QUAKESMART™

Community Resilience Program for Small Businesses & Organizations

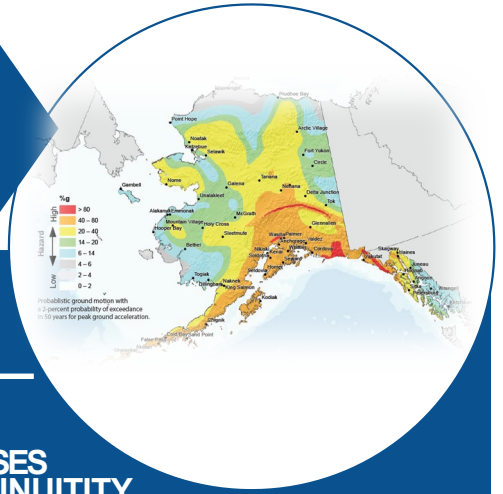
FLASH® FEDERAL ALLIANCE FOR SAFE HOMES | FEMA | Earthquake Country Alliance — We're all in this together.

STATE OF ALASKA — DIVISION OF HOMELAND SECURITY AND EMERGENCY MANAGEMENT

Dan Belanger
Earthquake & Tsunami Program Manager

Why should businesses and organizations care about earthquake risk?

Most of the United States is at some risk for earthquakes, and it is important that businesses understand the potential impacts. Developing a mitigation plan and taking action protects employees, customers and business continuity.



NATURAL DISASTER IMPACT

IMMEDIATE

40% OF SMALL BUSINESSES WON'T REOPEN

1 YEAR LATER

25% MORE SMALL BUSINESSES WILL CLOSE

3 YEARS LATER

75% OF BUSINESSES WITHOUT A CONTINUITY PLAN WILL FAIL

THE AVERAGE DAILY LOSS OF A BUSINESS THAT CLOSES DUE TO A DISASTER:

$3,000 SMALL BUSINESS

$23,000 MEDIUM SIZED BUSINESS

Why IS THIS IMPORTANT?

SMALL BUSINESSES ACCOUNT FOR **99%** OF ALL COMPANIES

SMALL BUSINESSES EMPLOY **50%** OF ALL PRIVATE SECTOR EMPLOYEES

SMALL bUSInESSES

Source: 2014 Data from the Federal Emergency Management Agency (FEMA) and US Department of Labor.

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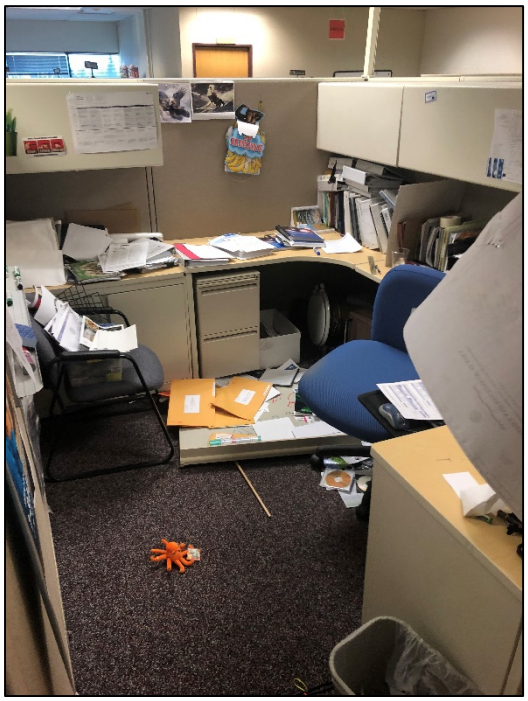
FLASH 2

Business Continuity Starts at Home

Preparedness empowers employees with the know-how, protocol and emotional survival skills that they may be faced with during the chaos of a disaster.

When your employees have emergency preparedness supplies on hand and they have braced their homes like you have done at your business, your business will resume regular productivity much more quickly. Encouraging your organization's employees to shore up their personal preparedness plans does, indeed, have an impact on your organization's business continuity, disaster recovery, and overall company resilience.



Encourage your employees to plan to be self-reliant for up to 72 hours, that means having on hand enough food, water, medicine, and all other necessary resources they may need for up to three days, incase assistance is not available. If your employees are prepared at this level, they will not only be ready on a personal front, but also will be available to support the company

Your employees are your most valued asset and are depending on you to ensure their future. Aiding them in their personal preparedness, as well as informing them as to how prepared you are for a disaster, is the most effective way to get your business back up and running quickly should disaster strike.

