Rural Voices

THE MAGAZINE OF THE HOUSING ASSISTANCE COUNCIL
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GOING FOR GREEN
Dear Friends,

This issue of Rural Voices marks the sixth year of the Housing Assistance Council’s Green Building/Healthy Homes Initiative, a comprehensive program of activities designed to encourage energy efficiency and other green approaches in rural housing. Since 2004, HAC has committed financing, provided technical assistance and training, and published research and information pieces to encourage the use of sustainable techniques in the development of affordable rural housing. Additionally, HAC has awarded grants to 45 rural nonprofit housing organizations to support green building planning and development. These capacity grants have helped organizations integrate green design elements into affordable housing projects across the country.

This issue recognizes the successes of our partner organizations. Each article shares information on the use of a specific green building topic and highlights a HAC partner whose developments exemplify the best of green rural affordable housing. The organizations profiled have integrated energy efficiency, water conservation, and indoor air quality technologies, as well as engaged in sustainable site development, green rehabilitation, and recycling efforts. Additionally, they have increased the knowledge of their residents and raised the awareness of their communities on the importance of green building and healthy homes.

With support from The Home Depot Foundation, Enterprise Community Partners, and the William Randolph Hearst Foundation, HAC’s Green Building/Healthy Homes Initiative continues to promote the effective use of sustainable technologies in affordable rural housing. HAC looks forward to continuing our work with our partners and sponsors to support current and future green building efforts in rural communities across the country.

Joe Debro, Chair  
Twila Martin Kekahbah,  
President

Moises Loza, Executive Director
Homeownership Dream Comes True for Some Rural Families

Over 650 low-income families in 17 states will help construct their own first homes in rural places around the country over the next three years, thanks to local community development organizations that will receive financing from the Housing Assistance Council.

Most of the $10.1 million in loan and grant commitments by HAC comes from the Self-Help Homeownership Opportunity Program – which is known as SHOP and administered by the Department of Housing and Urban Development.

HAC’s SHOP awards will cover the recipients’ costs of pre-construction site preparation such as buying land, adding utilities, and conducting environmental reviews. All 650 units will be ENERGY STAR certified. This is HAC’s thirteenth round of SHOP funding since the program was initiated in 1996.

~For more information and a list of the recipient organizations, visit HAC’s website at http://www.ruralhome.org/information-and-publications/press-room/1-year-2010.

Donations Needed for Tornado Recovery

The Esther Stewart Buford Foundation, a long-time HAC partner, is seeking donations to recover from the devastation of the Yazoo City tornado on April 24. All of the homeowners are fine, but the Foundation lost eight self-help homes in the tornado. The ESB Foundation has already started the re-building process but is seeking donations and resources to help its families recover. Needs include: two Extension Ladders, a Little Giant Ladder, two Nail Guns, two Compressors, three 150’ Heavy Duty Extension Cords, and one Generator.

~Please contact the Foundation at 662.746.1931, to arrange donations of resources. Cash donations may be made to The Esther Stewart Buford Foundation, 656 Center Park Lane, Yazoo City, MS 39194.

HAC’s Board Tours Affordable Housing in California

On May 21st HAC’s board of directors toured several housing developments of the Coachella Valley Housing Coalition in Riverside and Imperial counties in California. The tour included self-help housing subdivisions, farmworker housing, and rental housing. Among the green building techniques used by CVHC are systems that reduce energy costs in the desert heat and landscaping that fits the environment. Homes have also been equipped with evaporative water cooler systems that allow homeowners to restrict their air conditioning use to only the most severe hot days.

HAC extends its thanks to CVHC for hosting this tour. Seeing firsthand the impact of CVHC was profoundly uplifting and emphasized the continuing need for CVHC’s programs.

~For more information about CVHC, visit their website at http://www.cvhc.org.
S trengthening the link between resource conservation and affordable rural housing is a top priority for the Housing Assistance Council (HAC). With generous support from the Home Depot Foundation, HAC’s Green Building/Healthy Homes Initiative was launched in 2004 with the mission of promoting the effective use of green building technologies in affordable rural housing. The initiative is a comprehensive program of loans, recoverable grants, capacity-building grants, research, information, training, and technical assistance to promote an innovative, eco-friendly approach to affordable rural housing development. This unique initiative, which spans every program activity offered by HAC, provides local organizations with a range of tools needed to create and sustain local green building programs.

**TRAINING**

HAC’s Training and Technical Assistance Division has conducted a number of trainings, roundtable discussions and green peer-to-peer exchanges throughout the country. HAC offered green building workshops at its 2008 National Rural Housing Conference, highlighting green rehabilitation techniques; low-cost, energy-efficient alternatives; and overall green best practices in rural housing development. HAC will continue to help educate its partners on green development during the 2010 conference this December. This past April, HAC hosted “High Performance Green Building: Principles for Nonprofit Housing Developers” in Atlanta, Georgia. This training event discussed integrating green building principles with construction science. Case studies, hands-on demonstrations, and breakout sessions with veteran green, affordable housing developers and construction experts helped organizations learn how to prioritize green strategies on a tight budget. HAC also sponsored “Building Green in Rural America: A Symposium on Policy and Practice” in Washington, DC, on June 9. This conference featured nonprofit housing developers who have successfully incorporated a wide range of sustainable practices in their rural homeownership and rental projects.

