

# Revising the American Dream: Making Sustainable Housing Affordable for All

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## THE AFFORDABLE HOUSING CONTEXT

The economic divide between high-income and low-income Americans has grown considerably in the last thirty years, to the point that the top 1% control almost 34.3% of all private wealth. Shockingly, this is more than the total combined wealth for the population in the “bottom” 90%. This is the greatest concentration of wealth since 1928, the year before the stock market crash that led to the Great Depression. Also disturbing is that despite our increasingly diverse society, white Americans control the vast majority of this wealth.

Although this income disparity is not widely recognized, the situation has many significant impacts on our economy and society. One example is the ability of low to moderate income Americans to save enough money to purchase a home. Whereas only twenty-five years ago, the savings rate in the U.S. was over 11%, the savings rate today is now expressed in negative numbers – approximately negative 1%. There are only four years in the history of the U.S. so far when savings rates can be expressed in negative numbers – 1932, 1933, 2006 and 2007.

The ability to save for a down payment is an important first step towards purchasing a home. Yet in the last several years, house values across the U.S. have increased nearly 25%, while most incomes have stagnated or dropped. In Charlottesville, Virginia (the site of the ecoMOD Project) home values increased 50% between 2000 and 2006, and then leveled off with the mortgage crisis. Meanwhile, incomes in real dollars (adjusted for inflation) have decreased by 3.5%. With lower or stagnant incomes, a low savings rate, and high home values,

it is easy to see why it is increasingly more difficult for low and moderate-income families to enter the housing market.

One commonly used description for affordable housing is housing that does not cost more than 30% of one’s income. According to the Joint Center for Housing Studies, almost one in seven Americans are “severely housing cost-burdened,” defined as those that are spending more than 50% of their income on housing costs. Perhaps even more surprising is that a family with a single wage earner receiving minimum wage cannot find an affordable two-bedroom apartment or house *anywhere in the U.S.*

The era of the single-family detached dwelling as affordable for all is drawing to a close. Across America, especially in urban centers, it is becoming increasingly difficult for individuals and families below 100% of the area median income (AMI) to purchase and own a detached home. The American dream of a single-family home with a yard and a white picket fence is moving further away from reality, forcing many who strive for this dream to live in distant suburbs. The impact of this is felt nationwide, as the sprawl of suburban development begins to choke our communities.

The federal government provides assistance to make housing more affordable in two ways: tax benefits for homeownership available to all income levels, and budget outlays for funding affordable housing programs. Since the 1970’s the amount for tax benefits has grown significantly, while the amount for housing programs has decreased. According to the National Low Income Housing Coalition, federal housing assistance money decreased 48% from 1976 to 2004, but tax benefit spending

increased 260% in the same period – to the point that tax benefit spending is now four times that of affordable housing assistance.

This situation is compounded by the fact that the availability of affordable housing units – both subsidized and unsubsidized – has been reduced considerably in many parts of the country during the last fifteen years. As federal funding declines, rental units convert to condominiums and urban infill homes drive up real estate values, affordability – especially in urban areas – decreases. To address this, there has been a concerted effort starting in the 1990's to increase homeownership. This effort, combined with low interest rates, resulted in some improvement in the rate of homeownership among low and moderate income Americans. But the sub-prime mortgage crisis starting in the '00s has exaggerated the affordability problem. Predatory lending practices through the intensive marketing of high-cost loans have impacted low-income homeowners significantly. The homeownership rate had reached its highest level – 69.1% -- in 2005, but fell to 67.8% by 2008, the sharpest decline in twenty years. Many have lost their homes to foreclosure, or are now at risk for defaulting on the loan for their single largest investment – their home.

Apparently racial bias plays a part in this, and sadly Charlottesville leads the nation in this regard. According to the National Community Reinvestment Coalition, African-Americans in Charlottesville are far more likely than whites to be offered sub-prime / high-cost loans. They are four times more likely to end up with a high-cost loan than Caucasian borrowers – and apparently this difference is not connected to the borrower's income level or credit rating.

According to Piedmont Housing Alliance, the affordable housing partner for the first and third version of the ecoMOD project, there has been a 175% increase in housing affordability problems for low-income people in Charlottesville in the last several years. Unfortunately, the conventional wisdom is that the availability of affordable housing will continue to be a problem across the U.S. for the foreseeable future.

