



SAUNDERS
COMMERCIAL SEISMIC RETROFIT
www.saundersseismic.com

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Design Build-

May not work for a voluntary Seismic retrofit!

Deciding on a design-build approach for your seismic retrofit definitely has advantages and major disadvantages. You gain the convenience of a single point of contact and the benefits of one company to deal with, however there are some factors you should consider.

When you sell the building in the future the buyers engineer may not agree with the same PML as the engineer that designed your retrofit. They will want a discount of the purchase price to bring the building under a 20 SUL or PML90.

As you plan for your RFP (Request for Proposal) for the seismic retrofit, you will want to review the goals of the retrofit with your client/the building owner. There are various methodologies to strengthen a building (which is good as some are more cost effective than others) and there are various levels / criteria for the design. It is very important to define the retrofit goals / design criteria in your bid package, so that all bidders achieve the same goal with their proposals and you can compare "apple to apples". Because the scope of the retrofit involves "structural upgrades" and not maintenance items, extra caution should be taken.

As I mentioned, utilizing a structural engineer with proven experience in seismic retrofit, to function as a third party "peer review" engineer for this process could be helpful in ensuring the building owner's goals are achieved.

Here's a little background information:

Typically lenders and insurance companies rely on what's known as a PML (Probable Maximum Loss) and they're looking for a building to achieve a PML of less than 20%. There's is no "universal standard"; however, this is most commonly the case.

Building damage estimates are given as a percentage of building replacement value. The average (50%) damage estimate is reported as a PML50 or scenario expected loss (SEL475). The estimate that is the upper bounds for 90% of the probability distribution is reported as a probable maximum loss (PML90) or scenario upper loss (SUL475).



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When you present your RFP to bidders, you will need to specify the PML in terms of SEL or SUL, in order to establish the design criteria for the retrofit.

To complicate matters further, keep in mind, that the PML/SEL and PML/SUL can be calculated differently by various PML companies/providers. After you review the design-build proposals and you select a winning contractor, you may want the 'peer review' engineer to confirm that the proposed/conceptual design will in fact yield the desired PML.

Note: In the past, when Saunders has participated in design-build retrofits, we have provided our design-build proposal as a conceptual budget, along with a margin of + or - 15% for construction costs. Once the structural engineer generates construction documents, we then provide final pricing for the construction costs. This is to the benefit of the owner and the contractor. Until final retrofit drawings are completed, it's very difficult for a contractor to provide their most competitive proposal.