1. Encourage a employee to become familiar with the type of natural hazards and risks that are prevalent in your geographic area or community. Understand the types of risks their family may face.

2. Assist in constructing a family emergency plan that includes how they will handle each of these risks – from a prevention, safety, and response standpoint.

3. Plan for disasters that may require you and the family to shelter in place as well as disasters that will require them to evacuate. Make sure all understand and know what to do.

4. Establish an agreed upon meeting location outside the home or office and far away from the danger, as well as establishing an out of state/area emergency contact, in case the family gets split up. This will allow family members to check in and provide updates on their safety and well-being.

5. Create a family emergency kit. Each of your employees should develop a well-stocked disaster preparedness kit for their home to include items such as flashlights, batteries, changes of clothing, non-perishable food items, bottled water, a hand-crank radio, copies of important files, documents, and personal information, as well as other essentials ready to go and stored in a durable, water resistant container.

6. Discuss and practice these preparedness initiatives on a regular basis with employees and members of the family. The more aquatinted the family is with these procedures, the easier these actions will be to execute when the time comes.

The Small Business Administration (SBA) estimates 75% of organizations without business continuity planning will fail within three years of a disaster.

Why should businesses and organizations be concerned about earthquake risk? Unlike other natural disasters, earthquakes occur without warning and cannot be predicted. It is important that organizations understand their risk, develop a mitigation plan and take action according to the plan to ensure safety of their employees and customers as well as stay in business. Your business continuity is important to the community. If you are unable to continue operations after an earthquake event, it could impact the entire community's ability to recover.

The Continuity Plan walks owners and employees through a step by step process to:

- **Identify your risk**
- **Develop A plan**
- **take Action**

Following these steps in the Continuity Plan as a part of your overall business continuity planning will help protect assets (people, property, operations); sustain the capability to provide goods and services to customers and/or supply chain; maintain cash flow; preserve competitive advantage and reputation; and provide the ability to meet legal, regulatory financial and contractual obligations.

There are many tools available to complete your business continuity planning, this program references the Federal Emergency Management Agency (FEMA) Business Continuity Plan and the Disaster Resistant Business Toolkit to address planning.

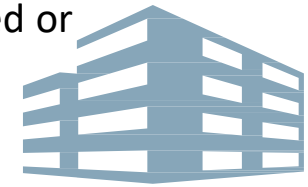
Lets walk you through the steps and provide you with the tools to plan and take action through analysis of your SPACE, SYSTEMS, and STRUCTURE.

Program overview

Space includes the contents of your workspace such as furniture, computers or equipment, tall shelving, filing cabinets, hanging artwork and free-standing partitions.

Systems include utility systems and nonstructural architectural elements, i.e. air compressors, built-in partitions, propane tanks, fuel tanks, suspended ceilings, suspended space heaters, water heaters, windows and automatic fire sprinkler systems.

Structure includes architectural and structural elements of the building, especially construction types that may be vulnerable to collapse or failure during an earthquake such as concrete tilt-up, improperly welded steel frame unreinforced masonry concrete, unreinforced concrete, or unreinforced soft story construction. The Structure recognition level also includes the building façade to help identify unreinforced or unanchored brick or exterior architectural elements.



It is important to remember that injury, damage, concurrent damage, cascading disasters like fire following the earthquake, business interruption or even increased repair or recovery costs can come from Space, Systems or Structure failures.

As a result, the first step in the Continuity Plan is to complete a "Back to Business" self-assessment to identify vulnerabilities from any source.

Step one: Identify your Risk

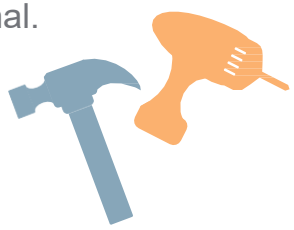
Complete the Self-Assessment to determine the specific areas your business needs to address to mitigate risk and return to operation following a disaster.

Step two: Develop a Plan

1. Based on the information in the BTB, complete the Mitigation Project Plan for SPACE, SYSTEMS and STRUCTURE to identify mitigation actions needed to ensure safety and business continuity.
2. Review the Quick Reference Guide to determine which mitigation actions you want to take based on potential impacts to your business.

