

# The Value of Incremental Development and Design in Affordable Housing

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## Abstract

*This article criticizes the overwhelming emphasis in the United States on financial approaches in expanding access to homeownership, and it suggests that the focus detracts from a serious consideration of the role of design in making housing affordable. The article also suggests that modest designs that facilitate and allow for progressive expansion and improvement over time have an important role in affordable housing. Although most observers do not think of incremental development in the context of the United States, I illustrate that it is more common than the conventional wisdom suggests. I focus specifically on a U.S. Department of Agriculture-financed program of affordable housing through mutual self-help and incremental development. I show that in the past two decades the program has moved away from its initial focus on modest designs that were ideal for incremental expansion. Consequently, the initial cost of housing has increased, and the program's ability to target very low-income households has decreased. I discuss opportunities for design-based strategies in improving housing affordability, but I also caution against some emerging directions in design-based thinking.*

## Introduction

The United States has achieved enviable success in expanding access to home loan mortgages to help make homeownership affordable. In this article, however, I suggest that the overwhelming emphasis in the United States on financial innovations and approaches in expanding access to homeownership may detract from a serious consideration of the role and value of design-based strategies to make housing affordable. I suggest more specifically that modest designs that facilitate and allow for *incremental development*, or progressive expansion and improvements over time, also have an important role in making homeownership affordable. They can also help increase the supply of rental housing. I argue that incremental

development-based design and planning approaches can help reduce the initial cost of housing development, can broaden access to affordable homeownership and housing, and deserve more attention from policymakers and scholars. I also argue that more research is needed on housing layouts and designs that can be conveniently and economically expanded over time, and I caution against housing finance requirements and planning regulations or codes that make future expansion and changes to the built form difficult.

The idea of incremental development is typically associated with developing countries, where access to institutional housing finance is limited or unavailable, particularly for low-income households. Although most observers do not think of incremental development in the context of housing practices in the United States, I illustrate that it is more common than the conventional wisdom suggests. I draw from my previous research to suggest that the strategy is prevalent in informally developed colonias, or subdivisions, along the U.S.-Mexican border region (Mukhija and Monkkonen, 2007, 2006) and in informally converted garage apartments in urban areas such as Los Angeles (Mukhija, 2014). I also suggest that incremental development and the ability to expand modest housing designs were inherent features of postwar affordable suburbs like Levittown, New York, and Lakewood, California. Finally, I focus on Mutual Self-Help Housing (MSHH), a U.S. Department of Agriculture (USDA)-financed program of affordable housing through mutual self-help and incremental development. I show that in the past two decades the program has moved away from its initial focus on modest designs that were ideal for incremental expansion over time (Mukhija and Scott-Railton, 2013). As a consequence, the initial cost of housing has increased significantly, and the program's ability to target very low-income households has dropped dramatically. In spite of noteworthy financial innovations, including longer loan terms and access to secondary finance for borrowers, non-profit developers of MSHH are facing challenges in targeting their programs to their originally intended beneficiaries: modest-income farmworkers.

My article is divided into four sections. After this brief introduction, the next section elaborates on the idea and practice of incremental development. I discuss its intellectual links to affordable housing strategies in developing countries, but I also suggest its prevalence in housing improvements in U.S. suburbs and in informal initiatives in U.S. cities. The third section focuses on the main case of USDA-financed MSHH in California and shows how a key original innovation of a modestly designed house has disappeared. In the fourth section, I conclude by focusing on potential avenues for policy and research. On the one hand, I discuss opportunities for design-based strategies in improving housing affordability and, on the other, I caution against some emerging directions in design-based thinking.

## **The Idea of Incremental Development**

Conventional wisdom associates the idea of incremental development with low-income households in developing countries. Planning scholars have suggested that the incremental development approach—also known as progressive development or autoconstruction in the literature—persists because, for most low-income households, it is often the best available option, particularly in the absence of adequate government support for affordable housing

or housing finance (Abrams, 1964; Peattie, 1968; Turner, 1976, 1972, 1967; UN-Habitat, 2003). Incremental development approaches allow for the gradual development of a home as a function of funds, resources, time, and needs. As an ingenious design adaptation, households may start with a single room and gradually expand and improve their homes, wall by wall, room by room, and floor by floor. Sometimes they may even add a new housing unit and use the rent they receive to further improve their homes. Although the incremental development process of affordable housing is often called self-help housing, self-managed housing may be a more appropriate term, because the incremental development of homes typically involves labor by both residents and hired workers (Turner, 1982).