**LENDING**

Since 2004, HAC has committed $43.91 million in green loans and recoverable grants to help develop 3,144 units of energy efficient affordable housing in rural communities. All units funded through the Green Building/Healthy Homes Initiative include a range of sustainable techniques and products, and the overwhelming majority of the supported development projects are ENERGY STAR® certified.

**RESEARCH AND PUBLICATIONS**

HAC’s research and information materials are steadily expanding the knowledge base on affordable, green rural housing. Information sheets, research studies, the HAC News, and the Rural Voices quarterly magazine provide nonprofit housing organizations and rural housing stakeholders with insight and new perspectives on green development. HAC’s latest green publications include the following:

- **Understanding Green Certifications.** This report examines the Leadership in Environmental and Energy Design (LEED) and ENERGY STAR green rating
systems and discusses the role of Home Energy Rating Systems in obtaining a certification.

- **Affordable Green Building in Rural Communities.** Based on roundtable discussions, this report explains how community organizations succeed in developing affordable green housing despite unique rural challenges.

- **Building Affordable ENERGY STAR® Qualified Homes.** This guide serves as a tool for rural nonprofit organizations building ENERGY STAR®-qualified homes by outlining the basic steps, providing advice from home energy raters, and sharing best practices from affordable housing developers in the field.

**GRANTS**

The Green Fund Capacity Building Grant Program funds a mix of novice and experienced nonprofit housing development organizations. Grant recipients use the funds to support sustainable affordable housing developments that include a range of techniques, such as water conservation; land planning and site development to preserve the natural environment; energy-efficient design; and use of materials that promote recycling, reuse, waste reduction, and a healthy indoor living environment. HAC staff members are currently reviewing the fourth round of applications for this grant program. Awards will be announced this summer.

Since 2005, the initiative has awarded $795,000 in grants to 45 nonprofit housing development organizations across the rural United States. The projects supported by these grants include new construction (both single-family and multifamily housing) and rehabilitation and span the green building spectrum. HAC recently surveyed the recipients of these grants and learned how these organizations are collectively changing the affordable housing development paradigm. These grantees have developed or rehabilitated over 3,000 units of rural housing using green tools and techniques. The energy efficient strategies used by these grantees save the occupants 15 to 60 percent on their energy bills.

The following articles will highlight other findings from the grantee survey and illustrate the vast array of green strategies that have been integrated into affordable housing developments in rural communities across the country. These efforts illustrate not only what has been done, but also what can be achieved through partnership and resources.

~More information and updates on HAC’s Green Building/Healthy Homes Initiative can be found at [http://tiny.cc/HACGBHH](http://tiny.cc/HACGBHH).~
Energy efficiency is a central component of green development and is a critical piece of any plan to preserve or develop affordable housing. With green building gaining momentum over the last decade, energy-efficient heating and cooling systems, household appliances, lighting, and insulation materials are now readily available, and the relative costs of these alternatives continue to become more competitive. Affordable housing practitioners across the country have enthusiastically incorporated green technique, and their clients are enjoying the financial and environmental benefits. Using energy-efficient building products in housing construction and rehabilitation reduces the amount of energy required to operate and maintain this housing, which in turn reduces the consumer’s energy costs. Well-insulated homes block moisture, dust, pests, pollen, radon, and other pollutants from entering, thus creating a healthy environment.

Understanding that efficient housing construction and rehabilitation produces cost-effective, healthy, and durable homes, a number of national and local rating systems are now in place to help consumers and builders select energy-efficient products. ENERGY STAR®, which was created by the Department of Energy and the Environmental Protection Agency, is the most well known and widely used. The ENERGY STAR® label is awarded to building materials, equipment, and systems that exceed the minimum national efficiency standards, where such standards exist for specific products. Using ENERGY STAR®-labeled systems, appliances, and building materials creates comfortable and energy-efficient homes without sacrificing features, style, or comfort.

**HAC Grantee Experiences with Energy Efficiency**

HAC Green Grantees have embraced energy-efficient products and materials, and these organizations consistently include a number of energy-efficient features in their developments. HAC’s 2010 survey of its green grantees reveals that virtually every grantee has incorporated energy-efficient lighting and appliances into their housing developments. More than three-quarters of all grantees have installed energy-efficient mechanical systems, and nearly 90 percent have installed energy-efficient windows and water heaters. A small but significant percentage of grantees use renewable energy systems in their developments.

The inclusion of energy-efficient systems and products has led to significant cost savings for the families that ultimately occupy these units. Survey respondents reported that because of these modifications, homeowners and tenants have seen utility cost savings ranging from 15 to 60 percent.

Rural Development, Inc., of Massachusetts, a national leader in affordable green building, exemplifies the work HAC Green Grantees have done to increase energy efficiency.
PROFILE: RURAL DEVELOPMENT, INC.

Rural Development, Inc., (RDI) is a private nonprofit organization created by the Franklin County Regional Housing and Redevelopment Authority in 1991 to finance and develop “safe, sanitary and suitable living accommodations of any and every type and kind to all persons of low, moderate and middle income within the Commonwealth of Massachusetts.” To meet this mission, RDI works with its partners to expand housing and economic opportunities for residents and communities in rural Franklin County and the Northern Quabbin regions of western Massachusetts.

With long winters often requiring the use of heating systems for at least ten months of the year, RDI determined that the best way to lower buyers’ operating expenses was to lower the amount of fuel oil and electricity needed. Committed to increasing energy efficiency, RDI began to work with the ENERGY STAR Homes Program in 2000 and now consistently exceeds its standards in its new homes. RDI acts as the developer, general contractor, and the recruiter/counselor of low-income buyers. Almost all homes have been sold to first-time, low-income buyers (those with incomes no greater than 80 percent of area median income) who have contributed at least 200 hours of sweat equity during construction. RDI employs four skilled carpenters who have mastered green building techniques and now oversee the organization’s subcontractors. During the development process, new homebuyers can choose their own appliances and RDI teaches them to look for ENERGY STAR® appliances.

