THE GREEN BUILT WAY TO AFFORDABLE HOUSING

THE GREEN BUILT HOME PROGRAM OF THE WISCONSIN ENVIRONMENTAL INITIATIVE PRESENTS:
A SERIES OF GOALS AND STRATEGIES FOR THE EFFECTIVE GREENING OF AFFORDABLE HOUSING
THE GREEN BUILT HOME MISSION:
Green Built Home™ is a voluntary green building initiative that reviews and certifies new homes and remodeling projects that meet sustainable building and energy standards. The program is implemented in partnership with the Madison Area Builders Association in cooperation with other participating builders associations, leading utilities and organizations that promote green building.

THE WISCONSIN ENVIRONMENTAL INITIATIVE MISSION:
WEI works to improve the environment, economy, and quality of life in Wisconsin through educational initiatives, multi-stakeholder dialogues, and the advancement of best practices in the areas of business strategy, environmental policy, green building, agriculture, and land use.

FOUNDATION
Building Affordable Healthy Homes
This project is made possible by a grant from the Home Depot Foundation.

Green Built Home is implemented in partnership with the Madison Area Builders Association. The Green Built Home Program of the Wisconsin Environmental Initiative appreciates the cooperation and contributions of participating builders, remodeling contractors, sponsors and other Program affiliates.

A special thanks goes to Heather Stewart, Green Built Home's Affordable Housing Project Intern who researched and composed the bulk of this report.
# Table of Contents

**Executive Summary** .......................................................4  
**Introduction** ...............................................................6  

**Goal #1: Increase education about green building and its affordability** .........................9  
1.1 Green Built Home Green Affordable Housing Worksheet ..............................................9  
1.2 Green Built Home Multifamily Checklist .................................................................13  
1.3 Green Built Home Hotline .........................................................................................13  
1.4 Training for Builders .................................................................................................14  
1.5 Green Built Home Future Project: Building Your Own Green Built Home ..................14  
1.6 Market Analysis ........................................................................................................15  

**Goal #2: Increase funding opportunities for green affordable home projects.** .............18  
2.1 Green Criteria for Funding ..........................................................................................18  
2.2 New Funding Opportunities ......................................................................................20  
2.3 Home Relocation Programs ......................................................................................20  
2.4 Tax Rebates for Green Building ...............................................................................21  
2.5 Clearinghouse of Sustainability Incentives .................................................................21  

**Goal #3: Address regulatory impacts for green affordable home projects** .................22  
3.1 Low-Cost Housing State Statutes ...............................................................................22  
3.2 Land Use Regulations ...............................................................................................23  
3.3 Green Tier ..................................................................................................................25  
3.4 Water and Sewer Charges .........................................................................................26  
3.5 State/city Surplus Land ..............................................................................................26  
3.6 Mixed-Income Housing .............................................................................................27  
3.7 Green Built Home Future Project: The Naturally Green Built Home .......................29  

**Conclusion, Resources, Endnotes** .................................................................30
Green building contributes to a more comfortable and responsible home, as well as to a more financially viable project in the long run.

The three primary goals of this report aim to increase knowledge of green affordable building, and to encourage funding and municipal support for projects within this realm.

EXECUTIVE SUMMARY

Housing is becoming increasingly expensive: land prices in many parts of Wisconsin have been skyrocketing since the mid-1990s, the cost of building materials has increased, and at the same time, consumer standards for housing are more expensive than ever. For many people in Wisconsin, the cost of owning or renting a home is becoming less and less affordable. More and more, middle-income people above the poverty line need assistance or some form of subsidy in order to purchase a home.

Municipalities across Wisconsin are becoming increasingly focused on the issue of providing affordable housing within new developments. This report is intended to demonstrate the practicality and feasibility of incorporating green techniques into standard affordable housing building practices, as well as the efficacy of utilizing green building to ease strain on municipal infrastructure.

Green Building refers to a wide variety of measures that can be implemented to make a home or other building healthier, safer, more comfortable, more durable, energy efficient, and environmentally responsible. With the costs of energy and materials climbing every year, green building is becoming more and more financially attractive as well.

This report is the culmination of a year-long research effort involving interviews with Wisconsin housing builders, architects, affordable housing developers and providers, market-rate housing developers, city and state government representatives, professional associations, and affordable housing lenders/funding organizations. This report would not have been possible without the support of community members; their contributions are greatly appreciated.

Three overarching goals came out of this effort:

- Increase education about green building and its affordability
- Increase funding opportunities for green affordable home projects
- Address regulatory impacts for green affordable home projects

These goals include roles for state and municipal policymakers, Green Built Home, and other organizations and businesses. Most of the recommendations involve collaboration and partnerships between organizations.

**Goal #1** considers educational strategies such as developing more educational materials from Green Built Home, including a Green Built Home Green Affordable Housing Worksheet and a Green Built Home Multifamily Checklist. Green Built Home is also well-positioned to offer assistance via a Green Built Home Hotline to builders, developers and homeowners on an as-needed basis. Other educational strategies include continuing Green Built Home’s collaborative efforts to provide training in green building techniques for professional builders and do-it-yourself homeowners. Finally, the report recommends a market analysis to better understand the marketability of green building and to build momentum for green building among Wisconsin homebuyers.
Goal #2 considers ways to increase funding opportunities for green affordable housing that include adding green criteria to existing funding sources, developing new funding opportunities, and making existing funding sources for green affordable housing more accessible. This section also discusses innovative home relocation programs, which are being used in other parts of the country to recycle existing homes and address local affordable housing needs.

Goal #3 considers regulatory impacts and challenges for green affordable housing and makes some recommendations for addressing them, including land use regulations, water and sewer charges, and surplus land policy. The section also looks at how Wisconsin’s innovative new Green Tier legislation could be used to encourage the creation of more green affordable housing in the state. Finally, the social and regulatory climate for specific green affordable housing issues is considered, including that of mixed-income housing and natural home building.

This document is both a guide for the future, and a celebration of green affordable housing that is already being created in Wisconsin and elsewhere. It includes case studies and examples of creative policy and programs being used in Wisconsin and in other parts of the country. Although the report does not directly analyze the quantitative benefits of green building, it offers specific recommendations for the low-cost greening of affordable housing. With this, and possibly future projects, Green Built Home aims to introduce green building concepts into the low-cost housing market and make green building integral to affordable housing planning and implementation.

This report celebrates successful existing models of green affordable housing, while promoting increased awareness and action on the green affordable building front.
Green Building is a term that refers to a wide variety of measures that can be implemented to make a home or other building healthier, safer, more comfortable, more durable, energy efficient, and environmentally responsible. The idea developed out of the energy crisis of the 1970s and the prevalence of “sick building syndrome” in the 1980s and 1990s. Since that time, the concept of green building has come to represent an integrated approach to issues related to poor indoor air quality, energy efficiency, and natural resource depletion.

The term “affordable housing” can refer to a wide range of housing types and constituencies, from single occupancy to transitional housing to housing for low- and middle-income households. Often, in order to make housing affordable to these groups, it has to be subsidized by funding from charitable organizations and/or the government.

The affordable housing crisis doesn’t just affect low-income people. Increasingly, middle-income people above the poverty line, such as teachers, postal workers and people who work for nonprofits need assistance or some form of subsidy in order to purchase a home. These are people who would have been able to buy a house 10-15 years ago, when housing cost a fraction of what it does today. In fact, between 1990 and 2003, the median price of an existing single family home increased by 27 percent in the United States and 36 percent in the Midwest alone. Between 1993 and 2003, rent prices experienced a similar increase, with the number of units renting for under $400 per month decreasing by 13 percent. These low-cost units are the only ones 31 percent of rental households are able to afford.

The standard definition for affordable housing is that housing costs are no more than 30 percent of the occupants’ household income. Housing assistance is usually granted to households earning no more than some percentage of the Area Median Income (AMI) for the community in which the household wishes to live. Often 80 percent AMI is used as the upper limit for housing assistance, although in some places it may be as high as 120 percent AMI.

Communities across the United States are experiencing a shortage of affordable housing. In Wisconsin, the cost of housing has risen much faster than wages for most people. “Between 1995 and 2002:

- The average sale price of homes sold in Wisconsin rose 44.6 percent.
- The national Consumer Price Index (CPI) climbed 17.8 percent.

