

Brennan Crawford
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Dr. Robyne Turner

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**Habitat For Humanity and Green Affordable Housing in Kansas City:
A Field Investigation, Relevant Literature, and Some Thoughts**

Introduction and Background

Urban scholars, design professionals, housing activists, and even local governments are beginning to recognize the critical need to incorporate energy efficiency and other “green” building techniques into affordable housing¹ production strategies. Indeed, housing activists have long recognized the link between poorly performing buildings and a host of trials endured by low income households: forced eviction due to high utility costs (Colton 1995) and higher rates of several health problems (Carr-Hill 2000; Bashir 2002; Srinivasan, O’Fallon et al. 2003), to name a couple. Much of the literature on the subject, however, is very sectoral, focusing on either only narrow aspects of the problem like the relationship between energy performance and household expenditures, or indoor air quality and upper respiratory disease, as in the preceding examples; or it is very broad, situating the issue of “green” building within the larger framework of smart growth or growth management. This literature spans issues from inclusionary zoning to increased densities to transit to strengthened building codes. In

¹ I am here and throughout this paper referring to what Downs calls “type one” affordable housing, which he defines as housing that costs less than 30% of low or very low income households’ income, although it would also be applicable to Downs’ “type two” affordable housing, defined as costing no more than 30% of a working class or moderate income household’s income.

this literature, building performance *per se* is given cursory attention at best; what is most frequently discussed is to what extent growth management or smart growth practices conflict with the provision of affordable housing by virtue of raising overall development costs or to what extent community resistance to inclusionary zoning can be overcome (see, for example, Downs 2004). Indeed, this apparent conflict is present in any discussion of “green” affordable housing because scholars and building professionals alike typically equate “green” building with higher development or construction costs. Since low-income housing is so difficult to finance and gain community support for in the first place, proposals that are believed to increase unit costs have received little serious attention in the policy literature.

Downs’ discussion of strategies to reduce affordability gaps reflects this point well. In his final chapter, Downs declares that there are only two ways to close the gaps: 1) Raise income through direct subsidy, or 2) Reduce the cost of the unit to the occupant by cheaper financing, reducing the costs of providing housing through regulatory modifications and increased densities, reducing size and quality standards of new units, or reducing the cost of existing units by overproducing new housing (Downs 2004). But these options are problematic and incomplete for a couple of reasons: First, they appeal to a static and oversimplified definition of affordability that ignores the impact of shelter service related expenditures on total household expenditures, and second, they fail to consider some technical innovations in the housing design and production process that can actually increase quality while holding constant or even *reducing* initial costs.

With respect to the former: the measure of housing affordability as a ratio measure between housing costs and income suggests that housing cost is viewed as an

opportunity cost; the socially determined amount of consumption on non-housing goods that “should” be foregone for shelter is, in the US, about 30%; a family that spends more than 30% is “cost-burdened”, meaning that it is necessary for them to forgo an “unreasonable” amount of consumption on non-shelter goods (Hancock 1993). But this determination makes assumptions about the acceptable or normal levels of other household expenditures, some of which are directly driven by housing characteristics. Thus, a substantial reduction in ongoing operating costs equates to an income subsidy; a family may comfortably pay a larger proportion of its income for housing if characteristics of the housing reduce other related expenditures².

With respect to the latter: nearly all housing production literature, technical or policy oriented, makes the explicit assumption that reducing unit costs equates to reducing unit quality. The problems inherent in this assumption are best illustrated by the treatment of manufactured housing both in housing literature and local building codes. There is a nearly tautological assumption that it costs less because it is lower quality, and it is lower quality because it costs less. But this is a gross generalization. Some advocates and scholars are beginning to revisit manufactured or modular housing as a viable means of housing low income strategies, explicitly focusing on the technological developments that have brought manufactured housing to a comparable (or higher, in some cases) level of quality as site built (Genz 2001; Jensen 2001; Apgar, Calder et al. 2002). While a

² HUD does recognize that reduction in housing-determined expenditures like utility costs and transportation does justify and allow higher mortgage payments; The Energy Efficiency Mortgage and the Location Efficient Mortgage are both finance tools designed to encourage more energy efficient homes or homes located close to transit services and employment centers, respectively, by increasing the maximum loan amount, effectively capitalizing reduced operating costs.