Through RDI’s Homeownership Program, 99 single family homes have been built since 1991, of which 63 have achieved ENERGY STAR certification. For its successful initiatives, RDI was honored with the 2003 ENERGY STAR Builder Achievement Award for Affordable Housing and the 2005 Home Depot Foundation Award of Excellence for Affordable Housing Built Responsibly. RDI was also awarded the first LEED for Homes Silver Certification for an affordable housing development in the United States and has subsequently earned several additional LEED Silver and Gold certifications. The organization completed its first “Near-Zero Net Energy” affordable home in May 2007 and continues to be a pioneer in green affordable housing development.

RDI is a two-time HAC Green Grant recipient. In 2005 HAC funded the organization’s efforts to increase the use of green materials, such as bamboo flooring and cement siding, in its developments. RDI also received funds from other organizations to install photovoltaic systems on several newly constructed homes and to begin recycling sheetrock and cardboard scrap into compost. Efficient heating systems are crucial to homeowners’ ability to pay for winter heat in Franklin County. RDI has done extensive study of appropriate heating systems and has used several different brands and models. The organization also installed an outside air intake to each boiler and an indoor-outdoor sensor that modulates the water temperature, heating it to just what is needed. The organization does not install cooling systems.

Energy Efficiency in Action: Wisdom Way Solar Village

HAC has awarded RDI a green grant and other financing to support the development of the Wisdom Way Solar Village, a 20-unit Near-Zero Net Energy condominium complex in...
SUSTAINABLE SITES

Green site planning and design techniques integrate strategies to minimize environmental site impacts; maximize energy, water, and natural resource conservation; reduce construction costs; and promote alternative transportation. Incorporation of certain site development techniques results in sustainable and attractive living environments for households of all income levels. Such environments ultimately increase the equity and sense of well-being of the residents and the overall community.

Some key steps in the green site planning and design process include completing a comprehensive site evaluation, instituting low-impact development by clustering buildings and preserving existing vegetation, managing surface water to maximize on-site treatment and filtration of storm water, using native and drought-tolerant plants and trees for landscaping, limiting lawns to recreational areas, designing and orienting buildings to use renewable energy, and locating development to provide access to public transportation and bicycle and walking paths to reduce use of automobiles.

HAC Grantee Experiences with Sustainable Sites

The challenges to incorporating sustainable site development techniques in rural communities stem from a range of geographic, cultural, and structural factors. Rural areas are inherently low density — large tracts of land with few people. Housing development patterns in rural America often reflect residential and cultural preferences for low-density development, preferences that are difficult to reverse. Community organizations also face general challenges related to location, including not-in-my-backyard attitudes, land availability, and costs.

In addition, the lack of infrastructure in rural areas is a significant challenge. While there is abundant land in many rural areas, it may lack streets, water, and sewer infrastructure, particularly in unincorporated areas. Housing developers working in rural areas must often provide new infrastructure when building projects. Thus, there is often less opportunity for infill development in these areas. Many rural communities also lack public transportation, given the higher costs associated with operating transit systems in communities with small populations. Local land use regulations may also be a barrier to cluster development. Often rural communities have minimum lot sizes and other restrictive ordinances; such measures may limit housing density.

Despite these challenges many of the grantees in HAC’s Green Building/Healthy Homes Initiative have successfully used green land planning and site-development techniques and concepts to develop rural affordable housing. HAC’s 2010 Green Grantee survey indicated that 81 percent of grantees are using sustainable site development techniques.
Respondents to the survey indicated that they have taken a number of activities that will result in more sustainable site developments, including situating developments close to infrastructure and community resources, initiating surface water and water erosion control systems, and incorporating green landscaping practices.

Coastal Enterprises, Inc. (CEI), a Maine-based nonprofit organization, has integrated a wide range of sustainable site methods in its efforts to create affordable, sustainable housing for low-income residents.

PROFILE: COASTAL ENTERPRISES, INC.

CEI is a community development corporation and community development financial institution (CDC/CDFI) based in Wiscasset, Maine, a small rural village along Maine’s midcoast. CEI’s mission is to create economically and environmentally healthy communities in which all people, especially those with low incomes, can reach their full potential.

The rural areas CEI serves are communities with much higher poverty and unemployment rates than the national or New England average. In this context, CEI provides a large array of programs, including financing and technical support to emerging businesses; promotion of women in business; microenterprise; natural resource ventures in farms, fish, and forests; and affordable housing, including homeownership.

CEI seeks to incorporate practices that maximize the economic value, social benefit or equity, and positive environmental impact of a project. This triple bottom line approach to community development finance is evident most dramatically in CEI’s housing program.

Sustainable Site Planning in Action: LID Planning

EPA New England, an office of the U.S. Environmental Protection Agency, defines Low Impact Development (LID) as:

an approach to land development (or re-development) that works with nature to manage storm water as close to its source as possible. By preserving and recreating natural landscape features, LID minimizes effective imperviousness, creating functional and appealing site drainage that treats storm water as a resource rather than a waste product. Bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements are some of the LID practices used to adhere to these principles.

By implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can maintain or restore a watershed’s hydrologic and ecological functions.