This means Wisconsin home prices rose at more than twice the rate of other expenses.”

According to the National Low Income Housing Coalition:

- The Housing Wage in Wisconsin is $12.22. This is the amount a full time (40 hours per week) worker must earn per hour in order to afford a two-bedroom unit at the area’s Fair Market rent.
- In Wisconsin, a worker earning the Minimum Wage ($5.15 per hour) must work 95 hours per week in order to afford a two-bedroom unit at the area’s Fair Market rent.
In Wisconsin, an extremely low income household (earning $18,463, 30 percent of the Area Median Income of $61,544) can afford monthly rent of no more than $462, while the Fair Market Rent for a two bedroom unit is $635.

A minimum wage earner (earning $5.15 per hour) can afford monthly rent of no more than $268.iii

Municipalities across Wisconsin are becoming increasingly focused on the issue of providing affordable housing within new developments. With this, and possibly future projects, Green Built Home aims to introduce green building concepts into these projects and make green building integral to affordable housing planning and implementation. This report is intended to demonstrate the practicality and feasibility of incorporating green techniques into standard affordable housing building practices, as well as the efficacy of utilizing green building to ease strain on municipal infrastructure.

What is an affordable green home? An affordable green home is good, responsible, appropriate housing. It means not mortgaging your life away, and not disenfranchising some portion of society. A comprehensive definition would include the following:

**It is affordable:**
- To build and maintain;iv
- Eligible for financing assistance;

**It makes use of existing infrastructure:**
- Renovates an existing building;
- Built on a restored brownfield or infill site;

**It uses quality design and quality materials:**
- Only as large as needed: Small houses can be added on to over time;
- Durable: Housing often lasts for 100 years or more, regardless of its intended life expectancy;
- Built using appropriate technology: residents can modify technology over time to adjust to changes in household needs and resources;
- Energy efficient: design for renewable energy, or so that it can be added later; use energy-efficient appliances; design so that the need for heat and air conditioning is minimal;
- Healthy: minimal use of synthetic chemicals, mildew/mold resistant and maximum light and fresh air; good day lighting, acoustic insulation, and access to darkness at night, which can prevent anxiety, depression and a range of other health problems;
- Water efficient: the building itself and landscaping;
- Built using materials that are local, renewable (and sustainably harvested/extracted) and/or recycled/reused; built with minimum construction waste;
- Protects and enhances local ecosystems/biodiversity: may include space for gardening, landscaping and green roofs, etc. (landscape conservation and storm water management); works with climate
It is integrated into the physical fabric of the community by: transit access where applicable and walkability, bikeability or access to other alternative transit modes. This provides access to work, shopping, institutions (library, government, religious, educational, etc.). Additionally, home design should be aesthetically welcoming, not isolating. Consider mixed use or live/work models. For example: urban = mix residential + office/retail/studio; rural = farm, cottage industry, office/retail/studio.

Other considerations include:

■ Security: Well-designed homes provide secure exterior and interior spaces while fostering a sense of comfort and encouraging community interaction. One way to meet both goals is to include front porches on homes, which encourages people to spend time outside, interacting with their neighbors and simultaneously monitoring neighborhood activities.

■ Beauty: When people believe their homes and neighborhoods to be attractive and worthy of taking pride in, they have more incentive to care for them. It is a matter of basic human dignity.
GOAL #1: INCREASE EDUCATION ABOUT GREEN BUILDING AND ITS AFFORDABILITY

Many providers of affordable housing want to build green. Often it is as much a part of their mission to build and operate healthy, durable and environmentally-responsible housing as it is to be able to offer it at prices affordable to low- and middle-income households. Many times, affordable housing providers find ways to build green despite the financial hurdles that they face.

In talking to affordable providers in Wisconsin, it became clear that what is most needed at this time is education. Because “green” building can mean different things to different people, clear guidelines are critical in getting everyone—including housing providers, builders, policymakers and residents—on the same page.

1.1 GREEN BUILT HOME GREEN AFFORDABLE HOUSING WORKSHEET

Affordable housing providers need clear guidelines to help them think about how to green their housing project from the start. Often building green is an integrative process that requires a lot of front-loading on the conception and design process. As the saying goes, time is money, so it is important to help providers and designers think about all the components that could make their project greener from the very beginning. For this reason, Green Built Home could offer an Affordable Green Built Home Worksheet in addition to the Green Built Home Checklist, Project Guide and Buyer’s Guide. Based on past experience and conversations with builders and affordable housing providers, the following measures have been found to involve little or no additional upfront costs and/or promise long-term savings in reduced maintenance and energy costs:

The Affordable Green Built Home Worksheet

So you want to build an affordable green project? The Green Built Home Checklist is an excellent resource to help you start thinking green about your project, but some elements are especially important when affordability is a priority:

SECTION A: SITING AND LAND USE

■ Siting the project within a short distance of transit and/or existing neighborhood shops and services can offset transportation costs. Is the site served by public transit? Is it in or adjacent to an existing neighborhood with necessary shops?

■ Siting the project in a pedestrian-friendly area can have physical and psychological benefits. Is the area surrounding the project safe and easy for pedestrians to navigate? Does it feel comfortable to walk around the block? Down the street? Through surrounding fields or woods?
Consider the building layout: Is building size appropriate for the number of occupants and the site location? How much unusable space exists in the home? Is the home ADA accessible (as applicable)? If not, can it be easily re-adapted for ADA accessibility (as applicable)?

Consider renovating an existing building.

SECTION B: LANDSCAPE CONSERVATION AND STORM WATER MANAGEMENT

Allowing space for resident gardens is becoming popular. Though not for everyone, gardens allow residents to grow a portion of their own food, offer a way to get outdoors and get exercise, as well as having therapeutic psychological benefits.

If the project includes landscaping, using low-maintenance landscaping and native plant species that are well-adapted to the area climate will save money in operating costs by minimizing the need for fertilizers, pesticides, and replacing unsuccessful plantings.

Green (or Eco) roofs are excellent for storm water management, save energy and can significantly reduce wear and tear on the roof, although they can be a considerable up-front cost.

Low-cost elements like rain-gardens and rain-barrels can be a successful storm water management strategy. In Milwaukee, WHEDA (Wisconsin Housing and Economic Development Authority), the City, and the Metropolitan Sewerage district have installed demonstration rainwater recovery systems (using rain barrels) in 16 family developments of the Housing Authority of the City of Milwaukee as a way of preventing urban runoff from polluting natural waters including Lake Michigan.

SECTION C: ENERGY EFFICIENCY

Investments in residential energy-efficiency will often pay for themselves in energy savings over a matter of years; in some cases even months.

Good insulation is the key to maximizing the efficiency of a home’s heating and cooling system. Generally, the most cost-effective insulating options are as follows (in order of cost effectiveness, most to least):

■ Sealing the building envelope to minimize drafts
■ Insulating the attic
■ Insulating walls
■ Upgrading windows

A tight seal of the building envelope requires air to air heat exchangers, which tend to be expensive; a less expensive ventilation option is to install fans with timers or humidistats.

Stress simplicity in building system design. Often, the fewer moving parts the better the system will operate over the years.

The three Rs:
Using Recycled, Renewable and Resource-efficient products contributes to successful construction of green affordable projects.
SECTION D: MATERIALS SELECTION

■ **Durability**: choose quality, high-performance materials and appliances that will last longer. They may increase the upfront cost of your project, but a lifecycle cost analysis will show that over time, they may be just as cost-competitive. You have the money to build now; you (or the new owners) may not have the money to replace later. In some cases, “green” products may not be as durable as more conventional alternatives (usually products made of recycled materials). However, choosing durable but less “green” products is a green choice if it keeps those products in use and out of landfills.

■ **Lifecycle cost calculators to help choose products:**
  - www.rebuild.org/lawson/Calculators.asp
  - www.wastematch.org/calculator/calculator.htm
  - buildlca.rmit.edu.au/links.html
  - frontierassoc.net/greenaffordablehousing/Tools/LifeCycleAnalysis.shtml
  - www.ci.seattle.wa.us/sustainablebuilding/Leeds/docs/LCA_Primer.pdf

■ **Recycled Content**: Products (partly or entirely) made of recycled materials help to minimize the amount of waste that ends up in landfills. These products can be more or less cost-effective than their conventional counterparts. A common concern is that due to the recycled content, they may perform less well over time than products using virgin resources. Sometimes it is, in fact, the case that recycled products are less durable and simply do not perform as well as their conventional counterparts. If unsure about the product, it is important to consult a product guide, such as the Building Green’s GreenSpec Directory, or call Green Built Home with questions: 608-280-0360.