One possible solution that has emerged is a National Housing Trust Fund. Similar to the Highway Trust Fund, it would be mostly supported by charging on

the value of mortgages held by Freddie Mac and Fannie Mae. The money would not be vulnerable to the whims of lawmakers, and would be set aside from the rest of the federal budget for the exclusive purpose of building and rehabilitating affordable housing. Although not included in versions of the bill floating around in Congress, an interesting idea that should be attached to this strategy is to have the financing structured to require the creation of homes with durable and energy-efficient materials, and designed to be livable with little or no utility costs. The linkage of sustainability and affordability could add significant value to affordable housing -- for both the homeowners and the earth.

Thus far in the U.S., sustainably-designed homes have been built mostly for the wealthy and middle income. Yet the families that can personally benefit the most financially from an energy-efficient home are those with the lowest income.

#### **THE ecoMOD PROJECT: ADDRESSING CHANGE THROUGH DIRECT ACTION**

Affordable housing in the U.S. today often equals poor quality construction. It is characterized by short-term thinking that leads to the selection of cheap materials, put together in a way to achieve the minimum standards of comfort. With little thought given to the life-span of the building or to energy efficiency, the worst of these poorly constructed homes tend to decrease in value over time. In some urban areas, the land they are constructed on is more valuable than the buildings, making them ripe for gentrification. They also have unnecessarily high utility costs and ultimately produce an enormous amount of material waste when demolished.

However, there is reason to be optimistic. By the year 2030 over half of the buildings that will exist in the U.S. will have been built since 2000. A significant percentage of them – over 100 billion square feet – will be residential. This means we have the opportunity to rebuild housing in America, and create homes that are sustainable and affordable for all income levels. The strategies and technologies already exist to create (or renovate) this next generation of housing – we simply need to make sure designers and builders understand them and use them appropriately. One study on occupied green affordable housing units documents that with no

more than 5% more in first costs, it is possible to create buildings that use 30 to 50% less energy, and 10 to 20% less water -- with healthier indoor air and more durable / easier to maintain buildings and landscapes.

Since 2004, the ecoMOD project has created five affordable housing units on three project sites. In that time, over 280 students and faculty of architecture, engineering, landscape architecture, planning, historic preservation, economics, environmental science, environmental thought and business have participated in various phases of the project. Extending the notion of a design-build project, the organizers call it a design-build-evaluate project to underscore the importance of following through with the occupied homes to see how well they perform.

The completed housing projects include the first two-unit condominium in the Charlottesville, Virginia (ecoMOD1); a single family detached dwelling for a Habitat for Humanity family in a city on the Mississippi Gulf Coast damaged by Hurricane Katrina (ecoMOD2), and the historic preservation of a 160-year-old home thought to be a slave quarters -- with a new modular accessory unit behind it (ecoMOD3). The current ecoMOD4 team is developing another project that will be completed by the end of August 2009.

The team's efforts during all phases of the projects are integrated into coursework in the core curriculum of the university's architecture and engineering schools. The student teams work closely with local, regional and national experts on issues related to affordable housing, sustainable design and methods of prefabrication. To ensure the impact of the ecoMOD project is focused on actual needs identified by housing experts, the project organizers have chosen to work with affordable housing organizations as partners. Rather than simply 'gifting' the housing units, the project teams work closely with the partners to provide a professional product. The projects are built using the standard budgets allocated by the groups -- to control the impulse of socially-minded university design-build projects to go well beyond the normal funding available. However the project has raised independent funds to pay for 'green upgrades' of selected materials and equipment.



Figure 1. ecoMOD1 in Charlottesville, VA



Figure 2. ecoMOD2 in Gautier, MS



Figure 3. accessory unit of ecoMOD3 in Charlottesville, VA

### **PIEDMONT HOUSING ALLIANCE: AFFORDABLE HOUSING PARTNER FOR ecoMOD1 and 3**

Piedmont Housing Alliance (PHA) is a regional non-profit organization with a mission to address affordable housing and community development needs in Charlottesville and the surrounding communities. The organization's focus is on affordable and fair housing counseling and education, as well as affordable housing development. It receives funding from the federal, state and local governments, as well as a variety of companies, individuals and philanthropic organizations. It rehabilitates and manages affordable rental complexes in the area, and also develops new homes intended for sale to their affordable housing clients. The target demographic of the organization is low to moderate-income individuals – roughly those from 40 to 110% of area median income.

The aspects of Piedmont Housing Alliance that distinguish it from most similar organizations is the emphasis they place on community outreach with their education and counseling programs, and on green building and innovative financing with their development projects. PHA aims to sell homes at appraised value for affordable housing clients, with the intention of building wealth within local communities. Affordable housing clients receive subsidies for financing and down payments, to bring the homes in line with what they can afford.