Step three: Take Action

1. Make sure that your plan is approved by the building owner if you are leasing the building. Always check with your local building official for any mitigation activities for SYSTEMS or STRUCTURE.
2. Perform mitigation activities as prioritized in the Mitigation Project Plan. Document your mitigation as instructed in the application for SPACE, SYSTEMS and/or STRUCTURE with photographs, receipts or letters from an engineer or design professional.



After you have completed these steps, you will have the peace of mind of knowing you have done your part to promote safety, mitigate potential loss.

Step One – Back to Business – ASSESS your readiness

Based on the planning scenario, complete the 13 questions below to highlight some areas your Business Continuity Plan should address.

Space/Systems/Structure		
1. Can you operate without the following: computers, copier, fax machine, files, inventory, special equipment (i.e. x-ray machine, cash register, CC readers)?	yes no	Mitigation project plan - SPACE
2. Can you operate without any of the following: gas, power, water, internet, or telecommunications?	yes no	Mitigation project plan - SYSTEMS
3. Can you still operate your without access to the damaged building?	yes no	Mitigation project plan - STRUCTURE
Employees/Customers/Vendors/Suppliers (people)		
4. Can you pay your employees' salaries without business income?	yes no	business continuity plan - people
5. Are your employees able to get to work?	yes no	business continuity plan - people

Step One – Back to Business (continued)

IMPACTS ON YOUR BUSINESS		RESOURCES THAT CAN HELP MINIMIZE DAMAGE, DISRUPTIONS, & INJURIES
6. Is your business easily accessible to the public, your customers, and employees (e.g. parking)?	yes no	business continuity plan - people
7. Are you communicating status with employees, key customers, vendors and suppliers throughout your recovery?	yes no	business continuity plan - people
OPERATIONS		
8. If you can't operate business without access to the damaged building, will you need to relocate the business?	yes no	business continuity plan - operations
9. Have you set priorities on what operations your business needs to recover 1st, 2nd, 3rd, etc.?	yes no	business continuity plan - operations
10. Are your suppliers up and running or do you have sufficient parts/supplies on hand to continue business without resupply?	yes no	business continuity plan - operations

Step One – Back to Business (continued)

IMPACTS ON YOUR BUSINESS		RESOURCES THAT CAN HELP MINIMIZE DAMAGE, DISRUPTIONS, & INJURIES
11. Are you able to ship your product or provide services to your customers based on your current impacts?	yes no	business continuity plan - operations
12. Will you still have all your customers/clients after the disaster?	yes no	business continuity plan - operations
OVERALL OPERATIONS		
13. Will your losses be too much for your business to survive if it is closed/inaccessible for 3-7 days?	yes no	Continuity Planning

For each question that you answered 'No', address the specific issue in your Business Continuity Plan.
There are many business community planning tools available, a few resources are listed below.

resources

- Disaster Resistant Business (DRB) Toolkit, **www.Drbtoolkit.org**
- FEMA Business Continuity Plan, **www.fema.gov/media-library/assets/documents/89510**
- QuakeSmart Business Toolkit, **www.FEMA.gov/QuakeSmart**

The QuakeSmart Community Resilience Program has many resources that will assist in determining, as well as addressing, how to reduce the potential for damage to building and business contents.

Step two: Develop a Plan

1. Based on the information in the completed BTB, create a Mitigation Project Plan for SPACE, SYSTEMS and STRUCTURE to identify mitigation actions needed to ensure safety and business continuity.
2. Review which of these mitigation actions you want to take based on potential impacts to your business.
3. Estimate the costs of mitigation.

Step Two – Develop A Plan – Space/Systems/Structure

After you have identified the potential earthquake risks and determined how they could impact your business, it's time to create a mitigation project plan and decide which solutions you will use to reduce risks. By using this mitigation project plan it will support the business continuity planning process and the readiness process and bring you one step closer to recognizing your actions.

company: _____ **project Lead:** _____

name: _____ **title/Department:** _____

Address: _____

phone number: _____ **Email Address:** _____

Executive Summary:

background: (Summary description of seismic risk to include priorities)

goals and objectives:

Step Two – Develop A Plan – Space

These are nonstructural earthquake mitigation activities that can be completed with common tools and readily available materials. The lists below are not all-inclusive, so you may have additional items that require attention.