■ **Renewable**: Materials made of abundant, renewable resources are greener and often more cost-effective. One example is bamboo flooring: bamboo can be harvested every 3-6 years; it is as durable as hardwood flooring, and usually costs a bit less than hardwood. When a lifecycle cost analysis is done, bamboo and hardwood flooring usually come out to be much more cost-effective over time than carpeting, which must be replaced far more often.

■ **Resource Efficient**: Resource-efficient products are designed to use fewer materials more efficiently, yet perform as well or better than standard products. These products tend to be more cost-effective over time, due to their durability, and when they are more abundant than the standard products they are designed to replace. Engineered lumber is an example of a resource-efficient product that, in Wisconsin, is often less expensive than standard wood because of the growing scarcity and rising cost of large-dimension solid lumber.

■ **Locally Produced**: Long-distance transport of building materials is energy intensive. Specifying locally-produced materials also keeps more money circulating in the local economy, and can be less expensive, especially if relationships are developed with suppliers over time.

■ **Using locally salvaged building materials** is an affordable green strategy that can give a project character while celebrating its ties to the community.

The floor of a soon-to-be demolished/renovated Boys and Girls Club indoor basketball court was re-cut, re-finished and re-assembled as a parquet flooring of the Highland Gardens’ community room. The Highland Gardens apartment complex is a HOPE VI project of the Housing Authority of the City of Milwaukee that also includes a green roof and rain-gardens to better manage storm water runoff.

Using locally produced materials often not only cuts down on construction costs, but also is energy efficient and supports the local economy.
SECTION E: INDOOR AIR QUALITY
- Healthier indoor environments mean healthier residents, and lower medical bills. What chemicals are used in building construction? Can non-toxic substitutes be found? Is the building designed to deter the growth of mold and mildew?

SECTION F: PLUMBING AND WATER CONSERVATION
- Water conservation can offset residents’ water bills. How water-efficient is the building?
- Fixtures and appliances. Look for efficiency in products, especially clothes-washers, dishwashers, toilets and showers.

SECTION G: WASTE REDUCTION, RECYCLING AND DISPOSAL
- Reducing and recycling construction waste is not just green; it should save the builder money and help reduce construction costs.
- Some excess materials can also be saved for building repairs later.

SECTION H: BUILDER OPERATIONS
- It is important to make sure staff and/or residents understand how to properly operate and maintain the home. Consider working with the builder to put together a homeowner’s manual that incorporates information on the green features of the home and how to operate and maintain them.

Addendum: Design
- Beauty is more important than many of us realize. You want to build a project that you can be proud of residents want to live in a place that they can be proud to call home and an attractive home will help to protect neighboring property values.
- Build for security while fostering a sense of comfort and encouraging community interaction. Front porches, for example, encourage people to spend time outside, interacting with neighbors and monitoring neighborhood activities.
- Good lighting, acoustic insulation and darkness at night can prevent anxiety, depression and a range of other health problems.
- The best projects require a multi-disciplinary approach that reflects the input of the project architect, developer, financier, community representative, environmental representative, housing association, general contractor, engineer and end users.
- Look for solutions that solve more than one problem. We tend to have very technological solutions to very simple problems, and sophisticated technologies require sophisticated operation and maintenance. However, simple systems, though a bit less efficient, may work best over the long term.
- Take the time to design and build to the best of your ability. If you can’t afford to do it right the first time, how can you afford to do it twice?

In Madison, the Reservoir, a 28-unit resident-managed, limited equity cooperative, is an example where a range of input resulted in a better design. Initially, the development faced strong opposition from neighbors concerned about the effects of low-income families moving into the neighborhood. During the design process, the owner invited input from the project’s opponents, residents of the housing association’s other co-ops, representatives from local non-profits serving older adults and persons with disabilities, and neighborhood residents, which resulted in the reduction of units from 40 to 28 and more parking. Although it required additional months of planning, Susan Hobart, former executive director of the Madison Mutual Housing Association, believes that the committee meetings were key to the eventual acceptance of The Reservoir, and improved the overall building and site design.

PHOTO COURTESY OF DESIGN COALITION, INC., ARCHITECTS
Addendum: Financial Assistance

Research green and/or affordable funding resources. Also talk to potential funding institutions about getting extra money for green features. While many affordable housing lenders do not have specific programs for green building, they may be willing to kick in some extra money for green features, especially if they believe that your project could be a good marketing or PR tool for them.

Financial Resources:

- Wisconsin Urban Infill Development Funds: www.co.dane.wi.us/plandev/build/grant.asp
- Wisconsin Brownfield Funding: www.commerce.state.wi.us/CD/CD-bfi-grants.html
- LISC: www.lisc.org; www.lisc.org/milwaukee
- Enterprise Foundation: www.enterprisefoundation.org
- WHEDA: www.wheda.com
- Wisconsin Department of Commerce Housing Bureau: www.commerce.state.wi.us/housing/
- Fannie Mae: www.fanniemae.com/housingcommdev/solutions/environment.jhtml

1.2 GREEN BUILT HOME MULTIFAMILY CHECKLIST

The current Green Built Home Checklist is oriented toward single family homes, but many affordable housing projects are multifamily projects. One of Green Built Home’s future projects will be to create a multifamily checklist. This tool is expected to be available in early 2006.

1.3 GREEN BUILT HOME HOTLINE

Time is money, and when choosing materials and products, or looking for contractors or advice on any aspect of the green building process, affordable housing providers need someone to turn to. This is an excellent role that Green Built Home is already starting to take on by establishing a “Green Built Hotline.” If staff at Green Built Home cannot answer the question, they can either research it or connect the affordable housing provider with the expert(s) who can. Housing providers often cite the need for good, unbiased advice. The hotline operates via telephone: 608-280-0360 or email: contact@greenbuilthome.org.
1.4 TRAINING FOR BUILDERS AND DEVELOPERS

Another problem is working with builders who are not trained in green building practices. Perhaps you want to specify a new product or technique they have not worked with before. Sometimes it is simply a matter of being more mindful of how business is done – recycling and erosion control are key environmental components on the construction site, in which the whole project is only as good as its least environmentally mindful worker. All it takes is putting the wrong material(s) in the recycling bins, and it won’t be accepted.

Green Built Home has had discussions with the Wisconsin Builders Association, Wisconsin Green Building Alliance, and the National Association of the Remodeling Industry (NARI) about creating more educational opportunities for builders to better their green practices, and should continue to strengthen these efforts. Curriculum should focus on method (construction waste recycling, deconstruction, rehab, material-efficient practices, erosion control), and demonstration tours should be included to observe local examples of best practices.

Developers can also benefit from peer-to-peer education. They are more likely to adopt green building principles once they see what other developers are doing, learn first-hand how cost-effective green practices are, and discover other potential benefits such as increased marketability.

1.5 GREEN BUILT HOME FUTURE PROJECT: BUILDING YOUR OWN GREEN BUILT HOME

Green Built Home should provide more resources for the do-it-yourself (DIY) homebuilder. A first step is the Green Built Home Project Guide, a set of guidelines for home building and remodeling projects. The Green Built Hotline can also be a helpful resource for DIY homebuilders. Green Built Home should also work with other interest groups to promote or offer classes in green building and remodeling techniques.

Often DIY homebuilders who already have an interest in building green run into problems with the regulatory system – they want to use materials and/or techniques not allowed by the building code, or are confused and intimidated by fees and regulations. Green Built Home can offer a set of guidelines for navigating the regulatory aspects of the homebuilding process, as well as advice for those interested in practices or materials that are not necessarily included in the Wisconsin Uniform Dwelling Code.
1.6 Market Analysis

Policy is most effective when it has grass-roots support. The first step toward building that support in the area of green affordable housing would be to perform a market study. Some questions to ask are: How profitable is green building, really? Who makes up the target market(s) for green building? Why would these people choose a “green” home over a conventional one? How should green building be marketed in Wisconsin?

