



Taylor & Francis  
Taylor & Francis Group

 ACSA  
ASSOCIATION OF COLLEGIATE  
SCHOOLS OF ARCHITECTURE

---

Framing the American Dream

Author(s): David Monteyne

Source: *Journal of Architectural Education (1984-)*, Vol. 58, No. 1, Construction and Context (Sep., 2004), pp. 24-33

Published by: [Taylor & Francis, Ltd.](#) on behalf of the [Association of Collegiate Schools of Architecture, Inc.](#)

Stable URL: <http://www.jstor.org/stable/40480521>

Accessed: 22/10/2014 22:09

---

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Taylor & Francis, Ltd. and Association of Collegiate Schools of Architecture, Inc. are collaborating with JSTOR to digitize, preserve and extend access to *Journal of Architectural Education (1984-)*.

<http://www.jstor.org>

# Framing the American Dream

Presenting a cultural history of the platform frame, this article explores its codification and commodification by the mid-twentieth century in relation to changing technology and to a shifting landscape of residential development. In addition to its promotion by government agencies, platform framing was complementary to the development of mass production and consumption in house construction. Rows of new houses can be seen in parallel with newly standardized and marketed lumber products like plywood. But pure commodification was tempered by appeals to the American dream of homeownership, partly propagated through myths about the nineteenth-century invention of the balloon frame.

## Introduction

Since World War II, almost all houses in the United States have been built with a method known as platform framing, a relatively standardized and refined form of light wood frame construction. If houses are the most common building type by sheer number, then platform framing is by far the most common method of construction in use today. Therefore, it seems particularly strange that, compared to other methods of building, platform framing has received little attention from historians, architectural or otherwise. This contrasts with the cousin of the platform frame, the balloon frame, on which edifice has been erected the social and architectural history of both nineteenth-century American expansion and twentieth-century suburbanization. However, when scholars such as Kenneth Jackson, for instance, credit the balloon frame with bringing "the price of a private dwelling within the reach of most citizens" during the twentieth century, they really mean the platform frame.<sup>1</sup>

More significant than this mild corrective to the terminology of the wood framing literature, differentiating between the balloon and platform frames is essential to understanding how the codification of the platform frame contributed to the mass expansion of homeownership in the postwar United States. By looking at the platform frame,

and how it became the standard version of house construction, this paper indicates an increasing commodification of the house related both to changing technology and to a shifting landscape of residential development and homeownership. The history of platform framing is intimately connected with that of the lumber industry, and house construction experienced a drive toward standardization in parallel with the  $2 \times 4$ . A variety of discourses and practices converged between the two world wars that enabled the platform framing of the American dream.

Until recent scholarship, the story of the balloon frame that ascribes its invention to 1830s Chicago has worked to suppress a long and complex evolution of light wood framing techniques and their meanings within American culture. Ironically, the ascendancy of the platform frame in U.S. construction history parallels the popularization of the dominant myths of the balloon frame: the latter's narrative of American frontier innovation was most fully established between the two wars by architectural historians such as Siegfried Giedion.<sup>2</sup> I argue that this concurrence was a cultural process by which the twentieth-century rationalization of the house building and real estate industries, associated with platform framing, was partially mitigated by invented traditions that tied the balloon frame to

ideal American character traits. The moderately industrialized, nineteenth-century balloon frame came to be associated with inventive, pragmatic, independent citizens who could produce their own livelihood in spite of skilled labor shortages on the frontier.

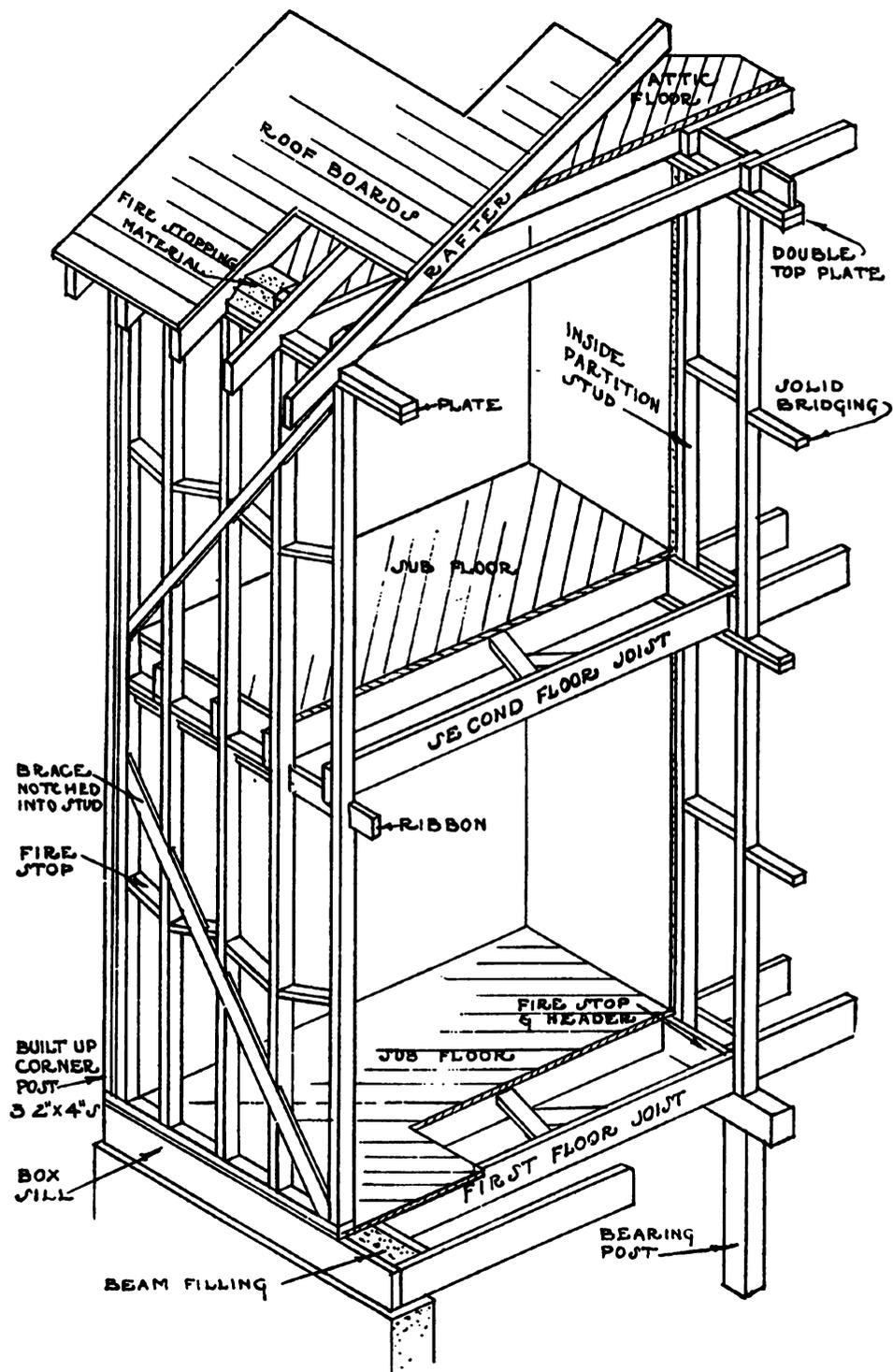
Meanwhile, the platform frame played a key role in the actualization of a Fordist republic of dependent consumers. Indeed, new house construction, most of it built with platform framing, was the bedrock of what historian Lizabeth Cohen has called a Consumers' Republic "that entrusted the private mass consumption marketplace, supported by government resources, with delivering not only economic prosperity but also loftier social and political ambitions for a more equal, free, and democratic nation."<sup>3</sup> However, as Cohen argues, this equation of democracy, equality, and mass consumption did not add up for all citizens of the republic. Often, the mass homeownership allowed by the development of the platform frame only increased indebtedness to banks and to the state. And the array of commodities available to citizen consumers effectively concealed the exploitive and alienating divisions of labor that made those commodities possible. In face of these inequities, the narrative of the balloon frame helped maintain the American dream of independent property ownership and

