



National Center for  
Healthy Housing



National Center for Healthy Housing

# 2007–2008 Annual Report



***Creating healthy and safe homes for children through practical and proven steps.***

Using a holistic and interdisciplinary approach, the National Center for Healthy Housing (NCHH) brings the public health, housing, environmental, and regulatory communities together to combat disease and injuries caused by hazards in the home. Through research and evaluation, training and technical assistance, innovative demonstration projects, and public policy advocacy, NCHH seeks to create a healthy home environment for all children.



## Research and Evaluation

### Building Green and Healthy in Minnesota

NCHH, with funding from the Blue Cross and Blue Shield of Minnesota Foundation, the U.S. Environmental Protection Agency (EPA), and Enterprise Community Partners, carried out an evaluation of a green and healthy rehabilitation of 60 affordable housing units in Worthington, MN. NCHH partnered with the Southwest Minnesota Housing Partnership, Minnesota Green Communities, the Greater Minnesota Housing Fund, and the Center for Sustainable Building Research to renovate this multifamily housing project using Enterprise Community Partners' Green Communities criteria. These criteria, which were developed with NCHH's input, include requirements to address indoor environmental quality, while also making homes more energy-efficient and reducing the environmental impact of the renovation through sustainable practices and product selection."

The study focuses on identifying the complex links among health, energy conservation, and building practices. The data and research we produce will inform building owners, developers, contractors, community planners, health officials, and others nationwide on how to cost-effectively implement health-based housing interventions while deploying green building design and renovation techniques.

The results of the evaluation are promising. In adults, there were large and statistically significant improvements in general health, chronic bronchitis, hay fever, sinusitis, and asthma ( $p < 0.05$ ). Hypertension in adults also improved, achieving marginal statistical significance ( $p = 0.083$ ). There were also large improvements in children's general health, children's



*"NCHH brought a better understanding of healthy living and housing to our community. The residents live in a healthier environment. They know that there is nothing toxic or dangerous to them here. Air quality and other environmental issues have improved. Our green space and playground creates community and a safe place for kids . . . . With what we learned, we'll now be able to provide healthy homes to our 27 counties."*

—Jorge Lopez, Sr., of the Southwest Minnesota Housing Partnership

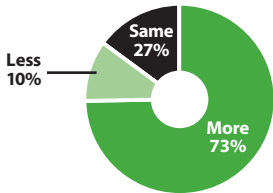
respiratory allergies, children's ear infections, comfort, safety, and ease of housecleaning. It is worth noting that these improvements were detected even though the baseline population in the buildings was generally in good health at the time of renovation. Observed health gains may have been even greater had the baseline population been in poorer health.

**For more information:** Visit [www.nchh.org/research.aspx](http://www.nchh.org/research.aspx) or contact David Jacobs, Director of Research, at [djacobs@nchh.org](mailto:djacobs@nchh.org) or 410.992.0712.

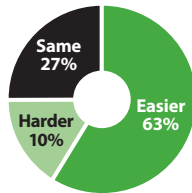
## Healthy Housing Features at Viking Terrace

- Individual fresh air supply for each unit.
- Low-VOC adhesives, paints & coatings.
- Radon testing in units before rehabilitation & post-construction.
- Radon mitigation.
- Integrated pest management.
- Non-smoking common areas.
- No carpets in wet areas (kitchens, baths, laundry).
- Energy Star-labeled bathroom fans that exhaust to the outdoors and are equipped with a humidistat sensor or timer.
- Surface drainage of water away from windows, walls, and foundations. French drains installed around the perimeter of all buildings.