(http://www.pueblo.gsa.gov/cic_text/housing/energy_mort/energy-mortgage.htm;
<http://www.locationefficiency.com/>)

thorough discussion of the relative merits of manufactured versus site built homes is beyond the scope and outside the purpose of this paper, I mention it to illustrate the point that technological improvements, many of which fall in the realm of “green” building can actually hold constant or reduce costs while *improving* quality³. In other words, the details of the design and construction processes *matter*, and these variations have not been well considered in the policy dialogue surrounding green affordable housing.

The lengthy foregoing exposition is designed to illustrate the following point: While many scholars and advocates alike recognize that low-income populations stand to derive great benefit from green construction— healthier homes with drastically reduced operating costs— the policy dialogue surrounding “green” affordable housing is not well developed or even well defined. It has not been widely discussed as a desirable or possible policy objective; consequently, scholarly considerations regarding *how* to achieve this goal are lacking. Government incentives to produce greener affordable housing are weak and piecemeal at best.

It is in this environment that private, mostly non-profit affordable housing advocates and producers have taken the lead in incorporating green building strategies into affordable housing production. Habitat for Humanity (“Habitat”) is one such group. Habitat has produced over 225,000 homes for low-income households worldwide since

³ Quality is an extremely murky issue in housing literature; the distinction between and interaction among amenity, aesthetics, resale value, durability, and performance is not well explored. For a thorough discussion of the difficulties in defining “quality” see Lawrence, R. J. (1995). "Housing Quality: An Agenda for Research." Urban Studies **32**(10): 1655. I will focus on the more measurable elements of quality including performance (energy consumption and occupant environmental health and comfort) and durability; the very issues addressed by green construction.

its inception in 1976⁴. Since 1995, Habitat has partnered with the Department of Energy and other local green building groups to incorporate green building principles into I housing production process. As of April, 2007, Habitat had constructed 2,569 EnergyStar⁵ certified homes. In 2006, Habitat partnered the US Green Building Council to conduct a nation-wide contest in which each local Habitat affiliate would select a green affordable home design from entries submitted by local architects. The final selections were made in June of 2007, and they will be presented at a national Greenbuild conference in October of 2007.

In this paper, I will examine the kinds of constraints and incentives faced by private non-profit housing producers in the Kansas City metropolitan area who wish to produce green⁶ affordable housing. Toward that end, I will use Habitat for Humanity's Kansas City affiliate as a case study. I will then review some policy literature that might be relevant to the formulation of policy recommendations aimed at local governments wishing to explicitly encourage green affordable housing production. Finally, I will compile from the work of others and construct from my own research, some modest recommendations to encourage and enable more green affordable housing in the Kansas City metropolitan area.

⁴ <http://www.habitat.org/how/historytext.aspx>

⁵ "To earn the ENERGY STAR, a home must meet guidelines for energy efficiency set by the U.S. Environmental Protection Agency. These homes are at least 15% more energy efficient than homes built to the [2004 International Residential Code \(IRC\)](#), and include additional energy-saving features that typically make them 20–30% more efficient than standard homes."

http://www.energystar.gov/index.cfm?c=new_homes.nh_features

⁶ Because there are considerable vagaries in the word "green," I will use it here to mean homes that meet either Energy Star standards or LEED residential standards of energy efficiency, environmentally friendly building practices, and indoor environmental quality.

Habitat for Humanity, Kansas City

Habitat for Humanity's Kansas City affiliate ("Habitat KC"), located at Linwood and Paseo, was founded in 1979. It is Habitat's seventh affiliate. Since 1979, Habitat KC has built over 160 new homes in Kansas City's urban core. Habitat KC's basic model for housing is a single story, 3 BR, 1 bath home with a single detached garage, although in practice, they alter this formula to meet the needs of the particular homeowner, the requirements of the lot, and at the preference of the Construction Manager. For the current year, Habitat KC will be building at least five different floor plans, ranging from the standard 3br, 1 bath single story to a 4br, 2 bath, two-story home with an attached garage.⁷ For the past several years, Habitat KC has incorporated energy efficiency into their overall housing production mission; according to the Habitat International Energy Star Homes map, Habitat KC has built between 4 and 9 Energy Star Homes since 1995. In 2004, under the direction of Construction Manager Frank Burns, Habitat KC began building Arxx insulated concrete form (ICF) homes. Between 2004 and 2005, they constructed at least eight of these homes, mainly along the 3600 block of Euclid and Wayne Avenues. While the energy performance of these homes was presumed to excellent⁸, the construction technique may not be as volunteer friendly as traditional stick-framed methods, and the cost of both the ICF's and the concrete may be unaffordable.⁹ In 2005-2006, under the guidance of a new Construction Manager named

⁷ Interview with Richard Pember, Habitat KC's current Construction Manager.