PHA has responded to the affordability challenge with a series of homes built and renovated in the 10<sup>th</sup> and Page neighborhood of Charlottesville. The 10<sup>th</sup> and Page neighborhood is a traditionally African-American community made up of 19<sup>th</sup> and early 20<sup>th</sup> century single-family detached homes. Many residents of the area have low incomes, and some have deferred their home maintenance, making their homes less valuable than they could be in this context. The long-time residents of the compact neighborhood have a strong sense of pride, in part because of the community identity that has built up over the years. Nearby, a public housing project is home to many families that were driven out of a demolished traditionally African-American neighborhood – Vinegar Hill -- during the 'urban renewal' days of the 1960's.

Topographically, the 10<sup>th</sup> and Page intersection it is a low point in the area, and it directly abuts wealth-

ier neighborhoods on higher ground. 10<sup>th</sup> and Page is largely cut off from direct access to these neighborhoods – few of the streets connect and high fences also deter pedestrian traffic. Given the serious development pressures on neighborhoods near the university, PHA decided to help stabilize the neighborhood by purchasing several empty lots and dilapidated homes, and to renovate them or replace them with new homes. Most of them include green building strategies, and one of them is the first EarthCraft certified affordable home in the state. Of the 31 homes in the project, one quarter of them were going to be sold at market rate to help offset the cost of building the similar affordable homes. However, as home values soared in the area during the first half of the 00's, PHA had to increase the percentage of market rate homes to one third to keep the remaining homes affordable.

The project is not without controversy. Some local residents have complained the homes over-power the neighborhood, and that the neo-traditional designs put together by the organization are "candy-colored cartoons." There has also been concern that the homes are not meant for people that have always lived in the area – because they are too expensive. This has been compounded by the fact that property taxes for those living near the new and renovated homes have increased, in part due to PHA's efforts – yet property taxes have increased by a similar percentage throughout the city. Gentrification is a legitimate concern in neighborhoods like this, and the search for the right balance of mixed income housing is always a significant challenge. Yet in many ways, it is clear the project accomplished its goals. According to information provided by PHA, the subsidies for the low-income units average over \$40,000, plus subsidized low-interest mortgages as low as 3.5% fixed for thirty years. The average annual household income for the affordable homes was \$28,000 per household, 47% of area median income, for when the project was completed in 2005. 65% of all the new homeowners (combined affordable and market rate) are minorities, including new immigrants to the country.

As the development was underway in 2004, the ecoMOD1 team and PHA were starting to plan the first ecoMOD project for the Fifeville neighborhood, about a mile away. The idea of using modular housing was not initially planned for the partner's 10<sup>th</sup>

and Page multi-family development, but as PHA observed the contemporary sustainable design the students were creating, they became interested in testing a modular version of their own conventional neo-traditional designs. PHA worked with a modular homebuilder in the state to create three of the homes as two-piece, two-story modular homes. The test project was a success -- the homes sold as easily as the others, and the quality of construction was very good. The cost per square foot was comparable to the many of the other homes, but higher than ecoMOD1 (completed at the same time) largely due to unforeseen problems with excessive water on the low-lying lots.

In many ways, PHA has been a terrific partner for the ecoMOD project. They have been very open-minded about using contemporary design, and about trying to push the sustainability beyond the measures they had already started to implement. PHA's Executive Director Stu Armstrong often refers to the project as the research and development arm of PHA -- where we test strategies and technologies before they are adopted more broadly within the organization.

#### **HABITAT FOR HUMANITY: AFFORDABLE HOUSING PARTNER FOR ecoMOD2 and 4**

The mission of Habitat for Humanity International (HFHI) is to create simple, affordable housing using volunteer labor and the 'sweat equity' of the homeowners. The residents purchase their home with the sweat equity applied to their down payment, but the price is significantly reduced compared to similar homes in the same areas. The owners also receive interest-free financing. Habitat typically keeps the aesthetics of their homes simple and practical so that they can focus their funds on the construction of as many new homes as possible. HFH builds homes in a variety of countries, and is the 15<sup>th</sup> largest homebuilder in the U.S. HFH has provided homes for more than a million people in over 250,000 houses -- distributed over 3,000 communities across the globe.