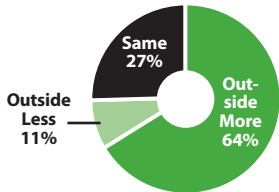
Comfort in Apartment Compared to Old Home



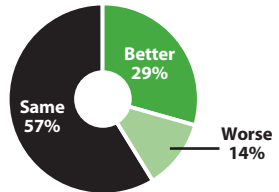
Ease of Cleaning Compared to Old Home



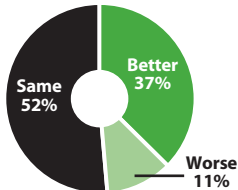
Amount of Time Children in Household Play Outside Compared to Old Home



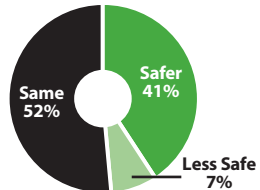
Child's Health Compared to When in Old Home



Adult's Health Compared to When in Old Home



Safety of Building Compared to Old Home



## NCHH Ranks Leading Green Building Programs on Health Practices and Impacts

In September 2008, NCHH released a provocative new report, *How Healthy Are National Green Building Programs?* Until recently, consumers, housing and environmental professionals, and policy makers assumed that all “green” design, construction, and renovation practices were equally good and had no down sides. “When it comes to occupant health, not all of the national green building programs are created equal,” said Rebecca Morley, NCHH Executive Director and one of the report’s authors.

The report ranked the leading national green building programs on how well they addressed practices that could actually cause harm, such as asthma, respiratory disease, and unintentional injuries due to inadequate ventilation, moisture concentration, mold growth, pest intrusion, toxic fumes from building materials, hot water scalding, and carbon monoxide poisoning.

Our analysis found that while all the programs had some elements to improve resident health, they varied significantly. And they uniformly failed to address certain major risks, such as unintentional injuries from falls, burns, and fires, one of the leading causes of death among young children.

Enterprise Community Partners’ *Green Communities Program* and EPA’s *Energy Star with Indoor Air Package* ranked highest among the programs included in the analysis. “By identifying ways to protect resident health, we hope to make healthy homes as high a priority as energy efficiency, and sustainability,” Morley concluded.

The report updates our 2006 analysis, which prompted many green building programs to strengthen their public health criteria. For example,



EPA added a non-smoking criterion, Enterprise Community Partners expanded its radon mitigation requirements to cover a broader swath of high-risk areas, and the U.S. Green Building Council added several mandatory health elements.

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### Training and Technical Assistance

Each year, billions of dollars in health care costs could be saved by training more housing and health professionals on preventing illnesses and injuries from unhealthy housing, who in turn put the principles into practice in their communities.

NCHH's *National Healthy Homes Training Center and Network (Training Center)* is a leader in bringing together housing and health practitioners to promote practical and cost-effective methods to make homes healthier and safer while serving as a forum for exchanging information on new research and best practices. Our extensive network of regional partners has delivered in-depth training to over 3,000 professionals. We operate the Training Center through a cooperative agreement with the U.S. Centers for Disease Control and Prevention (CDC), with additional support from the U.S. Department of Housing and Urban Development (HUD), EPA, and the Home Depot Foundation.

## Pediatric Environmental Home Assessment

In 2007, our Training Center developed the Pediatric Environmental Home Assessment, an online training tool tailored for nurses who make home visits to increase their knowledge of housing-related environmental diseases.

Because public health and visiting nurses make millions of home visits annually to vulnerable families, they are positioned uniquely to provide more comprehensive care and support by completing a pediatric environmental health history, identifying potential housing-related environmental diseases and safety hazards, and recommending corrective actions.

This new tool seeks to overcome the challenges nurses face in adding a holistic environmental health and safety assessment to a standard visit by using real-world scenarios that focus on the seven principles of “healthy housing”: housing that is clean, contaminant-free, dry, maintained, pest-free, safe, and ventilated. These principles were also developed by our Training Center. The tool then provides nurses with an appropriate yet practical follow-up action plan, which often includes helping the family access additional community resources.

Nurses who complete the training receive 1.5 credit hours of approved continuing education and a carbon monoxide alarm or lead dust wipe kit.

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*“There was a gas water heater in the basement of a family childcare provider, and I used the gas detector around the water heater pipes. The gas detector began beeping repeatedly, and I called the gas company immediately. The gas company came out within minutes and corrected the problem. They said if I hadn’t checked it, the family would not have lived. The provider was not aware of the leak and was very grateful.”*

—Miguel Ramirez, Philadelphia Early Childhood Collaborative



*"I use the online Pediatric Environmental Home Assessment in class for my students to do a walk-through home assessment. The assessment is an easy way for all students to get a realistic experience without going into the hazardous home. The online training course is very well done and gives students a real-life, controlled experience that doesn't cause harm to the patient."*

—Sharon Yearous, Ph.D., R.N., C.P.N.P., N.C.S.N.

