⁰ Design change was strategic, driven by builders’ needs to distinguish their products from the competition, keep the buying public interested, and respond to local market conditions. Writing in the early 1950s, C. William Smith of the Southwest Research Institute advised,

⁸⁶ “Design Clinic: How Can Monotony of Design Be Avoided in a Project of Homes Built from One or Two Basic Plans?,” 11.

⁸⁷ Smith, *New Frontiers for Home Builders.*, 40.

⁸⁸ Smith, 40.

⁸⁹ “Design Clinic: How Can Monotony of Design Be Avoided in a Project of Homes Built from One or Two Basic Plans?,” 10.

⁹⁰ Howard Davis, *The Culture of Building* (New York: Oxford University Press, USA, 2000), 153.

A design which is good today will not be good ten years from now. The future of the house building business lies in this often-unappreciated fact. Just as there is a steady demand for new automobiles and new women's clothes based not on the fact that the old ones are worn out, but on the desire for new designs, so too will a continual and steady demand for new houses be realized when more builders stimulate this demand by offering the public continually improved models.⁹¹

In their pursuit of innovation and novelty, builders functioned similarly to designers of other consumer goods, responding to and shaping consumer desires by creating a constant flow of variation within a single object class. Builders felt they must continuously improve their product to create demand, similar to the way auto manufacturers created desire for new models.⁹² Material culture scholar Regina Blaszczyk has characterized this approach as one of "flexible specialization," in which designers rely on flows of information from sales people, materials suppliers, market research, tastemakers, and their own professional design communities (e.g. architecture, fine art, home building, auto makers) to shape and reshape designs.⁹³

The pace and rate of change in common tract home design depended upon local market conditions. Change occurred on a sliding scale ranging from a series of adjustments to a complete redesign.⁹⁴ Throughout the study period, and in the decades before and after, builders introduced new exterior detailing, new material and building systems technology, new household appliances, and new color scheme to their models each year to entice purchasers. However, when builders saw a positive risk to benefit ratio, they would alter existing housing plans to accommodate new spatial arrangements or overall form. Flagging sales, the need for a new selling point, and changes in buyer preferences might spur builders to alter their designs, as might the arrival of a better or cheaper method of construction. Harsher factors, like a competitor flooding the market with a similar house or houses in the same price range, or making the wrong design decisions in the first place might call for deeper reconsideration of a builders' design portfolio.⁹⁵ As the housing market transitioned from a sellers' to a buyers' market in the late 1940s and early 1950s, large-scale homebuilders embraced increasing levels of novelty to support sales.

In bringing any new design to the market, builders tread a fine line between novelty and acceptability. Looking ahead to the postwar housing market in 1945, *National Real Estate & Building Journal* editors wrote, "Such men [builders] have a lot at stake in house design. They must select something neither obsolete nor too advanced. They must "play safe," yet be

⁹¹ Smith, *New Frontiers for Home Builders.*, 48.

⁹² "The Greatest Show on Earth," *NAHB Correlator*, March 1950, 23–34.

⁹³ Regina Lee Blaszczyk, *Imagining Consumers: Design and Innovation from Wedgwood to Corning* (Baltimore: The Johns Hopkins University Press, 2000), 12.

⁹⁴ Herman York, "Untitled [Speech to Savings and Loan Association Group?]" (Speech, 1959), 1–2, NAHB Housing, American Institute of Architects, Washington DC.

⁹⁵ Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area*, 259; Ned Eichler, *The Merchant Builders* (Cambridge, Mass: MIT Press, 1982), 84.

mindful of sales appeal.”⁹⁶ Pioneering industrial designer Raymond Loewy wrote about this balance in the realm of product design, noting that designers wanted to give consumers the most advanced products research and technology would allow. “Unfortunately,” he wrote, “it has been proved time and time again that such a product does not always sell well.”⁹⁷ Designers functioned in an environment where large numbers of successful products – such as mass-produced goods or traditional housing forms – set an established pattern or appearance that became a norm for consumers. Any design that broke abruptly or decisively from those schemas posed a risk to its producer. Consumers might be attracted to the novelty of the departure, but also experience resistance to the new and unfamiliar. For each product, Loewy held, there was “a critical area at which the consumer’s desire for novelty reaches what I might call the shock-zone.”⁹⁸ The competent industrial designer had a “lucid understanding of where the shock-zone lies in each particular problem . . . This is the all-important question, the key to success or failure of a product. Its satisfactory solution calls for an understanding of the tastes of the American consumer.”⁹⁹ Loewy called this ideal design MAYA, or the “most advanced, yet acceptable” design” for any given product.

Builders did not use Loewy’s acronym, but they did subscribe to his concept. In 1956, NAHB Executive Vice President Frank Cortright wrote that the definition of a good architect or designer was someone who knows “how to make homes more attractive and more livable without risking extremes beyond the taste of the community,” a practice which could be disastrous.¹⁰⁰ Builders might influence small changes in taste or preferences, but they understood their work to be largely responsive rather than proactive. In 1957 *House & Home* surveyed builders, lenders, materials salesmen, and economists on what types of houses the industry should be designing for the market. The editors cautioned,

The builder and his realtor have little chance to talk a prospect into buying a house he does not like at first glance, so the house must almost sell itself. That means the house must pretty much fit the buyers’ preconceived ideas of what they want. Even the biggest builders are too small to try the kind of advertising and promotion by which the auto industry makes people want changed designs and unfamiliar features.¹⁰¹

Architect-driven *House & Home* magazine advised that if builders wanted to avoid undue risk, they should keep an eye to their local custom (or architect-designed) house market to identify trends with merit.¹⁰² Stylistic trends, they submitted, moved geographically and socioeconomically “across the country and down the economy.” Architects designed custom

⁹⁶ “For Better Post-War Home Exteriors,” np.

⁹⁷ Raymond Loewy, *Never Leave Well Enough Alone*, 2nd ed. (Baltimore : Johns Hopkins University Press, 2002., 1951), 325.

⁹⁸ Loewy, 325.

⁹⁹ Loewy, 326.

¹⁰⁰ Cortright, “Today’s Tough Selling Market Is the Smart Builder’s Big Chance,” 143.

¹⁰¹ “Special to Architects: Don’t Think Small About Builders,” *House & Home*, September 1957, 131.

¹⁰² “Don’t Just Copy Your Builder Competitors,” *House & Home*, September 1957, 132.

homes incorporating novel stylistic or building features in one part of the country, which building media and style magazines introduced to a wider builder audience. Builders of higher-priced homes in the same region would test the new styles and features with their custom clients. If the designs caught on, regional custom builders would widely adopt the features or styles across varying price points. Builders and architects in other parts of the country would adopt and adapt the design to their own regions. At this stage, when the design or features were thoroughly vetted and market tested, *House & Home* advised, it was safe for mass builders to adopt the design.¹⁰³ “Spending money to speed up local change before it gets accustomed to seeing the new designs in national magazines and local custom-built houses,” the editors warned, was pointless.¹⁰⁴

Optimization and Flexibility

Builders were not just designers, of course, but also producers. A key factor in shaping a house model was optimizing the design to minimize production and labor costs, maximize output, and keep sales prices competitive. Builders’ use of “assembly line” construction staging methods at sites such as Levittown, New York, is a well-known tactic for achieving these aims. This practice has a longer history in the home building industry, however. Homebuilders and housing reformers had been experimenting with sequencing building tasks in assembly-line fashion, precutting materials, or selectively prefabricating design elements since the end of World War I. As Greg Hise has shown, the California design community was among the early adopters of these methods. Regional Farm Security Administration architects, headed by Vernon DeMars in San Francisco, used precutting and routinized, sequenced construction methods in their Central Valley migrant housing developments in the late 1930s. Fritz Burns employed similar methods at his 1938 Westside Village development northwest of Santa Monica, California.¹⁰⁵ (Figure 1.15) Research by local historians in San Francisco have also shown that Henry Doelger and other builders developing San Francisco’s western neighborhoods were utilizing precutting and staged sequencing in construction in the late 1920s.¹⁰⁶ (See Chapter 3.) After the onset of World War II, large-scale regional builders of war housing such as David Bohannon adopted this system and refined it, adding intensive labor specialization to speed housing production. (See Chapter 4.) The combined public and private efforts to optimize the efficiency and potential of this method in the region earned it the moniker “the California method” in the national building press. The postwar expansion of the housing market effected widespread diffusion and adoption of such ideas among large-scale builders.

¹⁰³ “Don’t Just Copy Your Builder Competitors,” 132.HH 1957-9:132

¹⁰⁴ “Don’t Knock Yourself Out Bucking Local Preferences,” *House & Home*, September 1957, 114.

¹⁰⁵ Hise, *Magnetic Los Angeles*, 100.

¹⁰⁶ See Mary Brown and San Francisco Planning Department, “Sunset District Residential Builders, 1925-1950 Historic Context Statement,” Historic Context Statement (San Francisco: San Francisco Planning Department, 2013); Rob Keil, *Little Boxes: The Architecture of a Classic Midcentury Suburb* (Daly City, CA: Advection Media, 2006).



Figure 1.15. Homes in Fritz Burns' Westside Village, Los Angeles neighborhood, 1939. Courtesy Google.

The “California method” of construction resulted in forms and styles of dwelling that embodied the close relationship between economy, material, and aesthetics in mass-scale housing. The resulting dwellings had relatively compact plans with lines, forms, and spatial ratios designed to accommodate standardizations in lumber, minimize complex construction tasks, and facilitate preassembled building systems units. The production methods also fostered certain design and planning characteristics for period housing development. The overall formal and aesthetic simplicity of minimum houses made them conducive to the controlled production processes that enabled large-scale production.

Home builders' effort at efficiency went deeper than imitating assembly line production, however. According to the HHFA in 1954, the “most important single tool of structural economy” in housing development was the use of modular design. Pioneered by civil engineer Albert Farwell Bemis in the 1930s, modular design improved production and design efficiency by coordinating the design and dimensioning of house models to the standardized measurements of building materials.¹⁰⁷ (Figure 1.16) On the design side, the method simplified building layout methods and reduced drafting time. It allowed for more flexibility in material use, as builders could substitute alternative materials in a design without having to redraw the plans. On the production side, modular design allowed builders to significantly reduce or eliminate building material waste and excess labor time. Modular design also reduced the need for pre-cutting and fitting by scaling rooms to conform to standardized lumber dimensions often as much as possible.

¹⁰⁷ In 1939, the American Standards Association, with technical assistance from the Bemis Foundation's Modular Service Association and the backing of the American Institute of Architects and the Producers Council, established a base module of four inches, arguing that this size afforded builders maximum flexibility in planning and designing building forms.

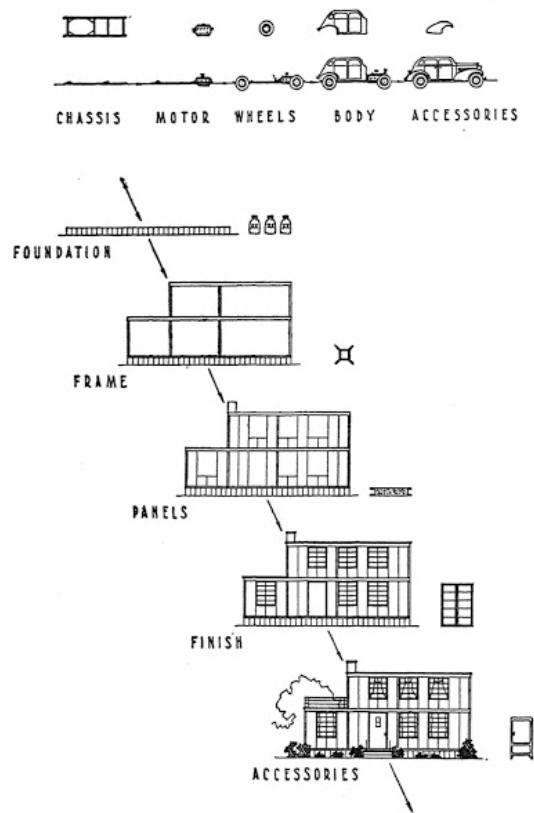
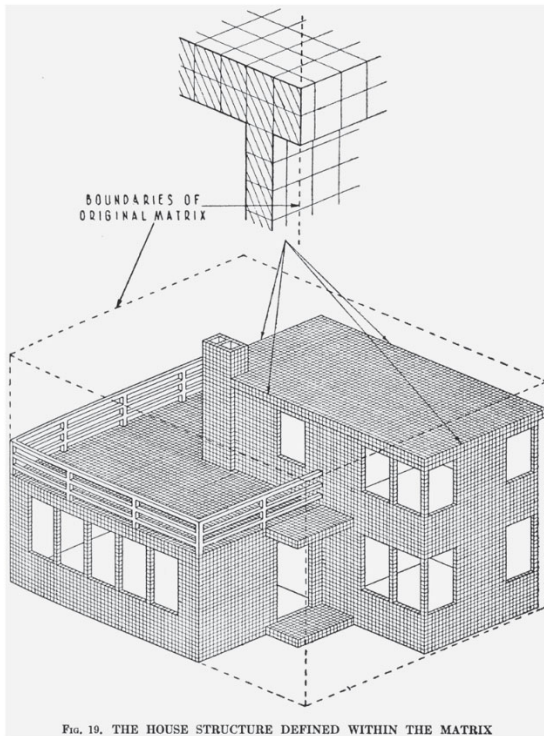


Figure 1.16. Left: Albert Farwell Bemis' four-inch cubical modules as a basis of structural design in Bemis, *The Evolving House: Volume III: Rational Design* (Cambridge, MA: MIT Press, 1936), 71. Right: Bemis' comparison between car and building production in *The Evolving House, Volume III*.

Home builders also engaged with design methods and features that allowed for design flexibility and therefore, market resiliency for their model catalogs. Sherman Maisel observed that building firms needed to have qualitative flexibility because “people purchasing houses have demanded variety at any given time” and because the nature of that variety shifted based on taste and trends. This was particularly true in the buyers’ market of the early 1950s, where builders had to attend more closely to consumers’ needs and offer greater variety to attract buyers. The shifting nature of the housing market and consumer preferences incentivized development of flexible housing schema and models that could absorb and adapt to moderate degrees of change without disrupting carefully calculated materials purchasing, production, and labor processes. The more flexible a schema, the more useful it was in the marketplace.

The building industry and industry-based researchers began exploring the potential of modular planning principles to create highly efficient, affordable units across a range of price points. For example, the Small Homes Council (SHC), a partially federally-funded research institute at the University of Illinois, produced a series of studies on unit planning for housing production. (Figure 1.17) Unit planning consisted of using a standardized set of plans for rooms or groups of rooms, all modular and designed to be combined in different ways. The system

included a bedroom unit consisting of a bedroom, bathroom and linen closet, a living-dining unit, and a work unit including the kitchen and utility area. SHC developed the units by studying circulation patterns, potential furnishing schemes, and even door and window placement variations. Each unit came in several sizes as well, depending on consumer preferences for more separation between living and recreation space for example, or smaller or larger bedroom sizes. Over time, the SHC developed units for garages, carports, home studies, and even front porches. The SHC's work built on earlier efforts, notably a 1947 research project carried out by the Producers Council and the National Retail Lumber Dealers Association. These organizations' "Industry-Engineered House" maximized the savings and efficiencies of modular coordination and standardized materials, but found little success with the public because the design allowed few possible variations. The SHC unit planning system allowed builders to treat each unit as a stand-alone entity, isolated from the rest of the house, and pick and choose modular units to create unified, but diverse housing forms according to market trends and target market preferences.

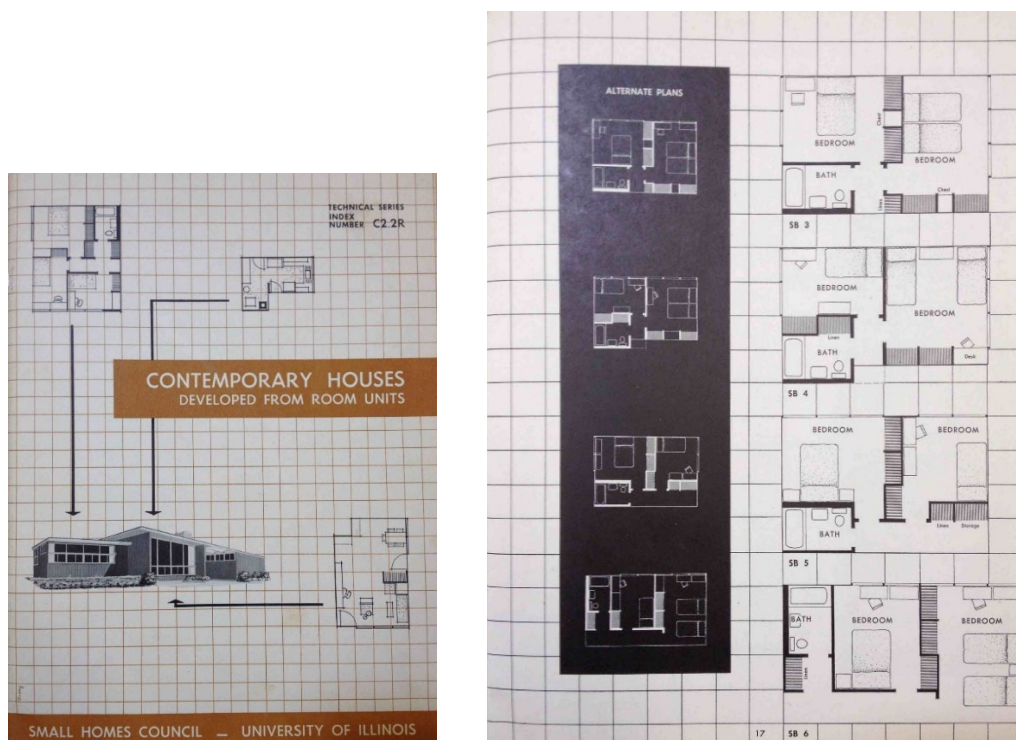


Figure 1.17. Cover and examples of plans created using the modular "room unit" system from the Small Homes Council publication "Contemporary Houses Developed from Room Units," (Small Homes Council, University of Illinois, 1951). Collection of the Prelinger Library, San Francisco, CA.

Building modes of flexibility into house forms for consumers to exploit after they took ownership also increased the appeal of the readymade product. Some of the best-known examples of this practice fall into what builders and government housing interests like the HHFA called the "expandable" house, or a house specially engineered for expansion over time as needs dictated. (Figures 1.18 and 1.19) Buyers could purchase small houses with framing designed to accommodate ells, wings, and garage additions already embedded in the walls. The

Levittown capes on Long Island are a classic example with their unfinished attic spaces. The Levitt Company also sized and framed rear-facing picture windows in the living room in its 1949 models so that owners could utilize the window opening as an access point for a rear ell expansion. (Figure 1.20) This practice mirrored to some degree the customization buyers who could afford contract or built-to-suit homes, but shifted the responsibility for those changes to the owner. During the early 1950s, higher down payment requirements for larger houses insured with FHA mortgages also spurred the marketing of expandable houses. The houses as built allowed buyers to put down less money, but facilitated expansion over time outside the FHA mortgage insurance financing process. Many builders issued guidance for their buyers to expand smaller, less expensive homes over time, and arranged certain spaces such as closets, interior circulation, and garages to accommodate additions.

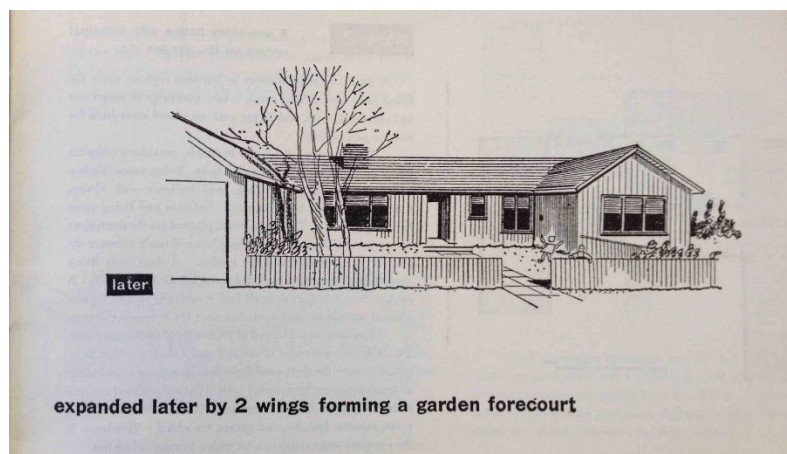
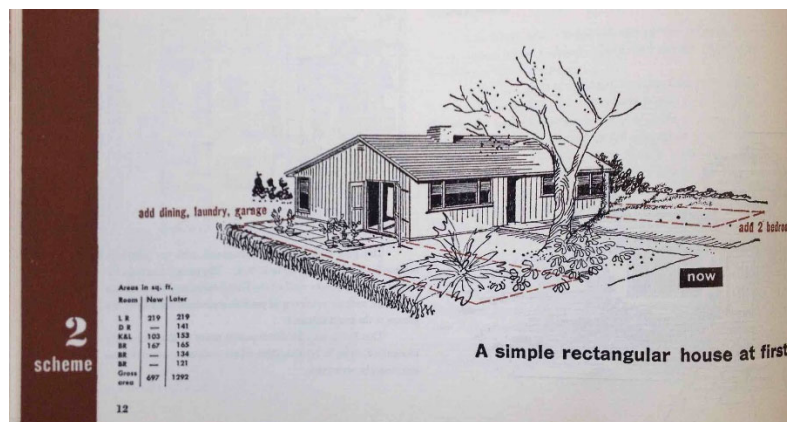


Figure 1.18. Scheme 2: A one-story house with principle rooms on the garden side from the Housing and Home Finance Agency publication “Planning the Expansible House” (Office of the Administrator, 1947). Collection of the Prelinger Library, San Francisco, California.

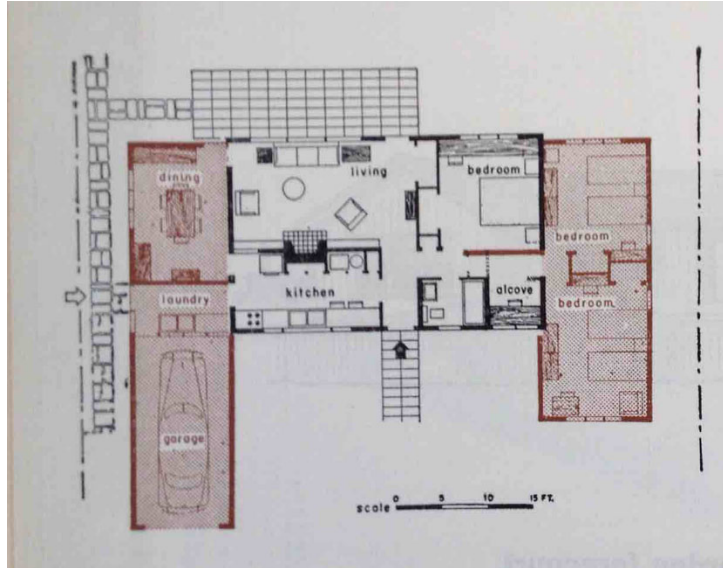


Figure 1.19. Plan for Scheme 2: A one-story house with principle rooms on the garden side from the Housing and Home Finance Agency publication “Planning the Expansive House” (Office of the Administrator, 1947). Collection of the Prelinger Library, San Francisco, California.

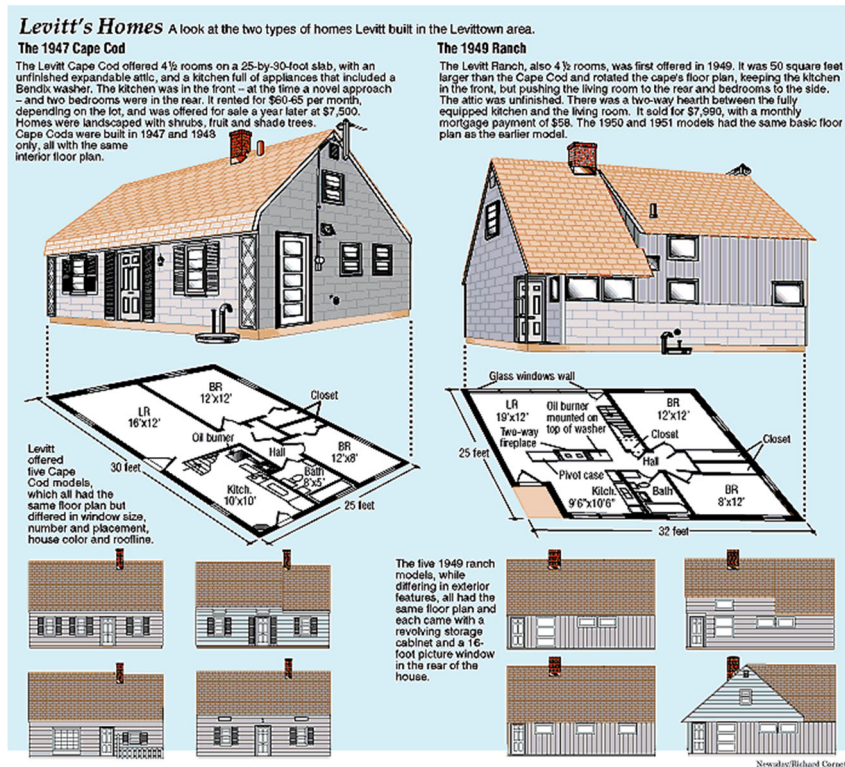


Figure 1.20. Plans and variations for cape (1947) and ranch (1949) models at Levittown, New York by Levitt & Sons.

Builders characterized the end result of successful integration of these various design values as “livability.” Livability was a loosely-defined, but important measure of product quality for builders and allied design professions over the course of the 1940s and 1950s. In the immediate

postwar years, livability was a primary consideration in houses of necessarily modest size. According to James Jacobs, livability referred to the intersection of space, plan, equipment and function and connoted ease, efficiency, and comfort within the household.¹⁰⁸ Architectural historian Monica Penick has similarly traced the usage of the term “livability” among mid-twentieth-century architects, designers, and housing interests as the way efficiency, comfort, performance, and beauty came together in period home design. But she notes that builders who embraced this term added another layer of meaning. Livability also referred to the ratio a house achieved between comfort, amenity, performance, and price point.¹⁰⁹ In other words, performance value – or how much a builder could offer for how little – was an inherent part of analyzing a model’s livability factor. What constituted “livability” was relative to the character of any given building market or market segment, as well as where the “most advanced, yet acceptable” design lay in those markets.

Achieving the end goal of livability in a model required successful negotiation of the design values outlined in this chapter. These five elements - continuity, novelty, uniformity, flexibility, and simplicity - constituted a series of core design values that balanced the needs of producer and consumer. Home builders relied on a certain degree of continuity in their designs to stay in line with accepted schema for their products, but they also had to incorporate elements of flexibility and novelty to attract consumers and provide for change. Builders’ designs also had to be efficient and cost effective to produce, meaning that simplicity and uniformity played an important role. Drawing on these values, builders engaged in a constant process of design optimization to create a pleasing balance of functionality, efficiency, appeal, cost, and value that more aptly defines “livability.”

Conclusion

In the mid-twentieth century, American home builders were negotiating a new set of building products, buyers, and scales of production that they helped conceive, but by no means controlled. Political, economic, and market factors shaped home builders’ design environment, objectives, and the values that underwrote the rapid development and proliferation of a diverse array of modest housing forms targeted toward the lower middle and working classes. Builders’ design environment and values resulted in what can be called optimized housing forms: dwellings meticulously tailored to materials, production methods, market, and geographic locale. Mid-century suburban home builders and their products show the flexibility of free-market-focused development in adapting to the sometimes chaotic economic, political, and by extension, social conditions of time and place. The houses reflected builders’ understanding of their markets but also afforded owners some agency to tailor their environment in the future based on their own needs, desires, and economic abilities. Builders

¹⁰⁸ James Andrew Jacobs, “‘You Can’t Dream Yourself a House’: The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World, 1945--1970: [1]” (Ph.D., United States -- District of Columbia, The George Washington University, 2005), 117–18, <http://search.proquest.com/dissertations/docview/304997904/abstract/F64C7599F7E843E2PQ/14?accountid=14496>.

¹⁰⁹ Monica Michelle Penick, “The Pace Setter Houses: Livable Modernism in Postwar America” (2007), 19–20, <http://repositories.lib.utexas.edu/handle/2152/3628>.

responding to the social and economic tensions imbued these dwellings with certain values, resulting in a flexible spatial and design product that could anticipate and absorb the will of the consumer. These houses were not just design products, but also products of the political economy of the housing design environment.

Home building design culture in the decades flanking World War II demonstrates the coalescing of a national consciousness around issues of home building, but also the continued vernacular processes builders engaged in to create housing. This marketized vernacular process relied on continued dialogs between producers and consumers. The increasing scale, speculative nature, and uniformity of underlying schema in the mid-twentieth century housing market did not disrupt the connection between maker and user, but shifted that dialog to occur in new forms and through new flows which will be further explored in the next chapter. The tract house was a site of reconciliation between the national and local political economies, and what was understood to be the universal housing preferences and tastes of the mass subject and the local specificities of time and place. These common dwellings constitute a text and index of the influence and balance of these converging forces in national housing culture and the rehousing efforts of the period, efforts that recast the domestic culture of the United States.

CHAPTER 2: THE BUILDER AS DESIGN DIRECTOR: TRACT HOUSE DESIGN DEVELOPMENT AND THE BUILDER-CONSUMER DIALOG

In 1950, Thomas P. Coogan, then President of the National Association of Home Builders (NAHB), published an editorial in *Architectural Forum* in which he outlined the array of decision points builders faced in producing a housing product. The builder, Coogan wrote, must build a house that will meet mortgage load requirements, meet FHA design and construction guidelines, be economical to construct, carry a down payment and monthly payment within potential buyers' ability to pay, fit on a standard fifty or sixty-foot-wide lot, have an appearance that appealed to local buyers, and have a design that was flexible enough to vary across cost scales.¹ In this scenario, builders' underlying design values, Federal Housing Administration (FHA) guidelines, and basic accepted housing schemas solved only a portion of builders' design problems. Solving the problem of what to build involved issues of production, profitability, the aesthetic and spatial character of the house-as-object, and matters of cultural and social resonance. In the late 1940s and early 1950s, the building trade journals *American Builder*, *House & Home*, and the *NAHB Correlator* – the National Association of Home Builder's monthly journal - were filled with articles whose titles asked "What Kind of House Should You Build for Today's Market?" "Are You Sure You're Giving Buyers What They Want?", and "What Do People Want in New Houses?." Alongside these articles, the journals presented real-life examples of trends in action via profiles of homes builders around the nation that were successfully selling in the moderate and lower-cost housing market. Aside from indicating a busy pattern of design exchange among builders – a topic addressed further in Chapter 6 - these recurrent articles and features on "what house to build" demonstrate that a mass-market cape, ranch, or split level was not enough to succeed in an increasingly competitive consumer housing marketplace.

This chapter examines the ways large-scale home builders learned about and understood their markets, developed home models, staffed their firms, and bridged the gap between an increasingly nationalized housing culture and local specificities. Scholars of common home building such as Thomas Hubka have characterized the individual home builder as an agent of reconciliation between local and national housing market regulations, negotiating the economic realities of production and the more abstract considerations of consumer appeal and acceptance. While builders had many normative models to choose from, the real work in housing design was selecting an acceptable housing form and adapting it to the thousands of smaller local markets around the country where builders built and customers bought. This process of reconciliation is the underlying driver of builders' design methods and forms the distinct patterns of builders' design work and culture.

The advice, model practices, and discourse on developing successful housing models in home builders' trade journals reveal large-scale builders engaged in design much more in the vein of product design than artisanal architectural design. For builders, design was a heuristic

¹ Thomas P. Coogan, "The Builder Needs the Architect and Is Ready to Meet Him Half Way," *Architectural Forum*, April 1950, 118.

exercise involving examining earlier models and competitors' work; market research; cost, production, and functional analyses; and social and cultural relevance.² Builders did not do this work alone. The complexities of designing and producing the largest and most expensive consumer good on the market required a diverse and multidisciplinary design labor force that could include, but was in no way limited to those trained in architecture. Builders pulled from a wide array of building and design-related fields for their staff, including planners, commercial artists, engineers, construction specialists, and realtors. Builders also borrowed and adapted design methods from other emerging professions focused on mediating between producers and consumers, most notably industrial design and retail merchandising.

Equally significant were builders' direct and indirect relationships with consumers. Housing and design scholars have long recognized that design processes for consumer goods are dialogic rather than one-sided. Lucy Kimbell's concept of design-as-practice conceptualizes design work as situated in the contingent sets of practices by designers *and* those who engage with their designs.³ Scholars such as James Jacobs, Richard Harris, and Amos Rappaport similarly recognize that in the context of commoditized mass housing, builders and consumers engaged in direct and indirect dialog on the form and character of housing as part of vernacular process of co-production. The dialog between producers and consumers, conducted through formal and informal campaigns of market research, calculated experimentation, and response to sales, drove the design cycle for home builders as it did for other durable goods makers. The result was a marketized vernacular wherein producers and consumers jointly negotiated adoption and adaptation of new and existing schema to locally specific housing cultures and economic conditions.

Like much vernacular architecture, antecedents and authorship can be murky territory for common tract housing. In Thomas Hubka's analysis, common houses have many precedents, but not in the "standard, line-of-influence, creative developmental sense."⁴ These house types are limited by economic constraints, construction practices and technology, and class-based cultural and social norms. Hubka notes that while it may be culturally normal and generally acceptable to live in uniform dwellings, the differences between plans and details are the "strategic playing field of popular house-design decision-making and usage."⁵ The decisionmakers on these playing fields are usually not confined to a single individual, but rather are made up of a team in which the builder, as design director, makes final decisions. As builders became more and more adept at communicating ideas amongst themselves and in dialoging with consumers in the mid-twentieth century, the authorship of common housing designs increasingly spreads and multiplies. The "strategic playing field" of design decision making, however, was roomy enough for builders to generate the distinctive regional housing forms and signature housing products.

² Jeffrey L. Meikle, *Design in the USA* (New York: Oxford University Press, 2005), 112; Norman Bel Geddes, *Horizons* (Boston, Little, Brown, and Company, 1932., 1932), 225–27.

³ Lucy Kimbell, "Rethinking Design Thinking: Part 1," *Design and Culture* 3, no. 3 (2011): 296.

⁴ Thomas C. Hubka, *Houses Without Names: Architectural Nomenclature and the Classification of America's Common Houses* (Knoxville: Univ Tennessee Press, 2013), 26.

⁵ Hubka, 91.

The overview of common design methods and processes presented here covers what builders considered best practices in the field. Often, individual builders with specialized experience introduced these methods to the national homebuilding community through trade publications, which regularly featured proven innovations and efficient practices. Other times, builders borrowed practices from government housing agencies, philanthropic reform movements, or professional architecture and engineering. These methods and processes will also be explored in more detail in chapters three through five via the work of builders Henry Doelger, David Bohannon, and Earl Smith and their San Francisco Bay Area developments.

Design Methods and Processes

Bruno Latour observed that to design is always to redesign, an observation that applies to builders' design approaches particularly well.⁶ When builders and their design teams set out to shape a house model, they were rarely designing from whole cloth. In builders' analysis, a successful design was not an original, artistic achievement, but a design that could be efficiently produced at a large scale; matched consumer expectations, needs, and desires; and was offered at the most competitive price.⁷ When consumers bought items like cars, refrigerators, or radios they were essentially buying a standardized product with a set of features and styling that answered their specific needs or desires.⁸ Builders took a similar tack with housing design, seeking out proven, existing plan arrangements, construction techniques, materials, styling and finishes wherever possible, and adapting those schemas in novel ways to accommodate variations in program, taste, and price point.⁹ These models and patterns came from existing regional house forms, FHA minimum house schema, and other builders' models from around the country. The notion that builders' design work drew from a limited scope of possibilities suggests methods focused on achieving a balance between rational action and the social, economic, and political realities that shaped their design environment. These methods place their work well within the boundaries of design practice as observed by scholars of organizational and design decision making. Builders came up not with optimal design solutions, but what Herbert Simon identified in his analyses of design process as "good enough" or "satisficing" solutions. In doing so, builders also engaged with design methods in line with those observed in architecture by Chris Alexander involving use of pattern language and drawing from a menu of standard solutions appropriate for a particular type of problem.

⁶ Bruno Latour, "A Cautious Prometheus? A Few Steps Toward a Philosophy of Design (with Special Attention to Peter Sloterdijk)" (Keynote Lecture, Design History Society, Falmouth, Cornwall, United Kingdom, September 3, 2008), 5, <http://www.bruno-latour.fr/sites/default/files/112-DESIGN-CORNWALL-GB.pdf>.

⁷ Neal MacGiehan, "Why Do People Buy?," *NAHB Correlator*, January 1954, 177.

⁸ MacGiehan, 177.

⁹ James A. Jacobs, *Detached America: Building Houses in Postwar Suburbia*, Midcentury: Architecture, Landscape, Urbanism, and Design (Charlottesville [Virginia]: University of Virginia Press, 2015), 60.

Adaptive Redesign and Merchandising

Scholars of mid-twentieth century housing have discussed these processes of transforming existing models as exercises in adaptive redesign.¹⁰ The practice of adaptive redesign has a long history in the production of consumer-oriented goods. Material culture and business history scholar Regina Blaszczyk has characterized the design approach of consumer goods producers in the nineteenth and early twentieth centuries as one of “flexible specialization,” in which producers responded to and shaped consumer desires by creating a constant flow of novelty within a single class of goods.¹¹ It was these novel features, more so than the character of the base model, that actually sold material goods. In 1954, federal Housing and Home Finance Agency (HHFA) production finance specialist Neal MacGiehan advised builders to pay attention to what kinds of features would be most attractive to buyers. Market research – and design – began, he stated, with the most basic question: “Why do people buy things?” MacGiehan told builders that according to experts in consumer goods marketing and sales, consumers bought not to own something, but because of features that promised specific benefits that satisfied certain wants or desires. These buying motives might be quite basic: bodily comfort, security, safety, pride or feelings of superiority, approval, aesthetic pleasure, or play. Sales required convincing the buyer that the product in question would satisfy their desires. Competitors for consumer dollars such as Cadillac and Wurlitzer Pianos already designed their products to appeal to the strongest buying motives appropriate to their products, and builders, MacGiehan urged, should do the same.¹² Large-scale builders often referred to the shaping and outfitting house models to appeal to consumers as part of the process of merchandising design, or offering buyers the right range of products at the right time to entice consumption.¹³ Though commonly understood in histories of the home building industry as publicity and advertising, merchandising encompassed three aspects: matching the right product to the right segment of the interested buying public; outfitting that product with as many attractive design, material, convenience, and comfort features as possible for the target price point; and promoting the product to educate the public on the availability and advantages of the product above competitors’ offerings.¹⁴

Design was a central part of the merchandising package. In 1953, Leonard Haeger, an architect and research consultant in the home building industry, stressed to *NAHB Correlator* readers that the most time-tested and proven merchandising tool was good design. By way of demonstration, Haeger outlined a variety of design practices builders could use, regardless of model, to give their products the look and feel buyers wanted in a house “today.” Because consumers indicated preferences for long, low profile houses, Haeger advised against any designs that broke up the roofline, which made houses look smaller. Dark roofs had the same

¹⁰ Jacobs, 52.

¹¹ Regina Lee Blaszczyk, *Imagining Consumers: Design and Innovation from Wedgwood to Corning* (Baltimore: The Johns Hopkins University Press, 2000), 9–11.

¹² MacGiehan, “Why Do People Buy?,” 177–78.

¹³ John R. Sargent, “Today’s Builder Must Merchandise,” *NAHB Correlator* 7, no. 6 (June 1953): 32.

¹⁴ Jacobs, *Detached America*, 60; Samuel Tommy Dodd, “Merchandising the Postwar Model House at the Parade of Homes” (MA Thesis, Austin, TX, University of Texas at Austin, 2009), chap. 2.

effect, making houses look smaller than light colored roofing. A single, simple wall material for exteriors was similarly effective in making smaller houses look larger. Wide overhangs, open kitchens, indoor-outdoor living, and built-in furniture functioned similarly.¹⁵

Builders' products were thus in a constant state of flux, requiring repeated refining and improvement to keep up with changing tastes, social patterns, and technological advances. As *American Builder* editor Joseph Mason observed, a good house was its own best salesman, but a close corollary in the words of industry analyst Ned Eichler was that what constituted a "good house" was a continuously shifting target.¹⁶ Advice to builders on model development highlighted the path builders had to navigate in offering houses for sale. *House & Home* advised builders in 1957 that "Houses are style goods, as surely as cars or clothes." "Don't get ahead of the styles," *House & Home* recommended, but "Don't cling too long to last year's best-selling design" either. Automakers, the constant foil for home building in issues of sales, provided cautionary tales. Chrysler, for example, came out "twelve years too soon" with the 1935 Airstream, which flopped, and GM lost half a million dollars in sales in 1957 because it stuck too long to the previous year's models.¹⁷

Editors advised builders against "gambling blindly" on design changes, however. Style changes, they proposed, followed predictable courses similar to those in women's fashion. Just as women's clothing trends went from the runways of Paris and Milan to the local department store over the course of time, trends in architectural style and features moved from the "great creative architects" of the custom housing market, through the building and consumer home magazine pool, into more local custom house markets via architects, and finally, for features that caught on, the speculative house market. A trend might fizzle or take off at any point in the process, but when features such as patios, sliding glass walls, the split-level plan, or jalousie window were repeated in higher-end local markets, it was almost inevitable that they would be a safe bet in the region's speculative houses as well.¹⁸ Consumer magazines could also help builders predict trends by "pre-selling" ideas to consumers. Magazines not only got "millions of women accustomed to seeing and liking new designs that often seem strange at first," the magazines were also the "mainstream through which new design ideas flow from state to state." *House & Home*, a spinoff of *Architectural Forum* specifically geared toward home builders, urged builders to look at these magazines as a vast campaign of free promotion reaching much further than any local advertising program.¹⁹

Other advice included, "Don't bet too hard on any one style."²⁰ Like automobile or appliance makers, builders created annual product model series and scalable catalogs of

¹⁵ Leonard Haeger, "Good Design Pays," *NAHB Correlator* 7, no. 6 (June 1953): 29–30.

¹⁶ Joseph B. Mason, *History of Housing in the U.S., 1930-1980* (Houston: Gulf Pub. Co., Book Division, 1982), 78; Ned Eichler, *The Merchant Builders* (Cambridge, Mass: MIT Press, 1982), 84.

¹⁷ "Don't Cling Too Long to Last Year's Best Selling Design," *House & Home*, September 1957.

¹⁸ "Don't Gamble Blindly on Design Changes," *House & Home*, September 1957, 106–7.

¹⁹ "Follow the New Ideas the Big Consumer Magazines Are Pre-Selling to Millions of Women for You," *House & Home*, September 1957, 119.

²⁰ "Don't Bet Too Hard on Any One Style," *House & Home*, September 1957, 112.

models that adjusted to various price points, recognizing the diversity of taste in every market. Builders also adopted a “model year” approach, changing the design of a product enough to differentiate it from earlier work and keep consumers interested.²¹ Some families, for example, want to show off how “up-to-date” they were and be ahead of the styles, while others wanted to impress people as being solid citizens, conservative in their tastes and “never stepping out of line.”²² “If you are building enough houses to offer a choice,” *House & Home* advised, builders should construct some of both variety. “But if you build few houses, stick to the middle ground.”²³

Understanding the Buyer: Market Research and Vernacular Design

One of the most important shifts in the home building industry in the early twentieth century according to housing economist Miles Colean was that consumers no longer built houses, they bought them.²⁴ This shift in residential development from land sales and owner-directed construction to selling a packaged product of land and pre-built house accompanied the expansion of the housing market in the late 1930s due to high rates of family formation, rising wages, and New Deal housing reforms and incentives. As Ken Cupers notes, the awareness of the mass subject or user in design fields – including home building – emerged in tandem with the development of large-scale mass housing and public social service programs of the New Deal, increased industrialized production of space, mass consumerism, and in the case of housing, the development of a federal housing policy.²⁵ This shift in and expansion of the market, most consequentially toward the lower and middle socioeconomic classes, meant that builders had to anticipate consumer needs and desires in their products on a larger scale and in different socioeconomic positions than most builders had worked with in the past.²⁶

The emergence of the prebuilt consumer housing market turned builders’ attention toward two central questions: how to understand and quantify their anonymous potential buyers, or “users,” and how to design for this mass, versus individual, subject. Builders – as with any producer of goods – had engaged with these processes in tacit and informal ways.²⁷ But between the mid-1930s and the mid-1950s, builders began embracing a belief in better design through better understanding of their buyers.²⁸ This was part of their negotiation of their “strategic field” of design, and ultimately, their search for Raymond Loewy’s “MAYA,” or “most advanced yet acceptable” design. Previous scholarship has posited that most builders conceived of their buyers as white, upwardly-mobile, nuclear families, and this is not untrue.²⁹

²¹ American Institute of Architects Committee on the Home Building Industry, “An Exchange of Ideas” (Washington D.C., 1958), 4, American Institute of Architects, Washington DC.

²² “Don’t Bet Too Hard on Any One Style,” 112.

²³ “Don’t Bet Too Hard on Any One Style,” 112–13. HH 1957-9:112-113

²⁴ “House & Home Marketing Conference Hears What to Expect in 1955,” 148.

²⁵ Kenny Cupers, ed., *Use Matters: An Alternative History of Architecture* (New York: Routledge, 2013), 7.

²⁶ Avigail Sachs, “Architects, Users, and the Social Sciences in Postwar America,” in *Use Matters: An Alternative History of Architecture*, ed. Kenny Cupers (New York: Routledge, 2013), 10. HH 1954-11:148; Colean interview

²⁷ Hubka, *Houses without Names*, 37.

²⁸ Sachs, “Architects, Users, and the Social Sciences in Postwar America,” 70.

²⁹ See for example Jacobs, *Detached America*, 59.

But in the context of the market, this demographic profile provided little useful information. Consequently, deciding what to build and for whom became an increasingly data-driven exercise. It began with an understanding of a median profile or norm but evolved by the mid-1950s into seeking out understandings of consumer needs by studying the patterns of their everyday lives, creating more fine-grained market segmentation, and focusing on locally-based market research. This period marks the transition, as James Jacobs and Sian Winship have noted, of the building industry from land developers to designers and producers of a marketable consumer good. In negotiating this transition, builders became experts in interpreting consumer needs through these heuristic means, using varying forms of direct and indirect dialog with consumers to create catalogs of marketized vernacular domestic design.³⁰

Finding National and Regional Norms

Concerted efforts at researching potential housing consumers in the building industry began in the late 1930s. Federal New Deal programs and centralized federal resource planning during World War II introduced builders to the use of basic market research. By the war's end, most communities with populations over 50,000 had at least one housing study on record from federal activities associated with HOLC, FHA, the Public Housing Administration, the Division of Defense Housing Coordination, or its successor, the National Housing Agency.³¹ In the late 1940s, the HHFA spearheaded quantitative research efforts, tracking national trends useful to builders such as housing supply, household size, average home size, and home values.³² The HHFA also compiled regional housing characteristics, such as common forms, materials, and features for single-family, detached houses insured by the FHA and published them in the agency's quarterly *Housing Research* journal.³³ (Figures 2.1 and 2.2) The NAHB served as a central clearinghouses for market research and projections on consumer housing trends for home builders in the late 1940s and early 1950s, primarily through its Technical Services Division and Research Institute. The *NAHB Correlator* regularly reported on national demographic and market trends including marriage rates, vacancies, and existing housing supply to recommend how builders might refocus their products or marketing efforts.³⁴

³⁰ Sachs, "Architects, Users, and the Social Sciences in Postwar America," 76, 78–79.

³¹ E. Everett Ashley, III, "The Need for Developing Local Housing Market Data," *Housing Research*, no. 7 (April 1954): 3.

³² See for example Housing and Home Finance Agency, Division of Housing Research, "The 1950 Housing Situation in Charts Based on Preliminary Results of the 1950 Census of Housing," *Housing Research* (Washington, D.C.: Housing and Home Finance Agency, 1951), Prelinger Library, San Francisco, Calif.)

³³ These statistics were regularly excerpted and published in the *NAHB Correlator*. See for example, "Regional Housing Characteristics," *NAHB Correlator*, July 1953, 163–65.

³⁴ See for example, Robinson Newcomb, "Your Changing Market," *NAHB Correlator*, June 1952, 4–6.

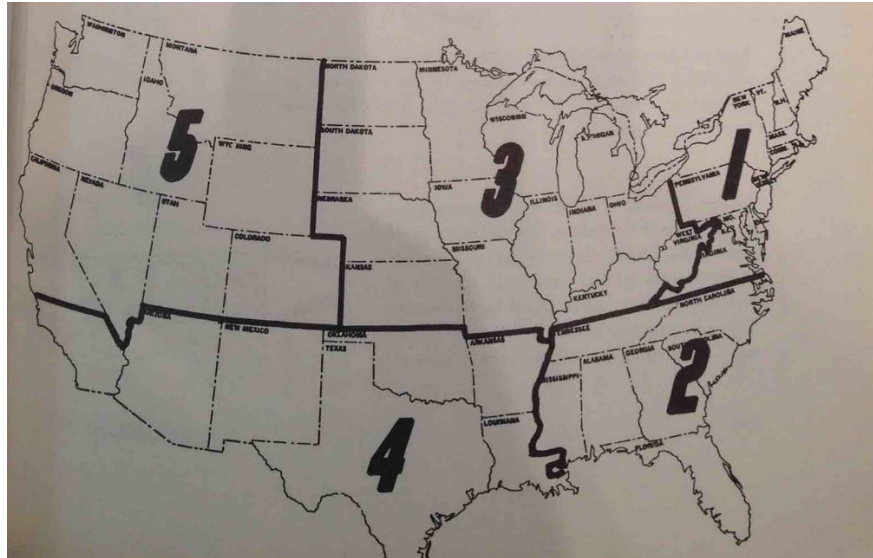


Figure 2.1. Five geographic areas for an HHFA Materials Use Survey of single-family detached homes build in the US during the first half of 1950. Source: *NAHB Correlator*, July 1953, page 163.

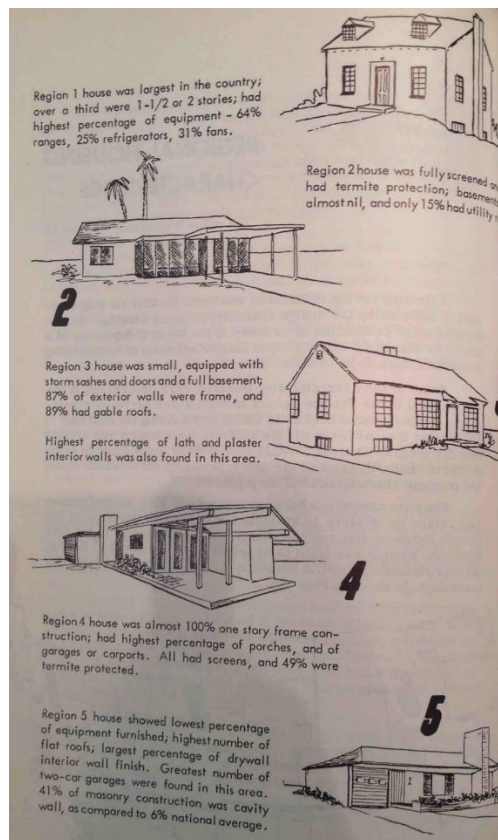


Figure 2.2. Typical houses by region based on the results of the HHFA Materials Use Survey of single-family detached homes build in the US during the first half of 1950. Source: *NAHB Correlator*, July 1953, page 164.

While useful, national statistics from federal agencies covered only the most basics facts, and builders quickly began conducting their own campaigns of research targeted more closely to their information needs. In these endeavors, the building industry focused on interpreting consumer desires and design trends as reflected in the market success of other builders' design work. In 1937, real estate sales expert A. John Berge urged *National Real Estate and Building Journal (NREBJ)* readers in an article titled "How to Sell Real Estate in Today's Market," to follow the lead of other consumer goods producers like the General Motors Corporation, whose motto at the time was, "There is only one person qualified to say just what the motorist prefers, and that person is the motorist himself."³⁵ Berge assisted the *NREBJ* with its first major survey of realtor-builders from across the nation on consumer buying motives, demands, and preferences in the new, more speculative FHA-driven housing marketplace. The journal asked 417 realtor-builders questions about everything from style to room arrangements, lot size to materials, building features, and systems and featured an entire section on bathroom arrangements. (Figures 2.3 and 2.4) The results, the journal emphasized, represented the opinions of hundreds of potential buyers for each of the realtor-builders queried, giving builders a sample view of consumer tastes and needs across the nation on "just how many of the new wrinkles in design, the newer methods of construction, the new equipment developments, the tricky gadgets have achieved such public acceptance that the operative builder must supply them in his new houses?"³⁶

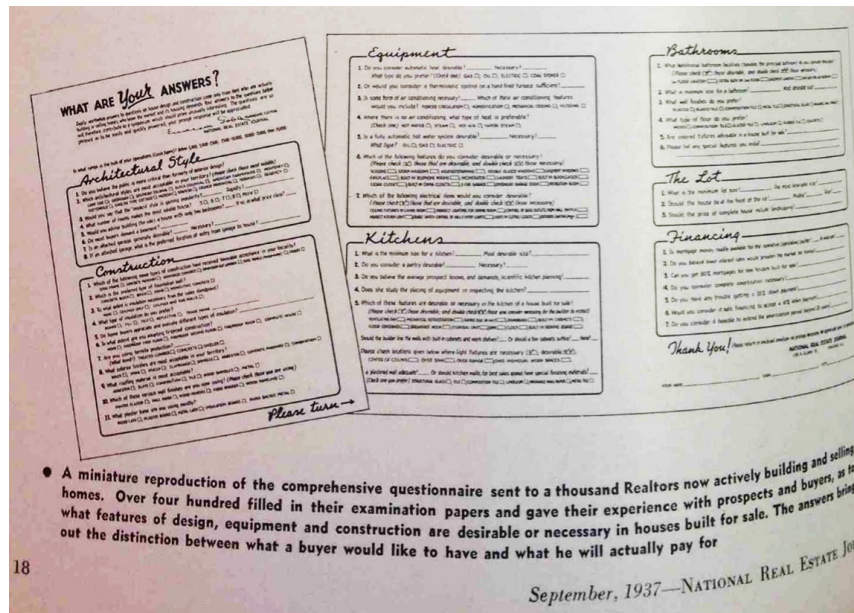


Figure 2.3. Questionnaires used in the 1937 Berge survey for *National Real Estate Journal* Source: *National Real Estate Journal*, September 1937, page 18

³⁵ A. John Berge, "How to Sell Real Estate in Today's Market, No. 1: A New Survey of Buying Motives of the Buyers Today," *National Real Estate and Building Journal*, May 1937, 17.

³⁶ "What Kind of a House for Today's Buyers?," *National Real Estate and Building Journal*, September 1937, 17; "What Kind of a House for Today's Buyers? Part 2," *National Real Estate and Building Journal*, October 1937, 20–23.

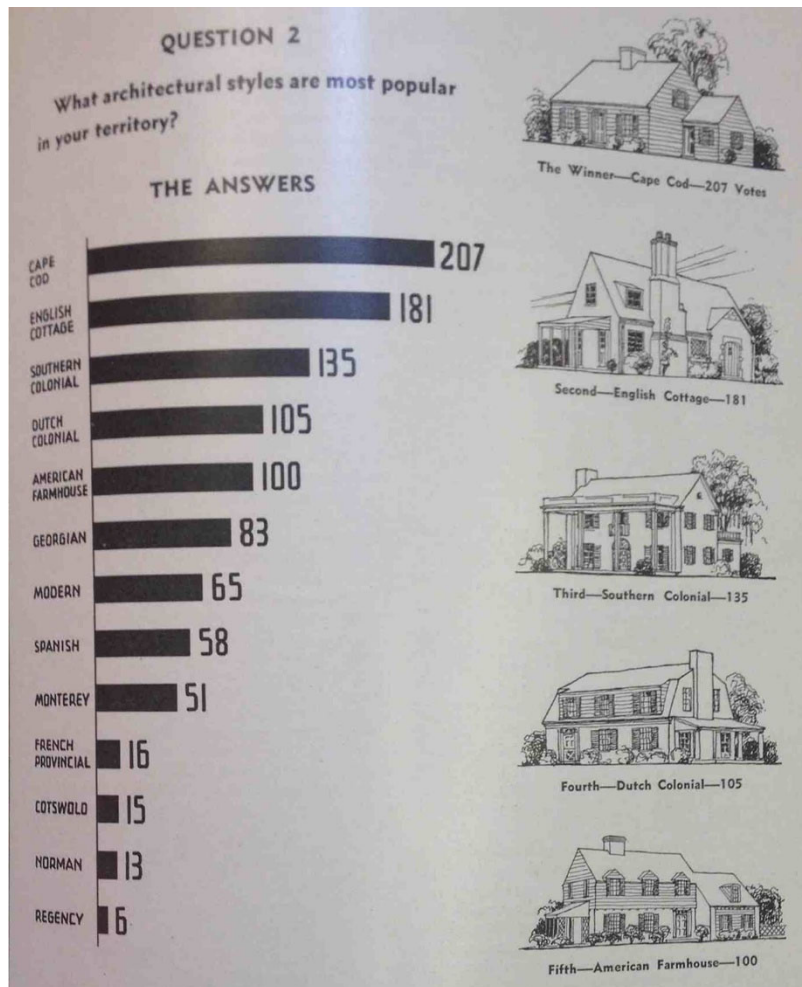


Figure 2.4. Results from question two of the 1937 Berge survey for the National Real Estate Journals showing results of preferences for architectural styles in realtor/builders' areas, and showing a clear preference for modest period revival-related designs Source: *National Real Estate Journal*, September 1937, page 19.

Other building industry trade publications soon followed suit, surveying builder-readers as to what trends or practices were finding success in their regional markets. In 1947, the *NREBJ* conducted a survey among its operative builder readers on the characteristics of "today's house." Their four-page questionnaire went out to 2,500 subscribers and asked questions about prevailing home characteristics such as the average number of rooms (five rooms, two bedrooms), average sales prices (\$8,578), architectural style (53 percent traditional, 43 percent "modernized traditional," and 3 percent "modern"), how many houses builders planned to construct in the coming year (35 percent more than last year on average), dining room or no dining room (a dead heat), lot sizes (typically fifty by 120 feet), materials (mostly wood frame), and financing.³⁷ The journal conducted the survey again every one to two years, looking at essentially the same questions, but with increasing levels of detail. In 1951, for example, the

³⁷ "Survey Tells Type of House Being Built for Sale," *National Real Estate and Building Journal*, November 1947, 14–14, 37.

NREBJ examined what architectural changes, features, materials, equipment, and construction techniques builders were adopting nationwide. The survey queried 1,900 builders building houses in the price range of \$11,285 to \$20,555 about the most popular style (modernized traditional at 70 percent of the vote), house size (5.34 rooms and 2.66 bedrooms), and types of plans offered (average portfolio of 6.1 plans).³⁸ The editors also issued advice to builders based on the survey, namely to increase their proportion of models with open planning, attached garages, deeper roof overhangs, and rear living rooms.³⁹ The look included details as small as kitchen cabinet material (largely manufactured, largely metal) to the presence of a dishwasher (45 percent of respondents).⁴⁰ The surveys became increasingly detailed over time as builders sought to optimize more and more of their design features. In 1954, the *NREBJ* reissued a similar survey to 1,500 realtor-builder subscribers to gauge buyer demands around the country. In addition to general characteristics, the survey did meticulous tracking of preferences ranging from flush versus paneled interior doors (distinct preference for flush) and colored versus white bathroom fixtures (most still preferred white).⁴¹ (Figure 2.5)

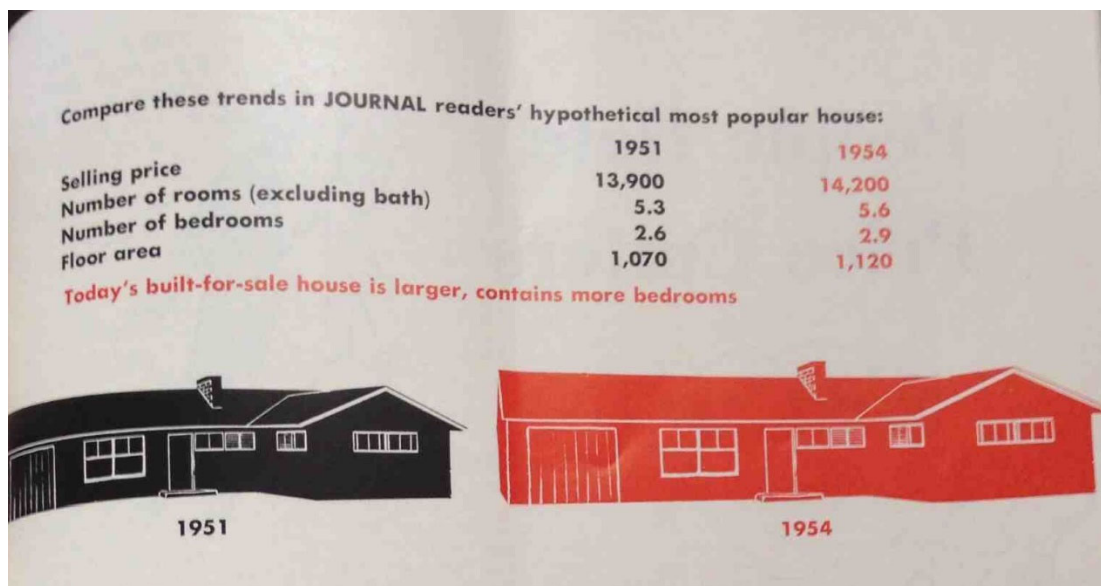


Figure 2.5. Results of 1954 *National Real Estate and Building Journal* survey of built-for-sale housing trends comparing results of readers' "hypothetical most popular house" in 1951 and 1954. Source: *National Real Estate and Building Journal*, June 1954, page 26

Going Direct to Consumers

In the field of architecture, the conception of the user – or consumer - transitioned over the course of the later twentieth century from a “standard, passive beneficiary” of design to an active participant, reflecting the realities of an increasingly diversified consumer culture. The

³⁸ “Nationwide Survey Indicates Characteristics of Today’s Built-for-Sale Houses,” *National Real Estate and Building Journal*, October 1951, 28.

³⁹ “Survey Points [Sic] Trends in Built-for-Sale Housing,” *National Real Estate and Building Journal*, September 1951, 25; “Nationwide Survey Indicates Characteristics of Today’s Built-for-Sale Houses,” 28.

⁴⁰ “Nationwide Survey Indicates Characteristics of Today’s Built-for-Sale Houses,” 29.

⁴¹ “Survey Shows Built-for-Sale Housing Trends,” *National Real Estate and Building Journal*, June 1954, 26.

home building design culture underwent this transition earlier, particularly as the “seller’s market” of the 1940s evolved into the “buyer’s market” of the 1950s. By the early 1950s, NAHB publications were flush with discussions on the importance and impact of consumer market research and recommended research methods. In 1953, John R. Sargent, a partner at the management consulting firm Cresap, McCormick and Paget, wrote in the *NAHB Correlator* that because houses fulfilled psychological as well as basic physical requirements for shelter, builders had to know the needs, preferences, and habits of their customers alongside population trends and social shifts in living patterns. Understanding consumers in this amount of detail required sound market research and abandoning the hackneyed trial and error methods of previous decades.⁴² Neil MacGiehan of the HHFA Division of Housing Research, wrote in the *NAHB Correlator* in 1954 that even builders who had done well in the past few years based on their own intuitive knowledge of their markets had to be more conscious about analyzing their markets. “Market conditions in all lines, like the old grey mare, ain’t what they used to be. This is a new game called “Buyer’s Market.”” In this market, “The Customer is King,” and the builder who would “win” was the one who offered the product that best met the needs, wants, and desires of his customers at an attractive price. McGiehan cautioned that automakers and appliance manufacturers were “already deep in market research.” As homebuilders, he said, “you are in the same business as General Motors, selling things to people,” and often competing for the same dollar. The *NAHB Correlator* followed McGiehan’s article with a series of pieces detailing how to set up consumer panels, use economic data, and analyze designs, locations, and sales promotion against basic consumer buying motives.⁴³ The increasingly competitive market, combined with the growing use of market and design research, replaced the project of identifying the normative, universal subject with the project of qualifying and quantifying growing series of smaller consumer groups.⁴⁴ These developments also occurred in architecture, but the marketized nature of home builders’ work accelerated their development, moving home builders toward an approximation of data-driven participatory design by the mid-1950s.

One of the first signals of this shift was a shift in the focus of building industry research from interpreting consumer demand through the market success of home builders’ models to going direct to housing consumers to assess their views. These efforts had varying degrees of mediation between consumers and producers. For example, builders and building trade journals often used consumer-oriented shelter publications as a convenient direct and indirect conduit to the opinions and views of potential buyers. In 1954, *House & Home* invited the editors of eight leading consumer shelter magazines, including *Better Homes & Gardens*, *Ladies’ Home Journal*, *McCalls*, *Good Housekeeping*, *Parents*, and *House Beautiful*, to meet with NAHB representatives on the question of “What do people want in a new house?” The goal of the meeting was to help home builders “find new ways to find new customers” by “betting” on the common threads the conversation generated.⁴⁵ Topics included everything from what made a

⁴² Sargent, “Today’s Builder Must Merchandise,” 31.

⁴³ MacGiehan, “Why Do People Buy?,” 176–78.

⁴⁴ Cupers, *Use Matters*, 7.

⁴⁵ “What Do People Want in New Houses?,” *House & Home*, May 1954, 174–77.

good house for children to more typical questions about kitchens, dining rooms, and bathrooms. The editors, who included the influential Elizabeth Gordon, advised builders to focus on better space planning, consideration of traffic circulation, including an entry buffer (even if only “psychological”), expandability, adding a separate dining area, improved kitchens and baths, and storage.⁴⁶ The NAHB took a more direct route in 1952, partnering with consumer shelter magazine *Living for Young Homemakers* to survey their readership on what they wanted and did not want in a house.⁴⁷ Forty thousand readers responded to a survey titled, “Are We Building the Right Kind of Houses?” The respondents were primarily younger married couples earning less than \$10,000 a year, about half of whom owned a home. They weighed in on preferred price range for a new home (\$10,000-\$15,000), home size and features (three bedrooms with a garage, eat-in kitchen, separate dining area), and house type (ranch was most popular). The survey also underscored the need for better design. Of respondents planning to buy a home in the near future who had investigated local developments, more than half were not impressed with what they saw, primarily because they disliked the architectural treatment of the homes. The readers wanted well-planned living space with fewer frills, not “over equipped” houses at the expense of quality and space.⁴⁸

Government and institutional research also moved beyond basic statistics in the 1950s, spurred by allocations for more intensive housing research funding via the Housing Act of 1949. In a 1952 feature in the HHFA’s publication *Housing Research*, the agency noted that builders were increasingly convinced they needed to have some fundamental knowledge of the requirements and desires of people they anticipated would buy their houses in order to stay in business. HHFA reported in the feature, titled “Why People Buy the Houses They Do,” the results of a nationwide survey of 1,000 home owners who purchased single-family homes targeted at low and middle-third income families between 1949 and 1950. Extensive interviews with the families constructed a profile of the majority home buying household and their basic housing preferences. The agency found that the most common buyers of lower-cost homes were World War II veterans under forty years of age with a skilled or semi-skilled job, managerial position, or self-employed position; children; and an income between \$3,000 and \$5,000.⁴⁹ Their preferred home, on average, was a single-story, two-bedroom, wood-frame house of quality material and construction with a basement, garage, and dining room priced between \$9,000 and \$9,500. Using this type of information, builders could target housing products to the income range, family size, and general preferences shown to be attractive, and then work from that baseline to tailor a home to other local specificities or conditions.

Mirroring the industry and market at large, the HHFA’s research grew increasingly participatory. In 1956, the HHFA convened the first Women’s Congress on Housing “to obtain the ideas of American housewives on home planning and design.”⁵⁰ During their meeting, 103 delegates from around the country registered opinions on what they liked and disliked about a

⁴⁶ “What Do People Want in New Houses?,” 174–77.

⁴⁷ “What Do They Want in a Home?,” *NAHB Correlator*, May 1952, 16–18.

⁴⁸ “What Do They Want in a Home?,” 17–18.

⁴⁹ Edward T. Paxton, “Why People Buy the Houses They Do,” *Housing Research*, October 1952, 1–7.

⁵⁰ “These Women Are Talking About You,” *House & Home*, June 1956, 138.

given catalog of builders' houses. (Figure 2.6) As a concluding exercise, the delegates collaboratively translated their desires into a design for a \$10,000 house (the average price point in the period).⁵¹ The program benefitted builders with insight into what women, then the primary stewards of domestic space, wanted in a home, and offered the women a taste of the challenges builders faced in accommodating those needs at a moderate price point. Although the congress resulted in assessment of national preferences in home design, the real value in the assessment was in the regional breakdown of the results. The hundred-plus women at the event met as a whole and in regional groups, producing both nationally aggregated and regionally-specific opinions on what they wanted most, would be willing to sacrifice, and what they thought constituted minimum requirements in a home. Across regional divisions, women reported minimum requirements of three bedrooms, 1.5 baths, ample closets and storage, a family room near or included in the kitchen, and no extremes in architectural design. In the New England region, women wanted full basements, pitched roofs, kitchens with eating spaces, a separate dining room, a separate living room (versus family room) for "decorous living," and traditional (vs. picture) windows only. In Northern California, by contrast, women wanted dining spaces in the kitchen, side entrances, no attic or basement, an oversized garage, and fully sealed ceilings (vs. exposed beams which caught dust).⁵²

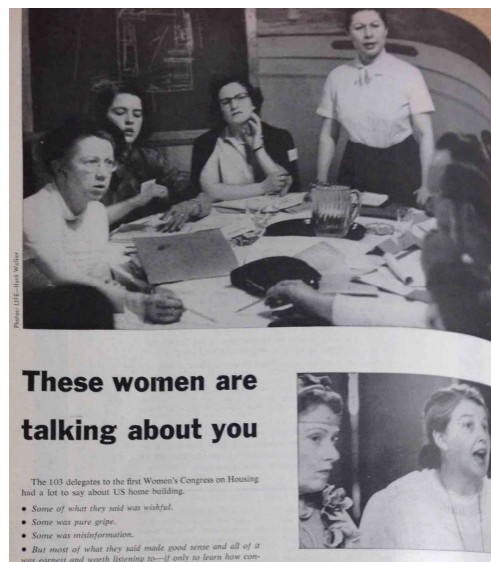


Figure 2.6. Women at the first HHFA Women's Congress on Housing in 1956 meeting in regional groups to discuss opinions on home planning and design. Source: House & Home, June 1956, page 138.

The results of these national surveys of building characteristics and by extension, consumer preferences and demand, allowed builders to assess where their products stood in relation to abstracted national and regional norms. The surveys, particularly those from building trade

⁵¹ "These Women Are Talking About You," 138–40.

⁵² "Report on Women's Housing Congress: The Houses Women Want - A Guide for Making Your Homes More Saleable," *National Real Estate and Building Journal*, June 1956, 17–19.

publications, also offered builders guidance that helped them keep abreast of the changing market and balance newly emerging trends against actual adoption and public acceptance.

Understanding the Local

Even as the housing industry got a firmer grasp on the national housing and housing consumption picture, data compilers and observers such as HHFA acknowledged that “national data are of extremely limited value for anticipating trends in individual housing markets.”⁵³ HHFA noted that local trends often diverged markedly from national averages. In 1952, for example, only a handful of American cities with populations of over 100,000 followed national performance trends, with some communities dropping more than 50 percent in housing starts the same year national figures showed steady rates of growth.⁵⁴ Local housing data was much more important than statistical averages across markets. The challenge was that while there was a growing body of national research on the housing market, local or regional market research was incomplete or badly out of date in most metropolitan areas. Citing the almost complete lack of systematic housing market research at the local level, in 1954 former NAHB President Thomas Coogan and the University of Miami’s Bureau of Business Research published selected results of a study of seventy-five market areas around the US in the *NAHB Correlator* designed to guide builders and investors in navigating the shifting postwar market. The study looked at population and housing, economic indicators such as employment and retail sales, and housing characteristics.⁵⁵ (Figure 2.7) The initial surveys had interesting results. For example, the work identified Albuquerque, New Mexico as the fastest growing housing market in the country based on the ratio of population to housing construction. The metropolitan New York market by contrast ranked sixty-second. The study also identified Los Angeles, Chicago, Detroit, San Francisco, Philadelphia, San Jose, Miami, San Diego, Sacramento, and San Bernardino as the nation’s fastest growing home building markets.⁵⁶

⁵³ Ashley, III, “The Need for Developing Local Housing Market Data,” 1.

⁵⁴ Ashley, III, 1.

⁵⁵ Nathaniel H. Rogg, “Survey Spotlights U.S. Housing Market Areas,” *NAHB Correlator*, September 1954, 28–30.

⁵⁶ Rogg, 30.

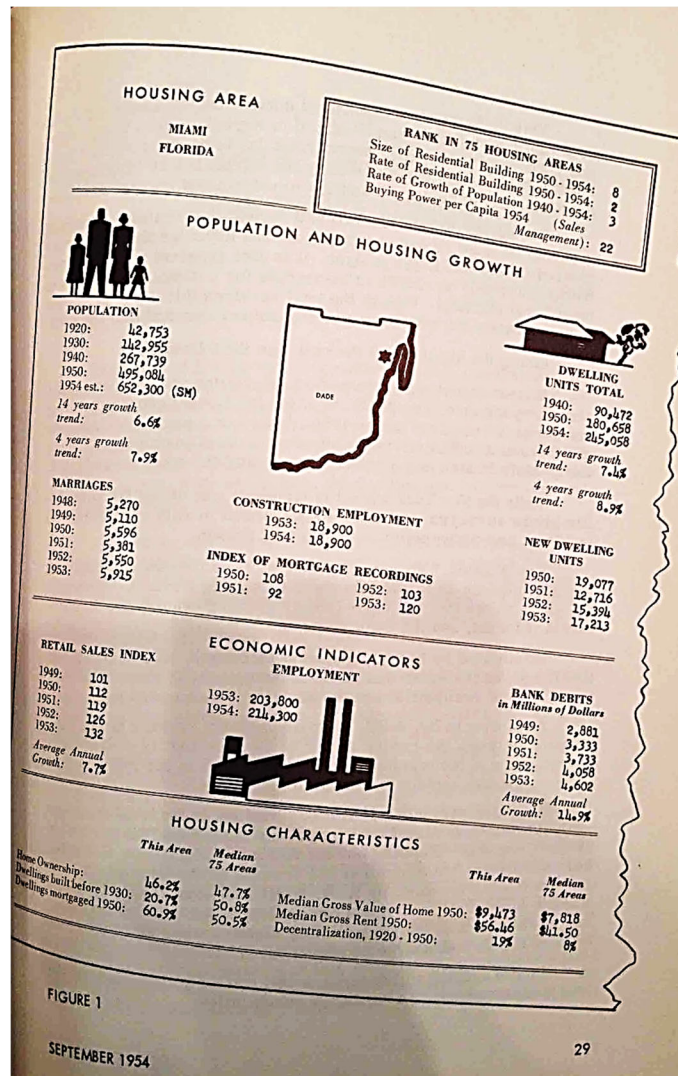


Figure 2.7. Sample summary of 1954 survey of US housing market areas by University of Miami Bureau of Business Research in partnership with Thomas Coogan, published in the NAHB Correlator. Source: *NAHB Correlator*, September 1954, page 29

Some builders banded together in discreet regions to share the cost of market analysis. In Baltimore, fifty builders set up a nonprofit organization, Real Property Research, Inc., in 1951 in partnership with The Johns Hopkins University. The service tracked the number, type, location, character, and cost of housing units started; vital statistics and employment numbers; and loan activity. Real Property Research furnished all its statistics to subscribers in series of monthly and quarterly reports. (Figure 2.8) Los Angeles, San Francisco, Detroit, and Miami builders sponsored similar market research programs.⁵⁷ In the San Francisco Bay area, the San Francisco Bay Area Council and the University of California, Berkeley went a step further with their joint 1955 venture, the Bay Area Real Estate Research Committee. The group of builders, architects, real estate appraisers, title companies, savings and loan associations, and contractors issued a

⁵⁷ "Market Research," *NAHB Correlator*, March 1952, 144.

quarterly report on “the housing situation,” including semiannual market analysis of the sales prices of ninety-six pre-selected houses representing typical construction, age, size, and character.⁵⁸ This information assisted in quantifying and qualifying a sometimes rapidly changing consumer population in centers of post-World War II growth like the San Francisco Bay Area while hedging against overproduction in any one income or product category.