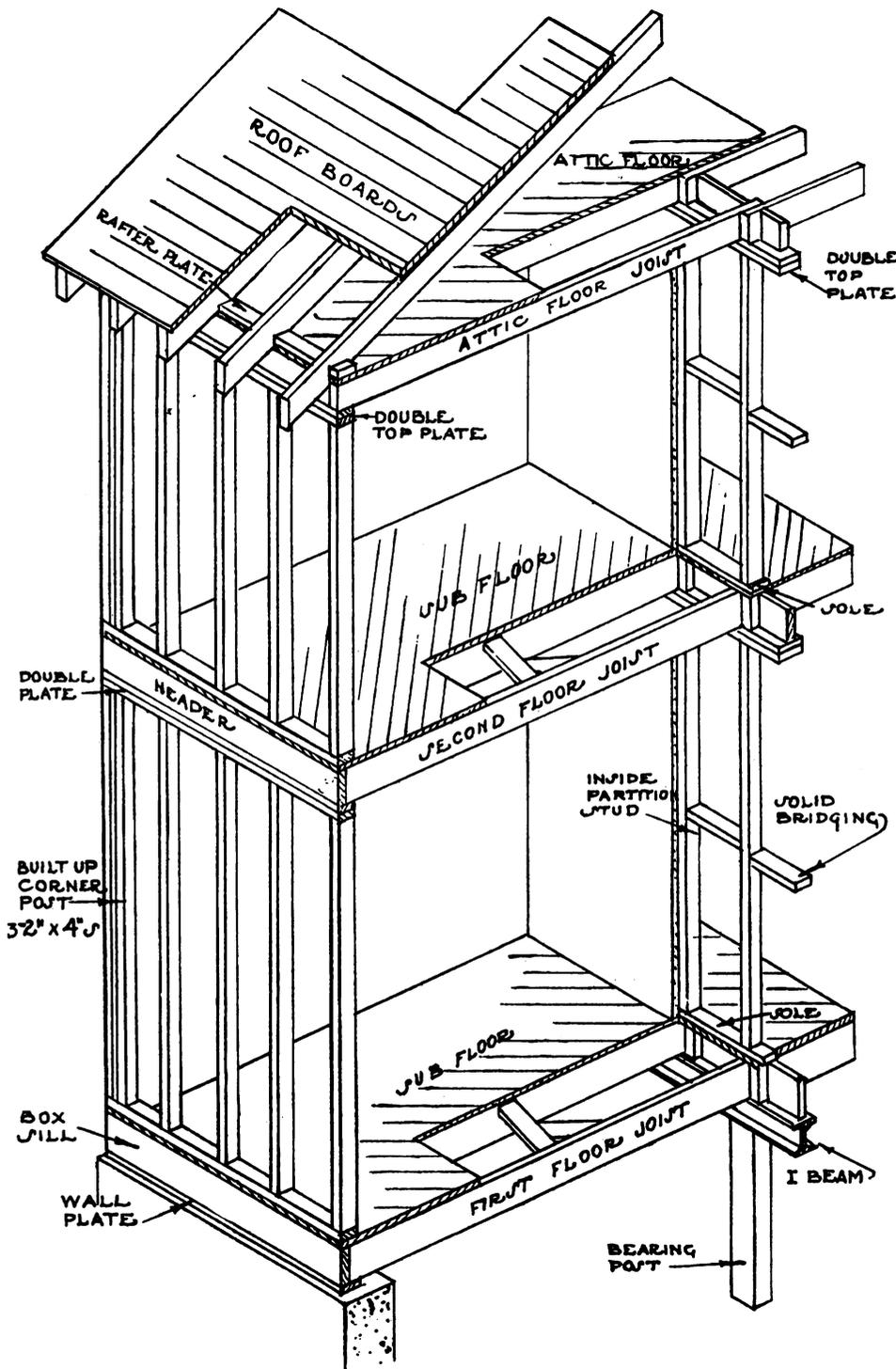
self-reliance. This paper aims at two goals: to present a history of the platform frame within this architectural and cultural context, and to propose why this building technology has been invisible to historians as well as to consumers. The story of the platform frame aids in understanding how the long-standing equation between homeownership and U.S. citizenship was transformed when the commodification of the house became integral to a Consumer's Republic.

### Light Framing and Codification

Light framing is based on narrow pieces of milled lumber and nailed connections. A skeleton of lumber studs, plates, joists, and rafters is sheathed with flat boards or panels, and this sheathing is covered by finishing materials. The strength of the structure comes from the interconnection of all pieces and the ability of the sheathing to tie the light frame together into a system. The two most well-known types of light wood frame construction are balloon and platform. (Figures 1 and 2.) Some of the technical details significant to the present argument that differentiate these two types of framing are the construction of sills, the length of studs, the connection between floors, and the order of erection. With the balloon frame, studs, corner posts, and joists rest directly on the sills, and vertical members extend in one piece to the roof, often two stories in height; upper-floor joists are supported on horizontal pieces let in to the studs—basically, the walls must go up before anything else can be done. In platform framing, however, each story is erected as a separate unit: a box sill is built with the joists, and subflooring is nailed down; each wall section is built lying on this platform, and the wall is then tilted into place. For upper stories, a second platform is built on top of the first walls, and then the wall framing process is repeated.<sup>4</sup>

However, these are contemporary definitions, and as Fred Peterson has shown light wood frame construction had no definitive form in the





nineteenth century: there were many competing versions, one of which was the platform frame.<sup>5</sup> The mixing of different building traditions, the variation of environmental conditions in American regions, and the geographically uneven development of communication networks, ensured that the balloon frame did not spring forth as a resolved design to settle the frontier, as the Giedion school would have us believe. To illustrate the technical and geographic confusion of methods, we can look to some of the key evidence used by previous historians of the balloon frame. For example, the platform frame is sometimes called *western framing*, due to an association with the California gold rush based on an equivocal 1855 reference to houses in San Francisco being “put up a story at a time.” This West Coast story was told in response to a New York lecture by Solon Robinson describing how to build a balloon frame house, based on his experience in the lower Midwest. Strangely, though, if one closely reads Robinson’s instructions, his scheme is itself remarkably similar to platform framing, and could even be read as a critique of the method of balloon framing described previously.<sup>6</sup> For the platform frame to become as widespread as it did by the mid-twentieth century, a process of national standardization clearly would be necessary. Concurrently, the story of the balloon frame’s invention was being standardized according to the national motifs that could be associated with its narrative.