Building momentum for green building among homebuyers in general can result in more opportunities and public support for green building in the “affordable” sector. However, it should be noted that these days “affordable housing” can apply to a much wider range of incomes than many think. In Madison, for example, a household with an annual income of $58,560 is eligible for federal assistance for “affordable” housing, and an “affordable” single-family house can cost up to approximately $250,000.

A supply of green affordable housing might be an innovative way to attract businesses to locate in a particular city – especially if the city is seeking the kinds of businesses that will employ the demographic group(s) most interested in moderately-priced green housing. According to an article in the Christian Science Monitor, green building is especially popular with eco-conscious young urban professionals with a moderate amount of money, a lot of creativity, and a desire to distinguish themselves through the social and environmental consciousness of their actions (in other words, keeping up with the eco-Joneses). This is exactly the demographic of workers that Madison, for example, would like to retain.

This isn’t to say that Wisconsin lacks examples of cutting-edge green building for more traditional “affordable” developments. In fact, the state has a number of successful examples, including: a number of homes built by the Madison Area Community Land Trust; Highland Gardens built by the Milwaukee Housing Authority; and the Yahara Riverview Apartments in Madison, built by Common Wealth Development. These projects should prove that green affordable housing is doable – no matter how you interpret “affordability.”

In today’s economy, “affordable housing” applies to an increasingly wide income bracket. In Madison, a household with an annual income of $58,560 is eligible for federal assistance for “affordable” housing, and an “affordable” single-family house can cost up to approximately $250,000.

Green building has proven to be particularly popular with young urban professionals, who find pride in their social and environmental awareness and action.
There are many market barriers to green building that a market analysis might address; a number of these are listed below:

**Problem:** Customers want larger houses.

**Solution:**

■ **Consumer Education:**
  - Smaller is not only more affordable, it’s greener (energy savings are offset by increased square footage).
  - With incremental design, small houses can be added on to over time.

**Problem:** Because customers and builders don’t know about the green building practices and technologies available, they cannot ask for or offer them.

**Solution:**

■ **Consumer Education:**
  - Green Built Home materials can inform homebuyers.
  - Green Built Home hotline can answer questions.
  - City educational initiatives can inform homebuyers.

■ **Builder Education:**
  - Wisconsin Builders Association can offer training.
  - Green Built Home hotline can answer questions.

**Problem:** The prevailing market perception is that green or affordable housing is ugly.

**Solution:**

■ **Highlight examples** (especially local examples) of attractive green buildings.

■ Like organic food certification, Green Built Home criteria can be used as a marketing tool to certify and promote green-built homes and homebuilding techniques. This might require that Green Built Home maintain a regularly-updated database listing home characteristics, point-rating, home value/appreciation, etc.

**Problem:** The prevailing market perception is that green building technologies are less durable or effective (i.e. of lower quality) than conventional ones.

**Solution:**

■ **Educate:**
  - While some newer, untested products and recycled products may in fact be less durable or effective than their conventional counterparts, thinking green means thinking in terms of durability.
  - The low-tech end of the green-building spectrum includes technologies that have been in use for hundreds, if not thousands of years. For instance, there are examples of cob houses in Wales of 500 years old, and cordwood masonry structures of 1000 years old!
  - New and old technologies are evaluated by groups such as Building Green: www.BuildingGreen.com.
**Problem:** The prevailing market perception is that green building is expensive.

**Solution:**

- **Educate:**
  - Researchers can estimate the financial benefits of green housing – especially savings in energy, health/medical and transportation costs.
  - Green building can incur higher upfront costs, but often results in lower operating and maintenance costs.
  - Healthier buildings mean healthier people and less household money spent on medical care.
  - Energy-efficient rentals do tend to require a higher monthly rent to cover the costs of “greening” the unit, BUT the net expense for renters should be less because of the energy savings.

- **Smaller houses** tend to be less expensive to build and operate than large ones, and with incremental design, can grow over time.

- There are a number of ways to **reduce the cost of green building** through rebate programs, housing assistance programs, and other incentive-programs offered by governments, local utilities, and various organizations.

---

**Problem:** The prevailing market perception is that green or affordable housing will lower neighboring property values.

**Solution:**

- **Adjust assessment criteria** to reduce or eliminate the bias against having a variety of income levels in a neighborhood.

- **Promote green building as adding extra value to the property**

---

**Problem:** The prevailing market perception is that green affordable housing is not profitable for housing developers and builders.

**Solution:** Conduct a market analysis to analyze the actual degree of profitability for green housing in Wisconsin.

This project could be implemented by state or municipal housing agencies or initiated as a distinct research-based endeavor by Green Built Home.

---

The construction of smaller houses is an affordable green building method that promises lower costs and includes the possibility of future expansion.
GOAL #2: INCREASE FUNDING OPPORTUNITIES FOR GREEN AFFORDABLE HOME PROJECTS

The term "affordable housing" can refer to a wide range of housing types and constituencies, from single occupancy to transitional housing to housing for low- and middle-income households. Often, in order to make housing affordable to these groups, it has to be subsidized by funding from charitable organizations and/or the government. One way to increase the provision of green affordable housing in Wisconsin is to increase funding opportunities for housing projects that meet both affordable and "green" criteria.

2.1 GREEN CRITERIA FOR FUNDING

Green building is the direction of the future, and many mission-driven housing developers are leading the way. Organizations that help to fund affordable housing projects can help to promote healthier, better quality housing by encouraging the adoption of green standards in the projects they fund. Local funding organizations can even use Green Built Home’s criteria: if Green Built Home certifies a project, funding organizations might consider giving it preference for funding, as long as the project fulfills any other criteria the funding organization demands.

The Enterprise Foundation actively promotes green building through its Green Communities program: www.enterprisefoundation.org/resources/green/index.asp. Other funding organizations may not have a formal green building program in place, but are willing to make extra money available for green features. Local Initiatives Support Corporation-Milwaukee recently co-sponsored a green building training seminar for affordable housing. Oakland requires applicants for housing development financing to submit a Sustainability Statement as part of the financing application:
OAKLAND SUSTAINABILITY STATEMENT

Provide a narrative of how your project will incorporate sustainable development practices. We strongly encourage you to consider how your project can integrate these practices while remaining technologically and financially feasible. Please see the information regarding Sustainable Development in the Program Description and Requirements section, and Addendum #5: Strategies for Sustainable Development, for further information and City contacts. Your narrative should discuss your consideration of the following areas. These areas have been taken from the “Sustainability Profile” developed by the City’s Sustainable Development Coordinator:

Environmental Measures:

1. Project Design/Construction (based on Sustainable Design Guidelines)
   ■ Site: Is the site optimized to the natural & urban environment?
   ■ Transportation: Is site within 1/2 or 1/4 mile of BART or bus stop? Promote alternative fuel vehicles & ride sharing?
   ■ Water: Will project use recycled water, low-water plumbing fixtures and water-conserving landscape?
   ■ Energy: Will project better the energy code by at least 15 percent?
   ■ Indoor air quality: Will project use low VOC paints & carpets, and minimize poor indoor air quality?
   ■ Materials: Will 25 percent (or more) of materials be of renewable or recycled content?
   ■ Waste: Will Construction Debris & Demolition plan exceed City guidelines?

2. “Green Operations” by Site Occupants
   ■ Resource conservation: plan for waste recycling & water conservation?
   ■ Green-business: proportion of business occupants with green-business certification?

3. Transportation Demand-Management
   ■ Will property promote transit, bicycles, pedestrian access, and/or alternative fuel vehicles?
   ■ Will property support car pools, car-sharing, and/or telecommuting?

Social Equity Sustainability:

1. Community-serving
   ■ Relocation/ assistance for pre-development site occupants
   ■ Community or social service facilities available
   ■ Other

2. Personal health (physical and mental) outlets
   ■ Facilities for physical exercise
   ■ Offers community gardens
   ■ Other

3. Cultural enrichment
   ■ Youth after-school activities offered
   ■ Continuing education activities or facilities on-site
   ■ Sponsorship of public art, arts & cultural activities
   ■ Other
2.2 NEW FUNDING OPPORTUNITIES

Creating new funding opportunities for green affordable housing may mean modifying existing programs to add a green-building component, combining funds, or starting new programs, such as a “Wisconsin Affordable Green Building Fund.” In particular, funding organizations need to be aware that while some green-building strategies can save money over time, they often have larger upfront costs. This is actually good news for affordable housing providers, for whom it is often easier to obtain “bricks and mortar” funding than it is to subsidize operating costs. Still, non-profit or mission-driven housing providers often seek to use innovative technologies that have significantly higher upfront costs such as geothermal heating/cooling systems, and solar hot water and energy systems.