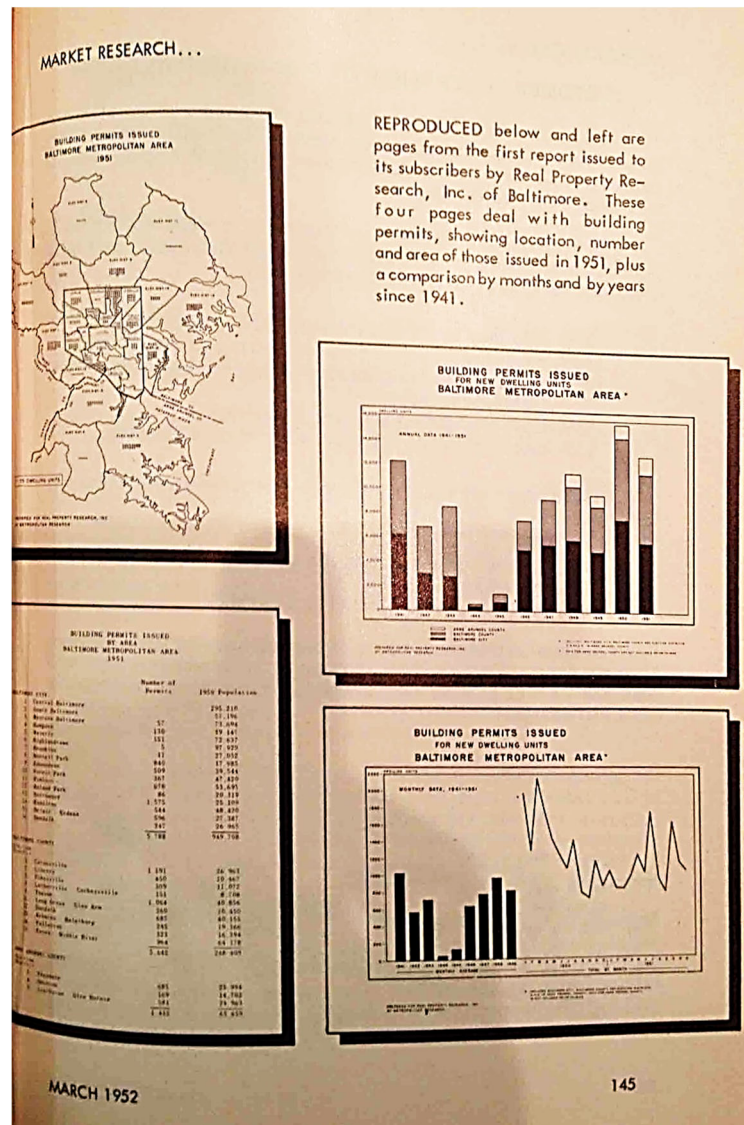


Figure 2.8. Reproduced pages from the first report (1951) issued to subscribers to the Real Property Research Inc. and Johns Hopkins University in Baltimore tracking building permits, development locations, and comparison of data since 1941. Source: *NAHB Correlator*, March 1952, page 145

Building industry professionals, such as Leonard Haeger, also cautioned builders against putting tremendous stock in national consumer preference studies. As home building was an

⁵⁸ E. Everett Ashley, III, “Local Market Data and How to Get It - Part II,” *NAHB Correlator*, February 1955, 174–75.

entirely local business, Haeger pointed out in 1952, surveys of national characteristics or consumer preferences could only serve as a basic guide.⁵⁹ Industry management consultant John Sargent warned against incorporating specific features designed to attract wider audiences, because in doing so, builders risked making the house less attractive to their *actual* market, which was locally specific.⁶⁰ By the late 1950s, the conventional wisdom among building industry leaders urged “Don’t knock yourself out bucking local preferences. . . Don’t try to sell California Modern for many tract houses in Connecticut. . . Don’t be surprised that Southern California went crazy over Cinderella [style]. Los Angeles has always liked its decoration lusher than San Francisco. . . Don’t try to sell Texas off brick. Don’t try to sell Minneapolis off basements yet.”⁶¹ Most local preferences made sense, and those that didn’t, signaled another kind of market occurrence. For example, *House & Home* editors noted the presence of thousands of “Iowa houses” in California and “Ohio houses” in Florida because buyers newly arrived from those areas wanted the kind of house they were used to “back home.”⁶²

As with local housing market performance data, local building associations and large-scale builders increasingly employed methods for understanding the needs and wants of their potential buyers at the local level. Developing housing products for target markets ensured better sales than trying to appeal to a generic everyman, and differentiating one’s products within a local market had the advantage of not going head-to-head with another builder for the same segment.⁶³ Ned Eichler, Joseph Eichler’s son, related that before local market research was widely available, builders did their own field research, collecting data from consumer interactions with their salespeople, often via model homes.⁶⁴ This practice continued after more widespread availability of market data as well. By 1950, *NREBJ* found that 90 percent of builders queried used model homes to help sell their houses, making them a ready-made market laboratory setting.⁶⁵ Management consultant John Sargent noted in 1953 to *NAHB Correlator* readers that model homes were one of the easiest ways for builders to do their own market research.⁶⁶ Frank Cortright advised builders in 1956 that smart builders made the most of their model homes as sales devices and showrooms. These builders used interior decorators, presented the home as a catalog of potential options, and employed sales merchandising aids from manufacturers similarly to a department store. The model home was in essence its own self-contained retail environment, able to both introduce consumers to potentially intriguing and attractive novelty while gauging just where “more” became “too much.”⁶⁷

⁵⁹ Leonard Haeger, “Low Cost Housing: Analysis of the Market,” *NAHB Correlator*, August 1952, 30.

⁶⁰ Sargent, “Today’s Builder Must Merchandise,” 32.

⁶¹ “Don’t Knock Yourself Out Bucking Local Preferences,” *House & Home*, September 1957, 114.

⁶² “Don’t Knock Yourself Out Bucking Local Preferences,” 114.

⁶³ Sherman J. Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area* (Berkeley: University of California Press, 1953), 28.

⁶⁴ Eichler, *The Merchant Builders*, 86.

⁶⁵ “Best Techniques for Showing Demonstration Houses,” *National Real Estate and Building Journal*, June 1950, 26.

⁶⁶ Sargent, “Today’s Builder Must Merchandise,” 31.

⁶⁷ Frank Cortright, “Today’s Tough Selling Market Is the Smart Builder’s Big Chance,” *House & Home*, September 1956, 143.

Another common tactic among large-scale builders for conducting local consumer research was the post-occupancy survey. In a 1953 *House & Home* article titled, “What Can a Builder Learn from his Customers?” editors reported that more and more “smart builders” were “knocking on doors” to ask questions about what people wanted in a house. (Figure 2.9) Builders were surveying people who had already bought their houses as well as prospective buyers on what they liked and disliked about their home and what they wished they could have in a future home. The advice *House & Home* editors gave was to be as specific as possible with survey instruments, using multiple choice questions to ensure clear responses. They also urged builders not to doubt consumer preferences indicated in surveys if they ran counter to conventional wisdom or what the builder thought consumers liked or disliked.⁶⁸ Frank Cortright, Executive Vice President of the NAHB concurred in 1956 that the smart builder should carefully study the people who bought their homes.⁶⁹ Key questions builders needed to answer were “what kind of people they are,” where they moved from, their likes and dislikes about their home, what advertising attracted them to the development, what features sold them on the house, and what changes they would like next time they buy a house.⁷⁰

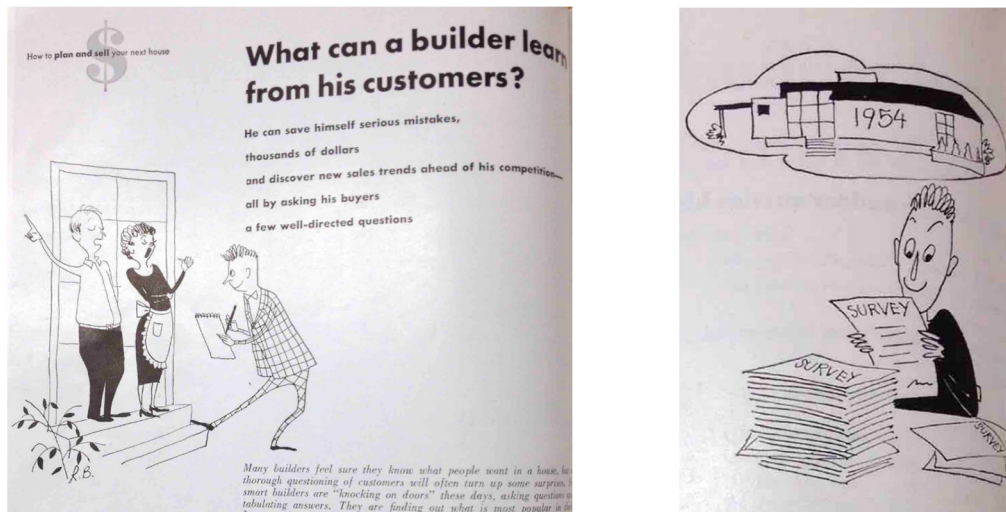


Figure 2.9 Images from “What Can a Builder Learn from His Customers,” in *House & Home* playfully encouraging builders to survey their existing customers to inform design changes. Source: *House & Home*, May 1953, page 176.

Inside the Four Walls

Builders’ efforts at understanding their consumers often fell short of a full-fledged campaign of environmental design research, but an emphasis on user experience – a term that would not be widely used in architecture for more than a decade – was a growing part of how builders conceived of and evaluated their products. Builders’ discussions of user experience were typically expressed in terms of “livability,” which they assessed by envisioning how a home buyer would function in their designs. In 1953, NAHB leadership got together with a

⁶⁸ “What Can a Builder Learn From His Customers?,” *House & Home*, May 1953, 176.

⁶⁹ Cortright, “Today’s Tough Selling Market Is the Smart Builder’s Big Chance,” 143.

⁷⁰ Cortright, 143.

group of architects practiced in working with builders, along with materials suppliers, bankers, realtors, and advertising specialists at the invitation of *House & Home* magazine. Their topic of discussion was the nature of “Tomorrow’s House.” The consensus of the group was that tomorrow’s house would be designed with “more thought to how people will want to live in it.” They would look at how parents could monitor children, how furnishings fit into rooms, what views were offered when looking out windows, how indoor-outdoor spaces were sited in terms of convenience and use, and of course, where the family would sit and watch television.⁷¹ A 1954 HHFA Housing Research series report on small, low-cost, home construction conceived of livability in similar terms, discussing considerations of circulation, storage, and furnishing options in housing design.⁷² In the mid-1950s, the *NAHB Correlator* “Design of the Month” feature presented a series of contemporary house designs from regional Modern architects like Richard Neutra and Hummel, Hummel & Jones, each accompanied by a “Livability Analysis.” (Figure 2.10) These analyses carefully described the relationships between rooms, furniture placement potential, issues of privacy and suitability for entertaining, consideration of traffic flow through the plan, utility and laundry placement, and storage solutions.⁷³

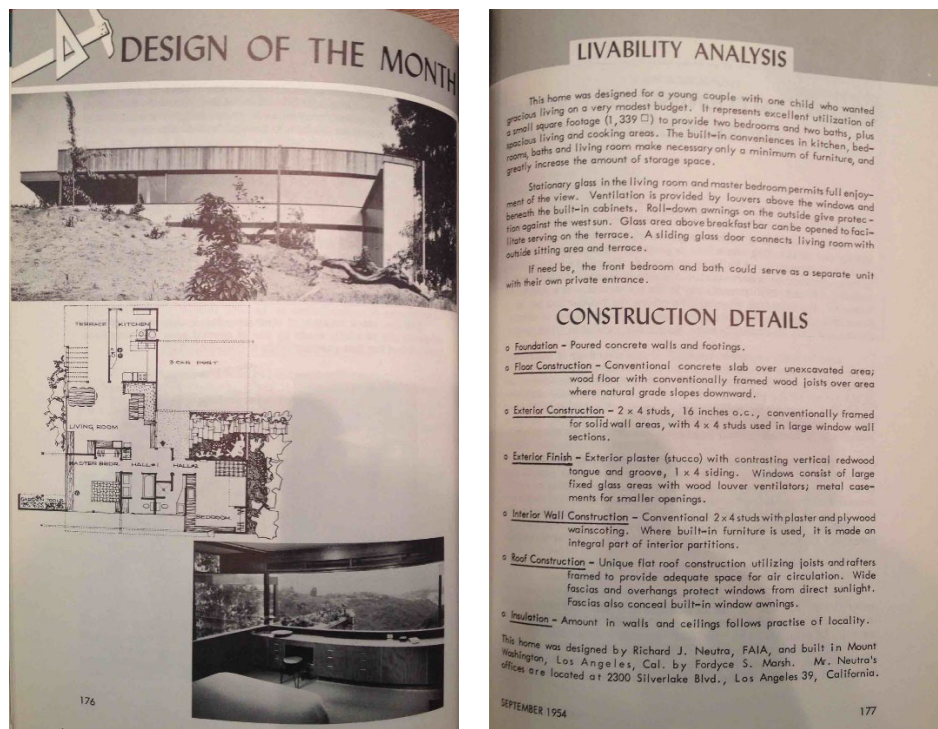


Figure 2.10. “Design of the Month” and livability analysis published in the *NAHB Correlator* in September 1954; designed by Richard Neutra.

⁷¹ “Architects, Builders, Lenders, and Suppliers Agree on Tomorrow’s Best-Selling House,” *House & Home* 3, no. 5 (May 1953): 121, 123, 127.

⁷² Small Homes Council, University of Illinois, Raymon Harrell, and James Lendrum, “Housing Research Paper 29: A Demonstration of New Techniques for Low-Cost Small Home Construction” (Housing and Home Finance Agency, 1954), 87–89, Prelinger Library, San Francisco, Calif.

⁷³ “Design of the Month,” *NAHB Correlator*, January 1955, 187; “Design of the Month,” *NAHB Correlator*, September 1954, 187; “Design of the Month,” *NAHB Correlator*, April 1954, 175.

Turning Market Data into Design Ideas

The building trade literature of the mid-twentieth century is rich with examples of builders translating market data into design ideas. Some of these projects were abstract and speculative, drawing on national trends to sell America's ideas on housing back to Americans. The 1937 *NREBJ* survey of 417 realtor-builders about the most preferred elements of housing design culminated, for example, in an architect designing two versions of "America's Most Salable House Designs" based on the results.⁷⁴ (Figure 2.11) In 1945, *Good Housekeeping* building editor Joseph B. Mason (who also served as editor of *American Builder*) asked three architects to translate the results of a national survey of recent home buyers into a representative model. *Good Housekeeping* exhibited the three resulting designs for "Homes America Wants" at Macy's in New York City and on tour at other department stores around the country.⁷⁵ (Figure 2.12) Other builders used research to naturalize new technologies such as air conditioning. In 1956, designer Henry Wright (former managing editor of *Architectural Forum*) and architect Bertram Bassuk teamed up to design an air-conditioned house as part of a promotional campaign for an air conditioning manufacturer. In order to design a house that would achieve maximum resonance with consumers, they conducted a campaign of research to identify as many popular ideas and features as possible for the design. To do this, the designers triangulated their inquiry, surveying houses featured in consumer magazines and leading builders' model homes. They also conducted a market test of proposed features among builders at the annual NAHB convention. (Figure 2.13) Bassuk and Wright examined twenty-nine published and constructed houses and picked forty-one design features and ideas that persisted across their research. These included layout features, tangible sales features such as storage walls or exposed interior masonry, and construction methods. The designers then asked builders at the NAHB convention to rank the features in order of market importance. (Figure 2.14) The designers felt that this tack would capture not only trend-setting features and innovations, but also features that builders approved of and the public found familiar and acceptable. Though many of the builders' rankings matched the exhibit house ratings for the most and least popular features, between the two extremes there was a wide range of opinion, showcasing the flexible center of housing design in which builders navigated.⁷⁶

⁷⁴ "America's Most Salable House Designs," *National Real Estate and Building Journal*, April 1938, 19.

⁷⁵ "Homes America Wants," *American Builder*, December 1945, 76.

⁷⁶ "What Are Today's Most Popular Features?," *House & Home*, May 1956, 182–83.

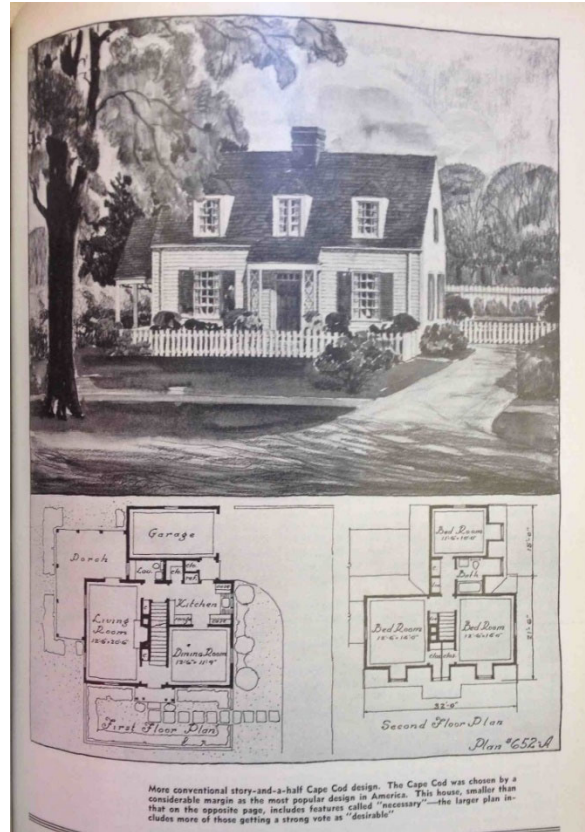
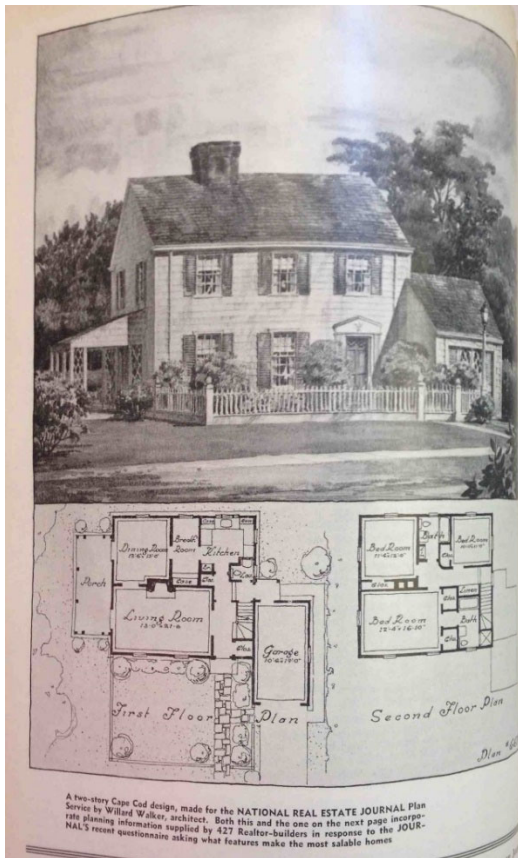


Figure 2.11. Two-story cape and one-and-a-half-story cape designs, from “America’s Most Saleable House Designs” from the *National Real Estate Journal* Plan Service based on input from 427 realtor builders. Source: *National Real Estate Journal*, April 1938, pages 20-21.

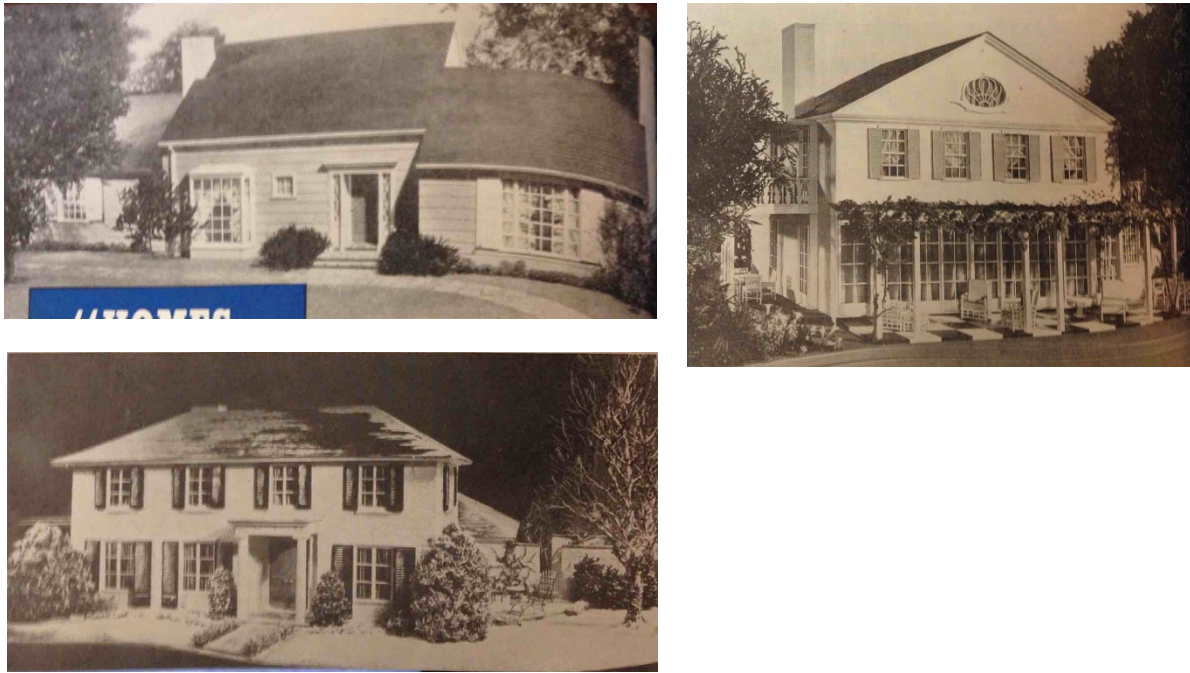


Figure 2.12. Three designs “Homes America Wants” from *Good Housekeeping* based on a nationwide survey of consumers. The houses were exhibited in 1945 at Macy’s in New York City and on tour at other department stores around the country. Source: *American Builder*, December 1945.

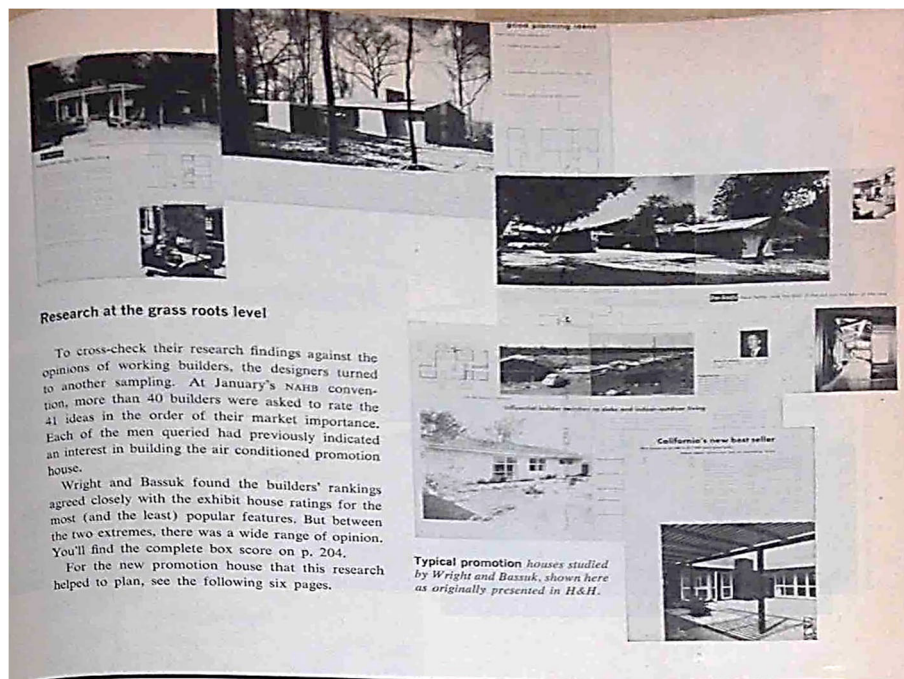


Figure 2.13. Samples of the houses published in *House & Home* that Henry Wright and Bertram Bassuk studied to inform their air-conditioned house design. Source: *House & Home*, May 1956, page 183

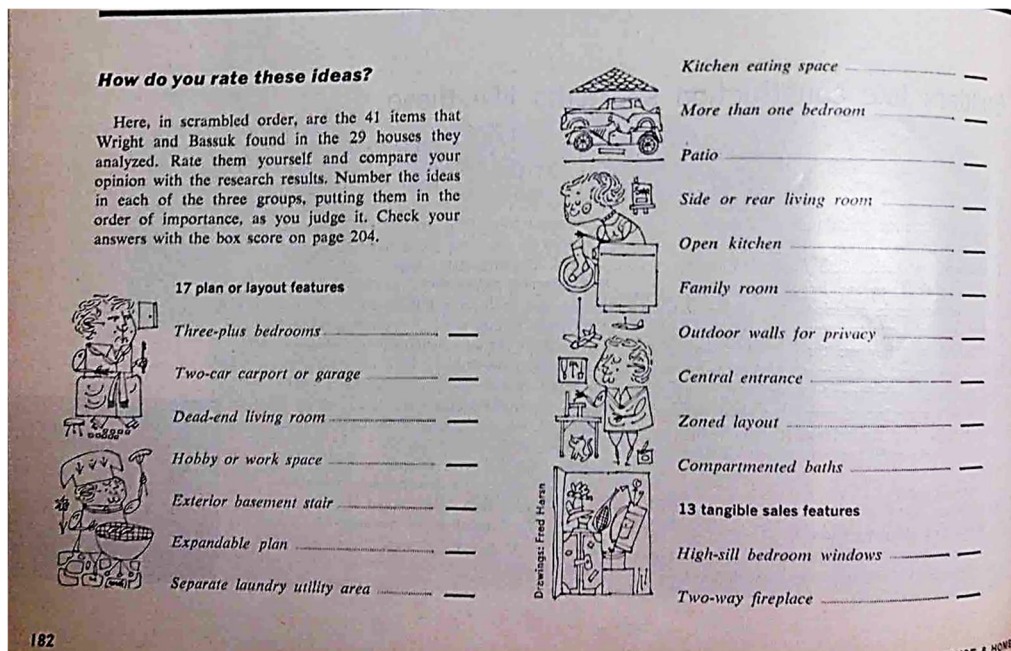


Figure 2.14. A sampling of the forty-one aspects of the twenty-nine houses Wright and Bassuk studied to be ranked in order of importance to the respondent. Source: *House & Home*, May 1956, page 182

Other national embodiments of consumer opinion got more circulation. In 1952, the Coleman Company, of recreational equipment fame, sponsored a national survey of 4,000 new homebuyers and people planning to build their own home. They integrated the results of the survey questionnaires with sixteen additional government, institutional, and private surveys on similar topics. Survey data indicated that “Mr. and Mrs. America” wanted a single-story, ranch home with a pitched (versus flat or shed) roof, three bedrooms, two bathrooms, open planning, picture windows, an option for outdoor living, forced air heating, some function for summer cooling, adequate storage, a utility room, and a carport.⁷⁷ The Coleman Company used the data to create the 1952 “Trend Home” for the NAHB National Home Week promotion in Wichita, Kansas. (Figures 2.15 and 2.16) The model Trend Home combined as many of the prevailing trends in the survey as possible. The Coleman Company marketed the Trend Home through regional building firms, who reproduced the model with variations for local preferences.⁷⁸

⁷⁷ “Nationwide Buyer Survey Reflected in Trend Home,” *American Builder*, December 1952, 86.

⁷⁸ “Nationwide Buyer Survey Reflected in Trend Home,” 80 The architect for the Coleman Company Trend Home was Ned A. Cole from Austin, Texas. The builder was Ken Stowell of Wichita, Kansas.

ADVERTISING ADVERTISING ADVERTISING ADVERTISING ADVERTISING

Popular "Trend House" Opens Today!

WHAT MR. AND MRS. AMERICA WANT IN A NEW HOME-TRENDS

Here are the latest trends in new home tastes, as established in a recent nationwide survey conducted by the Coleman Company. Over 4000 questionnaires were mailed to buyers of new homes and people planning to build. Here are the returns:

One-Story Construction
In 1945, 67 per cent of the homes built were one-story. In 1950 the figure was 71 per cent. Of those polled, 73 per cent reported they need in one-story homes; 78.3 per cent preferred them.



HAILED AS "HOUSE THE PUBLIC BUILT"

The doors of the new "Trend House" at W. 2368 Gordon, open today at 1 p. m. for the initial showing of a house which has attracted national attention as "the house the public built."

Marshall Wells Company, local distributor of Coleman heating and air-conditioning equipment, will be hosts at the week long showing of the house.

The completely furnished and air-conditioned trend home is thought to be the first home in the United States specifically built to define trends in residential construction, its sponsors report.

To determine trends, the market research department of the Coleman Company, Inc., devoted months to a study of building statistics and consumer preference reports. This was followed by a nation-wide survey of more than 4000 owners of new homes.

Results of the Coleman study have been incorporated in the Trend Home by Ned Cole, Austin, Texas, architect, and Leonard Lineberger, local builder. Certain changes in design were made by C. C. Rose of

HOME FEATURES
COLEMAN BLEND

This newly finished home at W. 2368 Gordon is the answer to the trend in public housing desire over the past 12 years. Architects Ned Cole and Leonard Lineberger have combined talents to produce this "house of tomorrow" here in Spokane. Other lumber buyers and contractors have adopted the building trend. The "Trend Home" will be open for public inspection for eight days beginning Monday, June 14.

Figure 2.15. Headline from *The Spokesman-Review* in Spokane, Washington hailing the Trend Home, June 14, 1953, page 57.

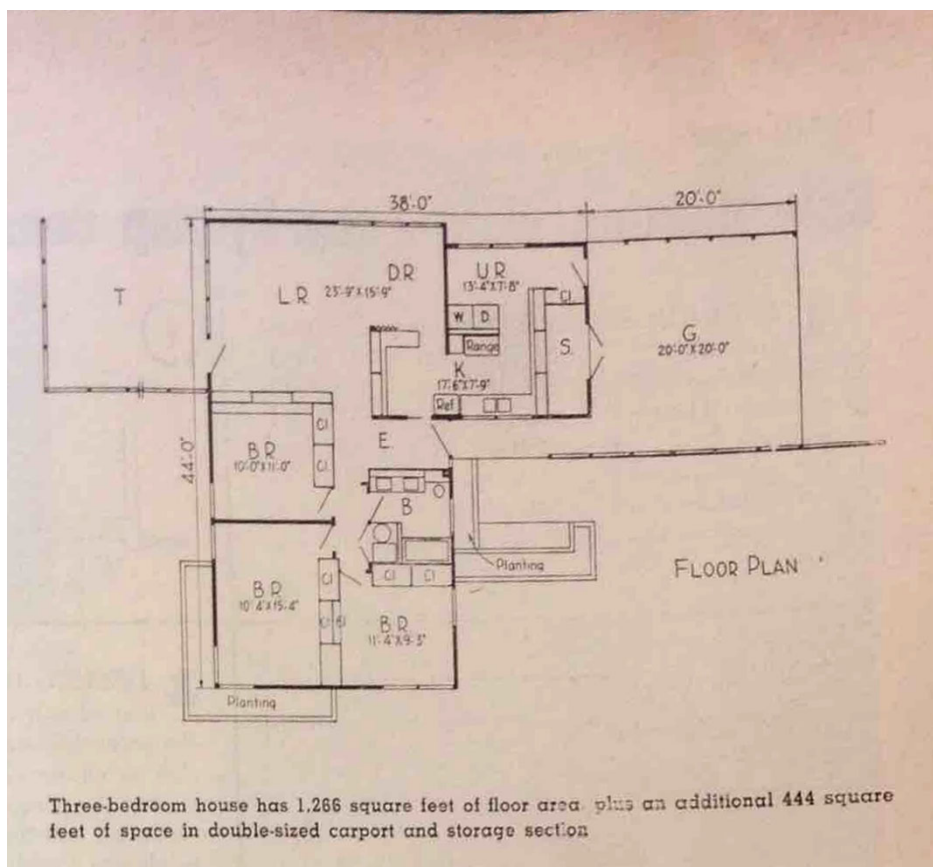


Figure 2.16. Plan of the Trend Home. Source: *American Builder*, December 1952, page 81

It was at the local level, however, that research most readily and meaningfully made its way into model selection. Builders began the work of matching product and buyer by identifying a promising new market segment to exploit with a new product or by pinpointing an encouraging

new geographic area and market to exploit with an existing product. In Sherman Maisel's study of the San Francisco Bay Area housing industry in the late 1940s, for example, large-scale builders typically researched their market by estimating the number of families within certain income brackets who might desire to live in a given area or in a particular type of home. The builder would then rough out ideas on site development and house design and hire an architect or engineer to check the plans.⁷⁹ Ned Eichler reported similar patterns, relating that for most builders, deciding what to build was a matter of targeting a price range.⁸⁰ From there, builders made decisions about characteristics such as square footage, plan, form and massing, materials, and sales-oriented design amenities that would balance economy and livability in the dwelling.

These simple statements belie the work that went into this decision making. Joseph Eichler, for example, hired a professional research firm in 1952 to interview 135 of his own buyers and 66 buyers of competitors' houses. From his research, Eichler learned that most of his buyers purchased his homes based first on price and second on the distinctiveness of his contemporary designs. He also learned that most of his home buyers wanted to have a second bathroom and increased storage, and that some of the company's detail and material choices had missed the mark. Eichler reported to *House & Home* that the survey data confirmed his belief that contemporary design was becoming more widely accepted and that all future Eichler houses would have two bathrooms – a feature many observers of his work note as a distinctive feature on the market.⁸¹ Other builders featured in the same *House & Home* article used multiple choice questionnaires sent to previous buyers, asking questions about satisfaction with the variety of designs available to buyers, the number of bathrooms and bedrooms, the balance and location of private versus public or family spaces in the house, and materials.⁸² South Bend, Indiana builders Place & Co. issued a three-page questionnaire of multiple-choice questions to 375 buyers in one of their subdivisions. The questionnaire asked owners about their general satisfaction with their purchase and more specific questions on features such as the slab foundations (just fine), storage (more always preferred), placement of the living room (majority preferred the front of the house), number of bathrooms (1.5 preferred at the development price point of \$16,000 plus), number of bedrooms (three adequate), and lot size (current size fine for price). This survey data backed up an experiment the company conducted by building twenty houses with front and rear living rooms. The front facing living rooms sold fastest, though salesmen noted that this was likely because the rear-facing living rooms looked out on unlandscaped areas still used for utility storage and trash cans. Based on the results, Place & Co. planned to continue with slab construction versus full basements, add more storage walls, build two-thirds of their houses with front-facing living rooms, add better landscaping elements for rear-facing living rooms, keep the majority of their homes at three bedrooms, and experiment with two full baths as a selling point.⁸³ Virginia builder Mark Bane conducted a contest among buyers at his Eastover Gardens development in Richmond, awarding cash prizes for the best suggested changes or additions to the dwellings that would improve livability

⁷⁹ Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area*, 112.

⁸⁰ Eichler, *The Merchant Builders*, 85.

⁸¹ "What Can a Builder Learn From His Customers?," 177.

⁸² "What Can a Builder Learn From His Customers?," 177–78.

⁸³ "What Can a Builder Learn From His Customers?," 177–78.

without significant additional cost. Local FHA staff judged the contest, the results of which Bane incorporated into his next development.⁸⁴ (Figure 2.17)

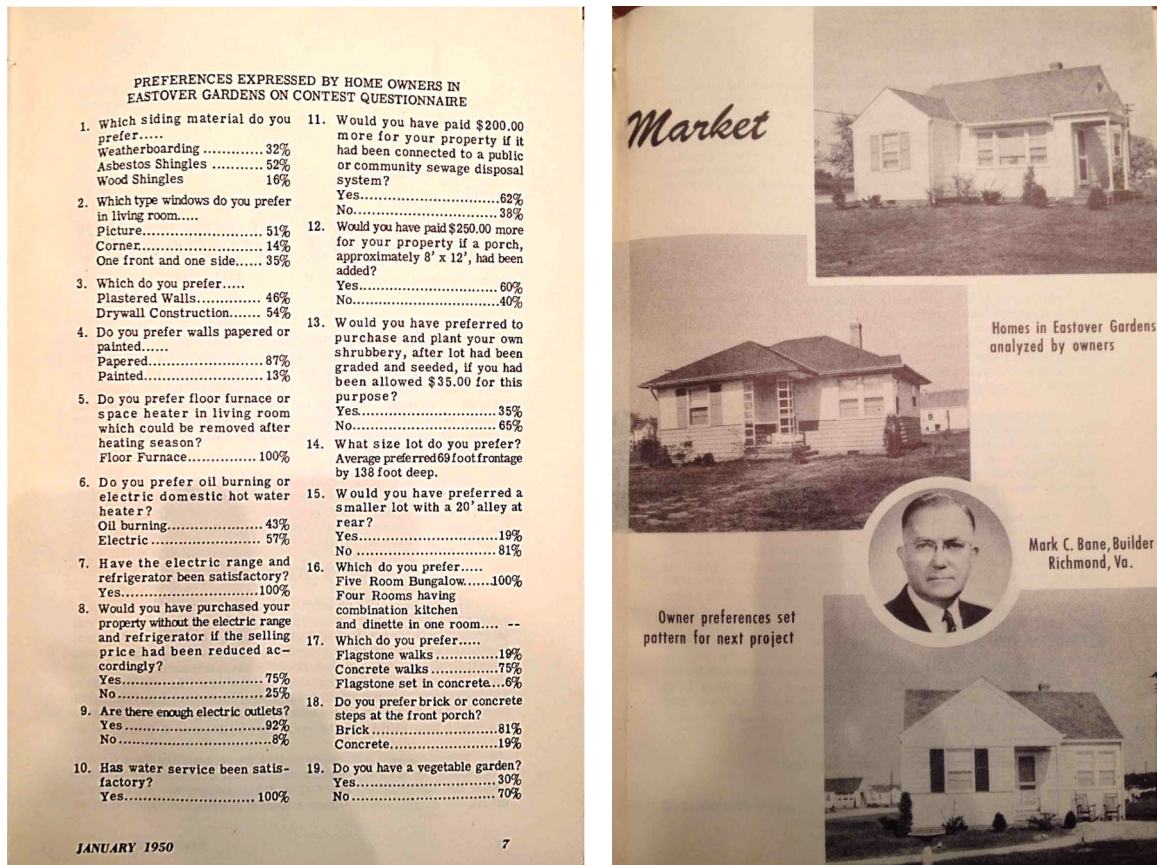


Figure 2.17. Survey questions and responses from builder Mark Bane's 1950 survey of his Eastover Gardens development in Richmond, Virginia and images of the houses in the surveyed development.

Source: *NAHB Correlator*, January 1950, pages 5 and 7.

Builders also used prototyping and loose processes of design testing in their built projects, often while simultaneously trying to sell a new idea to the public. In 1953, Bob Anshen of Anshen & Allen, a San Francisco Bay Area firm known for its work with Joseph Eichler, noted in *House & Home* that their FHA regional office and sales staff were skeptical of the public acceptance for rear-facing living areas (a signature feature in many Eichler Homes). The firm "built one anyway" and sold out a fifty-one-unit development of houses with the arrangement in ten days. The plan, Anshen stressed, made sense to buyers, and in that way created a trend that made it difficult for builders in the region to sell front-facing living areas.⁸⁵

⁸⁴ Walton Onslow, "It Pays to Analyze Your Market," *NAHB Correlator*, January 1950, 4, 6.

⁸⁵ "Architects, Builders, Lenders, and Suppliers Agree on Tomorrow's Best-Selling House," 132.

The Design Workforce

The firm Anshen & Allen has been much celebrated for its work with Joseph Eichler and Eichler Homes, designing innovative Modern tract housing. However, this seemingly standard model of contractual arrangement between builder and outside, independent architect is not representative of the diverse and multidisciplinary nature of the design work force in housing development. In 1951, southern California builder Fritz Burns wrote that home building encompassed “at least half a dozen activities, each one of which is a business in itself.”⁸⁶ Burns broke down the aptitudes home building needed to be successful, listing land selection, land development, architecture, construction, financing, and merchandising as critical.⁸⁷ “Furthermore,” he wrote, “being so divergent in their nature, it is almost impossible to find any one individual whose capabilities are broad enough to embrace more than two or three of these.”⁸⁸ In 1954, E.M. Spiegel, a past president of the NAHB, said at a *House & Home* Marketing Conference that the most significant change in building over the past decades was that it had now become a team operation involving design professionals, financing professionals, and sales professionals, all of whom had a role to play in product development.⁸⁹

The Role of the Architect

In this environment, one of the most notable aspects of builders’ design workforce was the variable role of the professional architect. Statistics on the involvement of architects in mass, single-family home design are difficult to confirm and tend to vary, but a brief survey of the estimates shows fairly limited involvement. In 1939, the AIA reported that although the small house field generated over a billion dollars of business per year, only 1.9 percent of that business included “AIA’s recommended method of full service.”⁹⁰ A few years later in 1945, Miles Colean’s study of the housing landscape in the US put the number a bit higher, estimating that twenty to twenty-five percent of all housing units built (single and multiple-family) had architect involvement.⁹¹ In 1950, *Architectural Forum* reported that perhaps only one in three houses costing \$12,000 or less had any involvement from an architect. (The others, the editors wrote, “just grewed.”)⁹² In 1956, L. Morgan Yost, another architect who specialized in designing

⁸⁶ NAHB-AIA Collaborating Committee, Fritz Burns, and Hubert Hammond Crane, “Design Clinic: Builder Fritz Burns Exchanges Views with Architect Hubert Hammond Crane on ‘What Services the Architect Should Render the Merchant Builder,’” *NAHB Correlator*, October 1951, 114.

⁸⁷ NAHB-AIA Collaborating Committee, Burns, and Crane, 114–15.

⁸⁸ NAHB-AIA Collaborating Committee, Fritz Burns, and Hubert Hammond Crane, “Design Clinic: Builder Fritz Burns Exchanges Views with Architect Hubert Hammond Crane on ‘What Services the Architect Should Render the Merchant Builder,’” *NAHB Correlator*, October 1951, 114.

⁸⁹ “House & Home Marketing Conference Hears What to Expect in 1955,” 149.

⁹⁰ Architects fared better, ironically enough, at the lowest end of the housing market. Of the approximately 60,000 houses constructed in 1939 valued at under \$3,000, architects designed 66 percent of the units, no doubt reflecting government and philanthropic sponsorship of housing for extremely low- or no-income citizens during the New Deal era. AIA Committee on Single Detached Unit Housing, “Report of the Committee on Single Detached Unit Housing for the Seventy-Second Convention of the American Institute of Architects, Louisville, Kentucky,” May 1940, np, American Institute of Architects, Washington DC.

⁹¹ Twentieth Century Fund and Miles Lanier Colean, eds., *American Housing, Problems and Prospects* (New York: The twentieth century fund, 1944), 97, <http://catalog.hathitrust.org/Record/001108596>.

⁹² “Architect and Builder,” *Architectural Forum*, April 1950, 117.

for home builders, estimated the number of AIA members focused on large-scale residential architecture at only fifty individuals or firms nationwide.⁹³

Architects had, of course, been directly involved in suburban residential developments in earlier periods. Architects assisted consumers in following the careful architectural controls common in developments where individual buyers were responsible for constructing their own homes. Influential suburban developers like J.C. Nichols of Kansas City and Mason McDuffie in San Francisco required lot purchasers to use architect-designed or derived plans, and required buyers to bring the plans for vetting by development company staff before building could commence.⁹⁴ However, as real estate development changed from a speculative land division model to a speculative land and home building model, architects' involvement – and their clients - changed. This presented design challenges for traditionally-trained architects. Instead of individual homeowners, architects worked for the developer, drafting a range of housing options the builder could construct and sell at a profit. This involved designing a common-denominator house for a composite customer – a practice generally alien to architect's training. The designs also had to appeal to a broad range of tastes and cultural backgrounds, including lower income groups with different tastes, prejudices, and preferences than the custom house market clients architects were used to. Houses might have to appeal to a range of people from apartment-dwellers and second-time buyers, the “smart set” and the “solid and substantial set.”⁹⁵ As the average price point for a home in speculative housing subdivisions shifted lower and lower, architects' involvement often decreased to an advisory role or ceased altogether without outside philanthropic or government assistance and oversight.

These challenges were compounded by builders' collective skepticism about architects' suitability for designing production housing. In 1957, *House & Home* showed a series of custom designed homes by Frank Lloyd Wright, Gardner Dailey, and Marcel Breuer, and advised builders, “It takes original genius to design one-of-a-kind houses like these but... builders don't need a creative artist to design low cost production models.”⁹⁶ The editors went on to say, “A builder does not need a creative artist to design his production models, any more than he needs Thomas A. Edison to lay out his wiring or Albert Einstein to figure his roof trusses.”⁹⁷ Builders were looking for design staff who could usefully and selectively bridge the gap between the innovation of the custom house market and the production market in ways that matched their methods and price ranges. This did not require novel design theory or bold visual statements. Instead it required careful attention to which of those novel theories and bold statements might have become familiar enough to local buyers that they were eager to pay for them. “No builder,” *House & Home* cautioned, “should employ an architect so filled with the

⁹³ “Better Design for Builders' Houses - a Roundtable Discussion,” *NAHB Correlator* 10, no. 4 (April 1956): 103.

⁹⁴ J.C. Taylor, “J.C. Taylor, President, J.C. Nichols Co. to Architectural Forum,” *Architectural Forum*, May 1950, supplement, 3.

⁹⁵ “Roundtable: Lenders, Realtors, Appraisers, Editors All Join to Urge Closer Architect-Builder Teamwork,” *House & Home*, May 1956, 154.

⁹⁶ “It Takes Original Genius to Design One-of-a-Kind Custom Houses Like These,” *House & Home*, September 1957, 128.

⁹⁷ “It Takes Original Genius to Design One-of-a-Kind Custom Houses Like These,” 128.

creative urge that he would risk the success of a production model on ideas that have not been tested, approved, and pre-sold, first in the custom house market and finally in the next-higher-priced local market – the local market that sets the standard the builders’ buyers are trying to follow.”⁹⁸ In 1950, Wayne E. Guthrie, a Regional Vice President for the NAHB wrote to *Architectural Forum* that “Altogether too many of the architects design purely from the esthetic [sic] standpoints and not from the standpoint of economy in construction, livability for the home buyers and long term stability for the mortgagee.”⁹⁹ In other words, builders needed designers and design staff who could help them achieve MAYA design.

This is not to say that builders did not rely on or employ architects. In 1950, *NREJ* queried 100 small-scale and large-scale home builders about their use of architectural services. On their face, the numbers looked good. Ninety-one percent of builders surveyed used an architect or draftsmen in some capacity to draw up housing plans.¹⁰⁰ More than half (fifty-six percent) employed an architect outside their firm. The *NREJ* survey question about *how* builders used architects was telling, however. According to the survey, many builders primarily relied on architects to help them develop their own ideas into plans for FHA and local regulatory reviews. Typical of this group was a builder who said, “All we need is someone to draw plans after we decide what we should build. We are closer to the market and to construction than most architects.” Another concurred, stating, “We sketch our own floor plans and elevations, then have our architect draw them to scale.” Some builders also relied on architects to assist with floor plans only, and then relied on their own expertise or in-house staff to design elevations and details and specify materials.¹⁰¹ Laws in many states mandated builders to use some form of “architectural service” by requiring an architect or engineer’s stamp on plans for building above a certain appraised dollar amount. These stamps were easily “bought” for small sums of money, wherein an architect or engineer assessed only the structural soundness of the building.¹⁰²

Multidisciplinary, Collaborative Design Models

So, what were builders looking for in their design staff? Large-scale builders’ design staffing models demonstrate that they valued diverse experience and tended to privilege a team-based, rather than individually-led approach to design work. In 1952, Pietro Belluschi, Dean of the School of Architecture and Planning at the Massachusetts Institute of Technology, invited a group of builders that included Fritz Burns, Howard Fisher, John Galbreath, Foster Gunnison, and Alfred Levitt to a round table discussion on the relationship between the professional architect and the homebuilder. In response to the question, “Who does the design?” all of the visiting builders stated that they valued and variously employed architects for design work. But,

⁹⁸ “It Takes Original Genius to Design One-of-a-Kind Custom Houses Like These,” 128–29.

⁹⁹ Wayne E. Guthrie, “Wayne E. Guthrie, Regional Vice President, National Association of Home Builders to Architectural Forum,” *Architectural Forum*, May 1950, 11, American Institute of Architects, Washington DC.

¹⁰⁰ Ralph Clements, “What Do Builders Say About Architects?,” *National Real Estate and Building Journal*, August 1950, 29.

¹⁰¹ Clements, 29.

¹⁰² “Architect and Builder: A Round-Up of the 20 AIA-NAHB Committeemen Tapped to Study the Problem of Better House Design - the Men, Their Opinions and Their Houses,” *Architectural Forum*, September 1950, 112.

they insisted, in order to be effective (and employable), the design professionals they hired had to be more than just architects. They needed design staff who understood the technical and sales aspects of market production. Equally as important, their designers had to be able to think about the needs of not just one client, but thousands of clients.¹⁰³

In trying to parse the differences between the product-oriented design and single-client design, architect Edward Fickett, who worked extensively with merchant and community builders in Southern California, drew parallels with the emerging professional industrial design field. “Nine years ago [1948], the American Institute of Architects officially recognized that designing houses for merchant builders is a new and completely different from of professional practice, closely akin to industrial design.”¹⁰⁴ *House & Home* editors went even further, writing in 1957,

The architect that builders need to design their production models is not a creative artist, but a really top-flight commercial artist. They need an artist who can translate into practical, usable, economical reality the fine ideas that creative architects are dreaming up and trying out in our industry’s great experimental laboratory – the one-at-a-time house.¹⁰⁵

Professionals with these skills were not easy to come by in architecture. Architects who carved out a specialty serving the homebuilding industry often also acquired skills more common to the developer such as market analysis and merchandising.¹⁰⁶ Architect Carl Koch related in the late 1950s that one of his independent colleagues prepared all design and production drawings for a project, the site and landscape plans, and all materials lists and specifications. The architect also negotiated with materials suppliers, helped select the project site, did all permit and FHA approvals liaison work, and even helped sell the houses for a few weeks after construction of the model home. In Koch’s estimation, “Here is one architect who does as much of the building as Alfred Levitt does of the designing.”¹⁰⁷ Typically, however, only builders with limited experience in house building, small operations, or taking a calculated risk on an experimental or novel house form or construction method utilized architects to this degree.¹⁰⁸

In response to multidisciplinary demands, builders created a multidisciplinary staffing model suited to their design needs. Many large-scale builders – such as David Bohannon - hired licensed architects, engineers, and planners on contract or as part of their permanent staff. Seventeen percent of the builders in the 1950 *NREJ* survey employed an architect or draftsman

¹⁰³ “In the Making... Architects University-Trained for the Builder House,” *House & Home*, March 1952, 135–36.

¹⁰⁴ “It Takes Original Genius to Design One-of-a-Kind Custom Houses Like These,” 129.

¹⁰⁵ “It Takes Original Genius to Design One-of-a-Kind Custom Houses Like These,” 129.

¹⁰⁶ Martin, “Tract-House Modern,” 112.

¹⁰⁷ Carl Koch, “Design and the Industrialized House,” in *Design and Production of Houses*, ed. Burnham Kelly (New York: McGraw Hill, 1959), 101.

¹⁰⁸ See for example the case studies in Martin, “Tract-House Modern.”

in their own firm, a practice limited primarily to large-scale home building operations (typically firms building more than 100 houses per year). In-house designers and draftsmen did everything from translate “back of the napkin” plans into working drawings to participating as a full-fledged partner in the design process. The backgrounds of design employees varied from men and women just out of architecture school to draftsmen with some degree of experience from work in local architecture firms.

These staff had wide-ranging responsibilities, including translating builders’ ideas into drawings for regulatory, financing, bidding, and sales purposes; developing variations in plan and form for house models; and creating ornamentation and siting schemes.¹⁰⁹ Case study research suggests that these designers were graduates of regional technical and industrial training schools - institutions that offered a multidisciplinary education in design, building, and visual expression, including architectural design and engineering. Many of these draftsmen, like Ed Hageman at Doelger Homes, began as drawing technicians but advanced their knowledge of local building codes, building materials, building technology and space planning to the extent that they earned their architecture license.¹¹⁰ This transition sometimes came with a transition in title from draftsman to “designer.”¹¹¹ Earl Smith, who designed and drew his own houses early on in his career had similar training as a commercial artist and painter, as well as being a fourth-generation carpenter and third-generation home builder. These more varied skills were an asset to builders who needed staff to consider multiple aspects of the housing design process.

In addition to the builder and design professionals, design development at large firms involved the firm’s marketing, sales, construction, accounting, and materials purchasing staff. Both Bohannon and Doelger, for example, engaged in multiple levels of plan review with their senior employees in planning, design, construction, and sales. As in other areas of product design, the diversity of inputs in the design development process ensured greater operational and marketing efficiency. For builders who did not employ permanent sales people, realtors were increasingly involved in design processes as the 1950s progressed and became important go-betweens between builders and consumers.¹¹² Sixty-eight percent of realtors sold houses

¹⁰⁹ Eichler, *The Merchant Builders*, 86.

¹¹⁰ This transition sometimes came with a transition in title from draftsman to “designer.” A 1960 House & Home survey of NAHB members recorded that by that date only seven percent of building firms had a staff architect and twelve percent a staff designer. These likely represented the top echelons of national building firms who produced more than 100 homes per year. Martin, “Tract-House Modern,” 112–13..

¹¹¹ Martin, 111–12. The remaining nine percent of builders surveyed were either architects or draftsmen themselves, bought plans from lumber companies and other commercial sources, or built manufactured housing. The final model was the plan service. Professional architects often owned these services, or sold their work to such services as a way of bringing extra business income into their practices. The plans service architects primarily serviced small-scale builders and owner-builders, and the service plans typically needed local adaptations for climate, code, and matters of taste. Few plans went to construction without modifications by owner, builder, or a local architect familiar with area requirements. For more on architects as developers see Matthew Gordon Lasner, “Architecture’s Progressive Imperative: Housing Betterment in the 19th and 20th Centuries,” *Architectural Design* 88, no. 4 (July 1, 2018): 14–21, <https://doi.org/10.1002/ad.2316>.

¹¹² “House & Home Marketing Conference Hears What to Expect in 1955,” 149.

for builder clients in 1955. In addition to overseeing sales processes, these realtors also gave advice on features, products and styling to increase consumer appeal. Seventy-five percent of this group of realtors participated in design development from the planning stage forward.¹¹³ The realtor functioned similarly to what Regina Blaszczyk has called “fashion intermediaries,” a group made up of sales people, materials suppliers, advertising experts, and market researchers who kept manufacturers informed about buying audiences. These intermediaries, along with in-house artistic and technical specialists, shared responsibility for durable consumer goods design.¹¹⁴

The Builder as Design Director

In these multidisciplinary design development processes, it was the builder more than any other design or sales professional who exerted the most influence. Large-scale suburban home builders are rarely recognized in historical accounts for their role in the design of the mid-century domestic architecture. In the integrated design-build nature of their work, most accounts assign their primary identity as “producer” or maker rather than designer. According to Ned Eichler, however, the builder was the initial instigator and final arbiter of design matters. Crucial marketing decisions like product selection and design were always made by builder, “with only minor influence, if any, exerted by employees or consultants.”¹¹⁵ It was the builder’s name that was publicly associated with the work, and like savvy brand managers of later decades, builders protected their public image through significant involvement in and control over design decisions.¹¹⁶ In a 1945 message in the *NREBJ*, journal editors wrote, “Men who actually build homes develop definite floor plans. By trial and error, by study and research, by being close to what people want and do not want, these men know fairly well what their room arrangements should be.”¹¹⁷ The builder set the general parameters for design to be executed by design staff, relying on their own judgement on what people did or did not want in terms of room arrangements, specifications, and materials. He then reviewed and critiqued designs his staff rendered from these ideas based on production considerations, cost, and salability. The builder thus functioned as the coordinator and unifier of the diverse design problems and questions inherent in the mass market home. This design process pattern paralleled similar trends toward specialization and collaboration between skill sets happening in larger, increasingly corporate architecture firms in the period. Builders’ design process is almost identical to the model of industrial design studios, where work was team-based, multidisciplinary, and often anonymized by a corporate identity.¹¹⁸

¹¹³ “Builders Need Realtors in Competitive ‘55,” *National Real Estate and Building Journal*, January 1955, 20–21.

¹¹⁴ Blaszczyk, *Imagining Consumers*, 12.

¹¹⁵ Eichler, *The Merchant Builders*, 79.

¹¹⁶ See Meikle, *Design in the USA*, 111–12.

¹¹⁷ “For Better Post-War Home Exteriors,” *National Real Estate and Building Journal*, February 1945, np.

¹¹⁸ Bernard Boyle, “Architectural Practice in America, 1865-1965 - Ideal and Reality,” in *The Architect: Chapters in the History of the Profession*, ed. Spiro Kostof (New York: Oxford University Press, 1986), 317–19; Meikle, *Design in the USA*, 112; Geddes, *Horizons*, 225–27.

Conclusion

Home builders' design development practices offer a basis for analysis and interpretation of common tract housing rooted in builders' design and market objectives rather than the prevailing standards of professional architectural design or critical aesthetics. This examination has several important outcomes. First, examining home builders' design development practices broadens the definition of what constitutes design and design work and who is and is not a designer. Rather than focusing on wholly original design, builders' processes focused on the design and redesign of basic, accepted housing schema in response to economic, production, and consumer considerations. The consistent adoption, redesigning, and reinventing of housing products constituted its own form of design practice, and one that deserves greater recognition.

Second, these understandings of builders' design processes demonstrate that builders' design work constituted a form of vernacular design within the commoditized housing marketplace. Builders tailored their homes to incorporate elements from a growing national housing culture, but also stayed closely engaged with the norms of their local building cultures and consumers. As with other forms of vernacular architecture, builders' tract homes had no single antecedent or neat developmental sequence. Rather, these houses were the product of the persistent housing patterns, the exchange of ideas within and between cultures of building, responses to shifting human needs, and small moments of invention. As products of vernacular design tied to place and time, tract houses can serve as meaningful indices to local economic conditions, tastes, and material preferences as interpreted by builders.

Third, understanding builders' design processes broadens the definition of authorship for common tract housing beyond the single author model common in fine arts and architecture. Builders engaged teams composed of multiple design professions to assemble a successful market housing designs in a collaborative design process more akin to product design than architectural design. This team also included the consumer, who was not simply an imagined figure, but an increasingly quantified and qualified entity giving feedback to the builder and his design teams. These perspectives necessitate a departure from narratives on suburban housing development in which builders or federal government standards imposed or dictated housing character and by extension, subjectivity.¹¹⁹

Finally, these understandings form a basis for questioning the generally accepted primacy of FHA development standards, national design media, and professional architecture on suburban housing. The focus in scholarship on these influences overshadows the importance of the local and builder-led design development work. Even in the midst of an emerging national housing culture, local markets constituted the real center of the action in housing design development. Local housing markets were the design laboratories where "official," national, or professional housing standards and local and vernacular design influences reshaped the everyday built environment. As will be discussed more in Chapter 6, these local testing grounds then informed

¹¹⁹ Cupers, *Use Matters*, 4.

the larger national building culture on issues of design and production in a bottom-up, rather than top-down manner. Cumulatively, these outcomes result in a more relevant design history for tract houses that acknowledges these buildings as both mass-market products and complex socially and culturally-informed objects.

The remaining chapters of this dissertation explore the fields of design dialog where home builders shaped and enacted housing design practices. The following three chapters look at how individual, large-scale builders in a single building market – the San Francisco Bay Area – operationalized design practices in diverse ways in dialog with home buyers and developed innovations that influenced national housing culture. The final chapter examines the information spaces and flows within the professional building industry, looking at how builders exchanged design information within their professional network.

CHAPTER 3: HENRY DOELGER (1896-1978): THE CALIFORNIA METHOD AND THE URBAN-TO-SUBURBAN HOME BUILDING TRANSITION

In 1949, San Francisco housing developer Henry Doelger (1896-1978) broke ground on a development that would become the capstone of a decades-long career in home building. Just over the city line from San Francisco in unincorporated San Mateo County, Doelger began transforming 1,350 acres of hog farms, cabbage and artichoke fields, and sand dunes into a self-contained, community of homes, shopping districts, recreation centers, schools, churches, and theaters. At the rate of six houses a day, Westlake grew between 1949 and 1962 into one of the largest and most iconic planned communities in the metropolitan area. When complete, the community contained 7,500 houses targeted at lower-middle and working-class buyers, two shopping centers, and nearly 3,000 apartments. Westlake enjoys a special place in local and national popular culture because of its design eclecticism and prominent presence on the landscape. The development is a hit with fans of midcentury modernism because of its futuristic house designs and quirky streetscapes, and has been the subject of popular design books and a short documentary. (Figure 3.1) On the flip side, Westlake also enjoys the dubious honor of being the likely inspiration for folk singer Malvina Reynold's 1962 anti-suburban anthem, "Little Boxes" and a model for "ticky-tack" conformity at its worst.

Alongside its conversation-piece design, Westlake is the product of a storied San Francisco persona: Henry Doelger, whose life reads as a traditional American Horatio Alger tale. A San Francisco native with an eighth-grade education, Doelger rose to become the largest home builder in the country by the late 1930s.¹ He began his building career in urban, single-family speculative housing development in San Francisco during a burst of expansion in the city in the 1920s. Between the late 1920s and early 1940s, Doelger built thousands of houses in the "in-city" suburban Sunset neighborhood as the city's "outside lands" transitioned from sand dunes to a rolling landscapes of single family homes. (Figure 3.2) Between the late 1920s and the 1930s, Doelger underwent the transition from realtor to realtor-builder, moving from selling unimproved land to developing small neighborhoods of houses for speculative sale and moving from building fifteen houses a year to building two a day. After a brief stint building defense housing during World War II, Doelger turned south of the city and transitioned his urban development methods to more traditional suburban settings. (Figure 3.3) By the time Doelger Homes Inc. ceased operation in 1972, Doelger was responsible for constructing in the neighborhood of 26,000 dwelling units, most of them single-family, in the San Francisco Bay Area.²

¹ Terry Davenport, "The 'Ford' of Housing: Doelger's Gamble Paid Off," *The Post*, July 18, 1979, North County edition, 1, Doelger Clippings File, Daly City History Guild, Daly City, CA; "A City of Homes by One Builder," *American Builder*, November 1941; Frank LaPierre, "Doelger Story: Hot Dog Stand to Construction Empire," *San Mateo Times*, September 29, 1972, 31, Doelger Clippings File, Daly City History Guild, Daly City, CA.

² Michael Svanevik, "Henry Doelger: From Hot Dogs to Hot Deals," *The San Mateo Times*, June 27, 1986, Clippings File 75-386, San Mateo County Historical Museum; Rob Keil, *Little Boxes: The Architecture of a Classic*



Figure 3.1. Houses in the first unit at Westlake, Daly City (1949); Elaine Stiles, 2016.

Midcentury Suburb (Daly City, CA: Advection Media, 2006), 42; "Bay Area Builder Henry Doelger Dies," July 25, 1978, Doelger Obituary Clippings File, Daly City History Guild, Daly City, CA.

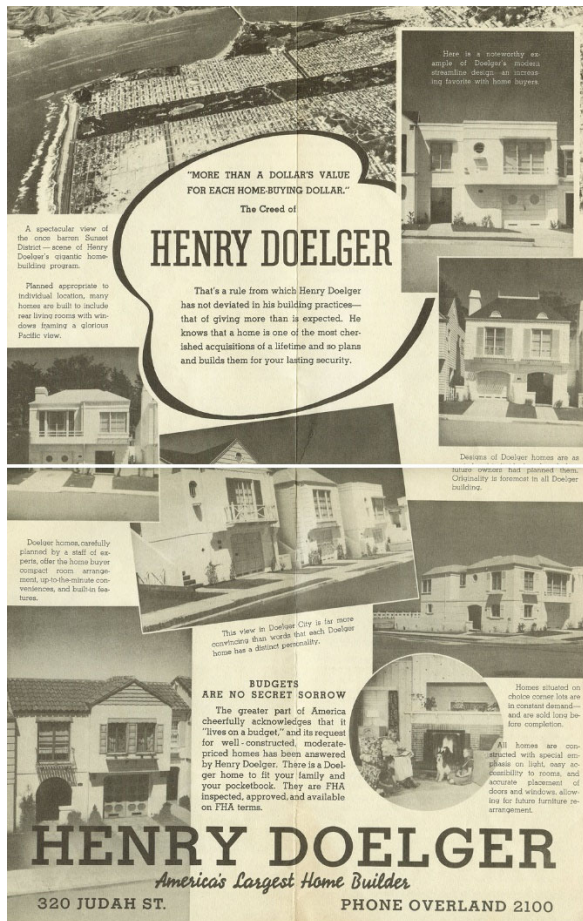


Figure 3.2 (left). Brochure for Henry Doelger showcasing typical homes for sale in the Sunset neighborhood ca. 1940. Source: Prelinger Library, San Francisco, California.

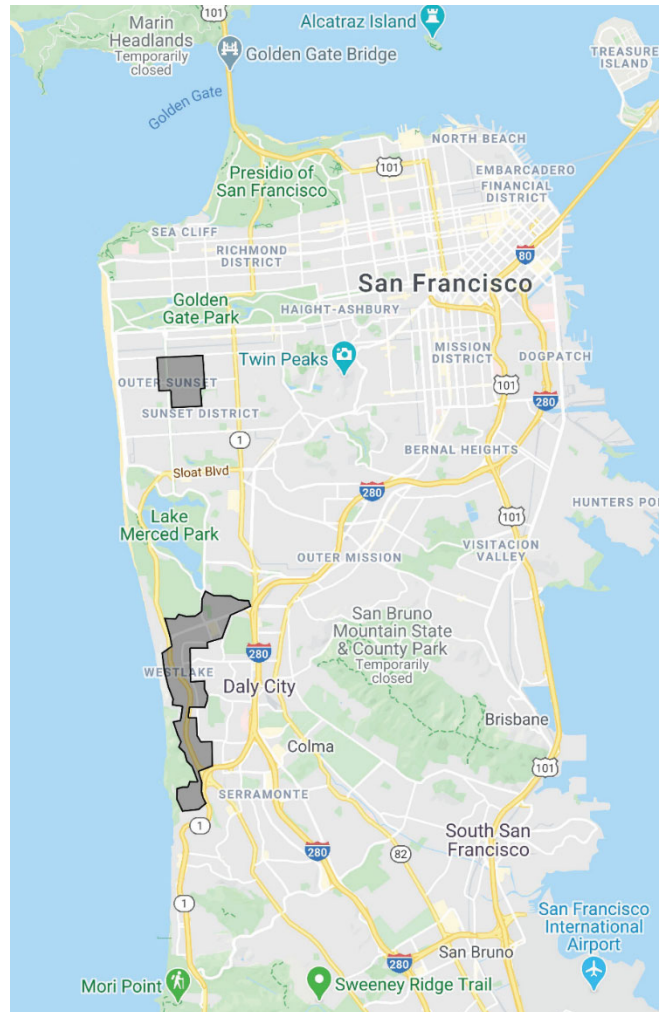


Figure 3.3 (right). Location map of Doelger Homes development area in the Sunset District of San Francisco and Westlake in Daly City. Source: Google Maps.

Doelger's development career spans a significant shift in home building in the mid-twentieth century as its dominant projects moved from urban to suburban locales. Doelger's work allows us to draw connections and distinctions between the building culture in the Bay Area before and after the war, but also shows how successive periods of major expansion in the Bay Area fostered the design leadership that made it a take off point for methods that fueled rapid postwar suburban expansion. To understand postwar developments like Westlake and the building culture that produced it, it is necessary to start twenty years previous with Doelger's formative development work in the Sunset of San Francisco. Doelger Homes was part of what Greg Hise has called "aggressive interwar campaigns to isolate, codify, and manufacture a standard low-cost minimum house that the majority of American wage earners

could afford.”³ As a result, this chapter is as much about home building in the Bay Area in the period before World War II as it is about the postwar period. It was in the Sunset where Doelger and his contemporaries experimented with and adopted the assembly line style production that would come to be known as the “California method” of building and make the San Francisco Bay region a “take off” point for this innovation in the US. Doelger was employing the method regularly a decade before local colleagues like David Bohannon made them national news, and more than two decades before the appearance of more recognized examples like Levittown, New York in 1947.



Figure 3.4. Henry Doelger in his Westlake offices, late 1950s. Source: Daly City History Guild, Daly City, California.

In the quest for affordable homes for middling Americans, Doelger relied in almost equal measures on long-standing, local housing culture staples and novel organizational, production, and merchandising techniques. Doelger drew from local house forms and design norms for his house plans rather than nationally-prescribed designs from the Federal Housing Administration (FHA), adaptively redesigning and restyling to create dwellings and environments that hit the right balance of both novelty and continuity. Doelger’s eclectic, but calculated mix of styles distinguished him from his competitors with their boldness and picturesque, almost film set-like effect, but also reflect Doelger’s mastery of a visual culture born from retail merchandising and advertising translated to domestic space. Doelger was among a small number of builders in the second quarter of the twentieth century who transitioned from a small-scale operation where he worked alongside construction crews to an integrated land and housing development

³ Greg Hise, *Magnetic Los Angeles: Planning the Twentieth-Century Metropolis* (Baltimore: Johns Hopkins University Press, 1997), 57.

organization, complete with an in-house design staff and real estate sales force. Doelger kept a tight watch on his consumers, their needs, and their tastes, privileging direct contact with his customer base rather than of more systematized quantitative market research. This intimate relationship with his consumer base and responsiveness to consumer expectations informed a vernacular process of housing design development even as home building became an increasingly commoditized and large-scale endeavor.

“San Francisco Grew Up in His Homes:”⁴ San Francisco’s Sunset

Doelger’s housing development career began during America’s first suburban boom: the rapid growth of urban areas in the interwar years of the 1920s. He entered the real estate business in the late 1910s under the wing of his older brother, Frank. Frank Doelger had a successful business buying and selling undeveloped land in the Sunset District as the city steadily marched toward the sea.⁵ By the mid-nineteenth century, there had been only minimal development in what San Franciscans called the “outside lands” beyond the incorporated boundaries of the city. After San Francisco took control of the land in the late 1860s, the city platted the district, continuing an existing gridiron of narrow urban lots. Golden Gate Park and the ocean beaches were the primary draws to the area, and were accessible via limited streetcar and railroad service. However, the district saw little real development or improvement for decades due to its minimal connectivity with downtown.

The 1906 San Francisco Earthquake and Fire that badly damaged the heavily-developed areas of the city resulted in a period of intensive reconstruction and urban expansion that lasted almost unabated until the Great Depression. The Sunset in this period largely consisted of sand dunes, but Golden Gate Park and improved public transportation accessibility made land development in the area an attractive proposition for speculators. The first streetcar tunnel through the central hills of the San Francisco Peninsula connecting the edges of the Sunset to the downtown development area opened in 1918, followed ten years later by a second tunnel in 1928. The 1928 tunnel, which directly connected the heart of the Sunset to downtown, along with the advent of the automobile, dramatically changed the accessibility of the Sunset. The result of these improvements and transportation revolutions was a period of intensive residential development between the 1920s and 1940s in what are now the Sunset and Richmond districts.⁶ (Figures 3.5 and 3.6)

⁴ Secondary headline, Andrew Curtin, “Henry Doelger, The City’s Premier Home Builder, Dies,” *San Francisco Examiner*, July 25, 1978, 24, Doelger Obituary Clippings File, Daly City History Guild, Daly City, CA.

⁵ Frank Doelger tragically died in 1932 from gangrene that set in after he was hit by a streetcar while saving his younger brother, John from the same fate. Henry had learned enough of the ins and outs of land speculation to continue on his own.

⁶ Mary Brown and San Francisco Planning Department, “Sunset District Residential Builders, 1925-1950 Historic Context Statement,” Historic Context Statement (San Francisco: San Francisco Planning Department, 2013), 19–21, 24–26.



Figure 3.5. Aerial photograph of San Francisco's Sunset District and Twin Peaks areas in 1938 showing extent of development of the Sunset district by that date. Source: Mary Brown, Sunset District Residential Builders 1925-1950 Historic Context Statement, 2013.



Figure 3.6. Sunset District of San Francisco, 1950, showing largely built-out blocks of homes. Courtesy San Francisco Public Library, San Francisco Historical Photograph Collection.

Doelger had his first major real estate success in 1922 when he purchased a lot at Fourteenth Avenue and Irving Street for \$1,100 on a tip that a movie theater might open across the street. Months later he reportedly sold the same lot for \$25,000.⁷ Leveraging this windfall, Doelger opened his own real estate office and over several years, acquired enough capital and credit to purchase fourteen blocks of the Sunset at \$10,000 apiece. Sales of undeveloped land in San Francisco and other major metropolitan areas slowed in the mid-1920s in response to an oversupply of subdivided lots. By 1926, Doelger was in danger of defaulting on his line of credit. To try to sell lots more quickly, he tried a new tactic: building houses on them. Doelger constructed his first speculative house in the Sunset in 1926 at 1427 Thirty-Ninth Avenue, near Judah Street. (Figure 3.7) The lot and house sold quickly, and Doelger continued the tactic. That year, Doelger built and sold 25 homes – an impressive annual sales figure for the period.⁸ By 1929, Doelger’s occupation in city directories had changed from real estate broker to builder.⁹ Doelger was in good company. In the 1920s and 1930s many large land sub-dividers transitioned to “merchant builders,” speculatively constructing small numbers of houses on their lots to create a more stable, profitable, and marketable real estate transaction.¹⁰ By 1933, Doelger was among the 40 percent of members of the National Association of Real Estate Boards engaging in speculative building and the 10 percent of those who were specializing in speculative home building.¹¹



Figure 3.7. Doelger’s first speculative “barrel front” houses in the Sunset District on Thirty-ninth Avenue between Kirkham and Judah streets (1926). Source: Google Street View.

⁷ Rumors that he made some of his startup capital bootlegging – either by smuggling in Canadian alcohol or brewing his own bathtub gin and beer – persist to the present day. See Mary Brown and San Francisco Planning Department, “Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA” (San Francisco: San Francisco Planning Department, 2013), 22; “Henry Doelger Dies in Italy - Bay Area Builder Was 82,” *San Francisco Chronicle*, July 26, 1978, Doelger Obituary Clippings File, Daly City History Guild, Daly City, CA; Curtin, “Henry Doelger, The City’s Premier Home Builder, Dies.”

⁸ Bunny Gillespie, *Westlake*, Images of America (Charleston, S.C: Arcadia, 2008), 7–8; Keil, *Little Boxes*, 28.

⁹ Brown and San Francisco Planning Department, “Sunset District Residential Builders, 1925-1950 Historic Context Statement,” 23.

¹⁰ Marc A. Weiss, *The Rise of the Community Builders: The American Real Estate Industry and Urban Land Planning*, The Columbia History of Urban Life (New York: Columbia University Press, 1987), 41.

¹¹ Weiss, 43.