Planning scholars have also suggested that a variation on the international incremental development approach is common in the so-called *colonias*, informal subdivisions along the U.S. border region with Mexico (Donelson and Esparza, 2010; Mukhija and Monkkonen, 2006; Ward, 1999). Colonias are principally associated with Texas but are also present in the other border states (Arizona, California, and New Mexico). Since the early 1990s, they have gained planning and policy attention from state lawmakers and federal agencies, particularly USDA, the U.S. Department of Housing and Urban Development, and the U.S. Environmental Protection Agency. Perhaps the most surprising aspect of colonias in Texas is that they were developed legally. Unlike most informal land subdivisions in developing countries, they were developed in a legal and policy vacuum, and their developers took advantage of the lack of regulations.<sup>1</sup> Another important distinction is that the approach to incremental development in U.S. colonias and informal subdivisions is somewhat different from the approach in developing countries. Most low-income households that buy individual lots in colonias also typically buy a manufactured home or a modular home, which is then moved onto their property. These initial homes serve as a core for future incremental additions and extensions and for extensive do-it-yourself and self-help improvements to the interiors of the homes and the yard areas. Although the development sequence is not as stark as the classic incremental development in developing countries, particularly as practiced by squatters, the logic of the housing consolidation process is similar and incremental.

This logic of progressive expansion and improvement of a core house over time was also a key feature of U.S. postwar suburbs. The archetypal suburbs like Levittown and Lakewood have received recognition for their success in combining mass-produced and assembly-line construction with access to affordable Federal Housing Administration home mortgages, but their small, single-story houses were also central in their strategy for expanding affordability (Gans, 1967; Jackson, 1985; Waldie, 1996). These homes, with their standardized designs, were easy to produce quickly and became a malleable core for future homeowner-led additions and changes. An excellent unpublished study by the architects Robert Venturi and Denise Scott Brown (1970) noted more than 40 years ago that it was difficult to find pristine, unmodified original homes in Levittown (also see Kelly, 1993). Whereas architects and planners criticized postwar suburbs for their cookie-cutter homes and homogeneity, Venturi and Scott Brown

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<sup>1</sup> The framework for regulating land subdivisions in Texas has changed since the mid-1990s, and new subdivisions have more demanding infrastructure and land development requirements (Ward, 1999).

focused on their adaptability and pointed out that the homes had been heterogeneously expanded and modified to create a significantly more interesting and diverse built form.<sup>2</sup> D.J. Waldie (1996), in his poetic, California Book Award-winning *Holy Land*, likewise described how Lakewood's modest designs helped keep costs down and enabled working-class households to buy their homes. Many of these homes, as Waldie noted, have been slowly expanded, customized, and transformed significantly by their owners.

My current research likewise shows that incremental development approaches are common in contemporary U.S. cities (Mukhija, 2014). Many of the cases, however, are of informal additions and unregulated and unpermitted modifications that leverage easy opportunities for expansion in the built environment of housing. For example, in many single-family homes, garages provide the easiest and most economic space for expansion, and they are regularly converted without permits. The converted garages sometimes house family members and, at other times, they are rented out as relatively affordable housing. The backyards of single-family homes also offer easy opportunities for expanding homes, either as an extension of the existing house or as an additional housing unit (exhibit 1). These unpermitted additions are often driven by economic need and design opportunities, and they are not always safe. They nonetheless offer lessons to planners and policymakers on the need for affordable housing and the value of designs that allow for adding or expanding the affordable housing stock at the household level.

### Exhibit 1

#### An Unpermitted Backyard Unit in Northern California

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Source: Vinit Mukhija

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<sup>2</sup> Venturi and Scott Brown are also coauthors of the acclaimed, and similarly themed, *Learning From Las Vegas* (Venturi, Scott Brown, and Izenour, 1972), which made the provocative argument for modernist architects and planners to learn from how common people adapt, organize, and design their built environment.