Much of the real work of Habitat occurs at the level of the local affiliate. Affiliates work within a flexible structure set up by Habitat for Humanity International that allows the affiliates to respond to the unique culture and specific needs of a community. HFH affiliates depend on staff and regular volun-

teers to manage their home build events intended for the media, as well as not so glamorous tasks like credit counseling, loan coordination, material procurement and family selection. These media oriented events with weekend volunteers putting in a few hours to pound nails are essentially fundraisers -- structured to maximize free publicity and spread the word about the organization. It should be no surprise that some of the most consistent and generous donors to HFH have been introduced to the organization through these building events. It is a fine example of a worthwhile organization using the news media for the public good.

The conservative nature of the architectural design of most Habitat homes has presented an interesting challenge for architects in the last ten years. Habitat homes in the U.S. are often conventional ranch homes, like so many other 'ranch-burgers' across the country. The only difference is that Habitat homes tend to be smaller, and to keep costs down they never have a garage. Architects and architecture students have long been intrigued by the possibility of rethinking the standard Habitat house. Design competitions have been held (sometimes without any involvement from HFH) and architecture design studios taught to challenge designers to work within the size and cost constraints of Habitat. The results are varied -- some of the designs offer considerable architectural sophistication, but would be too expensive or too complicated for normal Habitat volunteers to construct.

HFHI now provides guidelines on sustainable construction on their website, and quite recently have started to officially encourage this kind of thinking. Outside organizations have taken these ideas further by working directly with local Habitat affiliates to build demonstration homes using alternative materials, strategies and renewable energy technologies. The Oak Ridge National Laboratory built several 'zero-energy' Habitat homes, using super-insulated construction and photovoltaic panels. As evidence that these homes can be built within the context of Habitat, they are an important next step, despite the fact that the homes are as architecturally conventional as any stock building design Habitat offers on their website.

Habitat for Humanity of Greater Charlottesville (HFHGC) is a well-established and large affiliate, focused on addressing the issue of affordability in

the inflated real estate market of an economically-stable college town. With half a dozen paid staff, dozens of regular volunteers, and the support of at least one or two full-time AmeriCorps volunteers, HFHGC is comparable to a mid-sized home construction company.

A few years ago, HFHGC had the opportunity to purchase the site of a two-acre trailer park near downtown Charlottesville. They raised the money to purchase the land, and organized an international design competition to come up with ideas for how to keep the current occupants on the site (in housing they could afford), but mix their units in with other affordable and market rate housing. The land purchase and the design competition were significant leaps for Habitat. Struggling to formulate a clear response to the increase in home values in the area, the transition to mixed income development was a logical next step. The success of the process later inspired Habitat to purchase another trailer park on 100-acres near Charlottesville, and partner with local developers to start planning another mixed income neighborhood. The ecoMOD4 team is creating a single family detached home for HFHGC, but is also generating townhouse versions of the same design, so they can be considered by HFHGC for these other sites. If HFHGC uses the design, it is likely it will be built by a modular company.

## REVISING THE AMERICAN DREAM

To address the ongoing affordability problem, Americans need to start building (and renovating) smaller homes, in a variety of sizes appropriate for different households. These homes should be built following strict guidelines for sustainability. They should be sited in economically, ethnically and racially diverse communities, using energy- and water-efficient strategies. This revised American dream involves mixed income neighborhoods of mostly attached dwellings (town homes, condominiums, apartment style complexes) in pedestrian friendly neighborhoods with direct access to shared amenities, outdoor spaces and convenient public transportation. The old American dream of a new four-bedroom home, three-car garage and a white picket fence should adapt to the current situation: the fence can be replaced with a regionally appropriate hedge to support biodiversity; the home can be super-insulated and independent from the utility grid, and the garage can be replaced with a shared-

use electric car parked elsewhere – or a bicycle / garden shed. It is in this alternative American dream that we hope the ecoMOD housing units we are creating will take root.

In the recent past, there has been condescension from the avant-garde in the design world toward those who desire to apply innovative design in practical ways to positively impact society. Yet we should all be encouraged by the recent evolution of the profession to the point that designers are now starting to be able to address social and environmental issues without losing credibility as designers. The way designers respond to this newfound respect for social responsibility will directly impact the quality of life for Americans at the low to moderate-income bracket. By working with non-profit groups and using the innovative problem-solving skills that they have developed in design schools and firms, designers can lead the way for the rest of the country to develop socially and ecologically sustainable practices.

(NOTE: To learn more about the ecoMOD project, visit [www.ecomod.virginia.edu](http://www.ecomod.virginia.edu).)

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