Doelger's business slowed during the Depression, but revived and transformed in response to the passage of the National Housing Act of 1934 and the creation of new credit markets backed by loan guarantees from the Federal Housing Administration. These new conditions changed the market for countless builders, and for Doelger, it was the fuel he needed to begin building and selling at even larger scale. Doelger Homes grew into a fully integrated home development business, with in-house land development and home building activities as well as home sales. Doelger also employed a permanent, in-house design team of primarily unlicensed designers, draftsmen, and artists, who Doelger worked with closely on design matters. From 1934 to 1940, Henry Doelger was the largest homebuilder in the US, completing between two and five houses a day and selling as many as 400 houses a year.¹² Between 1934 and the American entry into World War II in 1941, Doelger constructed more than 2,500 houses in the district, primarily targeted toward prosperous working-class and middle-class buyers.¹³ Doelger was the primary developer of a broad central tract of housing in the Sunset between Twenty-Seventh Avenue and Thirty-Ninth Avenue on the east and west and Kirkham Street and Quintara Street on the north and south – smack dab in between the two major streetcar lines in the district on Judah and Taraval Streets.¹⁴ (Figure 3.8) By the end of his urban housing development career in 1949, Doelger had constructed in the neighborhood of 11,000 dwellings in the city.¹⁵ (Figure 3.9)

¹² Mary Brown and San Francisco Planning Department, "San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement," September 30, 2010, 26, <http://ohp.parks.ca.gov/pages/1054/files/sfmod.pdf>; Brown and San Francisco Planning Department, "Sunset District Residential Builders, 1925-1950 Historic Context Statement," 47; Brown and San Francisco Planning Department, "Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA," 24; Keil, *Little Boxes*, 31.

¹³ Svanevik, "Henry Doelger: From Hot Dogs to Hot Deals," B3; Henry Doelger, Inc., "America's Fastest Selling Homes Are Built By Doelger," ca 1935, Prelinger Library, San Francisco, Calif.; Keil, *Little Boxes*, 31; Brown and San Francisco Planning Department, "Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA," 24; "Henry Doelger Dies in Italy - Bay Area Builder Was 82."

¹⁴ Mary Brown and San Francisco Planning Department, "San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement," 25.

¹⁵ Keil, *Little Boxes*, 32.

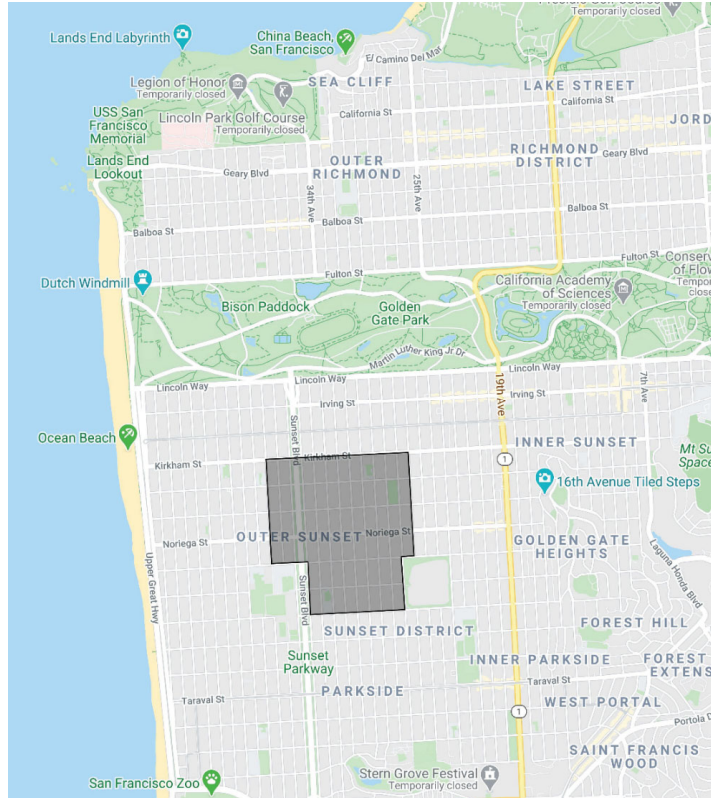


Figure 3.8. Concentrated development area for Doelger Homes in the Sunset District in the 1930s and 1940s. Source: Mary Brown and San Francisco Planning Department, “San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement,” and Google Maps.



Figure 3.9 View of the blocks between Ortega and Pacheco Streets in the “Doelgerville” section of the Sunset, 1937. Source: Bunny Gillespie, *Westlake*.

Full-Fives, Junior-Fives, Patio Plans, and Econo-Manors: The Sunset's "Bungalow" Row Houses

The houses and environment Doelger created in the Sunset presents object lessons in vernacular adaptation, the consensus nature of local building culture on housing form, and builders' negotiation between prevailing building culture, existing conditions, and consumers. Doelger's choices in his design work were based on elements of consumer acceptance, aspiration, and potential resonance with elements of contemporary housing and visual culture. The houses he produced, even after the involvement of FHA in his development projects, continued to draw on local housing and building culture and respond to local political economy and conditions rather than national models. Doelger's houses also illustrates that the practices of independently conceiving elevation and plan and treating exteriors with a variety of expressive possibilities were not postwar phenomenon in home building, but rather practices already embedded in home building culture.¹⁶

Residential development in the Sunset District of San Francisco between the 1920s and 1940s presents a hybrid of suburban and urban development. The district had development patterns and house forms linked to earlier urban building patterns, but articulated in the suburban model of the detached, single family house situated in single-use district. Doelger's customers were almost exclusively urban dwellers from the city's working- and lower-middle-class neighborhoods. These buyers left their rowhouse flats and apartments in Eureka Valley, the Western Addition, North Beach, and the Mission to own – and perhaps even live in - a single-family home for the first time. Doelger's Sunset homes were relatively affordable with two-to-three-bedroom models costing as little as \$4,350 and topping out at \$7,500 by the early 1940s.¹⁷

Doelger used variations on a single housing form, sometimes referred to as the "house-over-garage" form, for all of his Sunset development work. The dwelling was a narrow, two-story form with a garage and storage rooms on the ground floor and living quarters on the second story. (Figures 3.10 and 3.11) The main entrance was recessed on a side elevation, accessed via an exterior stair, or more commonly, within a recessed patio entrance. Side entrances eliminated the need for an entry hall at the front of the building and allowing for larger and better-lit front rooms. The plan included a two-car garage, laundry and work space on the ground story. The second story generally held a living room, dining room, kitchen with breakfast nook, entrance hall, two to three bedrooms, and a bath. Amenities included

¹⁶ James Andrew Jacobs, "'You Can't Dream Yourself a House': The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World, 1945--1970: [1]" (Ph.D., United States -- District of Columbia, The George Washington University, 2005), 15, <http://search.proquest.com/dissertations/docview/304997904/abstract/F64C7599F7E843E2PQ/14?accountid=14496>.

¹⁷ Carolyn S. Loeb, *Entrepreneurial Vernacular: Developers' Subdivisions in the 1920s*, Creating the North American Landscape (Baltimore: Johns Hopkins University Press, 2001), 90–91; Davenport, "The 'Ford' of Housing: Doelger's Gamble Paid Off," 1; "A City of Homes by One Builder," 52.

fireplaces, gas heating, a “modified air conditioning unit,” and both a bath tub and glass-door shower stall.¹⁸ Doelger built the houses as either row houses, with abutting exterior walls, or as detached, free-standing houses set so closely together that there was no accessible space between them. Each house had a private, albeit small rear yard inaccessible from the street.

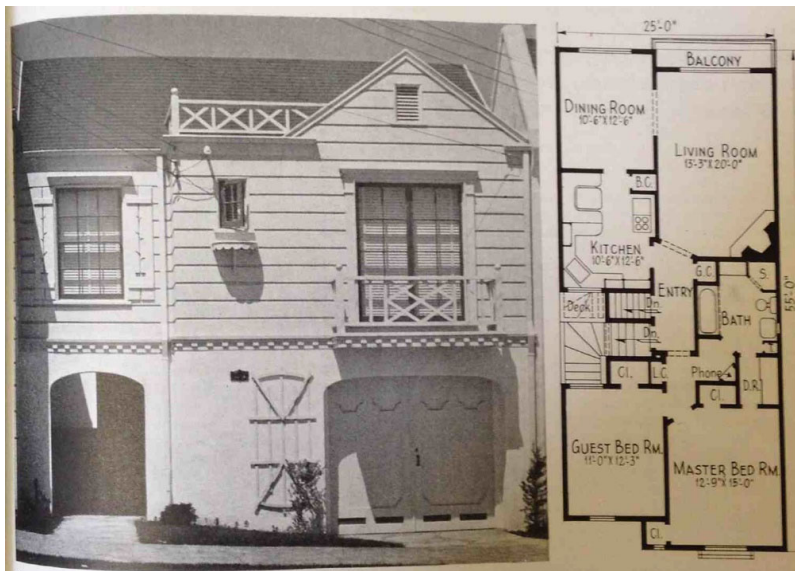


Figure 3.10. A “typical Doelger row house” elevation and plan with “patio entrance” at left. Source: “A City of Homes by One Builder,” *American Builder*, November 1941.



Figure 3.11 Doelger houses on Thirty-third Avenue between Moraga and Noriega Streets, 1938. Source: Bunny Gillespie, *Westlake*.

¹⁸ Francis Newton, “San Francisco’s Henry Doelger,” *National Real Estate and Building Journal*, November 1941, 36.

The origins of Doelger’s house design, like those for most tract housing, are obscure. The house form appears to be limited to the San Francisco Bay Region, and is therefore likely the result of a series of local adaptations by many actors based on a specific regional need. Zoning in the Sunset district allowed for the same kind of development as in earlier urban neighborhoods in San Francisco, including flats and apartment buildings. Sunset developers, however, almost uniformly elected to construct this particular single-family dwelling model. Doelger was not the first, or only, developer to build this house form. Fernando Nelson and Sons, best known for their housing developments in the Mission and Eureka Valley (now Castro) neighborhoods, began constructing single-family row homes in the Richmond in the 1910s with similar, but larger forms. They often included garage spaces on the ground level to accommodate autos because the narrow lots precluded access to rear, freestanding garages. Evidence of the “house over garage” form also appears in a hillier section of the Westwood Park tract, which predates Doelger’s work in the Sunset.

The characteristic Sunset dwelling does have “lineages” one can trace, however. The form appears to draw from two key common house forms in the region: the urban Victorian row house and the bungalow.¹⁹ In essence, the “house over garage” model was the next generation of San Francisco’s Victorian and period revival row houses, sitting nearly flush with each other in lockstep rows and designed to accommodate the narrow, twenty-five-foot wide city lots already platted across western San Francisco’s sandy expanse. This was not only a familiar urban pattern, but also had practical and economic benefits. In a 1941 profile of Doelger, the author noted that the “row home” on its narrow lot was already established as the “most economically sound type of development for the area” because it “‘pegged down’ the shifting dunes” and “offered more living area than the average San Franciscan could afford to rent.”²⁰ One of Doelger Homes’ Sunset competitors, the Gellert Brothers, also acknowledged the row house character of the buildings, discussing them in 1940 as a “new type of row house floor plan” that builders had improved with increased daylight and modern systems.²¹ Another clue to the form’s origins come from period advertising. Early advertisements for Doelger’s homes in the Sunset from the early 1930s referred to the houses as “bungalows” and to his speculative blocks as “bungalow colonies.”²² (Figure 3.12) Developers may have adapted a then-popular suburban housing form in the Bay Area – the bungalow - to the existing platting, creating a hybridized “bungalow row house” model.

¹⁹ Brown and San Francisco Planning Department, “Sunset District Residential Builders, 1925-1950 Historic Context Statement,” 26.

²⁰ Newton, “San Francisco’s Henry Doelger,” 36.

²¹ Francis Newton, “Merchandising Program for an Operative Builder,” *National Real Estate Journal*, June 1940, 38.

²² “Sunset Real Estate Sales on Increase,” *Sunset Dispatch*, March 1931, Doelger Scrapbook A 1933-1936, Daly City History Guild, Daly City, CA; “The Smartest and Most Distinctive Colony of Detached Homes [Advertisement],” *San Francisco Call-Bulletin*, May 14, 1932, Doelger Scrapbook, Daly City History Guild, Daly City, CA.

The Smartest and most Distinctive Colony of Detached HOMES in San Francisco



Take the "N" Car
31st Avenue at Lawton

Study this ad and you will realize this is truly an amazing value. We have spared no expense to obtain color schemes that will fascinate you. Not just one to select from but a whole block of attractive 5 and 6 room bungalows. Every one different and each containing a beautiful social hall. These homes are complete even to the lawn, shrubs and walks. If you are delighted with new and pretty homes, be sure to come out and see these **TODAY or TOMORROW.**

See "THE WINDSOR," the new model home furnished by the Sterling Furniture Co. Judge for yourself how attractively it is furnished. See the well-proportioned rooms with four large bay windows in the dining room and the many other unusual and striking features.

6650
and up

CONVENIENT TERMS

Built by
HENRY DOELGER
 320 JUDAH ST. Overland 2100

The Following Firms Are Making the Doelger-Built Homes "The Talk of the Town":
 They are noted for the quality of their materials and workmanship.

Concrete Work SUNSET CONCRETE CO.	Brick and Mantels MARTIN NELSON	Plumbing SCOTT COMPANY
Hardware Stores HASLEY & MCCRELLIS	Water Heaters HOLBROOK HEATERS	Lending Finance COLIN BERTH CO.
Lumber RICARDO LUMBER CO.	SPACIFIC TERRAZZO CO.	Welding W. J. PATON
Iron Work GEARY ORNAMENTAL	MIL WADE ALBION LUMBER CO.	E. & R. M. LEONHARDT CO.
	Plastering P. L. CASLIDY	Electric Wiring E. BONDIE
		Roofing SIMS ROOFING CO.

DOELGER-BUILT HOMES IN OTHER PARTS OF THE SUNSET AS LOW AS \$2750

*J. L. Call - Bulletin
 May 14, 1932*

Figure 3.12. Advertisement for Henry Doelger's "5 and 6-room bungalows" in the Sunset District appearing in the *San Francisco Call-Bulletin*, May 14, 1932. Source: Doelger Scrapbooks, Daly City History Guild, Daly City, California.

Doelger expanded and contracted the basic form of his "bungalow rowhouse" model to accommodate the needs of buyers at various incomes and family sizes. Early dwellings in the Sunset ranged from five-room, budget-driven designs of just under 1,000 square feet, known as "Junior Fives," to slightly larger "Full Fives," and more luxurious "Patio Plans" (Figure 3.12). The "Junior Fives" were not dissimilar from modest, economic bungalow plans common in the period, with minimum interior circulation space and small efficient kitchens. Junior Fives were most commonly built during World War II as defense workforce housing and in the years immediately following the war in response to the national and local housing shortages.²³ Doelger developed an even smaller plan in 1935 in response to a state program for World War I veterans allowing them to purchase homes using State Home Loan Certificates. The program operated in a similar fashion to the federal Veterans' Administration housing programs in the post-World War II years.²⁴

²³ Sunset HCS

²⁴ "English Type Model Home Draws Record Attendance; Doelger Plans New Smaller Homes for Veterans," *San Francisco Examiner*, September 6, 1935, Doelger Scrapbook, Daly City History Guild, Daly City, CA.

The larger homes followed the typical room arrangement of earlier rowhouses and flats with a living room at the front, dining and kitchen spaces at the center, and more private space like bedrooms at the rear. Doelger added a separate “social hall” – later referred to as the “rumpus room” - in the basement in his larger five-room and six-room plans to separate raucous entertaining from living quarters. Doelger also selectively marketed “Reverse Plan” houses on elevated lots in the Sunset District that offered views of the Pacific Ocean. In these homes, Doelger moved the living and dining rooms to the rear and added large bay windows to take advantage of the views.²⁵ In 1932, Doelger began building “Patio Plan” houses with a small outdoor space in the center of the dwelling to light the interior rooms where light from front and rear rooms did not penetrate. Though Doelger claimed the plan as his own, the Patio Plan was originally designed by Sunset developer Oliver Rousseau. Doelger did, however, pioneer several new features to maximize space and increase interior light in his houses, including the “daylight kitchen,” which featured a skylight and reflector walls to eliminate “dark corners,” and the “club car” breakfast nook arrangement that allowed for an eat-in kitchen in the narrow floor plan.²⁶

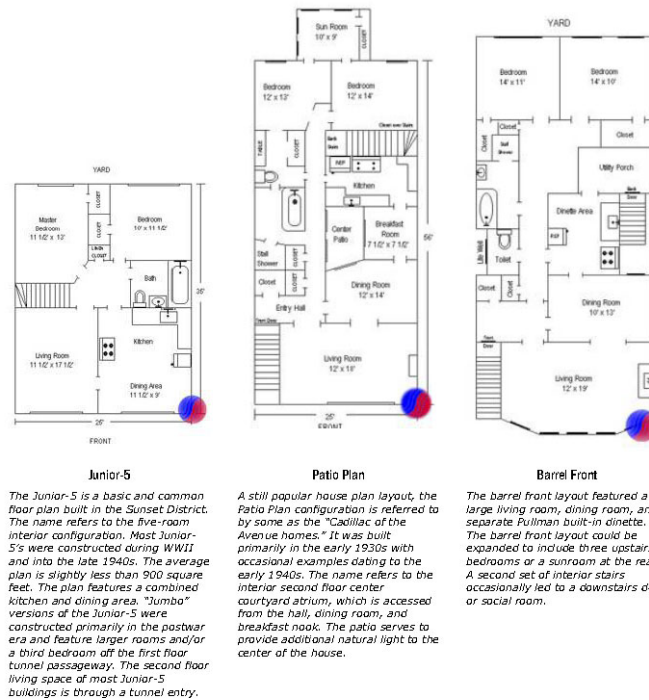


Figure 3.12. Typical plans of Sunset District tract houses. Source: Mary Brown and San Francisco Planning Department, “Sunset District Residential Builders, 1925-1950 Historic Context Statement.”

²⁵ Newton, “San Francisco’s Henry Doelger,” 39.

²⁶ Davenport, “The ‘Ford’ of Housing: Doelger’s Gamble Paid Off”; “A City of Homes by One Builder,” 53; Henry Doelger, Inc., “America’s Fastest Selling Homes Are Built By Doelger”; Brown and San Francisco Planning Department, “Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA,” 30; Doelger Building, Inc., “Smart New Patio Plan [Advertisement],” *San Francisco Examiner*, August 6, 1932, Doelger Scrapbook, Daly City History Guild, Daly City, CA; Newton, “San Francisco’s Henry Doelger,” 39.

Speed Meets Style: Production and Design Method in the Sunset

Doelger's adoption and replication of a regionally-sourced plan was not a matter of rote procedure, however. Doelger maintained a full cadre of design and production staff and continued to experiment with different ways of optimizing construction for time and cost efficiency. Doelger was among a series of early adopters of new development and production methods in the Bay Area, most notably using staged construction practices to streamline and speed up production of blocks of houses. By the early 1920s, builders in the Bay Area were beginning to use a system of materials planning and labor organization that sped production and reduced costs in homebuilding. Early forms of the method included many tenets of mass production, including calculated bulk purchasing of building materials, selected on-site prefabrication of some building elements, and coordinated distribution of materials to individual building sites. Builders also used a program of sequenced building tasks with specialized crews who repetitively performed the same job on each house under construction.

During his busiest years in the Sunset, Doelger used practices that would become common in mass home building in the next decade. Because he built largely standardized houses for speculative sale, Doelger took advantage of economies of scale by purchasing materials in bulk. His scale of production made it cost efficient to operate his own lumber processing mill near his building sites where crews precut materials and selectively preassembled elements of each house. A dedicated millwork operation also completed all interior and exterior architectural trim, ranging from door moldings to flower boxes.²⁷ Doelger's workers then bundled the materials into "kits," which they delivered to each building site. Doelger organized his labor force based on assembly line principles as well, separating his workmen into crews who specialized in one specific part of the home building process such as foundations, framing, sheet rocking, and finishing. In addition to efficient planning and work patterns, Doelger began experimenting with ways to use and pay for labor more efficiently or cheaply. He kept a skeleton crew of workers building almost constantly, which prevented him from having to hire workers less familiar with his units from union halls. The firm selectively subcontracted out plumbing, electrical, tiling, and stucco, sometimes employing two competing bidders at the same time and promising incentives to the fastest crews.²⁸ Doelger also hired lesser skilled labor to do single, repeated jobs on each house as a way of saving on labor.²⁹ With these practices in place, Doelger Homes was building as many as two houses a day in the Sunset by 1939. (Figure 3.13) Doelger's production speed made a strong public impression, earning him

²⁷ "A City of Homes by One Builder," 52–53; Brown and San Francisco Planning Department, "Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA," 25; Henry Doelger, Inc., "America's Fastest Selling Homes Are Built By Doelger"; Brown and San Francisco Planning Department, "Sunset District Residential Builders, 1925-1950 Historic Context Statement," 33.

²⁸ Michael Doelger, interview by Rob Keil, January 2005, Westlake Branch, Daly City Public Library, Daly City, California.

²⁹ Brown and San Francisco Planning Department, "Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA," 26.

the nickname “One-a-Day Doelger.” Locally, news accounts began using the word “Doelgerize” to describe the kind of rapid suburban residential growth figures like Doelger promoted and executed.

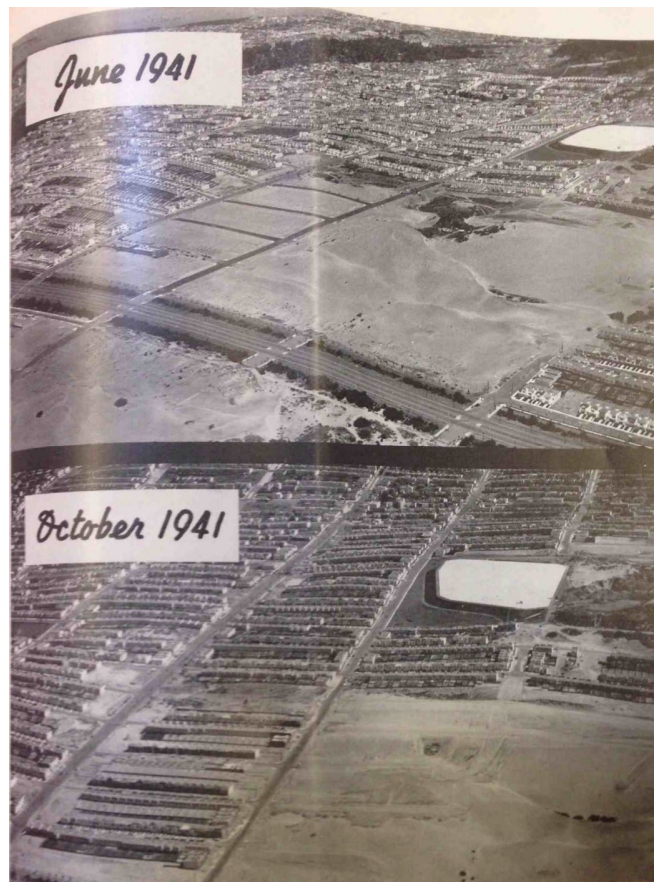


Figure 3.13. Four months of progress in the Sunset by Henry Doelger as presented in Francis Newton, “San Francisco’s Henry Doelger,” *National Real Estate and Building Journal*, November, 1941.

As with the origins of period housing forms, the origins of Doelger’s innovative construction methods are general rather than specific. Doelger was not the only builder in the region or state using the methods; local competitors Galli Brothers and Gellert Brothers and regional colleague Los Angeles developer Fritz Burns were also using the method in their projects. In fact, there were enough California builders using the method regularly by the early 1940s that the system came to be called “the California method” in the building industry press. The method does not appear to have a specific origin in California, however. Philanthropic interests, housing reformers, and the federal government had been researching methods of streamlining and modernizing building to produce more efficient, functional, low-cost housing for nearly a decade, including some aspects of the California method, by the time Doelger is using it in the Sunset.³⁰ Perhaps not surprisingly, the reform-minded Ford Homes project in Dearborn,

³⁰ Hise, *Magnetic Los Angeles*, 56–57, 100–103.

Michigan also employed assembly-line practices in the late 1920s.³¹ What is clear, however, is that the concentration of builders in northern California using the method in the late 1920s and through the 1930s made the region a “taking off” point in terms of method acceptance and diffusion. By the time the US entered World War II, California method practices were well-established in local building culture.

Building houses quickly and cheaply, however, only got a builder so far. Doelger also had to produce a product that appealed to buyers. To remain nimble and flexible in matters of design, Doelger directly employed the designers, draftsmen, and engineers who created his Sunset houses beginning in the early 1930s. (Figure 3.14) The size of the design staff fluctuated over the years, but typically consisted of around six employees working under the direction of a lead designer.³² Two designers were responsible for most of Doelger’s signature house forms and treatments in these years: Doelger’s “master architect” James Chester (Chet) Dolphin (1886-1965) and Dolphin’s creative partner in the office, draftsman Edward Hageman (1916-2015). (Figure 3.15) Neither had formal training as an architect or an architecture license at the time they started working for Doelger. Dolphin studied architectural and industrial drawing for several years at the Philadelphia Museum School for Industrial Arts, but like Doelger, left school to help support his family after the death of his father. He moved to San Francisco by 1925 and worked as both an artist and an architect. Before joining Doelger Homes in the mid-1930s, Dolphin worked for the firm Leonard & Holt, an integrated real estate, design, and building firm that specialized in subdivision planning and housing design. The partnership was well-known for their work developing Ingleside Terrace, another western neighborhood of San Francisco.³³ Dolphin was responsible for most of Doelger’s best-known housing plans and forms, designing floor plans that were suitable for mass production, but also with enough bells and whistles to be competitive in a market with other large-scale producers.³⁴ Hageman was a fourth-generation San Franciscan and grew up in the thirty-fifth house Doelger built in the Sunset, watching Doelger build out across the dunes. Hageman attended San Francisco Polytechnic High School where he took mechanical drawing courses alongside his regular courses. After graduation he attended the Rudolph Schaeffer School of Rythmo-Chromatic Design in San Francisco on a scholarship. His first professional job was as an artist for the Fox Theater Company, designing promotional lobby displays for their West Coast theaters. He joined Doelger Homes in 1937, and because his combination of building design, color theory, and visual advertising experience, Doelger put Hageman in charge of designing elevations and

³¹ Loeb, *Entrepreneurial Vernacular*, chap. 1, The Ford Homes.

³² “A City of Homes by One Builder,” 107–8; Early designers at Doelger Homes included John Hunter and O.E. Peterson. Brown and San Francisco Planning Department, “Sunset District Residential Builders, 1925-1950 Historic Context Statement,” 46.

³³ Richard Brandi and Woody LaBounty, “San Francisco’s Ocean View, Merced Heights, and Ingleside (OMI) Neighborhoods Historic Context Statement” (San Francisco: Western Neighborhoods Project, 2010), 32.

³⁴ Keil, *Little Boxes*, 74, 77; Michael Doelger, interview.

streetscape schemes.³⁵ Hageman eventually rose to the position of head designer before leaving in 1947 to start his own design practice.³⁶

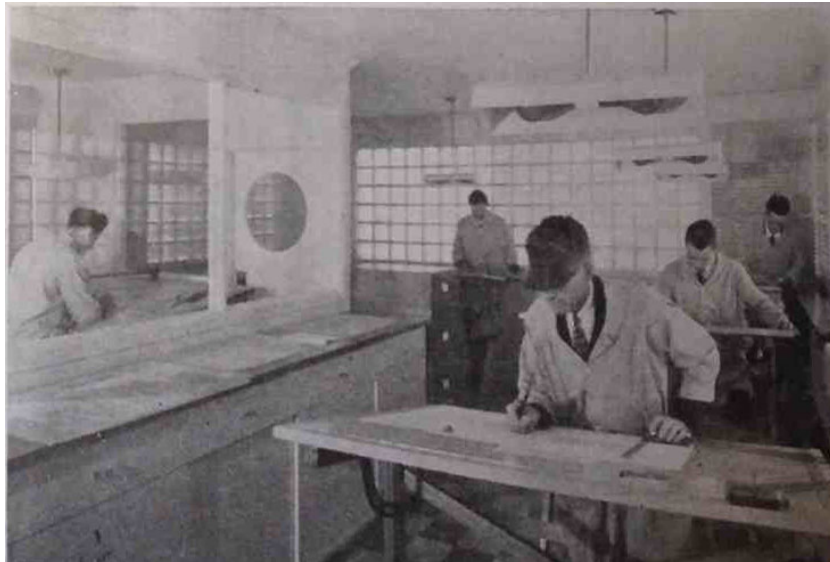


Figure 3.14. Draftspeople at work at Doelger Homes building, 1941. Source: "A City of Homes by One Builder," *American Builder*, November 1941.

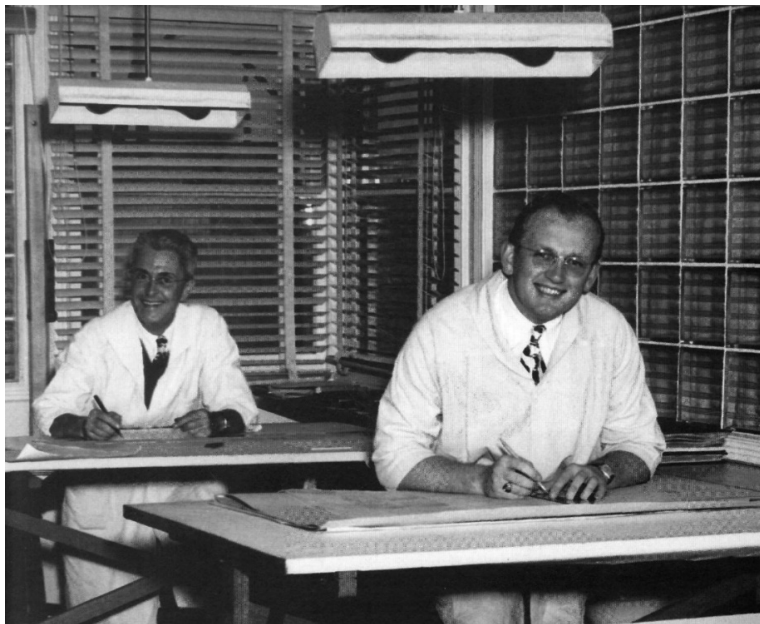


Figure 3.15. Chester Dolphin (left) and Ed Hageman (right) at work at Doelger Homes sometime in the 1930s or early 1940s. Source: Daly City History Guild, Daly City, California.

³⁵ Michael Doelger, interview.

³⁶ John Bowman, "Architect Stays Busy at 95," *Whistlestop Express*, October 2011, 1, 6.

Dolphin and Hageman's educational backgrounds were not unusual for the period – many practicing architects were graduates of industrial arts schools and later apprenticed with a practicing architect to gain additional skills. As designers, Hageman and Dolphin were experts in all the key aspects of home building. Doelger, for example, had Hageman do several stints as a construction supervisor as well as designer, and he moved back and forth between drafting room and building site, learning the ins and outs of what he was tasked with designing. Hageman recalls his time with Doelger as a tremendous period of design and building education. "I probably learned the whole ball of wax from Doelger," he recounted in 2005, "how to design foundations, how to design the framing of a house. As far as the decorative, cosmetic end of the exteriors, that, I think, was me doing what I like to do. I never went to architecture school. I learned everything on the drawing board."³⁷ Dolphin and Hageman worked closely with Doelger and the rest of the "planning department," as Doelger called his design department, in "searching, testing, and experimenting with new ideas."³⁸

Doelger rarely described his design process in public accounts of his work, but the one peek behind the curtain he offered in 1935 demonstrated the team-based approach to design Doelger Homes employed. To design his first FHA-insured house (the Deauville) in the Sunset at Thirty-Third Avenue and Kirkham Street, he relied on a "plan board" made up of one woman and five men: two architects (probably Dolphin and Hageman), Doelger, his vice president of construction (Doelger's brother John), and his sales manager. The unnamed woman involved may have been an employee or perhaps Doelger's wife, Thelma. The woman's role on the board, according to Doelger, was to represent all housewives and oversee matters of "livability," or ensuring that the design and layout matched how the average family would live, work, and operate in the home. Unnamed in Doelger's account of the partnership was Barney Poncetta, the director of the Bank of America branch in the Sunset that financed Doelger's projects. Poncetta was also regularly involved in the decision-making processes for projects, protecting the more than \$75 million the bank would loan Doelger by the mid-1950s.³⁹ Doelger's board considered twenty-five types of borrowed and original plans, and in their analyses broke apart and reassembled elements of the plans to developed the final floor plan

³⁷ Dave Weinstein, "Signature Style: Ed Hageman, The Wizard of Westlake," *San Francisco Chronicle*, July 16, 2005, <http://www.sfgate.com/bayarea/article/SIGNATURE-STYLE-Ed-Hageman-The-wizard-of-2622298.php>. Hageman was involved with some of the largest home building interests in the Bay Area over the course of his career. Doelger competitors like the Gellert Brothers, who also developed in the Sunset and on the San Francisco Peninsula, hired Hageman to design elevations for their developments in Laguna Honda. Hageman also designed for Paul Petersen of Whitecliff Homes in San Francisco, San Mateo, Santa Clara, and Contra Costa counties. Hageman went on to design approximately 2,000 custom homes as an independent architect. Hageman received his architecture license in 1973 when the State of California grandfathered in long-time practitioners with proven track records of competent design.

³⁸ "Doelger City: The Sunshine Community [Article Reprint]," *San Francisco News*, April 20, 1940, Henry Doelger, Daly City History Guild, Daly City, CA.

³⁹ Edward Hageman, interview by Rob Keil, 2005, Westlake Branch, Daly City Public Library, Daly City, California; Bob Brachman, "The Westlake Story - Artichokes to Homes," *The Westlaker*, February 1962, 1, Doelger Files, Daly City History Guild, Daly City, CA.

for the Deauville.⁴⁰ (Figure 3.16) The result was a basic floor plan and an overall model that would “have every new and every desirable feature of beauty, of comfort, of labor saving and of low upkeep that could be conceived.” Doelger regularly involved other staff into his design process as well. He relied on his crew foremen to offer input on new housing forms and styles, drawing on their pragmatic knowledge to adjust mechanics and housing concepts.⁴¹ He also met with his team of ten salesmen at bimonthly dinners to keep tabs on what was working and what was not with potential buyers.

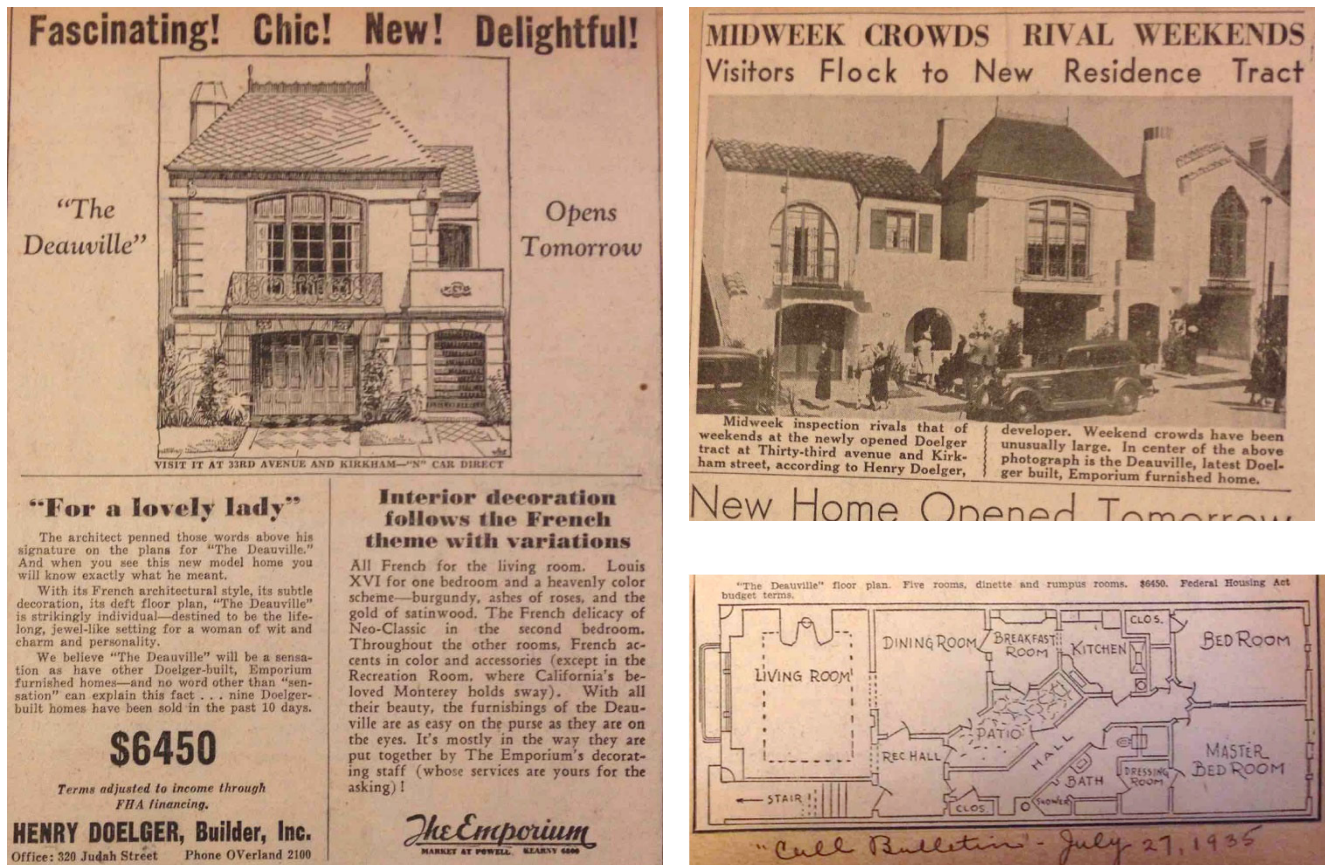


Figure 3.16. Clockwise from left: Advertisement for the Deauville plan from the *San Francisco Call-Bulletin*, July 13 1935; Photograph of open house for the Deauville model home from the *San Francisco Call-Bulletin*, July 13, 1935; and Plan for the Deauville from the *San Francisco Call-Bulletin*, July 27, 1935.

Source: Doelger Scrapbook, Daly City History Guild, Daly City, California.

With the uniformity of Doelger’s houses, his most malleable, marketable commodity after the interior space was exterior appearance, and his design process also revolved heavily around

⁴⁰ “‘Plan Board’ Unique Organization Developed by Doelger,” *San Francisco Call Bulletin*, July 27, 1935, Doelger Scrapbook, Daly City History Guild, Daly City, California; “Here’s Happiness for Sale,” Advertisement, *San Francisco Examiner*, August 17, 1935, Doelger Scrapbook, Daly City History Guild, Daly City, California.

⁴¹ Brown and San Francisco Planning Department, “Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA,” 24; Rob Keil, *Little Boxes: The Legacy of Henry Doelger*, DVD, Documentary, 2013.

manipulation of style. Doelger's first block of houses on the 1400 block of Thirty-Ninth Avenue were nearly identical, with the same form and only minor variations in style. This was typical of much of the development work in the Sunset district in the period – a trend critics would discuss as giving buildings as little distinction as the average tenement.⁴² However, by the early 1930s amidst the Depression, Doelger shifted tactics. He had his draftsmen design individual fronts for each home, regardless of similarities in floor plans.⁴³ Doelger's team executed well-developed, abstracted versions of period revival precedents. Doelger's goals, like those of many other developers, were to add variety, individuality, and a sense of quality and permanence to his newly minted streetscapes. As quoted in the *San Francisco News* in 1940, Doelger Homes offered "Home designs as varied and exciting as the history of San Francisco. Beside a sleek little modern can be found a gay French Provincial, a quaint English Colonial, or a charming Early American. Again, that Doelger individuality which makes a home distinctly yours alone."⁴⁴ Doelger also cautiously experimented with more contemporary modern designs that relied on form rather than applied ornament. He introduced Art Deco and Streamline Moderne styles into his tract houses in the late 1930s and early 1940s, though this was long after the styles were in the avant-garde. Models like Doelger's "Styleocrat" offering modest Streamline Moderne design elements made up about ten percent of house styles in the district.⁴⁵ (Figure 3.17)



Figure 3.17. Example of Doelger's "Styleocrat" model, constructed in 1941 in the Sunset. Source: Western Neighborhoods Project.

⁴² Newton, "San Francisco's Henry Doelger," 36.

⁴³ Newton, 36.

⁴⁴ "Doelger City: The Sunshine Community [Article Reprint]."

⁴⁵ Brown and San Francisco Planning Department, "Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA," 21.

This tactic in effect continued the design eclecticism of the late nineteenth century and the mix of stylistic languages that characterized speculative real estate development in San Francisco's inner neighborhoods. The city's quintessential neighborhoods of Victorian era row houses and commercial buildings were also built of similar or identical plans and depended on external ornamentation for differentiation. But Doelger's use of style differed in that, as a speculative builder, he had to anticipate, rather than respond to, buyer's preferences. This is evident in Doelger's advertising, marketing, and merchandising of houses. Speculative variety acknowledged the fact no single housing style would adequately appeal to a wide range of buyers. Doelger's advertising emphasized with his diversity of styles and entire blocks of prebuilt houses that buyers had a range of choice in purchasing a new home – or in essence, could perhaps for the first time “shop” for a newly built house.⁴⁶ (Figure 3.18)

Doelger's use of style also had practical applications. In the routinized, rationalized building conditions Doelger and his colleagues were developing, neighborhood identity expressed through style was an important factor in veiling the simplified plans and forms beneath. The nature of the styles chosen were also important. As Carolyn Loeb has argued, historicist styles like those preferred in the period also had the benefit of being flexible and modular in their application, allowing builders to “mix and match” elements to create a sense of diversity over an underlying similarity.⁴⁷ Builders also favored more conservative styles as part of their financial calculations. Investors and banks were less likely to take a gamble on new experimental styles like Art Deco or Art Moderne, preferring to stay with styles that had known resale values and were likely to continue to be relevant as a desirable house.⁴⁸

Impact on the consumer was another consideration in stylistic choices. Historical revival styles in speculative building emphasized a sense of continuity in these new environments while offering associational motivations and character.⁴⁹ A visual association with historical periods gave the new, modern houses a sense of continuity and stability in a period marked by significant technological change as well as social change in the family and home. At the same time, the historicist references masked the technological and social change happening in these new, modern houses with central heating systems, three-fixture baths, full electricity, and a car in the integrated garage.⁵⁰ Consumer anxiety over modernity was only one side of the spectrum of stylistic considerations, however. Architectural historian Alice Friedman has discussed the use of style in mid-twentieth-century architecture as a form of popular visual imagery designed

⁴⁶ “A Full Block From Which to Select,” *San Francisco Call-Bulletin*, March 19, 1932, Doelger Scrapbook, Daly City History Guild, Daly City, CA; “Builder Sets Record,” *San Francisco Call-Bulletin*, September 26, 1931, Doelger Scrapbook, Daly City History Guild, Daly City, CA.


⁴⁷ Loeb, *Entrepreneurial Vernacular*, 200, 190.

⁴⁸ Loeb, 194.

⁴⁹ Loeb, 200.

⁵⁰ Loeb, 194.


*America's
Fastest Selling Homes
are*



Built by
DOELGER

320 JUDAH ST. OVERLAND 2100

*Sparkling modern homes in San Francisco's Sunset District
where sand dunes once ruled.*



**DOELGER
CITY**

From 26th to 36th avenues between
Noriega and Quintara streets

the most modern communities in the entire United States, which has been given the unofficial title, "Doelger City," by its proud residents.

You will find the people living in this "city within a city" friendly folks in the average income group, for that, too, has been a Doelger goal: to build moderate priced homes for moderate income families.

Today you will find, besides homes, that schools, churches, shops, and markets also have come to Doelger City. And each week brings the beginning of additional blocks of convenient, modern homes. Truly, this is where *real living* is being enjoyed—real living that can so easily be yours!

*Start today on the road to financial independence by
owning a DOELGER home . . . homes that are built to last!*



*Think What This
Means to You!*
**A Fully
Detached
Bungalow**
Only
\$6750 *and
up*
Easy Payments

A Full Block From Which to Select

NOT just one to select from, but a full block of 5 and 6 room homes, each containing a beautiful social hall. Look at the photograph. Study the distinctive designs. Note that every one is different—English, Spanish, Moorish, Normandy, etc. The interior decorations are works of art. The color schemes will fascinate you and prove to you that we have spared no expense. See the Model Home, furnished by Redlick-Newman Co. Judge for yourself how attractively they furnish. See the well proportioned rooms with four large bay windows in the dining room. These homes are complete even to the lawns, shrubs and walks.

**YOU WILL NEVER HAVE A BETTER OPPORTUNITY
TO BUY**

Come Out Today
31st Avenue and Lawton Street
SUNSET DISTRICT—Take N Car

HENRY DOELGER
Builder
300 JUDAH STREET

Figure 3.18. Doelger brochure (top) and March 1932 advertisement in the *Sunset Dispatch* illustrating streetscape and invitation to choose from a full block of houses. Brochure source: Prelinger Library, San Francisco, California; Advertisement source: Doelger Scrapbook, Daly City History Guild, Daly City, California.

to be theatrical and visually exciting in response to expectations of Americans shaped by advertising.⁵¹ This was, in essence, aspirational style, selling a piece of magical storytelling or glamorous illusion through personal consumption. The styles Doelger used to transform his row houses tapped into a consumer preference for narrative and sentiment, but also a meaningful, if imaginary identity. In many ways, these were images detached from place, as much as their underlying buildings ignored or subdued their surroundings. Friedman interprets these works as successful attempts at creating a meaningful and useful modern architecture in the postwar US, but the practice harkens back well before World War II in domestic architecture.⁵²

Doelger's design and marketing practices also illustrate the close relationship builders had with their local market. He employed several mechanisms for dialoging directly and indirectly with consumers before the advent of more systematized and quantitative market research. Throughout his career, Doelger maintained close engagement with his neighborhoods, his buyers, and his prospective buyers, dialoging with them through informal, but almost anthropological means. Like many builders, he built in the neighborhood he grew up in and came from the socioeconomic class he targeted with his housing. In the early years of his business, Doelger worked building his houses as well as selling them, coming down and taking off his coveralls to talk with potential buyers or people who stopped to observe. Though his class status changed markedly during his career, Doelger took steps to remain connected to his buyers. He embedded himself in his developments, both as a signal of his commitment to the projects and as a participant observer. Doelger continued to live in the Sunset during his development work there, albeit in one of his more upscale developments: a Monterey-style residence at 1995 Fifteenth Street in Golden Gate Heights, just above his primary development area. (Figure 3.19)



Figure 3.19. Henry Doelger's home in the Sunset at 1995 Fifteenth Avenue. Source: Bunny Gillespie, *Westlake*.

⁵¹ Alice T. Friedman, *American Glamour and the Evolution of Modern Architecture* (New Haven [Conn.]: Yale University Press, 2010), 4–5.

⁵² Friedman, 5.

In addition, Doelger regularly polled prospective customers on their responses to his firm's designs and plans, and kept tabs on what existing homeowners said about his products.⁵³ Doelger relied heavily on the use of model homes and had one or two model homes open for display at all times. He changed to a new model home every thirty days, constantly keeping something new in front of the public. A female hostess and male salesmen were on site at the model homes from early morning until as late as nine or ten at night, meeting with potential buyers and gauging reactions.⁵⁴ Doelger also kept a maintenance department as part of his real estate and building business. For a year or so after purchase, Doelger Homes repairmen would come and fix any issue with the houses as part of the sales agreement. This not only served as a gesture of good will or confidence-inducing measure with customers, but also gave Doelger another avenue by which to monitor post-occupancy and post-construction performance of his homes. Doelger's intimate relationship with his consumer base and responsiveness to consumer expectations and preferences signal the underlying vernacular processes at play even as housing became increasingly commoditized and produced at large scales.

Few people meet the actual producer of the goods they consume, but with developer-built housing in this period, the builder was a local personage whose reputation and public profile were inseparable from their work – the last vestiges of the artisanal, local nature of home building to become anonymously industrialized. In 1931, Doelger Homes quoted one of its customers in the *San Francisco Examiner* as saying, "I'll tell you why I bought this house," said the new resident. "I knew that back of it was a large, experienced organization which had a good reputation to maintain, in addition to its large buying power, reflected in the price of the property." It seems doubtful the buyer actually existed given how perfectly his quote parallels a marketing pitch. Nonetheless, Doelger's use of the quote reflects his desire to project an image of stability, reliability, and belief in a mutual social contract between builder and buyer resulting in a sound investment.⁵⁵

Doelger projected this image in more than his advertising. In 1930, Doelger commissioned architect Charles O. Clausen of Clausen Studios in San Francisco to design a new headquarters building for the firm. The building would not be in the downtown financial or business district of the city, but in the heart of the Sunset commercial district on Judah Street.⁵⁶ Completed in 1931, the Doelger Building at 320 Judah Street held sales offices, design spaces, and behind its

⁵³ Davenport, "The 'Ford' of Housing: Doelger's Gamble Paid Off."

⁵⁴ Newton, "San Francisco's Henry Doelger," 39.

⁵⁵ "Deauville Model House Feature of Sunset Area: Buyers Favor Big Building Firm, Says One," *San Francisco Examiner*, August 4, 1935, Doelger Scrapbook, Daly City History Guild, Daly City, CA.

⁵⁶ Brown and San Francisco Planning Department, "Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA," 1, 2–3.

flashy street front main block, lumber, construction materials, and company trucks.⁵⁷ The Doelger Building one of the first “modern” buildings in the neighborhood, designed in the Art Deco style and a sharp contrast to the period revival styles of most of Doelger’s tract housing. The building presents itself as a monumental gate, or stage proscenium, through which the buyer passes into the sales and administrative offices of the city’s largest home builder to finalize their sale. Doelger remained in the headquarters building until 1951 when he moved the company to his Westlake development in Daly City.⁵⁸ (Figure 3.20)



Figure 3.20. Doelger Building (1932), 320-326 Judah Street, San Francisco. Source: Bunny Gillespie, *Westlake*.

From the Sunset to the Suburbs

Doelger’s experience developing houses in the Sunset had all the necessary building blocks for postwar suburban development. There, Doelger established a set of design practices and processes that allowed for mass-scale building with enough variability and personality to attract the consumer. He was also well-versed in what would become the single largest target market for new homes after World War II. As Doelger’s son Michael put it, his father’s buyers were the solid working-class wage earners, the firemen, police officers, and waiters of the city who as a whole, had limited choice in single-family dwelling options before the post-World War II period.⁵⁹

⁵⁷ Brown and San Francisco Planning Department, “Sunset District Residential Builders, 1925-1950 Historic Context Statement,” 46.

⁵⁸ Brown and San Francisco Planning Department, “Landmark Designation Report for The Doelger Building, 320-326 Judah Street, San Francisco, CA,” 35.

⁵⁹ Michael Doelger, interview; Weiss, *The Rise of the Community Builders*, 45.

Compared to other offerings in the former “outside lands” before and after World War I, Doelger’s work was considerably urban. Beginning in 1911 when the former lands of Adolph Sutro south and west of the Twin Peaks opened for development, real estate development firms such as Baldwin & Howell, the A.S. Baldwin Residential Development Company, Mason-McDuffie, and Fernando Nelson & Sons immediately began building master-planned garden suburbs or “residential parks.” Exemplified by developments like Mason-McDuffie’s St. Francis Wood (1912) and Nelson’s West Portal Park (1910s-1920s), these subdivisions offered lushly landscaped settings with curvilinear streetscapes designed by Olmsted Brothers, large lots with buried utilities, and sizable and comfortable homes designed by architects such as John Galen Howard, Julia Morgan, and Bernard Maybeck.⁶⁰ Some developers also targeted more middling buyers with their developments. Baldwin & Howell, for example, developed Westwood Park (1916) on the site of a former greyhound track, adjacent to St. Francis Wood. This bungalow neighborhood was arranged on curvilinear concentric rings of streets and offered many of the features and characteristics of their upper-class neighbors: covenants prohibiting commercial development and minority ownership, wide lots, ornamental street furnishings and lighting, entrance gate and pillars, and landscaping. Designers and architects such as Ida F. McCain and Charles Strothoff designed the bungalows working with individual owners. Builders also bought some lots from Baldwin & Howell and constructed small numbers of speculative houses, forecasting what would become a more common development pattern within a decade.⁶¹ Early developments in the gridiron Sunset and adjacent Richmond neighborhoods also attempted to achieve some semblance of suburban ideals in the district. Fernando Nelson’s Parkway Terrace in the Richmond District in the 1910s, for example, consisted of large, expensive, free-standing, single-family homes. Though very different from typical postwar developments, these examples begin to reflect the transition among larger-scale builders in the 1920s and 1930s from “merchant builder” to “community builder” activities. In contrast to the merchant builder, who built small subdivisions or infill development, community builders’ work was characterized by large scale development, control of large parcels of land by one developer; deed restrictions on use and occupancy for properties; long-term planning; and integrating financing, building, and real estate brokering in a single enterprise.

Compared to these more traditionally suburban examples and their controlled, but individually-driven design, Doelger’s development model in the Sunset is much closer to what we recognize as a post-World War II model for housing development in its scale, speculative building model, and streamlined production practices. He capitalized on issues of continuity and uniformity while infusing novelty and optimized his construction processes for maximum

⁶⁰ Western Neighborhoods Project, “St. Francis Wood,” accessed March 17, 2020, <http://www.outsidelands.org/sfw.php>; Western Neighborhoods Project, “A Short History of West of Twin Peaks,” accessed March 17, 2020, <http://www.outsidelands.org/wotp.php>.

⁶¹ Western Neighborhoods Project, “Birth of Westwood Park, Part 1,” accessed March 17, 2020, <http://www.outsidelands.org/westwood-park-birth1.php>; Western Neighborhoods Project, “The Birth of Westwood Park, Part II,” accessed March 17, 2020, <http://www.outsidelands.org/westwood-park-birth2.php>.

output and minimal prices. Though working within the confines of San Francisco's gridiron, we can see Doelger nodding toward more suburban ideas with his single-family focus and emphasis on the individuality and, at least minimally, detached nature of his houses. (Figure 3.21) Doelger's efforts to afford families more privacy by reorganizing the location of living quarters to the second story and provision of an integral garage in each home also signal more suburban than urban ideas. Doelger in essence created a sort of "suburb in the city" for residents who still relied on easy connectivity to downtown.



Figure 3.21. Advertisement for Doelger homes emphasizing individualized, detached dwellings from the *San Francisco Examiner*, April 23, 1932. Source: Doelger Scrapbooks, Daly City History Guild, Daly City, California.

By the early 1940s, the Sunset District was largely built out and with the US entry into World War II in 1941, building nearly ceased. During the war, Doelger, like many home builders, turned to defense housing and federal contract building to stay in business. Doelger constructed 2,400 units of defense-related housing in the San Francisco Bay Area, changing his models and forms rapidly to suit whatever market sector he could exploit.⁶² Colleagues credited him with having one of the most versatile private building programs of the war. Doelger built twenty-five, four-family apartment buildings in Alameda County, 150 single-story duplexes in Oakland, and 1,200 individual row homes in the Sunset. His "Ensign" model at 1946 Thirty-

⁶² Mike Roberts, "Westlake Pays Tribute to Innovative Builder," 1978, Doelger Obituary Clippings File, Daly City History Guild, Daly City, CA; Gillespie, *Westlake*, 8.

Second Avenue was Doelger's first defense model home, designed to meet the strictures of war-time emergency building restrictions. (Figure 3.22) The house sold for \$4,500 with FHA-insured financing, and contained a living room, two bedrooms, and a combination kitchen and dining area.⁶³ Doelger also stripped down his earlier "house-over-garage" plans to comply with wartime restrictions, marketing the reduced model as the "Econo-manor." (Figure 2.23) Doelger also experimented with a new form – the split level – in the Sunset during the war, a form that would launch him into his major postwar development campaign at Westlake. (Figures 3.24 and 3.25) Further south in San Mateo County, Doelger also built a privately-financed defense housing development of single-family homes called Mayfair Village, which included bungalow forms similar to what was being constructed on the other side of the bay in San Lorenzo Village by David Bohannon (see Chapter 6).⁶⁴

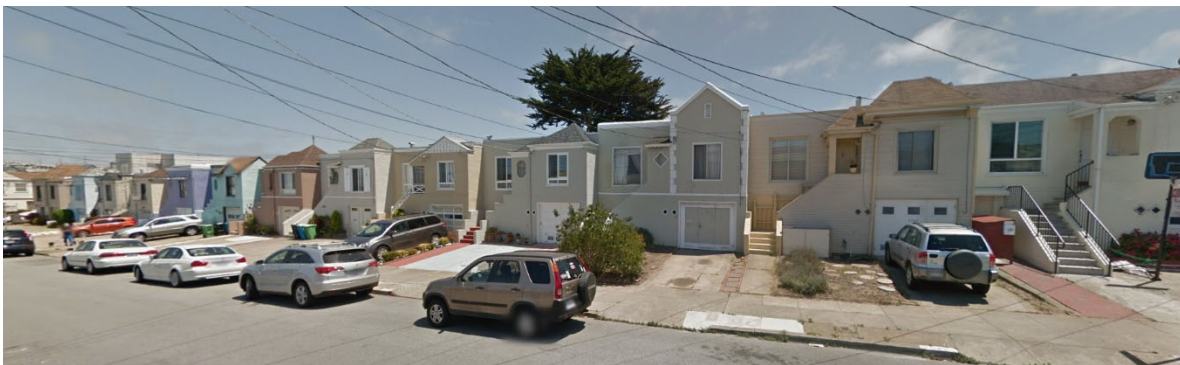


Figure 3.22. 1900 block of Thirty-second Avenue in the Sunset showing Doelger's wartime housing marketed variably as "The Ensign," and "Liberty Houses." Source: Google Street View

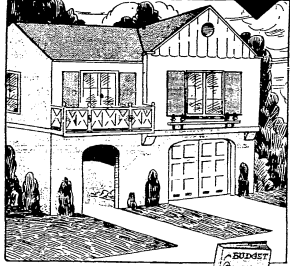
⁶³ "Defense Model Home Show Now in Its Fourth Week," *San Francisco Chronicle*, August 2, 1942, 57.

⁶⁴ Francis Newton, "Henry Doelger Plans 4,000 Home Post-War Project," *National Real Estate and Building Journal*, August 1945, 33–34; Doelger Homes, "Doelger Homes Advertisement for Carpenters," *San Francisco Chronicle*, August 26, 1944, 15. See also 640 Mayfair Avenue, South San Francisco, California.


...lucky-lists and Moraga and at of its own." the new models in electric grills.

of ver old ive in m, sp- a of in um am de- ry- the wn sth ive be the 7pe ful, as : is le- ds.

\$1.10 PER DAY Buys a DOELGER Home



Econo-Manor
1683 41st Avenue



THE BUDGET HOME OF 41

Think of it! A home of your own for the amazingly low price of just \$1.10 a day. That's not just an ordinary home either, but a Doelger-built home . . . planned by experts and built by America's largest home builder to insure your complete satisfaction. Inspect and compare our homes at all stages of construction. You'll agree they're miles ahead in new ideas, quality and style.

It literally took the city by storm, this Budget Home of ours. And there are plenty of reasons why! Inside and out, "**Econo - Manor**" **spells c-l-a-s-s**. There's loads of light in every spacious room . . . deep, roomy closets . . . built-in features you'll love . . . and an easy-to-work-in kitchen. You'll join in the unanimous agreement of the crowds who have already seen this record-breaking home that it's the reason Doelger homes **out-value, out-style** and **out-sell** all others. You'll never believe it, but monthly payments on "Econo-Manor" are only

\$33.00 PER MONTH
Includes Taxes, Insurance, Interest and Principal

\$500 DOWN **\$5,000 FULL PRICE**

"FURNISHED BY LACHMAN BROS."

That one expression, "furnished by Lachman Bros.," carries a world of meaning to everyone interested in home furnishings, whether for one room or for an entire house. You know you are getting furniture that is right both in quality and in price. See for yourself in "Econo-Manor."

HENRY DOELGER
America's Largest Home Builder
320 JUDAH STREET OVerland 2100

Figure 3.23. Advertisement for Henry Doelger's "Econo-Manor" in the San Francisco Chronicle, December 8, 1940. Source: Newspapers.com.



Figure 3.24. Split level houses constructed by Henry Doelger in the Sunset on the 1900 block of Thirty-First Avenue in 1942. Source: Google Street View.

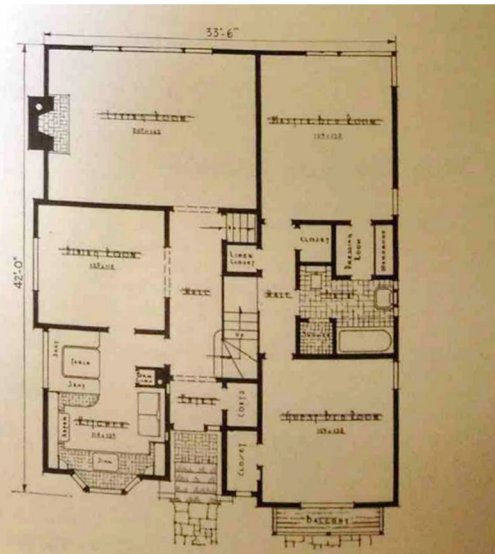
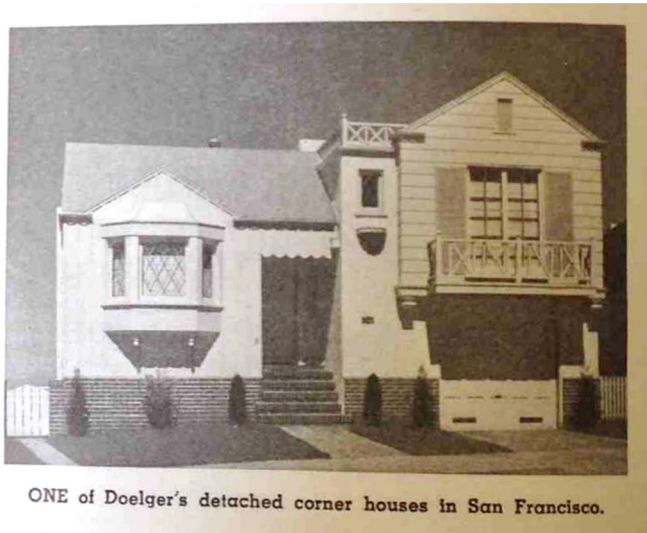


Figure 3.25. A detached, split-level corner lot house built by Henry Doelger in the Sunset. Source: “A City of Homes by One Builder,” *American Builder*, November 1941.

Even before the end of the war, however, Doelger was preparing for his next major project. The *National Real Estate and Building Journal* announced in 1945 that Doelger and his team were contemplating a self-contained community-style development of homes, shopping districts, recreation centers, schools, churches, and theaters on 1,350 acres he had recently purchased from the Spring Valley Water Company just over the southern border of San Francisco.^{65 66} In Doelger’s view, peninsula-bound San Francisco could only grow in one

⁶⁵ Newton, “Henry Doelger Plans 4,000 Home Post-War Project,” 32.

⁶⁶ Eddie King et al., Henry Doelger, The Man and His Dreams, the Story of Westlake, interview by Belva Carroll and Ronald Bates, December 11, 1979, Years after Doelger’s development of Westlake proved a success, news

direction after the war – south into San Mateo County. He was by no means the first or last on the scene in the area. By 1945, the hilly land he purchased was one of the last tracts open for development along the San Francisco border. The Metropolitan Life Insurance Company’s Parkmerced and developments by former Sunset competitors Stoneson Brothers and the Gellerts’ Standard Building Company were already underway.⁶⁷ (Figure 3.26) David Bohannon had already started his middle-class ranch development, Hillsdale, a bit further south. Between 1940 and 1950, the population of San Mateo County would double, and then it would double again between 1950 and 1960 as San Franciscans spilled over the border and into the county’s rapidly growing suburban communities. Doelger’s project – dubbed Westlake - was one of the most ambitious in the county and still stands out today as one of its most iconic postwar landscapes.



Figure 3.26. Map from the *San Francisco Chronicle*, March 4, 1949 showing development of housing tracts just over the San Francisco city and county line in San Mateo County. Key: A: Lake Merced Golf and Country Club, B: San Francisco Golf Club, C: Parkmerced (Metropolitan Life Insurance Company), D: Stoneson Brothers, E: Standard Building Company, F: Harding Park Golf Course, G: the Olympic Club at Lakeside. Unit One of Westlake is outlined in white. Source: Newsbank.

retrospectives claimed contemporaries called the plan to develop the area “Doelger’s Folly.” In reality, the land was much coveted by development interests, and sections sat adjacent to an earlier successful low-cost subdivision, Broadmoor. The Gellert brothers, who were Broadmoor’s developers, and the Stoneson Brothers, another major housing developer in San Francisco, all made moves to acquire the land., Daly City History Guild, Daly City, CA; Anne Harmon Stagg, “The Doelger Story,” *The News Mirror*, June 4, 1953, 1, Doelger Clippings File, Daly City History Guild, Daly City, CA; In 1945, Doelger purchased the initial 1,350 acres of Westlake for \$650,000. Brachman, “The Westlake Story - Artichokes to Homes,” 1; Gillespie, *Westlake*, 8.

⁶⁷ “Ground Is Broken for Building of Westlake Community,” *San Francisco Chronicle*, March 4, 1949, 26.

“We Used to Live in the Avenues:” Henry Doelger’s Westlake

In San Mateo County, Doelger embarked on a different kind of project – not an urban neighborhood, but a new, planned suburban community. Local historical accounts of Doelger’s vision for Westlake quote him as saying to his employees, “Come help me build a city,” and when Doelger turned south from San Francisco, he brought along many of the practices and methods he honed building out that city’s hinterlands. In adapting his Sunset methods to a suburban setting, Doelger and his design team remade and diversified variants on his tried-and-true house models. He held fast to his earlier patterns of merchandising design, but also began merchandising floor plans and forms within his new development, increasing the variety of houses he could offer to attract buyers. The result was a suburban community that urban dwellers could recognize and relate to, but which also offered them a seemingly brand-new environment.

On the acreage south of the San Francisco border, Doelger was unfettered by the rigid urban grid and designed a community that drew from the progressive community planning principles outlined by the FHA. (Figure 3.27) His master plan for Westlake organized the community into a series of planned development units largely in conformance with Clarence Stein’s neighborhood unit plan, which the FHA promoted in its planning guidance. Each unit had a curvilinear perimeter street and attendant primary school, while surrounding golf courses formed a partial greenbelt for the early units. Doelger’s first unit set the tone for later development. His real estate staff laid out the 680-house unit along a loosely-gridded set of curving streets. The lots measured thirty-three to forty-four feet wide and one hundred feet deep, slightly wider, but still similar in shape to San Francisco’s urban lots and their deep rear yards.⁶⁸ (Figures 3.28 and 3.29) The relative isolation and disconnection of the Westlake site necessitated construction of commercial, educational, and recreational resources. Doelger replaced the civic core in Stein’s model with a commercial area meant to do double duty as a civic space. He began construction of what would eventually become two shopping centers in the district in 1950. A bank of denser apartment housing separated the commercial zone from the single-family housing zones.⁶⁹ Between the start of construction in 1949 and full build-out in 1962, Doelger constructed eight neighborhood units contain 7,500 houses, nearly 3,000 apartments, and two shopping centers. (Figure 3.30) Like his work in the Sunset, Westlake was originally a whites-only community, with deed covenants in place restricting ownership, even after these covenants were no longer legally enforceable. Doelger also instituted a homeowner’s association at Westlake, the Westlake Improvement Association, which monitored and enforced a set of design and use guidelines and restrictions among resident members.

⁶⁸ “Foresight Sells a Subdivision,” *National Real Estate and Building Journal*, March 1950, 25.

⁶⁹ Keil, *Little Boxes: The Legacy of Henry Doelger*.



Figure 3.27. View of land along Alemany Boulevard (now John Daly Boulevard) in Daly City in 1947.
Source: Daly City History Guild, Daly City, California.



Figure 328. Aerial view of street layouts and lot sizes in the early phases of Westlake, 1949. Source: Daly City History Guild, Daly City, California.



Figure 3.29 Aerial view of Westlake in the 1960s with the intersection of Skyline Boulevard and Alemany (now John Daly) Boulevard in the foreground. Photographer: Lawrence Lowry.

Westlake

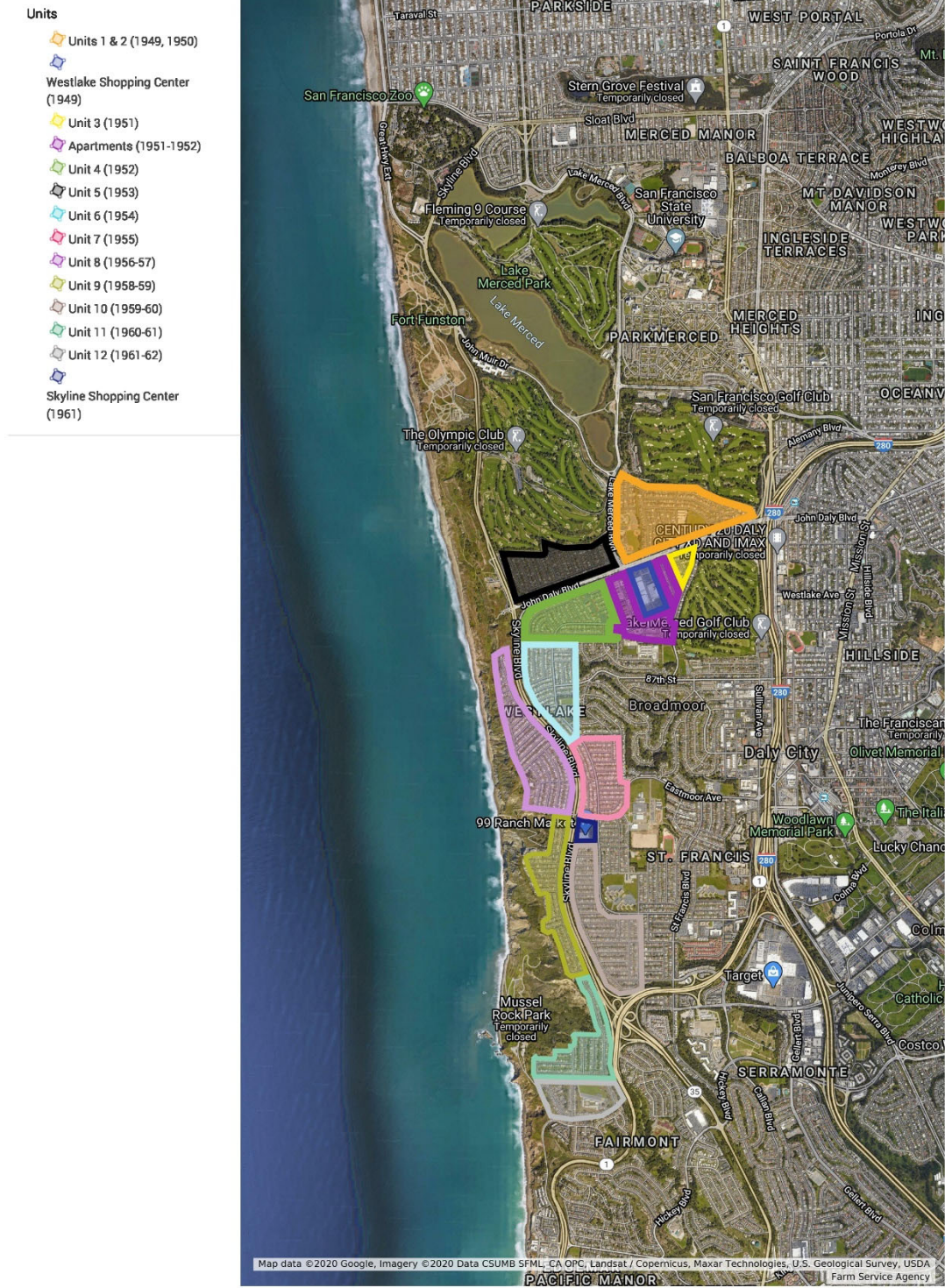


Figure 3.30. Map of phased unit development at Westlake. Source: Google Maps.

Split-Levels, Full Basements, and Modified Ranches: Urban Meets Suburban

Doelger continued to focus on housing development for lower-middle and working-class buyers at Westlake, building on his earlier reputation. The first dwellings were aimed at modest buyers, starting in 1949 at \$11,250 and topping out at \$13,650.⁷⁰ Housing design at Westlake was a different animal from Doelger's previous work in that he now had the opportunity to expand beyond the urban bungalow or row house model. However, the housing market tipped considerably toward the lower end of wage earners in the postwar period, and Doelger capitalized on his wartime experimentation to produce smaller and relatively less expensive housing than he had been producing in the Sunset.

The houses in Westlake were also to be suburban, not urban dwellings. Doelger transitioned from the single-story-over basement row house model to free-standing, split-level housing forms on Westlake's slightly wider lots, complete with modest front yards and increased space between dwellings. (Figure 3.31) The origins of the split-level form Doelger adopted for Westlake are as diverse and nonspecific as other common housing forms. Some scholars have traced evidence of the form to an early proliferation in the mid-Atlantic and Midwest in the 1930s known as the tri-level.⁷¹ However, Bay Area builders were using variations on forms approaching this plan in the same period in urban additions and suburban developments, often with a range of European colonial revival and medieval revival styles. Leonard & Holt, for example, the firm that employed Chester Dolphin before he came to work for Henry Doelger, used a similar form in their Ingleside Terrace developments, with a second story perched atop the rear block of their Spanish Colonial Revival style houses. (Figure 3.32) Although oriented differently on the lot, the form is very similar to the later twentieth-century iteration. Doelger himself experimented with a limited number of split-level plans in the Sunset in the early 1940s as the style gained purchase in the mass building market. The form had distinct design advantages for the builder, particularly when it came to styling. The form broke up the blocky plane of the façade and creating two rooflines and accompanying masses for articulation. It also had a relatively narrow footprint compared to other styles like the ranch and allowed builders to get more lots and houses per acre. One concession to gain this advantage was that Doelger's Westlake split levels halved the space available on the exposed ground story, and thus reduced the size of the dwellings when compared to his Sunset models.

⁷⁰ William F. Adams, Henry Doelger - The Man and His Dreams: The Story of Westlake, interview by Ronald Bates and Belva Carroll, December 11, 1979, Doelger Files, Daly City History Guild, Daly City, CA; Davenport, "The 'Ford' of Housing: Doelger's Gamble Paid Off," 1; Svanevik, "Henry Doelger: From Hot Dogs to Hot Deals," B3; Other sources say 9,000 homes, 3,000 apartments. "Bay Home Builder Henry Doelger Dies," *Redwood City Tribune*, July 26, 1978, Doelger Obituary Clippings File, Daly City History Guild, Daly City, CA; Curtin, "Henry Doelger, The City's Premier Home Builder, Dies"; others say 6,500 houses and 3,000 apartments. Keil, *Little Boxes*, 38.

⁷¹ James A. Jacobs, *Detached America: Building Houses in Postwar Suburbia*, Midcentury : Architecture, Landscape, Urbanism, and Design (Charlottesville [Virginia]: University of Virginia Press, 2015), 152–53.



Figure 3.31. Streetscape view of houses in second unit of Westlake (1950). Source: Daly City History Guild, Daly City, California.



Figure 3.32 Home by Leonard & Holt real estate developers and architects in Ingleside Terrace neighborhood of San Francisco. Courtesy San Francisco Public Library, San Francisco Historical Photograph Collection.

