



Happiness from Retrofitting

Be proactive and reap the benefits

By F. Stephen Masek

The St. Patrick's Day earthquake was a reminder that most apartment buildings in southern California have not **yet** been subjected to high loads from an earthquake. There have been earthquakes, but only certain areas were subjected to high shaking forces. The upcoming mandatory seismic retrofits of many thousands of apartment buildings with "soft" lower levels which will fail when subjected to significant earthquake forces has many positive aspects:

- Since the retrofits will be mandatory, all owners of such buildings will be in the same boat, with none having a competitive advantage or disadvantage relative to other owners of such buildings;
- Once the buildings are retrofitted, there is no reason for potential tenants to shun such unsafe buildings in favor of buildings which have no soft lower level or which have been voluntarily retrofitted;
- Owners will not need to be worry so much about the potential for injured or dead tenants and the resulting moral responsibility and lawsuits, nor the loss of income and equity when the buildings collapse;
- The engineers, consultants, and contractors needed for such work are specialist professionals, so owners of relatively small apartment buildings will enjoy the same levels of professionalism routinely expected by owners of much larger office, commercial, government, and institutional buildings.

Published estimates indicate that 20,000 apartment buildings will need to be retrofitted. All owners of apartment buildings with soft lower levels would be wise to begin planning immediately, as the cost of the retrofit work will surely rise when such a large number of buildings need to be retrofitted prior to the deadline. The initial consulting and engineering work is inexpensive enough that owners should be able to take it out of their cash flow.

The first step is having a California Certified Asbestos Consultant and California Lead Inspector to perform at least a limited asbestos and lead survey of the areas of the building which will need to be modified. The contractors involved with seismic retrofitting projects are far above the "one old truck and a few tools" types, so they will expect asbestos and lead-based paint to be properly addressed. They and the engineers have got far too much to lose to risk the big fines or jail time associated with violations,

plus the moral obligation to protect their employees and apartment occupants from exposures to asbestos and lead (the dangers of asbestos have been known for a century, and Benjamin Franklin wrote a letter regarding the dangers of lead, so these issues are not new and the dangers are real).

Many owners have already had their entire buildings inspected for asbestos and lead, but owners who have not yet had their buildings inspected would save money by having the entire building inspected while the consultant is there. Only the areas to be disturbed must be inspected for asbestos and lead. The cost of the limited inspections is a minor part of the overall project cost, typically \$600 to \$1,000. The cost of inspecting the entire building varies depending on the age (more for pre-1960 buildings), number of units, and number of bedrooms and bathrooms, but is typically \$2,000 to \$3,300.

In many buildings, the only way the seismic engineers are able to obtain sufficient information on the existing structure is to make relatively small inspection holes. Just making those holes would require assuming that asbestos and lead are both present, and compliance with numerous federal Occupational Safety and Health Administration (OSHA), Cal/OSHA (California Division of Occupational Safety and Health, or DOSH), federal Environmental Protection Agency (EPA), and South Coast Air Quality Management District (SCAQMD) regulations, so that is why the limited asbestos and lead surveys should be done first. The SCAQMD regulators are local and active, and many cities require that asbestos and lead surveys be performed before issuing building permits.

Fortunately, properly handling any asbestos containing materials and lead-based paint identified has become routine. If any abatement (removal) is needed, such as removal of some asbestos containing stucco to access portions of the structure in the carport area, that work by a licensed abatement contractor is often only \$2,500 to \$5,000.

The next step is to have a licensed structural engineer who is a seismic specialist and state licensed structural engineer inspect the building and design the retrofit work. Here owners have some choices, as they may choose to go beyond the base requirements to minimize earthquake damage to their building and their cash flow. The base requirements will be designed to prevent collapse, not to minimize damage and disruption of tenancies. The engineer will work with them to consider design alternatives which offer the owner's preferred mix of cost, appearance, and functional/operational impact. This engineering work is also only several thousand dollars.

Once the plans and specifications have been completed, licensed contractors who perform retrofit work are invited to a job walk to see the building and the job site conditions, and then submit firm-fixed bids for performing the work. It is important that the bids be firm, fixed price, and references the plans and specifications, so there are no costly delays or change orders during construction. After receiving the bids, the owners will know the cost of the retrofit, and will be able plan and budget for that improvement work. Many owners will be able to save money by combining the retrofit work with other maintenance or improvement work such as exterior repainting or re-piping.

In most of the buildings which need to be retrofitted, all or parts of the tuck-under parking will be unavailable while the work is being done. Owners also need to plan for temporary replacement parking, perhaps by making arrangements with a nearby parking lot or parking structure operator. The impact on parking is another good reason to perform the retrofit work immediately, rather than waiting until numerous buildings in the same neighborhood are being retrofitted at the same time. AA

F. Stephen Masek
Masek Consulting Services, Inc. President
23478 Sandstone Street, Mission Viejo, CA 92692
cell: 714-878-5284 office: 949-581-8503

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