For guidance on nonstructural risks, please see QUICK REFERENCE GUIDE – SPACE in this package.

by performing all applicable Do-It-yourself activities, organizations will be space resilient.

NONSTRUCTURAL RISK	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
DO-IT-YOURSELF ACTIVITIES				
Computers	Strap or Velcro® monitor/laptop to desk, latch desktop to desk			
Tall Shelving	Attach to wall with brackets or flexible fasteners			
Library Stacks	Brace to floor, install guards for books			
Tall File Cabinets	Secure to wall, install cabinet latches to drawers			
Drawers and Cabinets	Install latches to drawers and cabinets			
Compressed-gas cylinders	Attach to wall with chains or braces			

Step Two – Develop A Plan – Space (continued)

These are nonstructural earthquake mitigation activities that can be completed with common tools and readily available materials. The lists below are not all-inclusive, so you may have additional items that require attention.

For guidance on nonstructural risks, please see QUICK REFERENCE GUIDE – SPACE in this package.

by performing all applicable Do-It-yourself activities, organizations will be space resilient.

NONSTRUCTURAL RISK	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
DO-IT-YOURSELF ACTIVITIES				
Hazardous Materials	Remove from business area			
Fragile Artwork	Secure to walls with screws and to tables with putty			
Free-Standing half-height partitions	Brace/secure to floor			
Miscellaneous Furniture/ Fixtures	Restrain/secure ceiling fans and lights with safety cables			

Use the **cost Assessment Worksheet** to estimate the approximate cost of mitigation.

Step Two – Develop A Plan – Systems

These are nonstructural earthquake mitigation activities that can be completed with common tools and readily available materials. The lists below are not all-inclusive, so you may have additional items that require attention.

For guidance on nonstructural risks, please see QUICK REFERENCE GUIDE – SYSTEM in this package.

by performing all applicable Do-It-yourself activities, organizations will be systems resilient.

NONSTRUCTURAL RISK	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
DO-IT-YOURSELF ACTIVITIES				
built-In partitions (Walls)	Bolt to structure			
Water heater	Strap–wrap 1 1/2 times, bolt to studs			
Windows	Protective film covering			
REPAIR PERSON/POTENTIAL DO-IT-YOURSELF ACTIVITIES				
Suspended Light Fixtures	Anchor and brace			
Suspended t-bar ceilings	Anchor and brace			

Use the **cost Assessment Worksheet** to estimate the approximate cost of mitigation.

Step Two – Develop A Plan – Systems

These are nonstructural earthquake mitigation activities that can be completed with common tools and readily available materials. The lists below are not all-inclusive, so you may have additional items that require attention.
For guidance on nonstructural risks, please see QUICK REFERENCE GUIDE – SYSTEM in this package.

by performing all applicable Do-It-yourself activities, organizations will be systems resilient.

NONSTRUCTURAL RISK	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
PROFESSIONAL SERVICES REQUIRED				
Free Standing Walls or Fences	Reinforce			
Exterior Signs	Reinforce, bolt to building			
Exterior veneer	Properly anchor/adhere			
Roof parapets	Reinforce, bolt to roof			
Air compressor	Anchor			
Propane/Fuel tank	Bolt, secure in place			
Suspended Space heater	Anchor and brace			
Automatic Fire Sprinkler-piping and heads	Anchor and brace			
HvAc Equipment and Ducts	Anchor			
Piping	Attach and brace, especially between floors			
Stairways	Install sliding connections, enclosure materials			

Use the **cost Assessment Worksheet** to estimate the approximate cost of mitigation.

Step Two – Develop A Plan – Structure

These are nonstructural earthquake mitigation activities that can be completed with common tools and readily available materials. The lists below are not all-inclusive, so you may have additional items that require attention.