LID is a recommendation of best practices, not a requirement. However, CEI has made its LID plan a requirement for all of its affordable housing production. John Egan from CEI notes that the best practices used by CEI meet and often exceed the state of Maine’s recommendations. “CEI is ahead of the standard in Maine and nationally,” he said.

CEI’s LID plan includes using the following techniques:

- preserving existing vegetation,
- protecting green spaces,
- building homes close together,
- using internal roadways,
- shrinking new built roadways, and
- developing smaller lots.

CEI received a HAC Green Grant in 2008 to support the development of a 24-unit, infill, LEED-certified, affordable subdivision in rural Greenville, Maine, the Greenville Housing Subdivision. The project is currently in the planning...
Water conservation is an important component of rural green building. Using large volumes of water increases maintenance and life-cycle costs for building operations and increases consumer costs, including those for municipal water supply and treatment facilities. Reducing water use not only can lead to lower water bills for individual families, but by handling reduced volumes, water treatment facilities can also delay expansion and maintain stable water prices. Water efficiency measures include using low-flow devices and expanding use of non-potable water for landscape irrigation.

Rural communities face many challenges in water conservation. Many rural areas are likely to have farms and animals in the vicinity of housing. Pesticides and animal fecal waste can contaminate water supplies, so developers must be cognizant of filtration concerns in communities with these issues. Some rural housing developers also have trouble finding and being able to afford certain water-efficient products and building materials. More general barriers to incorporating specific water efficiency practices are related to local ordinances prohibiting gray water systems and to regional factors, such as lack of rainfall.

Community organizations can overcome certain water efficiency challenges by working with local municipalities...
to lessen local regulatory barriers (e.g., local ordinances) that prevent water-efficient practices. Community groups are also finding that water-efficient appliances have become more affordable in recent years as they have achieved greater market penetration.

**HAC Grantee Experiences with Water Conservation**

Eighty-one percent of HAC grantee organizations have engaged in successful green building techniques for water efficiency in the development of rural affordable housing. Their activities include rainwater harvesting, outdoor irrigation systems, high-efficiency fixtures, bioswales, and homeowner education. It should be noted that all HAC Green Grantees have incorporated indoor high efficiency features, including low flow toilets and showers. An increasing number of organizations are beginning to expand water conservation efforts outdoors to include irrigation systems and rainwater harvesting.

OPAL Community Land Trust's efforts to protect the environment and create sustainable affordable housing opportunities in rural Washington illustrate the many ways HAC Green Grantees have integrated comprehensive water conservation methods.

**PROFILE: OPAL COMMUNITY LAND TRUST**

Of People And Land (OPAL) Community Land Trust is a HAC Green Grantee that makes water efficiency a central part of its housing development process. The mission of OPAL is to acquire and own land so that community members in need may have access to permanently affordable homes and workplaces. Based in Eastsound, Washington, OPAL collaborates with others, develops infrastructure and housing, and stewards the land in a manner that is cooperative, stable, environmentally sensitive, and socially responsible.

OPAL has been committed to the values of green building and low-impact development since its inception in the late 1980s. All of OPAL’s projects have incorporated low-impact development techniques that have minimized the effect on the land of newly constructed neighborhoods.

The organization has also engaged in water management planning to improve the efficient use of water in its communities.

**Water Conservation in Action: Wild Rose Meadows**

In 2008, OPAL Community Land Trust was awarded a HAC Green Fund Grant to help fund the construction of a 32-unit green development project of single-family homes called Wild Rose Meadows (WRM). In March 2008, OPAL began construction on the 7.1-acre parcel and the 14-unit project will be completed by September 2010.

The neighborhood is designed in clusters of five to eight homes, with common open space screening one cluster from another. The WRM neighborhood features water conservation techniques that are guided by a storm water...
management plan to minimize the development’s impact on the environment and to maximize the degree to which water is absorbed back into the ground.

OPAL’s plan includes several techniques that work in concert to better manage water absorption.

- All water runoff at WRM is funneled toward a 55,000-gallon detention tank. This funneling of runoff happens through a series of underground pipes, natural swales, and grading.
- The community also has a designated rain garden. Designed like a dry streambed, the rain garden is filled with gravel that collects the water and holds it until it can dissipate slowly into the groundwater table.
- The parking lot for the West Cluster has been graded to direct all water flow toward a catch basin, which is located at the beginning of a path. The path is a porous gravel walkway with a mat underneath the gravel that allows water to seep into a 12-inch perforated under-drain pipe. This perforated pipe has holes that allow any excess groundwater to flow into the pipe. Basically, any water that the ground cannot hold will enter this pipe and start its travels to a detention tank.

- WRM also uses multiple bio-swales, a low-gradient basin system that contains a vegetative cover and is used to maintain and clean runoff during storm events. Solid pipe connects the bio-swales to the detention tank system.

Impact on Households and the Community

With every neighborhood, OPAL strives to incorporate sustainable features and leave a lasting impact. The purpose of the detention tank system is to prevent soil erosion and flooding by holding water, allowing silt to settle, and then distributing the water at a measured level over time. WRM residents reuse the water in this tank for watering the garden and orchard via a solar pump. Additionally, any excess water in the detention tank flows through a pipe that connects to an outlet control structure. The outlet control structure releases the excess water in a controlled manner into a drainage pipe that eventually travels to a nearby wetland.

~For more information about OPAL Community Land Trust and Wild Rose Meadows, visit their website at http://www.opalclt.org.