Even if there were different versions of light wood framing, a process of standardization began in the second half of the nineteenth century as the general principles spread rapidly across the United States. Certain developments contributed to standardization. For example, techniques of fire and pest control, as well as new systems of plumbing, gas lighting, and eventually electricity had to be accommodated between the framing members. The initial problem of balloon framed walls acting as hazardous flues was solved with the prescription of

extensive fire blocking, though it could be avoided altogether by selecting the platform frame instead, in which vertical fire stops are integral to the design. Further, while few of the proliferating plan books actually described structure in detail, allowing the local builder to supply the necessary expertise, by the 1870s most authors assumed their designs would be executed in the local carpenter's version of light framing.<sup>7</sup> More importantly, a growing mail-order industry producing packaged and ready-cut houses led to the tighter definition of light frame systems of building, as they broadly distributed their standard versions, thus influencing local methods of construction. Just after the turn of the twentieth century, two of the largest manufacturers were Aladdin Homes and Sears Roebuck, whose variety of house styles were designed specifically to be constructed with platform framing.<sup>8</sup> These mail-order companies realized that the platform frame was a simpler concept than other modes of light wood framing and that it afforded relative ease of erection due to its separable stages of assembly. These beginnings of codification for the platform frame also prompted early standardization among some lumber mills, which produced studs and joists for the large mail-order firms.

Nevertheless, if the platform frame held prominence in certain segments of the U.S. house construction business up to World War I, by the 1920s it would take an array of cultural, political, and technological forces to ultimately nationalize, and rationalize, this construction method. During the 1920s, newly formed organizations—from the expanded Bureau of Standards, to government departments and committees dealing with home economics and building materials, to real estate and building industry associations—began to study housing with the goal of rationalizing its provision. Materials and construction methods, as well as household movement patterns and storage requirements, were studied in the quest for what urban

historian Greg Hise has termed “the minimum house,” a set of basic standards for spatial requirements, comfort, and efficiencies in production.<sup>9</sup> The effects of this rationalization process on the lumber and house construction industries contributed to the codification of the platform frame. Ironically, one of these new government agencies, the National Committee on Wood Utilization, published a treatise on wood construction in 1929 that privileged the balloon over the platform frame, stating that the latter “today has only a limited use and is not recommended.”<sup>10</sup> But this committee would soon be proved wrong, as a concatenation of professional involvement, promotional discourse, standards writing, materials development, and public policy resulted in the nearly exclusive adoption of the platform frame.

One of the organizations devoted to the well-designed “minimum house,” the Architects' Small House Service Bureau (ASHSB), was formed in 1923 and reflected a perceived need for professionals to bring standards to the chaotic house-building process. The bureau would “inform the public . . . about the application of the principles of good architecture to building.”<sup>11</sup> The ASHSB mainly operated an architectural mail-order service for the plans of small, affordable houses, not unlike the many plan book services of the nineteenth century. What was unique about the ASHSB, though, is that this service was now officially endorsed by the U.S. Secretary of Commerce and the American Institute of Architects. Most of the plans published by the ASHSB were light wood frame construction, and the bureau partnered at different times with both the Southern Pine Association (SPA) and Weyerhaeuser Forest Products to produce several catalogs of house plans. In the design program for the SPA publications, the architects were reminded to specify stock sizes of lumber, preferably in the shorter lengths that were cheaper and “liable to give better grades.”<sup>12</sup> Thus, the increasing cost of quality studs

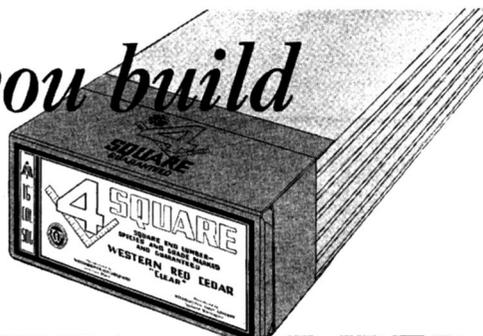
in the two-story lengths typical of the balloon frame contributed to the growing practicality of the platform method.

These early promotional efforts of the lumber industry also reflected a recognition of increasing competition from more easily standardized building materials such as steel and concrete. In the early 1920s, the lumber industry first discovered the concept of advertising to promote the use of wood products. In addition to the variety of plan books the industry published, the first major wood advertising campaign in both popular and industry publications was launched by Weyerhaeuser in 1928 with its 4-Square line of products. (Figure 3.) For this program, the corporation took select lumber smoothed on all four sides and squared at the ends, stamped it with the 4-Square logo, wrapped it, and shipped it to lumber yards in specially cleaned rail cars. In builder's magazines, specifiers were reminded that “six million 4-Square advertisements a month tell homeowners the story of the guaranteed lumber.” Competitors strove to match the 4-Square program.<sup>13</sup> Subsequently, in 1932, the National Lumber Manufacturers Association formed a subsidiary organization devoted entirely to trade promotions and advertising. The industry perceived their competitors instilling reluctance and fear in customers by decrying the susceptibility of wood buildings to conflagration and collapse, so product standards became one of the core themes of lumber industry promotions.<sup>14</sup>

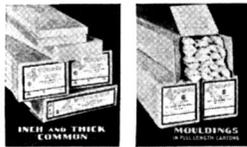
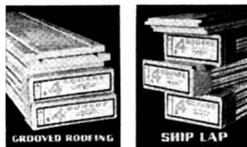
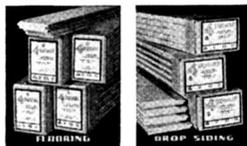
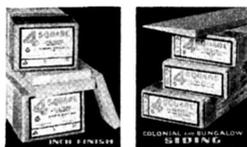
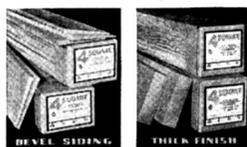
The 1920s have been termed the “golden age of standards,” when the governments of industrialized nations urged trade associations to homogenize products and processes to coordinate disparate corporate and regional practices. Unlike in other countries, in the United States standard writing took place in the private sector.<sup>15</sup> However, this was a difficult task in the lumber industry, and it took decades to ultimately reach agreement on the actual size of a nominal 2 × 4. Dimension lumber is subject

# The homes you build

and the



## NEW IDEA in LUMBER



When home owners want the best construction they can buy—

When it is so easy to give them better construction and build your reputation for quality work—

And when the slight extra cost of the lumber that makes better construction possible is usually more than repaid by the savings it makes possible—

Then it is easy to see why contractors from coast to coast are growing more and more enthusiastic about 4-SQUARE Lumber.