## **De Facto Incremental Development in Mutual Self-Help Housing**

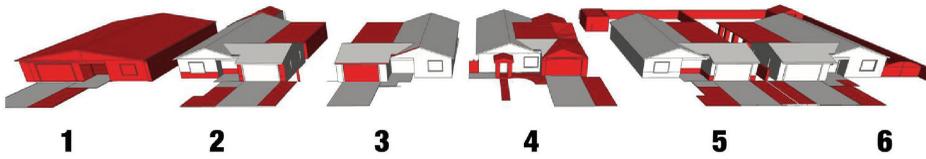
Although formal housing programs that incorporate incremental development are rare in the United States, the MSHH program, a USDA mortgage subsidy program, has played an important role in helping low-income households in rural areas, particularly farmworkers, own their homes. The program has produced about 46,000 homes, nearly one-third of them in California, and nearly 60 percent of them have gone to minorities (HAC, 2011, 2010, 2005). Instead of making a downpayment for their mortgage, the beneficiaries agree to contribute their sweat equity, through self-help, in cooperation with other participating households. Most households agree to 40 hours of self-help per week, for a commitment of 1,100 to 1,500 total hours of labor. The self-help groups typically average between 10 and 13 families. Some evidence also suggests that the group work helps in building social ties and community networks (HAC, 2005). Moreover, some participants move on to better paying construction jobs after the experience. Nonprofit organizations act as intermediaries between USDA and the beneficiaries. Although the MSHH program provides beneficiaries with a finished home, most of the homes, as in incremental development efforts, are substantially modified over time through room additions, expansions, and other gradual improvements.

With the help of a doctoral student, I recently examined empirical evidence from California and focused on three of the major nonprofit developers in the state (Mukhija and Scott-Railton, 2013). In addition, the research considered the Housing Assistance Council's (HAC's) national data on USDA's lending for the MSHH program. The following account is based on that research.

### **Modest Designs**

The MSHH program is best known for reducing construction costs through its use of self-help labor and USDA's subsidized financing. A less discussed but key component of the first three decades of the MSHH program was the simple and modest design of the homes. These homes were initially designed with approximately 1,000 square feet in area, and the program rules classified them as "modest" houses. They were typically built with less expensive materials and with simple designs and construction techniques that enabled the developers to maximize the use of self-help labor from beneficiaries. For example, in addition to their modest sizes, the houses had basic floor plans with simple rooflines and a very limited use of architectural ornamentation. They were utilitarian in quality and met the basic needs of their occupants.

Our field visits and analyses showed that these modest MSHH homes rarely stayed as they were initially built. The original modest homes usually became cores around which the owners expanded and on which they elaborated by adding architectural and ornamental details. Exhibit 2 shows a diagrammatic illustration of our analysis of a typical MSHH project built by a nonprofit housing developer in the late 1980s. As exhibit 2 indicates, nearly all the houses show some improvements, changes, and expansions. Home 1 had the most significant rebuilding, but homes 2, 4, and 5 also had substantial changes and expansions. The typical spatial, or floor area,

**Exhibit 2****Self-Help Homes, Decades Later**

Six neighboring homes developed by a nonprofit housing developer in California in the late 1980s. The bottom image shows present-day aerial imagery. The top image shows a three-dimensional model analyzing the incremental changes; features in white and gray represent the original homes, and features in red represent post-occupancy modifications made by the owners. Sources: Top—Mukhija and Scott-Railton (2013); bottom—Google Maps

modifications include extensive additions and covered or dried-in patios and garages. Furthermore, in several homes, owners expanded the uncovered parking spaces and, in many homes, owners made landscaping and street elevation improvements, including flowerbeds and trees, attractive roof tiles, decorative entranceways, and ornamental exterior lighting.

### The Gradually Disappearing Modest House

Although the small size and simple designs of the modest houses were pivotal in helping to keep the construction costs down, USDA agreed to relax this program requirement. By the early 1990s, USDA removed its rigid templates for garage size, floor plan, and exterior ornamentation. Instead, it agreed to a revised stipulation that homes be relatively modest for the locations in which they were built. USDA's amendments were in response to requests for flexibility from the nonprofit housing developers. The nonprofit organizations were facing pressure for more elaborate homes from both their beneficiaries—who sometimes wanted larger homes, particularly homes with more than a single-car garage—and local governments, who thought that the MSHH homes were too modest and potentially lowered the property values of neighboring homes.

