HEALTHY REBUILDING IN NEW ORLEANS
THE HEALTHY REBUILDING PROJECT

Enterprise Community Partners and the National Center for Healthy Housing

In Collaboration with

- Neighborhood Housing Services of New Orleans
- NeighborWorks America
- Neighborhood Development Foundation
- Columbia University
- Tulane University
HEALTHY REBUILDING DEMONSTRATION
PROJECT GOALS

- To conduct flood recovery activities in homes
  - to assess the cost of removing flood damaged/mold infested possessions and building materials
  - and the effectiveness of the process in reducing mold spore counts
  - to document suggested worker protection practices
Effects of Hurricanes Katrina and Rita on Housing

- Flooding and Wind Damage
- Mold Damage
- Other Potential Health Threats
New Orleans: A City Under Water

QuickBird Natural Color Multispectral Image
August 31, 2005
Health Effects of Mold Exposure

- Allergic reactions and asthma attacks
- Effects from toxins released by molds
- Young children, the elderly, and people with respiratory problems or immune-compromised individuals are most vulnerable
Other Health Issues During Clean-up and Renovation

- Bacteria
- Lead Paint Hazards
- Asbestos
- Pests
Personal Protection Equipment

N-95 masks if entering for short periods of time

N-100 Respirators, goggles, gloves and disposable coveralls for people working in the home
Homes Participating in Pilot Study

- Three homes located in Gentilly neighborhood of New Orleans. *
- Owner occupied
- Experienced different levels of flooding

*An additional home will be complete in March.*
HOME #1

- 2 story home
- Built in 1987
- Slab on grade construction
- Received up to a foot of flood water
- 2-3 ft of mold growth on first floor
Treatment for Home #1

- Work conducted November 1-4
- Possessions removed from first floor, cleaned, and moved to second floor or discarded.
- Appliances and most fixtures removed.
- Wallboard and insulation removed to 4 ft.
- Floors and horizontal surfaces cleaned with bleach/detergent solution.
- Studs HEPA vacuumed and sprayed with borate solution.
Clean and Disinfect
HEPA Vacuum Cleaning
Treat with Borate Solution
HOME #2

- 1 story home
- Approximately 100 years old
- Raised home on piers
- Received at least 5 ft of flooding
- Mold growth to ceiling
Treatment for Home #2

- Work conducted November 15-17
- Possessions removed and discarded
- Wallboard, insulation and lathe removed
- Left studs, ceiling, bath tile and materials backing tile.
- All surfaces cleaned with bleach/detergent solution
- Studs sprayed with borate solution
HOME #3

- 1 story home
- Built in 2004
- Raised home on piers
- Received about 2 feet of flood water
- Up to 4 feet of mold growth on walls
Treatment for Home #3

- Work conducted January 10-12
- Possessions and cabinets were previously removed.
- Wallboard, insulation, and carpeting removed.
- Left studs, ceiling and vinyl flooring.
- All surfaces cleaned with HEPA vacuum and dry brush process.
- Vinyl floors cleaned with detergent and bleach.
- Studs sprayed with borate solution.
How Much Do Flood Repairs Cost?

- Decontamination:
  - $3.40 to $4.10 per square foot of floor area
  - Or
  - $4,400 for average 1200 square foot home

- To complete repairs:
  - Home flooded 18 inches deep: $32,000 to $47,000
  - Homes flooded 6 feet deep: $78,000 to $120,000
Lessons Learned to Date

- Preliminary results indicate that clean-up protocols are working.
- Mold counts are extremely high especially during the removal process.
- Costs are variable because of high demand and shortage of labor.
- Access to workers trained in safe work practices is currently limited.
Lessons Learned to Date (cont.)

- General uncertainty about situation (levees, FEMA flood plain rules, electrical codes, etc) raise questions if rebuilding is viable
- Lack of good science about the specific relationship between mold and health is a barrier to assessing success of our work
Borate Treatment Products

- Termite-Prufe: Copper Brite, Inc., P.O. Box 50610, Santa Barbara, CA 93150-0610, 805-565-1566 (www.copperbrite.com). Each container contains 1 pound of product, which makes one gallon of treatment solution. This solution will cover about 200 square feet. About 14 pounds is needed for an average house, at a cost of $126.

- Bora-Care: Nisus Corporation, 100 Nisus Drive, Rockford, TN 37853, (800) 264-0870. (www.nisuscorp.com). The Nisus Corporation website lists local distributors.
Other Products for Clean-up

- **Safety Masks**
  - P-100 respirators: Home Depot supplies a P-100 filter class respirator, MSA Safety Work Multi-Purpose Use Mask. Model # 00817663.
  - N-95 respirators: Home Depot offers a package of 10 Dust and Mist Respirators (N-95) Model 8611 (about $18.00)
Other Products for Clean-up

- **HEPA Vacuum**
  
  HEPA Vacuuming can be performed using a Wet-Dry Vacuum with a HEPA filter. Sears offers a Craftsman 16 gal, 6.5 peak hp Wet/Dry Vac (Mfr model # 17066) for around $120. The Craftsman Wet-Dry Vac Filter, HEPA (Mfr. Model #17912) is available for around $27.00. Similar products manufactured by Shop-Vac and RIDGID are available from Home Depot.