This improved lumber is clean and unmarred. It is protected from dirt, damage and depreciation. It is *packaged*.

4-SQUARE Lumber is properly seasoned, ready and fit for good construction and easy to work with.

Every piece is cut to exact standard length. Both ends of

every piece are precisely squared. Not only do these plus values help the carpenter to do a better job, but they save hours of needless hand-trimming on the job.

Your customers know and trust 4-SQUARE Lumber. They know they are getting their full money's worth when they see the 4-SQUARE

packages delivered. Six million 4-SQUARE advertisements a month tell home owners the story of the guaranteed lumber with the *eleven plus values*.

Why not make the 4-SQUARE plus values work for you to help you get more contracts or sell more homes? And in the meantime, mail the coupon for a book thousands of home owners are reading—“Eleven Plus Values.”

- Every Piece of 4-SQUARE Lumber gives you these ELEVEN PLUS VALUES
- 1 Full Lengths
  - 2 Square Ends
  - 3 Properly Seasoned
  - 4 Better Craftsmanship
  - 5 Better Construction
  - 6 Protected Ends and Faces
  - 7 Better Appearance
  - 8 Marked for Species
  - 9 Marked for Grade
  - 10 Trade-Marked
  - 11 Guaranteed by Weyerhaeuser



WEYERHAEUSER FOREST PRODUCTS  
Merchants National Bank Building  
St. Paul, Minnesota

Please send me a copy of “Eleven Plus Values”.

Name .....

Street and No. ....

City .....

State .....

Lumber Dealer's Name .....

BA-9

This message to contractors is published  
by Weyerhaeuser as spokesman for

**4 SQUARE DEALERS**  
FROM COAST TO COAST

FOR SEPTEMBER, 1930

91

to numerous regional variations in species, manufacturing, transport, and marketing.<sup>16</sup> An additional problem was that only a small portion of the thousands of small sawmills spread across the United States were actually members of the national associations. The desire, though, among the big producers, was for wood to fit in with increasingly complex building codes and design guidelines, in the manner of more processed and formulaic competitors such as steel and concrete.

This drive to standardization also gave rise to lumber industry organizations that were dedicated to materials testing and the establishment of design values that could make wood products part of a codified system of building. The Forest Products Laboratory (FPL) of the U.S. Department of Agriculture, established in Madison, Wisconsin, in 1910, greatly expanded its research into house construction in subsequent decades. For instance, in 1930 the FPL released its study on the strength of light wood frame wall sections of the type used in platform framing: the FPL had developed large-scale apparatus that could apply pressure at various points to test wall assemblies with different sheathing, nailing, or bracing patterns, and with or without wall openings.<sup>17</sup> The fact that balloon framed walls are not separable from the rest of the structure the way platform frame wall sections are contributed to the ascendancy of platform framing in this period of testing, engineered design, and increased rationalization of the construction process.

Meanwhile, the lumber industry was perfecting its first engineered products, combining wood with glues to create manufactured materials with predictable properties. Of these, the product that would prompt significant changes in house building was plywood. Plywood had been around for some time, and the FPL tested it for use as sheathing in the late 1920s, but it was rarely used in building until after 1934 when waterproof glues were developed through a concerted industry research effort. This new material was promoted by the Douglas Fir Plywood Association (DFPA), whose publicity

department “began to write plywood into magazines and newspapers everywhere.”<sup>18</sup> Plywood was used extensively by the Army Corps of Engineers and the Navy Construction Battalion (the Seabees) during World War II in the construction of barracks, bridges and even PT boats. As the material’s corporate historian wrote, “the friendly tough building material of peacetime proved a rugged foe in war.”<sup>19</sup> The veterans of these battalions, most of whom were employed in the building industry before and after the war, came back with a thorough knowledge of plywood’s applications.

The importance of plywood in house construction was that it allowed very rapid construction of the platform and sheathing of the wall units, both formerly achieved with 8-inch-wide boards. Numerous systems of prefabrication that developed during the 1930s and 1940s, the heady years of discourse on the rationalization of housing, used plywood as their basic material in platform systems with panel wall sections.<sup>20</sup> And in regular, onsite construction, the proliferation of plywood, combined with the increasing rarity and expense of longer studs, assured the ultimate ascendancy of the platform frame. The 4-by-8-foot sheets of plywood also reinforced standard building measurements and formed a basic module for plans and elevations. Of course, like other new materials and methods, plywood was not introduced universally overnight. It came up against local building codes that required board sheathing, and sheathers unions protested the elimination of jobs due to time-saving panel products.<sup>21</sup> But as demand pushed the building industry toward year-round construction, weather issues also made it increasingly important to get a house sheathed quickly.<sup>22</sup> Pressure for new housing mounted in the late 1940s, and in the end technical and political opposition was subsumed by consensus over the efficiencies of these innovations.

At the same time, the building industry was rationalizing the construction process, especially through onsite mass production techniques developed by military housing contractors during World

War II and perfected after the war by the large-scale merchant builders such as Levitt & Sons on the East Coast and the David D. Bohannon Organization on the West. William Levitt served as a lieutenant in the Seabees from 1943 to 1945, and Bohannon built wartime housing in California, which, in itself, he claimed, was “like planning a military campaign.”<sup>23</sup> Subdivision housing projects for defense industry workers and army camp construction at home and abroad had developed the concept of a reverse assembly line for house building, in which instrumentalized teams of workers moved from house to house performing the same task on each. Platform frame methods, because of the definable stages of building involved, are amenable to this assembly line production. The standard history of these postwar developers concludes that, though the building process remained “very crude” compared to factory assembly lines, “through specialization, material control, precutting, and preassembly, merchant builders brought a degree of speed and predictability that had previously been deemed impossible.”<sup>24</sup>

Still, the merchant builders who used the most standardized processes built only a portion of all houses. Building remained an industry composed of thousands of small-scale operators, mirroring the diverse and localized lumber industry. Indeed, as architect M. Edwin Green explained in the 1950s, “the standardization of building materials involves not one but hundreds of different items; it affects thousands of manufacturers and millions of men who perform the actual construction work [and is affected by] extremes of climatic and geographic conditions and the varying patterns of construction practices.”<sup>25</sup> However, the centralized economy of World War II should not be underestimated, and most individual, small-scale builders would have experienced at some point the mass production of wartime housing or postwar subdivision development, and the methods learned on those projects influenced their subsequent work. While they continued to build in idiosyncratic ways based on per-

sonal experience and regional factors, they also incorporated industrial materials like plywood and the timesaving methods of platform framing. In the postwar period, housing starts eclipsed all previous records, and, no matter the size or style of builder, the increased supply of houses was made possible by these new materials and methods. Platform framing would be the structural basis for a widespread commodification and consumption of the American dream of homeownership.