⁸ No empirical analysis of the comparative energy advantages has yet been completed, although John Gartin is currently in the process of conducting just such an analysis.

⁹ According to an interview with John Gartin, no one really knows what it would cost to build one without Frank Burns; he received deep discounts from both the manufacturer of the forms and from LaFarge concrete. Richard Pember expressed serious concerns about materials cost.

Eddie Tapper, a young architect, ICF construction was abandoned in favor of a craftsman style bungalow design, exemplified in the homes constructed on the 3400 block of Tracy Ave. These homes feature high ceilings, wraparound porches, and deep overhangs. They are single story, 3br 1bath homes constructed with traditional stick framing methods. They are not Energy Star rated¹⁰. Today, under the leadership of the current construction manager, Richard Pember, a mechanical engineer and private builder, Habitat KC is preparing to break ground on its first Energy Star certified home of 2007. According to Pember, all homes built from this point forward will conform to Energy Star standards, and he will be studying the feasibility of incorporating LEED-H standards into Habitat's homes. He will build 12 Energy Star Homes in 2008, and he says that the current Executive Director, Yahna Gibson, intends to grow the program every year.

Habitat KC recently participated in the USGBC's Natural Talent Design Contest, in which local architects were challenged to develop a green prototype house for Habitat KC. John Gartin, one of Habitat's project managers, participated in the judging and helped select the winning design, but no serious discussion of whether to adopt or develop the design has yet been undertaken by Habitat's senior staff or board¹¹.

In addition to Energy Star and other "green" elements, Habitat KC also incorporates some Universal Design details into its homes. These elements are limited, however, to basic major structural accommodations like wider doorways and a ground floor bedroom, bathroom, and laundry. Other details like lever door handles, ramps, and special fixtures, are omitted. Pember's rationale for these omissions is straightforward:

¹⁰ Interview with John Gartin.

¹¹ One representative of the Emerging Green Builders local chapter privately expressed some doubt as to whether Habitat was ever really serious about the competition.

the homeowner can relatively easily have ramps built or doorknobs changed as family needs dictate. The upfront cost of these accommodations, Pember says, is better invested in other immediate projects.

Richard also indicated a strong desire to move in the direction of more rehab projects rather than just new construction. Most of Habitat KC's current rehab efforts are incidental; according to Pember, Habitat KC forecloses on a few homes every year, and these homes often require renovation before being returned to service. But Pember notes that, both from a cost perspective and a resource conservation perspective, rehab is preferable to new construction¹². At the current time, however, most of Habitat's efforts are aimed at new construction.

Habitat receives no incentives of any kind to construct affordable housing. They are funded entirely by donations of money, materials, and labor. The city of Kansas City, MO offers no particular concessions with respect to the permitting process or fees. This is surely in part due to the philanthropic culture of Habitat itself; it has traditionally been a faith based, donor driven organization that has explicitly avoided government funding. In this respect, then, it may not be an ideal case study for public policy interventions to encourage green affordable housing. Nonetheless, the question remains as to how local governments can encourage (or at the very least, not hinder¹³) organizations like Habitat to produce green affordable housing, particularly if green affordable housing is an explicit goal of the local government.

¹² This point is reflected in the LEED commercial standards, which award points based on reuse of at least 75% of an existing structure.

¹³ Richard mentioned that KCMO Code Inspectors were sometimes overly scrutinous of Habitat projects.

Incentives available in Kansas City

Unfortunately, no incentives are available through the city government of Kansas City for green affordable housing as of yet¹⁴. While Jackson County adopted a Green-Build program in 2006, which rebates a portion of permit fees to builders and developers who build housing that meets certain green standards¹⁵, no such program is yet available within city limits. Consequently, direct incentives for green building of any kind come only from the Federal government in the form of a \$2,000 tax credit for new homes¹⁶, and from KCP&L, in the form of a rebate for certain energy improvements in new homes¹⁷.

Other Cities

Several other cities have adopted some initiatives aimed at encouraging green building and reducing its cost, but two stand out: Seattle, WA and Austin, TX. Both of these cities have spearheaded comprehensive efforts to incorporate green building into all housing price points, and to specifically encourage green affordable housing.