Many working islanders are finding it increasingly difficult to live in Eastsound, Washington. This mom and her children were on the waiting list for a home in Wild Rose Meadows. Photo provided by OPAL Community Land Trust.

It takes a lot of people to create affordable, green housing. Members of OPAL’s construction team are pictured below. Photo provided by OPAL Community Land Trust.
When building green, one of the primary goals is to provide safe, healthy, energy-efficient homes while minimizing the negative impact on the environment. Recycling previously used materials and appliances is a simple and affordable way to incorporate green techniques into renovation projects. Given volatile housing markets and land values, preserving natural resources and recycling old materials takes on even greater significance. Efficient reuse of building materials can save critical development funds that might be used for other aspects of the construction process. Furthermore, using building products made from recycled material reduces solid waste and cuts energy consumption in manufacturing.

HAC Grantee Experiences with Green Rehabilitation

Balancing rising construction costs with energy-efficient measures is a top priority for HAC Green Grant recipients. A survey of HAC Green Grantees found that 76.9 percent of grant recipients consistently recycle or reuse building materials in their projects. Many organizations also resell or donate salable materials to other builders.

Umpqua CDC’s aggressive recycling effort has resulted in housing rehabilitation projects that have improved the quality of homes and significantly reduced the amount of waste going to Oregon landfills.

PROFILE: UMPQUA COMMUNITY DEVELOPMENT CORPORATION

Umpqua Community Development Corporation (Umpqua CDC) is a nonprofit organization in Southwest Oregon founded in 1991 to provide affordable housing and promote community and economic development. The organization highly prioritizes “human solutions, restoration, preservation, and sustainability” in its initiatives and developments. In 2002 Umpqua CDC formed Heartwood ReSources, a nonprofit deconstruction and salvage company, to help expand the scope of its sustainable development efforts.

Heartwood ReSources is noted as a community leader in the reuse of building materials and received the 2005 Recycler of the Year Award from the Association of Oregon Recyclers. The company helps deconstruct properties of all sizes and preserve salable wood and other home improvement materials. Reuse of salvageable materials reduces the impact on the local landfill and provides alternatives to high-cost lumber and materials for low-income families who wish to build, repair, or renovate their homes.

Heartwood ReSources encourages positive environmental stewardship through three areas of service:

- a deconstruction crew that disassembles structures, diverting on average 70 percent of a building from the landfill and reclaiming up to 50 percent of a building through salvage and resale,
- a retail store that sells reclaimed building materials, and
- a maintenance crew that works on Umpqua CDC’s affordable housing units, often obtaining materials from Heartwood.

Umpqua and Heartwood work closely with Douglas County Solid Waste Division to help develop programs that will divert more solid waste in Douglas County. As of May 2010, Heartwood has diverted over 790 tons from the landfill and produced sales of $1,161,400 of recycled building materials.

Continued page 14
Green Rehab in Action: Hotel North Bend

Umpqua CDC is a two-time Green Grant recipient. In 2005 Umpqua received HAC funding for Coddington Place, a ten-unit residential building for domestic violence victims in Coos Bay. Coddington Place used solar applications and green techniques in the design, including a bio-swale for storm-water runoff, triple-pane windows, passive and active solar, and insulation higher than required by building codes.

In 2008 HAC helped fund Umpqua’s historic renovation of Hotel North Bend, an infill, mixed-use, multifamily housing project in the heart of downtown North Bend. With careful planning, the organization was able to greatly increase the energy efficiency of the building.

Selective demolition of North Bend was completed by Heartwood ReSources. Umpqua brought in only a modest amount of new materials during construction in an effort to both preserve the hotel’s character and recycle supplies. All extracted demolition items were retained for their highest and best use and recycled carpet and flooring were utilized throughout the building. Umpqua also added reflective roof material to reduce the “heat-island” effect common in older buildings, a heat-recovery system, energy-efficient lighting and appliances, and additional insulation.

Using some of these techniques in an older structure was a new experience for Umpqua, but the organization is proud to have “greened” a historic property and considers its results a major achievement. Hotel North Bend was completed in early 2009 and was completely leased as of December 2009.

Impact on Households and the Community

Umpqua CDC has progressed into a high-capacity organization that has the ability to educate and assist many organizations, businesses, and individuals in proactively building healthier spaces and leading environmentally responsible lives.

Over the last eight years, Heartwood ReSources has become a highly valued resource for individuals in Oregon wishing to stretch their home improvement dollars while helping to extend the life of the community-owned landfill. In addition to promoting sustainable techniques, Heartwood mostly employs formerly incarcerated persons, recipients of Temporary Aid to Need Families, or child-support obligors. Heartwood provides an opportunity for individuals to renew their lives and obtain job training, sometimes acting as their sole employment option as they try to get back on their feet.

Umpqua’s environmental and economic benefits from Heartwood’s recycling initiatives are apparent throughout the organization’s new construction and rehabilitation projects, and the green partnership sets a strong example for other builders in the community.

~For more information about Umpqua Community Development Corporation, contact Betty Tamm, executive director or visit www.umpquacdc.org.
One of the primary goals of building green is to provide safe, healthy, energy efficient homes while having the least amount of negative impact on the environment. Limiting the use of wood, using natural and local materials, and recycling previously used materials are all ways to reduce the impact on the environment. While wood is one of the most useful building materials, its usefulness has helped deplete its supply. A common technique in the construction of green homes is to use wood as sparingly as possible. Another option is to use certified sustainably harvested trees from forests that are carefully monitored to ensure the forests are well preserved. For new construction or rehabilitation projects, choosing materials that will not adversely impact indoor environmental quality is essential. Hard-surface flooring, for example, is a better option than carpeting because carpet collects dust and other pollutants that impact respiratory health.

