Improving Community Resilience Through Public-Private Partnerships: The BORP Strategy

BORP: Building Occupancy Resumption Program

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Loma Prieta Earthquake 1989

- 4 days after EQ before Mutual Aid/OES Inspectors started inspections
- 14 days for San Francisco & Mutual Aid inspectors to inspect all major buildings, & months to get to ALL
- Average 21 days for Owners to find & engage a Structural Engineer
- Months for follow-up decisions & actions on 360 Red-tagged buildings in S. F.
Are building owners ready to be shut down for an indefinite period?

- There is no guarantee of when the city’s inspectors will come by to inspect your building
  - City does **not** automatically show up to post every building
  - They only respond when requested or notified
- There is no guarantee of how well your building will perform
- Even if a new building is designed and constructed to new building code, how long will it take to get it reopened?
- If your building is fine, don’t you want a Green tag ASAP?
Case Study: DreamWorks Animation Glendale, CA: B2B Program

Phase 1
- Site visit
- Basic life safety evaluation
- Potential damage locations
- Building Assessments
- Response protocols

Phase 2
- Building Manuals
- Proactive Improvement
- Training for First Responders
- Emergency drills
- Emergency supplies
- Logistics and Operations

Phase 3
- Engagement with Engineering Firm
- Approval of Qualifications
- City/County Agreement Signed
- Response protocols
- Final Deputization

Phase 4
- Post-Event Crisis Response
- Site Visit
- Review Findings
- Tag Buildings
- Determine Next Steps
Steps to a Comprehensive Plan

- Inventory & rapid evaluation of all buildings
- Select buildings to include
  - Safety
  - Critical use
  - Evacuation
  - Shelter
- Tier 1 Seismic Evaluation of selected buildings

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<th>Other Identifier</th>
<th>Location Type</th>
<th>Street Address</th>
<th>Structural System</th>
<th>Approx. Date Constr or Retrofit</th>
<th>Description</th>
<th>Building Vulnerability Level of Expected Damage</th>
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Rapid Evaluation
Conclusions
Building Schematics with Critical Points

- Prepare notebooks and reference materials for selected buildings

NOTES:
1. CIRCLE INDICATES AREA TO EXAMINE.
2. ARROW INDICATES SUGGESTED FIRST ACCESS POINT.
3. EXAMINE WALL ENDS/COGERS FOR SIGNS OF CRUSHING.
4. WHERE WALL SURFACE IS VISIBLE EXAMINE FOR SHEAR CRACKS.
5. INVESTIGATE/NOTE AREAS OF VISIBLE NON-STRUCTURAL DAMAGE.
Inspections are more effective with a BORP

- A designated Engineer is committed to respond right away
- Already has studied the building – knows where the vulnerabilities are, as well as critical functions and exits
- Will not be overly conservative while posting
- Can help train owner’s staff to be more effective
- BORP works even if communications are down
- Will not leave the building to inspect other buildings, will follow up with actions needed to reoccupy as soon as possible
- Will be there to re-inspect after an aftershock
A BORP Reduces Danger

- Delays in inspection increase the likelihood of people re-entering an unsafe building

- Relieves the uncertainties associated with Inspectors unfamiliar with the buildings
  - A much more informed and accurate inspection

- Minimizes the wait for an Inspection after an Earthquake
A BORP Reduces Damage

- Assess the critical buildings as part of the preparation
  - May lead to some pro-active retrofitting of more critical and/or vulnerable structures
- Response is faster and actions can be taken faster to mitigate further damage from aftershocks....
- Re-inspections after aftershocks are immediate
A BORP Reduces Downtime

For A Hypothetical Yellow-Tagged Building

CURRENT PRACTICE WITH CITY & OES INSPECTORS
- Initial Inspections & Posting by City Inspector
- When?, What Posting? Is Posting correct?
- Immediate Measures for Re-occupancy
- Reclassifications & Re-occupancy
- Find & hire a Structural Engineer

A COMPREHENSIVE PLANNED PROGRAM
- Immediate Measures for Re-occupancy
- Reclassifications & Re-occupancy
- S. E. on retainer

WITH BORP IN PLACE
- Immediate Measures for Re-occupancy
- Back in business...
- S. E. on retainer
- Re-posting by S.E.
BORP benefits Building Owners

- Insures occupants’ SAFETY reoccupying building
- Will result in faster response for inspections
- Reduces chance of an overly conservative posting
- Increased “control” of building’s re-occupancy
- More aware of vulnerabilities before the event and have a chance to reduce them
- Can be assured of shorter response and recovery time
- An Owner wants a Green tag on the building ASAP to show to his/her tenants and the public!
Steps to enroll in a BORP

1. Formalize retainer agreement with an experienced consultant to create a program
2. Select the buildings to be included
3. Complete building surveys and BORP Building Applications
4. Submit Applications
5. Building Department will review and approve Applications
6. Organize annual updates to meet the Building Department’s and owner’s requirements
Currenty

- A Permit is required for emergency work
- Requires completed documents and application at Building and Safety office

Is this realistic?

Does this really help to speed up occupancy resumption?
Two Ideas:

1. Provide authorization to City Inspectors to issue permits on-site based on recommendations of Deputized BORP Inspector

or

2. Allow emergency work without permit and require permit within a deadline
   - Safety first
   - Owner’s financial risk if more work or re-do is required later
   - Apply to all buildings
BORP inspires confidence

- **Owners** know that they have reduced their risks
- **Clients** know that the facility will be up and running sooner to service them
- **Tenants** feel safer and are confident because of their reduced business risks
- **Employees** feel safer and confident their jobs will be secure
- **Increases Citizens’** confidence in City government
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