Seattle's city government produced a guide called "Sea-Green"¹⁸ which outlines a comprehensive framework for city funded affordable housing projects. Seattle also produces several guides aimed at encouraging green remodeling in residential

¹⁴ Indeed, despite the fact that residential energy use is the third highest contributor to CO2 emissions, and "buildings" collectively, are the highest emitters of greenhouse gasses, any serious discussion of green or sustainable building practices are conspicuously absent from the April 2007 Progress Report on Climate Protection, aside from vague references to code reforms. <http://www.kcpl.com/business/affordhomes.html>

¹⁵ <http://www.jacomojourney.com/pdfs/Green%20Build%20Handbook.pdf>

¹⁶ http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=US41F&State=federal¤tpageid=1&ee=1&re=1

¹⁷ <http://www.kcpl.com/business/affordhomes.html>

¹⁸ <http://www.seattle.gov/housing/SeaGreen/default.htm>

structures.¹⁹ The city government *per se* offers no particular incentives to green affordable housing producers²⁰, but King County does offer a streamlined permitting process for homes that meet certain green criteria. It should be noted that Seattle's approach to encouraging green practices is primarily regulatory; Seattle has historically had a particularly aggressive energy code. Seattle does not take an incentive based approach because green building and general practices of sustainability are a long-standing element of the city's civic culture.

Austin, on the other hand, is considerably more incentive-oriented. Like Seattle, Austin has a progressive energy and building code, but Austin also offers two types of incentives for green building, particularly in conjunction with affordable housing production: The first incentive program is SMART²¹ housing. This program encourages builders and developers to produce green affordable housing by offering up to 100% fee waivers to builders who meet the city's Green Builder standards and who designate a certain proportion of their units as affordable.²² A second incentive system is the Green Builder program itself, operated through Austin's public utility, Austin Energy. This program offers rebates for energy efficiency upgrades and free energy auditing. It also offers extensive marketing and technical assistance to builders and developers who build

¹⁹<http://www.seattle.gov/dpd/GreenBuilding/SingleFamilyResidential/Resources/RemodelingGuides/default.asp>

²⁰ Rather than incentives, Seattle simply incorporates the SeaGreen building practices as selection criteria for any city housing funding.

²¹ The acronym stands for Safe, Mixed-Income, Accessible, Reasonably-Priced, and Transit-Oriented. http://www.ci.austin.tx.us/ahfc/smart_benefits.htm

²² It is unclear to what extent this incentive would be useful to producers of single family homes; this incentive is indicative of the general focus of most green affordable housing initiatives on multi-family unit development.

green, although this is not specifically helpful to non-profit builders of affordable housing.

If both of these examples seem modest, it is reflective of the fact that even the most progressive local governments simply have not yet been particularly intentional or effective at promoting affordable housing production, let alone *green* affordable housing production.

Rather, state governments have been the primary innovators and motivators of green affordable housing production (Proscio 2007).²³ As the focus of this paper is limited to local government's role in spurring green affordable housing, I will note only that neither Missouri nor Kansas has any program to facilitate the practice; thus, Kansas City cannot yet partner with the state on this issue.²⁴

Relevant Literature

Though literature examining the impact of policy designed to encourage green affordable is scant, some literature has emerged to support the desirability of such a policy intervention. A recent study conducted by Winkler, et al (2002) found that energy efficiency programs in low-income housing not only yielded positive economic effects for the families that occupied the housing, but also yielded broader social and economic benefits to the jurisdiction in which the programs were applied. (In this case, the jurisdiction was national—the study was conducted on behalf of the South African government.) And these findings are consistent with those of the US Department of

²³ The Green Communities Initiative, launched by the Enterprise Foundation in 2004, has successfully collaborated with several state governments, most notably Minnesota, to produce over 7,000 new units nationwide.

²⁴ www.dsireusa.org

Energy; because about 80% of every dollar spent on utilities leaves the local community, DOE estimates that every dollar spent reducing energy expenditures has a multiplier of 3 or 4 in the local economy. In other words, if low-income households spend less on energy, they spend more in the local economy. Thus, energy efficiency programs are effective economic development tools in low-income communities.²⁵

What can Kansas City Do?

Most policy interventions employed by local, state, and Federal governments are aimed at producing green multi-family rental housing (see for example HUD's Best Practices for Effecting the Rehabilitation of Affordable Housing (September 2006)²⁶. Virtually nothing is currently underway to address the kind of housing Habitat is producing: single family for ownership²⁷. All of the projects referenced in the Enterprise Foundation's *Affordable Housing's Green Future: Building a Movement for Durable, Healthier and More Efficient Housing: Lessons from Minnesota and Beyond* (Proscio 2007), for example, are large, multifamily units.