## Healthy Homes Specialist Credential

In 2007, NCHH joined with the National Environmental Health Association (NEHA) to launch the *Healthy Homes Specialist Credential Program*. To qualify for the Credential, professionals must sit for an in-depth exam that covers key healthy housing concepts, and they must also demonstrate that they can complete a visual assessment of a home for health and safety hazards. The Credential is tailored to home inspectors, pest control professionals, energy auditors, and other professionals with expertise in a specific home environmental hazard who are interested in expanding or solidifying their capabilities to deliver more comprehensive healthy housing services.



**For more information:** Visit [www.healthyhomestraining.org](http://www.healthyhomestraining.org) or contact Tom Neltner, Director of Training & Education, at [tneltner@nchh.org](mailto:tneltner@nchh.org) or 410.992.0712.

*“Realtors, home inspectors, energy auditors, pest management professionals, and others can save lives if they are armed with greater awareness of the hazards that can be found in the home environment. This Healthy Homes Specialist Credential provides an outstanding marketing opportunity for these professionals and enables homeowners and property managers to access qualified professionals who can help them protect their families.”*

—Rebecca Morley, NCHH Executive Director

## Public Policy Advocacy

# Strengthening National Policy for Making Homes Lead-Safe: EPA's Renovation, Repair, and Painting Rule

Kevin Sheehan's story of lead poisoning due to the work practices of a contractor has a unique twist: Kevin was the contractor. "It was 1989, no one knew," said Sheehan. "All we'd heard was, 'Don't eat the paint chips,' so my wife and I went all around our new home scraping off any chipping paint and vacuuming the areas. We thought we were keeping our kids safe, but we were really just creating more hazards."

The Sheehans had just purchased their dream home in New York: a 4,000 square foot folk Victorian, built in 1852. "There was a lot of demolition," Sheehan said. They moved their three daughters, ages 2, 5, and 12 into the home after the demolition work, but before the clean-up. There were no signs anything was wrong, Sheehan said. "That's the problem."

It was an article in *The Journal of Light Construction* entitled, "Lead: A Renovators' Hazard" that first clued the Sheehans into what could be happening through the renovation process of their new home. In addition, Ann Sheehan was editor of the local paper and had just finished a story about lead poisoning.

Ann had been traveling around the area, giving seminars on the hazards of lead paint a year prior to their home purchase. "We put it all together and had our family tested," said Kevin.

The eldest daughter showed no signs of elevated levels of lead in her blood; however, the five-year-old was at a level of 25 and the youngest at a level 23. “They [the doctors] told us they couldn’t do anything until it got above level 25,” Kevin said. The youngest did reach above a level 25 in the following weeks, and they began chelation treatment.

They had done everything they knew to do at the time. The EPA had performed dust testing through bulk samples of the debris and soil from their property. The samples registered more than 5,000 parts/million, and their property was then eligible for consideration as a superfund clean-up site.

“We invested \$100,000 of our own money and our parents’ money,” said Kevin. “Then we just abandoned it.” The majority of their medical bills were covered by insurance, “but there were a lot that were not,” said Kevin, costing them further financially. As to the long-term health costs—both mental and physical, Kevin said, “Who knows? Compared to what? The extent of the damage is still unknown.”

As a contractor, Kevin agonized over the work he’d done in other peoples’ houses; wondering who else’s children he’d unknowingly harmed. He found a two-day advanced deleading course in Baltimore and signed himself up. Even then, he had to translate what he’d learned to the contracting world.

Today, there is a federally-approved lead-safe work practices course, which Kevin has adopted and teaches across the country. Asked about what he thinks the federal government’s role in enforcement should be, Kevin said he felt a system akin to that of a restaurant inspector would work well. “There should be a certification process,” he said, and as a follow-up, random inspections of the contractor’s safe work practices.