The use of local materials is beneficial to the community both environmentally and economically. Patronizing area businesses supports the local economy, while reducing processing and transportation costs and environmental effects. Materials such as rocks, sand, adobe or rammed earth, straw bale, and scoria – a stone like volcanic rock – are all good alternative building materials. Scoria and straw bale are both excellent for insulation purposes, and adobe is an extremely versatile substance that can be used for external construction, interior walls, and flooring. Finally, using recycled materials also cuts costs while protecting the environment. Reusing materials that already exist saves precious energy, resources, and money that would otherwise be spent recreating it.

HAC Grantee Experiences with Green Materials

HAC Green Grantees have embraced the use of sustainable materials, reducing waste, and buying locally produced goods. Virtually all of the grantees responding to the green survey have successfully engaged in efforts to reduce construction waste and over three-quarters have purchased locally-sourced and environmentally preferable materials. Organizations have

HAC Green Grantee Materials & Resources Activities

Source: HAC 2010 Green Survey

Continued page 16
reported commonly using sustainably harvested woods, such as bamboo flooring and flooring backed with recycled tires. Many grantees also incorporated fly ash and previously used concrete and cellulose insulation into their green units.

Community Housing Partners, Inc. has received multiple awards for the range of green building technologies the organization has incorporated into its housing projects. The organization has been able to achieve this success through its planning efforts and the effective use of sustainable products.

PROFILE: COMMUNITY HOUSING PARTNERS, INC.

Energy efficiency has long been a priority for Community Housing Partners (CHP), a nonprofit community development organization based in Christiansburg, Virginia. In 1976, CHP first created an in-house energy services division to provide energy and weatherization assistance to low-income households. Since then, CHP has strived to provide sustainable green housing for low- and moderate income households in the southeastern region of the US.

CHP’s green efforts also include using environmentally preferable materials and resources and managing waste more effectively. The organization practices extensive construction waste management and has an annual goal of diverting at least 50 percent of their construction waste from their local landfill. In 2009, CHP completed construction on 114 units of affordable housing, which created 1,465,410 pounds of waste. CHP recycled, repurposed, or reused 840,415 pounds or 57 percent of the waste created.

CHP also regularly utilizes fiber cement siding and trim, 40 year shingles, low-VOC materials, formaldehyde free cabinetry, and advanced framing techniques in their new developments. In recognition of their sustainable development practices, CHP received the 2010 EarthCraft Virginia’s Multifamily Developer of the Year Award.

Materials and Resources in Action: Spicers Mill

In the past five years, CHP has developed almost 630 green units. The organization’s green building program began in their single-family developments and HAC provided assistance for these efforts through two green grants awarded in 2005 and 2008.

Understanding the significant need for affordable rural rental housing, CHP has begun incorporating green building techniques into its multifamily developments. Rental housing plays a crucial role in rural areas by providing an alternative for the many families that are unable to afford or are uninterested in homeownership, and using sustainable materials is especially critical to the energy efficiency and affordability of higher density developments. CHP has taken the lessons it has learned through its single family projects and used this knowledge to engage in a green multifamily preservation project.

Spicers Mill is a planned multifamily community located in Orange, Virginia. Originally constructed in 1987, Spicers Mill apartments were acquired and rehabilitated by CHP to preserve this affordable housing stock for the community and residents of Orange. The 40-unit development is rented to individuals and families with incomes at or below 50 percent of area median income. Spicers Mill features a number of green techniques designed to enhance affordability for the occupants and blend with the surrounding environment such as energy efficient...
ADDED GREEN COSTS

In order to create a healthier community, CHP incorporated greener, more sustainable materials and practices in the project. The increased costs of these materials and standards are detailed below.

<table>
<thead>
<tr>
<th>Green/Sustainable Feature</th>
<th>Added Cost</th>
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<tbody>
<tr>
<td>Air Sealing to reduce air infiltration by 20%</td>
<td>$3,825</td>
</tr>
<tr>
<td>Low-e double paned windows to upgrade and replace single paned windows</td>
<td>2,060</td>
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<tr>
<td>40 year sustainable exterior cladding + housewrap</td>
<td>10,000</td>
</tr>
<tr>
<td>Increase insulation from R-30 to R-38</td>
<td>7,000</td>
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<tr>
<td>Upgrade from 12- to 14-SEER HVAC units</td>
<td>2,970</td>
</tr>
<tr>
<td>Seal and insulate all attic access openings</td>
<td>800</td>
</tr>
<tr>
<td>Use 30-year versus 25 year roofing with installed roof drip edge</td>
<td>2,000</td>
</tr>
<tr>
<td>Install kitchen fans vented to outside</td>
<td>4,000</td>
</tr>
<tr>
<td>Low-flow 2.5 gal/min shower head upgrades</td>
<td>600</td>
</tr>
<tr>
<td>Low-flow 1.6 gal/flush toilets</td>
<td>6,900</td>
</tr>
<tr>
<td>High efficiency water heaters with heat traps</td>
<td>3,000</td>
</tr>
<tr>
<td>Outdoor lighting motion sensors to reduce unnecessary light trespass</td>
<td>6,000</td>
</tr>
<tr>
<td>Upgrade to Energy Star dishwashers and refrigerators</td>
<td>4,000</td>
</tr>
<tr>
<td>Down Spout Extensions to move discharge 5’ from foundation</td>
<td>960</td>
</tr>
<tr>
<td>Lead paint, asbestos and radon tested</td>
<td>740</td>
</tr>
<tr>
<td>Re-grade site to slope away from building (not usually done in a typical rehab)</td>
<td>3,000</td>
</tr>
<tr>
<td>Landscape Revisions to include native and drought tolerant plantings</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Total Cost for Green Improvements</strong></td>
<td><strong>$62,855</strong></td>
</tr>
</tbody>
</table>

