Proposed Best Practice

Building Occupancy Resumption Program (BORP)
City and County of San Francisco
Department of Building Inspection
Implemented 1996

Description
The Building Occupancy Resumption Program allows building owners to pre-certify private post-earthquake inspection of their buildings by qualified engineers upon building department acceptance of a written inspection program.

Problem
After the 1989 Loma Prieta earthquake, private building owners experienced delays in having their buildings inspected for occupancy safety while DBI and mutual aid inspectors were engaged in inspection of collapsing structures, critical facilities, and City buildings. Some safe buildings were posted in error and others were evacuated awaiting inspection, causing business and tenancy interruption.

Solution
BORP was developed by a public/private partnership between the City & County of San Francisco Department of Building Inspection (DBI) and local chapters of the Building Owners and Managers Association (BOMA), Structural Engineers Association of Northern California (SEAONC), and the American Institute of Architects (AIA). Building owners - or tenants with the permission of owners - employ qualified engineers (having design/inspection experience with buildings of similar size and complexity) to develop building-specific post-earthquake inspection plans. DBI staff and SEAONC volunteers review structural inspector qualifications and inspection plans. Upon approval, DBI gives building owner/structural inspectors official City placards with which to post the building following an earthquake and authorizes automatic deputizing of the structural inspectors upon declaration of a local emergency. Within 8 daylight hours of an earthquake, the inspectors are to respond and the inspection program is to be implemented, reporting results to DBI within 72 hours.

Examples
In 2002, San Francisco has more than 50 buildings in the Building Occupancy Resumption Program; references are available for building owners participating in the program. The written program is available on the Internet at www.seaonc.org under Members, Disaster Emergency Services Committee, BORP; there are also guidelines for writing and maintaining a BORP plan, and FAQs for building owners and engineers. A completed BORP building-specific inspection program is available for review from DBI.

Resources
Major resources are people – building department personnel to administer the program (approx. 5% of one fulltime employee, depending upon extent of building owner participation) and volunteer engineers. The jurisdiction supplies green, yellow, and red placards and Detailed Evaluation forms for the ATC 20 Procedures for Postearthquake Safety Evaluation of Buildings.

Costs to building owners to employ engineers to develop and maintain BORP programs vary widely - depending upon the size and complexity of the building, the familiarity of the engineer with the building, availability of construction and remodeling drawings, and the degree of detail
requested by the building owner. BORP program costs for a 30-story building have ranged between $2,300 for a plan meeting minimum requirements and $60,000 for a plan including a complete engineering evaluation and retrofit recommendations. San Francisco DBI charges no fees for review of submittal, but a minimal fee could be assessed to cover personnel costs. Maintenance fees are agreed between building owners and engineers to include costs of annual renewal, inspector training, and periodic exercises.

Adaptability/Sustainability

BORP can be easily adapted for use in other cities that have the cooperation of local structural engineers. It may be most effective in larger cities that have proportionately fewer building inspectors. It was originally developed for major commercial buildings but was expanded to include residential apartments and smaller buildings critical to utility or business operations.

Maintenance of the program requires annual renewal to address any changes made to the building or to the inspection team and to maintain current contact information.