To better protect children from lead-based paint hazards, NCHH joined its sister organization, the Alliance for Healthy Homes, and other advocates in successfully persuading EPA in March 2008 to issue a new rule governing professionals who renovate or repair pre-1978 housing, childcare facilities, or schools. The rule requires that contractors and property management companies be certified by April 2010, that their employees be trained, and that they follow protective lead-safe work practice standards. These companies must post warning signs, restrict occupants from work areas, contain work areas to prevent dust and debris from spreading, conduct a thorough cleanup, and verify that the cleanup was effective.

During the fight over the rule's specifics, NCHH advocated for the Agency to strengthen its proposed draft with a more rigorous test for contractors to use than a simple visual assessment, as most lead dust is invisible to the naked eye. NCHH successfully persuaded EPA to ban several dangerous work practices, such as dry sanding, open-flame burning, and sandblasting, which create large amounts of dangerous dust. These practices are already banned by many localities and HUD.

EPA estimates that its new rule will safeguard 1.4 million children under age six from unsafe renovation, repair, and painting projects annually.

**For more information:** Visit [www.nchh.org/policy.aspx](http://www.nchh.org/policy.aspx) or contact Jonathan Wilson, Deputy Director, at [jwilson@nchh.org](mailto:jwilson@nchh.org) or 410.992.0712.





## Looking Forward—Innovative Demonstration Projects

### Building Green and Healthy in Washington, DC

**G**reen building design, construction, and rehabilitation is an emerging trend in both low-income and market-rate housing. As a result, local governments are adding green criteria to their building ordinances. Washington, DC recently adopted one of the farthest-reaching such laws in the nation.

While all model green building codes contain some health requirements, only a few studies are evaluating how they impact health in low-income housing. Ours will be the first to test the impact of an actual local green ordinance. Thus, we expect this demonstration to command local and national attention.

With funding from the HUD Office of Healthy Homes and Lead Hazard Control, this demonstration project will show how incorporating green **and** healthy building design practices into a major low-income housing rehabilitation project can improve the residents' health. Our team includes the Wheeler Terrace Tenant Association; Wiencek & Associates, one of the nation's leading green architectural firms; and the Community Preservation and Development Corporation, a nationally respected community developer.

The project will address multiple indoor environmental hazards, including moisture problems, pests, volatile organic compounds, and other contaminants. We plan to demonstrate reduced allergen levels in

renovated units and fewer reported asthmatic episodes through several common-sense interventions, including:

- Ventilation system modifications to improve fresh air supply and distribution,
- Installation of bathroom and kitchen exhaust fans,
- Improved building envelope sealing to control moisture and pest intrusion, and
- Integrated Pest Management.

By training construction and developer staff and educating community residents, we also hope to ensure that these healthy homes practices continue beyond the demonstration project.

*“NCHH has played an important role in helping CPDC redefine the Wheeler Terrace project by helping us to better understand that air quality and other healthy housing interventions make a difference for our residents. The combination of being “Green” and “Healthy” has been a good match and is reinforcing the idea that all persons, regardless of income, should live in a healthy environment. We are excited about the end result.”*

—Mark James, Community Preservation and Development Corporation

## State of the Nation's Healthy Housing: How Does Your City Measure Up?

With funding from The California Endowment, NCHH is launching an interactive website of local and national level data that enables users to see where their communities stand (compared to national averages and other jurisdictions) on 22 elements defining basic housing quality and a healthy home. A few of the measures for each jurisdiction include:

- Presence of rats and/or mice,
- Deteriorated paint (a potential lead-based paint risk),
- Structural problems, such as crumbling foundations and leaking roofs,
- Lack of complete kitchen facilities,
- Inadequate or malfunctioning plumbing, and
- Exposed wiring.

This website provides local policy makers, housing, health and environmental government officials, community organizations, and other stakeholders with vital data on those areas that need the most improvement and immediate action. They can segment the data into rental and owner-occupied, central city and non-central city, and other “sub-categories” to more effectively target their efforts.