The strategies available currently that have shown some promise are fairly simple:

1. Streamline the permitting process and reduce or rebate permit fees for new homes and rehabs that meet green, affordable criteria. (Chicago, IL provides a good example of this practice.)
2. Ensure that city codes permit green building practices without the need for

²⁵ <http://www.eere.energy.gov/weatherization/improving.html>

²⁶ Accessed at <http://www.huduser.org/publications/affhsg/bestpractices.html>

²⁷ Actually, Seattle does incorporate SeaGreen standards into its selection criteria for HOME funding for single-family projects.

variances or special evaluation.

3. Mount a targeted, aggressive education and information campaign to target developers and builders of affordable housing. This includes materials detailing the techniques involved in green building, and an information clearinghouse for all available incentives and rebates, and professional design consultation. (Seattle provides an excellent example of this kind of effort; a single web page entitled “City Green Building” links to all pertinent code and permitting, technical, and financial information. The site also links to a “Residential Expert” contact form for developers to contact a single person to guide them through the process)
4. Incorporate incentives for projects that meet green criteria into CDBG/ HOME allocations. Seattle again provides an example of this strategy.²⁸

Some Concluding Thoughts

Cities need green affordable housing. It benefits the household by reducing operating and maintenance costs and providing a healthier built environment, which may reduce long-term health care costs. It benefits the jurisdiction as a whole by creating a more durable built environment that retains value over time and by keeping more dollars out of the furnace and in the local economy. It also seems to be a boon to city prestige²⁹ It benefits the environment by drastically reducing CO2 emissions and dependence on non-renewable fuels.

But how can they get it? The suggestions outlined above represent some of the most

²⁸ See Seattle’s 2007 NOFA for affordable housing, homeownership, accessed at <http://www.seattle.gov/housing/development/HomebuyerNOFA.htm>

²⁹ See, for example, <http://www.sustainlane.com/us-city-rankings/>

progressive cities' efforts. While scholarly literature is scant in this nascent field, there is at least a healthy smattering of case study evidence to suggest that these are some effective means of getting there.

If Habitat KC's experience is any indication, the extent to which Kansas City affordable housing developers embrace green practices has little to do with the city's articulated "green" goals (or lack thereof, as the case may be), and much to do with the individual preferences of the developing agency itself—particularly the technical staff. This means that the city will have to be much more intentional about producing green affordable housing than issuing a few vague goals about "being green."

Though they are incomplete, by incorporating the strategies outlined in this paper: faster permitting; reduced fees; stronger, more green-accommodating building codes; a concerted technical information resource campaign; and preference in local affordable housing production subsidies, Kansas City should be able to harness the productive capacity of both private and non-profit affordable housing producers to move the city a bit closer to being truly sustainable.

- Apgar, W., A. Calder, et al. (2002). An Examination of Manufactured Housing as a Community and Asset Building Strategy. N. R. Corporation, Joint Center for Housign Studies at Harvard University: 65.
- Bashir, S. A. (2002). "Home Is Where the Harm Is: Inadequate Housing as a Public Health Crisis." American Journal of Public Health **92**(5): 733-738.
- Carr-Hill, R. (2000). "Impact of housing conditions upon health status." Hume Papers on Public Policy **8**(4): 12.
- Colton, R. D. (1995). A Road Oft Taken: Unaffordable Home Energy Bills, Forced Mobility, And Childhood Education In Missouri, Fisher, Sheehan and Colton Public Finance and General Economics: 15.
- Downs, A., Ed. (2004). Growth management and affordable housing : do they conflict? Washington, D.C. :, Brookings Institution Press.
- Genz, R. (2001). "Why Advocates Need to Rethink Manufactured Housing." Housing Policy Debate **12**(2): 22.
- Hancock, K. E. (1993). "'Can Pay? Won't Pay?' or Economic Principles of 'Affordability'." Urban Studies **30**(1): 127-145.
- Jensen, K. (2001). Manufacturing a New Kind of Affordable Housing: Seattle's Noji Gardens, Fannie Mae Foundation.
- Lawrence, R. J. (1995). "Housing Quality: An Agenda for Research." Urban Studies **32**(10): 1655.
- Proscio, T. (2007). Affordable Housing's Green Future. Columbia, MD, Enterprise Community Partners, Inc 36.
- Srinivasan, S., L. R. O'Fallon, et al. (2003). "Creating Healthy Communities, Healthy Homes, Healthy People: Initiating a Research Agenda on the Built Environment and Public Health." American Journal of Public Health **93**(9): 1446-1450.