Impact on Households and the Community

CHP has established certain building practices and incorporated green products because there is an immediate and future benefit to the environment. The improved indoor air quality of the units have a positive impact on resident health and the improved energy efficiency will provide a significant reduction in both heating and cooling costs, resulting in financial savings for residents. The building is at least 30 percent more energy efficient than it was before its rehabilitation. These reduced costs have a direct impact on the quality of life of CHP’s residents as they are able to stretch their resources further.

Additionally, CHP’s operating expenses are reduced through energy cost savings and life cycle cost benefits from the use of durable building materials. This immediate and long term cost efficiency promotes the organization’s sustainability.

The overall community has benefited from this project as well. CHP has reduced its environmental impact by using green products that will not off-gas into the environment, by recycling construction waste and diverting materials from the landfill, and by using durable, sustainable materials that will remain on the building and not end up in the landfill in the near future. Spicer’s Mill is a model within the affordable housing development community that supports the idea that thoughtful, sustainable housing preservation is not only feasible, but is an ethical imperative.

~For more information about Community Housing Partners, please contact Jillian Fox or visit CHP’s website at http://www.communityhousingpartners.org.

mechanical systems, appliances and lighting, Energy Star windows, low-VOC finishes, durable siding and native landscaping. During the rehabilitation process, CHP also installed all-new formaldehyde free cabinets and durable flooring, waterproofed basement areas, improved site drainage and built a community room, laundry center and playground areas for tenants.

Spicers Mill received Earth Craft Certification and was completed in April 2009.
Greenfield, Massachusetts. The homes have achieved HERS scores under 18 and the development offers homeownership to 16 low- and moderate-income households plus homes to two low-income families with disabilities and two market rate buyers. The Solar Village incorporates a host of green techniques that conserve water, improve indoor air quality, and use recycled materials.

With regard to energy efficiency, RDI incorporated high-efficiency windows on the south faces of the development, a strategic move that increases the solar energy attained by the units in Greenfield’s cold northern climate zone. RDI’s inclusion of photovoltaic panels generates up to 3420 kW of renewable electricity each year, and the solar hot water systems provide the majority of the condominium’s hot water needs. Furthermore, the orientation of the homes facilitates increased passive solar heating. The Solar Village homes have tightly-sealed envelopes to ensure maximum energy efficiency and are equipped with Energy Star appliances. Each home also features state-of-the-art ventilation exhaust-only systems. The Solar Village’s low HERS ratings of 8 to 18 means that each home is about 82 to 92 percent more energy efficient than a standard American home. The Wisdom Way Solar Village is still under construction, with over half of the homes sold and occupied. It is expected to be fully occupied this year.

Impact on Households and the Community

RDI’s aggressive pursuit of energy-efficient affordable homes has led to a variety of tangible benefits for the community. Developing Near-Zero Net Energy homes means that the homes minimally rely on fossil fuels and are inexpensive to maintain. The reduction of utility and maintenance costs in the Solar Village has resulted in electricity and fuel savings of approximately $2000 per year for homeowners. In addition to the cost savings, the organization regularly holds public open houses, which have raised awareness throughout the community about the benefits of sustainable construction and living. Moreover, RDI’s developments have served as invaluable hands-on training for local technicians, subcontractors, and suppliers who work for the organization and want to better understand green techniques. RDI’s Affordable Green Homes initiative continues to evolve and improve each year.

~For more information about Rural Development, Inc. and Wisdom Way, please contact Anne Perkins, executive director, or visit RDI’s website at http://www.ruraldevelopmentinc.org/.

Innovating Design — The Wisdom Way Solar Village. RDI’s Near Zero Net Energy Solar Village is almost complete in Greenfield, Massachusetts. Near Zero Net Energy is a term that refers to buildings that produce almost as much energy as they use. The homes are achieving HERS or Energy Smart Homes scores as low as 8, LEED for Homes Platinum, Builder’s Challenge, and the new Massachusetts Energy Star Tier III certifications. Photo provided by RDI.
Poor housing conditions can contribute to a range of specific health concerns among children, the elderly, and other high-risk populations. Rural homes are more likely than urban units to have structural defects that make the units susceptible to mold and vermin infestation, which can trigger asthma attacks and other respiratory conditions. Rural households are also twice as likely as urban units to rely on heating sources that are potentially hazardous or insufficient, which can lead to carbon monoxide poisoning, fires, and explosions.

Housing programs that decrease moisture, remove or abate toxic materials, improve ventilation, or address structural defects improve indoor air quality and can help to create healthy living environments. The proper installation of an energy efficient heating, ventilation, and air-conditioning system reduces energy consumption and provides a healthy and comfortable indoor environment for residents.

HAC Grantee Experiences with Indoor Air Quality

Almost all HAC Green Grantees (96.2 percent) have incorporated indoor air quality measures in their housing developments. More than three-quarters of all grantees have installed air filtering and ventilation systems to improve indoor air quality and more than two-thirds have installed automatic timers and fans. An increasing number of grantees are exploring new ways to incorporate passive or active solar energy features in their units, which have the added benefit of reducing energy use.