The healthy housing ranking is based on a selection of criteria from the American Housing Survey and is a tool for gauging the overall health of the homes in a community. It is a measure we are working on to become part of the consciousness of urban policy makers.

## \*Consolidated Statements of Activities and Changes in Net Assets

For the years ended September 30, 2008 and 2007.

### 2008:

Revenue and Support	Unrestricted	Temporarily Restricted	Total
Grants and contracts	\$ 3,085,441	\$ 292,923	\$ 3,378,364
Contributions	\$ 52,940	-	\$ 52,940
Investment income	\$ 1,609	-	\$ 1,609
Other revenue	\$ 1,806	-	\$ 1,806
Net assets released from restriction	\$ 195,105	(\$ 195,105)	-
<b>Total revenue and support</b>	<b>\$ 3,336,901</b>	<b>\$ 97,818</b>	<b>\$ 3,434,719</b>

Expenses	Unrestricted	Temporarily Restricted	Total
Program	\$ 3,124,695	-	\$ 3,124,695
General and administrative	\$ 143,020	-	\$ 143,020
<b>Total expenses</b>	<b>\$ 3,267,715</b>	<b>-</b>	<b>\$ 3,267,715</b>

Change in net assets before provision for income taxes	\$ 69,186	\$ 97,818	\$ 167,004
Provision for income taxes	\$ 17,803	-	\$ 17,803
Change in net assets	\$ 51,383	\$ 97,818	\$ 149,201
<b>Net assets, start of year</b>	<b>\$ 444,869</b>	<b>\$206,794</b>	<b>\$ 651,663</b>
<b>Net assets, end of year</b>	<b>\$ 496,252</b>	<b>\$304,612</b>	<b>\$ 800,864</b>

\*These statements are for NCHH and our wholly-owned for-profit subsidiary, Healthy Housing Solutions.

**2007:**

<b>Revenue and Support</b>	<b>Unrestricted</b>	<b>Temporarily Restricted</b>	<b>Total</b>
Grants and contracts	\$ 2,156,047	\$ 106,000	\$ 2,262,047
Contributions	\$ 154,910	-	\$ 154,910
Investment income	\$ 2,332	-	\$ 2,332
Other revenue	\$ 32,925	-	\$ 32,925
Net assets released from restriction	\$ 290,574	(\$ 290,574)	-
<b>Total revenue and support</b>	<b>\$ 2,636,788</b>	<b>(\$ 184,574)</b>	<b>\$ 2,452,214</b>

<b>Expenses</b>	<b>Unrestricted</b>	<b>Temporarily Restricted</b>	<b>Total</b>
Program	\$ 2,553,647	-	\$ 2,553,647
General and administrative	\$ 56,109	-	\$ 56,109
<b>Total expenses</b>	<b>\$ 2,609,756</b>	<b>-</b>	<b>\$ 2,609,756</b>

Change in net assets before provision for income taxes	\$ 27,032	(\$ 184,574)	(\$ 157,542)
Provision for income taxes	(\$ 269)	-	(\$ 269)
Change in net assets	\$ 27,301	(\$ 184,574)	(\$ 157,273)
<b>Net assets, start of year</b>	<b>\$ 417,568</b>	<b>\$391,368</b>	<b>\$ 808,936</b>
<b>Net assets, end of year</b>	<b>\$ 444,869</b>	<b>\$206,794</b>	<b>\$ 651,663</b>

## NCHH Board of Directors



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## NCHH Staff

NCHH staff bring an impressive collection of backgrounds and experience to their work, as befits the multidisciplinary field of healthy homes.

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Assistant Professor, Harvard University School of Public Health

## **NCHH Receives Funding from These Organizations:**

- Blue Cross and Blue Shield of Minnesota Foundation
- Brand Resources Group (BRG)
- The Annie E. Casey Foundation
- The California Endowment
- Enterprise Community Partners
- ICF International
- The Home Depot Foundation
- The Kresge Foundation
- NeighborWorks America
- The Derald H. Ruttenberg Foundation
- Robert Wood Johnson Foundation Commission to Build a Healthier America
- TD BankNorth
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- The Wachovia Foundation

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