One suggestion would be to consolidate many of the smaller grants, loans, etc. that are available for affordable and green housing so that providers can submit fewer applications for access to greater amounts of funding. While this would take a considerable amount of coordination between the various funding institutions, it would save affordable housing providers a significant amount of time and other resources.

2.3 HOME RELOCATION PROJECTS

The House Moves program of the Island Affordable Housing Fund in Martha’s Vineyard, Massachusetts and the United Methodist Relief Center’s Houses on the Move program in the Charleston, South Carolina area are two similar and innovative programs that help create green and affordable housing.

When people purchase land with plans of rebuilding, rather than demolish the houses, they donate them to a local affordable housing fund or organization. Where the cost of moving the homes and bringing them up to code is prohibitively expensive (as in Massachusetts), the landowner can also donate the tax savings resulting from the charitable donation of the home to cover these costs. The landowner saves on the cost of demolition, and the Fund gets a house and money to move it.

In Charleston, South Carolina, thirty-two homes have been donated in the first three years of the program. This group finds that the average cost for installing and rehabilitating the donated homes has been about $28,000, compared with $175,000 for comparable new construction.

A similar program could be useful in Madison, Milwaukee, and/or other cities, as downtown areas are redeveloped.
2.4 TAX REBATES FOR GREEN BUILDING

Some states offer a tax rebate for green building. For instance, New Jersey has the Smart Growth Tax Credit Aid, which provides tax incentives of as much as $500 for each unit developed.

Massachusetts provides business and personal income tax credits for green sustainable construction, with deductions of up to 8 percent of allowable costs over five years, with an aggregate credit cap of $150/sq ft for the base building, and $75/sq ft for the tenant space.

Maryland offers a Green Building Tax Credit worth up to 8 percent of the total cost of the building. Buildings must be located in a priority funding area and be at least 20,000 square feet. New construction and rehabilitative construction projects will be considered for the tax credit, provided they meet the funding criteria.

Wisconsin, or its municipalities, could offer a similar tax rebate for green affordable housing. One concern is that policymakers would prefer to encourage a long-term commitment for sustained performance, rather than offer monetary or other incentives as a point-in-time intervention. Because housing tends to be a long-term investment of 100yrs or more (regardless of the intended life expectancy of a house) a point-in-time intervention to ensure a well-built structure will have far-reaching consequences. A competitive grant-style program could challenge builders to compete for the “greenest” projects with an affordable component, thus raising the standards for a greater number of builders.

2.5 CLEARINGHOUSE OF SUSTAINABILITY INCENTIVES

California’s State Architect provides a centralized, web-based directory of financial incentives for sustainability, including: Energy, Water, Materials, Siting, Green Building, Landscaping and Transportation.

www.dsa.dgs.ca.gov/Sustainability/incentives.htm

A similar clearinghouse should be maintained in Wisconsin, either by the state or a non-profit agency.

The consolidation of many smaller funding programs available to affordable or green housing into a common fund would make money more accessible to green affordable housing providers.

Tax rebates and competitive grant programs could be implemented to award and encourage green affordable building.
GOAL #3: ADDRESS REGULATORY IMPACTS FOR GREEN AFFORDABLE HOME PROJECTS

The regulatory process can add cost to a building project by creating more administrative work and inducing extra fees for the builder/developer. The intent behind many of the regulations is to ensure the safety and wellbeing of the building residents. Between these two points there is some room for streamlining the regulatory process so that it adds less cost to the project. There are also regulatory modifications that can be pursued to encourage greener and more affordable housing in Wisconsin.

3.1 LOW-COST HOUSING STATE STATUTES

Wisconsin Statutes provide provisions that intend to ease financial strains for low-cost housing development. Statute 66.0617(7) states that, "an ordinance enacted under this section may provide for an exemption from, or reduction in the amount of, impact fees on land development that provides low-cost housing." This ruling ought to be implemented by low-income housing developers and efforts should be made to educate affordable housing providers about this statutory provision, which has the potential to greatly reduce construction costs.

<table>
<thead>
<tr>
<th>TECHNIQUE</th>
<th>LEGAL MECHANISM</th>
<th>REMEDY/RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Minimum building size requirements</td>
<td>(zoning)</td>
<td>Local government should consider adopting/modify zoning to allow smaller building size.</td>
</tr>
<tr>
<td>2. Exclusion of multiple dwellings/multifamily dwellings</td>
<td>(zoning)</td>
<td>Local government should consider adopting/modify zoning to allow a mix of single family and multi-family dwellings.</td>
</tr>
<tr>
<td>3. Restrictions of number of bedrooms</td>
<td>(zoning)</td>
<td>Local government should consider adopting/modify zoning to lift this restriction.</td>
</tr>
<tr>
<td>4. Prohibition of mobile homes</td>
<td>(zoning)</td>
<td>Local government should consider adopting/modify zoning to allow mobile homes.</td>
</tr>
<tr>
<td>5. Frontage (lot width) requirements</td>
<td>(subdivision regulations)</td>
<td>Local government should consider adopting/modify zoning to allow smaller lot frontage.</td>
</tr>
<tr>
<td>6. Lot size requirements</td>
<td>(zoning, subdivision regulations)</td>
<td>Local government should consider adopting/modify zoning to allow smaller lot size. Might use maximum lot size rather than minimum lot size.</td>
</tr>
<tr>
<td>7. Deed restrictions – building size, design criteria</td>
<td>(subdivision review, local ordinances)</td>
<td>Local government should consider reviewing restrictive covenants during subdivision review process, and curtailing them if necessary.</td>
</tr>
</tbody>
</table>
3.2 Land Use Regulations

Some land use regulations can have a negative impact on housing opportunities for low- and moderate-income persons. The techniques above that are of the greatest concern for green affordable housing in Wisconsin are:

1) **Minimum building size requirements**: Minimum building size requirements can be used to force affordable housing to be built to a size requirement that puts the cost out of the range of affordability for the people it is intended to house. This may occur because neighbors are concerned that the construction of affordable housing nearby will lower their property values. Yet, these concerns are not necessarily well-founded. Smaller houses are often greener, requiring less energy and fewer materials. If built to high-performance, high-quality standards, a small, well-built house could appreciate or maintain its value to a much higher degree than a large, poorly-constructed house. To address these concerns, local governments should consider modifying their zoning codes to allow smaller building size and include a green-building element in their assessment criteria.

5) **Frontage requirements**: Local government should consider modifying their zoning codes to allow smaller lot frontage, as applicable. Wide lots have higher development costs (especially street paving and sewers) than narrower lots, although narrow lots tend to create a denser, less rural feel. If well-designed, a denser, “clustered” development can be both affordable and attractive, with more community cohesiveness.

6) **Lot size requirements**: Similar to minimum building size requirements, lot size requirements can be used to keep housing out of the range of affordability of many people. This is sometimes intentional, where neighbors are concerned about property values, and sometimes unintentional, where community members are simply concerned about stabilizing the rate of population growth in the community. Local government should consider modifying their zoning codes to allow smaller lot size. In this vein, some local governments are experimenting with zoning for maximum lot size rather than minimum lot size.

7) **Deed restrictions**: Similarly, developers can include deed restrictions that effectively limit the affordability of housing built in their subdivisions. These deed restrictions may include language requiring a certain building size, house design or fixtures, or restricting certain activities on the property (such as rules about pets, “yard clutter”, in-home businesses, etc.). Local government should review restrictive covenants as part of the subdivision review process. If in the public interest, local government should consider passing an ordinance negating deed restrictions. Although this is an extreme measure that is largely implausible in the legal arena at present, such action may be appropriate in some cases and is still worthy for consideration. On an individual basis, property owners can negotiate with the developer to loosen restrictive covenants.