For guidance on nonstructural risks, please see QUICK REFERENCE GUIDE – STRUCTURE in this package.

by performing **one** retrofit item at a minimum, organizations will be structure resilient

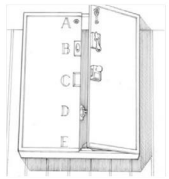
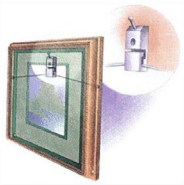
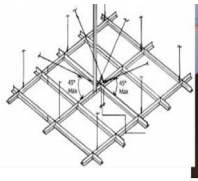
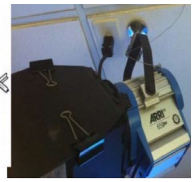
NONSTRUCTURAL RISK	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
PROFESSIONAL SERVICES REQUIRED				
Concrete tilt up construction without Anchored roof System	Anchor roof system to walls			
Unreinforced cripple Walls	Reinforce cripple walls			
Unreinforced concrete construction	Reinforce concrete construction			
Unreinforced Masonry	Reinforce masonry construction			
Unreinforced Soft Story construction	Reinforce soft story construction			
Unreinforced or Unanchored brick Elements in building or Facade	Reinforce or anchor brick elements in building structure or facade			
Walls not bolted to Foundation	Bolt walls to foundation			

Use the **cost Assessment Worksheet** to estimate the approximate cost of mitigation.

QUICK REFERENCE GUIDE– SPACE

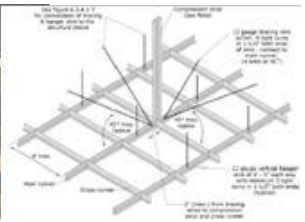
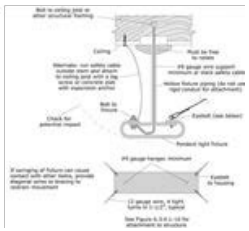
NONSTRUCTURAL RISKS	MITIGATION SOLUTION	MITIGATION ILLUSTRATIONS
Computers	Strap or Velcro® monitor/laptop to desk, latch desktop to desk	
Tall Shelving	Attach to wall with brackets or flexible straps	
Shelves with Supplies, Folders or books	Once furniture is braced, install lip guards to prevent shelving items from falling	 
Tall File cabinets	Secure to wall, install positive catch latches in non-locking drawers	

QUICK REFERENCE GUIDE– SPACE (continued)

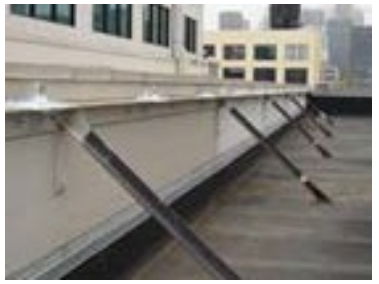
NONSTRUCTURAL RISKS	MITIGATION SOLUTION	MITIGATION ILLUSTRATIONS
Drawers and cabinets	Install latches to drawers and cabinets	 
Compressed-gas cylinders	Attach to wall with chains or braces	
Fragile Artwork and pictures	Secure to walls with screws and to tables with putty. Use closed hooks for hanging art and pictures.	 
Lights, ceiling Fans and Suspended t-bar ceilings	Secure with safety cables	 

For more detailed guidance, see the QuakeSmart Reference Guide or the FEMA E-74, Reducing the Risks of Non-Structural Earthquake Damage.

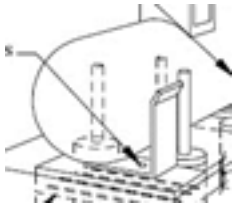
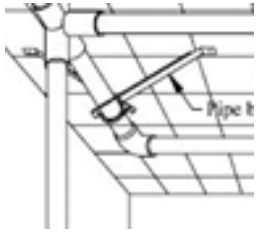
QUICK REFERENCE GUIDE– SYSTEMS

NONSTRUCTURAL RISKS	MITIGATION SOLUTION	MITIGATION ILLUSTRATIONS
built-in partitions	Connect to structure above ceiling and add reinforcement if made of heavy materials or supporting shelves	 
Suspended t-bar ceilings	Bolt grid to structure then strengthen with diagonal hanger or bracing wires also anchored to structure	 
Suspended Light Fixtures	All lights should be connected to structure, not to suspended ceiling. Keep pendant lights from swinging by using diagonal wires or bracing to restrain movement	 
Stairways	Should have a fixed connection to one floor and sliding connection to the other. If stair enclosures have brittle materials (unreinforced masonry), encapsulate or replace	

