



## Mitigation in Action: Millennium House

### Full Mitigation Best Practice Story

#### *Tulsa County, Oklahoma*

**Tulsa, OK** - Neighbor for Neighbor, Inc. (NfN) has been a very active private, non-profit organization in the City of Tulsa since 1967, with the purpose of serving those in need in the Tulsa community. Advocating assisting low-income families in owning their own homes is one of the agency's primary missions. The concept of the Millennium House is an innovative approach that not only meets the goal of the mission but also has the added benefit of being a storm-resistant house and a safe house for the poor. Additionally, the project location in the city is a high-hazard area at risk for frequent tornados and severe storms.



Millennium House, a storm-resistant house, is a 1,200 square foot home built with Insulating Concrete Forms (ICF) construction. Construction of this home has been very cost effective. The type of form plus concrete construction has a reduced time schedule and volunteers are providing all of the labor. The lot was purchased for \$300. Don McCarthy, volunteer builder, states the price of the finished home will be approximately \$50,000 to \$55,000.

The Millennium House Mission Statement, as written in their newsletter, is as follows: "Neighbor for Neighbor, Inc. (NfN) while acting in concert with its partners is committed to engineer, design and construct a prototype structure that will be the finest house for its clients. At the completion of the testing of the prototype, NfN and other partners hope to replicate this model to significantly impact the neighborhoods and lifestyle of those living in north Tulsa." Millennium House project has established several parameters for the prototype structure to meet this mission statement. The house must meet the following:

- **Affordable:** Low to Moderate Income: The combination of skilled volunteer labor, geothermal unit method for heating and cooling and low operating costs keeps the house cost effective and affordable. The Oklahoma state property tax rebate, reductions on insurance premiums and low cost of construction also contribute to the affordability of the house.
- **Wind-Resistant/Tornado-Resistant:** The basic design of the house will be structurally competent to withstand the majority of all tornadoes. One room will be constructed to meet the FEMA specifications for withstanding an F5 tornado (the main bathroom). The roof trusses will be secured with hurricane clips.
- **Energy-Efficient:** The concrete walls provide outstanding energy efficiency and dramatically reduce outside noises.
- **Minimum Operating Cost:** Annual utility costs are estimated at \$110.
- **Improved Air Quality:** This house meets standards set by the American Lung Association to earn the designation of "Healthy House." There are no hydrocarbons in the house.
- **Universal House Concept:** The Millennium House meets the requirements of the Americans with Disabilities Act. Door widths and the level-living spaces allow for wheelchair access. Bathrooms are handicap accessible. The safe room is wheelchair-accessible and all the outlets are elevated.
- **Fire Retardant:** Concrete is one of the most fire resistant construction materials. Open flames and the possibility of carbon monoxides building up in the structure are eliminated by the total electric utilities.
- **Replicable/Durable/Attractive:** Exterior finishes are available in a variety of designs providing individuality for the homeowners. Floor plans are standardized.
- **Attractive Landscape Efficiently Nurtured:** Landscaping is designed by a local horticultural group. Native plants requiring low-water consumption and low maintenance will be used.

The current house that is under construction is the prototype model for the project. The short-term goal is to build the structure to incorporate all the features outlined in the mission statement and further defined in the operational parameters. Location for this house was chosen specifically to be in the vicinity of the High School of Science & Technology where the students can

interact with the project. An advisory board is to be established with membership consisting of city planners, bankers, architects, engineers and builders, among others. Data will be collected during the first six to nine months after the house is operational and will be reviewed by the advisory board to evaluate performance in meeting the parameters. Information from the data will be used to improve on future Millennium Houses.

The list of Millennium House contributors is an example of a successful public/private partnership. The Tulsa Partners contributed seed money in the amount of \$15,000, with funds originally obtained through FEMA.

"It's the right thing to do," states Mike Buchert, P.E., Assistant Public Works Director for the City of Tulsa. Buchert lists three basic reasons for his assertion: "this project and type of housing construction helps protect citizens; less money is spent rebuilding and cleaning-up after a disaster; annual operation and maintenance costs are lowered. The City spends half a million dollars annually tearing down old dilapidated homes, this is significantly reduced by the secondary and tertiary benefits of the project."

#### Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region VI**

State: **Oklahoma**

County: **Tulsa County**

City/Community: **Tulsa**

#### Key Activity/Project Information

Sector: **Public/Private Partnership**

Hazard Type: **Tornado**

Activity/Project Type: **Education/Outreach/Public Awareness**

Activity/Project Start Date: **01/1967**

Activity/Project End Date: **Ongoing**

Funding Source: **Private funds**

Funding Recipient Name: **Neighbor for Neighbor, Inc.**

#### Activity/Project Economic Analysis

Cost: **Amount Not Available**

#### Activity/Project Disaster Information

Mitigation Resulted From Federal  
Disaster? **Unknown**

Value Tested By Disaster? **Unknown**

Repetitive Loss Property? **Unknown**

## Reference URLs

Reference URL 1: <http://www.fema.gov/about/contact/regionvi.shtm>

Reference URL 2: <http://www.ok.gov/oem/>

## Main Points

- Neighbor for Neighbor, Inc. (NfN), a private, non-profit organization, whose purpose is serving those in need in the Tulsa community. Advocating assisting low-income families in owning their own homes is one of the agencies primary missions.
- The concept of the Millennium House is an approach that not only meets the goal of the mission but also has the added benefit of being a storm resistant house and a safe house for the poor.
- The current house that is under construction is the prototype model for the project. The short-term goal is to build the structure to incorporate all the features outlined in the mission statement and further defined in the operational parameters.



Prototype under construction



Hurricane straps connect roof trusses to walls



Construction features make the Millenium House wind-resistant