Educational materials should be made available:

1) so that local communities know what to look for in deed restrictions that would unduly hamper green building and/or affordability

2) so that buyers can know what to watch for and how to negotiate with developers, and

3) so that developers can achieve their goals of community harmony without effectively disallowing green and/or affordable housing to be built.
Some examples of land use regulations that are to be used to encourage elements of green affordable housing are:

**Affordability:**
- Anti-Snob Legislation (Zoning Override)
- Inclusionary Zoning
- Home Equity Guarantee

**Home Occupation:**
- Family Home Occupation Ordinances

**Location-Efficiency:**
- Transit Oriented Development (TOD)
- Traditional Neighborhood Development
- Cluster Zoning
- Conservation Subdivision Regulations

**Solar Gain Maximization:**
- Solar Access, Thermal Performance, Solar Heating Ordinances

**Model Ordinances:**
- Family Home Occupation Ordinance: www.medusaonline.com/hbbc/ordinance.htm
- Traditional Neighborhood Development: www.wisc.edu/urpl/people/ohm/projects/tndord.pdf
- Cluster Zoning: www.exploremaine.com/~ccs/canton/chord.htm
- Other Affordable Housing Ordinances: www.mrsc.org/subjects/housing/ords.aspx?r=1

The HUD Regulatory Barriers page contains research papers on a number of affordable housing barriers: www.huduser.org/rbc/
3.3 GREEN TIER

If green-built affordable housing is a priority in Wisconsin, then projects should be encouraged with incentives such as reduced fees, expedited review, and additional funding. Wisconsin's Green Tier legislation may be an excellent way of achieving this aim. Green Tier uses a voluntary, self-regulating approach to reduce environmental impacts. Participating companies receive regulatory relief and other benefits such as reduced costs for energy, pollution control fees and insurance.

The homebuilding industry has already approached the Department of Natural Resources to establish Green Tier Charters. Veridian Homes has an agreement to reduce construction site erosion in exchange for a single point of contact approvals and expedited project review. The Development Council of the Wisconsin Builders Association is also pursuing a Green Tier Charter at the time of this writing.

Because green building practices include an emphasis on long-term durability, minimizing ongoing maintenance and utility costs, and the use of “healthy” building materials and building design (non- or low-toxic emissions, good air quality, day lighting, etc.), most mission-driven providers of affordable housing are also committed to green building practices as a matter of practice. A Green Tier Charter or similar regulatory relief could be very useful to these groups; however, the Green Tier legislation is designed for businesses and/or organizations that have an environmental management system in place. Many mission-driven businesses and organizations are not systems-based organizations, so that a capacity-development program would have to be offered to help these mission-driven operations adopt a systems-based approach. Such an approach might also benefit these organizations by making fundraising efforts more effective and curtailing mission creep, in addition to improving environmental performance.

Green Tier legislation: http://dnr.wi.gov/org/caer/cea/environmental/

Dane County Habitat for Humanity’s Twin Oaks Subdivision

The Twin Oaks Subdivision is unique in that it is a large-scale mixed-income subdivision, incorporating elements of sustainability and green design with a high number of affordable units. The subdivision includes 142 units, all homeownership (no rental units). Half of the units will be market-rate units developed by private or individual owners, builders, or developers. The other half of the units will be affordable units developed by non-profit housing developers.

The project will be a traditional neighborhood design with small lots, traditional architecture, and required front porches. It will also preserve 10 acres of wetlands and an old stand of oak trees near its center, which will have a public path meandering through it. Twin Oaks will also include bike paths that will skirt the wetlands and connect Twin Oaks with William McFarland Park to the east.

Habitat for Humanity will be building 50 of the 142 dwelling units, all 3-5 bedroom homes, which are anticipated to appraise for $140,000-$165,000 upon sale. Selected families will purchase homes for a sale price that is exactly equal to the home’s full appraised value (to be determined by an independent appraiser), and will enjoy Habitat’s zero-interest financing terms.

The Habitat homes will include green building features, such as ENERGY STAR qualified appliances and energy conservation standards; erosion control measures; construction recycling; use of sustainably-produced, low-toxicity materials; domestically-grown wood, and rain gardens. Habitat for Humanity of Dane County has also committed to certifying all the homes they build in Twin Oaks as Green Built Homes.

If Wisconsin recognizes the importance of green affordable housing, projects should be rewarded with incentives such as reduced fees, expedited review, and additional funding.
3.4 WATER AND SEWER CHARGES

<table>
<thead>
<tr>
<th>ENTITY</th>
<th>ASSESSMENT AND FEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developer</td>
<td>Department of Natural Resources – storm water/runoff [state]</td>
</tr>
<tr>
<td>Builder</td>
<td>Department of Commerce - uniform dwelling and building code [state]</td>
</tr>
<tr>
<td>Homeowner/Landlord</td>
<td>water utility [local]</td>
</tr>
<tr>
<td></td>
<td>sewer/sanitation utility [local]</td>
</tr>
<tr>
<td></td>
<td>Storm water utility [local]</td>
</tr>
</tbody>
</table>

* No offset is granted for local storm water utility fees if storm water is managed onsite: local storm water utility should find a way to encourage owners/developers to go above and beyond compliance by giving rebates to those who manage more than the required level of storm water.

For developers and builders, having to navigate Department of Natural Resources and Department of Commerce regulatory processes can add cost, time and complication: Can the two entities coordinate (align) their inspection/permitting procedures? Under the Green Tier legislation, it may be possible to bring these parties together, but it will ultimately depend on their willingness to be flexible and coordinate a joint process for permitting and review.

One suggestion that came up repeatedly in Milwaukee is that if a building manages its runoff and wastewater onsite (through a grey-water system or composting toilet, for example) sewer fees should be reduced. Fees are currently levied partly by flat fee, partly by usage to encourage lighter system loads. A more powerful incentive should be implemented to allow or even encourage individual property owners to manage their water system onsite. System components (such as composting toilets) would also have to be allowed by the Uniform Dwelling Code. Health concerns associated with composting and grey-water systems would also have to be addressed (for example, composting may attract pests – especially rats/rodents).

3.5 STATE/CITY SURPLUS LAND

State and city surplus land is occasionally offered for sale, and may provide an ideal opportunity for the creation of affordable housing. According to Wisconsin state law, the surplus land must be valued and sold at “fair market value” which can sometimes be prohibitive for developers of low-cost housing. The State should consider changing the law to allow surplus land to be sold at a reduced price for permanently affordable housing projects.
Akron, Ohio has a program in which the city offers vacant city lots for sale to local development corporations at a reduced price under its Community Development program.\textsuperscript{xiv} In Wisconsin, the Madison Area Community Land Trust and Friends of Troy Gardens were able to purchase a 31-acre site from the State for affordable housing, community gardens and open space. Five of the 31 acres will be developed as housing, and the remaining 26 acres are under conservation easement for community gardens, a working farm, and open green space. Because the State was under obligation to sell the land for market value, it was able to sell this property for a relatively low price only because the conservation easement removed development potential from the bulk of the site.\textsuperscript{xv}

### Strategies to Reduce Land Costs – Community Land Trusts

Community land trusts typically acquire and hold land, but sell off any residential or commercial buildings which are on the land. In this way, the cost of land in the housing equation is minimized or eliminated, thus making the housing more affordable. The land leases, in addition to being long-term (typically ninety-nine years) and renewable, are also assignable to the heirs of the leaseholder. Most, if not all, CLTs have in place limited equity policies and formulas that restrict the resale price of the housing in order to maintain its long-term affordability. These features of the community land trust model provide homeownership opportunities to people who might otherwise be left out of the market. Higher rates of homeownership help stabilize and strengthen communities ...

In most cases, community land trusts have been formed as a grass-roots response to specific local needs. As a result, there is considerable diversity in the roles that CLTs play. Many rural CLTs have been established to ensure access to land and housing for low-income people and to preserve family farms. Urban CLTs often deal with combating the negative effects of speculation and gentrification. Most community land trusts focus on increasing homeownership, which sometimes includes educating potential homebuyers on establishing credit, applying for a mortgage, and maintaining a home. A number of CLTs have also acted as developers of special needs housing or group homes, rental housing, and even commercial space for lower income entrepreneurs.\textsuperscript{xvi}

For more information about community land trusts, visit the Madison Area Community Land Trust Web site: www.affordablehome.org.