New two-car garages consequently have become the development norm in California's MSHH homes. To appeal to local governments, whose support is needed for securing housing permits and approvals, these homes also have elaborately articulated facades. Tiled roofs, articulated gables, and waist-height stone veneers have become common in street elevations,

and it is often difficult to distinguish between a nonprofit developer-built MSHH project and adjoining market-rate housing built by a for-profit developer. Although the number of bedrooms offered in homes has not necessarily increased, the spatial size of homes has increased significantly. To illustrate, in the early 1990s, three-bedroom MSHH homes were likely to be about 1,000 square feet with a one-car garage of about 300 square feet. More contemporary three-bedroom MSHH houses, however, are likely to have a floor area of about 1,200 square feet and a two-car garage of nearly 500 square feet.

### **Higher Costs, Bigger Loans, and Fewer Low-Income Beneficiaries**

The cost of developing MSHH homes inevitably has increased because of their larger size and more elaborate design and construction. Moreover, the more specialized construction activities that are beyond the skills of the typical households contributing their self-help labor create an additional need for outside labor, which further adds to development costs. Although USDA has increased the available loan amounts, nonprofit developers have to find secondary financing, which bridges the gap between the primary loan and the total cost of construction. Creatively securing adequate secondary financing, and sometimes even tertiary financing, from private and public sources has become a major task for the nonprofit developers. National-level data from HAC also suggest that costs and loan amounts within the MSHH program have increased throughout the country.

Lower interest rates fortunately have helped make larger loans affordable to beneficiaries. To increase access to the home loans, the regular loan duration has been extended to 33 years. For very low-income households, loan periods can be extended to 38 years. Notwithstanding these admirable financial innovations, the number of very low-income households in MSHH projects has dropped because of the higher cost of housing. According to HAC, the drop in participation by very low-income households in MSHH programs is a nationwide trend. It is now common for MSHH projects, particularly in California and other more expensive land markets, to house the minimum percentage of very low-income families mandated by USDA (HAC, 2010). The quality and size of MSHH homes have improved and increased, but that appears to have created a troubling tradeoff in affordability, with fewer low-income households qualifying for homeownership through the program.

## **Conclusion**

Although I have criticized the MSHH program for its increasing difficulties in targeting very low-income households, it is important to frame this criticism in the context of the program's significant success in helping low-income households, particularly from minority groups, achieve their dream of homeownership through subsidies and collective self-help. The United States has very few comparable housing programs. I am, nonetheless, concerned about the program's departure from its modest home designs of about 1,000 square feet, which helped decrease the initial cost of housing but allowed for de facto incremental development and improvements. The MSHH program has tried to maintain access to homeownership for low-income households through financial innovations, but these improvements may have reached

their limits and may have prevented program administrators from returning to the original modest home designs as an affordable housing strategy. Drawing from the MSHH experience, and from postwar suburbs and informal home improvements in contemporary U.S. cities, I suggest that incremental development-based design and planning approaches deserve more attention from policymakers and scholars interested in affordable housing. Incremental development approaches can help decrease the cost of homeownership and increase the supply of affordable rental housing.

Planners and policymakers need to better integrate design-based thinking in housing policy. One seemingly design-based approach for increasing affordability is the growing popularity of so-called microapartments. These amenity-rich microapartments, however, are rarely affordable. They may, nonetheless, play an important role in the housing market by increasing the diversity of available housing options. Design-based thinking in affordable housing, however, should not simply imply shrinking the size of homes. For example, in the early MSHH projects, the original modest houses also had designs and layouts that were easily expanded and incrementally improved through simple additions and modifications. It is particularly important in such projects that lot sizes do not shrink significantly but retain their potential to support future additions and expansions. Thus, I recommend more policy-oriented, design-based research on housing form, particularly research that assesses housing models and typologies that owners and users can easily and economically expand. In addition to studying ground-oriented single-family homes, scholars should also examine how housing can be gradually improved in taller built forms.

Finally, for incremental development to be viable, the associated institutions of housing finance, property rights, and land use regulations also have to support the possibility of flexibility and changes in the built form of housing. In particular, I do not want to minimize the likely challenges and opposition to incremental development and modest housing from communities and municipalities. This issue has been key in the MSHH experience. Planning institutions need to find better ways to address such NIMBYism (not-in-my-backyard ideology), however, than forcing affordable housing developers to build housing that is indistinguishable from surrounding properties. For example, opportunities may exist to creatively structure and support incremental changes to the built form by providing access to financing and design assistance. Without such enabling support, higher standards will proportionately add to the cost of constructing affordable housing and make it difficult for property owners to incrementally expand their housing. They will either push out affordable housing or leave homeowners with no other option but to informally make unpermitted additions.