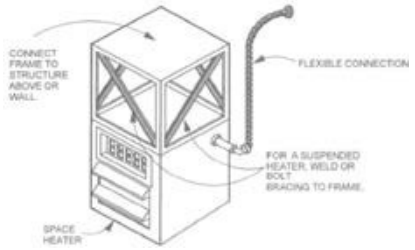
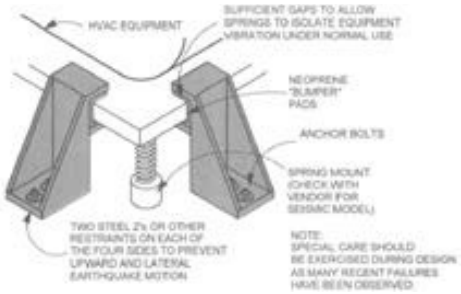
QUICK REFERENCE GUIDE– SYSTEMS (continued)

NONSTRUCTURAL RISKS	MITIGATION SOLUTION	MITIGATION ILLUSTRATIONS
Windows	Install protective film, especially were broken glass would cause the most injuries or damage	
roof parapets	Brace parapets to roof using engineer recommendations that include flashing & weatherproofing	
Exterior veneer	Consult with an engineer to determine if veneer is properly attached to structure with anchors or adhered	
Exterior Signs	Secure signage and canopies to structure and reinforce with vertical braces	

QUICK REFERENCE GUIDE– SYSTEMS (continued)

NONSTRUCTURAL RISKS	MITIGATION SOLUTION	MITIGATION ILLUSTRATIONS
propane/Fuel tank	Consult with an engineer to inspect and determine recommendation	
Water heater	Secure with heavy, metal-gauge strapping 1½ times around tank and bolt into wall studs. Water/gas connection should be flexible	
piping	Secure to structures and add reinforcement at vulnerable spots (joints, bends) and between floors	
hvAc Equipment & Ducts	Anchor to floor, and if on vibration isolators then secure each machine to each other and the floor. Follow local codes	

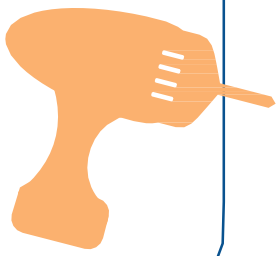
QUICK REFERENCE GUIDE– SYSTEMS (continued)

NONSTRUCTURAL RISKS	MITIGATION SOLUTION	MITIGATION ILLUSTRATIONS
Suspended Space heater	Secure to building structure and reinforce connections to fuel lines and other piping. Consult local codes.	
Air compressor	For equipment on vibration isolators, install snubbers or bumpers, otherwise anchor to structure	
Automatic Fire Sprinkler piping & heads	Brace to structure and reinforce connections (joints). Also, look for other equipment/hazards that may move and damage system	

For more detailed guidance, see the QuakeSmart Reference Guide or the FEMA E-74, Reducing the Risks of Non-Structural Earthquake Damage.

Step Three: take action

- Make sure that your plan is approved by the building owner if you are leasing your building
- Create a plan with your employees and their families ensuring success for their own plans, communication and preparedness.
- Perform mitigation activities as prioritized in the Mitigation Project Plan. Document your mitigation as instructed in the applications for SPACE, SYSTEMS and STRUCTURE with photographs, receipts or letters from an engineer or design professional.



Reviewers & Contributors

Mark Benthien, Southern California Earthquake Center (SCEC), Earthquake Country Alliance (ECA)
Leslie Chapman-Henderson, Federal Alliance for Safe Homes (FLASH)®
Barbara Harrison, FLASH
Ed Laatsch, Federal Emergency Management Agency (FEMA) Building Science Branch
Kate Long, California Office of Emergency Management (Cal OES)
Carmen Mackey, Los Angeles County Fire Department (LACo)
Janiele Maffei, California Earthquake Authority (CEA)
Ines Pearce, Pearce Global Partners
Wendy Phillips, FEMA Building Science Branch
Jeff Plumblee, PhD., FLUOR
Tim Smail, FLASH
David Vaughn, FLUOR
Eric Vaughn, FLASH
Margaret Vinci, California Institute of Technology

Valuable Websites

FLASH
http://www.flash.org/quakeSmart
http://www.flash.org/peril_earthquake.php

FEMA Earthquake Information/QuakeSmart toolkit http://www.fema.gov/quakeSmart
http://www.flash.org/quakeSmart/

Great Shakeout Earthquake Drills
http://www.shakeout.org

Disaster resistant business (Drb) toolkit
http://www.DRBToolKit.org