### 3.6 MIXED-INCOME HOUSING

The trend these days in affordable housing is to promote “mixed-income” housing, so that there is a range of income levels in a neighborhood. Madison’s Twin Oaks development is one Wisconsin example of a “mixed-income” neighborhood. There are many potential benefits of mixed-income neighborhoods, ranging from educational benefits for children of lower-income families who can attend better schools and for all children to be well-prepared for the diversity of the workforce they will join as adults; to the social benefits of increased community stability; to economic benefits as more workers taking lower-paid positions can afford to live closer to work, filling positions that would otherwise see high turnover and low application by members of higher-income neighborhoods. Maintaining a stock of more affordable housing also keeps costs down for local governments that must pay for teachers, police officers, firefighters, and other employees who can often no longer afford to live in many neighborhoods. But mixed-income housing developments present some sticky issues, which may have to be dealt with. This section does not make recommendations so much as to call attention to some of these issues.
Mixed-income neighborhoods boast a variety of possible advantages, ranging from social to economic benefits.

The current structure of housing appraisals and property tax assessment may effectively encourage segregation of income levels and prove detrimental to mixed-income neighborhoods.

The structure of housing appraisals and property tax assessment may effectively encourage segregation of income levels, contrary to the intent of a mixed-income neighborhood. The estimation of property value is based in part on the most recent sale price of the home, in part on the condition of the home, and in part on the condition of the neighborhood. While the presence of homes appraised at lower values will serve to keep property taxes down, it may also serve to lower the price that the home can sell for on the open market.

In a mixed-income housing development with an “affordable” component, this effectively serves to encourage self-segregation of income levels. On the one hand, people concerned with maintaining their own higher property values might discourage the creation of housing nearby that would assess at lower values, hence lowering their own appraised property values. On the other, residents of the “affordable” units may find that they are better off selling their homes and moving to a more generally affordable neighborhood.

In order to maintain a mix of incomes in a neighborhood, some of the affordable units would have to be made perpetually affordable: that is, they cannot be bought at subsidy and then turned around and resold at market rate. The community land trust model is based on this principle, for instance. If the units are not designated permanently affordable housing, then the new owners may find it to their advantage to sell them at market rates and move out, so that the neighborhood self-segregates to a higher income level.

One mixed-income method is to build all homes in the project to the market rate and secure loan guarantees (or some other form of subsidizing) to bring a portion of them to an affordable price level. However, people still have to be able to afford taxes and maintenance on the affordable units, which will be the same as the market-rate units. All the initial financing breaks in the world might not change the fact that people are buying more house than they can afford.

Ultimately, the controversy surrounding mixed-income neighborhoods is often related to social concerns about which people existing residents want in or near their neighborhood, and more importantly, which people they wish to exclude.

Because land in an upscale neighborhood is expensive, it is rare that projects with more than 10-15 percent affordable units will be able to afford to locate there, and this percentage is too low to impact surrounding neighborhood property values. For this reason, the number of lower-income residents can be minimized. But occasionally a development project will exceed this percentage of affordable housing, resulting in a much different ratio of market-rate to affordable units. In this case it is important to understand that these days, “affordable” housing projects are not simply a politically-correct version of public housing projects, and do not automatically come with the effects of concentrated poverty. Many affordable housing units serve responsible, middle-income households who would have been able to afford market-rate housing a number of years ago.

Concerns about lower-income residents often indicate a fear of people of color, seen to be the harbingers of social ills. But the reality is that these people are often hard-working and have a strong sense of community. The violence and social pathologies that many middle- to upper-income households fear is a product of concentrated poverty and disenfranchisement, not the color of a person’s skin, the clothes he or she wears, or his or her native language and culture. The best way to stem the spread of violence is to build and expand strong communities in which people are known and cared for, across the lines of race, language, and income that can serve to divide us.
3.7 GREEN BUILT HOME FUTURE PROJECT: 
THE NATURALLY GREEN BUILT HOME

Some homeowners and builders are interested in natural building techniques such as straw bale, cordwood masonry, cobb or rammed earth. These techniques are often far less expensive than mainstream housing because they have much simpler mechanical and electronic systems and require far less labor, or at least far less specialized labor. They can also be far more durable than today’s conventional housing – some examples have been known to last 500 years or more.xvii Natural homes also contain far fewer synthetic chemical substances, resulting in healthier homes. In many ways natural homes are one of the greenest homebuilding choices. But because the homebuilding industry is so important to the American economy,xviii it is no wonder that these techniques, which do not support as many related businesses and professions as conventional housing practices, are not more widely adopted.

Natural building techniques are best suited to smaller dwellings, and are often inappropriate for multifamily dwellings, especially those with multiple stories. Natural homes tend to require more day-to-day maintenance care than conventional buildings, but often it is the sort of maintenance that does not require calling a specialist (such as a plumber or electrician) and so can be done fairly easily by the homeowner.

Natural buildings are also very flexible in design, and can result in an appearance that does not match the general character of many neighborhoods. For this reason, natural homebuilders may encounter community resistance and may also find it difficult, if not impossible, to get a mortgage for their homes (if needed) since many lenders are wary of the ability to resell an unusual-looking home in the case of repossession. There are, however, many examples of well-designed natural homes that would blend well into any neighborhood. Natural Home & Garden Magazine (www.naturalhomemag.com/) is a good resource for such examples.

Often, natural homebuilding techniques are not included in building codes, although some states are beginning to pass building codes for straw bale and adobe structures.xix Wisconsin’s Uniform Dwelling Code currently does not make reference to any natural homebuilding technique. Because natural homes may fail to conform to local building codes, they are usually built in areas where building inspection is not required, or where enforcement of building codes is lax. Due to growing populations in areas of the state, as of January 1, 2005, all of Wisconsin is required by law to perform building inspections and enforce building codes.

Depending on the popularity of natural homebuilding techniques, the Department of Commerce may want to consider including natural homebuilding techniques in the Wisconsin Uniform Dwelling Code, or the State could provide a special building code for natural buildings, as it does with historic structures. Alternatively, performance testing for natural techniques could be done to prove that these techniques meet the performance standards given in the Wisconsin Uniform Dwelling Code. Homebuilders can also stay more or less up to code by renovating an existing structure with natural materials.

This home dubbed Earthship utilized numerous green building techniques, including earth berming, a green roof, active and passive solar as well as a whimsical facade.

The Department of Commerce may want to consider including natural homebuilding techniques in the Wisconsin Uniform Dwelling Code in order to reward more traditionally green building practices.
CONCLUSION

As long as land prices continue to rise as they have over the past several years, housing affordability will remain an important issue in much of Wisconsin. Using green building techniques and materials in affordable housing is not an impossibility—indeed, it adds to the integrity of affordable housing by ensuring a healthier, more efficient, and less costly living environment. Green affordable housing will be important to Wisconsin’s future, but it needs the support of and participation by Wisconsin citizens, the homebuilding industry, state and municipal governments, and other organizations.

The ideas and concerns in this report are informed by a number of Wisconsin housing builders, architects, affordable housing developers and providers, market-rate housing developers, city and state government representatives, professional associations, and affordable housing lenders/funding organizations. The report forms the basis of information and ideas for future initiatives, many of which will be characterized by collaboration and partnerships among state and municipal policymakers, Green Built Home, and other organizations and businesses.

This report is intended as a panoramic overview of the present state of green affordable housing and the means that can be taken to increase the construction of environmentally-responsible, low-cost homes. Although the scope of the report does not provide quantitative data detailing the profits associated with green building, it does present specific recommendations for the low-cost greening of affordable homes. This document aims to build support for and awareness of green affordable housing, while advocating ongoing discussion and future developments.

The primary goals addressed in this document pertain to an increase in education regarding green building and its affordability, as well as an increase in funding opportunities and a change in regulatory impacts for green affordable home projects. Proposals are made as to how financers can optimize their endorsement of green affordable projects and how municipalities and other government organizations can ease regulations and fees in order to benefit green affordable development. Recommendations are also laid out for Green Built Home to develop literature and programs that further support green affordable building. These recommendations serve as the basis for future steps to be taken by Green Built Home in the pursuit of more green affordable projects. In addition to the Green Affordable Housing Worksheet, Multifamily Checklist and training sessions for builders and homeowners, as detailed in Goal #1 of the report, GBH plans to develop and implement additional materials and projects that encourage green and affordable home design and construction. These may include a quantitative analysis of Green Built savings and state-wide presentations for a wide range of audiences broadcasting the results of the report.