### **Commodification and Homeownership**

That the house was becoming a commodity for purchase and resale was certainly apparent at least as early as the nineteenth-century formation of the ready-cut industry, with its slick catalogs and fixed prices. However, the extent to which the house became an object of mass consumption after World War II is not reflected in the nature of nineteenth-century land development, building, mortgages, or homeownership. Even into the 1930s, big developers restricted their activity to the community plan, infrastructure, and improvements that would help them sell lots to small-scale speculative builders or potential householders.<sup>26</sup> Prior to New Deal-era mortgage restructuring, the householder would need a significant amount of capital in hand to buy a house or initiate a building project, and often had the opportunity to research and oversee the entire process of building, from the purchase of a lot in a neighborhood of choice, to the choice of plan, style, and materials. Further, the capital and emotional investment at the outset of a building project seemed to set up the single-family home as a permanent investment in a community, although the actual mobility of nineteenth-century homeowners indicates that permanence was more symbolic than real. The increase in the commodification of the house largely eliminated the home’s symbolic function as a family heirloom or any sense of it as a lifetime purchase.<sup>27</sup> But between the two world wars, the ties between property ownership and good

citizenship were reinforced by changes to the government and industry of house building.

Exponential demographic changes, such as the naturalization of immigrants and their growing families and the great numbers of the working class that served during World War I, left many citizens with a new sense of entitlement to the American dream. Class limitations, on accessibility to homeownership began to change right after World War I when a severe housing shortage, strikes, and urban unrest drew attention to the atomized nature of the building industry, and its seeming inability to satisfy demand. Teaming up with national real estate and construction organizations, U.S. Secretary of Commerce Herbert Hoover promoted the “Own Your Own Home” campaign, which, according to Marc Weiss, had as its objective “to defeat radical protest and restore political stability” by tying workers to a piece of property and mortgage.<sup>28</sup> Intrinsic to a broadened working-class citizenship — and to the accompanying economic and political stability envisioned by government and industry — would be homeownership. In concert with the researchers and designers of the “minimum house,” the federal government initiated legislation that would make the house a more widely available commodity circulating in a Fordist economy of mass production and mass consumption.

Of utmost importance was the 1934 creation of the Federal Housing Administration (FHA), which, among other things, permanently established and guaranteed the long-term amortized mortgage, and developed insurance, property, and financing standards that oversaw lot size, house plans, and community development. Trends toward standardization of materials and the preeminence of the platform frame were also advanced by this New Deal legislation of the 1930s. The FHA exerted great influence over the materials and techniques used for FHA-approved houses, which amounted to approximately 30 percent of all homes built between 1934 and 1957. Increasingly, the whole building industry came under the influence of the FHA. For example,

a boon to the plywood industry was the FHA approval that its product received in 1938, after the DFPA instituted standards and grade-marking.<sup>29</sup> The FHA essentially underwrote a diverse but newly organized building industry that by World War II formed a network of land developers, building contractors, material suppliers, and government agencies responding to the ever-increasing demand for homeownership. By exerting government controls over the process of production and consumption, the FHA provided an essential impetus for the commodification of the house and its parts.

Undergirded by further federal government assistance, such as the loans to veterans allowed by the G.I. Bill after World War II, broadened homeownership would drive the growth of a mass-consumption economy.<sup>30</sup> Overall, these New Deal and World War II-era expansions of the state’s obligation to direct the economy were designed to expand the definition of citizens as consumers within a Fordist logic: pay workers enough and loan them money so they can buy the things they produce. In turn, this will lead to increased production and profit for the economy; continued growth of the housing market was ensured by the ease of building and buying, which encouraged an ethos of trading up to a bigger, more expensive house. For example, numerous articles related how Levittowners “could now buy a new house each year, as they would a new car.”<sup>31</sup>

Indeed, restructured mortgage lending made houses much more convenient to pay for, turning the house into an affordable commodity to be purchased like a car or dishwasher — and, by providing affordable homeownership, industry and government increased demand for these related commodities and provided the equity that would help finance their purchase. The marketing of the house reflected its commodification in this way, as Levitt & Sons sold their houses over the counter in their “store.” In the store, samples of the plumbing and other commodities incorporated in the houses — including the lumber — were on display.<sup>32</sup> Meanwhile,

representations in popular magazines, as well as in architecture journals, of the mass production processes that were rationalizing house construction allowed potential home buyers to consume images of modern efficiency and projected postwar affluence, without getting splinters in their fingers. In these articles, postwar platform frame house construction was repeatedly compared to the automobile assembly line, connecting these processes in a narrative of Fordist rationalization.<sup>33</sup> Therefore, the structural members, and even the structure itself, became part of a constellation of commodities that formed the nodal point of a consumer economy: the single-family home.

As discussed previously, the lumber industry performs a fundamental role in distancing the consumer from both the natural origins of materials and the processes of house production. Plywood, for example, comes from trees by way of a complicated industrial process that is invisible in the packaged stack of standardized, planar, retail objects delivered from the mill. The ubiquitous 2 × 4 appears nothing like a tree: at least since Weyerhaeuser’s 4-Square program, the 2 × 4 has been the subject of intense marketing, beginning with the standardization of lengths, sizes, and grades, and extending to the planing of all sides to make smooth (splinter-free?), attractive surfaces. Disconnected from their histories of resource extraction and industrial production, the stacks of lumber, plywood, and other building products at the local lumber yard became arrays of bounty, consumption, and possibility, available to the citizens of a Consumer’s Republic.