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## References

Abrams, Charles. 1964. *Housing in the Modern World: Man's Struggle for Shelter in an Urbanizing World*. Cambridge, MA: The MIT Press.

Donelson, Angela J., and Adrian X. Esparza. 2010. *The Colonias Reader: Economy, Housing, and Public Health in U.S.-Mexico Border Colonias*. Tucson, AZ: University of Arizona Press.

Gans, Herbert. 1967. *The Levittowners: Ways of Life and Politics in a New Suburban Community*. New York: Pantheon Books.

Housing Assistance Council (HAC). 2011. *A Brief and Selective Historical Outline of Rural Mutual Self-Help Housing in the United States*. Washington, DC: Housing Assistance Council. [http://www.ruralhome.org/storage/documents/msh\\_history.pdf](http://www.ruralhome.org/storage/documents/msh_history.pdf).

———. 2010. *Very Low-Income Loan Obligations Within USDA's Section 502 Direct Homeownership Loan Program*. Washington, DC: Housing Assistance Council. <http://www.ruralhome.org/storage/documents/listudy.pdf>.

———. 2005. *Creating the Village: How Mutual Self-Help Housing Builds Community*. Washington, DC: Housing Assistance Council. <http://www.ruralhome.org/storage/documents/creatingthevillage.pdf>.

Jackson, Kenneth. 1985. *Crabgrass Frontier: The Suburbanization of the United States*. New York: Oxford University Press.

Kelly, Barbara M. 1993. *Expanding the American Dream: Building and Rebuilding Levittown*. Albany, NY: The State University of New York Press.

Mukhija, Vinit. 2014. "Outlaw In-Laws: Informal Second Units and the Stealth Reinvention of Single-Family Housing." In *The Informal American City: Beyond Taco Trucks and Day Labor*, edited by Vinit Mukhija and Anastasia Loukaitou-Sideris. Cambridge, MA: The MIT Press: 39–57.

Mukhija, Vinit, and Paavo Monkkonen. 2007. "What's in a Name? A Critique of Colonias in the United States," *International Journal of Urban and Regional Research* 31 (2): 475–488.

———. 2006. "Federal Colonias Policy in California: Too Broad and Too Narrow," *Housing Policy Debate* 17 (4): 755–780.

Mukhija, Vinit, and John Scott-Railton. 2013. "The Importance of Design in Affordable Housing: Lessons From Mutual Self-Help Housing in California," *Housing Policy Debate* 23 (4): 765–780.

- Peattie, Lisa. 1968. *The View From the Barrio*. Ann Arbor, MI: University of Michigan Press.
- Turner, John F. 1982. "Issues in Self-Help and Self-Managed Housing." In *Self-Help Housing: A Critique*, edited by Peter M. Ward. London, United Kingdom: Mansell: 99–114.
- . 1976. *Housing by People: Towards Autonomy in Building Environments*. New York: Pantheon Books.
- . 1972. "Housing As a Verb." In *Freedom To Build: Dweller Control of the Housing Process*, edited by John F. Turner and Robert Fichter. New York: Macmillan: 148–175.
- . 1967. "Barriers and Channels for Housing Development in Modernizing Countries," *Journal of the American Institute of Planners* 33 (3): 167–181.
- UN-Habitat. 2003. *The Challenge of Slums: Global Report on Human Settlements 2003*. London, United Kingdom; Sterling, VA: Earthscan (for United Nations Human Settlements Programme).
- Venturi, Robert, and Denise Scott Brown. 1970. Learning From Levittown or Remedial Housing for Architects. Unpublished paper. New Haven, CT: Yale University.
- Venturi, Robert, Denise Scott Brown, and Steven Izenour. 1972. *Learning From Las Vegas: The Forgotten Symbolism of Architectural Form*. Cambridge, MA: The MIT Press.
- Waldie, D.J. 1996. *Holy Land: A Suburban Memoir*. New York: W.W. Norton.
- Ward, Peter M. 1999. *Colonias and Public Policy in Texas and Mexico: Urbanization by Stealth*. Austin, TX: University of Texas Press.