These presentations, which will include both conferences and smaller discussion panels, will target a wide audience, including affordable housing providers, funders, builders, developers, environmental groups and government representatives. Distribution of the report intends to disseminate the findings and suggestions encapsulated in the document and ultimately incite future action. Through formal presentations, Green Built Home hopes to kindle collaborative efforts with stakeholders and build momentum for a newly invigorated green affordable housing revolution. For this to succeed, affordable housing providers must investigate and implement green methods, funders must increase opportunities for green affordable projects to receive assistance, and government officials must actively pursue regulatory changes that ease red tape restrictions for green and affordable developments. Most importantly, dialogue and education about environmentally-responsible low-cost housing must progress in order to create a more receptive market for green affordable housing at large.
RESOURCES

**Green Building:**
- Green Built Home: www.greenbuilthome.org
  - Green Built Home Checklist
  - Green Built Home Project Guide
  - Green Built Home Buyer’s Guide
- Global Green USA: www.globalgreen.org
- Wisconsin Green Building Alliance: www.wgba.org
- Environmental Home Center: www.environmentalhomecenter.com/
- Healthy Building Network: www.healthybuilding.net
- Building Green: www.BuildingGreen.com
  - Building Green on a Budget, from Environmental Building News Vol. 8, no. 5, May 1999
  - Establishing Priorities with Green Building, Environmental Building News special reprint revised May 2001
  - Greening Affordable Housing, Environmental Building News March 2005
- E-magazine: www.emagazine.com
  - Affordable by Design, by Alice Horrigan, July/August 1997, Vol. VIII, no. 4
- Moore, Elizabeth Armstrong, In Portland, Living the Green American Dream: www.csmonitor.com/2005/0426/p03s01-ussc.html?s=hns

**Natural Homebuilding:**
- Natural Home & Garden Magazine: www.naturalhomemag.com/
- Natural Building Codes: www.housealive.org/articles/article_building_codes.htm
- Natural Building: www.greenhomebuilding.com/natural_building.htm
- Strawbale Building Codes: www.dcat.net/resources/index.php
- Natural Building Codes: www.dcat.net/about_dcat/current/codes.php#
- Daycreek Journal: www.daycreek.com/
- Green Home Building: www.greenhomebuilding.com/

**Energy:**
- Focus on Energy: www.focusonenergy.com
**Product Directories/Certification:**
- GreenGuard: www.greenguard.org
- Forest Stewardship Council: www.fscoax.org
- ENERGYSTAR: www.energystar.gov
- Carpet and Rug Institute IAQ Label: www.carpet-rug.com
- Green Seal: www.greenseal.org
- Scientific Certification Systems: www.scs1.com
- Green Building Advisor: www.greenbuildingadvisor.com
- Commissioning: www.bcxa.org
- GreenSpec product directory: www.BuildingGreen.com
- Lifecycle cost calculators:
  - www.rebuild.org/lawson/Calculators.asp
  - www.wastematch.org/calculator/calculator.htm
  - buildlca.rmit.edu.au/links.html
  - frontierassoc.net/greenaffordablehousing/Tools/LifeCycleAnalysis.shtml
  - www.ci.seattle.wa.us/sustainablebuilding/Leeds/docs/LCA_Primer.pdf

**Sustainable Communities:**
- Sustain Dane: www.sustaindane.org/
- Smart Growth America: www.smartgrowthamerica.org/
- Smart Growth Network: www.smartgrowth.org

**Model Ordinances and Legislation:**
- Green Tier legislation: http://dnr.wi.gov/org/caer/cea/environmental/
- Family Home Occupation Ordinance: www.medusaonline.com/hbbc/ordinance.htm
- Traditional Neighborhood Development: www.wisc.edu/urpl/people/ohm/projects/tnord.pdf
- Cluster zoning: www.exploremaine.com/~ccs/canton/chorch.htm
- Other Affordable Housing Ordinances: www.mrsc.org/subjects/housing/ords.aspx?r=1
Affordable Housing:
- Green Affordable Housing Coalition: www.greenaffordablehousing.org
- Affordable Housing Design Advisor: www.designadvisor.org/
- National Low Income Housing Coalition (NLIHC): www.nlihc.org
- HUD Regulatory Barriers: www.huduser.org/rbc/
- Wisconsin Urban Infill Development Funds: www.co.dane.wi.us/plandev/build/grant.asp
- Wisconsin Brownfield $: www.commerce.state.wi.us/CD/CD-bfi-grants.html
- LISC: www.lisc.org; www.lisc.org/milwaukee
- Enterprise Foundation: www.enterprisefoundation.org
- WHEDA: www.wheda.com
- Wisconsin Department of Commerce Housing Bureau: www.commerce.state.wi.us/housing/
- Fannie Mae: www.fanniemae.com/housingcommdev/solutions/environment.jhtml

Financial Resources:
- Wisconsin Urban Infill Development Funds: www.co.dane.wi.us/plandev/build/grant.asp
- Wisconsin Brownfield Funding: www.commerce.state.wi.us/CD/CD-bfi-grants.html
- LISC: www.lisc.org; www.lisc.org/milwaukee
- Enterprise Foundation: www.enterprisefoundation.org
- WHEDA: www.wheda.com
- Wisconsin Department of Commerce Housing Bureau: www.commerce.state.wi.us/housing/
- Fannie Mae: www.fanniemae.com/housingcommdev/solutions/environment.jhtml

Wisconsin Affordable Green Building Examples:
- Troy Gardens: www.troygardens.org/
- Yahara River View Apartments: www.cwd.org/housing/yahara/yahara.aspx
- Highland Gardens: www.hacm.org
- Twin Oaks: www.habitatdane.org/current.twinoaks.cfm
- the Reservoir: www.designadvisor.org/gallery/reservoir.html
- For more Green Built Homes, visit Green Built Home: www.greenbuilthome.org
FOOTNOTES


ii www.uwex.edu/ces/flp/demographics/housing/pdfs/Racine.pdf

iii National Low Income Housing Coalition
www.nlihc.org/oor_current/data.php?getstate=on&state%5B%5D=WI

iv National Low Income Housing Coalition
www.nlihc.org/oor_current/data.php?getstate=on&state%5B%5D=WI

v The standard definition for affordable housing is that housing costs are no more than 30 percent of the occupants’ household income. Housing assistance is usually granted to households earning no more than some percentage of the Area Median Income (AMI) for the community in which the household wishes to live. Often 80 percent AMI is used as the upper limit for housing assistance, although in some places it may be as high as 120 percent AMI.


vii Interview with Paul Jasenski, March 10, 2005

viii www.designadvisor.org/gallery/reservoir.html

ix The standard legal definition for affordable housing is that housing costs are no more than 30 percent of the occupants’ household income, and can be afforded by a household earning 80 percent of the Area Median Income (AMI). 80 percent of Area Median Income for Dane County is $73,200 * .8 = $58,560 (Dane County = $73,200 in 2004; from HUD estimates via Fannie Mae www.efanniemae.com/hcd/single_family/ref_tools_info/hud_income_results.jhtml?STATE=W&choice=msa&CITY=&FormsButton1=Search).

x The Wisconsin Housing and Economic Development Authority (WHEDA) will provide loan assistance for a single-family home costing up to $249,861 in Madison: www.wheda.com/manual_sfl/limits.pdf.

xi Moore, Elizabeth Armstrong, In Portland, Living the Green American Dream: www.csmonitor.com/2005/0426/p03s01-ussc.html?s=hns

xii www.daycreek.com/dc/HTML/DC_cob.htm,
www.daycreek.com/dc/HTML/DC_cordwood_masonry.htm


xv www.mpw.net/Pages/mbillcustservice.html

xvi http://ci.akron.oh.us/planning/devserv/landmarketing.htm
According to the NAHB, "The construction of 1,000 single-family homes generates: 2,448 jobs in construction and construction-related industries, approximately $79.4 million in wages, and more than $42.5 million in federal, state and local tax revenues and fees. Construction of 1,000 multifamily homes generates: 1,030 jobs in construction and related industries, approximately $33.5 million in wages, and more than $17.8 million in federal, state and local tax revenues and fees." Housing is also attributed to cushioning the U.S. economy after the 2001 recession.