In his focus on the economy housing market, Doelger's early houses at Westlake were small – only two bedrooms and a single bath – but managed to offer solid middle-class features such as a dining room, some semblance of an entry buffer space, and integrated garage. Doelger's chief designer Chester Dolphin arranged the houses to have a side elevation, midpoint entrance that brought visitors directly into a transitional space between the open plan living room and

dining room. The kitchen, set behind the dining room, completed the entry level. A small set of stairs off the dining area led to a bathroom and flanking bedrooms off a narrow hall. The bedrooms and bath were set above an integrated garage on the ground level.⁷² (Figure 3.33) In a nod to the financial circumstances of economy home buyers, these models also included room for expansion at a later date. Henry Doelger's son Michael recalled, "And those homes as I recall, too, were designed in such a way that you could add a third bedroom on the second-floor level. Because they were split . . . you'd walk in, the living room would be to your right, your dining room to the left, kitchen, and you'd go up a number of stairs an you'd have your two bedrooms with the bath in the center. But there was a way that you could work a stairway in on your left and go and add another level. And a lot of people did that."⁷³ (Figures 3.34 and 3.35)

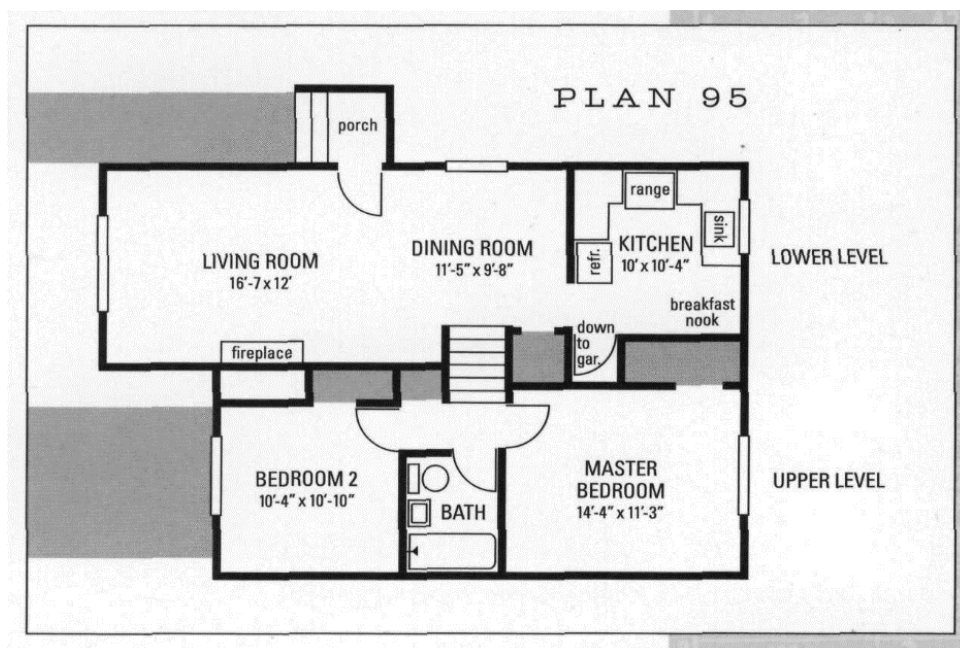


Figure 3.33. Plan for the majority of the houses in the first phases of Westlake, constructed 1949-1951.

Source: Rob Keil, *Little Boxes*.

⁷² Keil, *Little Boxes*, 77.

⁷³ Michael Doelger, interview.

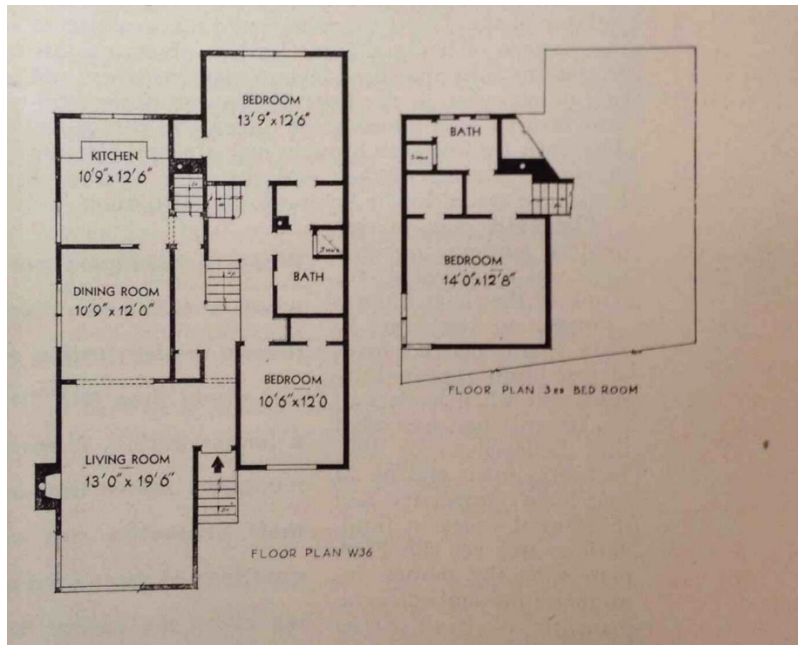


Figure 3.34. Plan of Westlake models with third bedroom addition option published in *National Real Estate and Building Journal* in 1950. Variation with a center entrance shown here was never executed in Westlake, but matches earlier split levels Doelger constructed in the Sunset. Source: "Foresight Sells a Subdivision," *National Real Estate and Building Journal*, March 1950.



Figure 3.35. Two models in Westlake Units One and Two with third bedroom addition completed, visible above projecting bay. Photographs by Elaine Stiles, 2016.

Doelger continued using the California method at Westlake, but at a much more intensive pace than before the war. At the height of construction in 1949, the crews were framing up to

six houses a day, three times as many as in the Sunset.⁷⁴ As in the Sunset, Doelger cut, finished, and packaged all framing lumber for each house at an on-site lumber mill, and had his own sash and door plant nearby that made door and window casings. (Figures 3.36 through 3.38) Doelger was the largest single buyer of lumber on the West Coast the year he started Westlake, with annual purchases totaling 84 million board feet. To make things more efficient, Doelger relied on his long-time subcontractors for the Westlake project, contractors already well familiar with his operations and standards. These subcontractors then trained 1,000 workers to work in the assembly-line style crews that framed, plumbed, wired, roofed, and finished the interiors and exteriors of the houses. Doelger also optimized his housing designs, scaling everything to standard lumber dimensions and standard material and product sizes, designing the houses to have proportions and dimensions that required a minimum of cutting and skilled carpentry to assemble.⁷⁵ He experimented with a new product he hoped would speed production at Westlake: sheet rock. Doelger's relationship with the local plasterer's union vacillated between strained and hostile, and when an alternative to plaster became available, Doelger went with it.⁷⁶ Son Michael Doelger recalled that Henry's competitors would denigrate his Westlake houses because of his use of sheetrock, calling them "paper houses." However, the labor savings over plaster and lathe were such that most mass builders converted to sheet rock by the 1950s.⁷⁷ In later phases of Westlake, particularly in the late 1950s after the 1957 Daly City earthquake, Doelger experimented with production methods to try to keep prices low and increase sales. Doelger experimented with prefabrication of walls and other framing components, on-site fabrication, and building an assembly line with conveyor belts at the job site. After a year, he realized no cost savings and went back to the regular California method of building.⁷⁸

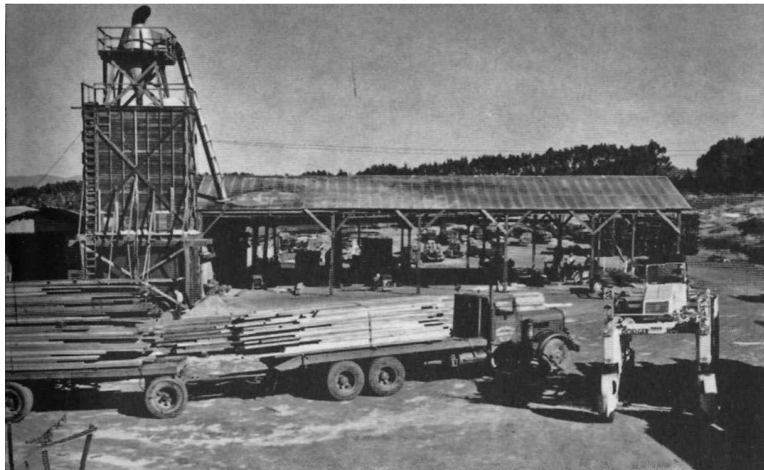


Figure 3.36. Lumber mill on the Westlake site. Source: Bunny Gillespie, *Westlake*.

⁷⁴ "Foresight Sells a Subdivision," 25.

⁷⁵ Hageman, interview.

⁷⁶ Woodrow Green, Henry Doelger, *The Man and His Dreams, the Story of Westlake*, interview by Belva Carroll and Ronald Bates, March 18, 1980, Daly City History Guild, Daly City, CA.

⁷⁷ Michael Doelger, interview.

⁷⁸ Michael Doelger.



Figure 3.37. Lumber yard at Westlake showing lumber processing on site. Source: Daly City History Guild, Daly City, CA.



Figure 3.38. Early unit of Westlake under construction, showing house kits on curbs and houses in various stages of completion. Source: Daly City History Guild, Daly City, California.

Affect and Authenticity: Merchandising Design

Doelger diversified his catalog of house plans at Westlake far beyond what he offered in the Sunset in part because of the financial gamble he took in pursuing his Westlake project. After purchasing the land for Westlake, Doelger had few assets in reserve. Doelger Homes salesman Bill Adams recalled that Doelger was under pressure from the large indebtedness and high interest rate he had taken on to finance the project. A solid design product, promotion, and

steady sales were vital, and it was not until the second phase of the project in 1951-1952 that it became clear the development would be a success.⁷⁹

The first two planned units offered eight different plans, with the largest variety in the second unit, started in 1950, during the “economy” to “quality” house transition and as the housing market tightened.⁸⁰ Doelger’s models evolved over the next several phases of the project as he varied designs to attract different segments of the home buying market. In doing so, however, he revisited many old tried-and-true, stand-by features from his earlier housing catalogs. After constructing five neighborhood units of split levels in the early 1950s, Doelger built his next two units in the mid-1950s with “full basement” houses, a form nearly identical to the Sunset houses, (Figure 3.39) The “full basement” models included a garage on the exposed basement story, as well as enough space for storage and the opportunity to add a room on the lower level at a later date. The houses had flush foundation piers on the interiors to accommodate sheet rock or paneling.⁸¹ These forms retained their side entrances, and typically featured a living and dining room in the front of the house, a clustered kitchen and bath, and two to four bedrooms at the rear.⁸² (Figure 3.40) The interior patio also made its appearance in the early phases of Westlake. Doelger experimented with ranch-form houses on select corner lots, offering “The Californian” with an enclosed patio he marketed as being a “seventh room.” (Figure 3.41) As with many developers, financial circumstances prompted design changes. During a recession in the late 1950s and in the aftermath of the 1957 Daly City earthquake, Doelger built smaller, single-story ranch form houses, adapting them to the general pattern of the surrounding development. (Figure 3.42) The ranches had their narrow end, with most of the architectural detailing, to the street and the main entrance on the long, side elevation.⁸³ The interior was not markedly different from the arrangement of the full basement model homes, with a front-loaded living and dining room, clustered kitchen and bath arrangement, and bedrooms set at the rear.⁸⁴ (Figure 3.43)

⁷⁹ Adams, Henry Doelger - The Man and His Dreams: The Story of Westlake.

⁸⁰ Keil, *Little Boxes: The Legacy of Henry Doelger*.

⁸¹ Keil, *Little Boxes*, 95.

⁸² Keil, 85.

⁸³ Keil, 96.

⁸⁴ Keil, 96.



Figure 3.39. “House-over-basement” or “Full Basement” models in Westlake. Photograph Elaine Stiles 2016.

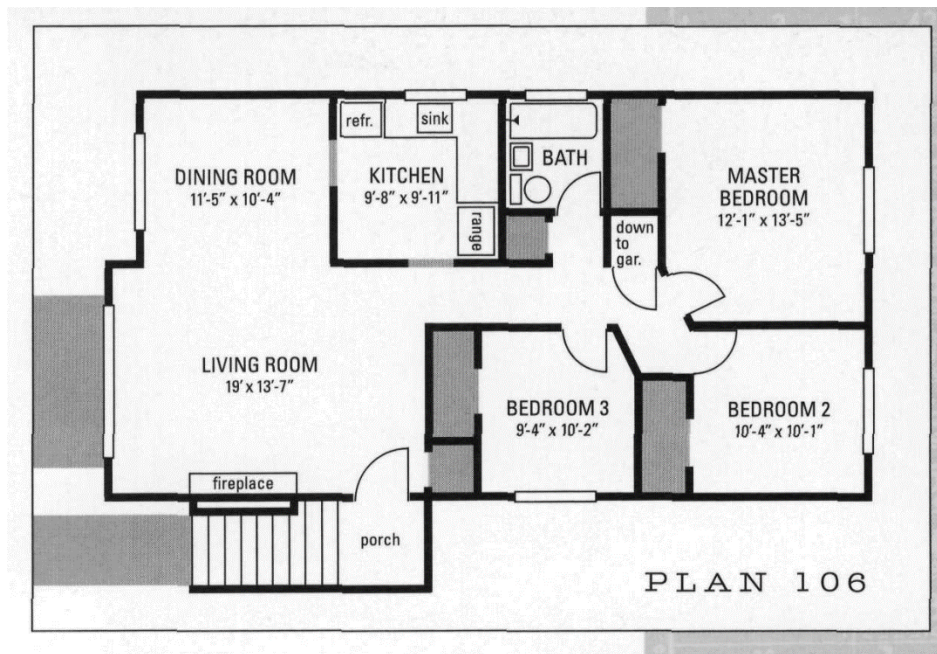
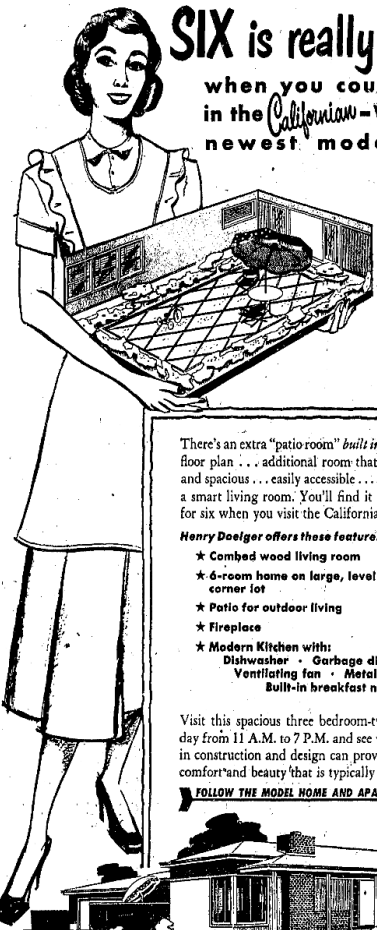


Figure 3.40. Plan of full basement models. Source: Rob Keil, *Little Boxes: The Architecture of a Classic Midcentury Suburb*.

SIX is really SEVEN
 when you count rooms
 in the Californian - Westlake's
 newest model home




There's an extra "patio room" built into the Californian's floor plan . . . additional room that is warm, sheltered and spacious . . . easily accessible . . . and just a step from a smart living room. You'll find it easy to count seven, for six when you visit the Californian.

Henry Doelger offers these features for your approval

- ★ Combed wood living room
- ★ 6-room home on large, level landscaped corner lot
- ★ Patio for outdoor living
- ★ Fireplace
- ★ Modern Kitchen with:
 - Dishwasher • Garbage disposal unit
 - Ventilating fan • Metal cabinets
 - Built-in breakfast nook

Visit this spacious three bedroom-two bath home any day from 11 A.M. to 7 P.M. and see what advancements in construction and design can provide in convenience, comfort and beauty that is typically Californian.

FOLLOW THE MODEL HOME AND APARTMENT ARROWS →



Furnished by **LACHMAN BROS.**
Westlake DOELGER HOMES A TOWN AND COUNTRY COMMUNITY
 LOCATED ON ALEMANY BLVD.
 Between Junipero Serra and Skyline Blvds.
 Where you can live and play

Figure 3.41. Advertisement for Doelger Homes' patio plan homes in Westlake from the *San Francisco Chronicle*, May 27, 1951. Source: Newsbank.



Figure 3.42. Ranch form houses at Westlake. Photograph Elaine Stiles 2016.

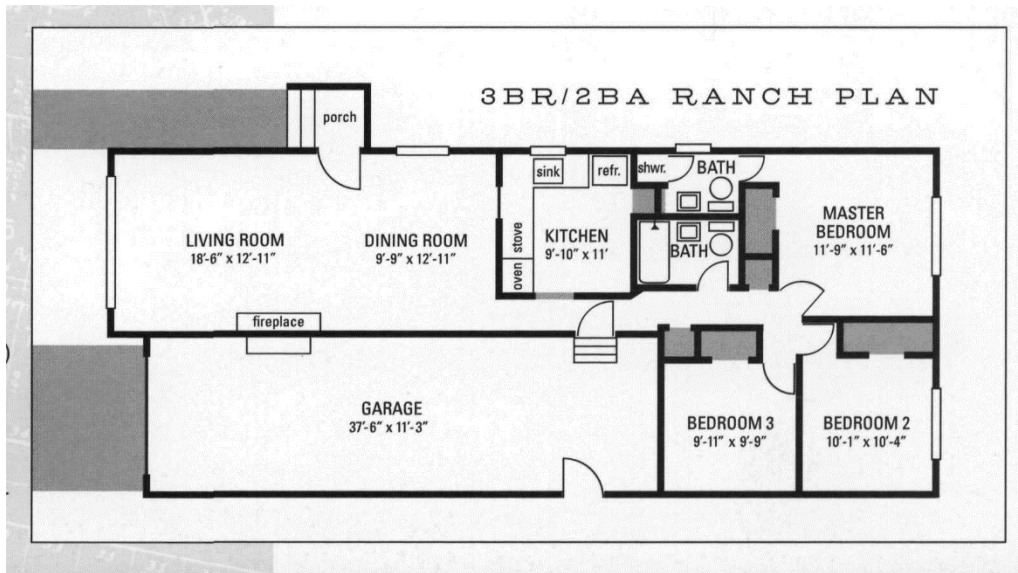


Figure 3.43. Plan of ranch form dwellings. Source: Rob Keil, *Little Boxes: The Architecture of a Classic Midcentury Suburb*.

Doelger merchandised house forms in Westlake more than he had in the Sunset because of the greater agency available to him to shape the built environment, but also to capitalize on as much market share within his basic target market as possible. By the end of active development in the early 1960s, Westlake had housing options ranging from a studio apartment to a four-bedroom, two-bathroom, freestanding house.⁸⁵ Still, he kept his target market narrow, never

⁸⁵ Keil, 55.

going after the upper end of the market. Apartments aside, there were not major price differentials in the various models Doelger marketed. Larger houses at Westlake were only marginally more expensive than smaller dwellings, with simpler finishes to offset the production costs in creating a larger dwelling.

Through the critical first phases of Westlake, Henry Doelger and his brother and vice president John Doelger paid close attention to design matters. According to Doelger's son, Michael Doelger, Henry was directly involved in the design work through the mid-1950s. Doelger related, "He was very actively engaged in the day to day business. I mean, where if the draftsman was working on something, he'd come over and he'd say 'No, I think you should put more angle to this line,' or 'Change the window design, make it look like this.' And he had no design experience, but he just had a sense and a feeling for what it is he liked and what he thought his following, his clientele, would be interested in seeing."⁸⁶ Doelger Homes salesman Bill Adams related that Henry and John Doelger were involved in all selections of materials for the house interiors, carefully selecting tile, fixtures, moldings, and paint colors for each phase and model.⁸⁷

When it came to merchandising style, Doelger's approach was straight out of his Sunset playbook. As in the Sunset, Doelger believed that variety –a mixing of revival and so-called "modern" styles - would attract the widest range of buyers.⁸⁸ Doelger's existing draftsmen were used to working on a relatively flat, single elevation from the row houses, and Doelger found them unequal to the task of designing the more three-dimensional schemes for free-standing dwellings with visible side elevations. Doelger hired his former façade designer, Ed Hageman, back as a consultant on the Westlake project to design exterior elevations. Hageman designed approximately thirty exterior elevations for the first five units of split-level form houses in Westlake.⁸⁹ Hageman approached the work as a form of illustration – applying style as a form of imagery and creating a pictorial environment associated with desirable environmental qualities. "In a nutshell," he recalled, "the tricky thing is to make each house look as differently as you can. Change the window style, change everything you can and still retain the same floor plan."⁹⁰ Hageman designed primary elevations in seven basic styles: Spanish Colonial Revival, French Provincial, Edwardian, Monterey, and variations on Modern design. Doelger's drafting room employees then translated Hageman's elevations into specifications and working drawings for existing floor plans. All told, Westlake had eight basic house plans and forms with exterior design schemes that allowed approximately 260 variations.⁹¹

⁸⁶ Michael Doelger, interview.

⁸⁷ Adams, Henry Doelger - The Man and His Dreams: The Story of Westlake.

⁸⁸ Keil, *Little Boxes*, 86.

⁸⁹ Dave Weinstein, "Signature Style: Ed Hageman, The Wizard of Westlake."

⁹⁰ Keil, *Little Boxes: The Legacy of Henry Doelger*.

⁹¹ Svanevik, "Henry Doelger: From Hot Dogs to Hot Deals," B3; Other sources say sixteen house plans and 320 variations or eight house plans. See Gillespie, *Westlake*, 43; Keil, *Little Boxes*, 24.

The revival styles were clearly a nod to Doelger’s earlier Sunset work and the styles that proved popular with his market demographic there. But as in the Sunset Doelger experimented with newer styles, particularly iterations of Modernism that consumers were familiar with in contemporary commercial architecture.⁹² One of Hageman’s most iconic designs – one now associated closely with Westlake – was his Googie-style roofline inversion with full glass corner picture window. (Figure 3.44) Hageman recounts in interviews that this now-popular design began as a joke, slipped in among his other presentation drawings. Doelger reportedly liked it, however, and in the end, it proved a strong seller.⁹³ According to Hageman, his design work for Doelger was practical rather than artistically-driven. He didn’t necessarily even care for what he was designing. “To be honest with you, I’m not that hot for flat-roof things at all, although I sure did plenty of them. I’m more of a traditional type of guy. But I was hired to do a job and that’s what I did, simple as that.”⁹⁴ This anecdote showcases the builder’s influence in design matters of the period, with the Doelger’s making the critical design decisions.



Figure 3.44. Hageman’s “Googie” style house design variations in various phases of Westlake. Photographs Elaine Stiles, 2016.

Doelger paid attention to the character and image of the dwelling as well as the layered effect of the streetscape, demonstrating that while the overall development plan was important, builders still considered the streetscape and individual dwelling significant design units. Doelger’s design team conducted block-by-block reviews of streetscape design schemes. Designers would pin up renderings of each house design on strings hung across the drafting room to approximate the streetscape, and Henry and John Doelger would personally review the blocks to assure the desired effect.⁹⁵ This method ensured there were no duplicate houses on any block, offering each homeowner a sense of individuality in their home. But the practice also helped ensure assemblages that blended the continuity of revival styles that were by then

⁹² Keil, *Little Boxes*, 89.

⁹³ Keil, *Little Boxes: The Legacy of Henry Doelger*.

⁹⁴ Dave Weinstein, “Signature Style: Ed Hageman, The Wizard of Westlake.”

⁹⁵ Gillespie, *Westlake*, 43; Keil, *Little Boxes*, 92; Michael Doelger, interview.

staples of popular design with the novelty of new house forms and limited Modern-inspired design. The combination of revival and modern styles tapped into a sphere of consumerist fashion, visual imagery, and predictable effect that Doelger negotiated with confidence. (Figure 3.45) The theatrical, photogenic, and visually exciting effect of Doelger and Hageman's streetscapes reflected and responded to the expectations of American consumers shaped by the popular visual imagery. At a small scale, these dwellings echoed the visual and consumerist glamour of the postwar period, ushering new residents into an environment as pristine and picturesque as any film set. Doelger could not offer individualized design, but he could offer a range of designs familiar to, and resonant with, his buyers. The streetscapes presented an atmosphere of tension between affect and authenticity that consumers experienced in other consumer environments, beginning in the department store and migrating to the shopping mall and theme park. The result was a place of image seemingly detached from place, but also full of promise.



Figure 3.45. Juxtaposition of styles on a Westlake street. Source: Daly City History Guild, Daly City, California.

Selling Westlake

The design eclecticism and planned nature of development at Westlake combined to create an aspirational ideal removed from both the urban mecca to the north and the wilds of the adjacent seaside. Michael Doelger commented in an oral history interview that if there was one thing his father would have liked to achieve, but didn't, 'He would have loved to be the creator of Disneyland. I do know that. He would have loved to have been the creator of Disneyland.'⁹⁶ Michael Doelger was referring to his father's ability to engage the community with display and showmanship at his shopping center, and even at their home during holidays and other events. But his comment also points toward a level of design control and design quality that projected a

⁹⁶ Michael Doelger, interview.

certain fantasy and set of controlled circumstances that underwrote consumer comfort and access.

Westlake's streetscapes and houses captivated prospective buyers. As Harry Bosberry, one of the first ten residents of Westlake recounted, "People came out here . . . on Sundays. You couldn't drive. It was a procession of cars coming through Westlake."⁹⁷ Woodrow Green, the seventh homeowner in Westlake and a childhood acquaintance of Doelger, also owned one of Doelger's homes in the Sunset. Woody Green was typical of early Westlake buyers, many of whom followed Doelger from the Sunset neighborhoods, "buying up" from their row houses to a free-standing, more suburban dwelling. The phrase "we used to live in the avenues," referring to the numbered avenues of the Sunset District, was a common response when asked where new Westlake residents hailed from.⁹⁸ The Greens moved to Westlake because they needed a slightly larger house and knew Doelger and his products. Woody Green recalls that he and his family were in good company. "There were no real estate men out here," he recounted, "They were order takers, I always call them. Because you'd have four people battling for one lot on a busy Sunday – at the height of that time. That was, dollar for dollar, the best buy and that's why they came. He gave you more house for the amount of money at that time than any other contractor before or since."⁹⁹ A good number of the buyers were blue-collar workers in the trades, some of whom had worked for Doelger at one time or another.¹⁰⁰ Other buyers were young people just getting out of the armed services and getting their start in home ownership and their careers, perhaps intending to "buy up" themselves in a few years.¹⁰¹

Doelger used similar tactics at Westlake as in the Sunset to market his homes. Doelger opening his first Westlake model home in 1950 – which was also conveniently his eleven thousandth house. Hagemann's modern designs with shed roofs and corner windows were also an easy choice for a later model home to attract curious buyers. (Figure 3.46) The model houses worked; in 1950, 96 percent of Doelger Home sales were for houses still under construction.¹⁰² Doelger regularly attended sales meetings with his growing sales staff to hear feedback on what potential buyers visiting the model homes like and didn't like.¹⁰³ And as he had in the Sunset, Doelger embedded himself in the Westlake community. Henry built and lived in a house at 112 Northgate Avenue, and his brother John lived just up the street. (Figure 3.47) Doelger moved his company headquarters to his new shopping center at Westlake at 333 Park Plaza Drive, a

⁹⁷ Harry Bosberry, Henry Doelger, *The Man and His Dreams, the Story of Westlake*, interview by Belva Carroll and Ronald Bates, February 22, 1980, Daly City History Guild, Daly City, CA.

⁹⁸ Woodrow Green, Henry Doelger, *The Man and His Dreams, the Story of Westlake*; Gillespie, *Westlake*, 11; Eddie King et al., Henry Doelger, *The Man and His Dreams, the Story of Westlake*, 8.

⁹⁹ Woodrow Green, Henry Doelger, *The Man and His Dreams, the Story of Westlake*.

¹⁰⁰ Michael Doelger, interview.

¹⁰¹ Adams, Henry Doelger - *The Man and His Dreams: The Story of Westlake*, 5.

¹⁰² Adams, Henry Doelger - *The Man and His Dreams: The Story of Westlake*; Keil, *Little Boxes*, 78.

¹⁰³ Adams, Henry Doelger - *The Man and His Dreams: The Story of Westlake*, 6.

midcentury modern commercial building. (Figure 3.48) Doelger also maintained a service department that provided homeowners with repair and maintenance services. Doelger sent his children to Westlake public schools and regularly patronized local businesses and restaurants. He kept lines of communication open and cemented friendly ties with his buyers, sending a bouquet of flowers on their move-in day and annual Christmas cards to all residents.¹⁰⁴

By Popular Demand

Henry Doelger
presents
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the Model Home the whole Bay Area has been waiting to see

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Brice out to WESTLAKE today... and get a new slant on living!
Located on Alameda Boulevard, between Junipero Serra & Skyline Blvd.

Figure 3.46. Doelger Homes advertisement for model home from the *San Francisco Chronicle*, July 22, 1950. Source: Newspapers.com.

¹⁰⁴ Keil, *Little Boxes*, 36, 41.



Figure 3.47. Henry Doelger's Home at 112 Northgate Avenue. Photograph Elaine Stiles 2016.



Figure 3.48. Former Doelger Homes Westlake office location, 333 Park Plaza Drive, Daly City. Source: Google Street View.

The community building model that Doelger finally achieved at Westlake also allowed him to exploit his position as builder and designer to become a kind of unofficial mayor of Westlake, long after the community had been annexed to Daly City in 1948. The Westlake shopping center, where the Doelger Homes offices were, became an unofficial city hall for the community, and Doelger maintained both his own reputation and the reputation of the community as an attractive, affordable place to live through the activities and events he orchestrated and presided over as the preeminent resident and founder of Westlake. While many builders' relationships with their clients grew more abstract over time as scales of development increased, Doelger privileged more direct interaction with his residents and buyers over more scientific data collection and analysis. During and after build-out of Westlake, Doelger remained invested in commercial development in the community, operating the

community's shopping centers and developing other small commercial properties such as a bowling alley, free-standing restaurants, and a medical and dental building. Doelger's promotions and events at his shopping plazas in particular kept him in regular circulation with his buyers.

Conclusion

Henry Doelger was one of the "new breed of builders" that period building trade magazines and the business and architectural press trumpeted in the 1940s. He vertically integrated his building business to encompass everything from processing bulk materials to handing over the keys to the new buyer. He used modern methods and materials, and capitalized on merchandising and retail techniques to design and sell houses. He employed an in-house, permanent design staff with specialized skills suited to commoditized design. His houses and postwar developments complied with the housing and planning guidelines developed by experts for the FHA and disseminated across the nation to builders large and small. In all of these aspects, Doelger was also part of a growing national community of professionalized large-scale builders who embraced best practices and contributed to knowledge creation for the profession as a whole. For all the modernity of Doelger's operations and practices, however, his work remained inherently local. His choice of house forms, design styles, ratios of house types and styles, sales tactics, and market intelligence were all predicated on local responses and recognized norms of acceptability. Doelger's approach to his constituency of buyers was also inherently personal and rooted in common experiences of place: the experience of growing up in the Sunset and then building its neighborhoods, the experience of moving to an entirely new community at Westlake and making it into a functioning place with multiple uses and neighborhood connections, the experience of building for a class of people who were (at least once) his peers.

Doelger bridged two critical eras in homebuilding: the interwar and Depression periods of experimentation and small-scale planned neighborhood development and the postwar explosion of these methods and scales of production. In comparison with later figures like David Bohannon, the subject of the next chapter, however, Doelger held onto more traditional ways of home building. Bohannon hit his stride in housing development during World War II, leveraging his wartime projects and political housing advocacy into a national profile that eclipsed earlier giants like Doelger. In comparison to Doelger, Bohannon ran a much more sophisticated building operation, using more professional design talent and labor and more market research. Bohannon took the grassroots relationships of figures like Doelger and transform them into research-driven, heuristic exercises that channeled design and merchandising into carefully calculated models blending local and national trends. Bohannon also engaged in development projects that were aimed not just at consumers, but also at the nation as advertisements for the "new" building industry and its capabilities to solve America's housing problems.

CHAPTER 4: SELLING HOMEBUILDING, SELLING HOMES: DAVID D. BOHANNON (1898-1995), DESIGN POLITICS, AND THE ART OF MERCHANDISING

David D. “Big Dave” Bohannon opened his first real estate office in 1928 in San Mateo, California. (Figure 4.1) Over the next 35 years, his firm, the David D. Bohannon Organization (DDBO), would come to exemplify the modern, vertically-integrated, research-oriented, “big firm” approach to suburban home building that emerged in the immediate pre- and post-World War II period. Bohannon adopted the community building model from the outset of his career, conceiving development projects that included single-family housing, apartments, commercial spaces, and planning for civic amenities and institutions like schools, religious uses, and parkland. He built some of the first planned unit developments in California and was responsible for major neighborhood units of housing in cities like San Mateo, San Jose, and Richmond. By the end of his nearly 60-year career, Bohannon had built more than 26,000 single-family homes and apartment units in the San Francisco Bay Area.¹

In addition to being one of the largest home builders in his region, Bohannon was also a nationally-influential figure in the mid-twentieth-century home building industry.² Of the three builders profiled in this research, none was more active in the political activities of the home building industry than Bohannon. He led important local planning forums like the City Planning Section of the Commonwealth Club in San Francisco, was a Western regional director for the National Association of Real Estate Boards (NAREB), and served as first president of the Home Builder’s Institute, a precursor institution to the National Association of Home Builders (NAHB). He also later served as a national president of the NAHB and the Urban Land Institute.

Bohannon built the bulk of his home building and land development business during some of the most financially and politically tumultuous periods in US history. In the midst of the Depression and World War II, builders like Bohannon saw housing reformers, public housing advocates, New Deal programs, and wartime building restrictions as constant threats to the continued viability of the private home building industry. David Bohannon was one of the most active and influential voices advocating for for-profit, capitalist home building industry and its work from the late 1930s through the early 1950s. Bohannon was an “avowed ideological enemy of Franklin Roosevelt” and the “creeping socialism” of the New Deal and his activism led contemporaries to later call him the “Paul Revere of the housing industry,” for “sounding the

¹ Marshall Wilson, “David Bohannon Remembered for Vision,” *San Mateo County Times*, March 15, 1995, sec. A, Bohannon Clippings File, San Mateo County Historical Museum.

² Michael Svanevik, “San Mateo County’s Master Builder,” *San Mateo County Times*, April 6, 1990, Bohannon Clippings File, San Mateo County Historical Museum.

alarm” about the perils of government encroachment on for-profit enterprise.³ Bohannon used more than words to support his arguments for free-enterprise building, however. He used his housing products as tangible and symbolic tools to attest of the superiority of private home building. His body of work from the late 1930s through the mid-1950s reflects the underrecognized influence of period politics and economic conditions on the character of home building and design.

Bohannon had just started what he hoped would be his first successful, large-scale housing development in San Mateo in 1941 when the US entered World War II, stopping his momentum. Like many large home builders of the period, Bohannon was deeply concerned about the government stoppage of private building during the war emergency period and equally concerned about the government stepping in to direct all emergency building for the war effort. He became a national leader in the fight for private building of war housing, and afterward, a national leader in the fight to keep government out of the private housing market beyond stabilizing credit markets and supporting private enterprise.

Bohannon became a national leader in diffusing the streamlined, optimized housing production California builders pioneered, as well as improving on these processes to extract greater productivity. Bohannon’s wartime and postwar projects became national demonstration projects, showcasing the effectiveness of the “California method” of precutting, selected preassembly, and staged construction at producing livable, affordable homes. Bohannon’s World War II defense housing projects showcased the method to the nation, and his increasingly vertically integrated and production-oriented building firm became the subject of attention from the financial, building, and business press. His production during the war and in the immediate postwar period were an embodiment of the political economy of the homebuilding industry and the design leadership of Bay Area builders in changing the trajectory of the housing industry from left by the wayside to being primed for the incredible growth of home building in the postwar period. More than simply housing developments, Bohannon’s wartime projects were tools in ensuring that the political economy of housing in the US centered on private producers.

Bohannon was more than a political leader, however. He was also a design leader. Bohannon’s body of work from the late 1920s through the late 1950s illustrates the evolving design principles, methods, and practices of the technical, high volume firm and the relationship of these practices to external economic, political, and market conditions. Design at DDBO was simultaneously a set of processes, a form of data, and a marketable commodity. Throughout his development career, Bohannon had a what he termed a “throw mud at the wall” philosophy, seeing what stuck, and then adapting and refining successful production methods, house forms, or design idioms. But Bohannon’s colloquialism belied the underlying

³ “Big Dave Bohannon, Operative Builder by the California Method,” *Fortune*, April 1946, 147.

reality of his design development. When he “threw mud at the wall,” it was highly studied, very well-directed mud. He was a keen observer of building and style trends and a dogged researcher on matters of market and technological change. In 1940, he noted that, “In recent years, to be successful, a land developer has found it necessary to enter into research and become a student of urban development, of housing trends, and of the whole social and economic structure. Study and observation, supplemented by experience are indispensable.”⁴ His method for departing from norm included market research followed by a series of experimental projects with limited investment to minimize risk. Those that showed promise moved forward to larger-scale production, and where very successful, constitution of a new norm.⁵

At the height of its operations in the late 1940s and early 1950s, DDBO employed a full in-house design and planning staff, and had one of the most sophisticated programs of marketing, market research, and home merchandising in the region. Bohannon’s design approach was research-driven, technical, and creative, but always closely tied to the local housing market. At DDBO, this development process was one of constant design, prototyping, and redesign based on economic and market factors. Each housing model was a synthesized set of design characteristics and features that best matched the mid-priced housing consumer profile. The source material for these designs was a mixture of proven forms and styles from the builder’s own catalog, refreshed at regular intervals with new design infusions. Bohannon’s wartime and immediate postwar designs embodied the design value of optimization. His experimental forms in the mid-1950s exemplify the “most advanced yet acceptable” or MAYA concept of striving for a balance between continuity and novelty.



Figure 4.1. David D. Bohannon (1989-1995). Source: *Fortune*, 1946

Bohannon also proved an exceptional housing retailer, using the concept of merchandising – or coalescing the right mix of housing forms, amenities, and prices at any one time to attract buyers – to guide his design decisions. Bohannon regularly partnered with national housing and design publications, using these programs to refresh his design catalog. This strategy both

⁴ David Bohannon, “Building Homes for Sale,” *National Real Estate Journal*, December 1940.

⁵ Sherman J. Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area* (Berkeley: University of California Press, 1953), 111.

ushered new design concepts into the suburban vernacular of the region and underwrote Bohannon's design regime as one of quality and lasting value. At the height of this activity in the 1950s, Bohannon turned his developments into showrooms, adopting methods like the model-year structure of the automobile industry and co-branding with design magazines. His developments hosted a series of flexible designs he could adapt to multiple stylistic patterns and price points. Bohannon's speed-building methods allowed him to be highly responsive to consumer feedback on his designs, and based on buyers' responses, he built (or stocked) his developments with ratios of housing reflective of their tastes.

This chapter examines Bohannon's body of design work in relation to three critical shapers of the suburban built environment in the decades bracketing World War II: the regional and national political economies of the building industry, builders' increasingly sophisticated methods of dialoging with consumers, and builders' adoption of retail merchandising concepts to guide design development and their overall product catalog. The chapter begins with a discussion of the scope of design expertise and activity at DDBO and the omnivorous nature of Bohannon's design development as he created new models and pursued new markets. The following sections examine his designs and design development approach in response to the political economy of the housing market before, during, and after World War II and in response to DDBO's increasing market testing and niche marketing of housing design.

The Shape of Design at DDBO

From his earliest forays into real estate development, Bohannon relied on the expertise of professional architects, planners, engineers, and building contractors for housing design and planning. Bohannon consistently emphasized that the advantage the large builder had over the smaller builder was the ability to support a research department, undertake their own architectural and engineering development, and ultimately create a superior design product.⁶ Like Doelger Homes, DDBO employed a full-service, in-house design and planning department beginning in the early 1940s. (Figure 4.2) Even before this, however, Bohannon worked consistently with professional design consultants on a contract basis. Part of the initial rationale for his reliance on design professionals was his lack of real estate development experience. Later, it was the character of his integrated residential, commercial, civic, and industrial developments. Bohannon felt these projects, which would be realized over a three-to-five-year period, needed a team-based design and planning approach.

⁶ Joseph Guilfoyle, "Some Contenders for 'Henry Ford of Housing' Title Take a Tumble," *The Wall Street Journal*, February 8, 1949, Personal Scrapbook No. 1, David D. Bohannon Organization; David Bohannon, "Overhead in Large vs. Small Operations," *Tomorrow's Town*, January 1946.

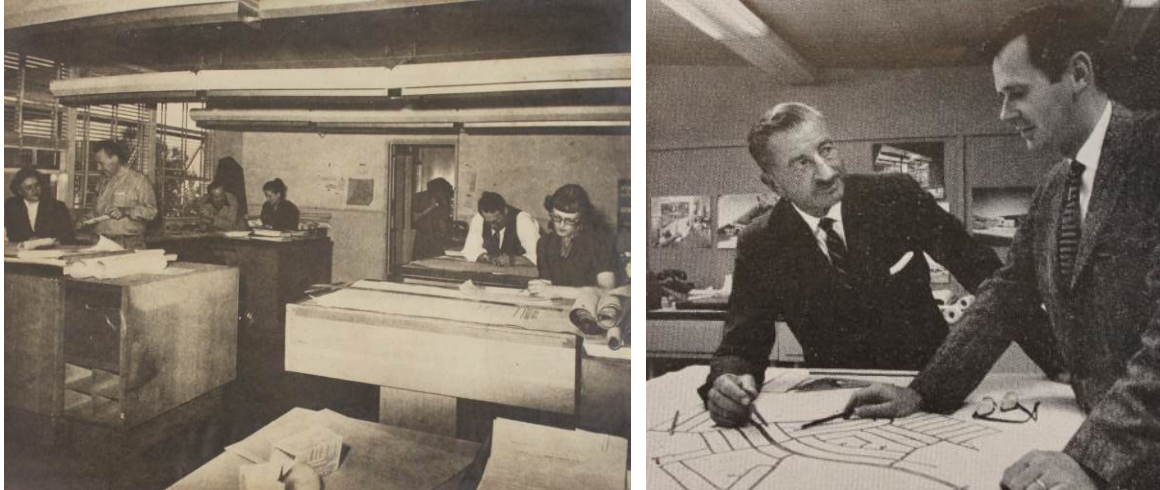


Figure 4.2. Left: Drafting Department at DDBO in San Mateo, 1953. Right: Bohannon and project manager Earl Seaman, 1960s. Source: Collection of the David D. Bohannon Organization, San Mateo, CA.

In the early 1940s, Bohannon transitioned from working with a changing series of architects and planning consultants to an internal design and planning department that carried out most of the firm's planning and design development work. This was part of an increasing program of vertical integration at the organization, pulling more and more functions in-house. From the outset, Bohannon's design staff was outstanding in its level of education and expertise. Most of his identified planners and designers had formal architecture or planning education, most frequently from the University of California, Berkeley. Throughout the 1940s and 1950s, a small core of design leaders in the firm made the firm's significant design decisions. These included Bohannon, his "Man Friday," Ronald Campbell, and a rotating cast of chief architects.

Ronald Campbell (1906-1999) was Bohannon's partner at the top of the design hierarchy for more than forty years. (Figure 4.3) Campbell officially joined DDBO in 1941 as a vice president and the in-house design staff leader. The son of a real estate broker, Campbell grew up in Los Angeles and came to northern California to study architecture at the University of California, Berkeley. After graduating with a bachelor's degree in architecture and a master's degree in city planning in 1929, he established an architecture and planning practice in San Mateo and became the staff director of the San Mateo County Planning Commission.⁷ During this period, Campbell gained a reputation as a regional expert on roadway design, traffic management, and traffic safety. By the time he began working with at DDBO, Campbell had co-authored a series of 1937 amendments to the California State Planning Act establishing general plan and land use plan requirements for California communities. He later served as a planning advisor to the Office of the President of the United States during World War II.

⁷ United States of America, Bureau of the Census, "Sixteenth Census of the United States, 1940.," 1940, National Archives and Records Administration.

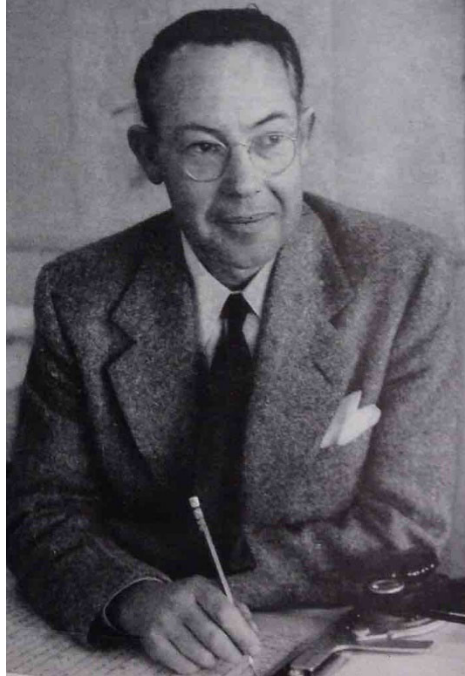


Figure 4.3. Ronald Campbell in 1946. Source: *Fortune*, June 1946.

Campbell had wide ranging responsibilities at DDBO. As a trained architect, Campbell coordinated all design-related activities in the firm and designed some of Bohannon's early civic and commercial buildings, such as the new train station at Hillsdale in San Mateo. He also did some of the conceptual building design work in the firm. In 1946, he described his one of his key responsibilities as taking Bohannon's initial "spate of ideas" about a development and translating them into sketches and plans for the staff architects and engineers to execute as drawings.⁸ He planned the firm's subdivisions, using his traffic management expertise to create a series of limited-access, curvilinear street plans that protected pedestrians and facilitated slow, easy flows of traffic.⁹ Campbell also oversaw the firm's planning and market research and advised Bohannon on new development locations, sizes, and character.

Campbell supervised Bohannon's staff of in-house architects, who changed over the years according to the firm's design needs. Bohannon's internal design teams had diverse skill sets and many of his longest-serving staff moved fluidly between architectural design, planning, engineering, and construction roles. This breadth of expertise was important, because

⁸ "Ronald L. Campbell, Architect," *The Almanac*, October 6, 1999, http://www.almanacnews.com/morgue/1999/1999_10_06.obit06.html; "Big Dave Bohannon, Operative Builder by the California Method," 146 He also designed the odd building for Bohannon, including the Hillsdale train station, completed in 1941. See "Hillsdale S.P. Station Started," *Daily Pacific Builder*, May 16, 1941, Hillsdale-Residential 1940 to June, 1949 Scrapbook, David D. Bohannon Organization. Campbell was one of the longest of Bohannon's employees, remaining with DDBO until his retirement in the early 1980s.

⁹ Campbell's direct attributions include the layout for Bohannon's Woodside Hills development in Woodside, Hillsdale in San Mateo, San Lorenzo Village in unincorporated Alameda County, and the Westwood development in San Jose.

Bohannon's staff had broad-ranging design responsibilities. They planned subdivision layouts, created landscaping plans, designed community facilities, and developed house siting plans. They optimized plans for Bohannon's specific production methods, adjusted the firm's basic model plans based on market demand, drafted series of primary elevations, and crafted interior finish schemes. Few of Bohannon's design staff are recognizable names today, but with more than fifteen thousand single-family houses and more than a dozen major Bay Area suburban neighborhoods to their credit, their impact on the landscape of the Bay Area supersedes that of many better-known design figures.

Bohannon typically employed a lead architect who oversaw design development for the firm's single and multiple-family housing, and sometimes commercial buildings. Often this architect had his own practice, which he maintained during the contractual arrangement with DDBO, albeit on a limited scale. Bohannon hired his first staff architect, Lucien Stark (1907-1988), in the early 1940s while constructing large wartime defense housing developments in the San Francisco East Bay. Bohannon valued design staff who had a range of experience, creating multidisciplinary design teams that could tackle the complexities of commoditized architecture, planning, and production. Like Campbell, Bohannon's supervising architect in the postwar years, Edwin A. Wadsworth, AIA (1909-1999), worked both as an architect and engineer and had experience working in local government. A longer-term employee, Samuel Chartock (1905-1980), was the head of Bohannon's drafting department during the 1940s and 1950s. After earning his bachelor's degree in architecture from the University of California, Berkeley, Chartock moved between roles as a draftsman, carpenter, and contractor for other developers.¹⁰ In the early 1950s, when Bohannon was looking to refresh his housing catalog for the impending end of the postwar housing shortage, he hired a European-trained Modernist, Mogens Mogensen, AIA (1920-1997) as a supervising architect. In addition to his design skills, Mogensen had experience as an illustrator and animator, something he had in common with Lucien Stark, who also worked as a commercial artist before coming to DDBO in the 1940s.

Although Bohannon relied on professional designers in his development work, these designers were not independent operators generating original designs. The nature of their work was adaptive rather than generative, focused on taking proven solutions to common housing problems and adapting them to address new variations on these problems. In this regard, DDBO remained within the inherited legacy of builders of common houses, who relied on familiar precedents and moderated degrees of differentiation over time.¹¹ The design team's collective challenge was to reconcile identified housing needs, prevailing local tastes, exploitable market segments, and production process economy into workable, saleable housing designs. The most efficient way to do this was to evaluate existing solutions, synthesize a set of

¹⁰ Ancestry.com, *U.S. City Directories, 1822-1995* (Provo, UT: Ancestry.com Operations, Inc., 2011).

¹¹ See Thomas C. Hubka, *Houses Without Names: Architectural Nomenclature and the Classification of America's Common Houses* (Knoxville: Univ Tennessee Press, 2013), 33.

adaptations, design an adapted model, test it, and redesign it as necessary. Their work was thus by its nature a constant process of design and redesign, often investigating multiple design solutions simultaneously. Their design work was also a collaborative exercise involving input from across the organization, including accountants, market researchers, planners, engineers, building foreman, and sales staff. Designers' adaptive approach was not one of slow, smooth evolution, however. Bohannon interrupted his program at irregular intervals with the influx of new design solutions from architects, other builders, and marketing partnerships. Bohannon and his leadership team were always at the helm of this effort, interpreting a changing set of market-driven parameters to direct their design team.

Bohannon's wartime and immediate postwar designs embodied the design value of optimization. His experimental forms in the mid-1950s exemplify the MAYA concept of striving for a balance between continuity and novelty. The course of David Bohannon's design development processes and the houses and suburban developments it produced materialize in three of his most formative developments. The first, Belle Haven in Menlo Park (1928-1940) was a financial failure, but established a foundational set of housing models Bohannon would use as he shifted from selling lots for homeowner construction to operative, or speculative, building. The other two developments - the Hillside neighborhood of San Mateo (1940-1941 and 1946-1965) on the San Francisco Peninsula and the defense housing community-turned-suburb of San Lorenzo Village (1944-1957) in the San Francisco East Bay - were both famous in their day for their production methods, size, and product design. San Lorenzo Village was result of Bohannon's early exercises in heuristic design, using operational and market research to solve the problem of how to quickly produce economy housing to address the national shortage during and after the war. At Hillside, Bohannon began his early experiments with the California method before the war, and after the war, pivoted back to the quality house market in the early 1950s, negotiating the shift to a buyer's market with a creative program of design experimentation and merchandising.

Belle Haven City: From Community Builder to Operative Builder (1928-1940)

Bohannon began his real estate career in the mode of a community builder, banking on the planned expansion of San Francisco south into San Mateo County. The community building model of real estate development that emerged in the US between 1900 and 1930 linked stages of transforming and selling unimproved land while improving urban land use patterns and increasing security and growth potential for real estate projects through greater property management controls.¹² While contemporaries like Henry Doelger were focusing on developing the "outside lands" of western San Francisco, Bohannon took a cue from expansion patterns in southern California, where planned industrial expansion went along with planned residential and commercial decentralization. In the late 1920s, Bohannon assembled 520 acres of land

¹² Marc A. Weiss, *The Rise of the Community Builders: The American Real Estate Industry and Urban Land Planning*, The Columbia History of Urban Life (New York: Columbia University Press, 1987), 18-19.

made up largely of defunct, and sometimes foreclosed upon, country estates of wealthy San Franciscans just north of Palo Alto on the western bay shore. The land was strategically located along the new Bay Shore Freeway (now US 101), just south of the western landing point for the proposed Dumbarton Bridge.¹³ (Figure 4.4)

Here, Bohannon planned a new industrial community, Belle Haven City, that conformed to best practices in community building at the time: coordination of siting and utilities with public infrastructure, attention to landscape elements such as street patterns and public spaces, and designated areas for commercial, civic, and residential uses.¹⁴ Bohannon's plan included land set aside for districts of single and multiple-family homes, apartment buildings, a dedicated commercial center, and ready-to-build industrial sites. Deed restrictions, including stipulations prohibiting non-whites, prescriptive architectural guidelines, and an approved catalog of house plans ostensibly helped ensure neighborhood stability. From the outset, Bohannon relied on planning professionals to organize land use and circulation in Belle Haven. Planning consultant Guy Wilfrid Hayler, who authored numerous studies on regional housing and planning in the Bay Area in the 1930s and 1940s, laid out the initial street and development plan.¹⁵ In one of his first projects for Bohannon, Ronald Campbell, designed plans for the city's commercial center buildings, all rendered in a Spanish Colonial Revival motif.¹⁶ (Figure 4.5)

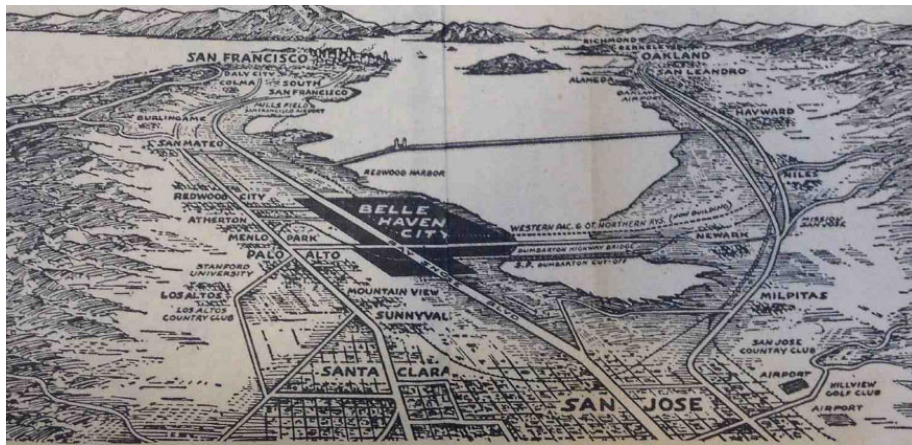


Figure 4.4. Location of Belle Haven City from development advertisement. Source: *The Redwood City Tribune*, January 27, 1932.

¹³ Guy Wilfrid Hayler, "Belle Haven City, on the San Francisco Peninsula," *The American City Magazine*, n.d., Belle Haven Scrapbook, David D. Bohannon Organization.

¹⁴ Weiss, *The Rise of the Community Builders*, 45.

¹⁵ Hayler's plan accommodated areas of single-family homes and flats or duplexes. The plan was automobile-centric, with unusually long blocks, wide streets, and a series of service alleys in the business district, all designed to facilitate traffic flow. A divided arterial road with landscaped median led to the intended business district adjacent to the Bay Shore Freeway, while a series of slightly serpentine blocks and a loop road completed the development south of the new road. Hayler also drafted the restrictive covenants for zones of use and housing quality and cost.

¹⁶ Hayler, "Belle Haven City, on the San Francisco Peninsula."



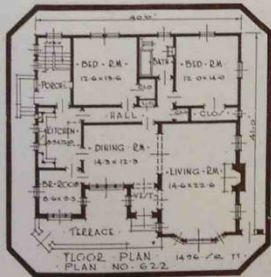
Figure 4.5. Ronald Campbell's design for the Spanish Colonial Revival commercial district at Belle Haven City, ca. 1935 Source: *American City Magazine*.

Bohannon's residential development model at Belle Haven was typical for 1928. He sold subdivided lots to individual buyers through his realty company, then buyers constructed their own home. As a measure of control on the character of development, and by extension, property values, buyers were required to work with an architect Bohannon designated or chose from a series of architect-designed plans that conformed with the development's architectural standards. (Figure 4.6) Architect Henry (H.C.) Bauman (1890-1960), one of San Francisco's most prolific apartment house designers and a favorite of local real estate developers, designed Bohannon's first series of approved houses for Belle Haven.¹⁷ In these arrangements, Bohannon had little to no involvement in the actual construction. Instead a local building contractor completed the houses.¹⁸

¹⁷ David Parry, "Pacific Heights Architects #16 - H.C. Baumann," David Parry, Architecture, accessed January 17, 2017, <http://150290062.homesconnect.com/AccountData/150290062/NF16BaumannHC.pdf>.

¹⁸ Hayler, "Belle Haven City, on the San Francisco Peninsula."

A Complete Service to the Home Builder is Offered
By
BELLE HAVEN CITY BUILDING CO.



The price of this cozy little home is \$5,000.00 . . . 10% down, the balance in monthly installments of \$55.00, which includes principal and interest.

Never has there been an opportunity like this offered by any building company for anyone desiring to reside on the beautiful peninsula.

BELLE HAVEN CITY
Office On Tract

Main Office: 416-17 Matson Building
Phone: 215 Market Street
Davenport 3432 San Francisco, Calif.

Figure 4.6. Page from plan book of approved designs for Belle Haven City, ca. 1930. Source: Collection of the David D. Bohannon Organization, San Mateo, California.

The onset of the Great Depression late in 1929 put a wrench in Bohannon's grand plans, forcing him to revise his development model and market focus. As Bohannon later wrote, he found his industrial city "a dead subdivision marked by two stucco tombstones on which BELLE

HAVEN CITY was carved, like an epitaph.”¹⁹ Rather than constructing homes on contract to individual lot buyers, Bohannon, like Doelger in San Francisco, switched to “operative building,” or constructing a small number of modest houses on speculation to help populate his barren subdivision. Like his contemporaries, Bohannon turned to self-building in response to an emergency, but soon found the combination of house and land sales more stable, profitable, and marketable.²⁰ Operative building was no silver bullet, however. Bohannon’s advertisements the early 1930s assured readers that demand for homes on the San Francisco Peninsula was brisk and there was “high interest” in his models. But facts on the ground told a different story. It took him another eight years to build even a modest number of homes at the site and Bohannon never did realize the industrial city he set out to build.

Though property in Belle Haven moved failed to move during the 1930s, Bohannon’s efforts to salvage the project generated a series of design and marketing experiments that proved critical in the direction of his wartime and postwar homebuilding projects. Most community builders targeted their developments to high-income buyers before the 1940s, but Bohannon reoriented Belle Haven City toward more moderate-income buyers.²¹ In the early years of the Depression, even before the creation of the Federal Housing Administration (FHA), Bohannon was experimenting with lower-cost housing models he thought would be attractive to the middle-income buyer looking to purchase their first home in a planned industrial suburb. The passage of the National Housing Act (NHA) in 1934 and new FHA-backed mortgage credit markets promised a revival of the housing market and ushered the lower half of income earners into the housing market in increasing numbers. With the FHA behind him, Bohannon engaged in a process of understanding and learning how to design and market suburban housing to this new class of potential home buyers. Between 1934 and 1940, he changed his speculative house designs at Belle Haven every one to two years in an attempt to attract buyers. Bohannon tried new forms and styles, engaged a string of architects to generate new designs, speculatively built groups of five or six houses to see if a design would sell, and used model home open houses and sales to determine viable models.

With common housing types like those at Belle Haven and Bohannon’s future developments, the dwellings have many precedents, none of which appear in a smooth, evolutionary, linear fashion.²² It is nearly impossible to identify “prime objects,” or those bursts of inspiration, innovation, and change that reshape suburban domestic design, if such a concept even applies.²³ But it is possible to follow design development in the work of single builders with geographically stable development areas. By the time Bohannon abandoned plans for

¹⁹ “Big Dave Bohannon, Operative Builder by the California Method,” 146.

²⁰ Weiss, *The Rise of the Community Builders*, 41.

²¹ Weiss, 45.

²² See Hubka, *Houses without Names*, 26.

²³ See George Kubler, *The Shape of Time: Remarks on the History of Things* (New Haven: Yale University Press, 1962).

Belle Haven in the late 1930s, he had three house models in his catalog that would be the foundation for his future successes: the “Casa del Flores” model, Kirk Stephen’s “colonial bungalow,” and Gardner Dailey’s *LIFE* House plan. These models were key components in Bohannon’s education in building economical houses for a new brand of housing consumer, and he would replicate, adapt, and augment these flexible forms repeatedly over the next fifteen years.

The “Casa del Flores” was Bohannon’s first speculative house model at Belle Haven, completed in 1932. The design, most likely by Henry Bauman, was a compact, two-bedroom Spanish Colonial Revival model that sold for an economical \$5,950. The house may have been economical in size and price, but it also offered middle-class niceties such as a fireplace, dining room, and separate two-car garage. (Figures 4.7 and 4.8) Bohannon initially constructed five of the models to attract buyers to Belle Haven, and he sold all five successfully, albeit slowly. Buoyed by the promise of a revived customer base after the creation of FHA, Bohannon tried to return to his more upper-middle-class vision for Belle Haven. He hired architect C. Hugh Kirk to design his first model home eligible for FHA credit terms in 1935. Kirk’s two-story, Spanish Colonial Revival dwelling was a comfortable multiple-bedroom, split-level dwelling complete with a maid’s room and separate service entrance and costing 30 percent more than his 1933 Belle Haven houses.²⁴ (Figure 4.9) Tellingly, it remains the only of its kind in the neighborhood, signaling that Bohannon had misread his FHA market.

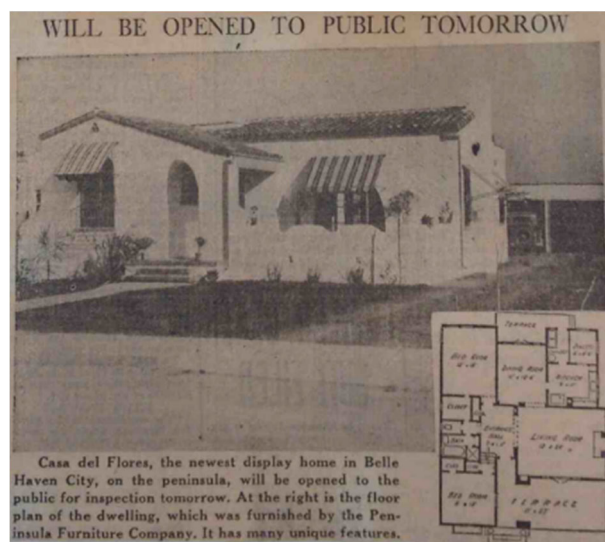


Figure 4.7 (left). Casa del Flores models under construction. Source: *San Francisco Call-Bulletin*, January 4, 1933

²⁴ “Belle Haven in Building Plan,” *San Francisco News*, June 15, 1935, Belle Haven Scrapbook, David D. Bohannon Organization; “As Architect Sees It Will Rise in Belle Haven,” *San Francisco Call-Bulletin*, June 15, 1935, Belle Haven Scrapbook, David D. Bohannon Organization; “Efficiency First, New Kitchen Designed to Make Few Steps Necessary in Work,” *San Francisco Chronicle*, February 1, 1936, Belle Haven Scrapbook, David D. Bohannon Organization. House address is 1029 Tehama Street, Menlo Park, CA.



Figure 4.8 (right). Casa del Flores model home and plan. Source: *San Francisco Call-Bulletin*, February 25, 1933



Figure 4.9. C. Hugh Kirk's design for Bohannon's first FHA-approved home in Belle Haven, San Francisco Chronicle, February 1, 1936

In 1936, Bohannon shifted his design tactics again, hiring architect Wallace Stephen, AIA (1894-1974), who had experience with the San Francisco firm Willis & Polk, to design a series of smaller, lower-cost homes that cautiously bridged conventional, proven forms and newer home designs gaining popularity in the region.²⁵ The Stephens catalog of houses included two- and three-bedroom dwellings in a range of sizes and forms heavily favoring period revival English and Spanish designs. Bohannon priced this series of houses, all qualifying for FHA terms, between \$4,500 and \$6,500. One outlier in this group was a model Bohannon referred to as the "modern colonial" or "colonial bungalow" house – period terminology in the Bay Area for the California ranch house. (Figures 4.10-4.12) Stephens modeled this compact, roughly square-plan, hip-roofed house on the form of the vernacular Spanish and Mexican period ranch houses of northern California. His original Belle Haven model referenced earlier ranch house form with

²⁵ "Houses Realtors Are Building for the New Selling Market," *National Real Estate Journal*, October 1936, 26.

a U-shaped plan and more contemporary Spanish Colonial design with a glassed loggia. But he made this form more compact through a “bungalow” plan with minimal central circulation space. Stephens managed to include two bedrooms, a living room, a dining room, a library or third bedroom, a kitchen, and a half bath off a small, enclosed rear porch in the space.²⁶ The economy-priced houses designed by Stephen enticed some buyers, though not in significant enough numbers to warrant speculatively constructing more beyond his first test run.



Figure 4.10. Wallace Stephen’s Swiss Farmhouse and Tudor Revival models at Belle Haven City. Source: Collection of the David D. Bohannon Organization, San Mateo, CA.

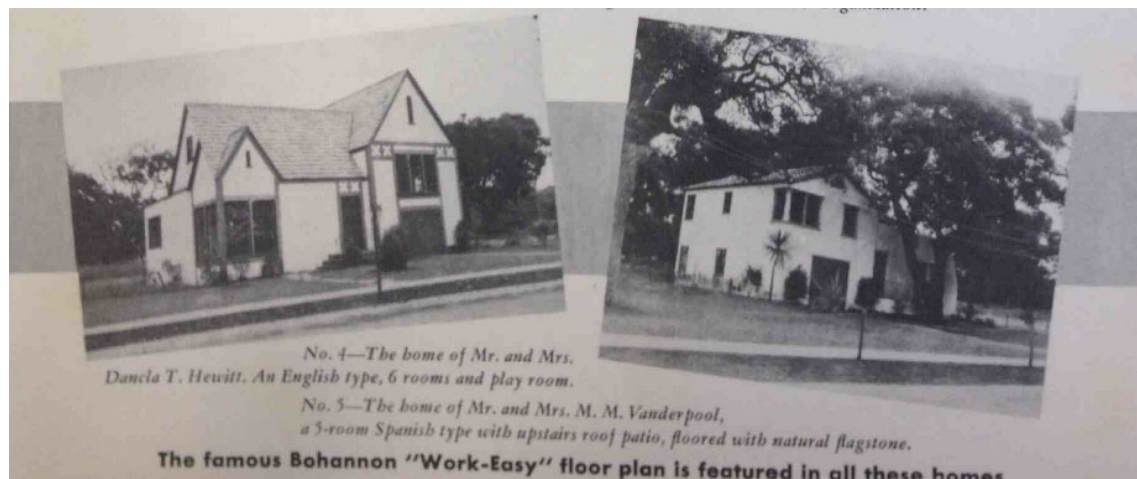


Figure 4.11. Wallace Stephen’s Tudor Revival and Spanish Colonial models at Belle Haven City. Source: Collection of the David D. Bohannon Organization, San Mateo, CA.

²⁶ Two years later in 1938, southern California architect H. Roy Kelley would publish a similar form in *Life* magazine as part of its “Modern Living” house series scaled to families of varying incomes. Kelley, a recognized popularizer of ranch architecture, proposed the design for families making between \$3,000 and \$4,000 per year. Unlike Stephen’s plan, Kelley’s example kept a more traditional arrangement of space with the engaged porch on the rear elevation and a central hall. The living space, however, was at the rear of the dwelling. See “H. Roy Kelley Designs a ‘California Colonial’ in ‘Modern Living,’” *LIFE*, September 26, 1938.

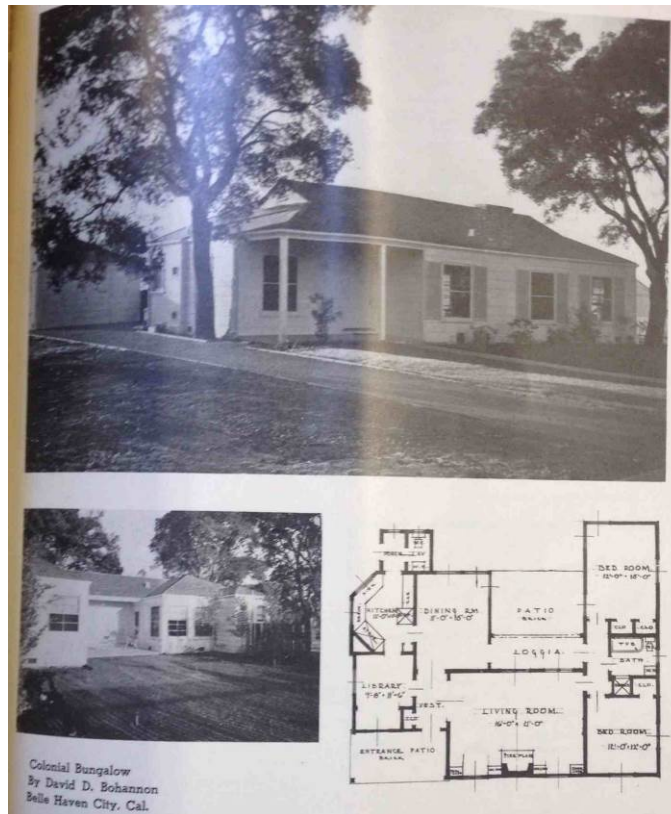


Figure 4.12. Wallace Stephen's Colonial Bungalow at Belle Haven. Source: *National Real Estate Journal*, October 1936

As the 1930s drew to a close, an emerging national housing policy driven by the economic conditions of the Depression gave momentum to a greater focus on the low-cost housing movement in the building industry and the popular housing press. Builders across the country focused on generating attractive housing designs priced for the lower third of income earners, trying to capitalize on a promising new market. Bohannon was active in pushing this agenda. Writing in 1938, Bohannon articulated a vision for what was required in low cost housing.

“ . . . the low cost home built to be acceptable and to sell quickly must go far beyond this [prefabricated factory products] for, thanks to the automotive industry, we have been well coached in other desires. We can buy as little or as much modern automobile as we want, but we still get four-wheel brakes, quick acceleration, high-speed motors and easy riding and driving. . . Like the automobile, you can buy as much of it [house] as you can pay for, but you still expect modern heating, modern plumbing, bath and kitchen, modern living conveniences, and good workmanship.²⁷”

²⁷ David D. Bohannon, “Low Cost Housing” (ca 1940), 2, David D. Bohannon Organization, San Mateo, Calif.

For Bohannon, the effort to create and market viable base models for low cost homes brought in a critical infusion of new design that reshaped his housing development. In 1939, a partnership with a program sponsored by *Architectural Forum*, NAREB, and *LIFE* magazine commissioned a series of home plans for families with incomes ranging from \$1,800 to \$6,000 per year to be featured in *LIFE* in July 1940. Bay Area Modernist architect Gardner Dailey (1923-1979) designed one of the eight “*LIFE* Houses:” an economical, two-bedroom dwelling with flat roof, modern styling, and a relatively open living area plan priced for a family with an income of \$2,300 to \$3,000 per year. (Figures 4.13 and 4.14) In a nod to builders, Dailey shaped the dimensions of the house to conform with standardized lumber and thus support labor and material economy, and offered a range of roof types to offset builders’ typical reluctance to engage with the aesthetics of Modernism. Dailey claimed that with his design and this optimization on labor and material, his *LIFE* House could be built for as little as \$3,000, exclusive of land.

Eighteen builders across the country built versions of Dailey’s plan, adapting it to their own local conditions, including Bohannon, who constructed a version of Dailey’s “*LIFE* House” at Belle Haven City in 1940.²⁸ This was a second partnership of sorts for Bohannon and Dailey. The two first collaborated in designing and building an exposition show house for the 1939 Golden Gate International Exposition in Bohannon’s exclusive Woodside Hills development in Woodside. Bohannon, Dailey, and landscape architect Thomas Church partnered with *Better Homes & Gardens* on a \$45,000, 12-room Modern house with a long, U-shaped plan and flat roof featuring sliding glass panels in each room opening to the exterior and little or no separation between rooms. After the exposition, Bohannon was not able to sell the house, so made it his own home and lived in it until his death.

At Belle Haven, Bohannon constructed a version of Dailey’s house with a more traditional hipped roof, citing local preferences and combining the minimal, compact plan with the ranch styling popular in the Bay Area. (Figure 4.15) No builder, Bohannon included, could achieve Dailey’s price projection for the plan, and builder prices for the *LIFE* House nationwide ranged from \$4,600 to \$6,200.²⁹ Regardless, Dailey’s plan would prove critical in the future of Bohannon’s housing catalog through the war years and into the immediate postwar period.

²⁸ Edwyn A. Hunt and Francis L. Newton, eds., “Official Exposition Model Homes Tour of the San Francisco Bay Counties Album and Plan Book” (San Francisco Real Estate Board, 1939), Woodside Hills Scrapbook, David D. Bohannon Organization; David D. Bohannon Organization, “The Story Behind the Good Housekeeping Home in Woodside Hills,” 1939, Woodside Hills Scrapbook, David D. Bohannon Organization; Marion Softky, “Master Developer David D. Bohannon Dies at 96,” *The Almanac*, March 22, 1995, Bohannon Clippings File, San Mateo County Historical Museum.

²⁹ “Belle Haven City House Featured In *LIFE* Magazine,” *Redwood City Tribune*, June 27, 1940, Belle Haven Scrapbook, David D. Bohannon Organization; “Model Home Typifies FHA Low Cost Goal,” *San Francisco News*, 1940, Belle Haven Scrapbook, David D. Bohannon Organization; “*LIFE* Houses,” *LIFE*, July 1, 1940, 80–81.

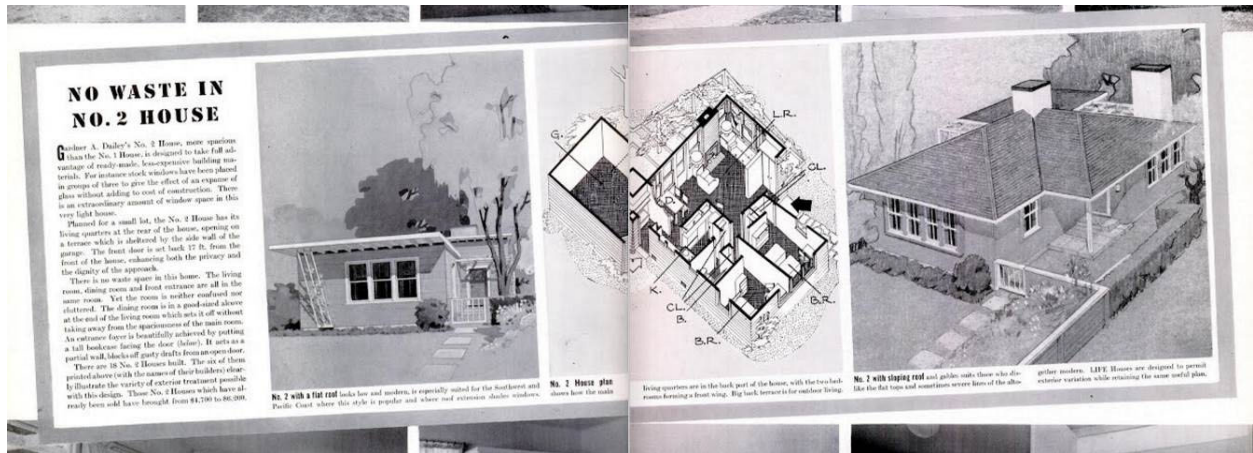


Figure 4.13. Gardner Dailey's LIFE House. Source: LIFE, June 1, 1940.

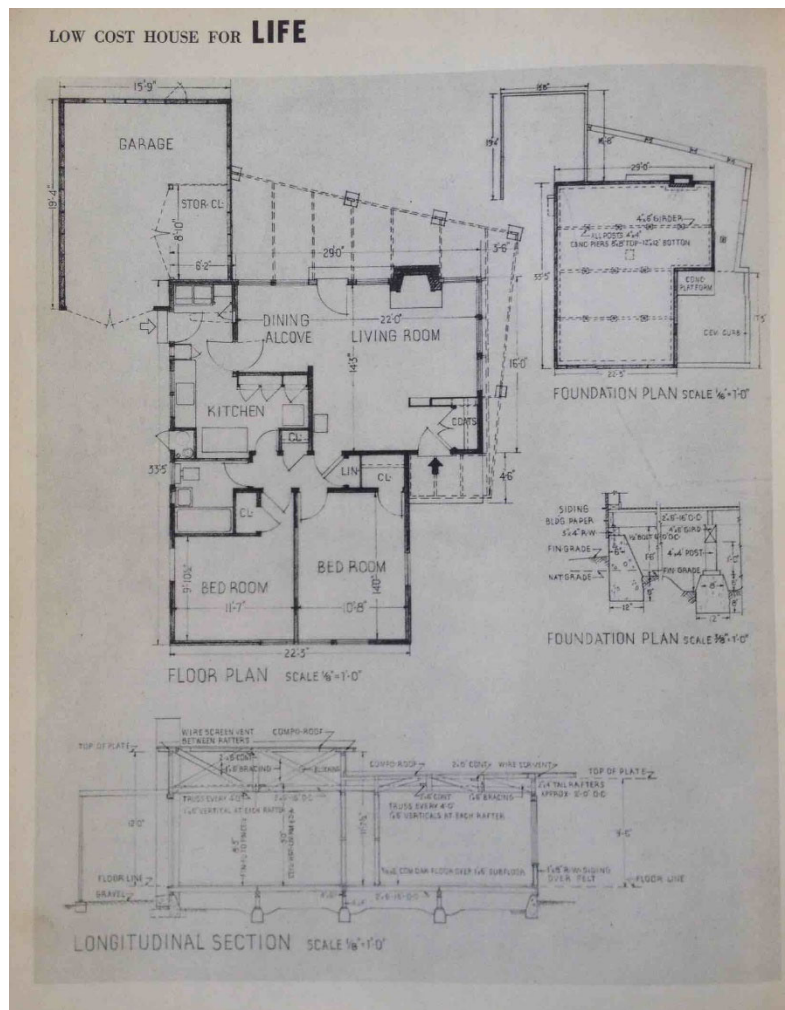


Figure 4.14 Plan of Gardner Dailey's LIFE House published in *Architectural Forum's The 1940 Book of Low Cost Houses*.