Because of the many benefits that accrue to household residents, Northeast Iowa Community Action Corporation, a recent HAC Green Grantee, has begun to integrate a broader range of indoor air quality systems with each new housing development project.
The range of indoor air quality features in the West Union homes are of particular note. NEICAC has utilized products that meet strict limits for VOCs, including interior paints, adhesives, caulks, and sealants. The whole house ventilation system provides fresh air per ASHRAE 62, 1-207 and the units include several products that are used to ensure proper ventilation of the units, including a bathroom exhaust fan that is connected to the light switch and equipped with a humidistat sensor and a clothes dryer and kitchen range hood that are vented to the exterior of the home.

Many efforts have been made to ensure a tight house construction. A continuous air barrier, substantially air-tight doors with closers, and inside carbon dioxide detectors are installed between the homes and garages. Additionally, all wall, floor, and joint penetrations have been sealed with low VOC caulk. Large openings have been sealed with rodent and corrosion proof screens. Building materials that reduce water collection and deter the growth of mold and bacteria were used throughout the project. The development also provides drainage and water management for windows, walls, roofing, and foundations.

Indoor Air Quality in Action: West Union

NEICAC received a 2008 HAC Green Grant to purchase materials and support unit construction on the third phase of the organization’s West Union project. NEICAC offers a unique Rent-to-Own Homes program to help families with incomes below 60 percent of area median income become homeowners. The qualified participants rent these three-bedroom units for one to three years. After completing the required homebuyer education classes, the renter can purchase the home for approximately half the cost of construction. The current cost of construction for each unit is approximately $140,000.

NEICAC learned a great deal from incorporating green techniques in the first two phases of the Rent-to-Own Homes program and the organization has included a number of strategies in the West Union Homes. The units were built on an infill lot that is close to local services and local transportation and will include a range of green features, including Energy Star products, waste management, and a rain catchment system. NEICAC has constructed the units using the Iowa Green Streets Criteria Checklist. The completed Phase III units will have a HERS rating index of 80 at most.
Impact on Households and the Community

NEICAC has instituted a fairly sophisticated education program that extends well beyond the tenants and homeowners that live in the units they create. All rental residents receive an Occupant’s Manual explaining the green features of their units, as well as other “green” information that can help them be more conscious of their environment. All occupants also receive a comprehensive walk-through where they are introduced to the green features of their units and provide an orientation on how to use these products most effectively. Lastly, NEICAC has installed a new technology in the units they construct that provide residents with the ability to monitor total electrical use. The Electrical Devise (TED) will give residents a current electricity usage reading, allowing them to better understand and manage their energy usage.

NEICAC has become an educator for the community at large. In collaboration with the Iowa Center on Sustainable Communities and the Iowa Department of Economic Development, NEICAC hosted an affordable green building training to educate local contractors on using green products in the development of affordable homes. For 20 weeks, 30 local contractors followed along in the development of the West Union homes to learn lessons on integrating indoor air quality systems and incorporating green building technologies in future housing developments.

~For more information about Northeast Iowa Community Action Corporation, contact Mark Mark Kvammen, or visit NEICAC’s website at http://www.neicac.org/.

Photo provided by NEICAC.
SPECIAL FEATURE

NATIONAL RURAL HOUSING CONFERENCE 2010

LEARNING OPPORTUNITIES

The 2010 HAC National Rural Housing Conference is scheduled for December 1-3, 2010 at the Washington Wardman Park Marriott in Washington, D.C., with pre-conference activities on November 30.

This year’s conference theme, A Place to Live: Rural Housing in a Changing Landscape, reminds us that though nonprofits are facing multiple challenges in a changing environment, the goal of our work remains the same, providing housing in rural communities. The National Rural Housing Conference is a chance for the community of rural housing practitioners to learn from one another and renew its commitment to working toward a better future in rural communities.

With input from a range of stakeholders, HAC has organized an event that is designed to inspire dialogue, ideas, and action. The conference will include a series of informative workshops featuring knowledgeable speakers who will encourage a dialogue on the challenges and opportunities facing rural affordable housing developers. Participants will learn strategies from local leaders, hear updates on critical issues, and influence the policy priorities of national leaders. This year’s conference will also feature a series of workshops on green building, rental preservation, self-help housing, homeownership, and infrastructure development.

The National Rural Housing Conference is a collaborative effort undertaken by the Housing Assistance Council and our many advisors and partners. Join us this year to honor our local partners, and celebrate 40 years of building rural communities together. Also this year, the Rural Community Assistance Program (RCAP) will have its Annual Meeting at the National Rural Housing Conference. RCAP is a national umbrella organization comprised of six regional organizations whose focus is delivering key infrastructure and housing to rural communities.
In addition to learning and networking, the conference also gives us an opportunity to celebrate individual and joint efforts to develop and sustain affordable housing in rural communities. The Rural Housing Awards Banquet is HAC’s salute to local and national rural housing practitioners who have made a difference in the lives of low-income rural people.

We are excited about the conference and we are looking forward to your participation. With the assistance of conference sponsors, we have created a scholarship fund to help representatives of as many organizations as possible attend the conference. Together, we can build rural housing in a changing landscape.

~Registration information and details about the 2010 National Rural Housing Conference will be posted this summer on HAC's website at www.ruralhome.org.
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