Likewise, the manifestation of the house in the realm of consumption results in an array of objects on display along a street. The rationalized process of platform framing and the commodified building products it incorporates lead to the elision of natural resources and labor — the celebration of mass consumption, and the government and corporate reorganizations that allowed for it, glossed over the exploitive social relations of the building industries. In particular, the reverse assembly line and the

increased speed of construction deskilled the building trades and debilitated builders. For the maximum efficiency of the reverse assembly line, a worker must focus on one repetitive task to the detriment of other skills or job satisfactions; no longer problem solvers, carpenters become nailing machines. This degradation of skilled labor was described flippantly by one of its early employers, merchant builder Dave Bohannon, who

says his interviews with workmen ran about like this: "Yes, we see you are a journeyman carpenter. Put your card in your pocket. That is the frame of a house you are looking at. Come over here. This is a two-by-four. Pick it up and put it over there. . . . You hit a nail with the hammer and drive it in. Just keep doing that and move along."<sup>34</sup>

This level of condescension was evidently necessary "in order to keep the production line moving." The speed of production also amplifies the abuse of the builder's body because more lumber must be lifted and more nails pounded in the same amount of time, such that "light framing [became] the purview of the young and exploitable."<sup>35</sup>

Finally, the rationalization of house building, certainly as understood in the celebratory publications of the 1940s, was an exercise in undermining what were seen as the "ancient customs and restrictive rules of the craft labor unions." In their stead, urged a 1945 editorial in *Life* magazine, needed to be "a class of entrepreneurs who will take more responsibility for the house as a whole, from its architecture to its delivery . . . through [their] integrated control of all steps in the building process."<sup>36</sup> By 1945, those entrepreneurs were already poised to mobilize modern methods of management and organization to direct the movement of laborers among the platform frames of large-scale subdivision developments, while customers brought their government-guaranteed loans to the model home sales counter.

### Framing the American Dream

Gangs of instrumentalized laborers progressing from house to house down the streets of a massive subdivision is a much different image from the romantic description of balloon framing written in 1865 by George Woodward, and quoted by Giedion and many others since 1941: "A man and a boy can now attain the same results, with ease, that twenty men could on an old-fashioned frame. . . . If a mechanic is employed, the Balloon Frame can be put up for forty per cent less money than the mortise and tenon frame."<sup>37</sup> This key motif in the drama of the balloon frame lauds its savings on labor compared to the hewing and lifting, and the complex skilled joinery, of heavy timber construction. According to the Giedion school of thought, in the boomtowns of the Midwest and Pacific coast a dearth of time and skilled labor necessitated the invention of the technique. In this narrative, a constituent fact in the general development of the United States was that, on the frontier, people had to adapt technologies and fend for themselves due to the lack of available workers.

However, the romantic concept of the self-sufficient homesteader and his boy readily balloon framing their own house is largely a myth. The balloon frame, if quality built, still required an experienced carpenter, or "mechanic" as the Woodward quote suggests, to integrate and plumb the complex relationships between individual pieces of lumber.<sup>38</sup> Although it saved some onsite labor, what the nineteenth-century explosion in the use of the balloon frame more accurately represents is the initial stages of a division and displacement of labor, especially in the production of materials. Giedion makes this argument in his most cited passage: "The balloon frame is closely connected with the level of industrialization which had been reached in America. Its invention practically converted building in wood from a complicated craft, practiced by skilled labor, into an industry."<sup>39</sup> In Giedion's account, this thesis stands in tension with the notion of "a man and a boy." With increasing

standardization of materials and prefabrication of building elements (windows and doors early on, trusses and joists more recently), house construction labor is progressively relocated from the site to the factory, where it is more easily rationalized under the controls of mass production. This ability to control labor and material output was extended by the use of the mature platform frame, as its rationalized stages are more suited to the assembly of the ready-cut house and to the reverse assembly line that characterized the mass production of houses in the postwar period. When, to this attempted rationalization of the labor process, one adds the expanded availability of working-class homeownership and its attendant debts, both financial and social, light wood framing can be seen to contribute to social control in multiple ways.

In contrast to these indications of class control and dependence, Giedion school historians drew on the balloon frame's "importance to the progress of American individualism," as they theorized the independent and self-sufficient builder erecting the house on his frontier property, whether urban or rural.<sup>40</sup> The balloon frame's industrialization fit in a progressivist history of American modernization and invention, driven by the great individuals who provided steam-powered sawmills and nail machines and developed a land previously devoid of civilization. That is, the balloon frame was a specifically American architecture and exhibited the traits of a national character.<sup>41</sup> The resilience of this American free spirit is symbolized in other myths of the balloon frame: that it was derided at first with the derogatory name "balloon," but won over skeptics with its American qualities of pragmatism, simplicity, and efficiency, or that a balloon frame house was so well held together that it could be struck from its foundations by a great plains tornado, blown like tumbleweed, and still maintain its structural integrity.<sup>42</sup>

When viewed within this context of mythology, it is interesting that the Giedion school became interested in the balloon frame during the interwar

years, just as the methods of house construction and the meanings of home were undergoing a process of change. That is to say, these historians in the tradition of invention seem to be participating in what social historians have described as the invention of tradition, a process often invigorated by modernization and the concurrent loss of accepted practices.<sup>43</sup> A slight twist on this theorization of the invention of tradition is that, with the balloon frame, the accepted practices lost were themselves representative of modernization and industrialization. But the platform frame was an extension of that industrialization, a more thorough rationalization of the labor process that threatened the possibility of an independent “man and a boy” building a house for themselves. The reified process in which the platform frame played a principal role reduced means to an end (the commodified house), but the concurrent production of a discourse that associated the balloon frame with the American dream of independence, freedom, and homeownership maintained satisfaction in that commodity and helped ensure mass demand.

However, there was not only a discourse but also an ongoing practice of independence and self-building. A concluding visit to a lumber yard in the Consumers’ Republic adds another dimension to the argument that the platform frame leads to the house becoming a complete and closed object for passive consumption. A vital characteristic of light wood framing is that it allows easy alterations. The platform frame still allows for the knowledgeable self-builder, renovator, handyperson, or small-time contractor to change the house to meet their desires. The lumber industry (distinct from the FPL in this case) has never supported the drive to prefabrication because they realize that factory-built wall sections make buildings difficult to alter, and their ongoing sales depend on additions and renovations. Clifford Clark, in his history of the American home, presents some startling statistics: in the 1950s, 70 percent of new home buyers held back enough money from their mortgages to be able to

make immediate alterations; in 1955, 62 percent of all home buyers did some of the construction work themselves, and 23 percent did all or almost all of it themselves. Barbara M. Kelly has found similar evidence that renovation and addition to suit personal needs and tastes began immediately after the purchase of homes in the notoriously homogenous Levittown.<sup>44</sup>

These demographics of do-it-yourself suggest the significance of platform framing: it’s a standard method of construction, fully rationalized and industrialized up to the exact point where the homeowner can still knock out a wall for a new bedroom built of plywood and 2 × 4s. Here we return to the image of “a man and a boy” — or, just as likely, a single woman or housewife — working with wood to renovate their commodity purchase. This element of production and self-reliance maintained core historical American values in midst of the upheavals and rationalizations associated with the Consumers’ Republic. Similar work was performed by the history of the balloon frame, as told beginning in the 1930s, which played a role in preserving the spirit of the American dream, just as the platform frame made that dream a technical, economic, and political possibility.

### Acknowledgments

Research on wood design done in conjunction with Jennifer O’Connor at Forintek Canada resulted in the foundations of this article; it was framed and finished in conversation with Kate Solomonson at the University of Minnesota.