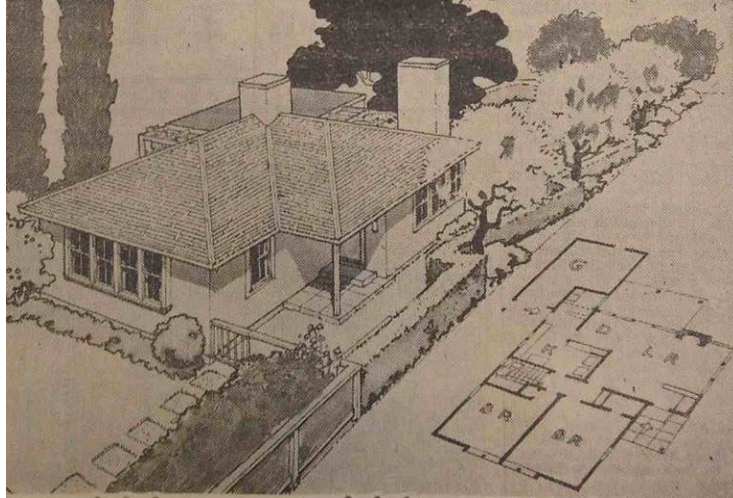


Figure 4.15. Bohannon's adaptation of Gardner Dailey's *LIFE* House with plan, *San Francisco News*, 1940. Source: Collection of the David D. Bohannon Organization, San Mateo, CA.

In addition to Dailey's plan, Bohannon also kept Bauman's Casa del Flores plan and Stephen's colonial bungalow in his future repertoire. All three models proved well-suited to the market preferences and production demands of a period when the building industry pursued building larger numbers of smaller, more affordable homes. Stephen's colonial bungalow model directly engaged with the growing trend in ranch-style houses, and although Bohannon only appears to have constructed one of this model at Belle Haven, elements of Stephen's design, and especially the bungalow plan, would reappear in Bohannon's work for another ten years. Bauman's Casa del Flores model also persisted because Bohannon could adapt it to conform to a ranch style building. In 1936, during Bohannon's final spate of speculative construction at Belle Haven before World War II, he tested the lower end of the market with a series of stripped-down Casa del Flores plans, replacing their earlier Spanish Colonial Revival ornament with features more allied with the modern, minimal ranch house. The dwelling retained its front-facing gable and partial-length front terrace (now a porch) and its functional compact plan. Bohannon found that both the Casa and colonial bungalow plans could be scaled to a variety of price points in terms of size and degree of ornament while continuing to meet or exceed FHA minimum housing standards. Both plans were also formally conducive with what promised to be the most popular house form in California in the coming decade, the ranch house (Figure 4.16).³⁰

³⁰ By the late 1930s, the ranch house form was already gaining in regional popularity. Architectural historians point to various sources for ranch form housing in California, all of which Bohannon would have interacted with as a builder engaged in regional real estate and planning issues. These influences included the early residential work of northern California Modernist William Wurster, Cliff May's southern California interpretations of ranch architecture, FHA model homes at the San Diego Pacific International Exposition in 1935, and even the modest Farm Security Administration self-sufficiency dwellings of the New Deal era.



Figure 4.16. “Modern” ranch homes with variations on the Casa del Flores plan at Belle Haven in 1936.
Source: *San Francisco News*, December 14, 1936.

Hillsdale: Optimization Begins (1941)

In 1941, Bohannon began work on an ambitious new planned community on an 800-acre tract of the former Burleigh H. Murray Estate in San Mateo. At the time, the parcel totaled one eighth of the entire land area of the city and was the largest planned real estate undertaking in the Bay Area. Bohannon formulated the new development, which he named Hillsdale, as a large-scale, planned suburban community of up to 3,000 homes arranged on the hillsides of the coastal range around a new, modern commercial center. With a brief interruption during World War II, Bohannon would continue to develop and refine the development for the rest of his career, constructing 2,500 homes by 1965.

Hillsdale represented a break from his earlier patterns at Belle Haven. At Hillsdale, Bohannon was intent on creating a “modern” suburban development incorporating best practices in planning, contemporary architectural expression, and building methods. Industrial development was no longer part of the equation, operative building was present from the outset, and Bohannon, with the help of a now-permanent design staff, made a pivot in his planning and design approaches. Bohannon’s target market was also solidly middle-class, but his marketing approach demonstrated an emphasis on economy. The community, Bohannon wrote in 1941, was “aimed for business men, people of education and moderate incomes, who could appreciate good design and like to live in attractive outdoor surroundings heretofore available only with more expensive homesites.”³¹ The houses in the first phases of Hillsdale were priced between \$6,500 and \$8,000, or the equivalent of two times the annual median income in the region at the time, and were eligible for FHA-backed loans.³²

³¹ Earl Burke, “A War Change-Over in California,” *National Real Estate Journal*, July 1942, 12.

³² Association of Bay Area Governments, “Bay Area Census: Population by County, 1860-2000,” Bay Area Census, Historical Data, n.d., <http://www.bayareacensus.ca.gov/historical/copop18602000.htm>.

The prewar phase of Hillsdale was Bohannon’s first major development using in-house design staff, albeit a staff of one. Ronald Campbell officially joined DDBO in 1941 and laid out the plan for Hillsdale. As a traffic specialist, Campbell designed the plan to manage traffic and ensure pedestrian, and particularly child, safety. The plan for the first two phases of the project included cul-de-sac streets of sixteen lots each off a central arterial spine. Each cul-de-sac had pedestrian access to a common park parcel isolated with landscaping from adjoining streets and with no direct automobile access (Figure 4.17). Bohannon built an initial set of sixteen “exhibit homes” in 1940 – enough to line one of the short, cul-de-sac streets in Campbell’s plan.

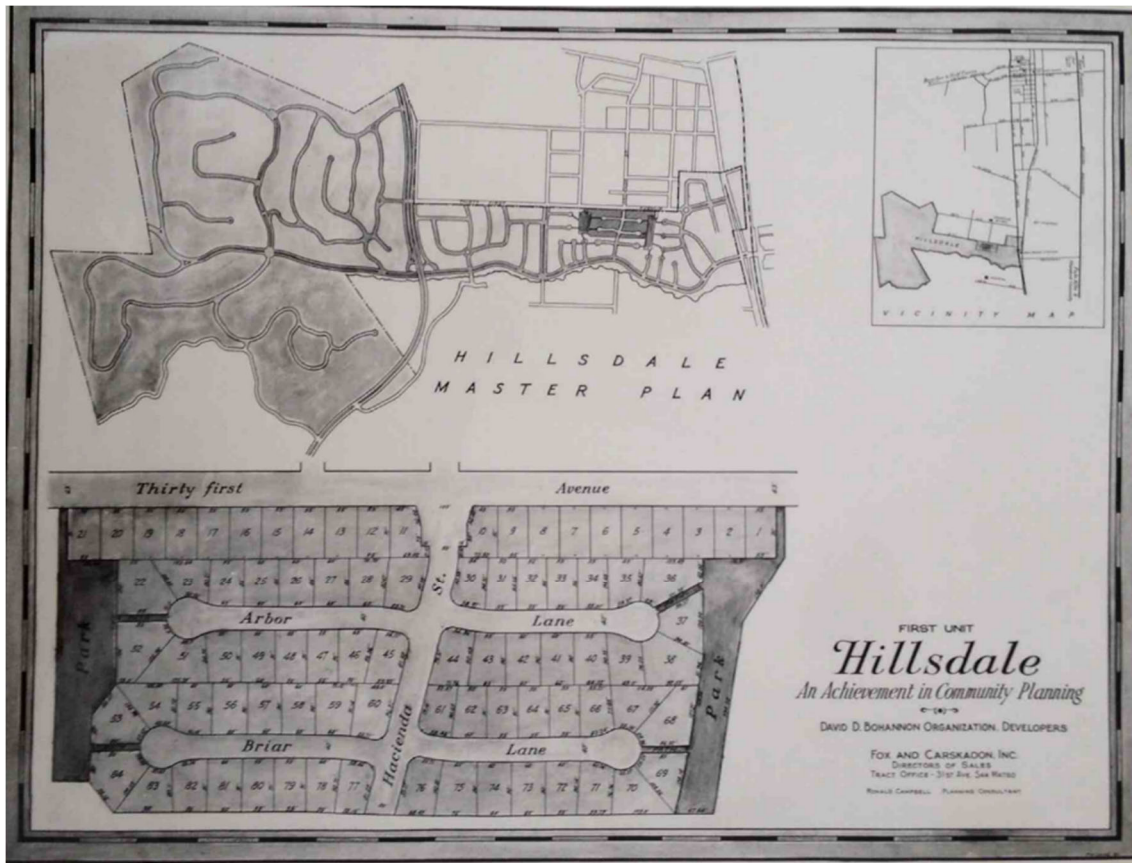


Figure 4.17. 1941 master plan of Hillsdale showing first phase cul-de-sac and park parcel plan. Source: Collection of the David D. Bohannon Organization, San Mateo, CA.

The first phase of Hillsdale that Bohannon was able to engage with before the US entry into World War II stopped work on the project was a proving ground for the new models he experimented with at Belle Haven. At Hillsdale, Bohannon chose designs that his promotional materials described as having “authentic suburban architectural styling.”³³ He contracted with housing specialty architects Williams & Wastell of Oakland to design “simple California ranch houses” and New England Cape Cods, signaling the association of these forms with a certain

³³ “The Hillsdale Home,” *San Francisco Chronicle*, January 4, 1942, Hillsdale, David D. Bohannon Organization.

brand of community. Two-bedroom models cost \$6,500, three-bedroom models cost \$7,450, and a “specially fitted,” three-bedroom house with finer finishes topped out the range at \$7,650.

But these were not ordinary ranches and capes. These houses were the product of Bohannon’s first experiments with the “California method” of building, a process that would propel him to national recognition in the building industry and transform housing production for lower-income homebuyers. Getting his start with the method in the 1940s put Bohannon about ten years behind his competitors in the region, but Bohannon arguably did more than anyone to promote the method on the national stage through his experience with the practice. During the 1930s, developers such as Henry Doelger and his contemporaries, along with a range of design professionals, continued development and diffusion of the method in the state. In addition to the housing field, New Deal programs and projects also engaged with the methods in California. The design staff of the California Farm Security Administration (FSA) under the leadership of architects like Vernon DeMars and landscape architects like Garrett Ekbo demonstrated the efficiency and effectiveness of these methods on relatively large-scale building projects in the region. The Region IX FSA office in California employed a system of pre-engineering and sub-assembly to quickly and cheaply construct camp facilities for the thousands of migrant farmworkers flooding the state during the 1930s. In an effort to conserve materials and reduce costs, California FSA architects based their designs on modules conforming to standardized lumber dimensions. To speed construction, workers pre-assembled selected building components and used jigs to quickly size and cut framing and finish materials in on-site shops. Builders then assembled these parts into kits for delivery and assembly at each building site. The California FSA design staff did not invent the concept of integrated planning in design and production, but California home builders took notice of these and their colleagues’ earlier efforts, and would adopt, optimize, and deploy these practices on a larger scale.

At Hillsdale, Bohannon and Williams & Wastell pre-engineered the designs of the house models to take advantage of the California method. First, while the houses had “individual distinctive exteriors,” all of the homes conformed to two basic forms and five approximately 1,100 square-foot floor plans. Second, Williams & Wastell designed these forms and plans “using modules which permitted extensive mass production methods in the cutting of lumber and in the repetition of various installation operations.”³⁴ During the first several building phases at Hillsdale, Bohannon bought large quantities of lumber, shipped it to the site on a special railroad siding, and pre-cut it into construction dimensions in an on-site processing yard.

Bohannon and his architects emphasized that these homes were distinctive in other ways as well, engaging with current architectural thought, modernizing the past to create a more

³⁴ “Bohannon’s Hillsdale,” *American Builder* 63 (October 1941): 87.

contemporary and regionally distinctive expression.³⁵ Bohannon and his designers rejected the eclectic revival styles of earlier developments, favoring instead the newer, more streamlined plans they experimented with at Belle Haven – plans that had the added advantage of lending themselves well to the California method. For the two-bedroom models at Hillsdale, for example, Williams & Wastell largely adapted Gardner Dailey’s *LIFE* House plan, moving the entry to a side elevation to offer an entry hall and making minor shifts to interior divisions. (Figure 4.18) Bohannon boasted of the entry hall feature in a 1942 profile, noting that his house plans permitted “all rooms to be reached from the reception hall without passing through another room, a feature usually found only in higher-priced homes.”³⁶ Exterior styling was decidedly ranch-like, with long, horizontal profiles, some cross-gable elements for variety, partial length porches on posts, and integral garages included under the roofline in some models. (Figures 4.19 through 4.22) Echoes of Wallace Stephen’s “colonial bungalow” at Belle Haven also persisted with hipped rooflines and integral porches included under the eaves. (Figure 2.23) The “Cape Cods” were nothing of the kind, but rather a ranch form with gestures to what was by then a highly-routinized catalog of New England Colonial Revival elements: octagonal windows, six-over-six double hung sash patterns, sidelights around the main entrance, and shingle siding. (Figure 4.24) Bohannon also adopted some new features, including marketing an “outdoor living room” created by opening living rooms directly to the outdoors at the rear of the house in the three-bedroom models. This “distinctly new trend” in 1941 would later become the norm for suburban housing throughout the country.³⁷

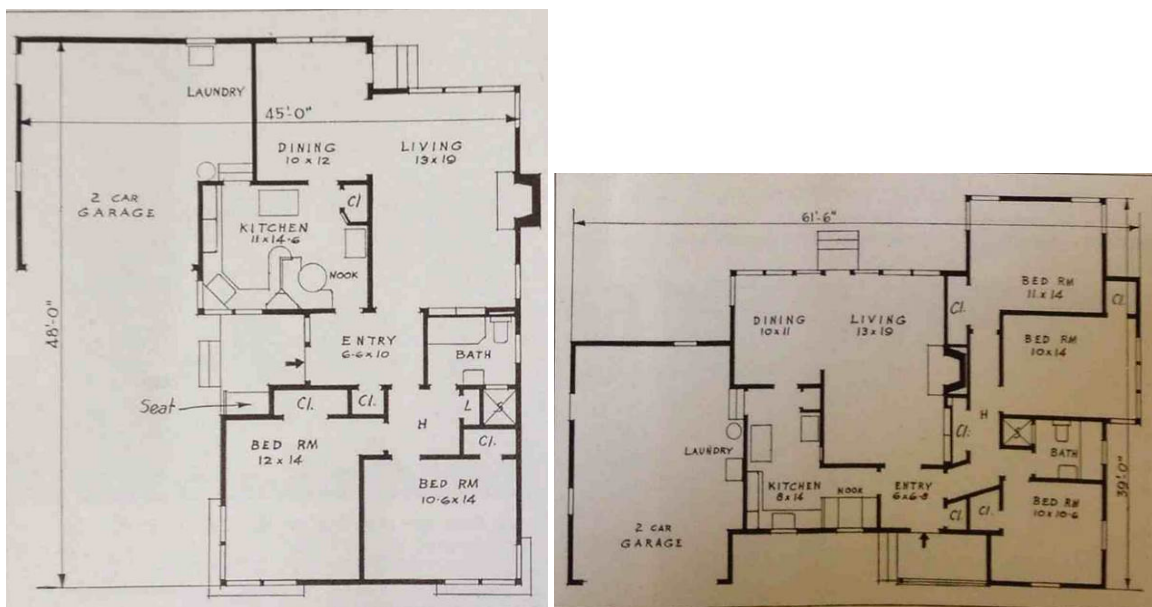


Figure 4.18. Left: Plan of two-bedroom ranch model based on Gardner Dailey’s *LIFE* House plan. Right: Plan of 1941 three-bedroom ranch. Source: *American Builder*, July 1941.

³⁵ “Bohannon’s Hillsdale,” 86.

³⁶ Burke, “A War Change-Over in California,” 14.

³⁷ Burke, 14.



Figure 4.19. Front elevation of two-bedroom ranch modeled on Dailey's *LIFE* House plan. Source: *American Builder*, October, 1941

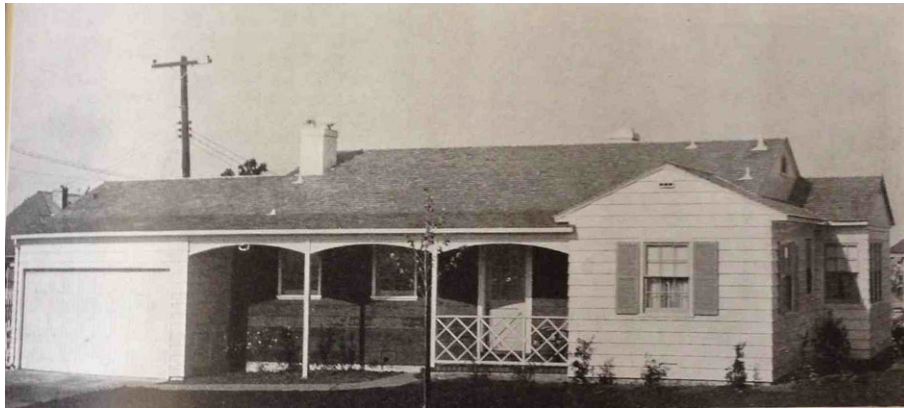


Figure 4.20. Three-bedroom ranch in Hillsdale. Source: *American Builder*, October 1941.



Figure 4.21. Model homes in Hillsdale on cul-de-sac, 1942. Source: *National Real Estate and Building Journal*, July 1942.



Figure 4.22. Ranch house in first phase of Hillsdale. Photograph Elaine Stiles 2016.



Figure 4.23. Three-bedroom ranch model in first phase of Hillsdale based on Stephen's "colonial bungalow" plan. Photograph Elaine Stiles 2016.



Figure 4.24. "Cape Cod" model in first phase of Hillsdale. Photograph Elaine Stiles 2016.

The pre-planning the California method made possible had unforeseen advantages for Bohannon. The US entry into World War II in 1941 and the related materials restrictions halted most building across the country. Because of his stockpiled materials however, Bohannon was able to build at Hillsdale until well into 1942, completing 160 houses on the site before the War Production Board halted all nonessential building.³⁸

San Lorenzo Village: The Politics of Design (1944-1957)

The American entry into World War II and the halt to non-defense related building was a critical event in the political and developmental history of the housing industry. In response, builders harnessed new methods, materials, and technology to stay in business during the war and as a counter to a political climate they saw as hostile to private enterprise. American home builders entered World War II already wary of increased government involvement in housing through New Deal programs and federal support for local public housing development via the US Housing Administration. Coming out of the Depression, the housing industry was also under fire from housing reform advocates who painted them as an antiquated, slow institution blind to the plight of the ill-housed. The onset of World War II in Europe exacerbated builders' worries. Even before US entry into the war in 1941, the Office of Production Management (OPM) classified home building as a defense production category, meaning that the government would regulate housing production for the duration of the war. With OPM controlling building materials and housing priorities, builders faced serious shortages. Then, in April 1942 the WPB, which superseded OPM, ordered a halt to all private building for the duration of the war emergency. Home builders feared they saw the future.

As then-president of the Home Builders' Institute of NAREB, David Bohannon was at the forefront of the fight to keep the American housing industry in business during the war. Bohannon later wrote in his memoir that,

World War II gave the New Deal group an opportunity to eliminate the private home building industry. Their goal was to have the government do all the housing development in the nation during the war emergency, thus eliminating the private builder so the government could carry on and control all housing in the nation. . . Our objective was to make it possible for private builders to participating in the housing program, which we succeeded in doing.³⁹

Bohannon was critical in the effort to keep private home builders in business. He made the original proposal for Title VI FHA insurance on mortgages for defense housing, which provided

³⁸ "Bohannon in Tribute to Newspaper Ads," *San Francisco Call-Bulletin*, December 26, 1942, Hillsdale-Residential 1940 to June, 1949 Scrapbook, David D. Bohannon Organization; "Hillsdale HOMes Bid Adieu Until War Ends," 1942, Hillsdale-Residential 1940 to June, 1949 Scrapbook, David D. Bohannon Organization.

³⁹ Excerpt from unpublished memoir reproduced in "In Loving Memory, David Dewey Bohannon May 23, 1898-March 13, 1995," 1995, Bohannon Clippings File, San Mateo County Historical Museum.

additional protection for builders from war time risks. He was also a leader in reversing the 1942 WPB order, chairing the Home Builders Emergency Committee that successfully lobbied for continuing building during the war.⁴⁰

Defense housing projects were a high-stakes demonstration project for builders, a chance to offer tangible proof of the prowess of private enterprise. In 1943, the conservative building paper *American Builder* outlined the stakes while praising one of Bohannon's early defense worker housing projects, stating,

David D. Bohannon demonstrates that private enterprise can produce war homes quicker, better, cheaper than public agencies . . . Without government subsidies, David D. Bohannon and his associates created an attractive, residential community, without any of the stereotyped drabness of war 'housing' . . . Private builders like Bohannon have clearly shown that attractive houses can be built quicker, cheaper, better than Government projects – and because they are real homes, war workers like them. Government-built shanty towns are not necessary.⁴¹

In Bohannon's assessment, the future of the building industry, and free enterprise itself, rested on builders' ability to produce inexpensive, attractive housing. Writing in 1945, Bohannon warned,

We must have no illusions concerning the coming showdown between private enterprise and public housing. As a democracy, this nation is rapidly approaching the time when the American people are going to have to choose between the philosophies of freedom of enterprise and government guided socialism. The tremendous post-war housing requirements of our country have placed the home builders in a position of strategic importance that I do not think we, as individual builders, fully realize.⁴²

While home builders remained in business during the war, they faced tightly curtailed market opportunities. Building and selling homes to defense industry workers migrating in large numbers to critical defense areas was the only viable, permissible, operative building market. Most of the Bay Area was a critical defense area during the war, home to major shipbuilding plants, Army and Navy installations, oil refineries, food processing plants, and automobile

⁴⁰ City of Sunnyvale, California, "Context for Evaluating the Southwood Historic District," February 20, 2009, 7, City of Sunnyvale, California Community Development Department, <http://sunnyvale.ca.gov/Portals/0/Sunnyvale/NonCouncilReports/hpc-2008-0926.pdf>; Housing and Home Finance Agency, "A Summary of the Evolution of Housing Activities in the Federal Government" (Washington, D.C: Office of the Administrator, Housing and Home Finance Agency, 1950), 8–9, Ephemera, Homes, Prelinger Library, San Francisco, Calif.

⁴¹ "Better Homes, More Ships," *American Builder* 65 (April 1943): 35.

⁴² "Bohannon Advocates Builder Policy," *Western Builder Magazine*, February 1945, Personal Scrapbook No. 1, David D. Bohannon Organization.

factories. Between 1940 and 1945, the population of the Bay Area grew by 26 percent as more than half a million people arrived in the region to work at more than fifty different defense industry plants.⁴³ In total, private builders and the government constructed 48,000 units of war emergency housing in the area, probably the largest concentration of war housing in the nation.⁴⁴ WPB controls on building further curtailed builders' options. The WPB allowed private builders to construct houses of their own design, but in addition to conforming with FHA standards, the market price of the dwelling could not exceed \$6,000.⁴⁵ These narrow opportunities and the instant need for homebuilding made production process and efficiency paramount.

Bay Area builders were well-poised to address this challenge with the California method and Bohannon proved a leader in refining the process for defense worker housing projects. Bohannon acquired two critical competencies with his defense housing. The first was an intimate understanding of the potential and the limits of the California method. During the war, Bohannon exploited every measure of efficiency and economy the California method afforded to construct fast, economical, and saleable homes for the largely blue-collar war worker population. The second was the ability to design and produce affordable, appealing homes for a newly emerging class of homebuyer: the lower-middle- and working-class family.⁴⁶

Between 1942 and 1944, Bohannon constructed more than 1,500 compact, single-family houses in Sunnyvale, Napa, and Richmond for defense workers – the first large-scale building projects of his career.⁴⁷ Bohannon progressively perfected his production methods with these projects while developing a series of house forms and plans optimized for the California method. During the early stages of his defense house development, Bohannon had help managing the logistical and financial challenges the work from building partner Ross Chamberlain (1906-1977).⁴⁸ A Stanford University graduate trained as an accountant, Chamberlain was responsible for all construction planning and logistics for Bohannon's early

⁴³ Marilynn S. Johnson, *The Second Gold Rush: Oakland and the East Bay in World War II* (Berkeley: University of California Press, 1993), 33.

⁴⁴ Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area*, 12.

⁴⁵ American Builder and Building Age, *Defense Homes Handbook* (Chicago: Simmons-Boardman Publishing Corporation, 1941), 5, 7.

⁴⁶ Defense housing in the Bay Area and across the nation was strictly racially segregated. Only white defense workers had the opportunity to rent or purchase homes in any of Bohannon's defense housing projects. At San Lorenzo Village, Bohannon's largest defense housing project, property deeds and the homeowners' association bylaws both included express racial exclusions.

⁴⁷ Bohannon's first three projects included Homewood, a tract of 288 two- and three-bedroom houses near the Joshua Hendy Iron Works in Sunnyvale (1942); Westwood, a tract of 559 two- and three-bedroom houses near the Basalt Shipyard in Napa (1942-1943), and Rollingwood, a tract of 700 two- and three-bedroom houses near the Kaiser Shipyards in what is now Richmond (1943).

⁴⁸ Bohannon and Chamberlain partnered as Pacific Homes, Inc. for Bohannon's first three defense housing projects. The partnership lasted from 1941 to 1944. The financial risks of their defense housing projects were high, despite their efficient planning and production, and as a result, Chamberlain left the partnership in early 1944.

defense projects.⁴⁹ Bohannon and Chamberlain tested the limits of the California method, creating systems for calculating materials, organizing labor, and routinizing construction processes. Their efforts bore fruit. At Sunnyvale, they constructed 288 two- and three-bedroom houses in a development called Homewood, completing the first 200 houses in just seven months. To demonstrate the effectiveness of the California method, Bohannon built one house at Homewood in an eight-hour work day.⁵⁰ In 1943, Chamberlain and Bohannon built 700 three-bedroom homes for Kaiser Shipyard workers in Richmond, completing all the dwellings between May and September of 1943.

In 1944, Bohannon parlayed his experience with the California method into his largest, most ambitious, and most widely-publicized defense housing project. San Lorenzo Village in unincorporated Alameda County would be the largest defense home building program in the nation at the time: a village of 1,392 homes costing more than \$7 million.⁵¹ (Figure 4.25) Bohannon sited the project on 350 acres of orchards and fields near the small settlement of San Lorenzo, within commuting distance of seven defense industry plants. San Lorenzo would differ from Bohannon's earlier war housing in that he planned not just homes and small-scale commercial development, but a complete "village-style" community that would include commercial, recreational, civic, and eventually, industrial development. San Lorenzo would be Bohannon's first completed planned unit development and the first such development in northern California. The village would also be the largest-scale implementation of the "California method" during the war.

⁴⁹ The systems Chamberlain created for calculating materials, organizing labor, and routinizing construction processes for Bohannon led some accounts to erroneously attribute the method to him. See "Better Homes, More Ships."

⁵⁰ City of Sunnyvale, California, "Context for Evaluating the Southwood Historic District," 10.

⁵¹ Chamberlain continued to develop housing during and after World War II in the Bay Area with his own company, Ross H. Chamberlain Ltd., in Redwood City and briefly as an executive at Sterling Homes. He continued to use the California method in his later work. "A TV Success Story," *San Francisco Chronicle*, December 12, 1954; Ancestry.com, *U.S. City Directories, 1822-1995*.



Figure 4.25. Aerial view of San Lorenzo Village, 1945. Source: Collection of the David D. Bohannon Organization, San Mateo, CA.

Bohannon showcased the best of his design team's abilities at San Lorenzo Village in service of his political agendas and financial bottom line. Ronald Campbell laid out the village along a series of limited-access, curvilinear streets designed to reduce traffic speed, discourage through-traffic, and keep the densely-settled neighborhoods safer for pedestrians and children. A "community center," where Bohannon would build a shopping center, create parkland and playgrounds, and provide space for civic services such as a firehouse, library, and schools was within walking distance from all proposed homes in the development. (Figure 4.26) Bohannon's architect on the project, Lucien Stark (1907-1988), replaced some of Chamberlain's expertise in the California method and its associated design requirements. The son of a house carpenter from Santa Barbara, Stark attended architecture school at the University of California, Berkeley, then worked as a draftsman at a lumber company and as a technical director and scenic artist in Santa Barbara and Pasadena theaters after graduation. During the Depression, Stark got a job at the FSA with architect Vernon DeMars designing shelters and housing tailored to the efficient, expedient building methods the agency used to quickly construct migrant labor camps around the state. After working at the FSA, Stark joined DeMars and three other former FSA architects in 1940 in a venture to design a \$2,500 house, including lot.⁵² It is unclear when Stark

⁵² In 1940, DeMars and fellow FSA architects Burton Cairns (d. 1939), Nick Cirino, and Corwin Mocine formed California Housing Inc. The partners intended to use their FSA design experience to educate the building trade on designing and constructing low-cost housing. California Housing Inc. purchased land outside San Carlos and built two demonstration houses. The project was ultimately a failure for two reasons. The group could not get the price of the house with land under their goal of \$2,500 and were unable to sell the demonstration homes. Vernon Armand DeMars et al., *A Life in Architecture: Indian Dancing, Migrant Housing, Telesis, Design for Urban Living, Theater, Teaching*, 1992, 60, 192; United States of America, Bureau of the Census, "Fifteenth Census of the United

began working for DDBO, and he may have been the architect of some of Bohannon's earlier war housing at Napa and Richmond, both of which have dwellings similar to the house models at San Lorenzo. By any measure, Stark was well-schooled in the building and design requirements for a project like San Lorenzo Village.⁵³

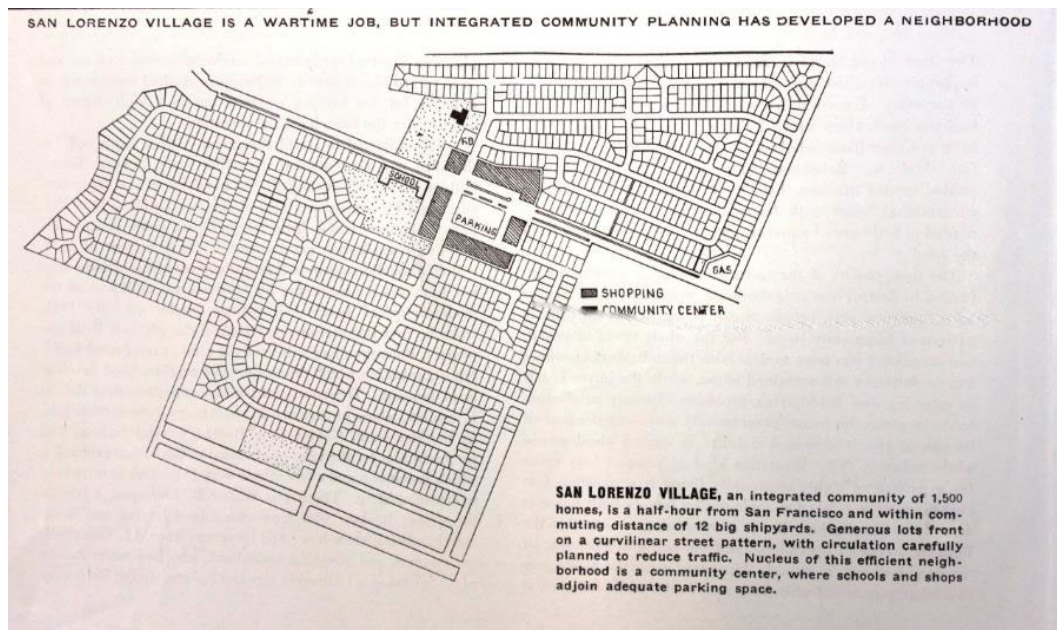


Figure 4.26. Plan of San Lorenzo Village, 1945. Source: *Architectural Forum*, June 1945.



Figure 4.27. DDBO design staff in 1945, from left to right: Ronald Campbell, Edwin Smith (civil engineer), David Bohannon, and Lucien Stark. Source: *Architectural Forum*, June 1945.

States, 1930.," 1930, National Archives and Records Administration; Ancestry.com, *U.S. City Directories, 1822-1995*; "Big Dave Bohannon, Operative Builder by the California Method," 199.

⁵³ It is unclear when Stark began working for DDBO, and he may have been the architect of some of Bohannon's earlier war housing at Napa and Richmond, both of which have dwellings similar to the house models at San Lorenzo.

The organizing principles of the California method guided housing design as well as construction at San Lorenzo, resulting in a form and style of dwelling that reflected the close relationship between economy, material, and aesthetics in mass-scale housing design.⁵⁴ Formally, the San Lorenzo houses were compact in plan with lines, forms, and spatial ratios aligned to standardizations in lumber, designed to minimized complex construction tasks, and facilitate preassembled building systems units.

The California method was fastest and most cost-effective with a limited number of floor plans, as fewer floor plans maximized consistency, and therefore efficiency, in precutting and on-site fabrication.⁵⁵ In earlier defense housing projects, Bohannon concentrated on one or two efficient floor plans to allow maximum consistency in precutting and site fabrication.⁵⁶ In the first phase of San Lorenzo, Bohannon pursued even greater speed, settling on a single floor plan for all 1,392 houses. Stark and Bohannon chose this plan based on informal market research. In his previous defense projects, Bohannon noticed that the majority of buyers and renters preferred one particular plan: a three-bedroom model with the kitchen, dining alcove, and living area at the rear and the bedrooms at the front. The San Lorenzo plan coalesced the most popular features of those earlier plans into a single, optimized 1,000 square-foot, three-bedroom model. (Figure 4.28)

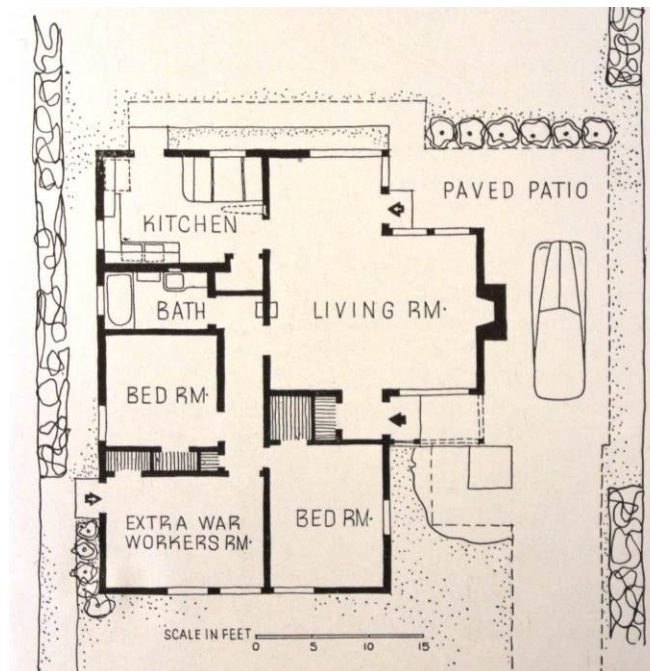


Figure 4.28. San Lorenzo plan. Source: Collection of the David D. Bohannon Organization, San Mateo, CA.

⁵⁴ See Peter G. Rowe, *Design Thinking* (Cambridge, Mass: MIT Press, 1987), 107–8.

⁵⁵ David D. Bohannon, "Production of Large-Scale Small-House Operation," *American Savings and Loan News*, April 1944, 144, 157, Collection of the David D. Bohannon Organization, San Mateo, CA; "Big Dave Bohannon, Operative Builder by the California Method," 192.

⁵⁶ David D. Bohannon, "Production of Large-Scale Small-House Operation," 144–45.

Bohannon's defense home models adapted features and principles from his earlier economy houses, most notably his Belle Haven "colonial bungalow" adaptation of Gardner Dailey's 1940 *Life* House plan. Dailey's plan proved well suited to mass scale production, being already tailored to take advantage of standard lumber dimensions. From a sales perspective, it exceeded minimum standards in square footage and offered more middle-class amenities like a slightly separated dining space and fireplace. The placement of the main living areas at the rear of the house also afforded more privacy in the dense development pattern of defense housing areas. Bohannon also knew from experience he could construct the house and sell it for less than the \$6,000 defense house price ceiling.

Bohannon's San Lorenzo houses reflect his design team's attempts to balance economy and aspirational features in the interest of attracting buyers. For the sale price of \$5,950, Bohannon included tiled bathrooms, linoleum flooring, relatively full-sized kitchen cabinetry, and a landscaped front yard. Although wartime restrictions prohibited construction of a garage, Bohannon included a concrete patio slab to the side of the house where owners could build a later garage addition. The houses also included a popular feature from earlier developments: a separate outside entrance to the third bedroom so owners could rent it to another war worker.⁵⁷ Under a patriotic guise, this feature underwrote a measure of financial stability for families just eking their way into home ownership.

Market research and production considerations again dictated exterior features at San Lorenzo. Most of the exteriors at San Lorenzo make gestures to ranch form and detailing, which were the most popular choice in Bohannon's surveys of defense worker buyers and renters.⁵⁸ Stark then added as much architectural character as possible within the cost-saving, pre-cutting methods utilized on the project. The result was a programmatic array of abstracted applied ornament and particular attention to form-as-ornament. Even in the early 1940s, builders had concerns about monotony in large-scale developments. In addition to exterior ornament, the design team used common tactics like reversing floor plans, changing roof forms and window locations, and varying house color and trim features to create architectural interest and variety (Figures 4.29-4.33). Bohannon was proud of the variety the design team achieved at San Lorenzo, later saying, "I'd give any man a thousand dollars if he can stand in one place and see more than one house alike."⁵⁹

⁵⁷ Often owners rented the room out to more than one war worker. In Bohannon's Westwood defense housing development in Napa, the renters were frequently "a pair of girls." "Better Homes, More Ships."

⁵⁸ "Merchant Builder Survey: Community Builders," *Architectural Forum*, April 1949, 136; "The Story of San Lorenzo Village [Reprint]," *American Builder*, n.d., 9, Scrapbook 23, David D. Bohannon Organization, San Mateo, Calif.

⁵⁹ Svanevik, "San Mateo County's Master Builder."



Figure 4.29. San Lorenzo home exteriors. Source: *Architectural Forum*, June 1945.



Figure 4.30. 16010 Paseo del Campo, San Lorenzo Village. Photograph Elaine Stiles 2016.



Figure 4.31. 838 Paseo Grande, San Lorenzo Village. Photograph Elaine Stiles 2016.



Figure 4.32. 16181 Via Primero, San Lorenzo Village. Photograph Elaine Stiles 2016.



Figure 4.33. 592 Paseo del Rio, San Lorenzo Village. Photograph Elaine Stiles 2016.

Bohannon executed one of the largest and most coordinated uses of the California method at San Lorenzo, all the while showcasing the development as proof of the building industry's ability to modernize and address the nation's housing challenges. A 1945 film Bohannon commissioned to profile San Lorenzo detailed the work of heavy equipment leveling and grading at the site, laying down of two million cubic yards of topsoil, and installing storm drains, runoff canals, and sewer and water pipes. Mechanical trenching machines and augers excavated for sidewalks and foundations. The development had its own cement plant, paint mixing plant, asphalt plant, and lumber mill. When Bohannon could not purchase enough dimensional lumber for framing, he bought box cars of heavy timber and processed it into two-by-fours on site. The lumber then went through an outdoor assembly line where workers used forms and jigs to pre-cut lumber into the exact pieces needed for framing an individual house. The pieces were bundled and keyed with the portion of the house they belonged to, meaning that unskilled laborers could assemble a dwelling without ever having to look at a blueprint. A small number of skilled carpenters also prefabricated windows and some doors on-site. Other work crews assembled all the lumber for a single house into a "house load," which they then delivered like parcels at each house site for assembly. (Figures 4.34-4.37)



Figure 4.34. Cutting yard at San Lorenzo Village, early 1940s. Source: Collection of the Hayward Area Historical Society, Hayward, CA.



Figure 4.35. Rolling tables for precutting and keying framing and sheathing for houses at San Lorenzo Village. Source: *American Builder*, February 1945.



Figure 4.36. House load in place during construction at San Lorenzo Village. Source: *LIFE*, April 15, 1946.

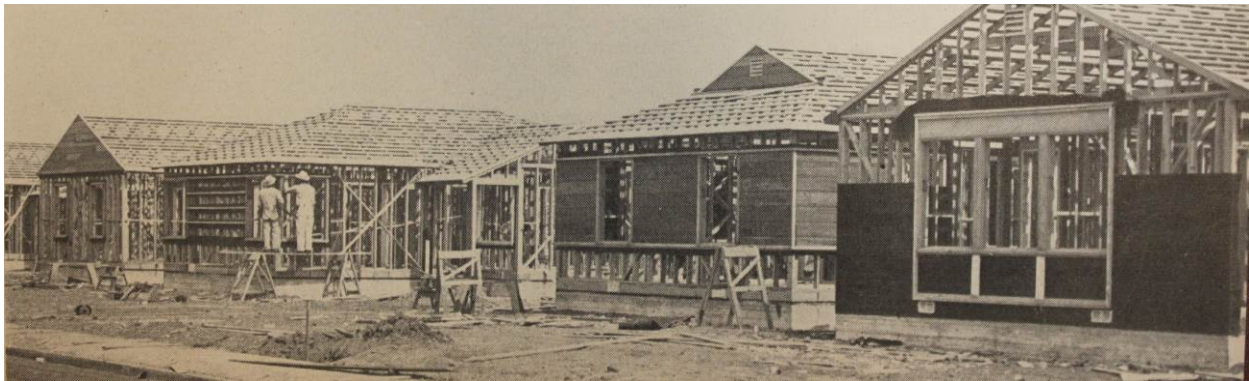


Figure 4.37. Houses in varying stages of construction at San Lorenzo Village. Source: *American Builder*, February 1945.

At the building sites, series of crews of semi-skilled laborers working under a skilled supervisor performed the same job over and over, from pouring foundations, to framing walls and roofs, or installing finish materials. Once again, a collection of pre-made forms and jigs guided many jobs. Bohannon even incorporated building guides into the foundation slabs at San Lorenzo to direct framing crews. Workers were also able to simply connect pre-assembled plumbing units and install standard trim pieces. The result was an assembly line turned inside out, where workers and materials moved along the production line and the product remained stationary. With this method, the 2,500 workers at San Lorenzo Village broke wartime housing production records, completing nearly 1,300 of the houses in the seven months between May and December of 1944.⁶⁰

⁶⁰ Andrew Hope and California Department of Transportation, "California Department of Parks and Recreation Primary Record for San Lorenzo Village Historic District," June 2000.

Bohannon and Promotion of the California Method

Bohannon's success at San Lorenzo Village would make him the public face of the California method and the new, modernized building industry it signaled. In the words of Bohannon's film, San Lorenzo Village was "the dream of private enterprise come true," demonstrating that the building industry could provide for American's housing needs. By the end of 1946, Bohannon and San Lorenzo Village had graced the pages of *LIFE*, *Fortune*, *Architectural Forum*, and *American Builder*. Real estate writers pointed excitedly to San Lorenzo Village as being a model program that would eventually allow private enterprise to produce homes for "the most modest income brackets."⁶¹ The California method would soon become the norm for large-scale home builders across the nation as they plunged into the home building boom of the postwar period.

During Bohannon's public discussions of the California method, he indirectly articulated the impact the process would have on the emerging postwar domestic landscape. Bohannon advised his fellow builders that the California method of building only worked efficiently and economically at the neighborhood scale where builders would be producing a large number of units at a single site.⁶² Organizations taking on the method also had to have a certain degree of scale.⁶³ Bohannon, for example, found that the California method saved him 30 percent in labor and materials costs, but admitted that most of this savings was eaten by increased overhead costs.⁶⁴ The method, in short, saved time and allowed builders to construct at great scale with efficiency, but it also carried costs that minimized any net financial gain.

From a design perspective, Bohannon advocated for the California method because of its flexibility, economy, and general superiority to other mass production methods like prefabrication. The California method came without, in Bohannon's words, "the experimental risks and delays inherent in present-day prefabrication."⁶⁵ As he pointed out, prefabrication required a significant capital investment in factory facilities, materials storage, and of course, product distribution.⁶⁶ The California method, by contrast, was flexible and fully mobile. Equally important, the California method allowed builders to have more control over matters of design and adapt to the vagaries of local taste. One of the key problems with prefabrication per Bohannon was that designers developed the products independently of neighborhood or

⁶¹ "Bohannon's 1329-Home Project May Presage Homes Purchasable for \$20 Monthly," *National Real Estate Journal* 46 (January 1945): 25.

⁶² "Bohannon Building Team," *Architectural Forum* 82 (June 1945): 133.

⁶³ "Big Dave Bohannon, Operative Builder by the California Method," 194, 199.

⁶⁴ Precutting and selected pre-assembly alone realized an overall savings of about two percent. The single largest overhead cost was not labor, but equipment.

⁶⁵ David D. Bohannon, "Production of Large-Scale Small-House Operation," 144–45; "Big Dave Bohannon, Operative Builder by the California Method," 192.

⁶⁶ "Bohannon Building Team," 133.

region. There was little room for prefabricated housing designers to address the diversity of taste and tradition “on the ground.”

The key financial benefit of the California method, however, was its effectiveness in reducing home cost and fostering more efficient design development. The planning of war-time houses,” Bohannon said, “taught us to utilize every tiny bit of space and material to its highest advantage.”⁶⁷ Anyone could build an expensive house, but building an inexpensive, functional, attractive home had long been the golden ring for the building industry. In the post-FHA housing market, doing so meant being able to access the full range of potential buyers, including the lower third of income earners who made up more than half of that market.⁶⁸ Bohannon and his design staff had worked through the most significant process challenges in large-scale building during the war, and were ready to bring those solutions into the more materially and economically liberal postwar housing market. For Bohannon, this meant focusing more attention on architectural attractiveness and “livability,” a term he used to refer to material comfort, functional ease, and aesthetic quality. Better production methods, in short, enabled better design.⁶⁹

Postwar Hillsdale (1945-1965): Merchandising Design

At the end of World War II in 1945, Bohannon turned his attention back to his stalled project at Hillsdale. Through the height of the postwar housing shortage between 1945 and 1950, Bohannon continued building the proven, optimized ranch house plans he constructed before the war. As the postwar housing shortage abated, however, he recognized the need to refresh his models to attract more buyers. From the late 1940s to the late 1950s, Bohannon and his design staff shifted from housing design based on considerations of economy and production process to design focused on creating a diverse range of housing products tailored to prevailing market preferences. Design change was a financial risk for builders, and to minimize that risk, Bohannon relied on research and nationally-recognized marketing partnerships to inform his decision making.⁷⁰ With the turn from a focus on mass production to mass merchandising, Bohannon would construct some of his most creative housing models at Hillsdale. He constructed almost a dozen other neighborhood-scale developments in the Bay Area during the same period, but Hillsdale would be his base of operations and his laboratory for design development.

⁶⁷ David D. Bohannon, “Building or Bottlenecks?,” *Savings & Loan Journal*, January 1946, 11, David D. Bohannon Organization.

⁶⁸ Robert E. Adams, “Realtor-Builders at Convention Urged to Build Low-Cost Homes,” *National Real Estate Journal*, December 1936, 38–39.

⁶⁹ See Bohannon, “Building Homes for Sale,” 23.

⁷⁰ The late 1940s were the height of the postwar housing boom across the nation, and while sales were brisk, builders still faced some challenges in selling homes. Price ceilings and rent control remained in effect throughout for several years following the war, meaning builders had to offer housing products attractive enough to attract buyers to transition from renting.

By the end of the 1950s, Bohannon was not just a home builder, but a major housing retailer. He created his catalog of houses at Hillsdale guided by the concept of retail merchandising, or providing the right mixture and character of housing products with the right amenities and price points to attract the broadest range of buyers. This concept drove Bohannon's building model as early as 1940. Addressing the Land Developers and Home Builders Division of NAREB, he stated,

Merchandising in all major fields of manufacture receives a top position. The much quoted automobile, in its high degree of development would not be possible except for modern merchandising, which has created sales volume and a constantly improved product at lower costs. So the land developer and home builder must apply effective merchandising methods.⁷¹

Bohannon merchandised houses at Hillsdale like automobile manufacturers merchandised cars, offering a full range of models scaled by price and features. Bohannon's team created this catalog through a design process that coalesced local market research, national housing design trends, and the firm's existing design catalog of designs into new product prototypes. The team tested these prototypes through model homes and promotional events and used consumer feedback to refine or revise the design. As this process drove design changes at DDBO, the Hillsdale development became a housing showroom and design development laboratory.

One of the major supports for Bohannon's design experimentation in the 1950s was his regular partnership with popular national home magazines' design/build programs. These campaigns sought to transmit new trends or ideas in home design and amenities through partnerships with builders who would construct a model home or series of homes reflecting the trends, tailored for local tastes and needs. Participating in these programs offered builders meaningful benefits. Much as design competitions propelled the work of architects, home magazine design/build programs offered builders the chance to showcase their work and advertise with a tacit endorsement from nationally recognized tastemakers. Builders constructed homes embodying new design principles and theories, but principles and theories developed by professionals sensitive to the practical and economic needs of the building community. Builders also retained significant design autonomy under these programs. Rather than a top-down transmission of design features or aesthetics, participating building teams developed a model incorporating partner program tenets that proffered an educated guess as to what the buying public would want. These relationships introduced new design concepts into local vernaculars, but the program houses were effective promotional devices and important marketing and research tools. Once DDBO constructed the model homes, something akin to a

⁷¹ Bohannon, "Building Homes for Sale," 23.

live-action market research campaign ensued. Bohannon's salesmen and marketing team monitored what the thousands of visitors who came through the models liked or did not like and designers adjusted future iterations accordingly. Bohannon began participating in home magazine design/build programs in the 1930s, usually constructing a single, locally-adapted version of homes designed by an architect under commission to the magazine. Beginning in 1950, Bohannon moved away from these single-building promotional efforts to promotional partnerships that allowed him to offer a broader array of merchandised houses.

Testing Modernism with Pace Setter, Five-Star, and Idea Homes at Hillsdale

Bohannon participated in a series of major home magazine design/build programs with publications like *House Beautiful* and *Better Homes & Gardens* in the early 1950s that supported and informed changes to his house design catalog. The resulting dwellings aided Bohannon in shaping his design offerings for the next decade. One of the major issues the home building programs helped with was the degree to which Bohannon would incorporate aspects of Modern design in his home models. Like many builders, Bohannon was cautious about Modern design in his work, being careful not to move too far ahead of the tastes of his buying public.

In 1950, Bohannon constructed a series of three houses as part of *House Beautiful* (*HB*) editor Elizabeth Gordon's "Pace Setter House" series that gave him an opportunity to market-test a modest array of Modern design features. Gordon established the Pace Setter program in 1946 as an annual series of exhibition homes tailored to regional climate, taste, and building traditions. The program offered an alternative response to the advent of European Modern architecture in the US, rejecting universalism and functional aesthetics for more "livable," home-grown modern aesthetics and forms.⁷² Local builders and architects designed and constructed seventeen Pace Setter houses around the US with oversight and occasional interior decorating assistance from the *HB* editorial staff.

⁷² Monica Penick, "The Pace Setter Houses: Livable Modernism in Postwar America" (Dissertation, Austin, TX, University of Texas, Austin, 2007), 1–3.

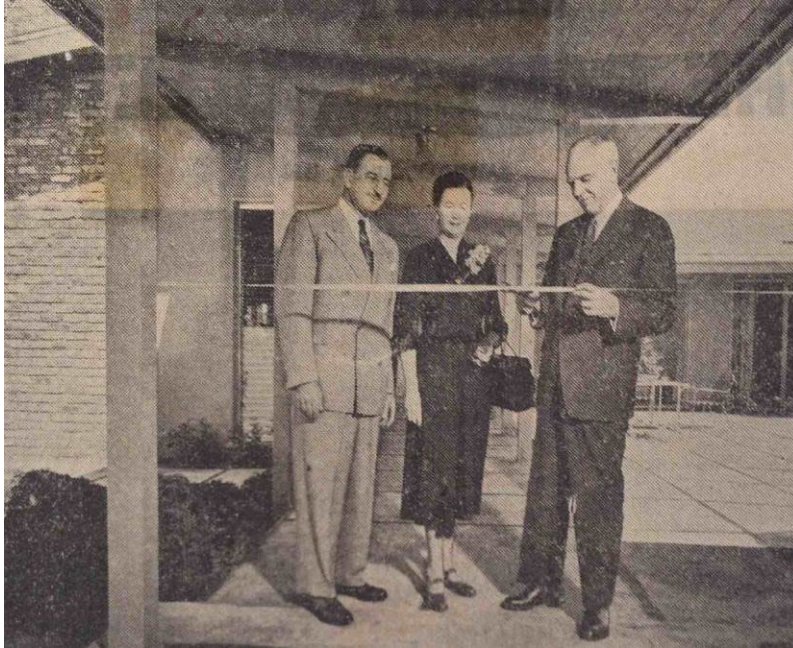


Figure 4.38. David Bohannon (left), *HB* editor Elizabeth Gordon (center) and John Sloan, president of W. & J. Sloan who produced the early American reproduction furnishings for the Pace Setter model homes at Hillsdale. Source: *San Francisco Call-Bulletin*, June 3, 1950.

Bohannon's supervising architect from 1945-1951, Edwin Wadsworth, AIA (1909-1999), designed DDBO's Pace Setter series at Hillsdale.⁷³ Wadsworth earned a bachelor's degree in architecture from the University of California, Berkeley in 1932. Before that, however, he worked as a draftsman for the Los Angeles architecture firm Walker & Eisen in the late 1920s and as an engineer for the Santa Barbara County Planning Commission, supervising their public works program.⁷⁴ Bohannon and Wadsworth generated three different models for the Pace Setter program - a "contemporary," a California ranch, and a "traditional." Bohannon was the first builder to construct a series of Pace Setter house models and the first to offer models available at relatively modest prices. Bohannon's series of three differently-styled houses demonstrated that no particular design aesthetic (including Modernism) had a monopoly on quality and livability. The houses also demonstrated that these qualities could be achieved at even the most modest price points. The Hillsdale Pace Setter houses, which sold in 1950 for

⁷³ Landscape architect Thomas Church designed site and planting plans for all of the Pace Setter model homes, including those at Hillsdale. See "House Beautiful Will Display Hillsdale Pace-Setter Homes," *San Francisco Examiner*, May 6, 1950, Hillsdale - Residential July 1949 to Oct. 1963 Scrapbook, David D. Bohannon Organization; Elizabeth Lawrence, "Newest Ideas Shown in 3 'Pace-Setter' Houses [Clipping]," n.d., Hillsdale - Residential July 1949 to Oct. 1963 Scrapbook, David D. Bohannon Organization.

⁷⁴ Wadsworth started his own firm in 1951 in Menlo Park, where he designed individual houses, churches, and commercial buildings and pioneered the use of pole house framing on the hillsides of San Mateo County. "Edwin Wadsworth," *San Francisco Chronicle*, July 31, 1999, <http://www.sfgate.com/news/article/Edwin%ADWadsworth%AD2917502.php>; Penick, "The Pace Setter Houses: Livable Modernism in Postwar America."

\$25,000, were the first examples the magazine featured from a moderate price bracket. Bohannon's Pace Setters were a fraction of the price of other Pace Setter houses in other the years, some of which cost nearly \$100,000.⁷⁵

Each of the Pace Setter house conformed with the program's "big three" ideas for 1950: the "American style" of design, climate control features tailored to region, and privacy.⁷⁶ Bohannon and Wadsworth used the house plans to address issues of climate control and privacy. Each plan provided sheltered, private exterior living spaces, siting that maximized sunlight in main interior and exterior living areas, and deep roof overhangs to regulate that light. The expression of "American style" in Bohannon's houses was rather literal; each model home had a furnishing scheme of traditional, colonial revival style décor that DDBO selected in consultation with reproduction furnituremakers, retailers W & J Sloane, and *HB* editors.

Bohannon pitched his Pace Setter houses as examples of good design at an economical price, offering the comfort, convenience, and a casual living atmosphere the Pace Setter program espoused.⁷⁷ But he was also using the program to market and test housing with more novel plans and Modern aesthetics than in his previous catalog of work. Bohannon and Wadsworth's Pace Setter Houses were a departure from their earlier homes in their formal complexity and direct references to aspects of Modernism. The house plans were T or U-shaped and wrapped around a sheltered exterior space. Wadsworth's "contemporary" model referenced the Modern pavilion structure with its deeply projecting shed roofs, large expanses of glass, open interior volumes, and the sheltered walkway between the house and detached garage. (Figures 4.39 and 4.40) The reconceived ranch model had similar Modern flair, with a deep "porch" composed of an extended roofline on posts at one end of the main block. (Figures 4.41 and 4.42) Large windows on the rear of the main block and the side elevation of a sizable rear ell opened onto a sheltered terrace. The contemporary and ranch models departed from Bohannon's earlier housing models by putting the main living areas near the front of the dwelling instead of the rear. The traditional model had staid ranch styling, but a more novel arrangement of rooms. (Figures 4.43 and 4.44) The model placed the living quarters in a rear main block and shifted bedrooms to a front ell extending toward the street. Like the other models, the main entrance was in the rear block; visitors accessed it by going through a sheltered walkway between the front ell and a detached garage.

⁷⁵ "3 New S.M. Homes Win 'Pace Setter' Title," *San Mateo Times*, May 18, 1950, Hillsdale - Residential July 1949 to Oct. 1963 Scrapbook, David D. Bohannon Organization.

⁷⁶ "The 3 Big Ideas of 1950," *House Beautiful*, June 1950; "'Pace-Setter' Homes Underscore Three Big Ideas," *San Francisco Chronicle*, June 4, 1950, Hillsdale - Residential July 1949 to Oct. 1963 Scrapbook, David D. Bohannon Organization.

⁷⁷ "3 New S.M. Homes Win 'Pace Setter' Title."

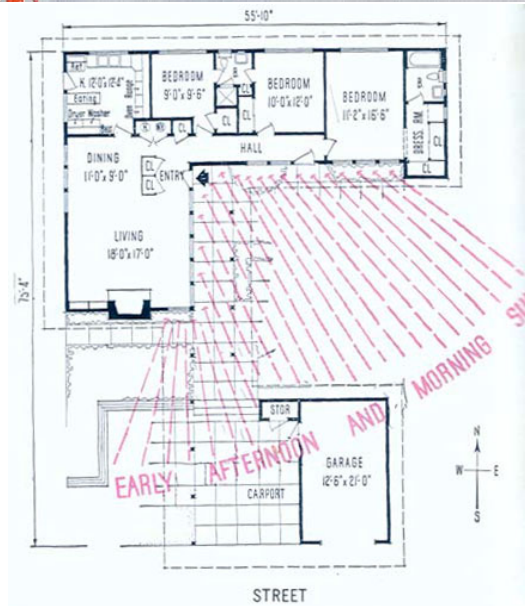
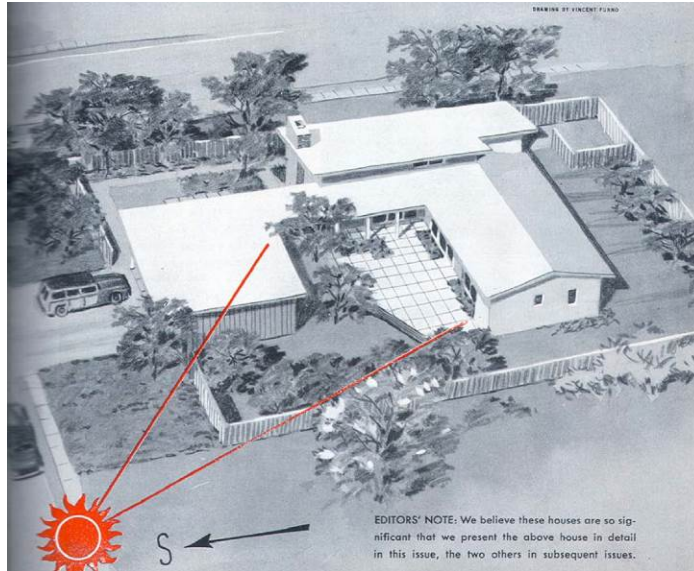


Figure 4.39. DDBO's Pace Setter Contemporary model. Source: *House Beautiful*, June 1950.

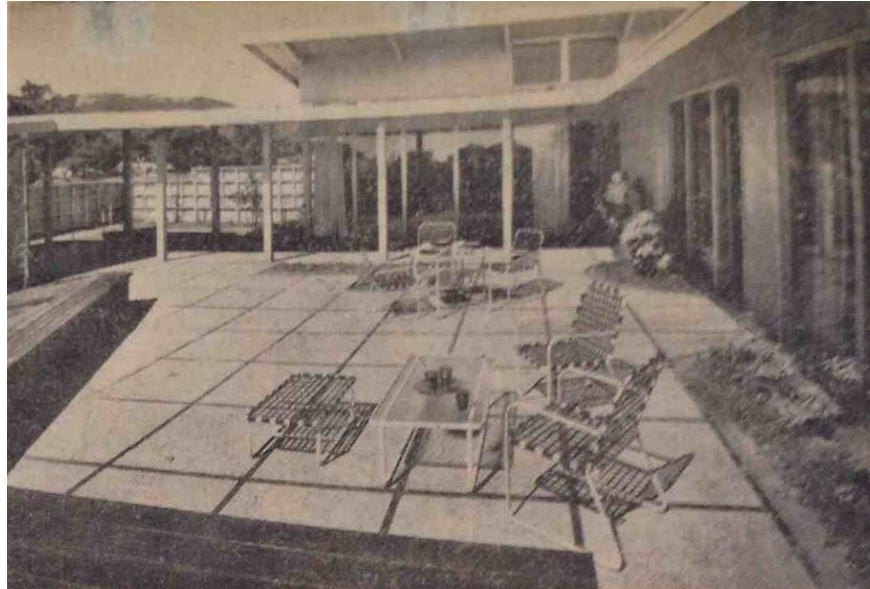


Figure 4.40. Courtyard space, Pace Setter contemporary model. Source: *San Francisco News*, May 27, 1950.

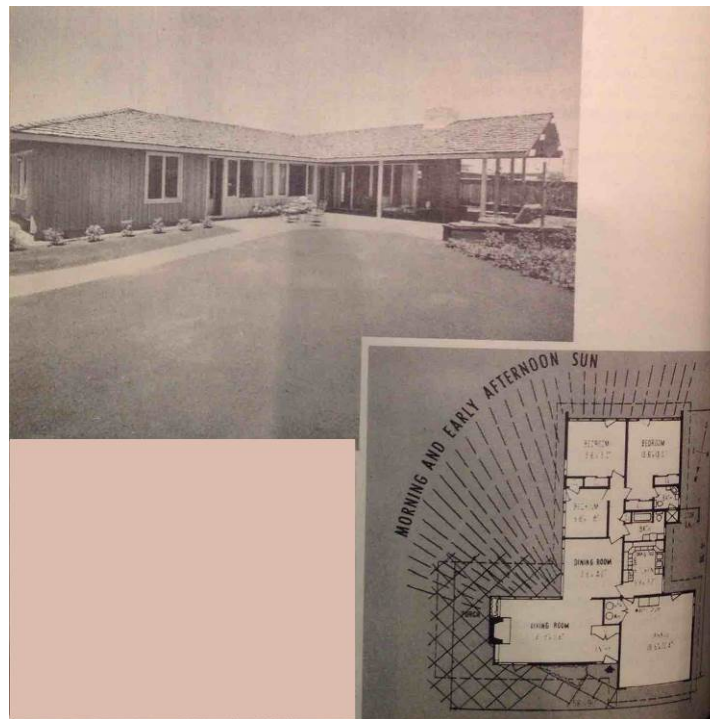


Figure 4.41. Pace Setter ranch model at Hillsdale. Source: *NAHB Correlator*, February 1951.

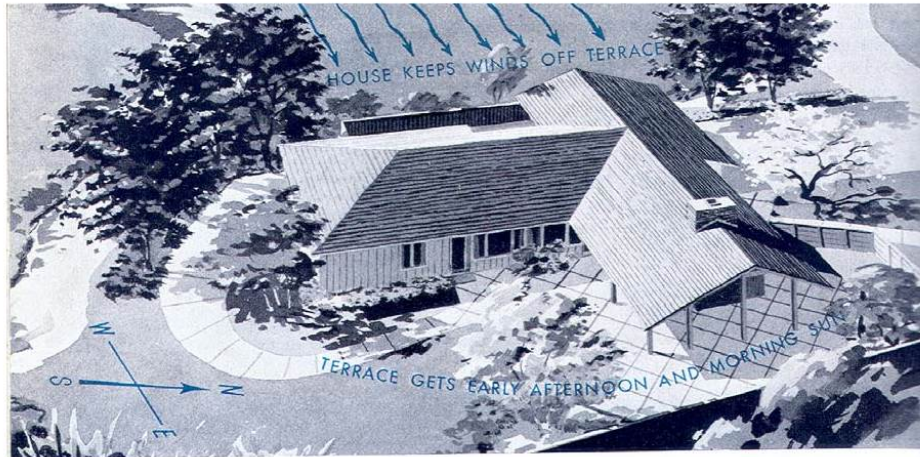


Figure 4.42. Pace Setter ranch model bird's eye view. Source: *House Beautiful*, August 1950.

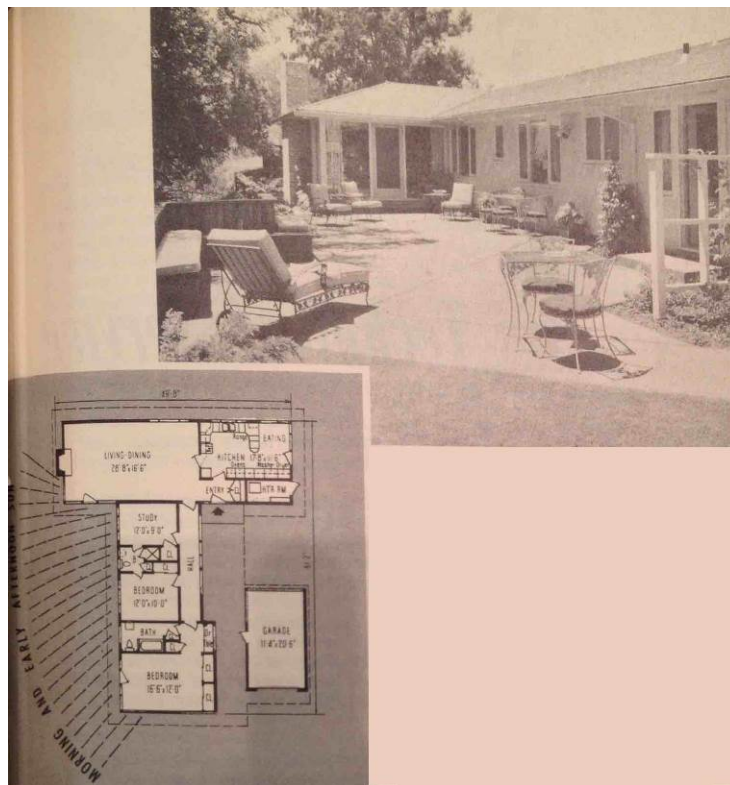


Figure 4.43. Pace Setter traditional model home. Source: *NAHB Correlator*, February 1951.



Figure 4.44. Pace Setter traditional model bird's eye view. Source: *House Beautiful*, August 1950.

Bohannon planned to construct about fifty of the three Pace Setter models in Hillsdale after showing the model homes.⁷⁸ The houses he actually built after the program debut demonstrate how Bohannon adapted the designs to match consumer tastes after testing the model homes with the visiting public. They also demonstrate the axiom that upper class domesticity, housing design, and culture do influence common built suburban housing forms, but not in a direct, linear manner.⁷⁹ Bohannon found the modern aesthetic of the “contemporary” model a non-starter with his customers, and the original “contemporary” model published in *HB* remains the only of its kind in the development. (Figure 4.45) The plan, however, proved a winner, and Bohannon constructed a dozen houses with two major adaptations. The first employed the basic layout and plan of the contemporary model, but gave the dwelling a conventional gable or hipped roof, traditional ranch styling, and attached the garage to the projecting front ell. (Figures 4.46 and 4.47) The second, more interesting variation kept the basic arrangement of the contemporary plan, but gave the house a conventional ranch “false front.” In these models, the main entry door opened not into an interior living space, but onto the interior courtyard formed by the projecting front ell and semi-detached garage. (Figures 4.48 and 4.49) The plan offered buyers a traditional aesthetic, but a modern living arrangement with private outdoor living space at the front of the dwelling. The actual traditional model proved to be the least popular, with only one identified additional example beyond the model home. The most successful initial design turned out to be the Bohannon’s ranch Pace Setter model; he constructed several of them identical to the published plan. (Figure 4.50)

⁷⁸ “3 New S.M. Homes Win ‘Pace Setter’ Title.”

⁷⁹ See Hubka, *Houses without Names*, 26, 29.



Figure 4.45. Pace Setter contemporary model home, 516 West Hillside Boulevard, San Mateo. Photograph Elaine Stiles, 2017.

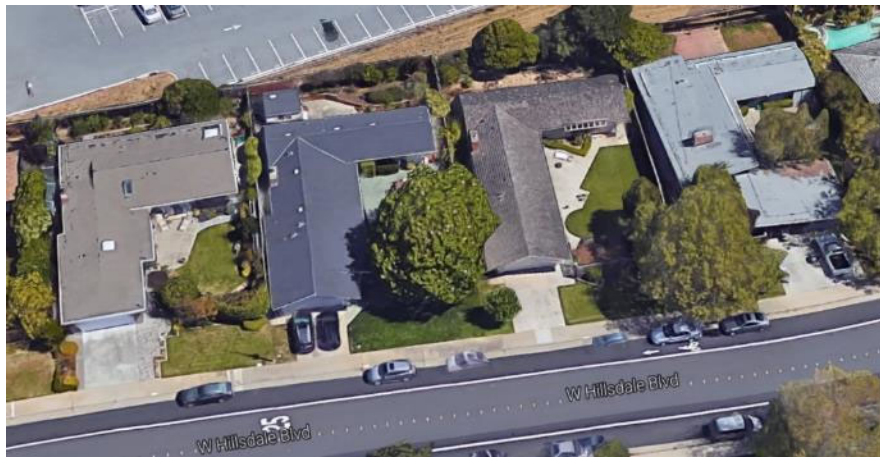


Figure 4.46. Contemporary Pace Setter model (far right with gray roof) adjacent to adapted plan with garage appended to end of ell. Source: Google Earth.



Figure 4.47. Adapted contemporary model with garage appended to end of ell at 520 West Hillside Boulevard, San Mateo. Photograph Elaine Stiles, 2017.



Figure 4.48. Bird's eye view of adapted "false front" models at 540 and 650 West Hillsdale Boulevard, San Mateo. Source: Google Earth.



Figure 4.49. Street appearance of adapted "false front" model at 540 West Hillsdale Boulevard, San Mateo. Photograph Elaine Stiles 2017.



Figure 4.50. Pace Setter ranch model, 615 West Hillsdale Boulevard, San Mateo. Photograph Elaine Stiles, 2017.

Only two months after Bohannon debuted his Pace Setter series, he offered the public another design/build partnership house. In late summer 1950, he opened his *Better Homes & Gardens (BH&G)* “Five-Star Home” adjacent to the Pace Setter model grouping. (Figures 4.51 through 4.54) This house, priced at \$15,000, offered buyers a more economical option. Probably also designed by Wadsworth, Bohannon’s “California Contemporary” design was a ranch form with an L-shaped plan featuring a projecting front ell housing the garage. In plan, the house was remarkably similar to earlier economy houses in Bohannon’s repertoire, with an open living room and dining “alcove,” modest entry hall, two or three bedrooms, and a single bath. Though less expensive, Bohannon and *BH&G* promoted the house using many of the same qualities as the Pace Setter program: contemporary design, convenience, privacy, and indoor-outdoor communication and living.⁸⁰ The Five-Star model proved popular, and Bohannon constructed 200 of them in Hillsdale, but again not without alterations.⁸¹ Approximately half of the models conforming to the Five Star form have a garage set in the rear, lateral part of the ell arrangement.

⁸⁰ “B. H. & G. Taps Bohannon - A House with Five Stars,” *San Francisco Chronicle*, August 27, 1950.

⁸¹ “A Builder Remodels a Hillside,” *San Francisco Chronicle*, January 21, 1951.

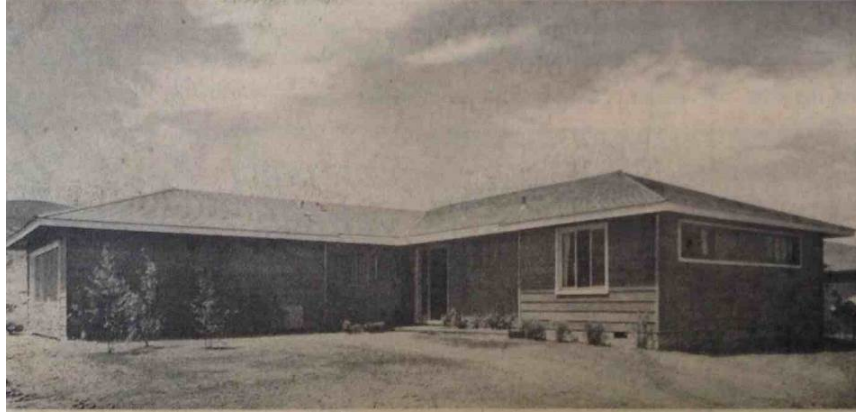


Figure 4.51. Front elevation of *BH&G Five Star* model home at Hillsdale. Source: *San Francisco Chronicle*, August 27, 1950.



Figure 4.52. Rear elevation of *BH&G Five Star* Home. Source: *San Francisco Chronicle*, January 21, 1951.

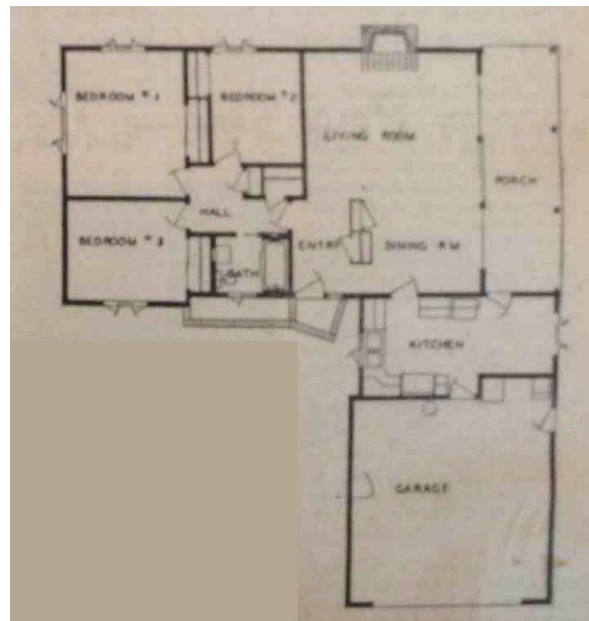


Figure 4.53. Plan, *BH&G Five Star* Home. Source: *San Francisco Chronicle*, August 27, 1950.



