2-2011

Building Evaluations for Risk Assessment

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Wednesday, February 16, 2011

Workshop Session III

Time of Session: 3:30-5:00pm

Session Title: Opportunities for Building Mitigation & Floodproofing

Speaker: Stuart Adams, Louisiana State University & Pat Skinner, LSU AgCenter

Room: 256

Head Count: 16

Note Taker: Casey Carpenter- O'Keefe

Notes:

Building Evaluations for Risk Assessment

Stuart Adams, Civil Structural Engineering PhD Student

Unmanned Aerial Vehicle Research- Uses a remote control helicopter with a camera to take photos of campus. Costs apx $300/day to rent

Using the helicopter you can collect quick data to see response time of infrastructure (pre/post storm or disaster)

Investigate and document building vulnerabilities, identify potential mitigation and shelter in buildings from hurricanes, tornadoes, wind, floods, etc.

Use HAZUS for field data collection and a level 2 analysis.

HAZUS survey collects general building attributes, creates a permanent record and a computer entry. The campus (LSU) is working together to build an "app" for this information.

Common Vulnerabilities

Mostly related to roof. (Equipment, debris, poorly anchored, etc)

Vulnerable roof areas include: skylight, air-conditioning units, drains.

Potential Mitigation Measures

Anchor
Remove Unused Equipment
Roof Upgrade

Use social media and emergency management through Facebook, Twitter, etc. Want to integrate form to server to photo to computer program (through smart phones and application)

Hurricane Hazards
Wind, flood, storm surge
    Create 3D model of buildings
Pre-event Imagery and Post-event Imagery used to enhance potential vulnerabilities

Unmanned Aerial Vehicle used for Inventory, Maintenance, etc

Floodproofing Techniques, Pat Skinner, LSU AgCenter

Flood Protection

Structural Measures
Major Levees
Dams

Non-Structural Measures
On-site flood protection
Removal (Acquisition/Relocation)

Techniques to minimize damage
<u>On-Site flood protection</u>
Elevate
Dry Flood Proofing
Levees
Walls- permanent and temporary measures, closures for openings, pumps and backflow preventers.

Wet Floodproofing
Use materials that floodwater won't hurt
Elevate appliances, equipment, utilities
*Required for areas of a structure below BFE (base flood elevation)

Elevation is best to reduce future flood damage
Fill (not advocated to go too high)
Elevated Slab
Elevated and removed from slab
Built atop old walls
Elevating on piers
Demolish and Reconstruct

<u>Elevation Considerations</u>
When are you required to elevate the home?
Choosing a foundation (piers, pilings, etc)
Choosing a level of protection (how high?)

How high? Look at flood of record, height above levee, pre-DFIRM

Dry Floodproofing
Usually not over 3 ft
- Certifiable alternative to elevation for non-residential structure
- Sealant, Swinging and Removable panels
- Problems with water leakage? Floodwalls, levees and pumps

Wet Floodproofing
Allows water to enter