### Notes

1. Kenneth Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford, 1985), 292; cf. Carl Condit, *American Building* (Chicago: University of Chicago, 1968), 284. Countless historians tie the balloon frame to the nineteenth-century settlement of the frontier: for representative architectural histories, see the Giedion school in fn. 2; for samples of social histories, see Daniel Boorstin, *The Americans* (Toronto: Random House, 1965) or William Cronon, *Nature’s Metropolis: Chicago and the Great West* (New York: Norton, 1991). Two architectural historians who do recognize the significant differences between balloon and platform frames, though in little more than a

couple paragraphs each, are Paul E. Sprague, “Chicago Balloon Frame,” in H. Ward Jandl, ed., *The Technology of Historic American Buildings: Studies of the Materials, Craft Processes, and the Mechanization of Building Construction* (Washington, DC: APT, 1983), 45–49, and James Garvin, *A Building History of Northern New England* (Hanover and London: University Press of New England, 2001), 23–28.

2. Sigfried Giedion, *Space, Time and Architecture: The Growth of a New Tradition* (4th ed.; Cambridge, MA: Harvard, 1965), 345–52. Many writers cite Giedion’s discovery of this invention; architectural historians who follow Giedion in the story of inventive genius include, among others, Walker Field, “A Reexamination into the Invention of the Balloon Frame,” *Journal of the Society of Architectural Historians* 2 (Oct. 1942): 3–28, who argues for a different inventor in the same time and place; and Sprague, “Chicago Balloon Frame,” who, despite overwhelming evidence presented by himself that suggests a different conclusion, returns in the end to Giedion’s story. Historians of vernacular architecture have now questioned, refuted, and expanded the various stories of the Giedion school. For example, Ted Cavanagh, “Balloon House: The Original Aspects of Conventional Wood-Frame Construction Re-examined,” *JAE* 51:1 (Sept. 1997): 5–15, details light wood framing techniques going back to the eighteenth century in the Mississippi valley and questions many of the myths behind the genius invention and the supposedly derisive naming of the balloon frame. See also Dell Upton, *Architecture in the United States* (New York: Oxford, 1998), 153–54.

3. Elizabeth Cohen, *A Consumers’ Republic: The Politics of Mass Consumption in Postwar America* (New York: Knopf, 2003), 13. The postwar period that Cohen focuses on has often been described as the peak of Fordist economics in the United States and elsewhere, when a negotiated compromise between the state, capital, and labor permitted an expanding mass consumption economy; see David Harvey, *The Condition of Postmodernity* (Cambridge, MA: Blackwell, 1989), 125–40.

4. I am here paraphrasing Allen G. Noble, *Wood, Brick and Stone: The North American Settlement Landscape, vol. 1 Houses* (Amherst: UMass, 1984), 137.

5. Fred W. Peterson, “Anglo-American Wooden Frame Farmhouses in the Midwest, 1830–1900: Origins of Balloon Frame Construction,” in Sally McMurry and Annmarie Adams, eds., *People, Power, Places: Perspectives in Vernacular Architecture, VIII* (Knoxville: University of Tennessee, 2000): 3–16. This article represents a slight modification of Peterson’s thesis in his book *Homes in the Heartland: Balloon Frame Farmhouses of the Upper Midwest, 1850–1920* (Lawrence, KS: University of Kansas, 1992), 14–24. In the book, Peterson agrees with the 1833 Chicago origins of the balloon frame but presents copious evidence that there was nothing definitive invented at that time.

6. For the San Francisco reference, see Sprague, “Chicago Balloon Frame,” 48–49. Robinson’s comments were later published in Gervase Wheeler, *Cheap Wooden Dwellings* (1855) and have been reprinted in Leland Roth, ed., *America Builds: Source Documents in American Architecture and Planning* (New York: Harper and Row, 1983), 53–56: I quote, “It is a great saving, though, of labor, to begin at the bottom of a house and build up. In laying the floor first, you have no studs to cut and fit around.”

7. Linda Smeins, *Building an American Identity: Pattern Book Homes and Communities, 1870–1900* (Walnut Creek, CA: Altamira, 1999), 126. Smeins also notes that the balloon frame’s “more straightforward