Figure 4.54. Five-Star model home at 653 West Hillsdale Boulevard, San Mateo. Photograph Elaine Stiles, 2017.

By 1955, Bohannon was moving up the hillsides into the next phases of his development, marketed as the Hillsdale Highlands. Here, Bohannon moved into full retail showroom mode, developing sections of the Highlands like a series of specialized departments. That year, Bohannon's new in-house architectural director, Mogens Mogensen, AIA (1920-1997), designed an adapted version of the *BH&G* "Idea Home." Mogensen, who was Danish, received his architectural training from the Institute of Architecture, Copenhagen and worked for several architecture firms in Denmark and Sweden before immigrating to the US. (Figure 4.55) Mogensen also had an interest in filmmaking, and his animated film version of Hans Christian Andersen's fairy tale, "Tin Soldier" was critically well-received. Mogensen immigrated to the US in 1946, possibly hoping to continue a film animation career in southern California. He continued his career in architecture instead, landing a position as a draftsman for noted Bay Area regional modernists Wurster Bernardi & Emmons in 1947. In 1950, Mogensen established his own practice in Redwood City and began working on contract as Bohannon's in-house architect. Mogensen designed plans, exteriors, and interior finishes for Modern-influenced houses in Bohannon's Hillsdale tracts in San Mateo and Westwood developments in San Jose. He ended his contractual relationship with Bohannon by the mid-1960s and went on to design numerous apartment buildings and condominium complexes in a Modern idiom in the Bay Area.⁸² Mogensen did some of the more original designs in Bohannon catalog, transforming some of his stock forms into new series of houses with more contemporary features.

⁸² Pimsleur, J.L., "Mogens Mogensen," *San Francisco Chronicle*, November 28, 1997, <http://www.sfgate.com/news/article/Mogens-Mogensen-2792918.php>; American Institute of Architects, "Mogens Mogensen," The AIA Historical Directory of American Architects, accessed October 1, 2016, <http://public.aia.org/sites/hdoaa/wiki/Wiki%20Pages/ahd1030977.aspx>; Dave Weinstein and Eichler Network, "Mogie Modern," n.d., <http://www.eichlernetwork.com/article/mogie-modern>.



Figure 4.55. Mogens Mogensen. Courtesy Eichler Network.

The Idea Home series produced a set of houses with the most advanced planning, materials, systems, and interior appointments adapted to various regions of the country. Mogensen adapted an existing *BH&G* design by Hugh Stubbins, AIA to northern California climate and the hilly topography of the Highlands section. (Figure 4.56) At \$50,000 – or twice the price of the average Hillsdale home - Bohannon had little expectation of selling many Idea Houses. But thousands came to see the demonstration house alongside more modest model homes. Mogensen did, however, develop a small tract of less expensive versions of the Idea Home that sold for \$26,950. (Figures 4.57 and 4.58) Marketed as the “Contemporama,” these three-bedroom homes had low-pitched shed roofs with deeply projecting eaves, post and beam framing, large sections of glass and spandrel panel walls, and T-shaped plans that created sheltered courtyards in tandem with the partially-detached garages.⁸³

⁸³ Thirteen “Contemporama” models remain on the southern cul-de-sac section of Sunset Terrace in the Hillsdale section of San Mateo. “You Saw the Idea Home in Better Homes and Gardens, See It Now in Hillsdale [Advertisement],” *Burlingame Advance-Star*, November 11, 1955, Hillsdale - Residential July 1949 to Oct. 1963 Scrapbook, David D. Bohannon Organization; “Peninsula Home Built on Knoll Overlooking Bay,” *Daily Pacific Builder*, October 12, 1956, Hillsdale - Residential July 1949 to Oct. 1963 Scrapbook, David D. Bohannon Organization.

You saw the IDEA HOME in... **Better Homes**
and Gardens

See it now in Hillsdale

All America has been reading about Better Homes & Gardens' fabulous IDEA HOME. Now you can see it in Hillsdale—the Bohannon Organization's exclusive residential development west of El Camino Real in San Mateo. The Hillsdale IDEA HOME has been especially adapted for peninsula living by Mogens Mogensen, A.I.A. It's located high up in Hillsdale's newly-opened highlands section with a spectacular panoramic view that is literally out of this world. With its built-in automatic kitchen and lavish furnishings by City of Paris, it's the dream home of dream homes. Be sure to see it this weekend.

If you're planning to buy or build, investigate OUR 3-WAY PLAN...

Now for the first time, you can purchase quarter acre lots in Hillsdale from \$5000 and up, depending on exposure and view. If you prefer, you can make your own arrangements for designing and building. Or, you can choose from several basic plans such as the IDEA HOME or our famous House Beautiful Pace Setters, and we'll arrange financing and construction. Or, you may purchase from a wide variety of builder homes which are now ready for occupancy from \$26,950. It's the most outstanding offering in the San Mateo-Burlingame area in recent years.

DIRECTIONS: To reach the IDEA HOME, you drive through one of the finest community developments in California. From either Boyshere Freeway or El Camino Real between San Mateo and Belmont, turn west onto Hillsdale Blvd. The IDEA HOME is at the upper end of this beautiful, broad avenue. On your way, you'll pass the Southern Pacific Hillsdale station and the huge new Hillsdale Regional Shopping Center with Macy's, H. L. Liebes, Sears and dozens of other big-name stores. You'll pass the Hillsdale Garden Apartments and the new multi-million-dollar Hillsdale High School. You'll continue on through one of the best-planned residential districts in the entire Bay Area. There's nothing else like Hillsdale—anywhere! Come, see for yourself.

interior by **City of Paris**

Sale Office: West end of Hillsdale Blvd., San Mateo
phone FRanklin 3-3365

David D. Bohannon Organization • Developers

The ADVANCE-STAR, Burlingame, California

Page 10—Friday, Nov. 11, 1955

Figure 4.56. Idea Home advertisement. Source: *Burlingame Advance-Star*, November 11, 1955.



Figure 4.57. Mogensen's "Contemporama" model at Hillsdale. Courtesy Eichler Network.



Figure 4.58. Contemporama model at 3109 Sunset Terrace, San Mateo. Courtesy Eichler Network.

Bohannon's experiments at Hillsdale informed design decisions at other developments he undertook during the 1950s. Having proved to be well in line with local preferences and national trends, the Pace Setter and Five-Star houses dictated the stylistic breadth of Bohannon's designs for moderately-priced, slightly aspirational housing models through the decade. Bohannon's developments consistently offered houses in contemporary and California ranch formats and a home with either traditional styling or slightly exotic revival motifs. Bohannon strategically adapted the models to subdivisions with lower price points.⁸⁴ Bohannon also continued to build houses conforming to his earlier catalog of plans, including a slightly expanded version of his defense housing plan and early Hillsdale ranch plans with updated exterior features. DDBO reserved these houses for their more economical suburban developments, offering buyers a chance to own a house with Modern or traditional exterior styling and a plan already optimized for low-cost construction.

By the late 1950s, Bohannon had transitioned to being more retailer than builder, essentially going back to the model of development he practiced in the early 1930s. The Hillsdale Highlands became a "boutique" suburb offering what Bohannon termed his "3-Way Plan." In this model, prospective buyers had the choice of buying a lot and building their own home, or selecting from a number of basic plans and allowing DDBO to arrange for building and financing. Alternatively, buyers could purchase a ready-built home from one of fourteen different contractors building under agreements with DDBO in Hillsdale.⁸⁵ The basic plans included the *BH&G* Idea Home and *House Beautiful* Pace Setter models.⁸⁶ Lot buyers could also construct homes based on a series of approved plans designed by Mogens Mogensen under contact with one of ten different building firms working in the Highlands section. These plans included "The Panorama" a rustic, picturesque ranch designed to take advantage of the hillside views, the Contemporama, and split-level forms that conformed well to the uneven lot topography. Bohannon also no longer directly sold land or houses in the Highlands, relying instead on the services of a local realty firm, August Associates.⁸⁷

Over the course of the 1950s, Bohannon shifted his development focus to commercial and industrial development while outsourcing more of the homebuilding at Hillsdale. DDBO's advertising in the period served as a form of reflection on Bohannon's accomplishments over his more than thirty-year career in housing development. The ads emphasized the design expertise of DDBO's in-house architectural staff, the firm's experience with using mass production methods to standardize quality and lower costs, and the superiority of their home

⁸⁴ Bohannon's other 1950s developments included the economy-priced Mayfair Heights in San Jose (started 1951) and more moderately-priced Westwood (1952-1957), Westwood Oaks (1955-1959), and Westwood Park (1959-1961), all with home designs by Mogensen.

⁸⁵ "A House Full of Ideas," *San Francisco Chronicle*, November 13, 1955.

⁸⁶ "You Saw the Idea Home in Better Homes and Gardens, See It Now in Hillsdale [Advertisement]."

⁸⁷ "New Horizons for You in Hillsdale Highlands," *San Francisco Chronicle*, September 16, 1956, sec. Classifieds.

models because of the firm's research and testing under actual living conditions. With a systematized catalog of flexible, proven traditional and contemporary plans and aesthetic schemes, DDBO was able to, and did, merchandise homes to a wide range of cost or taste-based segment of the home buying market.

Conclusion

Bohannon embodied and helped shape the public image of the ideal entrepreneurial, large-scale housing developer in the World War II and postwar periods. Bohannon rode political, economic, and market waves as he tailored his methods, home designs, and marketing strategies to respond to or take advantage of the opportunities of the moment. Among his peers, Bohannon stood out for his leadership in industry politics and design development, spearheading the initiatives the industry took to shape the political economy of American housing in their favor. He was critical in builders' efforts to influence federal housing policies, using product design as evidence of the industry's ability to answer the country's housing needs. In these efforts, it was the experience building economy houses under restricted circumstances during war that "fast-forwarded" builders' methods in housing development just as the war "fast-forwarded" so many other technological ideas. Bohannon and his contemporaries in the Bay Area, which had one of the largest concentrations of war housing in the nation, refined and improved methods for large-scale production of housing and their "California method" became a model for other builders would adopt to transform the domestic landscape in their own locales.

Beyond politics, Bohannon's career underscores at each stage the importance of design and design development in builders' work and the importance of connections between the building cultures of home building, architecture, engineering, planning, and commercial design. This interdisciplinary model of design development at firms like Bohannon's embodied modern design principles and modes of living more so than any other single building culture in terms of volume and market acceptance. Bohannon's career also illustrates that the borrowing and adaptation of ideas between of the building industry and the automobile industry in this period go far beyond production methods. Builders like Bohannon borrowed merchandising and retailing methods from the auto industry, adopting a semblance of the model-year system and generating a range of models at different price points and with different styling to encourage sales.

Bohannon's work also underscores the influence of the local on the national and the limits of national models on influencing local tract housing design. The interplay of local and the national forces manifests in Bohannon's work through patterns of information circulation and in his reconciling of national and local trends in his work. The local consumer also emerges strongly as the third player in the designer-producer-consumer triad. The not-so-anonymous home buyer is ever-present in Bohannon's processes, directing design teams as they tested and

refined housing models to appeal to various target markets. These dynamics, along with a strong local housing design culture, kept design development in the Bay Area a regional affair, that created, rather than conformed with, national design models.

The final case study chapter that follows examines another area of Bay Area design leadership and design experimentation, looking particularly at issues of market and regulatory acceptance and the builder/designer role in reconciling and diffusing new design ideas into popular culture. Bohannon's contemporary, Earl Smith, took a different tack in his design and marketing, pushing a single model and single idea – the modern-inspired flat-roofed house – which he perfected, varied, and replicated all over northern California from the late 1940s to the 1960s. Smith's economical and affordable "flat-top" designs were ground-breaking in making Modernism, or at least elements of modern design, acceptable to review bodies like the FHA and in putting minimalism and modern aesthetics to work for lower income buyers.

CHAPTER 5: PRAGMATIC MODERNISM FOR THE WORKING MAN: EARL SMITH (1908-2000) AND THE NEGOTIATION OF MODERN AESTHETICS

Earl W. Smith's more than forty-year building career focused on a niche market: inexpensive homes for lower-income buyers. When Smith described his homebuilding firm in 1954, he said, "We like to build little houses for little guys in little towns."¹ At the time of his statement, however, Smith was the fourth largest home builder in the country, having started 2,800 homes in twenty-eight tracts around northern California that year.² Every single one of those houses was a variant on his signature product: his economically-priced, modern-styled, "flat-top." (Figure 5.1) *LIFE* magazine featured Smith's typical flat-top product in 1953: a 1,161 square-foot, four-bedroom, two-bath home with post-and-beam construction, a flat roof with deeply projecting eaves, large windows, and a redwood screen and trellis sheltering the entry. At \$8,695, *LIFE* editors called it "the most astonishing buy in the [National Home Week] show."³ Smith designed his homes himself throughout his career, relying on his own design-build knowledge and market analysis to guide his decisions. His design approach was pragmatic, purpose-driven, and rooted in the belief that design was the builders' best tool in solving the nation's housing problems. It was also a task he enjoyed. Reflecting on his work in 1955, Smith said, "Building a house someone else had created would take away half my pleasure."⁴ Between 1947 and the early 1960s, Smith built approximately 11,000 "flat-tops" in northern California, earning him his life-long nickname, Earl "Flat Top" Smith.

Smith's affordable homes in marginal, largely-working-class enclaves of the Bay Area were the vanguard of large-scale modern home development in the region. Smith was the first builder in the Bay Area, and possibly the nation, to construct flat-roofed, Modern-inspired houses on a mass scale and the first developer of houses with flat roofs in the nation to get his homes qualified for FHA mortgage insurance.⁵ Smith may even have been indirectly responsible for his better-known contemporary Joseph Eichler's turn to Modernism. In the late 1940s, while Eichler was contemplating entering the home building market in the Bay Area, he encountered Smith's economical, post-and-beam flat-tops. Eichler bought a set of plans from Smith and used them as the basis for his first tract of Modern-styled houses in Sunnyvale, California.⁶ Smith's early adoption and optimization of modern design made him one of the most prominent economy housing developers in the nation and an advocate for the advantages of modern design. Smith saw a coming renaissance for more novel, and simultaneously economical,

¹ Lee Geist, "He Builds Bargains to Live In," *Saturday Evening Post* 226, no. 51 (June 19, 1954): 85.

² "Biggest Homebuilders of 1954," *House & Home*, January 1955. William Levitt of New York (4,800 houses), Morris & Zuckerman of Los Angeles (3,800 houses), and F&S Construction of Salt Lake City and Denver (2,856 houses) rounded out the top four in 1954.

³ "Four Bedroom Bargain for \$8,695," *LIFE*, October 12, 1953.

⁴ "What Kind of Man Is the New NAHB President?," *House & Home*, March 1955, 145.

⁵ Lee Geist, "He Builds Bargains to Live In," 39.

⁶ Jerry Ditto, Marvin Wax, and Lanning Stern, "Introduction," in *Eichler Homes: Design for Living* (San Francisco: Chronicle Books, 1995), 28–29.



Figure 5.1. Exterior and interior views of Earl Smith's "flat-top" houses dating from the late 1940s through the mid-1950s. Source: Duncan Smith Collection, Alamo, California.

approaches to home design. In a speech to the California Real Estate Association in 1950, he said,

The American home building industry has thrown off the shackles of restraint that through the years have stifled improvements and advancement of home design. A truly new era in home ownership lies ahead for all Americans.⁷



Maverick builder Earl Smith (center) and his brothers, Rae and Henry. In 1917, Earl borrowed \$4000 to build his first "flat-top." Since then, he's sold over 11,000 of the unconventional, low-cost homes.

Figure 5.2 Earl Smith (center) and his twin brothers Rae and Henry Smith with a model flat top. Source: *Saturday Evening Post*, June 19, 1954

Smith's bold embrace of modern aesthetics in the late 1940s set him apart from his peers. The advent of Modern design in the US proved one of the most challenging and anxiety-inducing production periods for home builders, sparking critical building industry debates about the future of housing design and production. While some scholars have attributed mass builders' resistance to Modernism to associations with European socialism or communism, builders' aversion to risk was a far more powerful factor. Most home builders were skeptical of the appeal of Modernism to their buyers, and they questioned how much and how soon they should incorporate Modern aesthetics into housing products. Builders understood houses as style goods, additionally encumbered by cultural and social prescriptive norms. They needed a strong market justification to risk changing the status quo.

Smith's early adoption of modern design showcases the underlying practical and philosophical pragmatism of how popular home builders made decisions about new design information and managed new product development and distribution. Scholarship on

⁷ "Volume, Quality High, Says Speaker," *Oakland Tribune*, March 12, 1950, Oakland Tribune Clippings File, Hayward Area Historical Society, Hayward, Calif.

twentieth-century suburban housing development and architectural critics and observers in the period typically characterize the diffusion of Modern design principles into the mass housing market as being driven by the trickle-down effect. In this scenario, the expensive, custom-designed homes of the elite set a class-based taste standard that influences, and ultimately shifts broader popular housing tastes.⁸ Builders certainly scrutinized the work of architects and the custom home market for design cues, but, as vernacular architecture scholar Tom Hubka has shown, this top-down pattern of diffusion happened far less, and far less consistently, in common building than previous scholarship allows.⁹ Builders like Smith approached design grounded in their own bodies of building knowledge and market awareness. Their reading of consumer markets, exploitable identified niches within those markets, and the need for economic and technical advancement in their operations drove decision-making. Smith actively adopted modern aesthetics because they were a viable, efficient, and economical solution to a key building industry problem: how to produce a more efficient, lower-cost single-family home. His career and products demonstrate that taste and art were important considerations, but no more important than issues of construction, materials, and market factors.

Design change was always a risk for builders, even if they had years of market experience. Risk management practices were another important factor in design decision-making. Smith sold a product rendered in a challenging idiom to a relatively untested market and across a broad geographic area. He managed those risks with specialty marketing, operations, and production systems which guided design decisions every bit as much as aesthetics. Smith's work, as with many other mass-scale builders, was a constant balance between material, cultural, and economic considerations.

The Road to the Flat Top

From early on in his career, Earl Smith had a reputation as a “builder’s builder,” someone with a thorough understanding of the technical as well as the promotional aspects of the business. Smith was born in 1908 to a family already three generations deep in the building trades. His great-grandfather built houses in his native Germany. After the family immigrated to the US, Smith’s grandfather and father built homes in Sauk Center, Wisconsin; Seattle; and the San Francisco Bay area. Earl attended school through the eighth grade, when at age fourteen, he quit to work with his father and twin brothers in the family business. Though his building training was traditional in scope, Earl had an aptitude for design and drawing and acquired some design training beyond his family apprenticeship. As a teen, he briefly attended a drafting

⁸ See Christopher T. Martin, “Tract-House Modern: A Study of Housing Design and Consumption in the Washington Suburbs, 1946--1960” (Ph.D., United States -- District of Columbia, The George Washington University, 2000), 55, <http://search.proquest.com/dissertations/docview/304619634/abstract/E6F4A694FB5F4419PQ/1?accountid=14496>.

⁹ Thomas C. Hubka, *Houses Without Names: Architectural Nomenclature and the Classification of America's Common Houses* (Knoxville: Univ Tennessee Press, 2013), 29.

school, and when the Great Depression put a temporary end to his father's business, he attended evening art and theater classes at the California School of Fine Arts.¹⁰

The revival of the building industry in the late 1930s sent Smith out on his own. He began building houses independently of his father's business in 1939 as the Earl W. Smith Development Organization (EWSDO).¹¹ From the outset of his career, Smith focused on building relatively affordable homes for lower-income working people. Smith's initial housing development projects were fairly standard for the period. He constructed defense worker housing during World War II, primarily what he called the typical "California-style, low-cost bungalow."¹² After the war, he built single-family, "quasi-capes" priced for the modest-income buyer at between \$9,000 and \$11,000.¹³ His shift to a new house form began in 1947. According to Smith, he lost a sale of a house costing \$9,200 that year because the young couple, who earned \$65 per week, were interested, but simply could not afford the payments. The couple told Smith that they, and many like them, wanted to buy homes, but there was little within their reach. This was likely not news to Smith. The need for housing across the nation in the immediate postwar period was acute, and in the Bay Area, with its tens of thousands of war workers and returning GIs looking for permanent places to live in the region, the need was even more acute. Couples and households like his \$65-per-week buyer made up nearly forty percent of wage earners in the region in the late 1940s.¹⁴

Smith later wrote that during this period, he came to see the lack of attention to housing for lower-income residents in the Bay Area and across the nation as a key public failure. While communities were keen to attract industry and improve infrastructure to support new growth, local policies failed to consider appropriate housing for industrial workers. A growing vacuum of housing for low and modest-income families during and after World War II in many Bay Area communities was a market opportunity.¹⁵ Smith's business model evolved in the late 1940s to address what he and the broader building industry identified as this underserved, but viable, market of lower-income buyers.

Smith's entrance into the low-cost housing market occurred during a period of political tension in the home building industry over the quality and volume of the nation's privately-developed, low-cost housing. In the late 1940s, the National Association of Homebuilders (NAHB) spearheaded an industry-wide campaign to design and produce high volumes of "economy houses," or dwellings within the financial reach of the lower third of income earners.

¹⁰ "What Kind of Man Is the New NAHB President?," 142–43. Smith was a lifelong amateur painter, photographer, and actor.

¹¹ "Gift to St. Mary's Funds Economics Chair," *Oakland Tribune*, December 11, 1980, Oakland Tribune Clippings File, Hayward Area Historical Society, Hayward, Calif.

¹² "What Kind of Man Is the New NAHB President?," 144.

¹³ Lee Geist, "He Builds Bargains to Live In," 84.

¹⁴ Sherman J. Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area* (Berkeley: University of California Press, 1953), 366.

¹⁵ Earl W. Smith, "Community Facilities: How Does the Problem Affect the Home Builder?," *NAHB Correlator* 9, no. 3 (March 1955): 14.

This campaign was a critical component of the home building industry's agenda for the future of American housing: relaxing government controls on building, stymieing public housing, and promoting capitalist enterprise as the best answer to America's housing needs. Building industry lobbying kept government housing programs small through the late 1930s and World War II, but the industry remained vigilant about government involvement in housing in the postwar period. The negotiation period leading up to the 1949 Housing Act, which would set the agenda for postwar housing policy, was a critical moment for the industry. The proposed act would reauthorize FHA mortgage insurance financing - the lifeblood of the building industry - but also potentially fund hundreds of thousands of public housing units. Political pressure on the building industry to prove itself was high. In his 1949 State of the Union address President Harry Truman called the building industry to task, stating that "By producing too few rental units and too large a proportion of high-priced houses, the building industry is rapidly pricing itself out of the market. Building costs must be lowered."¹⁶ Builders had a political and economic stake in demonstrating their ability to solve the postwar "housing problem," particularly at the lower end of the market.

In response, NAHB members across the country threw themselves into an intensive period of economy house development and promotion. Smith would emerge as a national leader in the building industry's economy housing campaigns, promoting his own designs and spearheading several design and construction research programs and builder-to-builder education efforts with the NAHB. Smith believed the best argument for the superiority of private building was the industry's products. Writing in 1954, he reflected, "Most of us [builders] waste too much time fighting the [sic] Government. We wouldn't have to worry so much about socialized housing if the industry itself put up houses the little guy could afford."¹⁷

Developing the Flat Top

Smith's design objective in the late 1940s was to do just that. He set out to create a housing product that would sell for an affordable price, but offer lower-income buyers a measure of social and economic parity with middle class standards - a home he said, "for which no family will have to apologize."¹⁸ At the time, Smith had no professional design staff at his building firm. Rather, he relied on his own building expertise, brief training as a draftsman, and a program of informal research to develop his new housing product. Smith designed the flat top himself, purportedly on the same battered drawing board he used during his brief foray in drafting school in his teens. Based on his own telling, he experimented with several house forms, swapping features and amenities and conducting detailed cost accounting for each model. Smith admitted that at the time he designed the flat top, he was lukewarm on Modernism at best. He called himself "the original Cape Cod kid" and recollected, "I thought modern was too cold and brutal, didn't like it at all."¹⁹ During his design research, however, Smith realized that

¹⁶ Harry S. Truman, "State of the Union Address" (Harry S. Truman Presidential Library & Museum, January 5, 1949), <https://www.trumanlibrary.org/whistlestop/tap/1549.htm>.

¹⁷ Lee Geist, "He Builds Bargains to Live In," 82.

¹⁸ "Doing Something About Low-Cost Houses," *American Builder*, June 1948, 87.

¹⁹ Lee Geist, "He Builds Bargains to Live In," 39.

the two most cost-effective and time-efficient features in low-cost home construction were pouring a slab foundation at grade and eliminating the more complicated framing of a pitched roof form. These two features could reduce the cost of a house by as much as 20 percent.

In the end, Smith settled on a program of post and beam construction, slab foundation, and his signature flat roof profile as providing the most amenity for the lowest price. In 1947, Smith's finalized design offered a five-room, two-bedroom home measuring 890 square feet with an additional 200 square-foot attached garage. (Figures 5.3 through 5.5) The home had a long, rectangular plan, slightly-canted flat roof with a deep overhang, and recessed entry porch with thin wood supports framing the main entry. The house had a poured slab foundation, standard framed walls, lapped redwood siding, and post and beam roof framing with the plank sheathing exposed on the interior. Smith included a fireplace in his design, with an exterior chimney that pierced the overhanging roof. Built-in brick planters at the front entrance added another dash of accent masonry. The interiors had plaster board (sheetrock) walls, asphalt tile floor coverings, and stained beam and plank sheathing as ceilings. The eat-in kitchen had wood cupboards and a ceramic tile drain board and backsplash at the sink. The garage included laundry hookups. Smith's houses were priced at \$7,300, inclusive of a landscaped, 52 x 100-foot lot with concrete drive and walk. Smith's overall development also offered sewer access and paved streets with sidewalks. The home sales price was 15 to 20 percent below the price of a comparable house in the San Francisco Bay Area. With FHA or VA-backed mortgage financing, buyers in 1948 could purchase the home for \$900 down and a monthly payment of \$49.²⁰



Figure 5.3. Smith's "Riviera" model flat-top, location unknown, ca. 1950. Courtesy of the Duncan Smith Collection, Alamo, California.

²⁰ "Doing Something About Low-Cost Houses," 87.

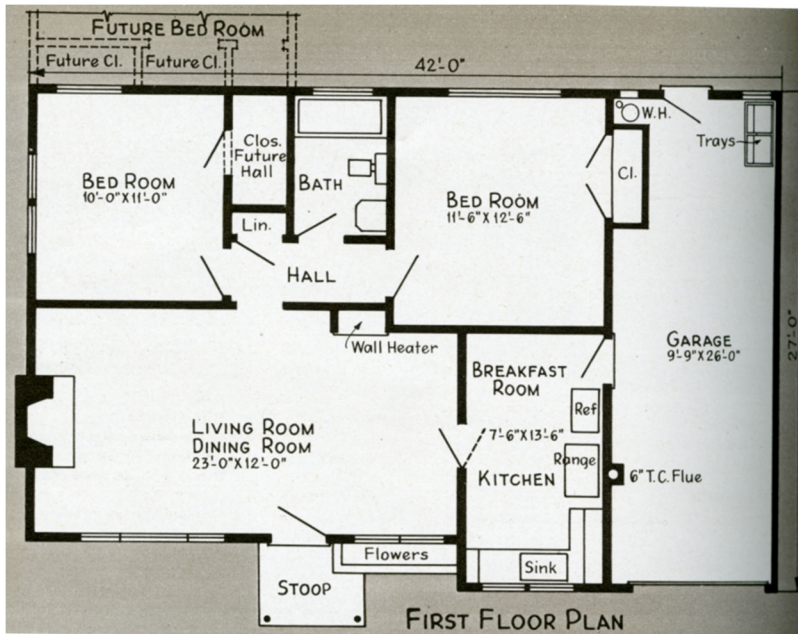


Figure 5.4. Floor plan of the two-bedroom flat top model showing potential bedroom addition published in *American Builder*, June 1948.



Figure 5.5. Flat-top model in Smith's first development, the Serpa Tract, in El Sobrante. Photograph Elaine Stiles 2016.

Smith expanded his flat top plan in later developments, constructing a three-bedroom, 1,000 square-foot version priced at \$8,100 and a four-bedroom, 1,161 square-foot model priced at \$8,965. Smith's expanded flat tops exhibited sophisticated design thinking not commonly found in homes at this price. Rather than simply tacking on extra rooms to increase house size or rearrange space within the same box-like shape, Smith reconceived spatial organization and reshaped footprints. He later shifted service spaces from front to rear, and reoriented living and dining spaces to divide service space and private bedroom and bath areas. (Figures 5.6 and 5.7) Smith also added more modernist features to the homes, including floor-

to-ceiling windows, three-part picture windows, and framed arbors extending from roof overhangs. Models also came with full landscaping, including a fruit tree. (Figures 5.8 and 5.9)

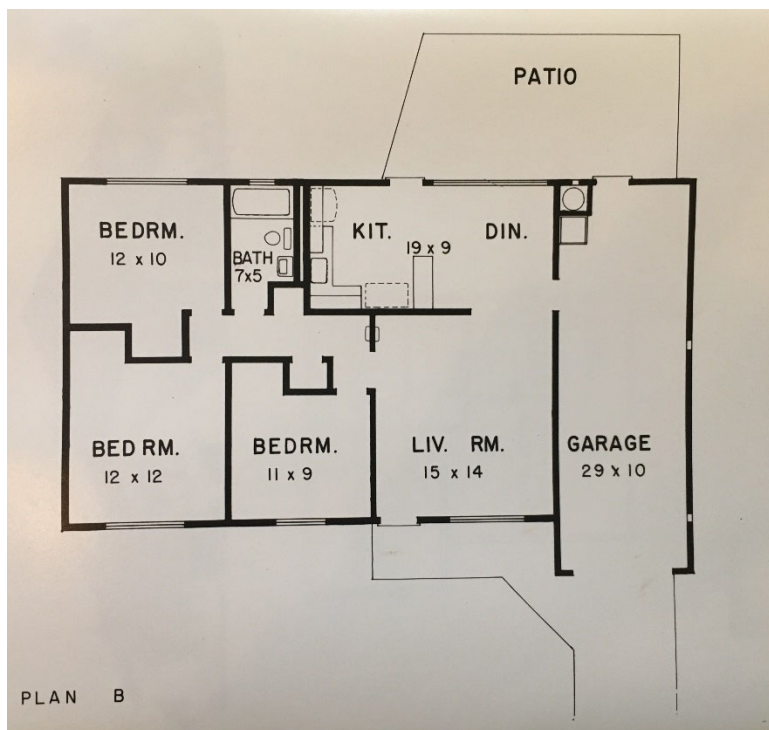
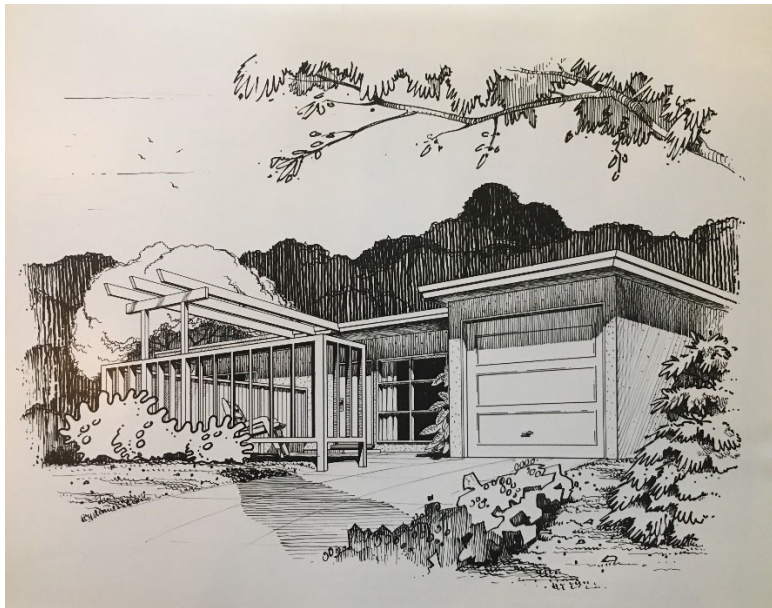


Figure 5.6 (top): Rendering of three-bedroom flat-top model with service spaces shifted to the rear, a dining space, and more privately zoned bedroom spaces off a hallway. Source: Duncan Smith Collection, Alamo, California.

Figure 5.7 (bottom): Plan for three-bedroom flat-top with revised space planning. Source: Duncan Smith Collection, Alamo, California.



Figure 5.8. Rear yard of Smith model home in Contra Costa County showing floor-to ceiling windows. Courtesy of the Duncan Smith Collection, Alamo, California.

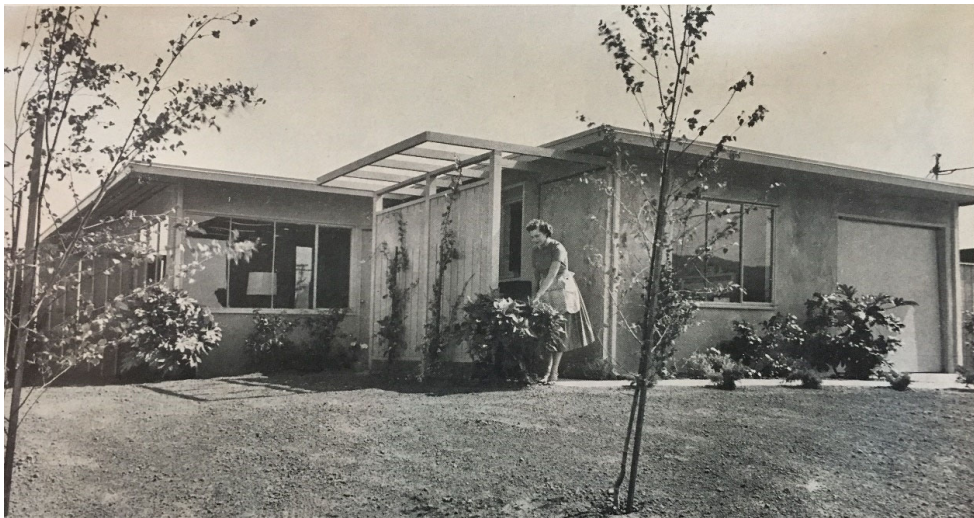


Figure 5.9. View of flat top with fruit trees planted in front yard. Courtesy of the Duncan Smith Collection, Alamo, California.

Though Smith would rescale and alter his flat top plan on a regular basis, in the end his product catalog was built around a single, defining idea: the economy of modern design.²¹ In promoting

²¹ In the mid-1950s, EWSDO built a series of 1,400 square-foot houses in Marin County using the same building methods and materials as their budget flat-tops, but with more amenities. The three-bedroom, 2.5-bath houses came with a separate television room and maid's room. Styling included four-foot eave overhangs, floor-to-ceiling windows, and an expansive rear patio. These models cost about twice what the average flat-top cost, priced at \$16,500. "What Kind of Man Is the New NAHB President?"; "Four Bedroom Bargain for \$8,695," 101-3.

his house models, Smith readily credited modern design principles, alongside improvements in building materials and process, with the affordability of his homes. He particularly emphasized that the clean lines and functional planning of modern, contemporary design facilitated more economic use of labor and materials. He presented the facts like a “builder’s builder” speaking before the California State Chamber of Commerce in 1949. “Cut off your corners and your humps,” he said, “utilize the principle that a straight line is the shortest, and cheapest, distance between two points and you can build good quality homes at low cost.”²² But in 1950, he waxed more poetic. In a speech to the California Real Estate Association titled, “A Practical Approach to Low-Income Housing,” Smith said,

Builders and developers in recent years have frequently been guilty of under-estimating the intelligence of buyers... Too much importance has been given the terms under which a home may be purchased, the sales campaign has been over-emphasized and too little attention centered on design of the home itself. Happily, this type of merchandising is behind us. Builders today are keenly aware of their responsibility in giving the public more housing value for its money. It is now well established that despite all of the ‘ballyhoo’ regarding the ‘prefabbed’ or industrialized house, the greatest advance in the technique of building has come through the intelligent use of modern design.²³

Design Origins and Influences

Smith never discussed the specific origins of his design for the flat top, but there were many possible influences among the San Francisco Bay region architecture and design community. The Bay Area was one of the richest zones of regional Modern expression in the nation during the first half of the twentieth century. Architects like William Wurster, Joseph Esherick, Vernon DeMars, and Gardner Dailey practiced a local Modernism beginning in the 1930s that influenced mass housing in the region, including Smith’s designs. The rejection of formal Modern hallmarks and combination of high style and vernacular elements in Bay Area modernism made it particularly accessible to those like Smith who were engaged with the world of art, but made their living building. Several regional Modern architects were also engaged in economy housing programs that may have been influential in Smith’s designs. As noted in Chapter 4, Vernon DeMars designed and constructed hundreds of economical single-family dwellings with flat roofs during his tenure as the regional Farm Security Administration architect, including in nearby Vallejo, California. Architect Gardner Dailey’s *LIFE* House design, which was influential in David Bohannon’s design development, must also come into the mix, though Smith’s plan is considerably different. (Figure 5.10) Further afield in southern California, architect Gregory Ain designed and developed several tracts of inexpensive single-family dwellings with flat roofs and Modern styling beginning in the mid-1940s, most famously, the Mar Vista Tract. (Figure 5.11) DeMars, Dailey, and Ain, like Smith, embraced design as a means of enhancing the lives of everyday people, producing austere designs offering socially

²² “Warning at Housing Conference,” *San Francisco Chronicle*, February 11, 1949, 15.

²³ “Volume, Quality High, Says Speaker.”

functional, but economical space.²⁴ That said, “flat-tops” were also a common choice in publicly sponsored housing programs in the name of expediency and economy.

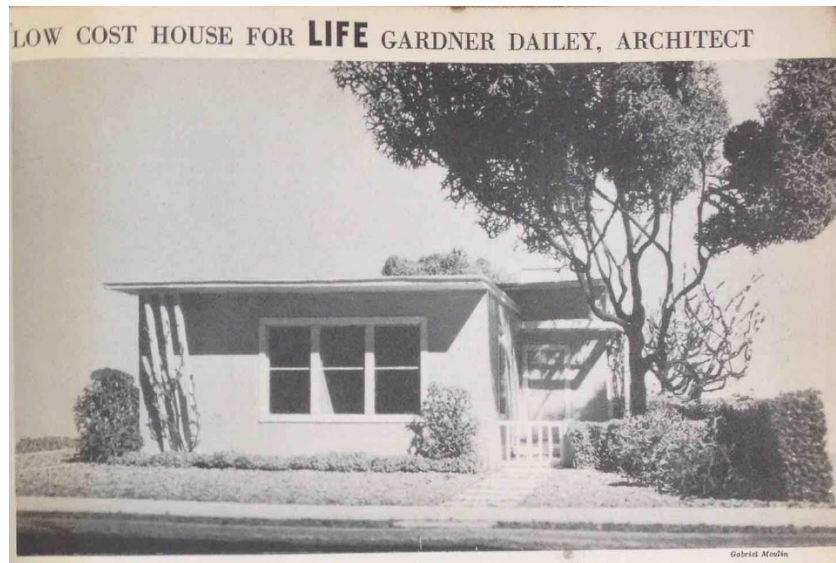


Figure 5.10. Gardner Dailey’s *LIFE* House, 1940. Source: *Architectural Forum Book of Low Cost Houses*, 1940.



Figure 5.11. Gregory Ain’s Mar Vista tract in Los Angeles, completed in 1948. Source: Architecture and Design Collection. Art, Design & Architecture Museum; University of California, Santa Barbara.

Smith’s flat top included a number of technical innovations and housing industry firsts. Smith was one of the earliest users of the exposed beam and plank sheathing ceiling system in

²⁴ See Kevin Starr, *Golden Dreams: California in an Age of Abundance, 1950-1963, Americans and the California Dream* (New York: Oxford University Press, 2009), 41.

production housing.²⁵ He was one of the first builders to solve the vexing problems of moisture and insulation in slab foundation and flat roof construction. He developed a system to insulate and seal the concrete slab foundation, creating a successful moisture barrier between the slab and interior flooring materials. Smith also developed a pattern of felt, insulation board, and gravel sheathing that insulated the flat roof and repelled moisture. These features made the economical foundation and roof forms commercially viable in that the builder could produce a low-cost and reputable product. Smith also added features to support future expandability in his smaller house designs. He positioned framing on the rear wall of the master bedroom to accommodate adding a third bedroom and structured the master bedroom closet to convert to a hall to the additional rooms added to the rear elevation.

Design Risk and Risk Management

Smith believed with respect to his flat-top design that, “the public will not fight shy of houses which are new in design, if they represent sound values.”²⁶ But in 1948, his design choice bucked conventional wisdom among home builders. The Modern aesthetic – particularly the flat roof – had made little headway in the for-profit building community by this time in the Bay Area or elsewhere. In the late 1940s, the assumption among most builders was that only the luxury house market – then houses costing \$50,000 or more – would be interested in so-called “modern architecture.”²⁷ Builders and consumers remained skeptical of consumer acceptance of Modernism or its stylistic longevity into the 1950s. Architect Paul Williams, who designed for many developers, wrote in his book *New Homes for Today* in 1946, “Many people say they would like a modern home if it did not have a flat roof, pointing out that a home should not resemble an office or factory, most of which have flat roofs.”²⁸ In 1951, a survey of builders on what aspects of contemporary design had the greatest acceptance in their regions, only builders in the Southwest, Southeast, and Pacific noted any acceptance of flat roof forms. For most of the rest of the country, the form was still “too radical.”²⁹ The FHA was similarly unconvinced about public acceptance of the flat roof. In 1941, the FHA directly dismissed the use of flat roofs in its 1941 “Modern Design” bulletin, stating, “The flat roof is no more vital to modern than it is to Georgian architecture...”³⁰ Well into the 1950s, select regional FHA offices refused to approve mortgage insurance for houses with flat roofs.

Smith did encounter struggles getting his flat tops on the market. When Smith first approached the local FHA underwriting office in 1947 for plan review, the reviewing official wholly rejected his designs, reportedly saying, “You’ll go broke if you try to sell that house.” Then regional director D.C. McGinness (who would later work for EWSDO), recalled “I took one look at Earl’s house and I said, ‘That looks like hell!’” Smith’s own father looked at his design

²⁵ Starr, 47.

²⁶ “Doing Something About Low-Cost Houses,” 89.

²⁷ Lee Geist, “He Builds Bargains to Live In,” 39.

²⁸ Paul R. Williams, *New Homes for Today* (Hollywood, California: Murray & Gee, 1946), 7.

²⁹ NAHB-AIA Collaborating Committee, “Design Clinic: What Features of Contemporary Design Have Met with the Greatest Customer Acceptance in Your Area?,” *NAHB Correlator*, April 1951, 113–16.

³⁰ Federal Housing Administration, “Modern Design,” Technical Bulletin (Washington, D.C.: Federal Housing Administration, 1941), 6, Prelinger Library, San Francisco, Calif.

and said, “Who’d want to buy a mouse trap like that?” Colleagues at the California Real Estate Association joked that Smith and his brothers would soon be called the “Flat-broke Smiths” instead of the “Flat-Top Smiths.” After his FHA rejection in 1947, Smith took out a personal loan to construct a flat top prototype in hopes of getting a future loan for large-scale construction. Neighbors of the building site in El Cerrito, California objected to the experiment and began circling a petition against the project. Smith managed to assuage them, promising to take the house down if they still objected after its completion.

Modern Design in a Culture of Continuity and Risk Aversion

Institutional and industry resistance to Modern design was rooted in a building culture that valued design continuity and was inherently risk averse. Common house builders, as Tom Hubka has demonstrated, generally worked in a vernacular vein, following defined “standards of appropriateness and popular acceptance in common housing environments.”³¹ This meant following, and thus reinforcing a local consensus of proven house plans and types and refining them over time, but with only modest differences.³² The advent of Modernism in the professional design community in the United States challenged the industry’s preference for measured design progress and fueled considerable anxiety.

Builders’ conservative approach grew from their combined, learned experience over the previous two decades. The industry was still recovering from its mistakes during the speculative land subdivision and building booms of the 1920s. They viewed this period in hindsight as one of poor design, overdone aesthetics, unproven materials, and shaky financing – a heady time of indiscretion that contributed to terrible financial losses for producers and consumers in the 1930s. Builders and FHA officials viewed the late 1930s and 1940s as an important rebuilding period in American housing production – a period of active, but cautious recovery and revitalization. The home building industry pursued a vision of a progressive, industrialized, and scientifically-informed mass home building industry, but they were also skeptical of any instant transformation delivered by any one architectural approach, technology, or new material. Building industry leaders described their design approach in the 1940s as that of “forward-looking ‘middle-of-the-roaders’.”³³

The FHA’s approach was similar. The administration’s 1941 bulletin on “Modern Design” acknowledged that Modernism was probably an architectural design movement with staying power, but advised a “wait-and-see” approach. The bulletin stated on its first page that, “... where rapid and unforeseeable change is occurring, the hazards to a system which relies upon stability over a long period are increased.”³⁴ The authors foresaw a period of “considerable change and development” ahead for Modernism in the US, and warned that it would be important to consider Modern designs in relation to “deeply ingrained ideas of what constitutes a house” and the likely rate of obsolescence of design features with future design

³¹ Hubka, *Houses without Names*, 34.

³² Hubka, 33, 37.

³³ Joseph B. Mason, “America’s Builders Speak on Post-War Home Building,” *American Builder*, May 1943, 35.

³⁴ Federal Housing Administration, “Modern Design,” 1.

development.³⁵ Bulletin authors even used the very architectural movements that bore Modernism as an argument against it, stating,

A striking example of the exuberant and devastating course of novelty in residential design may be observed in the confusion and rapid succession of styles, new and adapted, which followed the break-down of architectural tradition beginning in the period just preceding the Civil War and continuing until a more restrained taste gained a foothold early in the present century.³⁶

Reinventing Modernism as Contemporary Design

In the early 1940s, the home building industry's strategy regarding Modernism was to separate its aesthetic and planning principles. The FHA was one of the first industry partners to suggest home builders pick and choose the most advantageous elements of Modern design in its building products. In its 1941 "Modern Design" bulletin, the FHA wrote of Modern design, "... where the unconventional modes do make possible a more thorough-going expression of a way of life, which has already found expression in the plan of the house, their vitality will be more enduring."³⁷ Why go beyond improving elements of plan and structure or pursue radical change when "skillful adaptations or gradual and still more skillful evolution" was ultimately more productive?³⁸ Builders embraced the new space planning principles Modernism espoused, but aesthetically and formally, most home builders serving the mass market rejected "hard" Modernism.

Builders also recognized that the relative simplicity of Modern design offered distinct advantages in materials and process efficiency – both beneficial to builders' production volumes and bottom lines. The FHA pointed out that Modern planning principles and structural systems offered the home builder certain advantages in constructing efficient, economical houses. "Modern" or more open houses plans, for example, facilitated more efficient circulation and functional relationships between rooms. These more open plans were better designed to suit "present modes of living, to facilitate efficient housekeeping, and to permit an economical use of materials." Modern design also offered builders considerably more freedom in their designs while reducing material and labor costs. The FHA noted that Modern design allowed more flexible plans because the idiom ignored any confining principles of balanced elements or symmetrical shapes. Modern plans were also useful in, "directly, boldly eliminating decorative features and relying on texture and color of materials together with skillful arrangement of masses and openings to produce good esthetic [sic] effect."³⁹ The result was a compact, efficient plan permitting simple, economical construction.⁴⁰ Modernism's real value was its economy and flexibility, not its aesthetics.

³⁵ Federal Housing Administration, 1.

³⁶ Federal Housing Administration, 4.

³⁷ Federal Housing Administration, 5.

³⁸ Federal Housing Administration, 4.

³⁹ Federal Housing Administration, 2.

⁴⁰ Federal Housing Administration, 2–3.

This principle became the basis of the acculturation of international Modernism into American popular culture. *House Beautiful* editor Elizabeth Gordon's 1953 diatribe against International Modernism, "The Threat to the Next America," espoused many of the same ideas. Her condemnation of Modernism's privileging of form over functionality and call for a more human-centered, livable Modern design was some of the most influential thinking on how builders would assimilate Modernism to the needs of a consumerist versus custom house market.⁴¹

The separation of spatial and planning concepts from aesthetic expression was a fruitful distinction for builders comfortable with "middle of the road" progressivism in design. Seeing the economic and market advantages of Modern design principles, builders readily adapted their plans to include more open floor plans, multifunctional rooms, larger expanses of glass, asymmetrical plans, low-pitched roofs, and minimal ornament focused on color and texture. *Architectural Forum's* 1949 special issue on "The Builder's House" called out the increase in these types of design features as proof that "modern thinking" was having an influence on merchant builders.⁴² At the 1950 NAHB convention, architects and builders debated what people wanted in "today's houses" and noted an "awakening to contemporary design." Earl Smith, speaking at the same meeting, noted, "The trend toward modern design is having its effect on sales. Any builder who, as we go forward, refuses to recognize this trend, may find himself in difficulty."⁴³

During this period, builders began to define their experiments with aspects of Modern design as something distinct from Modernism. By the early 1950s, builders started referring to their hybridized work as "contemporary" design. The NAHB-AIA Collaborating Committee, composed of architects and builders, collectively defined contemporary design in 1957. The conclusory statement read:

Contemporary Design [sic] is architecture which varies sufficiently from previous periods to make possible more comfortable, convenient use of living space in conformance with the changing habits of the present time; which selects from new and old materials to achieve top quality; and which uses stylized innovations of construction only where they serve to solve the problem in a more satisfactory fashion.⁴⁴

Contemporary design was not a style, but rather a mode of design thinking, one that embraced progressivism, but rejected pointless novelty. As one committee member wrote,

⁴¹ See Elizabeth Gordon, "The Threat to the Next America," *House Beautiful* 95, no. 4 (April 1953): 126–32, 250–51.

⁴² "Portfolio of Builder Details: Plan and Design," *Architectural Forum* 90, no. 4 (April 1949): 104.

⁴³ Bob Fawcett, "Home Builders Lay Plans for Booming Year Ahead," *National Real Estate and Building Journal* 51, no. 3 (March 1950): 44.

⁴⁴ NAHB-AIA Collaborating Committee, "Design Clinic: What Is Your Definition of Contemporary Design?," *NAHB Correlator*, March 1951, 116.

True contemporary design is the solution of the problem of utilizing modern materials, equipment and knowledge to provide suitable environment and protection for our daily lives. This does not mean that we cannot use past methods or forms, but merely that we are not restrained by them. Thus we build on the past, but are not hindered by it.⁴⁵

Contemporary design was more than a softened or masked Modernism; rather it was an integration of old and new design principles that balanced market acceptability with improvements in process efficiency and economy. The flexible, malleable nature of contemporary design also suited the building industry's geographic and market diversity and risk aversion.

Making Modern Design Work

In this environment of design continuity and risk aversion, Earl Smith stood out in 1947 with his straightforward modern styling and signature flat roofs. Of all the aesthetic features of Modernism, the flat roof may have been the most difficult for consumers and builders to accept. Smith proved, however, that these concerns were less of a barrier when one looked toward the lower end of the housing market. Over the next decade, Smith demonstrated the viability of his model and developed carefully crafted production, distribution, and marketing systems to help manage the inherent risk of his novel product and target market. His success counters arguments that houses with flat roofs transmitted cultural statements about occupants' class and character, and was most popular among progressive, highly educated, or even "rebellious" buyers looking to defy convention. Smith's success also counters arguments that, by contrast, lower classes were "frightened" by flat roofs, not secure in enough in their social status to buck prevailing tastes and trends.⁴⁶ While Eichler marketed his flat roofed houses to the professional classes, builders like Smith targeted a different market with fewer qualms about style.

After Smith's initial rejection by FHA, failure to find financing, and difficulty with the El Cerrito neighbors about his pilot flat top project, Smith took great pleasure in recounting how he prevailed. His story is perhaps an apocryphal tale, but an entertaining one. Smith had a mortgage financier at the site toward the end of construction, hoping to get institutional financial backing. The banker remained unconvinced. As they prepared to part, a red convertible screeched to a halt in front of the house and the young woman driver said, "What a beautiful house! If it's for sale, I'd like to buy it." Smith had his first sale.⁴⁷ Convincing financial backers and the FHA took more than a single sale, however. Smith eventually constructed ten pilot homes to demonstrate the market viability for his design. After selling his first ten houses "within two hours of the time a small advertisement appeared in the local paper," Smith constructed twelve more dwellings. He used testimonials from his first ten homeowners to

⁴⁵ NAHB-AIA Collaborating Committee, 115.

⁴⁶ Martin, "Tract-House Modern," 23, 25–26.

⁴⁷ "What Kind of Man Is the New NAHB President?," 144; Lee Geist, "He Builds Bargains to Live In," 38, 39.

convince the FHA that his flat tops, while non-traditional in appearance, offered sufficient amenities and quality to satisfy buyers.⁴⁸

By 1948, Smith had financial backing and FHA mortgage insurance for his design and his flat top model was the first dwelling with a flat roof to achieve FHA insurance approval. FHA regional director D.C. McGinness, who initially expressed dismay at the aesthetics of Smith's house, encouraged Smith to construct his first flat-top development – the 64-dwelling Serpa Tract in unincorporated Contra Costa County.⁴⁹ The tract won first place from the NAHB Neighborhood Development Contest in Northern California in 1949 for a group of single family homes exceeding fifty units.⁵⁰

More recognition followed. In 1951, the Associated Home Builders of the Greater East Bay chose Smith to design and construct the centerpiece of the California International Home Show in Oakland: the California “living center,” a model home in the middle of the exposition that would demonstrate recent advances in modern housing. (Figure 5.12) The model home was to “showcase maximum livability at minimum cost” through contemporary design, “a California innovation constantly growing in popularity across the Nation.”⁵¹ The living center was Smith's signature flat top, along with an entire rear wall of glass opening onto a landscaped patio. Smith achieved national recognition through profiles in *LIFE* magazine in 1953 and a feature in the *Saturday Evening Post* in 1954. He also rose to become a leader in the regional and national home building industry. Smith pioneered the NAHB's popular “Shop Talk” and “Trade Secrets” series at their annual conventions and was the founding chairman of the NAHB's National Housing Research Institute. He also regularly chaired NAHB design competitions, which he viewed as essential to building industry progress. He received appointments to the Housing and Home Finance Agency Housing Research Division Advisory Committee in 1951 and the Advisory Committee to the FHA in 1954. In 1955, he served as president of the NAHB, a role that included exchange programs with residential building programs in the USSR.

⁴⁸ “Doing Something About Low-Cost Houses,” 87–88.

⁴⁹ “What Kind of Man Is the New NAHB President?,” 144. McGinness later became an associate of Smith's, building his flat-top designs on a contract basis.

⁵⁰ “A Glance at Local Housing,” *San Francisco Chronicle*, January 30, 1949, 3L.

⁵¹ “Model ‘Living Center’ to Be Built as Home Show Exhibit,” *Oakland Tribune*, February 13, 1951, 24.



Figure 5.12 “Model home living center” built by the EWSO at the 1951 California International Home Show in Oakland. Source: Oakland Tribune, March 11, 1951.

By the end of his career, Smith had built flat tops in over sixty northern California communities. (Table 1) Because of his focus on lower-income and working-class buyers, these sites were primarily on the industrial fringes of the Bay Area. These zones offered the least expensive land - a critical factor in keeping housing prices low - and were near major employment centers in manufacturing, shipping, and the petroleum industry. Smith built the majority of his tracts along the heavily industrialized shoreline of San Pablo Bay in Contra Costa County and the industrial suburbs of the East and South San Francisco Bay areas. After completing his early demonstration tracts in unincorporated El Sobrante, Smith built his operation through wartime defense housing programs for the Korean Conflict. In 1951, EWSDO completed an 1,800-house tract called Shore Acres in West Pittsburgh complete with a shopping plaza – an unusual feature for Smith. The development housed workers from eight defense industry and military installations in the area. Westfield Village, a defense housing tract in Sacramento followed the same year. EWSDO completed another defense housing tract comprised of about 250 houses called La Riviera in Vallejo in 1952.

The mid 1950s were a prolific period for private tract development at EWSDO. The firm built the 224-house Fairmede neighborhood in Richmond (1954) and the 462-house Montalvin Manor in San Pablo (1954). In the South and East Bay, EWSDO completed a 1,600-home tract called Milford Village near the Ford Motor Plant in Milpitas (1954), Shannon Estates in San Jose, and the 300-house Los Ranchitos tract in Newark. Smith’s interest in the housing needs of working-class and lower-income buyers evolved over the 1950s to include community facilities planning. His Milford Village development at Milpitas, for example, included schools, a shopping center, and lots set aside for church construction. All of these developments offered a standard package of homes and financing terms. EWSDO offered a selection of three-bedroom, one-bath; three-bedroom, two-bath; and four-bedroom, 2-bath models ranging in

price from \$9,250 to \$13,000. The highest-price model also included a two-car garage and full suite of kitchen appliances.⁵²

Table 1. Identified EWSO Developments as of 1970

Location and Development Name	Date
Anderson, Meadow Lane	Unknown
Atwater, Highlands Park	Unknown
Auburn, Auburn Village	1954
Chico, Bidwell Manor	1954
Dixon, Dixon Gardens	1953
El Cerrito, Arlington Manor	1951
El Sobrante, Canyon Park and Rancho Vista	1948
Eureka, Humboldt Hill	1956
Fortuna, Compton Heights	1974
Fremont, Orchard Park (Centerville)	1972
Gilroy, Park Meadows	1954
Gridley, Meadow Vista	1954
Lincoln, Unknown	Unknown
Martinez, Vine Hill Gardens	1953
Milpitas, Milford Village	1954
Newark, Los Ranchitos	1954
North Sacramento, Wil-Acres	1959
Orland, Orland Heights	Unknown
Oroville, Oakdale Heights	Unknown
Pinole, Marlesta	1961
Pinole, Sunnyview	1961
Pittsburg, Shore Acres	1952
Red Bluff, Park Gardens	1969
Richmond, Fairmede	1954
Richmond, Montalvin Manor	1954
Richmond, Parchester	1950
Sacramento, Westfield Village	Unknown
Salinas, Santa Lucia	1955
San Jose, Shannon Estates, East Foothills	1954
Soledad, Rancho Vincenti	1955
Stockton, Vista del Rio	1955
Sunnyvale, Sunnyvale Manor	1949
Tracy, Arbordale	1954
Turlock, Sunnyside Manor	Unknown

⁵² Earl W. Smith Organization, "Advertisement for Milford Village," *San Francisco Chronicle*, August 19, 1956, sec. Want Ads, 8.

Location and Development Name	Date
Vacaville, Sunny Gardens	1955
Vallejo, La Riviera	1952
West Sacramento, Arlington Oaks	1952
Wheatland	Unknown
Winters, Major Vista	Unknown
Woodland, Brentwood Village	1954
Yuba City, Orchard Manor	1960

Assessing Smith’s success in 1954, the *Saturday Evening Post* reported, “Because he gave the public what no one else knew it was waiting for – the combination of modern design and just about the lowest price in the country – he has started a trend and hit the jack pot.”⁵³ Smith’s targeting of what no one else knew the public was waiting for was a risky proposition. Smith credited his willingness to take that risk to his market position. Smith observed that his small scale at the outset of his building career allowed him to be more experimental than larger, more established building firms. “I got away with it [the flat top] because I was unknown and wasn’t forced like the big boys to stay in the pattern to protect myself.”⁵⁴ But Smith also had other market factors working in his favor. Smith had a close understanding of lower-income market buyers’ needs and economic realities. As a friend told the *Saturday Evening Post* in 1954, “One reason Earl is able to think in terms of what the low-income man needs is that he was one himself for so long.” For most of his adult life before developing the flat top, Smith earned on average what his potential flat top buyers did.⁵⁵ Smith banked on lower-income buyers – many of whom faced severe housing shortages in the postwar Bay Area - appreciating the overall economy of the dwellings above aesthetic considerations. He was not alone in this assessment. In 1951, *American Builder* featured three variations of Earl Smith’s flat-top and an Eichler model as representative of an overall trend toward simplified exteriors and flat or shed roof treatments - “a style avoided by most builders in the past.” The writers believed these styles would gain greater acceptance in the market because of their economy.⁵⁶

While consumers may have been increasingly receptive to modern styling, the ultimate success of Smith’s unorthodox house form depended on his highly tailored development and merchandising methods. Selling an unusual product to an emerging consumer market required optimizing design and construction, seeking out and analyzing ready markets, and keeping costs low. Smith employed what he called “carpenter thinking” to optimize the construction of the flat top to the greatest extent possible.⁵⁷ Smith designed his flat tops to conform with the proportions of standard, dimensional lumber and other stock materials and fixtures to minimize materials processing. Like most northern California home builders, Smith used the “California method” of construction, a method developed by California builders in which house framing

⁵³ Lee Geist, “He Builds Bargains to Live In,” 38.

⁵⁴ Lee Geist, 85.

⁵⁵ Lee Geist, 84.

⁵⁶ “Home Week Display Houses Indicate Design Trend,” *American Builder*, February 1951, 110–11.

⁵⁷ Lee Geist, “He Builds Bargains to Live In,” 84.

members arrived at the building site precut and ready for assembly to maximize costs and material savings. Typical of the California method, workers used a series of jigs and templates to mark and code all the joins on precut wood members so no measuring was required on the actual construction site. Smith also improved upon the building site efficiency California method. While other local builders like David Bohannon delivered lumber in entire “house loads,” Smith broke down and staged five separate lumber deliveries to each house site. With this staging process, workers saved time by not having to sort and organize lumber into the various house sections.⁵⁸ While many builders operated their own lumber cutting operations on building sites, Smith contracted with the Griffin Building Materials Company lumber yard next door to his offices in El Cerrito, to pre-cut all his lumber. In a 1954 profile of the EWSDO, a writer for the *Saturday Evening Post* reported, “Earl figures this way he’s got his own lumber yard without the attendant headaches of maintaining a corps of buyers and expeditors or having to borrow and tie up large amounts of his own capital.”⁵⁹ To keep overhead as low as possible, Smith also rented, rather than owned the heavy equipment needed for site preparation, utility installation, and foundation preparation.⁶⁰

It was Smith’s marketing and merchandising model, however, was what kept his flat tops in production and his firm in business. By producing a housing product within the reach of the average consumer, Smith hoped to do for houses what Henry Ford did for the automobile. He intended this not just in terms of mass production methods, but also mass-market access to home ownership. In 1954, Smith said, “Henry Ford knew there was a tin-lizzie market, but who makes Model T houses except us? . . . Besides, the market obviously gets bigger as it goes down. [J.C.] Penney and Sears knew this fifty years ago, so they’re the biggest in the world. But for the building business, that’s revolutionary thinking.”⁶¹ Smith recognized his position as an outlier, but remained confident in his market. “Because we’re the only ones dumb enough to do it,” he said, “we’re going to make this the J.C. Penney of the building business, a stand in every town.”⁶²

Smith’s comparison of his firm to J.C. Penney was more than a humorous line. His business model borrowed heavily from aspects of mass retailing methods. Smith took a standardized product line – his flat tops - and distributed them in a wide network - a model akin to locating chain retail outlets. In contrast to developers like Bohannon or the Levitts who built large numbers of houses in a small number of locations, Smith built small numbers of houses in a large number of locations. Smith’s average tract size was initially less than 100 dwellings, but EWSDO had twenty-five to thirty tracts under construction in as many as fifteen communities at one time during the 1950s.⁶³ This tactic was economically advantageous because a highly mobile building operation like EWSDO could seek out and exploit pockets of inexpensive land –

⁵⁸ Lee Geist, 83.

⁵⁹ Lee Geist, 84.

⁶⁰ Lee Geist, 84.

⁶¹ Lee Geist, 39.

⁶² Lee Geist, 85.

⁶³ Lee Geist, 84; “What Kind of Man Is the New NAHB President?,” 144, 146.

one of the largest cost bases in building.⁶⁴ This tactic was strategically advantageous because it helped mitigate the risks of building an unusual housing type by sprinkling the dwellings among a range of discrete housing markets. As his organization grew, Smith also began franchising his home design through an associate model. Under the associateship model, EWSDO arranged for all FHA approvals, all site planning issues, and sometimes, project financing. The organization instructed associate builders on their construction methods, and further provided and scheduled delivery for all precut building materials. EWSDO staff, similar to FHA inspectors, also did regular construction checks. The firm served as the sole sales agent for the houses, thereby controlling the public representation of their products. This cost builders the relatively small cost of \$300 per house. In 1954, EWSDO had seven associates, including Smith's father, George Smith, and his brother-in-law, builder William Maynard.⁶⁵

Unlike builders who knew their discrete local market intimately, Smith's model meant he had to assess new communities' housing needs and market potential on a regular basis. As Smith's market share grew, he increased his professional building and market research staff. By the early 1950s, EWSDO employed a series of engineers, a full range of building trade experts, and a sales staff headed by Smith's brother, Harry Smith. At this time, EWSDO employees included some of the most prominent planning and technical experts in the building industry. Architect Carl Lans, who previously worked at the FHA and directed the Technical Services Division at NAHB, oversaw all the firm's planning processes and coordinated with the FHA, VA, and local government officials.⁶⁶ D.C. McGinness, the former regional director of the FHA who initially disliked Smith's flat tops, had also joined the firm.⁶⁷ Other design staff included architect and engineer H. Donald West, who supervised all the infrastructure development for Smith's subdivisions. Many of the firm's staff were "converts" to Smith's housing model and development methods and focused on low-cost housing solutions. West, for example, joined the Smith organization after he saw some of Smith's houses while scouting lots for his own speculative building work.⁶⁸ Lans reported he joined the firm because "he felt that in spite of all the talk, Earl was the only one doing anything about the problem [low cost housing]."⁶⁹

The combination of building, economic, and marketing expertise at EWSDO made the organization a highly efficient, precisely targeted development machine. Smith laid out his firm's market selection process to NAHB members in 1954, showcasing the type of familiarity with local markets builders fostered to inform decision-making. To assess an area's homebuyer demographics, EWSDO's marketing staff would interview a range of area employers and the personnel officers at the largest local companies in a location about area housing needs and worker incomes. EWSDO would also consult with local banks on area residents' savings habits and visit the local chamber of commerce for insight on the local economic outlook. The firm

⁶⁴ "Doing Something About Low-Cost Houses," 89.

⁶⁵ Lee Geist, "He Builds Bargains to Live In," 85; "What Kind of Man Is the New NAHB President?," 146-47.

⁶⁶ "What Kind of Man Is the New NAHB President?," 146.

⁶⁷ "What Kind of Man Is the New NAHB President?," 144, 146.

⁶⁸ Lee Geist, "He Builds Bargains to Live In," 83.

⁶⁹ Lee Geist, 83.

studied current and proposed home building operations in the area, noting the number of units, prices, and monthly terms offered.

With the market assessed, Smith then scaled the design and amenities of his flat top houses based on a careful analytic rubric. Smith used the firm's market research program to hone in on which segment – or income category – provided the best market in the area and where the firm needed to target its prices to be competitive.⁷⁰ Typically, the optimal income category for the flat top in the Bay Area was between \$3,000 and \$5,000 – which was also conveniently one of the most underserved segments of the national housing market. Figuring that this market segment could afford to spend one-fifth of its annual income on housing, EWSDO used that number as a target for the combined purchase price, debt service, taxes, and insurance on a new home. The firm then scaled a flat top product or “package” to meet the target sales price and drafted financing terms attractive to that respective market.⁷¹ This included tailoring building size, amenities, and incidentals like appliance packages. The resulting houses were thus a distinct reflection of the financial profile of potential area buyers.

But Smith hedged his bets when it came to capital outlay for construction. Once EWSDO settled on model specifics, the firm purchased several lots in a new development location outright but purchased only an option to buy the surrounding larger tract. Smith constructed several model homes to generate orders, but no large-scale construction began until after collection of orders for the homes.⁷²

To generate housing orders, Smith did advertise, though he saw this as one of the least important aspects of his business method. Smith held that if a firm's market analysis, product design, and pricing were handled carefully, “the fourth step [selling] becomes a relatively small part of the whole.”⁷³ Smith used his advertising for the typical reasons: to let potential buyers know about his product and to get them out to look at one of his tracts. But given his unusual product, Smith also managed his risk. Until the mid-1950s, when his model gained national fame, Smith's newspaper ads were primarily terse, text-only affairs in the real estate sections. When he did take out a larger ad, it usually contained little imagery, or a stock image of a ranch house unlike the flat-tops actually on site. Price, rather than style, was the biggest selling factor in Smith's operation. Even in the mid-1950s, when Smith's ads featured artistic renderings of his modern flat-tops, his advertising campaign consisted primarily of billboards with no images and the text, “Homes, \$6,695.”⁷⁴ (Figure 5.13) Smith was confident that a solid bargain would attract buyers, but was clearly wary of both the expense of advertising and the potential of turning off buyers before they could inspect his homes in person.

⁷⁰ Earl W. Smith, “The Secret of Successful Merchandising,” *NAHB Correlator* 8, no. 11 (November 1954): 209–11.

⁷¹ Smith, 209–11.

⁷² “What Kind of Man Is the New NAHB President?,” 145.

⁷³ Smith, “The Secret of Successful Merchandising,” 209.

⁷⁴ Lee Geist, “He Builds Bargains to Live In,” 82.

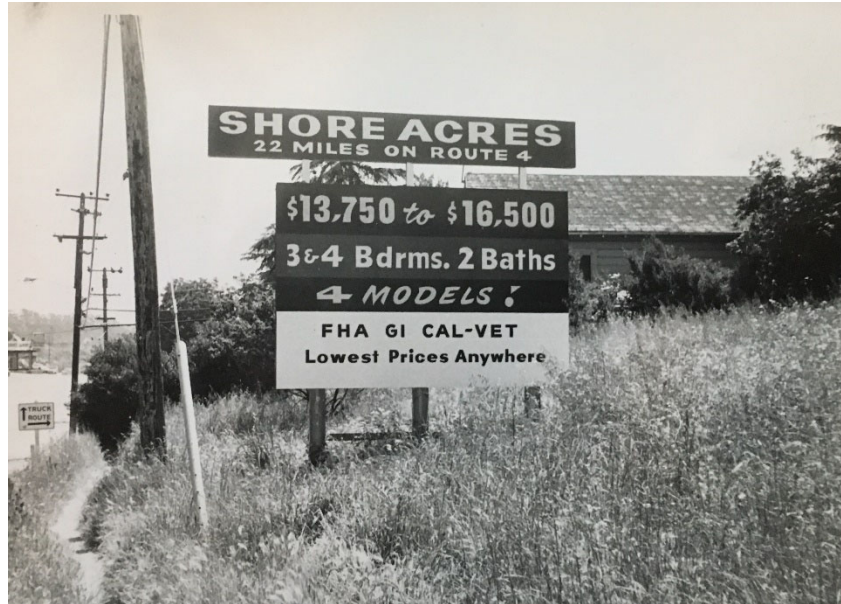


Figure 5.13. Billboard for Shore Acres in Pittsburg, California, ca. 1952. Source: Duncan Smith Collection, Alamo, California.

Flat Tops on the Land: Parchester Village, Richmond, California

Only one of Smith's dozens of developments in northern California has any significant documentation that can illustrate his practices at work or the unusual nature of his market focus. In 1951, Smith constructed a tract of housing in what was then unincorporated Contra Costa County that became one of the first open occupancy, and therefore African-American, suburban developments in the East Bay. (Figure 5.14) Parchester Village, now part of the City of Richmond, is an uncommon, but telling, example of how Smith's design and development model functioned within the local real estate economy. While most of Smith's flat-top housing tracts were independent projects, he also responded to requests from communities inviting him to assess their lower income housing markets and construct homes.⁷⁵ Parchester Village was one such occasion, and it gave him an opportunity to develop one of his first substantial tracts of flat-tops.⁷⁶

⁷⁵ "What Kind of Man Is the New NAHB President?," 146.

⁷⁶ Starr, *Golden Dreams*, 48.



Figure 5.14 Aerial photo of Parchester Village in Contra Costa County, ca. 1951. Courtesy of the Richmond Museum of History, Richmond, California.

Parchester Village came about through the efforts of a local minister, the Reverend Guthrie Williams; a local politician, Amos B. Hinkley; and a local industrialist, Fred D. Parr. During World War II, Richmond and the surrounding industrial areas of Contra Costa County attracted tens of thousands of workers from around the nation with jobs in war time industries and support services. Many of these newcomers were African Americans from the southern United States. Housing during the war was a scarce commodity, and after the end of the war, returning servicemen made the housing situation in the Richmond area and around the Bay even more dire. Temporary wartime housing was slated for demolition and African-Americans, like many other minority groups in the region, struggled to find any kind of suitable housing. Richmond city council member Amos Hinkley approached Reverend Williams in 1949 during his tenure as president of the Universal Non-Partisan League, an advocacy organization for racial equality, for support in his reelection campaign. A former carpenter and ship yard worker, Reverend Williams was keenly aware of the housing scarcity for African-Americans in the city. Williams and the League agreed to support Hinkley's reelection if he would commit to work for housing for the African-American community. Hinkley introduced Williams to Fred Parr, president of Parr Terminal Company, and one of Hinkley's key supporters.⁷⁷ Parr committed to supporting a housing project open to African-Americans in Richmond.

⁷⁷John Parr Cox, Parr Terminal: Fifty Years of Industry on the Richmond Waterfront, interview by Judith Dunning, 1986, Oral History Center, Bancroft Library, University of California, Berkeley, https://ohc-search.lib.berkeley.edu/catalog/MASTER_731. Parr Terminal was one of the single most influential developers of the industrial waterfront in Richmond and adjacent Contra Costa County. Parr was responsible for attracting the

Hinkley lost his reelection, but Parr made good on his promise to the Universal Non-Partisan League.⁷⁸ In 1950, Parr donated approximately seventy-five acres of land near the San Pablo Bay shoreline between the Santa Fe and Southern Pacific railroad lines.⁷⁹ Williams and several other local ministers formed the Richmond Interdenominational Ministerial Alliance to promote the village and support housing sales.⁸⁰ Supporters intended the Parchester project to be a model for open occupancy housing, an “all-American” project that would redefine the term to meaningfully include people of color. The development was believed to be the first tract house development in Northern California, or perhaps the state, explicitly open to African-American residents.⁸¹

Williams approached Earl Smith the same year to discuss constructing homes on Parr’s donated land. Williams may have chosen Smith as a development partner because of his existing ties with the local African-American community.⁸² At the outset of his independent building career in 1939, Smith began working with Mrs. Laura B. Clarke, an African-American, Columbia University-educated social worker, on a series of investment properties. Over the course of their relationship, Smith and Clarke constructed about thirty homes.⁸³ At Parchester, Earl Smith demonstrated the speed and efficiency of his new model, constructed 407 flat top dwellings on 5,000 square-foot lots at the rate of three every eight hours. The Parchester models were variations on Smith’s designs for his pilot Serpa Tract, consisting of a two-bedroom, 800 square-foot home priced at \$6,795 and a three-bedroom, 950 square-foot home priced at \$7,765. Depending on their veteran status, buyers could own these homes for as little as \$99 down and \$45 per month in mortgage payments.⁸⁴ (Figures 5.15 through 5.17) While the two-bedroom houses were nearly identical to the Serpa Tract designs, Smith substantially rearranged the three-bedroom models. These houses had a central living and dining area, the kitchen and garage to one side, and bedrooms and bath to the other.⁸⁵ All came with fully landscaped lots.

Ford Motor Company, Perrelli Canning Company, and more than one hundred other industrial interests to the Richmond waterfront between 1926 and the end of World War II. Parr was also key in attracting Henry J. Kaiser’s massive shipbuilding operations to Richmond during World War II.

⁷⁸ Gordon Raddue, “The Little Village That Could: Success Thrives in Bustling Parchester,” *North East Bay Independent & Gazette*, December 4, 1980, 21.

⁷⁹ Raddue, 21.

⁸⁰ Parchester Village Neighborhood Council Homeowners & Concerned Citizens, “Parchester Village History” (1995), 2, Richmond Museum of History, Richmond, California.

⁸¹ Rona Marech, “Richmond’s Global Village,” *San Francisco Chronicle*, May 3, 2002, East Bay edition, sec. G, G1, G5; Parchester Village Neighborhood Council Homeowners & Concerned Citizens, “Parchester Village History,” 1.

