

University of New Orleans

ScholarWorks@UNO

DRU Workshop 2011 Presentations - Disaster
Resistant University Workshop: Building
Partnerships in Mitigation

Conferences and Workshops

2-2011

Building Evaluations for Risk Assessment

Stuart Adams

Louisiana State University - Eunice

Carol Friedland

Louisiana State University

Mark Levitan

Louisiana State University

Follow this and additional works at: <https://scholarworks.uno.edu/dru2011>

Recommended Citation

Adams, Stuart; Friedland, Carol; and Levitan, Mark, "Building Evaluations for Risk Assessment" (2011).
*DRU Workshop 2011 Presentations - Disaster Resistant University Workshop: Building Partnerships in
Mitigation*. Paper 23.

<https://scholarworks.uno.edu/dru2011/23>

This Conference Proceeding is brought to you for free and open access by the Conferences and Workshops at ScholarWorks@UNO. It has been accepted for inclusion in DRU Workshop 2011 Presentations - Disaster Resistant University Workshop: Building Partnerships in Mitigation by an authorized administrator of ScholarWorks@UNO. For more information, please contact scholarworks@uno.edu.

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

On-Site flood protection

 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

Elevation Considerations

 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