- approach to building" was its advantage, certainly to pattern-book authors (pp. 74–76). *Woodward's National Architect* (1869) and *Palmer's American Cottage Homes* (1878) both refer to balloon framing.
8. Carvin, *Building History of Northern New England*, 131–32; and *Aladdin "Built in a Day" House Catalog, 1917* (Bay City, MI: The Aladdin Company, 1917; reprint, NY: Dover, 1995), 13.
  9. Greg Hise, *Magnetic Los Angeles: Planning the Twentieth-Century Metropolis* (Baltimore: Johns Hopkins, 1997), 56–85. For the variety of housing agencies, see Gwendolyn Wright, *Building the Dream: A Social History of Housing in America* (Cambridge, MA: MIT, 1981), 193–98.
  10. Dudley F. Holtman, *Wood Construction: Principles—Practice—Details* (New York: McGraw-Hill, 1929), 231–32. In this book, the platform frame was discouraged because it increases the amount of lumber laid horizontally in the structure, thereby increasing the total shrinkage because lumber shrinks (with moisture loss) significantly more in breadth and depth than in length. However, with a platform separating each story, all horizontal lumber is in the same plane, so that shrinkage theoretically occurs equally in exterior and interior walls. This contrasts with the balloon frame in which exterior walls have purely vertical members, but partition walls are separated by each floor, thus allowing unequal shrinkage. The committee also believed that erecting the longer studs of the balloon frame was quicker than erecting two stories of shorter studs in platform or braced framing.
  11. *Scrapbook of Homes* (Minneapolis: Architects' Small House Service Bureau, 1928), 3; and Lisa D. Schrenk, "Introduction: The Work of the Architects' Small House Service Bureau," in *Your Future Home: Architect-Designed Houses of the Early 1920s* (Washington, DC: AIA, 1990), v–vii.
  12. The design program is held in the ASHSB Records, Minnesota Historical Society, St. Paul, MN, Box 152.B.12.13B. See also Schrenk, *Your Future Home*, viii–xi.
  13. Ralph W. Hidy, et al., *Timber and Men: The Weyerhaeuser Story* (New York: MacMillan, 1963), 356–67, 478. For sample advertisements, see *Building Age* (Sept. 1930): 91; and the pamphlet *New Way to Build on the Farm* (St. Paul, MN: Weyerhaeuser, 1940).
  14. Nelson Courtlandt Brown, *The American Lumber Industry* (New York: John Wiley and Sons, 1923), 264–67.
  15. Michael A. Tomlan, "Building Modern America: An Era of Standardization and Experimentation," in Thomas C. Jester, ed., *Twentieth Century Building Materials: History and Conservation* (New York: McGraw-Hill, 1995), 38–40. World War I production and its aftermath revealed a need for national industrial coordination that fueled standardization efforts in the 1920s; see *Industrial Standardization* (New York: National Industrial Conference Board, 1929), 10–15.
  16. *History of Yard Lumber Size Standards* (Madison, WI: Forest Products Laboratory, Forest Service, USDOA, 1964), 6–16.
  17. Frank P. Cartwright, "Sheathing, Nailing, Bracing to Produce Stronger Frame Buildings," *Building Age* (Feb. 1930): 39–44.
  18. Robert M. Cour, *The Plywood Age: A History of the Fir Plywood Industry's First Fifty Years* (Portland, OR: DFPA, 1955), 114; for the development of waterproof glue, see pp. 83–93. See also Thomas C. Jester, "Plywood," in *Twentieth Century Building Materials*, 132–35.
  19. Cour, *Plywood Age*, 133–42. For the demographic of building industry workers who volunteered for the Seabees, see William Bradford Huie, *Can do! The Story of the Seabees* (NY: E.P. Dutton, 1945).
  20. Hise, *Magnetic Los Angeles*, 80. For several different prefabrication systems, see Joseph B. Mason, *History of Housing in the U.S., 1930–1980* (Houston: Gulf, 1982), 23–29. The FPL built two demonstration houses of plywood panel construction in 1934–1937: *Manual on Wood Construction for Prefabricated Houses* (Washington, DC: FPL, US Forest Service, USDOA, 1947).
  21. For an example of this resistance, see Barbara M. Kelly, *Expanding the American Dream: Building and Rebuilding Levittown* (Albany: SUNY, 1993), 28–30, 259; she cites Madeline Ryttenberg, "Low-Cost Houses, Answer to Shortage, Banned by Old Code," *Newsday* (Apr. 29, 1946).
  22. Hise, *Magnetic Los Angeles*, 60, 73, 81–82; and Ned Eichler, *The Merchant Builders* (Cambridge, MA: The MIT Press, 1982), 74.
  23. "Big Dave Bohannon: Operative Builder by the California Method," *Fortune* (April 1946), 194; and, for Levitt, "Up From the Potato Fields," *Time* (July 3, 1950): 70. Note that the earliest Levitt houses were frame-on-slab construction, so the bottom "platform" was actually a concrete slab that performed the same role. For histories of wartime housing projects, see Donald Albrecht, ed., *World War II and the American Dream: How Wartime Building Changed a Nation* (Washington, DC: National Building Museum; Cambridge, MA: The MIT Press, 1995).
  24. Eichler, *Merchant Builders*, 70. The merchant builders, using government mortgage guarantees to capitalize the development of large tracts and mass production techniques of construction, built great numbers of houses and entire communities during the postwar period. For an overview of merchant construction, see *ibid.*, 67–78; for a description of the reverse assembly line, see Mason, *History of Housing in the U.S.*, 31–45.
  25. M. Edwin Green, "Modular Construction—The Building Block Principle in Architectural Design," in Dickson Reck, ed., *National Standards in a Modern Economy* (New York: Harper Bros., 1956), 83.
  26. Hise, *Magnetic Los Angeles*, 14–22.
  27. Jackson, *Crabgrass Frontier*, 50–51; and Cohen, *A Consumers' Republic*, 202.
  28. Marc A. Weiss, "Marketing and Financing Homeownership: Mortgage Lending and Public Policy in the United States, 1918–1989," *Business and Economic History*, 2nd series, vol. 18 (1989), 109.
  29. Wright, *Building the Dream*, 248; Cour, *Plywood Age*, 110; and Mason, *History of Housing in the U.S.*, 12–14.
  30. Cohen, *A Consumers' Republic*, 195; and Peter G. Rowe, *Making a Middle Landscape* (Cambridge, MA: The MIT Press, 1991), 44–54, for the postwar commodification of the single-family house.
  31. For example, "Levitt Adds 1950 Model to his Line," *Life* (1950): 141–47.
  32. "Up From the Potato Fields," 67.
  33. William Levitt compared his firm to General Motors in "Up From the Potato Fields," 67; similarly, an architecture writer claimed Levittown houses "pack as much sales wallop as a heavily gadgeted new car," in "A Complete House for \$6990," *Architectural Forum* 86/5 (May 1947): 70.
  34. "Big Dave Bohannon," 194.
  35. Doug Eaton, "Light Frame Durability," *Timber Framing* 61 (Sept. 2001): 18; Eaton combines historical observations with his own experience as both a light framer and a heavy timber framer.
  36. "Housing: What Can Be Done?" *Life* (Dec. 17, 1945): 36. Discussions of the merchant builders often complimented their ability to work around unions and control workers; see "Up From the Potato Fields," 71.
  37. G.E. Woodward, *Woodward's Country Homes* (New York, 1869), quoted in Giedion, *Space, Time and Architecture*, 347.
  38. Peterson, *Homes in the Heartland*, 8–9.
  39. Giedion, *Space, Time and Architecture*, 345.
  40. Field, "A Reexamination," 3–4, 25–29.
  41. Giedion, *Space, Time and Architecture*, 334–44, prepares the reader for understanding the American character of the balloon frame in the sections entitled "Europe Observes American Production" and "The Structure of American Industry." James Marston Fitch, *American Building: The Historical Forces That Shaped It*, 2nd ed. (Boston: Houghton Mifflin, 1966), 13, 121, first published in 1948; and Carl Condit, *American Building Art: The Nineteenth Century* (New York: Oxford, 1960), 22–23. Both give the balloon frame quintessentially American traits. Balloon frame buildings became "icons of American ideology" as early as 1867, when a house and school, prefabricated in Chicago, were displayed as uniquely American at the Paris Exhibition of that year; Ellen Weiss, "Americans in Paris: Two Buildings," *Journal of the Society of Architectural Historians* XLV (June 1986): 164–67.
  42. Cavanagh, "Balloon House," 5–6, 12–13, argues that, rather than a dismissive word related to the light appearance and inconsequentiality of the balloon frame, its moniker more likely derives from dialectical French words with meanings related to saplings, sticks, sheds, and so forth. A number of authors have related the tumbleweed story about the balloon frame, including Field, "A Reexamination," 8; and Ada Louise Huxtable, "The Balloon Frame—c.1833," *Progressive Architecture* 38/5 (May 1957): 145–46.
  43. Eric Hobsbawm and Terence Ranger, eds., *The Invention of Tradition* (Cambridge: Cambridge University Press, 1983); see especially the editors' introduction where they note that "objects or practices are liberated for full symbolic and ritual use when no longer fettered by practical use" (p. 4).
  44. Kelly, *Expanding the American Dream*, var. pag.; and Clifford Edward Clark, Jr., *The American Family Home, 1800–1960* (Chapel Hill, NC: University of North Carolina, 1986), 230–31.