⁸² Parchester Village Neighborhood Council Homeowners & Concerned Citizens, “Parchester Village History,” 2.

⁸³ “What Kind of Man Is the New NAHB President?,” 144. Census records show that Laura Clarke was employed as a state social worker in 1940. Her husband, Henry S. Clarke, was a railroad porter in 1930 and 1940.

⁸⁴ “Prize Winning Contemporary Design: Parchester Village,” *NAHB Correlator* 4, no. 8 (August 1950): 12.

⁸⁵ “Prize Winning Contemporary Design: Parchester Village,” 13.

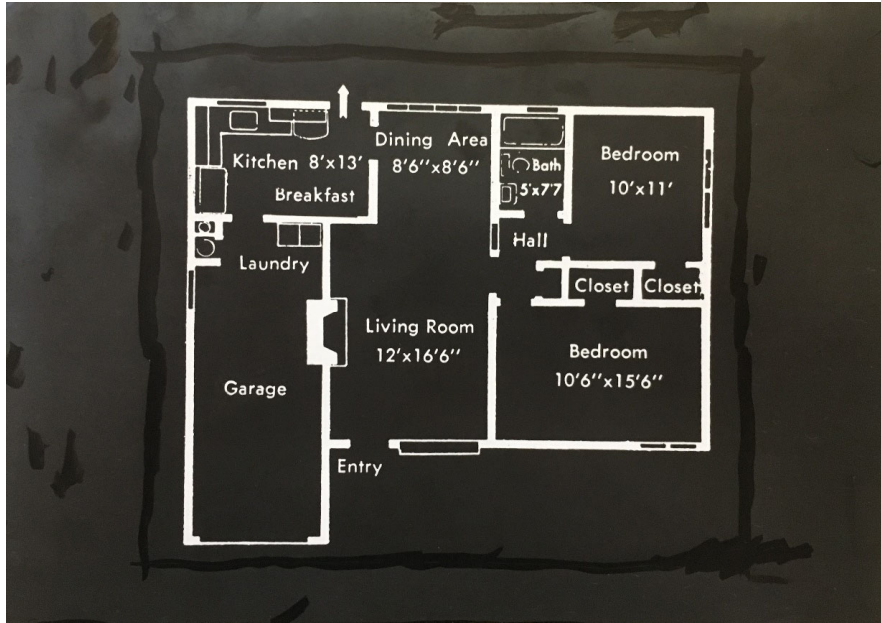


Figure 5.15. One of two plans for the Parchester models. Courtesy the Duncan Smith Collection, Alamo, California.



Figure 5.16. Typical home in Parchester Village, Richmond with garage incorporated into living space
Photograph Elaine Stiles 2016.



Figure 5.17. Typical home in Parchester Village, Richmond with garage remodeled as living space.
Photograph Elaine Stiles 2016.

Advertisements for the first unit of the Parchester development promoted it as a “home community for all Americans,” subtly signaling its open occupancy status. (Figure 5.18) The advertisement presented a long list of home features underscoring its middle-class quality such as choices of interior colors and finishes, a fireplace with damper, picture windows with shades and screens included, thermostatic heating, attached garage with overhead door, and durable kitchen and bath fixtures. The advertisement also emphasized the development quality, promising landscaped front yards and paved streets with real curbs and sidewalks. Despite the remoteness of the parcel, the Parchester advertisement assured potential buyers that it was indeed a “suburban community having all city advantages” of utilities, sewers, and bus transportation. All of these were worth mention for homes selling at a price point where such amenities were far from a given.⁸⁶ Ads for later units made more direct appeals to African American buyers, touting “Unrestricted New Homes” in a “Beautiful modern Calif. Ranch style.”⁸⁷

⁸⁶ Earl W. Smith Organization, “Presenting a Home Community for All Americans: Parchester Village [Photocopy of Advertisement]” (1950), Richmond Museum of History, Richmond, California.

⁸⁷ Earl W. Smith Development Organization, “Advertisement for Parchester Village,” *San Francisco Chronicle*, February 25, 1951, sec. Want Ads, 4.


Presenting ...a home community for all Americans!

UNIT No. 1 *Parchester Village*
 CONTRA COSTA COUNTY, CALIFORNIA

\$7100 Five Rooms to **\$8250** Six Rooms

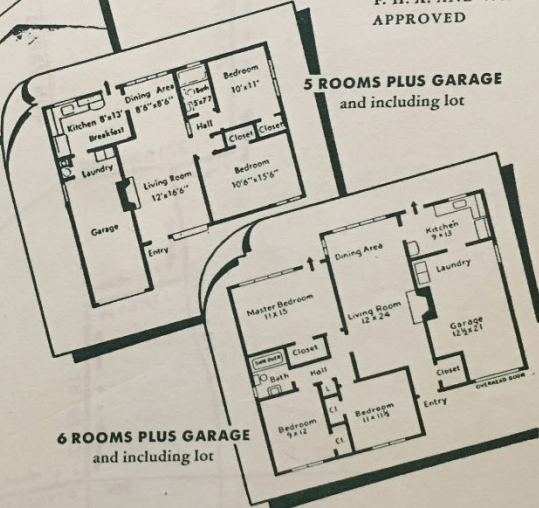
\$300 DOWN PAYMENT for VETERANS... includes closing costs and landscaping. Non-Veterans down payment: \$1000 for 5 rooms, \$1,500 for 6 rooms. Monthly payments as low as \$47.50 including taxes and insurance.

F. H. A. AND V. A. APPROVED



Features:

- ★ Spacious Lots, with Landscaped Front Yards
- ★ Choice of Plan and Lot Location
- ★ Choice of Interior Wall Colors
- ★ Fireplace
- ★ Picture Windows
- ★ Steel Sash
- ★ Copper Screens
- ★ Window Shades
- ★ Beam Ceilings
- ★ Insulated Planispheric Roof (c)
- ★ Insul-Duolithic Floor (c)
- ★ Tiled Kitchen
- ★ Coralite Bath and Shower
- ★ Copper Plumbing
- ★ Thermostatically Controlled Heat
- ★ Attached Garage with Overhead Door
- ★ Utilities and Sewers
- ★ Paved Streets, Curbs and Sidewalks
- ★ F. H. A. and V. A. Approved



PARCHESTER VILLAGE...California's newest suburban community having all city advantages—utilities, sewers, large lots, schools and bus transportation. Enjoy a home of your own in this modern home development.

PARCHESTER VILLAGE
 General Sales Office: 1344 SAN PABLO AVE., EL CERRITO
 Telephone BR 4-1027

Tel. Landscape 5-3272
 BEacon 2-4739

Figure 5.18. Advertisement for Parchester Village from early 1950s. Courtesy of the Duncan Smith Collection, Alamo, California.



Figure 5.19. African American community leaders outside of Smith’s model home in Parchester, ca. 1951. Courtesy of the Duncan Smith Collection, Alamo, California.

Parchester was a success in terms of construction and sales. By the mid-1950s, Parchester was fully occupied with 30 percent white and 70 percent Asian and African-American owners. Early residents of the neighborhood included black professionals, notably many local clergymen. But most residents were working and middle-class African-Americans, many of them veterans.⁸⁸ The homes in Parchester and Smith’s other developments bear out both the affordability and access Smith’s modern designs provided buyers as well as buyers’ privileging of price (and thus access) over style. Many of the houses at Parchester remain in their original configurations with the usual losses of decorative features and materials replacements that all older houses undergo. Others, however, formed the basis for robust, personalized renovation campaigns, including major additions and stylistic changes. The single most common change was the addition of pitched roofs, followed by rear additions, but many owners have also added complete second stories.

Parchester remains a pocket of affordability and high minority home ownership in the area. The development grew to more than 90 percent African American over ensuing decades.⁸⁹ In the 2010s, the neighborhood is still 80 percent African American, and boasts the highest rate of

⁸⁸ Raddue, “The Little Village That Could: Success Thrives in Bustling Parchester,” 21; Carolyn Penn, “Parchester Village Has Its Very Own Historian-in-Residence,” *Oakland Tribune*, July 22, 1985, sec. A, A9.

⁸⁹ Living in Parchester, and likely many other lower-cost, outlying suburban tracts in the region, was challenging. While the development had paved roads, a community center, and a church, the surrounding area remained largely undeveloped. Home owners had to advocate with the county for postal delivery, paved access roads, street lights, phone service, and school access. Unlike white lower-income tracts, Parchester residents also faced the additional onus of racism and defacto segregation. Racial prejudice and municipal divides excluded children from the local, mostly white elementary school, and eventually resulted in Parchester residents having to file a lawsuit to gain access for their children to City of Richmond schools.

black home ownership in the City of Richmond.⁹⁰ Several original owners, family members of original owners, and second owners remain in residence. Smith's designs proved a useful housing product, accommodating many families in their original iteration over the long-term, and providing a foundation for growth and change for others.

Conclusion

Smith's flat-tops were in many ways, modern to the core. The homes embodied the stylistic and planning hallmarks of Modernism in their design and they were the products of modern production methods. They were also modern in their pursuit of period ideals of economical, efficient housing for the working man. Smith's early adoption of modern design elements emerged from an identified social and market need and a strict pragmatism. Whether or not Smith admired Modern design, he adopted its hallmarks when it was clear it was the best solution to his central design problem. Form followed function in this process, but function was conceived economically and socially, rather than programmatically.

As an early adopter of modern design among large-scale home builders, Smith was an important figure in showcasing the possibilities of modern design in low-cost housing to his fellow builders, and many others appear to have experimented with the form. Period building industry publications show that builders in markets across the nation also tested the viability of the flat-top in their markets.⁹¹ Well-known large-scale home builders also used Smith's plans or modeled their houses on Smith's designs. Don Drummond in Kansas City, for instance, produced a series of tracts of what locals called "Flatties" after his wife visited California, met Earl Smith, and brought back a set of his plans.⁹² Others took advantage of the path Smith paved in getting FHA approval for affordable houses with flat roofs. In the late 1940s and early 1950s, Frank Facciolo's Philadelphia area "California Cliff Houses," also called flat-tops; Del Webb's Pueblo Gardens in Tucson; K. Sande Seness's Pacific Hills in Torrance, California; Jere Strizek's homes in Sacramento, California; John Moss's San Angelo plan dwellings; and Nairne Fisher's designs in the Markham area outside Chicago are just some examples.⁹³

Smith's adoption and adaptation of a new design language demonstrates that builders needed substantial impetus to do so and had to be adept at managing the inherent risk of such change. Smith chose a specific niche market, developed a highly specialized product for that market, and then strategically filled that need across a broad geography. This high degree of

⁹⁰ Bradley Inman, "Living in Parchester Village: Black Homeowners Strive to Preserve Their Community," *San Francisco Examiner*, January 12, 1992, sec. Real Estate, F7; Marech, "Richmond's Global Village," G1.

⁹¹ In 1947, Joseph Eichler purchased plans from Smith for \$25 and used them to construct his first two speculative homes in Sunnyvale, California. The post-and-beam framing method and flat roofs characteristic of Eichler Homes derive directly from Smith's economized design. Jerry Ditto, Marvin Wax, and Lanning Stern, *Eichler Homes: Design for Living* (San Francisco: Chronicle Books, 1995), 48–49.

⁹² "Drummond 'Flatties' - The J.C. Nichols Connection," *KC Modern*, March 12, 2009, <http://www.kcmodern.com/kcmodern/2009/03/drummond-flatties-jc-nichols-connection.html>.

⁹³ Gardner Dailey, Del Webb at Pueblo Gardens in Tucson (see Correlator 1949-3; K. Sande Seness, Pacific Hills in Torrance, CA (Correlator 1950-11); Jere Strizek, Sacramento (Correlator 1950-12); Nairne W. Fisher (architect), Markham, Chicago area (Arch Forum April 1949); Facciolo in BML Houses for a New World 96-103

focus minimized his risk, but also demonstrated his sophisticated ability to assess market tastes and needs.

CHAPTER 6: BUILDING A COLLECTIVE CULTURE: DESIGN EXCHANGE AND RESEARCH IN THE HOME BUILDING INDUSTRY

On October 4, 1955, Vice President Richard M. Nixon used a solid gold key to open the National Housing Center (NHC) in Washington, DC. The new headquarters for the National Association of Home Builders (NAHB) contained seven stories of exhibition space, classrooms and meeting spaces, and the first reference library dedicated exclusively to home building. (Figures 6.1 and 6.2) In his brief speech before hundreds of cheering spectators on L Street, Vice President Nixon hailed the benefits the housing center would bring to the American population through research and exchange of ideas among the nation's builders.¹ The forum the NHC provided for these activities came at what industry leaders saw as a critical time in the history of US housing development. Referencing rising population growth and population shifts from rural to urban areas, NAHB President Earl Smith underscored the importance of the Housing Center in responding to these changes, writing,

In the Housing Center, leaders in thought and action in this country will be given opportunity to study and ultimately resolve the problems of community expansion and growth which already beset us. . . The new National Housing Center will, therefore, in fact, become the nation's Town Meeting Hall for the constant study and improvement of the services of the home building industry to the end that all of our people may enjoy the benefits of home ownership, and take pride in having their own little piece of America.²

The NHC was a tangible expression of home builders' efforts to facilitate greater builder-to-builder exchange and increasingly, design research in order to improve the quality and reputation of their products. The creation of a central gathering space for the building industry was an effort to formalize what had been lively, but largely informal and intermittently organized patterns of design exchange between builders in the World War II and immediate postwar eras. This new "town meeting hall" in the nation's capital would provide a democratic space for the free exchange of ideas and the results would help the building industry deliver the promise of the consumer citizenship through homeownership to a wider array of Americans.

This chapter examines how home builders gathered, analyzed, and shared design information amongst themselves in the postwar period. In the 1940s and 1950s, the average home builder had access to greater volumes of design and production-related information than ever before. The popular housing and building trade press, building material manufacturers' promotional and research materials, government and institutional research, and the custom housing market saturated builders with new products, techniques, and designs.³

¹ Robert C. Albrook, "National Housing Center Here Dedicated by Home Builders," *The Washington Post and Times Herald*, October 4, 1955, sec. City Life, 19.

² Earl Smith, "National Housing Center: Housing Industry's Own Town Hall," *NAHB Correlator* 9, no. 9 (September 1955): 3.

³ James A. Jacobs, *Detached America: Building Houses in Postwar Suburbia*, Midcentury: Architecture, Landscape, Urbanism, and Design (Charlottesville [Virginia]: University of Virginia Press, 2015), 52.

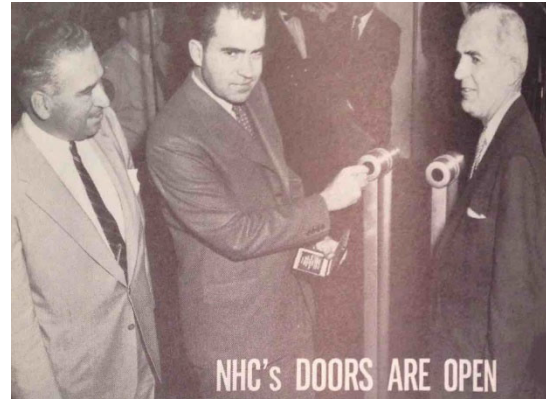


Figure 6.1. (left) 1953 rendering of the front elevation of the National Home Building Center, designed by Alvin Aubinoe. Source: *NAHB Correlator*, August 1953, cover.

Figure 6.2. (top, right) NAHB President Earl Smith (left), Vice President Richard Nixon (center), and National Housing Center Committee Chairman Hugh Crawford (right) opening the doors to the National Housing Center, October 3, 1955. Source: *NAHB Correlator*, November 1955, page 2.

Figure 6.3. (bottom, right) Earl Smith (on dais at right) and crowd on L Street at the opening of the National Housing Center, October 3, 1955. *NAHB Correlator*, November 1955, page 3.

These sources were important and influential in making design decisions, but home builders put their greatest faith in the collective wisdom and experience of their colleagues in assessing, parsing, and applying design information. As Thomas Hubka has observed of earlier periods in the building industry, home builders' innovative ideas did not come in a direct, "top down" manner from elite taste or professional architectural practice, but rather "from the side." Builders were more likely to change their design approach or schema based on market considerations and observation of what other successful builders were doing.⁴ Home builders

⁴ Thomas C. Hubka, *Houses Without Names: Architectural Nomenclature and the Classification of America's Common Houses* (Knoxville: Univ Tennessee Press, 2013), 37, 38.

carefully monitored the work of their colleagues and competitors and followed design trends and innovations from the homebuilding industry and professional architecture by travelling, attending trade conventions, and of course housing and building periodicals.⁵ Threats of slowing sales, either because of materials shortages or a tightening housing market, also spurred intensive periods of design exchange and education in the home building industry throughout the postwar period. Builders' networks illustrate the channels through which design leaders such as California's Doelger, Bohannon, and Smith were able to diffuse and influence the nature of American home building.

Within the home building community, the NAHB and its more than 400 affiliated local building associations were key sources of design research, education, and knowledge exchange for builders of all sizes. Founded in 1943, the NAHB was the home building industry's first independent, national organizational body. Its missions included advocating for the home building industry's interests in emerging national housing policy, showcasing the industry's design and production capabilities, improving housing quality, and boosting the industry's reputation among American consumers. Through the NAHB, design leaders in the housing field shaped the content and pacing of builder education and information exchange as part of the larger project of professionalization. The NAHB represented a dominant, but not universal force in the shape and form of building knowledge and knowledge exchange in the home building industry. In 1954, the NAHB had just under 15,000 members, leaving around 8,000 builders in the US who operated without NAHB membership. However, according to the NAHB their members built 80 percent of the houses constructed in the US each year.⁶ The NAHB and its members constituted those who had a strong interest and stake in the future of the industry and were influential in shaping US housing policy and the overall output of the industry. The NAHB also provided leadership and coordination for small building associations around the nation and served as the convener for larger building industry interests such as architects, materials producers, manufacturers, federal housing agencies, and the home mortgage financial sector. In short, there was little going on in homebuilding that the NAHB did not lead, coordinate, or monitor.

Four NAHB efforts that focused on education and knowledge creation illustrate the character and trajectory of builder-to-builder exchange in the study period. The character of these efforts articulates important aspects of the industry's identity as a design community, demonstrating the kinds of design information that were important to them, the tenor of the industry's relationships with neighboring cultures of building, and the tensions in the period between vernacular and empirical or official sources of design knowledge. The annual NAHB Convention, beginning in 1945 and the NAHB Trade Secrets House program launched in 1949, reflect the early program emphases on amassing and abstracting the collective knowledge of the home building community. After the early 1950s, NAHB programming was increasingly

⁵ Sherman J. Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area* (Berkeley: University of California Press, 1953), 112; John R. Sargent, "Today's Builder Must Merchandise," *NAHB Correlator* 7, no. 6 (June 1953): 31.

⁶ "House & Home Marketing Conference Hears What to Expect in 1955," *House & Home*, November 1954, 148.

focused on solving design problems through information curation, proactive research, and development activities. The creation of the NAHB's National Housing Center in Washington, DC in 1955 and the launching of the NAHB Research House series in 1957 illustrate these trends. Collectively, the NAHB programs focused on creating abstract and tangible manifestations of builders' design and technical knowledge in forms ranging from universal best practices to didactic model houses that stood in for the industry and its abilities. Discussions on design among builders reflect their key design objectives. Their emphasis was on pragmatic design, technical and materials knowledge useful in optimizing housing for efficient production, livability, and aesthetic acceptance rather than artistic expression or theory. Builders discourse also illustrates increasing claims on technological expertise in issues of mass market housing design over the two decades following World War II.

The NAHB and the Project of Professionalization

Scholars characterize professionalization as a process in which producers of special services seek to constitute and control a market for their expertise and legitimize that expertise through means like education and credentialing. Groups seeking to professionalize must define their services and market, establish a "monopoly of competence" for that market, and justify and defend the group's market relevance.⁷ Like all campaigns of professionalization, the nature of home builders' efforts was related to the nature of their work and the structure of their target community: a diverse, decentralized building culture rooted in the particularities of hundreds of local markets. Unlike in white-collar professions, the building industry did not pursue formalized education, licensure, or strict codes of ethics as markers that sanctioned belonging. The primary focuses of professionalization in the industry were better codifying the "coordinated system of knowledge, rules, procedures, and habits" that unified their building culture, abstracting building knowledge in ways their members could carry out in their local or regional market areas, and pursuing control of other forms of building knowledge that would support their dominant hold on housing production.⁸ The NAHB also focused on differentiating their knowledge from that of neighboring professions like architecture, emphasizing the practical application of design knowledge in solving problems versus aesthetic or theoretical expression.⁹ As the 1950s progressed, builders further sought to legitimize their control over home building design and production by associating their expertise with values of rationality, efficiency, and scientific method.¹⁰ These tactics asserted structural and cultural control of certain bodies of knowledge and their application in ways designed to legitimize and preserve

⁷ Judith R. Blau, Mark LaGory, and John Pipkin, eds., "Introduction," in *Professionals and Urban Form* (Albany: State University of New York Press, 1983), 4; Magali Sarfatti Larson, "Emblem and Exception: The Historical Definition of the Architect's Professional Role," in *Professionals and Urban Form*, ed. Judith R. Blau, Mark LaGory, and John Pipkin (Albany: State University of New York Press, 1983), 60–61; Magali Sarfatti Larson, *The Rise of Professionalism: A Sociological Analysis* (Berkeley: University of California Press, 1977), xvi–xvii.

⁸ Howard Davis, *The Culture of Building* (New York: Oxford University Press, USA, 2000), 5.

⁹ See Andrew Abbott, *The System of Professions: An Essay on the Division of Expert Labor* (Chicago: University of Chicago Press, 1988), 29.

¹⁰ See Abbott, 41; Larson, "Emblem and Exception: The Historical Definition of the Architect's Professional Role," 61.

the private, capitalist building industry as the leading force in design and production of the American home.¹¹

The NAHB's role in information exchange encouraged and formalized less centralized, sporadic efforts at improving production quality in the building industry. In the early twentieth century, as noted in Chapter 1, what housing historian Carolyn Loeb has called a mutually-supportive professional housing network coalesced among realtor-builders, social reformers, engineers, financial institutions, government leaders, and materials suppliers to promote more widespread home ownership. The activities of this non-state network of national and local building interests established ready conduits and patterns for sharing bodies of building knowledge. National experts formed the tip of a pyramidal organizational structure that diffused the ideas and methods sanctioned by their expertise to the local level.¹² The NAHB emerged from this "housing network" first as an organized subgroup of land developers and home builders within NAREB in 1923, then as the more independent Home Builders Institute of America in 1941, and finally, as the independent NAHB in 1943.

The formation of the NAHB came in the wake of builders' need to advocate for themselves with government and the public in the face of the development of a national housing policy, as well as to educate and reorient its members to meet national housing demands. The move to organize was also broad acknowledgement of the challenges posed by the operative building or community building model, which required areas of expertise from market analysis to land development, engineering to architecture, real estate law to public relations, and merchandising to advertising.¹³ The NAHB's founding mission was to develop and maintain better and higher standards of business practices, promote technical research, and foster "interchange of experience" to increase efficiency and quality in home building. Membership in the NAHB would be a "hallmark of quality and integrity" and an assurance to consumers of dependable value.¹⁴

As the NAHB grew, it led the industry in an accelerated period of professionalization activities, including shoring up existing expertise through knowledge sharing and documentation and investing in and creating new forms of building knowledge.¹⁵ In these efforts, the NAHB focused on ways to produce attractive, quality houses quickly, efficiently, and affordably. They also strove to improve design quality across the field. Their efforts in

¹¹ See Abbott, *The System of Professions: An Essay on the Division of Expert Labor*, 19.

¹² Carolyn S. Loeb, *Entrepreneurial Vernacular: Developers' Subdivisions in the 1920s*, Creating the North American Landscape (Baltimore: Johns Hopkins University Press, 2001), 177.

¹³ National Association of Home Builders, "History of the National Association of Home Builders of the United States (Through 1943)" (Washington, D.C.: National Association of Home Builders, 1958), 3–4.

¹⁴ Home builders and land developers first established their own division within NAREB in 1923. The division was first titled the Home Builders and Subdividers Division. The division changed its name to the Land Developers and Home Builders Division in 1933. "Home Builders Institute Organized by Realtors," *National Real Estate and Building Journal*, February 1941, 36; National Association of Home Builders, "History of the National Association of Home Builders of the United States (Through 1943)," 8–9.

¹⁵ Gwendolyn Wright, *Moralism and the Model Home: Domestic Architecture and Cultural Conflict in Chicago, 1873-1913* (Chicago: University of Chicago Press, 1980), 207.

information exchange, builder education, and research centered on issues of design optimization – or what methods, materials, and design factors would produce the “most house” for the least money. The ultimate goal was to achieve the right balance between pragmatic cost savings and consumer acceptability. With regard to the latter, the degree to which builders should adopt - and the public would accept - “contemporary,” or Modern-influenced, design were central issues. The NAHB and its design leaders took on the challenge of fostering widespread adoption of the methods they pioneered and promoted in a multinucleated building industry.

Sharing Knowledge

The NAHB embarked on its role in design education following the familiar pattern of looking to other builders for insight and solutions. The NAHB promoted cooperation in the building industry and the sharing of best practices as being essential to mutual security and prosperity. In an institutional history from 1945, NAHB leadership wrote that,

. . . men engaged in this pursuit began to follow the pattern of the past and seek counsel with one another, not only for mutual aid and protection . . . but to better their product and offer better values so that an ever-increasing number of our people might enjoy the benefits of home ownership.¹⁶

This continued to be a pattern through the mid-1950s. As NAHB Executive Vice President Frank Cortright advised in 1956, “Smart builders study what other smart builders are doing.”¹⁷

Home builders had many informal opportunities to monitor other builders’ work and keep tabs on new housing trends in the period through the media. Building industry periodicals regularly featured the work of successful home builders around the country, both as a showcase for technical and design development in the home building industry and as a measure of consumer interest and desires. Beginning in the late 1940s, the *National Real Estate and Building Journal (NREBJ)*, for example, had a regular feature called “Homes our Readers are Building” that profiled the basic development conditions, house features, lot sizes, pricing, and floor plans for affordable and economy-priced homes around the country. The *NAHB Correlator* and *American Builder* commissioned and solicited designs from architects and builders as well, which the journals featured monthly. In the late 1940s and 1950s, *NREBJ* and *House & Home* regularly surveyed the editors of major popular housing magazines, including *Better Homes & Gardens*, *McCall’s*, *Good Housekeeping*, *Ladies Home Journal*, *Parents*, *Life*, *Living for Young Home Makers*, *House Beautiful*, *Time*, *Sunset*, and *American Home* to collect and republish the house designs that got the most “reader approval” for the year. *House & Home* also started a feature in 1953 that presented the “fastest-selling houses in the USA,” billed as a virtual

¹⁶ National Association of Home Builders, “History of the National Association of Home Builders of the United States (Through 1943),” 4.

¹⁷ Frank Cortright, “Today’s Tough Selling Market Is the Smart Builder’s Big Chance,” *House & Home*, September 1956, 143.

business trip to visit the nation's best-selling homes."¹⁸ *Architectural Forum* and the *NREBJ* also regularly published surveys of their readership on issues from average sales price to kitchen countertop materials.¹⁹

The NAHB's design exchange programming focused on more direct engagement with the expertise of leading builders in the field and access to the storehouse of building knowledge represented by American home builders as a collective. In 1948, Milton Morris, Secretary of the Home Builders Council of California, expressed the urgency and importance of this cooperation. "The man who refused to join with his fellow competitors for the good of an industry," Morris wrote, "is actually encouraging an industrial hazard. Ignorant competition and superstition has been the downfall of many businesses. Teamwork is the answer in overcoming all problems requiring cooperation. The builder who remains outside needs the Association as much as the organization needs him."²⁰ Within the building industry, certain builders took the lead in pioneering and promoting designs and production techniques. Housing economist Sherman Maisel estimated in 1950 that approximately one-third of builders in the industry took the bulk of the risk in experimenting with new techniques, materials, and house plans or forms to improve their products. As a group, design leaders tended to be large-scale producers who could spread the cost of design development across a large number of units.²¹ These firms had more design talent at their disposal, including professional architects, and had the organizational expertise to, for example, translate ideas from professional architecture and the higher-priced custom home market to the production home market. These larger builders, including figures such as David Bohannon, Earl Smith, and Henry Doelger, served as de facto design laboratories for the remaining two-thirds of builders who might lack the resources or risk tolerance to experiment with new designs or methods. Bringing all builders "on board" with new techniques, design ideas, and materials was critical in the immediate postwar period as the industry geared up to address national housing shortages and strong demand.

Two of the NAHB's early programs - the annual NAHB Convention beginning in 1945 and the "Trade Secrets House" program of 1951 to 1953 - illustrate the ways in which the industry leadership mined building knowledge from its members and allied with neighboring groups like architecture and materials manufacturing to disseminate design and technical information.

The NAHB Convention: The Greatest Show on Earth

In January 1945, more than 3,700 home builders from around the nation converged on the Sherman Hotel in Chicago for "The Greatest Show on Earth." Attendees at the first national "home show" were met with three days of plenaries, panels, clinics, and field sessions; the winning models from the association's first national design contest; as well as a custom-designed, 12,000 square foot exhibit garden of displays from material and equipment

¹⁸ "The Fastest Selling Houses in the USA," *House & Home*, April 1953, 119.

¹⁹ See for example "Merchant Builder Survey: Community Builders," *Architectural Forum*, April 1949; "Survey Points [Sic] Trends in Built-for-Sale Housing," *National Real Estate and Building Journal*, September 1951.

²⁰ Milton W. Morris, "A Word to the Wise," *NAHB Correlator*, February 1948, 40.

²¹ Maisel, *Housebuilding in Transition Based on Studies in the San Francisco Bay Area*, 110–11, 258.

producers. The first NAHB convention was a watershed moment, proof in the eyes of experts like *NREBJ* editor Ralph Clements that the industry was starting to “find itself” and define its areas of activity and focus.²² The NAHB convention did, in fact, have a firm aim: to prepare the nation’s builders for the character of postwar building materials and production practices and the major production task ahead of them. George F. Nixon, first president of NAHB (1941) and 1945 exposition chair wrote, “Our 1945 National Convention must reassure the builders, excite them, teach them, and send them away ready to undertake a building program the unprecedented magnitude of which will compare with the vast job of tooling for the war.”²³ This was no easy task. *American Builder* editors posed some of the many questions builders had about the future in the magazine coverage of the convention: “What is ready now, what can be expected in the immediate postwar period, in the long-term postwar period? What substitutes are ready, nearly ready, or may be expected in a year, five years, ten years? What new designs, new forms, new techniques, new financing plans? What products and processes will not change, because they can meet the test of the coming vast new construction programs?”²⁴

Builder-to-builder education and didactic interactions between building industry sectors constituted the bulk of the programming at the 1945 convention and those that would follow. As one journalist wrote, builders “feasted at a smorgasbord of ideas,” learning “from others who *knew how* by doing.”²⁵ The educational programming at the 1945 convention consisted of expert-led plenary sessions and clinics where builders could bring their problems or questions for review and discussion by experts and colleagues from around the country. The shift from standards of prewar development to the new postwar housing development environment was clear in the content. Speaker Seward Mott of the Urban Land Institute predicted that complete residential neighborhoods, not scattered subdivisions, would be emphasized after the war. California builder David Bohannon’s chief planner, Ronald Campbell, gave a talk on cutting-edge subdivision design, covering issues such as inclusion of parks, ideal street widths, setting lot sizes based on house designs versus house designs based on lot sizes, and predicting that mass-market developments would supplant custom building after the war.²⁶ Curt Mack of the Federal Housing Administration (FHA) chaired a panel titled “Back to School – What’s New?,” in which panelists discussed practices such as concentrating on a few basic plans within a single subdivision, dimensional coordination of construction materials and designs, and the soon-to-be-standard phenomenon of the “completely packaged house” – a “turnkey house” complete with all systems, appliances, and finishes.²⁷ The NAHB and its leaders were clearly working furiously to bring the building industry up to speed in preparation for the production and political challenges leaders knew lay ahead.

²² Ralph Clements, “Homebuilders Convention Breaks Records for Interest and Attendance,” *National Real Estate and Building Journal* 46, no. 2 (February 1945): 17.

²³ “Postwar Homes Will Be Planned Here,” *American Builder*, September 1944, 57.

²⁴ “Postwar Homes Will Be Planned Here,” 57.

²⁵ John McNamara, “Their Minds Feasted at a ‘Smorgasbord’ of Ideas,” *American Builder* 65, no. 2 (February 1945): 64.

²⁶ McNamara, 64–65.

²⁷ “Panel of Industry Experts Tells Homebuilders What’s New in Post-War Products,” *National Real Estate and Building Journal* 46, no. 2 (February 1945): 22.

The first convention also inaugurated what would become an annual NAHB house design contest in association with the annual meeting. Five hundred builders from around the country submitted plans for their best urban, suburban, and rural housing designs as measured in ease of construction and sales.²⁸ The cost of homes was limited to \$6,000, then the price cap on single-family dwelling under wartime restrictions. The six prize winners reflected a measured consensus on the state of builders' housing design in the period, or at least the direction leaders in the field judging the contest preferred.²⁹ Winners of city and suburban home divisions shared an emphasis on recreational and multi-use spaces and indoor-outdoor fluidity. In addition to the contest, developers from all over the country exhibited home designs and floor plans in the convention halls, providing builders an opportunity to make their own assessments of the state of housing design and innovations.

The centerpiece of the 1945 meeting was the Postwar Building Material Exposition, billed as a "post-graduate course" in home building.³⁰ Eschewing the usual static, paper-laden sea of booths in monotonous grids, the NAHB scripted the exposition as a space of active demonstration and person-to-person exchange. NAHB Home Show Director Elizabeth Shoemaker hired Skidmore Owings Merrill (SOM) to design their exhibit space. (Figure 6.4) Jacques Seltz, a Swiss industrial designer at SOM, designed a 12,000 square-foot exhibit space with saw-toothed panels set against exhibit space walls, free-standing walls, and amoeba-shaped forms for display of exhibit materials. This design ostensibly privileged no particular exhibitor or industry sector, allowing all 100 exhibits to be seen from any part of the hall. SOM also designed the exhibit space to take on the effect of a garden, filled with greenery and with scattered seating for 200 people. (Figure 6.5) This design facilitated face-to-face consultations between manufacturers and materials suppliers and attending builders in collegial, conversational settings.³¹ The NAHB prohibited traditional exhibit booths and banished literature to an enclosed side room. Participants' exhibits had to be active rather than passive, featuring demonstrations of manufactured materials, equipment, and techniques as well as material displays.³²

²⁸ "Postwar Homes Wil Be Planned Here," 57.

²⁹ "All Set for the Greatest Builders' Show," *American Builder* 65, no. 1 (January 1945): 155–56.

³⁰ "Trade Show Is Feature of Convention Planned by Construction Group," *Cincinnati Enquirer*, August 13, 1944, 37; "All Set for the Greatest Builders' Show," 88.

³¹ "Postwar Homes Wil Be Planned Here," 57.

³² "Home Builders to Take Look at New Homes," *The Miami News*, September 24, 1944, 34; "Postwar Homes Wil Be Planned Here," 92.

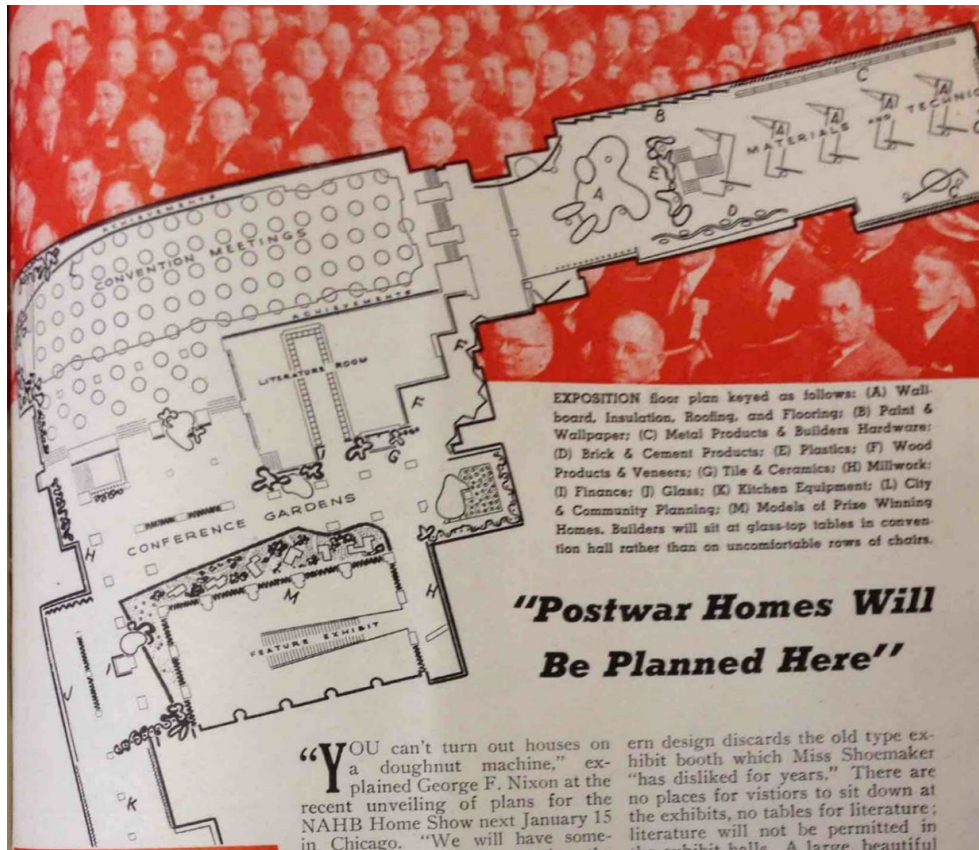


Figure 6.4. Plan of first NAHB Convention at the Sherman Hotel, Chicago, January 15, 1945. Source: *American Builder*, September 1944, page 57.

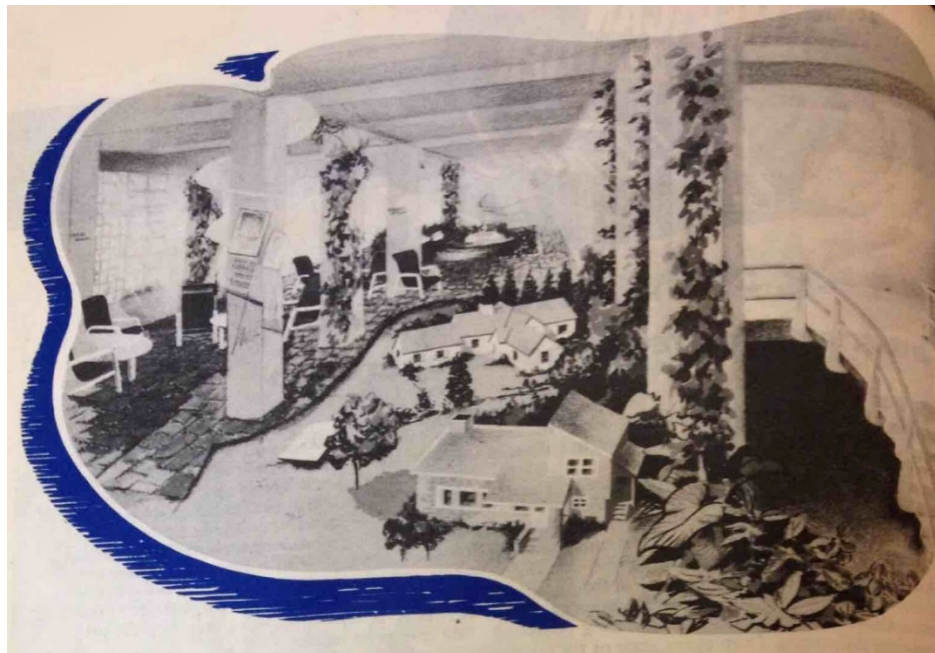


Figure 6.5. Sketch of conference garden seating area. Source: *American Builder*, January 1945, page 88.

Over the next fifteen years, attendance at the annual NAHB Convention swelled to nearly 30,000 and 450 exhibitors, making it the single most important gathering for the industry in the nation. Proceedings from the convention made it into major daily newspapers as well as the building press, and housing exhibits from the convention circulated to local communities through the affiliated network of building associations. Design education and information sharing continued to be a focus of the convention through the 1950s, with the NAHB billing the event as a “University of Building Methods.”³³ Design education focus vacillated with the important political or market issues of the time. Stopping public housing through better design and faster productivity was the focus from 1947 to 1949. In 1949 panels focused on building methods that cut costs, the sharing of economy housing plans, faster sales through better design, and reaching the mass market through economy houses. Programming also continued to emphasize audience participation, either by workshopping plans collaboratively, sharing information on solving building or design problems, or didactic demonstrations.³⁴ At the 1950 NAHB convention, the favored topic was the shift to modern or contemporary architecture. A panel discussion on “Tomorrow’s House Designs” attracted 2,000 delegates representing 30 percent of the total attendance at the convention.³⁵ The session included group analysis of various types of house designs and floor plans builders brought with them. Other clinics included “on-the-spot demonstrations” of new building equipment and methods, a dedicated session on “Selling Tomorrow’s Homes,” and a panel by women builders on interior design.³⁶ By this year, builders had more than 600 exhibitors at the expanded convention and home show, many with staff on hand who would analyze builders’ working plans and offer design and materials advice.³⁷ New technologies were also introduced at the convention, with features like a major exhibit hall display on “the feature of the future,” air conditioning in 1953.³⁸ In the mid-1950s, the convention expanded to include prefabricated home displays outside the convention hotels and even skit and role-playing exercises in merchandising and sales moderated by NAHB Executive Vice President Frank Cortright.³⁹ Merchandising and financing sessions drew the largest crowds in the late 1950s when the buyers’ market was going strong.

Over the course of the 1950s, several recurring specialty clinics at the NAHB convention served as annual round tables on the state of design and construction techniques for builders. Northern California builder Earl Smith began his popular “Shop Talk” session at the NAHB Convention in 1951, bringing together builders to share knowledge on how they could speed production, lower costs, and still provide quality homes. (Figure 6.6) The “talk” sessions were spurred by the national emergency period associated with the outbreak of the Korean War and related government materials restrictions. Builders needed to find alternative materials and

³³ Joseph Haverstick, “Preview of ‘The Greatest Show on Earth,’” *NAHB Correlator*, December 1952, 117–19.

³⁴ “Greatest Show on Earth,” *NAHB Correlator*, February 1949, 49.

³⁵ “The Greatest Show on Earth,” *NAHB Correlator*, March 1950, 21–24.

³⁶ “Major Part of NAHB Meeting to Deal with Builders’ Practical Problems,” *American Builder*, January 1950, 58.

³⁷ “A New Milepost in Home Building Accomplishment,” *American Builder*, February 1950, 79.

³⁸ Haverstick, “Preview of ‘The Greatest Show on Earth,’” 117–19.

³⁹ “Builders Told: Be More Aggressive in Your Merchandising.,” *National Real Estate and Building Journal* 56, no. 1 (January 1955): 29–30.

methods to continue volume production. Sessions at the convention examined now commonplace materials and techniques, such as the use of drywall versus plaster, modular construction, and eliminating basements. With Earl Smith moderating the panels, there were also plenty of questions about his signature flat roofs and their associated 20 percent cost savings.⁴⁰ In later years, the Shop Talk sessions turned into lively free-for-alls of questions and answers solicited and offered from the floor. By 1953, *NAHB Correlator* editors wrote, “The life blood of the Convention are these “Shop Talk” gatherings, here builders band together to help each other do a better job.”⁴¹ In 1954, the convention inaugurated an even more interactive program, the “How to Do It Circus.” This program consisted of live demonstrations on seven separate stages where experts showed how to pour foundations, tilt up walls, fabricate roof trusses, and install storage walls.⁴² (Figure 6.7) In 1956, the circus took on construction of an entire house in the convention center in a single day.



Figure 6.6. One of two of Earl Smith’s half-day “Shop Talk” session at the 1953 NAHB Convention.
Source: *NAHB Correlator*, February 1953, page 197.

⁴⁰ “Shop Talks’ Highlight Convention,” *National Real Estate and Building Journal* 52, no. 2 (February 1951): 30.

⁴¹ “Convention Roundup: Shop Talk,” *NAHB Correlator* 7, no. 2 (February 1953): 197.

⁴² “Convention Roundup: The ‘How to Do It’ Circus,” *NAHB Correlator*, February 1954, 30; “Convention Roundup: Scenes from the ‘How to Do It’ Circus,” *NAHB Correlator*, February 1955, 24–25.



Figure 6.7. Scenes from six simultaneous demonstrations at the “How to Do It Circus” at the 1955 NAHB Convention at the Hilton Hotel, Chicago. Demonstrations included (left, top to bottom) lathe and plaster, applying strip hardwood flooring over concrete, installing mineral wool batting insulation, (right, top to bottom) applying insulated board roof decking, nailed truss construction, and hardboard siding installation. Source: *NAHB Correlator* February 1955, pages 24-25.

The NAHB Trade Secrets House

The NAHB also sought to reach beyond the builders who could come to the Chicago convention each year. Builder-to-builder exchange took broader collaborative form in the NAHB's first field-based research program. In 1949, the *NAHB Correlator* announced a new monthly "Trade Secrets" feature. Rod Lockwood, then NAHB President, wrote in the *Correlator* that in the previous five years of high-volume production, home builders had created their own "field testing laboratory" where more information had been developed and gathered than could be had from any research laboratory in the foreseeable future. The scattered nature of this information, however, meant that it was of little use to the group. The major project of the NAHB in 1949 would be to start collecting and distributing this industry-generated know how to the industry as a whole.⁴³ The new Trade Secrets section, *Correlator* editors stressed, was "YOUR section," a place where members could share and exchange their building knowledge with each other for their mutual benefit. With the return of the competitive housing market in the late 1940s, editors added, made "this pooling of experience and KNOW-HOW a necessity."⁴⁴ The scope of topics the editors solicited included construction techniques, land planning, sales methods, and housing design.⁴⁵

Early installments of "Trade Secrets" featured take-aways from Oklahoma home builder William P. Atkinson's NAHB conference session on housing merchandising and contributions from NAHB award-winning builder Clarke Daniel of Washington, DC. Daniel presented his recipe for success in his East Pines subdivision where homes sold for an economical \$9,600: careful land selection, constant measurement and assessment of manpower expenditures, strict supervision of construction by their staff architect, and phasing projects in batches of twenty-five to fifty houses.⁴⁶

The start of the Korean War in 1950 sent the Trade Secrets program in a new direction. With the US restricting and controlling building materials and defense-related housing, builders faced renewed uncertainty and performance pressures as they tried to continue their postwar housing production rate of one million homes per year. Instead of relying on builder submissions, NAHB leadership began systematically harvesting design information. In 1951, Oklahoma builder W.P. "Bill" Atkinson (1906-1999) hosted two meetings of "big operators" in housing at his Midwest City, Oklahoma ranch.⁴⁷ (Figures 6.8 and 6.9) Builders brought blueprints, construction cost information, specifications, and photographs of their work, using them to outline their entire building operation, including techniques and costs. Stenographers and wire recorder dictation machines were on hand to document the discussion. The goal of the meetings was to break down the "traditional secrecy barrier among builders, to exchange ideas and learn from each other how to build a better house for less money."⁴⁸ The group

⁴³ Rodney Lockwood, "The President's Message," *NAHB Correlator* 3, no. 5 (May 1949): Frontispiece.

⁴⁴ "Trade Secrets," *NAHB Correlator* 3, no. 4 (April 1949): 23.

⁴⁵ "Trade Secrets," 23–25.

⁴⁶ "Trade Secrets," 23–25; Clarke Daniel, "Trade Secrets," *NAHB Correlator* 3, no. 5 (May 1949): 13–14.

⁴⁷ "Home Builders Exchange Trade Secrets," *American Builder*, January 1952, 116.

⁴⁸ "New Housing Buy Revealed, 'Trade Secret,'" *Clarksville Leaf-Chronicle*, January 12, 1953.

isolated similar patterns of operating among attendees that could be promoted to all builders, regardless of size or region. These included using market surveys, preplanning operations in great detail, an emphasis on fast construction (ten working days per house on average), expandability of house plans, and the use of land planners, landscape architects, and engineers to lower development and production costs. There was also consensus on the need for good design, which translated to attention to circulation, low maintenance finishes and spaces, sufficient storage, and the efficiency of built-in storage.⁴⁹ The two Oklahoma meetings would be the first in a series of more than forty NAHB-sponsored meetings around the country over the next two years to collect "trade secrets." Later gatherings took place in other regional cities across the US, including Washington, DC; Atlantic City, New Jersey; Madison, Wisconsin; South Bend, Indiana; and Berkeley, California. Emphasis in the meetings was at the more challenging lower end of the housing market, with 90 percent of attendees building houses costing between \$5,000 to \$10,000.⁵⁰



The nation's leading builders made public their "trade Secrets" at "Operation Trade Secrets" conferences instituted by the National Association of Home Builders. The recorded conferences were made available to builders all over the nation.

Figure 6.8. Undated Operation Trade Secrets meetings by NAHB members. Source: Atkinson, et al. *Housing USA . . . As Industry Leaders See It*, 1954, page 25.

⁴⁹ "Trade Secrets Exchanged by Home Builders to Give More House for Money," *Morning Call-Chronicle*, October 28, 1951.

⁵⁰ "Trade Secrets Exchanged by Home Builders to Give More House for Money"; "'Operation Trade Secrets' in Full Swing Again," *House & Home*, August 1952, 108.



Here is another example of "Operation Trade Secrets" conferences in which builders made the blueprints of homes available for examination by competitors.

Figure 6.9. Undated Operation Trade Secrets meetings by NAHB members. Source: Atkinson, et al. *Housing USA . . . As Industry Leaders See It*, 1954, page 25.

In 1952, the NAHB took the Trade Secrets program "live" at the annual convention. In an eponymous session, speakers and audience members presented their cost saving ideas on everything from room configurations to paint types.⁵¹ Invited presenters included architect-builder Ned Cole of Austin, Texas who presented on the "one-room theory" of house building. This method involved using roof trusses to carry the entire weight of the building, allowing the use of non-load-bearing interior walls of prefabricated storage units. The results were extremely flexible floor plan variations and savings of up to \$12 per square foot on construction.⁵² Less formal contributions in the session included debates over the virtues of slab floor construction (the cost savings were undeniable, but women on Long Island, "wouldn't walk on it"), and whether a garage was worth the effort in terms of sales (an emphatic yes).

The star of the Trade Secrets program, however, was the very first "Trade Secrets House." - Then-NAHB President and Utah builder Alan Brockbank took it upon himself to construct a dwelling in Salt Lake City based on the collected wisdom of Trade Secrets program participants the previous year. (Figures 6.10 and 6.11) The result was a single-story, two-bedroom, brick house with a compact rectangular plan, truss framing with three-foot eave overhangs, storage walls, a back-to-back (single) plumbing tree, and floor plan that accommodated addition of a third bedroom in the future.⁵³ Brockbank's model was experimental, but the idea of an

⁵¹ "Operation 'Trade Secrets,'" *NAHB Correlator* 6, no. 3 (March 1953): 7-9.

⁵² Roger Lakey, "Trade Secrets. . . Plus," *National Real Estate and Building Journal*, February 1952, 26-27.

⁵³ "Research - An Open 'Trade Secret,'" *House & Home*, no. 128-130 (September 1952): 128-29.

embodiment of builders' collective knowledge proved compelling as a didactic and public relations device. The recently-formed NAHB Trade Secrets Committee, in partnership with the Technical Services Division, followed Brockbank's pilot program with an official Trade Secrets House program, drawing on the expertise of the nation's leading builders to put on a form of "home show" for fellow builders and convince them of the efficacy of recent building and design innovations. The Trade Secrets House would not be a "house of tomorrow," but a practical demonstration of the best that the building industry could offer the American consumer today.

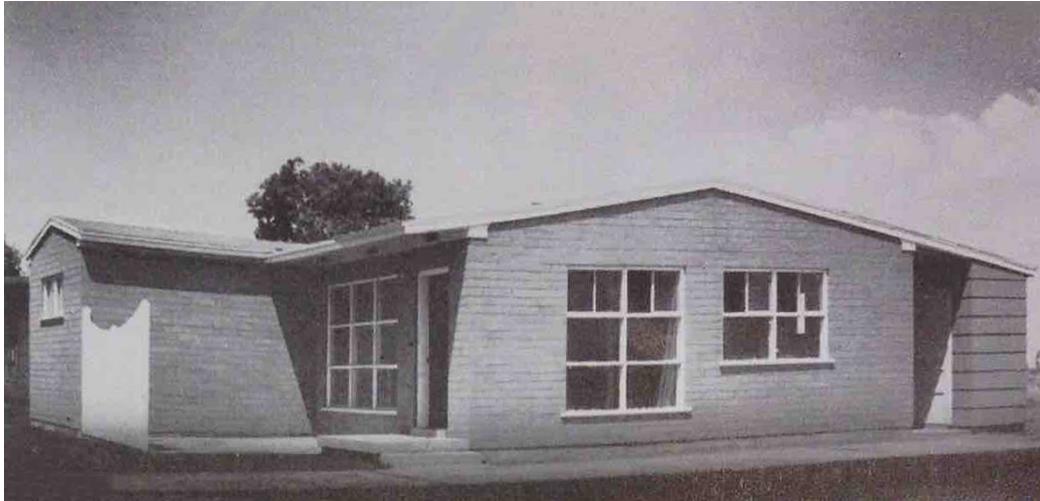


Figure 6.10. Alan Brockbank's Trade Secrets House, Salt Lake City, Utah, 1952. Source: *House & Home*, September 1952, page 129.

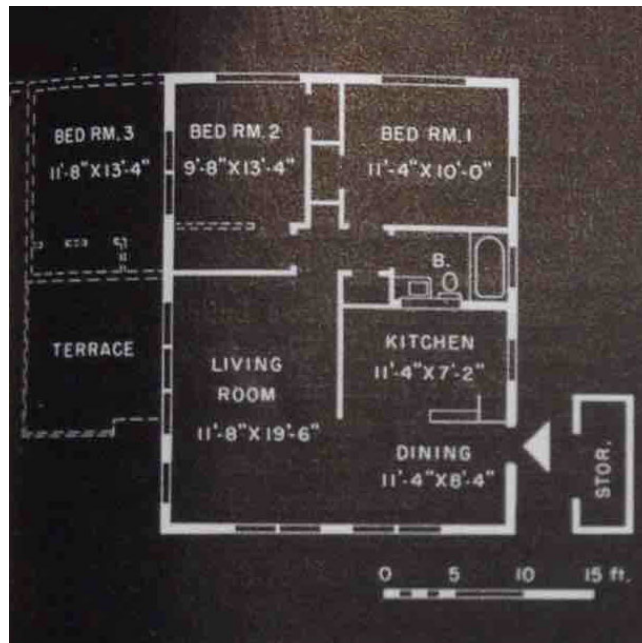


Figure 6.11. Plan of Brockbank Trade Secrets House, 1952. Source: *House & Home*, September 1952, page 129.

In 1953, the NAHB Trade Secrets Committee developed the official NAHB Trade Secrets House using methods culled from regional Trade Secrets gatherings over the previous two years. The committee was composed of leaders in the home building field, including NAHB President Alan Brockbank; Martin Bartling Jr., then a vice president at US Gypsum and chair of the NAHB Construction Committee; Ned A. Cole; Indiana builder Andrew Place; Fort Worth area builder and future NAHB president Dick Hughes; builder David Slipher, who worked with the Fritz Burns Company in Los Angeles; and architect Leonard Haeger, then-director of the NAHB Technical Services Division and a former employee of the FHA and Levitt & Sons. (Figure 6.12) The committee cooperatively designed the Trade Secrets House to embody four core design principles: adequacy of space, adequacy of storage, indoor-outdoor living with provisions for privacy, and provision of space-use equivalence to a house with a basement on a slab foundation.⁵⁴ The committee also wanted the design to be feasible for construction across the country at a mid-level price, at that time around \$15,000, exclusive of land.⁵⁵ The vision for the Trade Secrets House was an embodiment of what “progressive builders” saw as a desirable house for consumers, but at significantly lower cost.



Figure 6.12. NAHB Trade Secrets committee members (left to right) Leonard Haeger; Martin L. Bartling, Jr.; Alan Brockbank; Ned A. Cole, Andrew Place, and David Slipher. Source: *LIFE*, January 5, 1953, page 11.

⁵⁴ “\$15,000 ‘Trade Secrets’ House,” *LIFE*, January 5, 1953, 13; Building Research Institute, *Proposals for New Building Research: Two Groups of Proposals for New Building Research Presented at the 1959 Fall Conference and the 1960 Spring Conferences of the Building Research Institute, Division of Engineering and Industrial Research* (Washington, D.C.: National Academy of Sciences-National Research Council, 1960), 1; James Thomas Keane, *Fritz B. Burns and the Development of Los Angeles: The Biography of a Community Developer and Philanthropist* (Thomas and Dorothy Leavey Center for the Study of Los Angeles, Loyola Marymount University, 2001), S-4; Leonard Haeger, “The ‘Trade Secrets’ House,” *NAHB Correlator*, April 1953, 13.

⁵⁵ “\$15,000 ‘Trade Secrets’ House,” 8–12.

LIFE magazine prominently featured the Trade Secrets house in January 1953, billing it as the “product of a series of extraordinary conferences in which leaders of the highly competitive building industry pooled their trade secrets and . . . planned the best housing buy in the US today – a good-looking, skillfully engineered \$15,000 house.”⁵⁶ (Figures 6.13 and 6.14) The 1953 Trade Secrets House had a 1,340 square-foot, L-shaped plan with an open-plan kitchen, dining, and living area; one and a half baths; and two bedrooms.⁵⁷ (Figure 6.15) The house had Modern-inspired contemporary design allowed for more economical construction with its simple lines. The Trade Secrets House offered what *House & Home* editors called “jelled, but not frozen design.” The house had three possible floor plans, could accommodate different storage wall configurations, and was conducive to a wide range of possible exterior finish materials.⁵⁸ On the interior, the builders facilitated flexibility to allow different families to use the house in different ways. The kitchen space could be open or closed depending on buyer preferences and the third bedroom in the house was actually an alcove off the living area, which could be variously used as a library or screened off for a sleeping area.⁵⁹ In terms of livability, the Trade Secrets House fostered privacy by placing the largest windows and window wall on the rear elevation, facing an assumed fenced or screened back yard. (Figures 6.16 and 6.17) The large living area windows fostered an indoor-outdoor connection to the rear yard in the more public spaces of the house, while in more private spaces, glass sliding doors in the bedrooms opened onto a small garden area with a pergola-like roof extension. Inside, walls consisted primarily of preassembled storage units, supplemented by a storage space off the carport.⁶⁰ The NAHB was careful not to describe the Trade Secrets House as “universal,” but emphasized its suitability for a variety of climates and regions, particularly given its design and material flexibility.



Figure 6.13. Street elevation of 1953 NAHB Trade Secrets House model showing enclosed garden off master bedroom and children’s bedrooms. Source: *LIFE*, January 5, 1953, page 9.

⁵⁶ “\$15,000 ‘Trade Secrets’ House,” 8.

⁵⁷ Haeger, “The ‘Trade Secrets’ House,” 13.

⁵⁸ “Is This 1953’s Most Influential House?,” *House & Home* 3, no. 1 (January 1953): 100.

⁵⁹ “\$15,000 ‘Trade Secrets’ House,” 8–12.

⁶⁰ “\$15,000 ‘Trade Secrets’ House,” 12; Haeger, “The ‘Trade Secrets’ House,” 13.



Figure 6.14. Rear elevation of 1953 NAHB Trade Secrets House model showing main living areas and window wall and rear terrace. Source: *LIFE*, January 5, 1953, page 9.

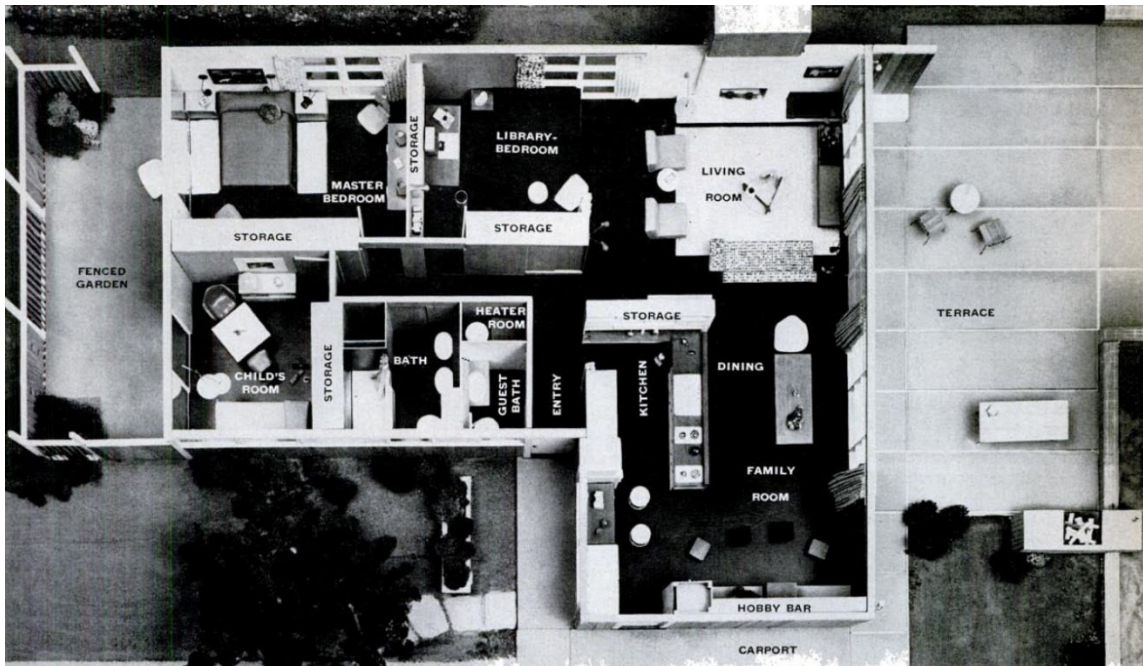


Figure 6.15. Floor plan of the 1953 NAHB Trade Secrets Houses showing storage wall construction and open kitchen. Source: *LIFE*, January 5, 1953, page 11.

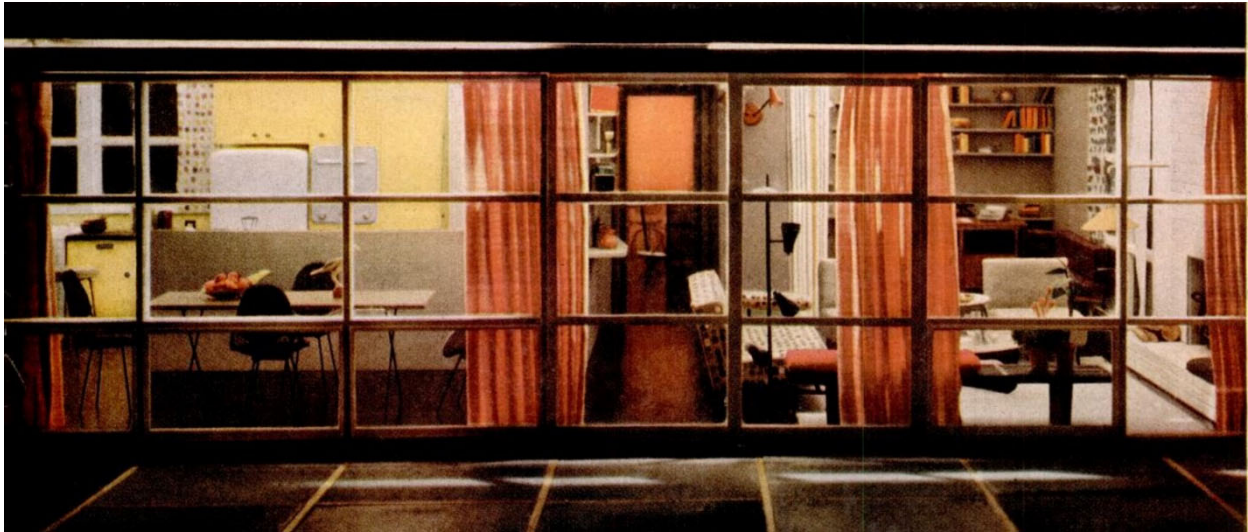


Figure 6.16. Night view of interior through rear window wall, 1953 NAHB Trade Secrets House model.
Source: *LIFE*, January 5, 1953, page 10.



Figure 6.17. Living room in 1953 NAHB Trade Secrets House showing open plan, and black terrazzo flooring. Interior decoration for the model was by Oscar O. Widman using Herman Miller furniture and fabrics. Source: *LIFE*, January 5, 1953, page 10.

From a production perspective, the house did not introduce any one particularly new or revolutionary feature, but instead incorporated a collection of the most advanced, tried-and-true methods and materials into one dwelling. The house utilized five key period design and construction innovations - precutting framing members, slab foundation, truss roof construction, tilt-up framing, and open planning – in an accessible form. (Figures 6.18 through 6.20) The house was also structurally designed according to the “one big room” theory, eliminating the need for load bearing partition walls. (Figures 6.15 and 6.21) This method, along with the use of prefabricated storage wall partitions, made installation of interior wiring and finish materials faster than in standard construction.⁶¹ (Figure 6.22) With these features, according to the NAHB, a builder could enclose and cover the Trade Secrets House in a single day and typically complete the house in less than eight weeks.⁶²



Figure 6.18. Worker swinging on nailed roof trusses on W.P. Atkinson’s Midwest City, Oklahoma Trade Secrets demonstration model. Source: *LIFE*, January 5, 1953, page 8.

⁶¹ Haeger, “The ‘Trade Secrets’ House,” 13.

⁶² “\$15,000 ‘Trade Secrets’ House,” 13–14; “Is This 1953’s Most Influential House?,” 99, 100–101, 102.



Figure 6.19. Workmen setting in preassembled window units and attaching pre-cut roof sheathing in a Wallace Arters' Lima, Pennsylvania Trade Secrets House model. Source: LIFE, January 5, 1953, page 14.



Figure 6.20. Workmen tilting a preassembled wall into place in Franklin Burns' Denver, Colorado Trade Secrets House model. Source: LIFE, January 5, 1953, page 14.

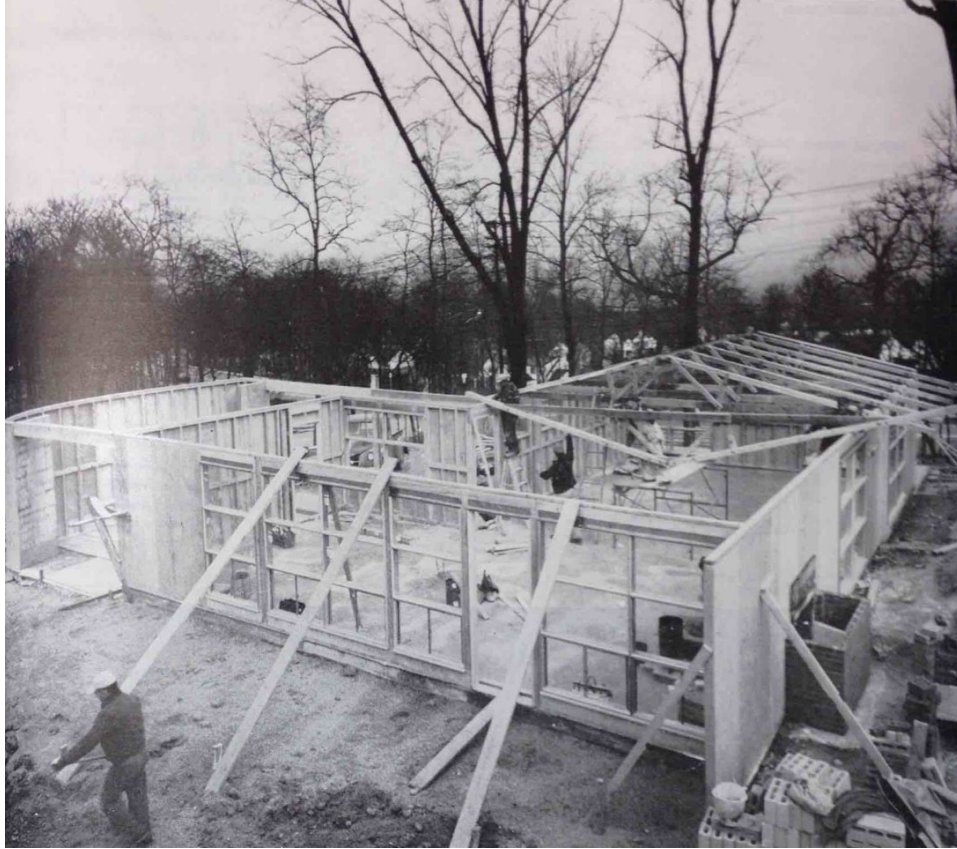


Figure 6.21. 1953 Trade Secrets House under construction showing “one-room” principle and lack of load bearing interior partition walls. Source: *House & Home*, March 1953, page 119.

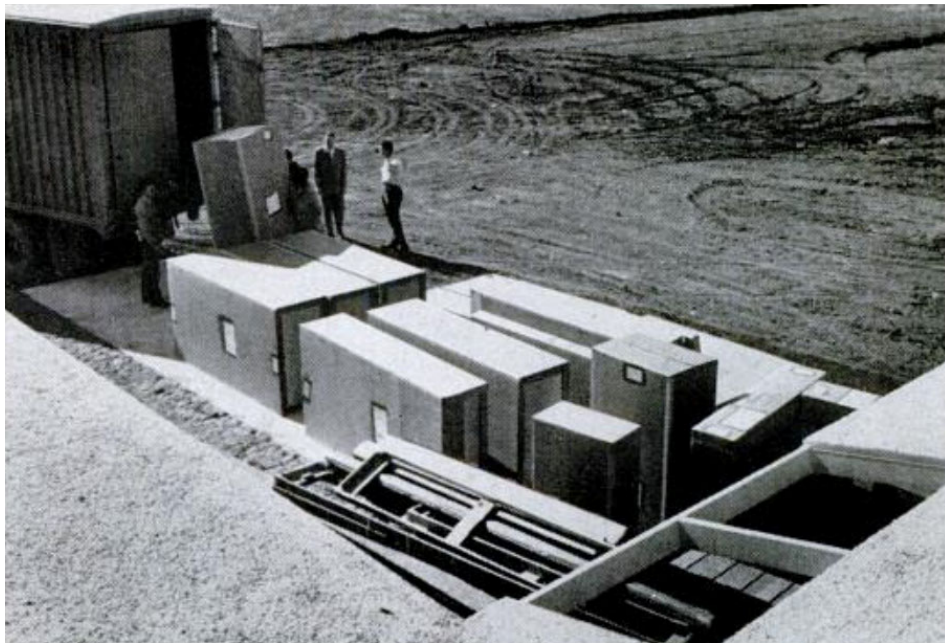


Figure 6.22. Prefabricated storage walls arriving at a Dallas, Texas Trade Secrets House model site. Source: *LIFE*, January 5, 1953, page 13.

The Trade Secrets house signaled a key concern for the NAHB in the early 1950s. Even as the industry pursued new methods and streamlined production, the NAHB was aware that many builders -particularly small and mid-sized operations - were not taking advantage of these developments. The NAHB hoped to use the Trade Secrets House to push back on the idea that only large-scale builders putting up 100 houses or more per year or builders in “progressive” markets could benefit from cost-saving measures or new design idioms. *House & Home* editors wrote of the program,

It dramatically exposes the common alibi, “That’s all right for the big guy, but I could never build that way” . . . The plans for this house. . . would be a quick education in housebuilding for anyone willing to study them. This house would be good for any builder to build, to show himself and his workmen and subs how much easier it is to work the modern way than the way they always have worked.⁶³

Builders could purchase the Trade Secret House plans complete with a work schedule to guide construction from the NAHB for \$100. If builders committed to constructing the house, they got assistance from Trade Secrets Committee member Ned Cole, who travelled around the nation visiting participating builders’ model homes to advise on construction, material, and modification issues.

As of January 1953, twenty-three builders in fourteen states were constructing the Trade Secret House, and the NAHB later reported that 166 members eventually built variations of the house in thirty-eight states.⁶⁴ (Figures 6.23 and 6.24) The first cadre of Trade Secrets House models were research settings as well as didactic devices. With the tightening of the housing market in the early 1950s, builders were uneasy about whether to stick with their tried-and-true, traditional house models or shift to contemporary design. The Trade Secrets House, with its concessions to Modern aesthetics, but builder-led design, served as a litmus test to see what the public in various markets might accept.⁶⁵ Trade Secrets House builders opened their models to the public for tours and surveyed visitors with detailed survey instruments or comment cards. (Figure 6.25) According to the NAHB, 1953 model builders reported an 80 percent approval rating for the design. Surveys demonstrated that potential buyers liked the light, bright interior; the open planning of the living areas; and the indoor-outdoor connections. The open kitchen plan also met with general approval, except, builders noted, in the South where servants were more common and buyers preferred to have the help (primarily African-American) hidden from guests. The storage wall systems, extra half bathroom, and the window walls in the bedrooms also met with widespread approval. Less universally popular were the small bedroom sizes and the den off the living area and its “bedroom conversion” potential. Most families would have preferred a finished third room. Some viewers disliked the plain front

⁶³ “Is This 1953’s Most Influential House?,” 101, 102.

⁶⁴ “\$15,000 ‘Trade Secrets’ House,” 14.

⁶⁵ “Crowds Beat Path to Trade Secrets House,” *LIFE*, March 9, 1953, 111.

elevation and the carport also gathered mixed reviews in areas accustomed to enclosed garages.⁶⁶



Figure 6.23. 1953 NAHB Trade Secrets House in Flint, Michigan. Source: *NAHB Correlator*, February 1953, page 14.



Figure 6.24. 1953 NAHB Trade Secrets House in Memphis, Tennessee. Source: *NAHB Correlator*, February 1953, page 14.

⁶⁶ "The Trade Secrets House and the US Builder," *House & Home* 3, no. 3 (March 1953): 115; Haeger, "The 'Trade Secrets' House," 14.

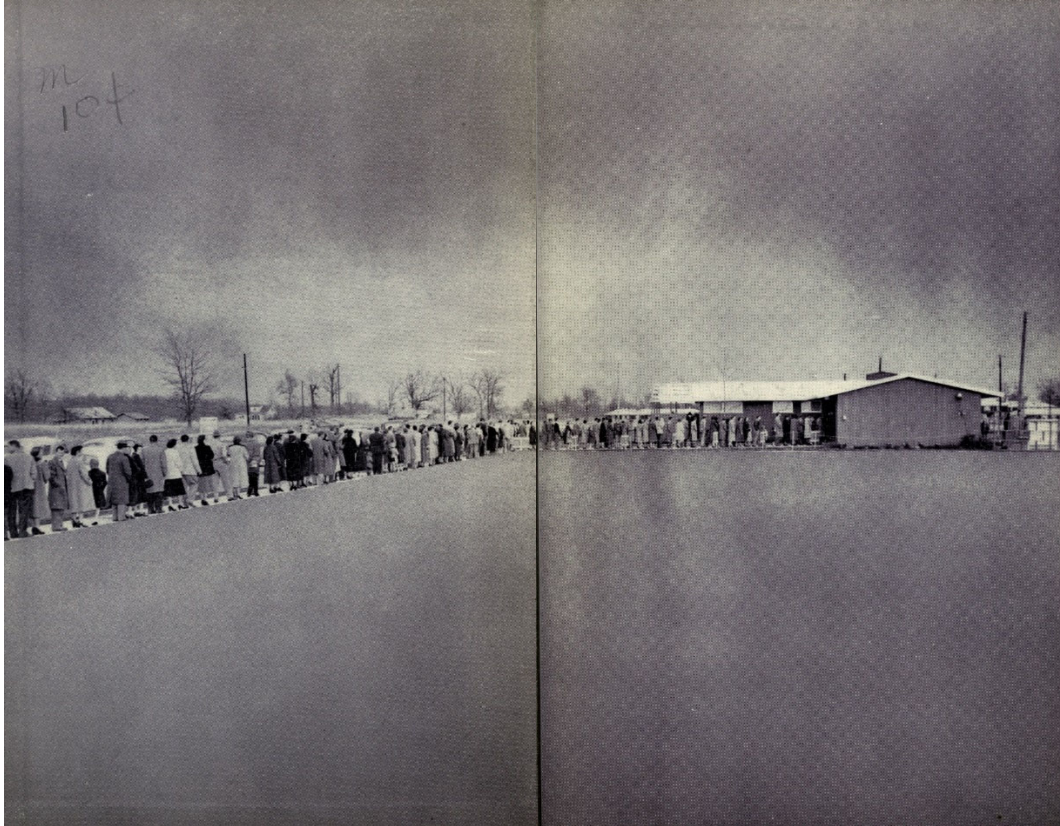


Figure 6.25. Visitors lining up to see the NAHB Trade Secrets House in South Bend, Indiana. Source: Atkinson et al. *Housing USA. . . As Industry Leaders See It*, 1954, inside front cover and flyleaf.

As builders rolled out the Trade Secret House and/or its ideas in larger numbers, its form and materials changed in response to local building markets and communities. Early reports from the NAHB on the results of the diffusion of Trade Secrets Houses in 1953 charted the influence of the project with local Trade Secret House builders. Seventeen percent of builders constructed the Trade Secrets House exactly as specified. This included Memphis, Tennessee builder Wallace Johnson who planned to retool his production methods to build the Trade Secrets model at scale. Other builders altered the design for their particular markets or adopted elements to create something new. Philadelphia area builder Wallace Arters and his architect, George Hay, redesigned their 1953 house models to include nineteen features of the Trade Secrets House, including the “one room” concept, window walls in the living area, storage wall units, and a redesigned kitchen.⁶⁷ The house model even found some purchase among conservative such as former NAHB President Robert P. Gerholz of Flint, Michigan. Gerholz shifted from constructing what *House & Home* called “practically the trademark of the Midwest” - two-bedroom bungalows with expansion attics and full basements - to construct his 600-house Southgate project of models based on the Trade Secret House.⁶⁸ The new houses had no basements or attics and incorporated the truss roof system, storage wall partitions, and open floor plan. The most common alterations builders made included eliminating the

⁶⁷ “The Trade Secrets House and the US Builder,” 120–21.

⁶⁸ “The Trade Secrets House and the US Builder,” 122.

fireplace, substituting an enclosed garage for the carport, and making the bedrooms larger. Many builders also rejected certain features, such as the specified resilient terrazzo flooring, because of its complexity to install.⁶⁹ Builders hedged their bets with the open kitchen plan, adding screening shelves or sliding doors to close off the space when desired.⁷⁰ All of the builders who put the Trade Secret house into large-scale production did away with the L-shaped plan and stuck to a rectangular footprint. This eliminated the need for two different sizes of roof trusses, as well as the use of a steel beam support the ell. The change also meant the house could fit on a standard size lot in most locations.⁷¹

The NAHB Trade Secrets House program was the organization's first foray into builder-led design research and technical education. After 1953, the organization began pursuing more empirically-based programs of demonstration housing. Nevertheless, the Trade Secrets premise that exchange of information among builders was key to finding universally valuable building solutions remained strong with the professional home building community as it moved forward.⁷²

Creating Knowledge

Before the mid-1950s, most large-scale builders' engagement with research was dependent on their own interest and initiative. Builders like David Bohannon and Earl Smith, for example, conducted their own informal campaigns of material and design experiments in their projects, trying out changes like flat roofs and slab foundation insulation options. Other builders, such as Los Angeles' Fritz Burns, partnered with manufacturers to produce research show houses as promotional devices, charging admission and periodically updating features. As the housing market became increasingly competitive in the 1950s, however, industry leadership increasingly engaged in programming focused on aiding and promoting knowledge creation versus knowledge sharing. With a solid catalog of functional house plans, accepted minimum standards of construction, and proven sets of optimized production techniques in place, industry leaders saw builder-led and generated research as the great "next step forward" in innovation. In 1958, Ralph Johnson, then director of the Home Builders' Research Institute, wrote in the *NAHB Journal of Homebuilding* (successor to the *NAHB Correlator*) that the fundamentals of science and scientific method had to supersede the vernacular traditions, "accepted conclusions," and "antiquated opinions" still present in some sectors of the industry. Research was the future, offering a basis for established housing performance standards, scientifically designed houses tailored to occupants, increased product quality, and reduced

⁶⁹ Haeger, "The 'Trade Secrets' House," 16.

⁷⁰ Haeger, 17.

⁷¹ "The Trade Secrets House and the US Builder," 115, 123 There was some debate among Trade Secrets House builders as to whether the model could really be built for \$15,000. Initial models cost closer to \$20,000, with the most expensive markets exceeding that figure. The average selling price was just under \$18,000 for the house alone and just over \$21,000 with the cost of the lot per the NAHB. However, early models were custom, demonstration builds, with none of the cost-saving measures in place that builders would typically use in mass production, and some products, such as marble chips for roofing, plywood sheathing, and storage walls, were also not uniformly available in all locales, adding cost for shipment.

⁷² "Is This 1953's Most Influential House?," 102.

risk. Johnson also argued that greater scientific knowledge and better homes would improve builders' status, establish them in position of leadership and independence, and ultimately "lead home building into becoming a profession."⁷³

The NAHB's forays into design research began in the organization's Technical Services Division established in 1948. At that time, the division primarily served as expert reviewers of technical information for builders, alerting them to new guidance or potential innovations in materials or building processes. This was becoming essential given the growing field of building materials and construction-related research in the period. The Housing Act of 1949 established the Housing and Home Finance Agency (HHFA) Division of Housing Research and charged it with conducting a comprehensive technological and social science research program in the area of housing.⁷⁴ By Congressional order, HHFA (then parent agency of the FHA) assigned research programs to nonprofit organizations, government research laboratories, and university research groups.⁷⁵ In 1950, the HHFA awarded \$1.3 million in research funding to fifty-eight projects housed in twenty-two universities and seven government agencies.⁷⁶ Government efforts dovetailed with and supported a growing number of research centers founded in the period focused in whole or in part on housing. These included the Small Homes Council (SHC) at the University of Illinois at Urbana (1944), the Housing Research Foundation at the Southwest Research Institute in San Antonio, Texas (1947), and the Building Research Advisory Board of the National Research Council (1946). By 1952, the NAHB could identify 861 organizations in the US conducting housing research: 220 educational institutions, 46 foundations and nonprofit research groups, 408 professional associations or societies, and 107 commercial laboratories.⁷⁷ Home building methods would no longer be the result of builders' trial and error, but instead the product of structured investigations, scientific method, and professional expertise.

Raymond Foley, Administrator of HHFA, wrote to builders in 1948 that technical progress in the housing field was an important means to constantly broadening the range of income groups the industry served.⁷⁸ And indeed, about 70 percent of housing research in the period was on ways to produce housing faster and more affordably.⁷⁹ HHFA-sponsored projects in the late 1940s and early 1950s included straight-forward, pragmatic, technical and material topics such as economical designs for plumbing trees and floors, baseboard heating, concrete block shrinkage, and chimney design. Research also included operational topics that supported the

⁷³ Ralph Johnson, "Today's Research - Tomorrow's Dividend," *NAHB Journal of Homebuilding* 12, no. 1 (January 1958): 39.

⁷⁴ Housing and Home Finance Agency, *Housing Research: Capsule Descriptions of Projects Started under Contract in 1950*. (Washington, DC, 1951), iii, <http://hdl.handle.net/2027/uiug.30112064503896>.

⁷⁵ Johnson, "Today's Research - Tomorrow's Dividend," 38 (Confirmed with archival records for Division of Housing Research and predecessor units, NARA; record run is from 1942-1954).

⁷⁶ Richard Ratcliff, "Housing Research," *NAHB Correlator*, August 1950, 4.

⁷⁷ Joseph B. Mason, *History of Housing in the U.S., 1930-1980* (Houston: Gulf Pub. Co., Book Division, 1982), 45.

⁷⁸ Raymond M. Foley, "Lower Costs Through Technical Research," *NAHB Correlator* 2, no. 2 (February 1948): 39-40.

⁷⁹ Mason, *History of Housing in the U.S., 1930-1980*, 45.

market-based building industry such as simplifying cost accounting for builders, construction financing structures, and techniques for assessing and predicting local housing market demand.

The remaining 30 percent of research, however, focused on social aspects of housing performance.⁸⁰ These research projects looked at human reaction to new features and ideas in organizing the home to increase efficiency for builder and consumer alike, as well as the ever important “livability” factor. This work included topics such as identifying unnecessary fatigue factors in plan arrangements, pursuit of greater efficiency in siting and organizing home operations, and the less tangible, but psychologically important element of “good space design.”⁸¹ The research program and environment at the SHC at the University of Illinois gives a sense of the scope of social science research in housing design in the period. The SHC facilities included a four-block demonstration area with three streets of study houses and a full-size housing production yard. The center utilized the study houses for materials, construction, and occupation studies, usually on contract for manufacturers or government research programs. In 1953, for example, the SHC reported on the findings of a twelve-month study of family reactions and movements among seven different floor plans. A succession of two families lived in a study house with movable interior walls, which researchers shifted into a new plan every four to five weeks. Electric counters and time clocks tracked family movements and subjects completed monthly surveys to record their reactions to the different plans.⁸² Using this research, the SHC abstracted typical use patterns for different family sizes and “lifestyles,” and proposed median ideals for house room dimensions and storage and utility area size and location.⁸³

The NAHB was directly involved in many of these government and industry-sponsored research activities. NAHB Technical Services Division directors, for example, regularly consulted with the HHFA research program directors on builders’ needs, as did NAHB presidents. In addition to pilot demonstration programs like the Trade Secrets House, the Technical Services Department also reviewed research and issued advice to builders on topics such as avoiding construction mistakes and eliminating building material waste.⁸⁴

In 1952, the NAHB became more deeply involved in advancing building research with the founding the Home Builders Research Institute (HBRI). The missions of the HBRI were to supplement and assist with the work of other research institutions, advise research institutes on the practical problems homebuilders faced, and serve as a clearinghouse for government and privately-sponsored research findings and reports. The institute would also conduct field research on materials and techniques developed in university and industrial labs to rapidly channel the results directly to home builders in the field.⁸⁵ The HBRI was a separate, affiliated

⁸⁰ Mason, 45.

⁸¹ Mason, 47–48.

⁸² “University Reports on Space-Use Studies of Small House,” *American Builder*, May 1953, 80–81.

⁸³ Mason, *History of Housing in the U.S., 1930-1980*, 48.

⁸⁴ Carl G. Lans, “Technical Service: Attractive Low Cost Homes,” *NAHB Correlator*, October 1951, 19.

⁸⁵ Earl Smith, “NAHB Research Institute Completes First Year,” *NAHB Correlator* 8, no. 2 (February 1954): 39.

entity to the NAHB, led by a nine-member board and then-NAHB Technical Services Director Leonard Haeger, AIA.⁸⁶

A major focus for the HBRI initially was to bridge the gap between the products and knowledge generated in laboratory settings and the experience of the builder in the field. The institute liaised with materials manufacturers to field test products developed in industry labs in the “real world.” Similar to a research institute at a university, manufacturers could contract with the HBRI to develop a field research project for a product, solicit member builders to test products, and evaluate and report the results. The first HBRI field test in 1952 assessed the performance and comfort levels afforded by two different heating and air conditioning systems for the National Warm Air Heating and Air Conditioning Association. South Bend, Indiana builder Andrew Place constructed two test homes equipped with competing heating and air conditioning units designed for smaller and mid-sized homes. Two families lived in test homes with the units in South Bend for a period of a year as live test subjects. The next year, in Austin, Texas, eighteen NAHB members built twenty-two houses in what the organization billed as the “Air-Conditioned Village.” Each builder experimented with design features for year-round climactic comfort in the home, such as window orientation, roof overhangs, trellises and screens, various types of insulation, and light color schemes for the hot Texas climate. Buyers agreed to hosting monitoring equipment and giving feedback on the building systems for the first year. The University of Texas Engineering Research Division and Medical Department in Austin, Texas also participated in the research, looking at technical, medical, and psychological aspects of climate control features in fourteen of the test houses.⁸⁷

The Industry’s Own Town Hall: The National Housing Center, Washington, DC

As the HBRI embarked on its research agenda, larger plans were underway in the organization to centralize and promote the work of the NAHB and assertively claim its areas of professional expertise. In 1953, NAHB president Alan Brockbank announced a second, “more dramatic step” beyond the HBRI: the creation of the National Home Building Center in Washington, DC.⁸⁸ The center, in Brockbank’s words, would provide,

the research activity, the physical display, and the creation and dissemination of all the newest information on home building, to serve our members all over the United States and throughout the world at large. It is a great and momentous step forward in the never-ceasing progress of our industry toward better homes for all the people, everywhere.⁸⁹

NAHB board member Nathan Manilow, who had been at the forefront of the NAHB’s economy housing design work, wrote of the center,

⁸⁶ Leonard Haeger, “NAHB Founds New Research Institute,” *NAHB Correlator* 6, no. 12 (December 1952): 126–27.

⁸⁷ Smith, “NAHB Research Institute Completes First Year,” 39–40; “Air-Conditioned Project World Research Center,” *The Austin Statesman*, June 4, 1954.

⁸⁸ Alan Brockbank, “Building Center,” *NAHB Correlator*, January 1953, np.

⁸⁹ Brockbank, np.

The center will be the medium through which our great industry will give visual evidence that it has made important forward strides through continuous research. This will be the testimony needed to show how the home building industry (comprised of all segments) has been a principal factor in the recovery of our economy following World War II. Here will be proof that people are receiving more and better housing for the dollar than ever before in history.⁹⁰

The NAHB was already underway with relocating from its Chicago headquarters to a new headquarters site in Washington in 1952 when the home building center idea came to the fore.⁹¹ In 1952, a delegation of NAHB leadership visited Europe to tour the new housing being constructed across the war-torn continent. In Rotterdam, the delegation visited the Bouw Centrum (Building Center), a joint research institute founded by four Dutch building industry and building research entities opened in 1948. Housed in a striking, round exhibition building, the goal of the Bouw Centrum was to promote interest in the construction industry and provide a centralized source of construction information for building professionals and the public. Brockbank envisioned a center that would achieve similar aims in the US, with an active program of research and permanent exhibits of modern building materials, sponsored by the NAHB.⁹²

The Home Building Center officially opened in October 1955 at 1625 L St. NW. Alvin L. Aubinoe (1903-1974), son and grandson of Washington, DC area builders and an engineer by training, designed the building.⁹³ During planning and construction, Aubinoe and the NAHB maintained a correspondence with the Bouw Centrum as well as the similarly programmed London Building Centre (established 1931).⁹⁴ The \$2.5 million center was eight stories of reinforced concrete faced in alternating bands of dark red granite and aluminum sash windows. The first two stories were composed of glass panels framed in stainless steel to create a massive show window at street level.⁹⁵ The first three stories had an open volume from ground level, with visual access to 13,000 square feet of exhibit spaces. The fourth and fifth stories had

⁹⁰ Nathan Manilow, "National Home Building Center: Another Major Milestone for Our Industry," *NAHB Correlator* 7, no. 8 (August 1953): 4.

⁹¹ Nathan Manilow, "National Housing Center: How It All Began," *NAHB Correlator* 9, no. 9 (September 1955): 7.

⁹² Brockbank, "Building Center," np.

⁹³ Aubinoe worked interchangeably as an architect and engineer for much of his career. He worked primarily for home building companies before beginning his own design and development business in the late 1930s, at which point he acquired an architecture license. After World War II, Aubinoe partnered with Harry L. Edwards and Edgar Carroll Beery, Jr. and their firm specialized in design and construction of apartments, office buildings, hotels, shopping centers, and single-family housing. Aubinoe's firm continues to operate today as Alvin L. Aubinoe Inc. under the leadership of his grandson, Alvin L. Aubinoe, III. District of Columbia Office of Planning, "DC Architects Directory: Alvin L. Aubinoe," October 2010, <https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/Architects%20Bios%20A%20and%20B.pdf>.

⁹⁴ Walton Onslow, "National Housing Center: Telling the Story to the World," *NAHB Correlator* 9, no. 9 (September 1955): 12.

⁹⁵ John Dickerman, "National Housing Center: What the Center Means to You," *NAHB Correlator* 9, no. 9 (September 1955): 4.

additional meeting and demonstration spaces and a large reference library. The last three floors contained office space for exhibitors and NAHB staff.⁹⁶ (Figures 6.26 and 6.27) Vice President Richard Nixon led the opening exercises for the Home Building Center before an audience of 1,600 home builders and government officials from the US, Canada, and Europe. Nixon told the audience in his remarks that the building center would be useful in benefiting Americans through research and the exchange of ideas, advancing development of the *home* as well as housing, and make a strong contribution to existing programs to end housing blight.⁹⁷ Also in attendance at the opening was a delegation of ten housing officials from the USSR who had just arrived for a month-long housing study tour of the US. (Figure 6.28) Led by Soviet Minister of City and Urban Construction I.K. Kozuilia, the representatives from the Soviet construction and architecture fields toured the building on the second day of operation.⁹⁸

The NAHB envisioned the NHC as serving the industry in three key ways. First, the organization conceived of the NHC as a central information and education center for builders. For the first time, the home building industry would have a single location for curated, vetted building information. This knowledge was power. “The most successful operator,” NAHB Executive Vice President Dickerman wrote in 1955,

always seems to be able to figure out a new financing package, a more efficient way to handle his work flow, material scheduling or construction techniques. He always has the new design, that improvement in equipment or amenity which catches the public fancy. This success is purely a matter of imaginative planning coupled with a thirst for knowledge. The center will hold virtually all the accumulated knowledge on home building and allied subjects.⁹⁹

To that end, a reference library under the supervision of HBRI assembled reference materials and technical, trade, government, and manufacturers’ literature on community planning and residential construction. The materials came from US and international sources and focused primarily on single-family dwellings.¹⁰⁰ Librarians distributed a monthly digest of new literature to members upon request.¹⁰¹ The library staff also monitored the state of housing research projects in academia, identified research gaps, and arranged for research sponsorships to fill those gaps. Staff would offer regular tours of building operations to see construction techniques, new building materials, and planning ideas. And of course, the center was also the

⁹⁶ Alvin Aubinoe, “National Home Building Center: Design and Physical Properties,” *NAHB Correlator* 7, no. 8 (August 1953): 7–10; Manilow, “National Home Building Center: Another Major Milestone for Our Industry,” 5.

⁹⁷ “NHC’s Doors Are Open,” *NAHB Correlator* 9, no. 11 (November 1955): 2–3; Onslow, “National Housing Center: Telling the Story to the World,” 12.

⁹⁸ “Russians Here for Housing Tour,” *NAHB Correlator* 9, no. 11 (November 1955): 6–7.

⁹⁹ Dickerman, “National Housing Center: What the Center Means to You,” 4–5.

¹⁰⁰ Smith, “National Housing Center: Housing Industry’s Own Town Hall,” 2.

¹⁰¹ Saul Herner, “National Housing Center: The Library Contains the Facts You Need,” *NAHB Correlator* 9, no. 9 (September 1955): 19–20.

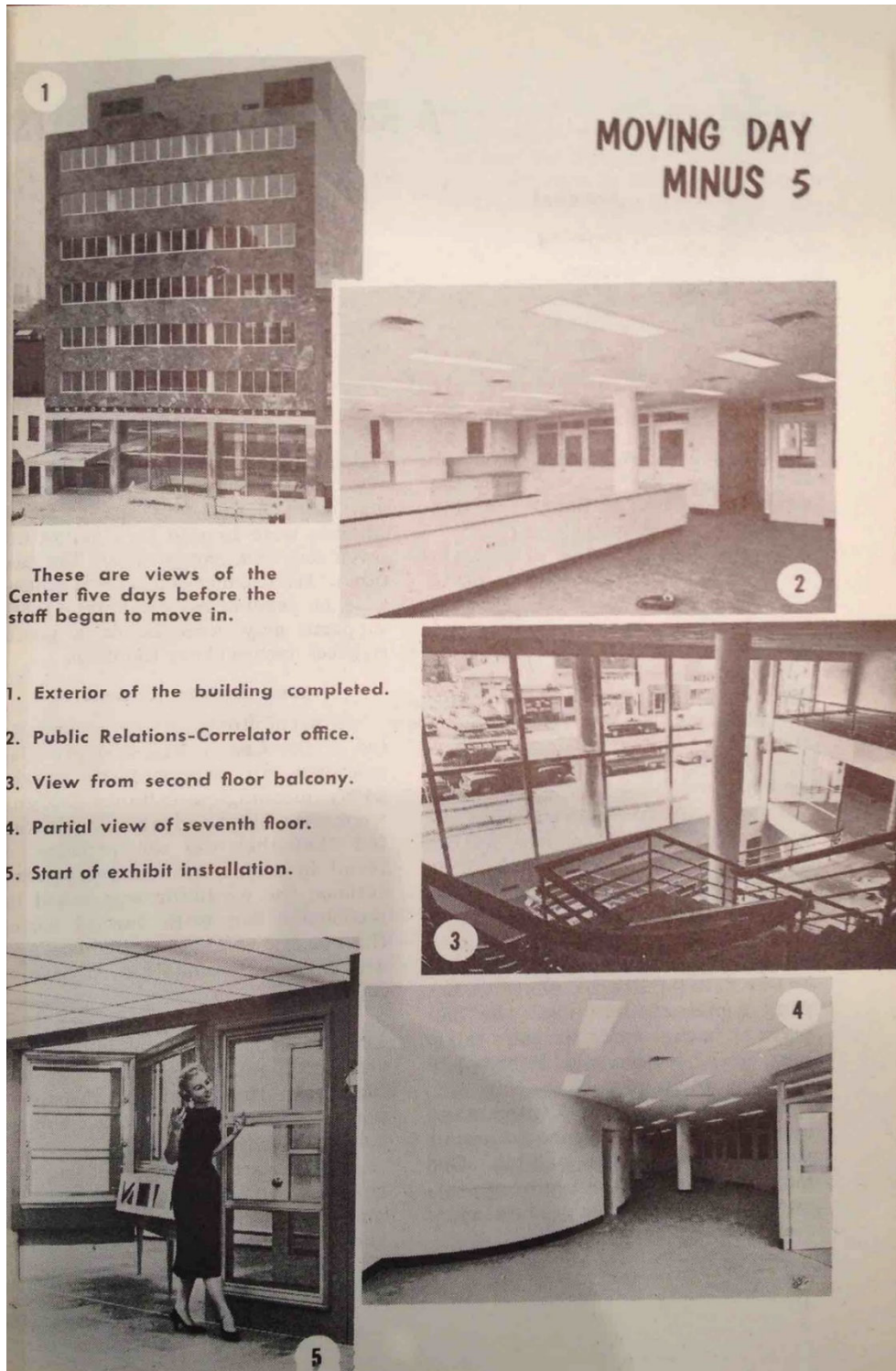


Figure 6.26. Exterior and interior views of NAHB National Housing Center, Washington, DC, 1955.
Source: *NAHB Correlator*, September 1955, page 9.

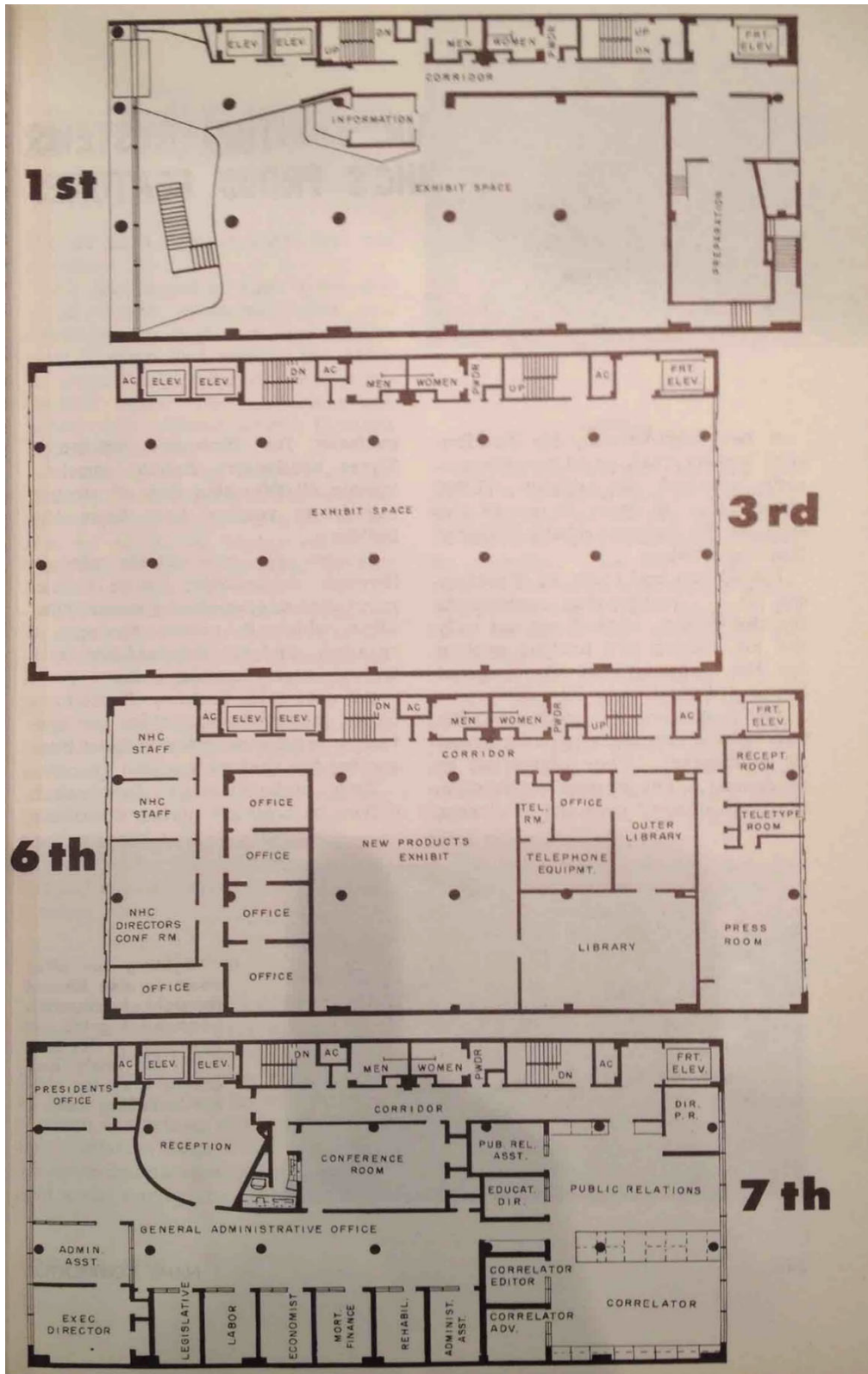


Figure 6.27. Floor plans for exhibit and public spaces at the NAHB National Housing Center, Washington, DC, 1955. Source: *NAHB Correlator*, September 1955, page 23.



Figure 6.28. Members of the Russian delegation outside the National Housing Center with NAHB President Earl Smith and Russian delegation leader I.K. Kozuilia in foreground. Source: *NAHB Correlator*, November 1955, page 6.

new home of the HBRI and its field research projects.

Second on the NHC agenda was to foster more contact between building material and product producers and builders-as-consumers.¹⁰² NAHB Technical Services Director Leonard Haeger wrote of the building, “The Center’s six floors of exhibit space will become, in effect, the first industrial exhibit of the home building process.”¹⁰³ The NAHB invited manufacturers of nationally-distributed products and equipment to set up semi-permanent displays highlighting new building products and technology. (Figure 6.29) These exhibits were not meant to be merely sales displays. Exhibitors used their spaces to demonstrate processes such as the manufacture of insulation board from cane and wood fibers, techniques of producing vitreous enamel on bathtubs, how radiant heating worked, and the benefits of double-glazed windows.¹⁰⁴ Exhibits were also forward-looking; a New Products section featured materials and

¹⁰² Dickerman, “National Housing Center: What the Center Means to You,” 4.

¹⁰³ Leonard Haeger, “National Home Building Center: Scope and Character of Exhibits and Activities,” *NAHB Correlator* 7, no. 8 (August 1953): 12.

¹⁰⁴ Haeger, 12.

products developed to a point just short of production and distribution.¹⁰⁵ Exhibitors on site in the inaugural 1955 exhibit year included material manufacturers such as the Formica Company, the US Plywood Corporation, the US Gypsum Company, the Owens-Corning Fiberglas Corporation, and the US Rubber Company. General Electric and In-Sink-Erator (garbage disposals) were among appliance manufacturers on site. Fixture manufacturers such as Crane Company (plumbing), Schlage Lock Company, and Overhead Door Corporation had wares on display, as did more specialty producers such as Home Music Systems, Inc. and the Canvas Awning Institute.¹⁰⁶



Figure 6.29. Early exhibits at the National Housing Center, 1955. Source: *House & Home*, September 1955, page 112.

Third, the NHC served as a focal point for the fragmented, but interdependent sets of actors that made up the home building industry. Executive vice president of the NAHB John Dickerman remarked of the industry upon the opening the center, “Few industries are more interdependent, one segment on another, than home building. Yet the diversity of its parts mitigates against a cohesive and close-knit organization.”¹⁰⁷ At the NHC, architects, engineers, planners, government agencies, investor groups, publications, manufacturers, suppliers, and of course, home builders had the opportunity to meet at a central space to discuss mutual problems.¹⁰⁸ In its capacity as the “Town Meeting Hall” for the home building industry, the NHC was also the site for conferences, seminars, and round tables on technical aspects of house

¹⁰⁵ Smith, “National Housing Center: Housing Industry’s Own Town Hall,” 2.

¹⁰⁶ “National Housing Center: Press-Time List of Exhibitors in National Housing Center,” *NAHB Correlator* 9, no. 9 (September 1955): 27–28.

¹⁰⁷ Dickerman, “National Housing Center: What the Center Means to You,” 4.

¹⁰⁸ W. Hamilton Crawford, “National Housing Center: Control Room Is NHC’s Eye,” *NAHB Correlator* 9, no. 9 (September 1955): 16–17.

building.¹⁰⁹ NAHB president Earl Smith planned a series of round table or forum type “National Housing Center Conferences” on matters of public interests, interspersed with “hammer and saw” technical meetings and demonstrations for builders.¹¹⁰ Early round tables at the Housing Center included discussions among builders, architects, real estate interests, government housing agencies, and consumer and professional periodical publishers on how to achieve better design in builders’ houses.¹¹¹ More directed seminars included merchandising, design, market analysis, business management, construction techniques, landscape design, and heating, ventilation, and air conditioning.¹¹² The center also offered a series of “short courses” to builders on all aspects of housing production and running a homebuilding firm. The center would also serve as an introduction to foreign visitors to the American system of housing production.¹¹³ In the first year of its existence, delegations from England, Belgium, France, Italy, Germany, and Japan visited the NHC.¹¹⁴

The NAHB Research House Series

With the NHC in operation, the NAHB embarked on one of its most ambitious design research projects, the NAHB Research House Program. The NAHB Research House program, which ran from 1957 to 1969, designed and constructed a series of eight study houses to test construction systems, materials, and equipment. For each house, the Research Institute trustees designed the dwelling, prepared specifications for material and equipment desired, and approached manufacturers to create the items for inclusion in the house. By the late 1950s, NAHB Research Institute (successor name to the HBRI) Director Ralph Johnson noted that manufacturers were spending an estimated \$50 million per year on product research, but there was little research on how to turn these innovations into better, cheaper housing. The NAHB Research Institute intended the Research House program to stimulate and speed product development in home building. But the NAHB also saw the program as an opportunity to influence product development. The program opened a more direct dialog between builders and materials producers wherein builders were more active in the research and development of materials, equipment, and techniques. Even more significant, builders would no longer have to rely on the word of manufacturers alone about product performance. For the first time, the industry was creating products designed by builders, for builders.

The concept of a “research house” was not a new phenomenon among home builders, but the NAHB Research House series differed in scope and aim from other research house efforts. Until the mid-1950s, houses builders billed as “research houses” were really “trend houses” meant to showcase gadgetry and novel materials or drive customers to a new housing development that might feature some elements of the show house. In 1946, for example, Los

¹⁰⁹ Haeger, “National Home Building Center: Scope and Character of Exhibits and Activities,” 13.

¹¹⁰ Onslow, “National Housing Center: Telling the Story to the World,” 13.

¹¹¹ “Better Design for Builders’ Houses - a Roundtable Discussion,” *NAHB Correlator* 10, no. 4 (April 1956): 102–7, 172, 174.

¹¹² Dickerman, “National Housing Center: What the Center Means to You,” 5.

¹¹³ Haeger, “National Home Building Center: Scope and Character of Exhibits and Activities,” 13.

¹¹⁴ John Dickerman, “Extensive Programs Mark Building Trend,” *The Times (Muncie, Indiana)*, September 16, 1956, 61.

Angeles developer Fritz Burns and his firm's research division designed and constructed a "The First Post-War House" prototype on Wiltshire Boulevard in Los Angeles as a demonstration project. Designers Welton Becket and Walter Wurdeman gave the house Modern styling and a U-shaped plan, while Burns filled it with new and still-experimental techniques and products from an estimated 100 manufacturers.¹¹⁵ A revolving plexiglass door on the shower, intercoms between rooms, air conditioning, rubberized plastic walls, aluminum roofing neon lighting under the kitchen cabinet shelves, and even electric toothbrushes represented the technologies and amenities that would be available to postwar housing consumers. Burns opened the house to the public and charged a modest admission fee. At a cost of \$75,000, however, this was not a dwelling meant for sale to the average buyer of the period.¹¹⁶

Another vein of research house typology was akin to the *Arts & Architecture* magazine Case Study Houses project that ran from 1945 to 1966. The emphasis in these houses was also on novel materials and forms, but on novel materials and forms that consumers could expect to achieve today versus in a far-off "House of Tomorrow." Builders and building material companies adopted this model in presenting their own versions of "case study houses," often in collaboration with a major building material manufacturer. In 1954, US Gypsum, the American Institute of Architects, and the NAHB partnered on the US Gypsum Research Village in Barrington, Illinois. Six teams of leading residential architects and consulting builders, including the likes of Joseph Eichler, Don Drummond of Kansas City, A. Quincy Jones of Jones & Emmons, and Hugh Stubbins, Jr., designed six Modern houses as case studies specifically geared toward operative builders. In northern California, Joseph Eichler later built what he billed as the X-100 house in 1956, a continued experiment in rigid steel frame residential construction. Eichler partnered with manufacturers to build the house with advanced prototypes for new steel products for the home building industry and used the house as a draw to the then-isolated development he was constructing in the San Mateo Highlands.¹¹⁷ Research houses could also be used for just plain research. The Frigidaire division of General Motors, for example built a 1,485 square-foot ranch house in Dayton, Ohio in 1955 solely for the purpose of testing the performance of their air conditioning units.¹¹⁸

The NAHB Research Houses primarily served as research and development tools, with promotional draw coming second.¹¹⁹ Like the Trade Secrets Houses before them, the NAHB stressed that Research Houses were not model or "show homes," but informational objects

¹¹⁵ "Fritz Burns 'Post-War' House Previews New Products and Trends," *National Real Estate and Building Journal*, March 1946, 16–19.

¹¹⁶ "Tomorrow's Living Today," *National Real Estate and Building Journal*, October 1951, 27. Burns revamped and updated the Post-War House in 1951 as the "House of Tomorrow."

¹¹⁷ Suzan Lindstrom and Marty Arbunich, "Discover Eichler's San Mateo 'X-100' House of Steel - the Eichler of the Century, Design for the Ages," *Eichler Network* (blog), accessed June 27, 2019, <https://www.eichlernetwork.com/article/eichler-x-100-house-steel>.

¹¹⁸ Brainard Platt, "Research House for Future Ease," *The Journal Herald (Dayton, Ohio)*, December 7, 1955, sec. 23, 23.

¹¹⁹ National Association of Home Builders of the United States, *NAHB Research House; a Summary Report* ([Washington, 1958], iii). The 1957 Research House was still extant near 3811 Denfield Avenue, Kensington, Maryland as of 2012 per Google Street View.

that cataloged and showcased techniques and materials builders could assess and adapt as their needs dictated.¹²⁰ The trustees designed the houses so that all of the ideas could be adopted individually or in certain combinations depending on local specificities in design preferences, climate, and market character.

The first NAHB Research House (1957) was the product of two years of design and materials specification work by Research Institute trustees. Located in Kensington, Maryland, the 1957 Research House was a 1,300 square-foot, three-bedroom, two-bathroom dwelling with attached garage and contemporary design.¹²¹ (Figures 6.30 and 6.31) Local builder (and early Trade Secrets contributor) Clarke Daniel constructed the house. The design used modular dimensioning and had a component structural system for flexibility and dimensional control.¹²² The house featured products from thirteen different manufacturers. Masonite preassembled panelized walls with board-and-batten siding, and spray-on neoprene granule roof coating came from DuPont, as did a choice of printed wood or Mylar laminate “wipe-clean” interior wall finishes. (Figure 6.32) A fully sealed combination air conditioning and heating system manufactured by Frigidaire/General Motors provided climate control. Plastic foam edge insulation for the slab foundation came from Dow Chemical. Other new products, many of which soon became standard in American housing, included double-glazed windows, fiberglass blanket insulation, foam-backed sheet vinyl floor covering in the kitchen, glued 1/8” hardwood strip flooring stabilized by temperature compression, and a porcelain enameled front door. The house also used a king-post, nail glued roof truss designed by the SHC, which developed the nail glue technique.

¹²⁰ National Association of Home Builders of the United States, v.

¹²¹ “NAHB Research House Features New Products,” *NAHB Journal of Homebuilding* 11, no. 4 (May 1957): 134–35.

¹²² National Association of Home Builders of the United States, *NAHB Research House; a Summary Report*, 3.

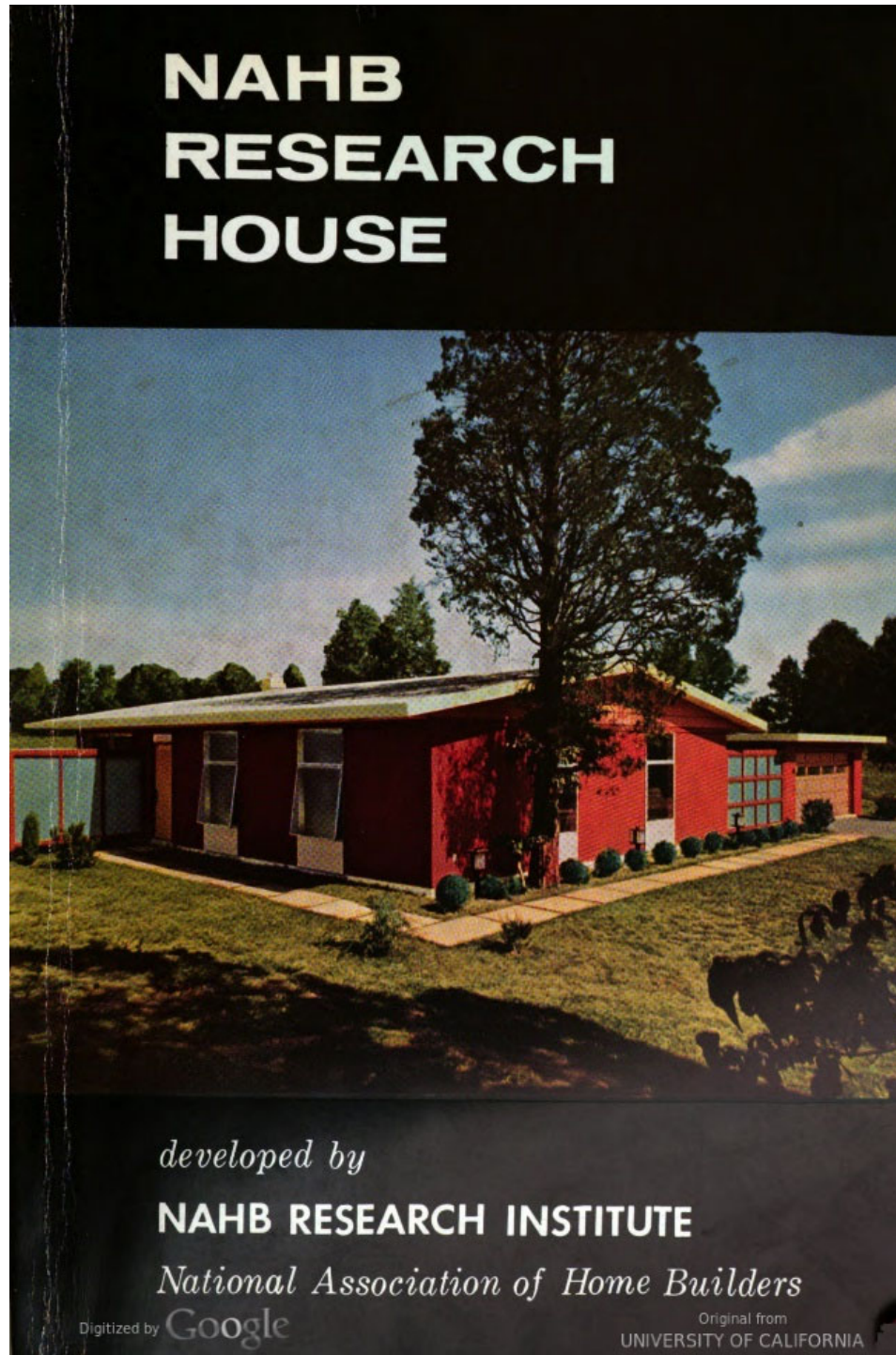


Figure 6.30. Cover of 1958 NAHB report on the first NAHB Research House in Kensington, Maryland.
Source: Hathi Trust, <https://hdl.handle.net/2027/uc1.b4309952>.

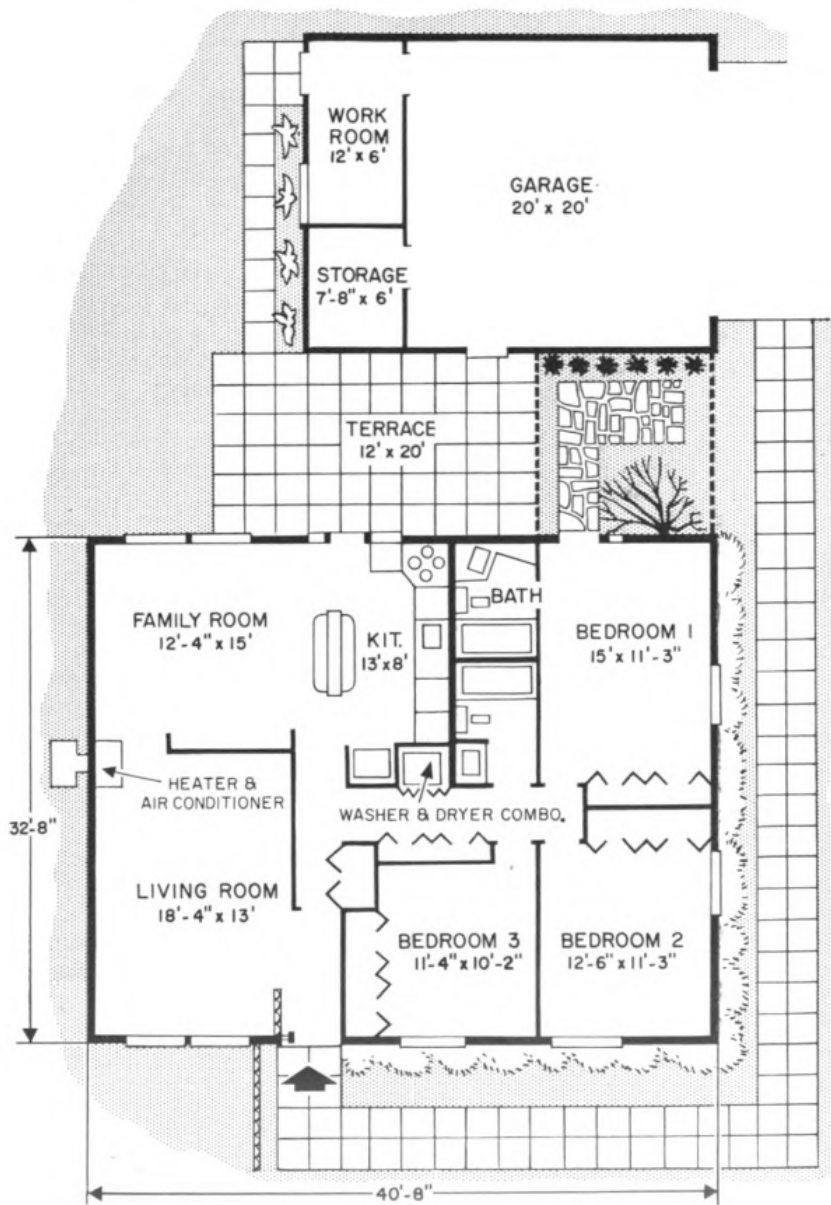


Figure 1—Floor plan of NAHB Research House

Figure 6.31. Plan of 1958 NAHB Research House in Kensington, Maryland. Source: National Association of Home Builders Research Institute, "NAHB Research House," 1958, page 2. Hathi Trust, <https://hdl.handle.net/2027/uc1.b4309952>.



Figure 9—Masonite panels extend about 2½" below base plate

Figure 6.32. Detail showing insertion of Masonite panels onto slab foundation and base plate. Source: National Association of Home Builders Research Institute, "NAHB Research House," 1958, page 11. Hathi Trust, <https://hdl.handle.net/2027/uc1.b4309952>.

Over the next twelve years, the NAHB sponsored seven more research houses in South Bend, Indiana (1958 and 1969, Figures 6.33 through 6.36); Knoxville, Tennessee (1958, Figures 6.37 and 6.38); East Lansing, Michigan (1959); Rockville, Maryland (1962); Carderock Springs, Maryland (1966); and Washington, DC (1967). Research Institute and NAHB officers and trustees designed and built most of the houses with assistance from local architects and engineers. The projects focused primarily on the use of stressed-skins structural sandwich panels that combined ten to twelve layers into a single panel structure. The regional distribution of the buildings was meant to test the system with different house forms, in different climactic conditions, and in the local markets where home buying decisions were ultimately made. The houses also tested a variety of additional materials and components commissioned from manufacturers, many of which are now commonly used in building. NAHB Vice President Martin Bartling, for example, built the 1958 Research House in Knoxville with assistance from Knoxville architect Bruce McCarty. The three-bedroom, roughly 1,000 square-foot house had products from forty-three manufacturers and was an early experiment with plastic plumbing systems. The 1959 East Lansing house was a partnership project with Michigan State University's Department of Forest Products. Byron Radcliffe, a professor in the Forest Products Department and local builder Walter Neller designed the two-story, four-bedroom, 2,100 square-foot, house. This house tested one-story construction methods for a two-story

house and the performance of panel construction in cold climates.¹²³ The houses in the late 1950s and early 1960s continued testing of panelized wall construction, foam insulation board, plastic laminate exterior and interior finishes, and glue laminated flooring. The last Research House in the mid-twentieth century series, the 1969 South Bend Research House VIII, experimented with near full plant prefabrication. The house was an economical, 850 square-foot dwelling composed of three preassembled sections that were fabricated with everything from aluminum siding to interior carpeting already in place.

The Research House program used the study houses to generate field performance data on materials and building systems as well as to gauge the reaction of experienced builders to new products.¹²⁴ NAHB opened the houses to builders during and after completion and to the public for several weeks after completion to gauge reaction. More than 15,000 people visited the 1958 Kensington Research House, for example, over the course of four weeks. The NAHB and building team staff interviewed as many public visitors to the house as possible in 1958, though they later switched to using a standardized questionnaire for visitors to fill out.¹²⁵ The Research Houses would ultimately be sold to a buyer, but the sale conditions included a deed covenant allowing the Research Institute back into the house several times during the first year of ownership to collect additional data.¹²⁶

The Research House program reflected the state of the housing market in terms of optimizing design. Martin Bartling, vice president of the NAHB in 1958 and the builder of the Knoxville, Tennessee Research House, told a Louisville paper that in his opinion, builders had "gone about as far as we can in the direction of cheap financing for houses. With no-down-payment houses available, how much further can we go?" The only answer in his view was "to simplify construction, do more mass-production, and get around or remove the many building code restrictions that add to the cost of today's new house."¹²⁷ The research houses addressed these issues by showing tangible proof and empirical data on the function, performance, utility, and market acceptability of new materials and techniques.

¹²³ National Association of Home Builders of the United States, *Home Builders Guide to Urban Renewal* (Washington: The Association, 1961), iii.

¹²⁴ "Research by NAHB Aimed at Better House for Less Money," *The South Bend Tribune (Indiana)*, January 29, 1961, 23.

¹²⁵ *NAHB Research House: A Summary Report [Knoxville, Tennessee]*. (Washington D.C.: National Association of Home Builders, 1959), <http://hdl.handle.net/2027/uc1.b4309952>.

¹²⁶ National Association of Home Builders of the United States, *NAHB Research House; a Summary Report*, 1.

¹²⁷ "Knoxville 'Research House' Boasts Unique Features, Says Its Builder," *The Courier-Journal (Louisville, Kentucky)*, December 14, 1958, 86.



Figure 1—View of front of House

Figure 6.33. Front view of 1959 NAHB Research House, South Bend, Indiana showing living areas and breezeway to carport. Source: National Association of Home Builders Research Institute, "NAHB Research House," 1959, page 1. Hathi Trust, <https://hdl.handle.net/2027/uc1.b4309952>.



Figure 2—View of car shelter and louvered garden fence

Figure 6.34. Side elevation of 1959 NAHB Research House, South Bend, Indiana, showing carport and fenced garden off breezeway. Source: National Association of Home Builders Research Institute, "NAHB Research House," 1959, page 2. Hathi Trust, <https://hdl.handle.net/2027/uc1.b4309952>.

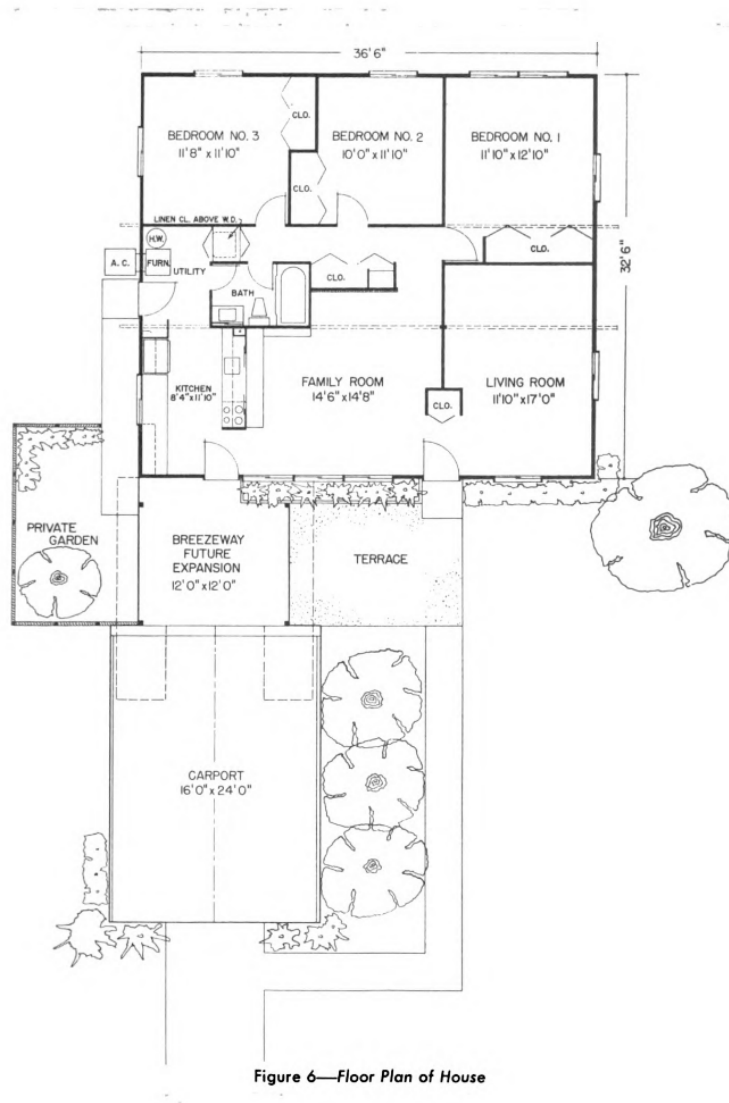


Figure 6—Floor Plan of House

Figure 6.35. Plan of 1959 NAHB Research House in South Bend, Indiana. Source: National Association of Home Builders Research Institute, "NAHB Research House," 1959, page 7. Hathi Trust, <https://hdl.handle.net/2027/uc1.b4309952>.



Figure 15—Placing exterior wall panel

Figure 6.36. Workmen tilting up panelized walls at 1959 NAHB Research House. Source: National Association of Home Builders Research Institute, "NAHB Research House," 1959, page 14. Hathi Trust, <https://hdl.handle.net/2027/uc1.b4309952>.

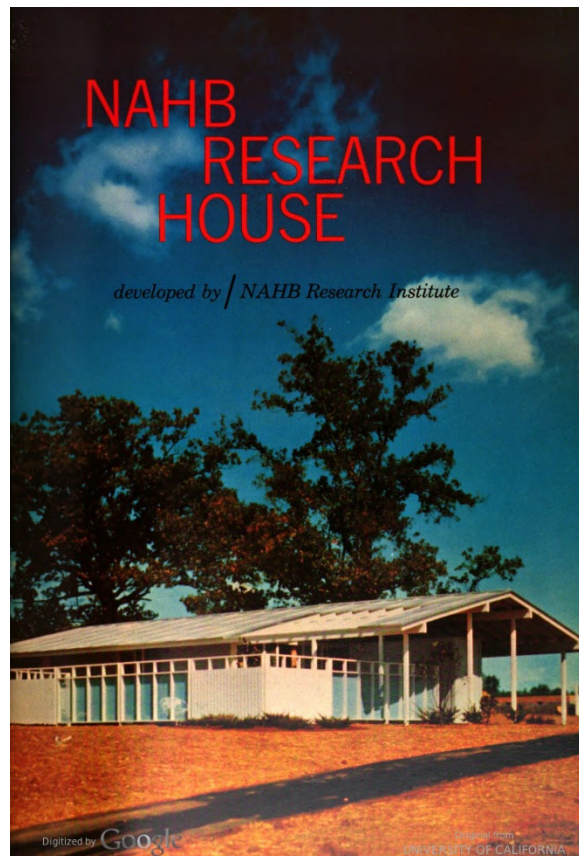


Figure 6.37. Cover of NAHB report on the 1959 Research House in Knoxville, Tennessee. Source: Hathi Trust, <https://hdl.handle.net/2027/uc1.b4309952>.

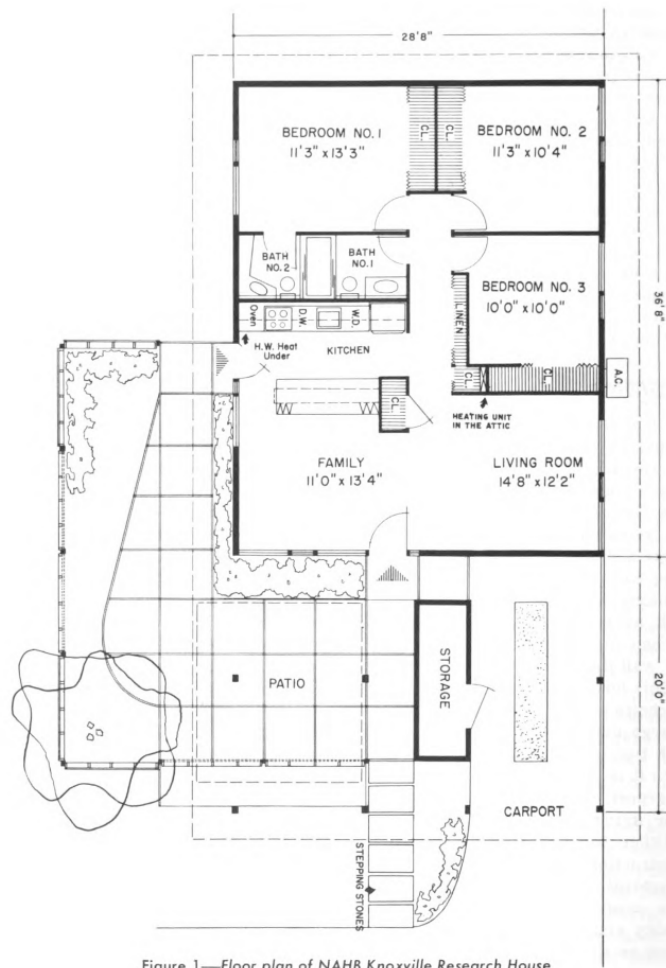


Figure 1—Floor plan of NAHB Knoxville Research House

Figure 6.38. Plan of 1959 NAHB Research House, Knoxville, Tennessee. Source: National Association of Home Builders Research Institute, "NAHB Research House," 1959, page 3. Hathi Trust, <https://hdl.handle.net/2027/uc1.b4309952>.

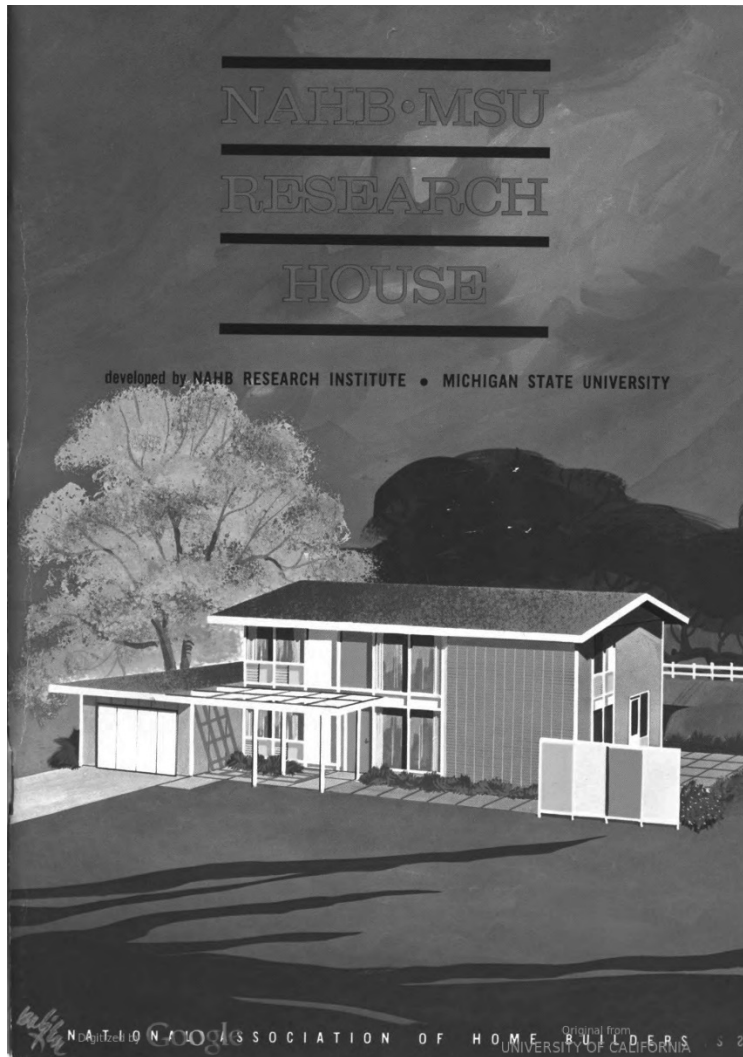


Figure 6.39. Cover of NAHB report on NAHB-MSU 1959 Research House, East Lansing Michigan. Source: Hathi Trust, <https://hdl.handle.net/2027/uc1.b4310226>.

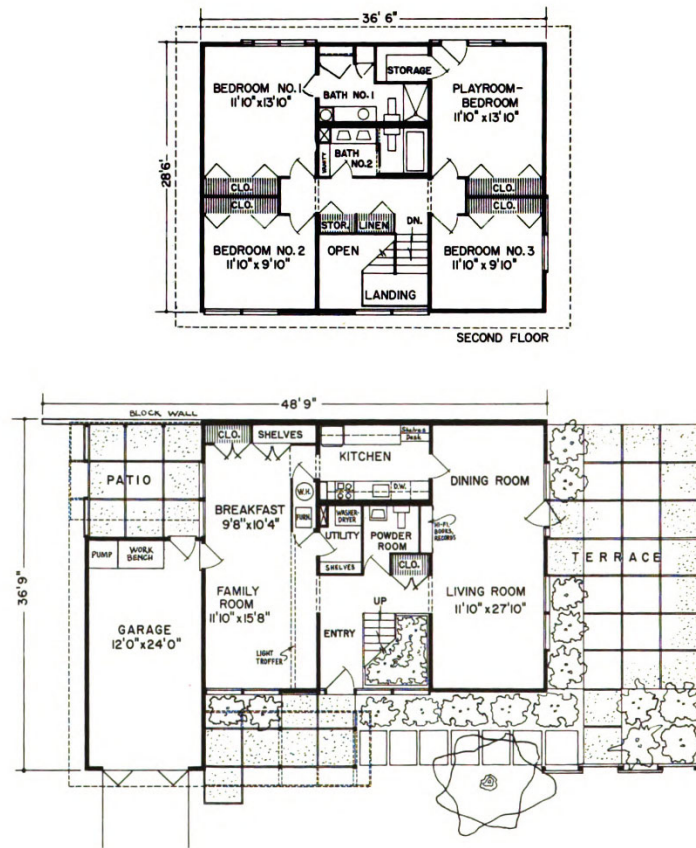


FIGURE 1 — Floor plan of NAHB—MSU Research House

Figure 6.40. Floor plan of NAHB-MSU 1959 Research House, East Lansing Michigan. Source: National Association of Home Builders and Michigan State University, NAHB-MSU Research House, 1960, page 2. Hathi Trust, <https://hdl.handle.net/2027/uc1.b4310226>.

Conclusion

In the fifteen years following the end of World War II, the major project of the organized home building industry was to transition its members from operating largely as a small-scale, handicraft endeavor to a professionalized field of domestic mass production. These efforts balanced the embodied, often vernacular knowledge of the building culture with new technology and scientific knowledge generated by and for builders. In the process, the NAHB and its members fostered a design community revolving around their shared core political and economic objectives of improving housing design and performance and maintaining a strong private housing market. The success of these efforts, in the view of the NAHB and its leaders, spoke for themselves. They saw builders as achieving many of the design and production ideals espoused by Modernist architectural thinkers and further, bringing these innovations in practical form to the consumer. In an essay in *Housing USA...as Industry Leaders See It* in 1954, the editors, all past presidents of the NAHB, noted that everything from “reorganized concepts of living space,” such as open floor plans and indoor-outdoor living, to bold new architectural lines that satisfied Americans’ “longing for individuality” were the product of builders’ design

research.¹²⁸ While “the architect dreamed,” the builder and researcher developed windows that could extend from floor to ceiling with minimum heat loss, plaster and concrete that would hold color, and paints that provided harmonious color spectra.¹²⁹ It was the entrepreneurial builder, not the artistic architect, they maintained, who had “boldly taken the lead in breaking trite traditions.”¹³⁰ Hyperbole aside, the sense of design community, or design culture, these statements reflect and the prizing of shared bodies of building knowledge within the home building industry illustrate the importance of builder-to-builder exchange and the internal design discourse of home builders in the transformation of the American home.

¹²⁸ William P. Atkinson et al., eds., *Housing... USA As Industry Leaders See It* (New York: Simmons-Boardman Publishing Corporation, 1954), 42.

¹²⁹ Atkinson et al., 93–94.

¹³⁰ Atkinson et al., 43.

CONCLUSION: RETHINKING THE TRACT HOUSE AS A DESIGN OBJECT

The central goal of this dissertation has been to remedy the status of mid-twentieth century suburban tract houses as objects outside the traditional histories of design, or what Judy Attfield called “wild things.” I argued that remedying this status requires writing a design history of tract housing that looks at these objects not according to the prevailing standards of professional architecture or architectural design, but in the context of the design objectives, design values and design environments of their makers. To “domesticate” the history of these dwellings, I investigated how builders conceived of their design work, how they negotiated the political and economic conditions of their design environments, and the rationales behind their design values and objectives. I also investigated how these objectives, values, and political economy operated in the work of individual builders, and how builders cooperatively created a distinct design culture through collaborative, builder-to-builder design exchange. Contextualizing tract housing within the design culture of the home building industry and the resulting findings warrant reconsideration of many of the established interpretive frames for mid-twentieth-century tract houses. When we consider tract houses within these contexts, we see that what often appears to be the result of a pat, rote exercise in design in fact has a rich design story with a complex field of actors, relationships, and creative conditions little recognized in existing accounts of suburban development. This conclusion summarizes these findings and suggests some of the new interpretive approaches that should guide analysis of common suburban tract houses.

The Political Economy of Tract House Design

To understand mid-twentieth-century tract houses as design objects, it is essential to understand the design environment in which their creators - home builders - operated. The political economy of housing development in the pre- and post-World War II periods shaped builders’ design objectives and the form and character of period housing. Acute housing shortages in the Depression, World War II, and postwar periods focused builders’ efforts on volume production to address the shortage, while an emerging US housing policy opened new working- and middle-class housing markets. As a result, home builders focused their efforts on a new and ambitious design project: efficiently producing large quantities of affordable dwellings as quickly as possible.

During the political and economic crises of the World War II emergency period, when the federal government almost shut builders out of war housing development, builders organized a period of rapid, widespread diffusion and adoption of new designs, methods, and approaches to tract home production. Many of these new designs and methods realized decades of housing and home building reform ambitions. Though sometimes dismissed as subpar compared to the more “fashion-forward” housing of the 1950s and later, the small, efficient economy housing of World War II and the immediate postwar period was a milestone in housing development for lower- and middle-income Americans. These houses were the first realization of the design and production fundamentals that ultimately underwrote the postwar boom in housing production for across classes.

The political context of the housing industry and housing development in the 1940s extends not just to matters of race, class, and gender, but also to direct influence on the form and shape of tract housing. Builders were deeply concerned about increasing government involvement in housing production during the New Deal and World War II and about the growing influence of public housing advocates in shaping US housing policy. Builders' dwellings of the 1940s, like those of David Bohannon, Earl Smith, and the National Association of Home Builders' (NAHB) Economy Housing campaigns, offered tangible proof that free enterprise, not government, would solve the nation's housing problems. The affordable or economy tract house was a distinctly American alternative to public or social housing models for lower income citizens, a model that drew on prevailing American housing culture and political ideals.

Builders' Design Objectives and Values

One of the biggest misconceptions about the project of rapid tract housing development in the mid-twentieth century is that builders paid little attention to matters of design. Internal dialogs in building industry trade literature demonstrate that far from being disinterested, builders considered design as critical to their success. The idea that builders had little or no interest in design persists, however, because of the interpretive frames scholars use to analyze tract housing. Builders' concepts of "good design" were rooted in professional and market objectives and values different from those of professional architecture shaped by the political economy of the housing market. The retail nature of housing development meant that home builders needed to design efficient housing models that could be produced at large scale and succeed in the marketplace. Their goal was to achieve what industrial designer Raymond Loewy termed "MAYA," or the "most advanced, yet acceptable" design – design just novel enough to attract attention, but not so novel as to violate prevailing norms for the design object in question. They wanted solid, flexible plans that they could redesign, merchandise, and adapt as market factors changed. Home builders thus embraced a set of design values focused on simplicity and uniformity, flexibility, a balance of continuity and novelty, and optimized design for efficient production. In this pursuit, builders rarely sought out completely new designs. Identifying, borrowing, adapting, or reshaping viable models to meet market conditions were the central creative acts for tract housing design. Recasting notions of what constitutes design to recognizing this fact creates a more contextualized and appropriate framework for analysis for tract houses, one where creative adaptation and transformation are as important as novel artistic expression.

The Nature of Authorship

To understand tract housing as design objects, we also need to recast the notion of who is and who is not a designer. Builders often used professional and unlicensed architects and architectural designers to shape housing models, but it would be incorrect to assign these figures full credit for the final products. Not only did builders rarely design housing models from "whole cloth," the design process for tract housing was a collaborative process that included an array of contributors. In large-scale home building firms, designs were typically the result of a large, multidisciplinary team that could include architects, planners, engineers, commercial

designer, sales staff, construction specialists, accounting staff, and sometimes even the banking institution financing the project. In this setting, the builder served as a design director, generating ideas that were then reviewed, refined, and realized by a multidisciplinary design team. He, rather than the architect, held ultimate authority on the balance of market, economic, technical, and consumer-driven variables. His reading of the market, model selection, and adaptation of the model to local conditions effected the final design, making the builder as much a designer as the architect.

The builder had another important partner in design development work as well: the housing consumer. Builders looked to tastemakers such as architects, designers, design editors, and even materials producers for design guidance, and these figures certainly helped shape consumer opinions on design. But builders also interacted directly with consumers at the local level to gauge their desires, needs, and expectations, or in other words, the “MAYA” design for the builders’ local markets. These practices allowed builders to tailor their products to regional housing cultures, socioeconomic classes, and taste-based demographic groups. Builders conducted these dialogs through personal contact, market research, and market testing of architectural design trends. In some instances, such as with Henry Doelger, builders went so far as to embed themselves in their own developments as participant observers. To negotiate the growing, and increasingly diverse, postwar consumer marketplace, builders adopted the design and merchandising tactics of retailers, automobile makers, and other durable goods manufacturers. Builders used vertically-integrated strategies of designing, building, and merchandising houses based on their readings of increasingly segmented target markets. The result was a catalog of housing within each market geography demonstrating a diversity of form and style tailored to newly identified market segments based on price and taste. Tract houses were a coproduction between producer and consumer in which both sides negotiated the material and economic realities of housing production and social and cultural ideas about what constituted a home.

Vernacular Design Patterns

The collaborative nature of tract housing design and the exchange on matters of design between producers and consumers have two important implications for interpreting and understanding commoditized housing. The first is that these practices position tract housing as a form of vernacular architecture – a set of objects coproduced or negotiated from a set of common understandings between maker and user. Builders were central figures in these negotiations, reconciling national and local design trends or preferences with the material and economic realities of building. Tract houses are therefore, inescapably, expressions of local material cultural - a coalescence of economic, cultural, geographic, and social factors translated into a material object. Like other forms of vernacular architecture, tract houses can be read as indices of cultural and social patterns at local and regional scale, as well as indicators of the diffusion and acceptance of design ideas. The second key implication of this reframing of tract home production is that we must do away with the notion of a national housing market in the pre- or post-World War II era. To date, most analysis of suburban housing in scholarly literature has looked at tract house models as the product of an increasingly nationalized housing and home building culture. Certain forms and styles did gain national popularity, but in reality, the

housing market existed as a series of local markets, each with its own specificities and proclivities. Much of the emphasis on the emergence of a national housing market in this period relies on the view that Federal Housing Administration (FHA) standards homogenized housing design or restricted design creativity in period. FHA housing standards were an important baseline and curb on what the government considered risky design decisions, but builders successfully manipulated their designs to conform with these standards and still serve a wide variety of market areas and segments.

The Power of the Local

Even with national standards and design trends, local markets remained the primary testing and proving grounds for all design or production ideas. The calculated experimentation of design leaders – or builders who took on the risks of experimenting with new production methods and models – at the local level, rather than national standards or models, drove the diffusion of nationally-recognizable housing types and production methods. These dynamics of design diffusion argue strongly for paying more attention to the influence of the local on the national, rather than the national on the local in mid-twentieth century home building.

California Design Leadership

The San Francisco Bay Area of California was a critical local center of design leadership and diffusion in the World War II and postwar periods. Three ambitious, large-scale Bay Area builders - Henry Doelger, David Bohannon, and Earl Smith - demonstrate the role of California builders in advancing the methods, practices, and habits of the larger national building culture during both World War II and the postwar periods. Henry Doelger's early experimentation with the "California method" of building and translation of urban homebuilding methods to the suburban setting proved the efficacy of what were then methods with limited track records. David Bohannon built on the foundation Doelger created, optimizing the California method during a tense period in the political and economic fortunes of the housing industry to show its utility in solving the nation's housing problems. Bohannon became the public face of the California method and the large-scale, efficient, and affordable housing the method facilitated. Earl Smith was a national leader in the adoption of new design ideas – particularly the flat roof and exterior styling associated with Modernism – into production housing. He achieved FHA approval to build and sell the first FHA-backed houses in the US with flat roofs. His success in selling thousands of his "flat-tops" demonstrated to colleagues and housing regulators alike that elements of Modern styling not only made houses more efficient and less expensive to build and but were also acceptable to lower-income buyers. All three builders led in developing successful home merchandising methods, from Doelger's continued use of a controlled eclecticism in home styling to Bohannon's use of his Hillsdale development in San Mateo as a design development laboratory. Bohannon's demonstration homes for programs such as *House Beautiful's* Pace Setter Houses series engaged with some of the major questions of the day on housing design and character using attainable, replicable, and approachable models.

The careers of figures like Henry Doelger and David Bohannon also show that the periodization of the development of the post-World War II suburban landscape requires

recalibration. Scholars such as Marc Weiss have laid strong groundwork for this argument, demonstrating that all the required “parts” for postwar suburban development were already in place by the late 1920s. Narratives of postwar development that begin with the gargantuan examples like Levittown, New York have bypassed the revolution and some of its key actors. Industrialized building practices and many of the design methods that underwrote postwar suburban expansion were developed more than a decade earlier and first found widespread application in California.

Builder-to-Builder Design Exchange and Diffusion

While home building was not a wholly nationalized endeavor, it was not an entirely localized one, either. Doelger, Bohannon, and Smith were able to influence the production and design methods of their colleagues because of the increasingly organized national community of builders during the mid-twentieth century. Facilitated primarily through the NAHB, builders engaged in focused campaigns to collect and legitimize their own distinct body of design knowledge through builder-to-builder exchange of design information and builder-led research. The forum the NAHB provided for sharing and creating building knowledge and the results of their efforts were part of the larger project of professionalizing the building industry. In the process, the NAHB and its members cooperatively constructed a common design culture grounded in design research and material and technical innovation. The NAHB network, alongside local building associations, gave builders a trusted source of information on best practices in production-scale building, housing design, marketing, and merchandising. The dialogs on production and design that occurred within these professional networks were as important as builders’ dialogs with consumers in shaping common tract houses.

The patterns of design exchange among builders complicate the notion of a passive “trickle-down” effect from aesthetically-focused architectural design or a “top-down” imposition of design ideas from national regulatory agencies like the FHA. As evidenced by the NAHB and its programs, most builders did not passively receive or copy ideas from professional architecture or government standards, but rather borrowed, tested, and accepted or rejected ideas based on their own design values, market experience, and gauging of consumer acceptance. In making these decisions, builder-to-builder interaction was more highly valued as a source of design information than architecture or regulators. The influence of local markets on national design discourse if anything suggests a “bottom up” effect where local experimentation and adaptation of art-driven design ideas and government standards informed a loose national building design culture and practice. This design discourse forms the heart of home building design culture in the period – one created by and sustained by home builders as designers.

The Tract House as a Design Object

So, what do we encounter, then, when we encounter a suburban tract house from the mid-twentieth century? On the one hand, we encounter an object shaped by the political economy of the housing industry and the realization of a vision for modern mass housing tailored to the capitalist political economy of the United States. As such, the tract house is an object engineered to be produced quickly, efficiently, and in forms acceptable to the greatest number

of potential buyers. On the other hand, we encounter a form of vernacular architecture, created not within an insular, tradition-laden community, but in a dynamic and rapidly changing marketplace. We encounter the product of a burst of creative design development on the part of builders, in partnership with consumers, as builders worked to reconcile local specificities and preferences, popular housing culture, and the demands of the larger political economy of housing. As such, when we encounter the tract house, we encounter a measure of what was advantageous for builders to produce and attractive to consumers to buy in a given place and time – an important source of evidence on the local and national domestic cultural landscape. With these perspectives and interpretive frames in place, when we encounter the tract house, we no longer encounter a “wild thing.” Instead, we encounter a diverse, but knowable, species of object that has much to tell about the mid-twentieth century transformation of the character of the American domestic landscape and the dynamic design culture that created it.

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