Building Façade Inspections

One Engineer's Opinion

By Craig Barnes, P.E., S.E.

A piece of a building that falls from above may obviously have disastrous results for passersby below. Those cities in the United States with an older population of buildings, and with taller buildings, are more prone to this potential. New York, Chicago, and Boston are older cities where objects falling from building façades have made the news nationally, and certainly many more have made the news locally. It makes sense for façades to be evaluated on a periodic basis in an attempt to prevent such occurrences. The referenced cities have ordinances in place with differing language. However, the intent is the same: to detect problem areas before the public is put in danger.

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The City of Boston Ordinance 9.9-12, in capsule form, states that the façade of high rise buildings (over 70 feet in height) must be inspected by a registered architect or engineer at least once every five (5) years, or once a year for unoccupied buildings. Buildings 125 feet or less in height may be inspected with the aid of binoculars or from adjacent structures, while buildings greater in height than 125 feet must be closely inspected through the use of swing staging or window washing equipment. Within thirty days of the inspection, a report must be filed with the Inspectional Services Department. This report must list the address of the property, name and address of the owner and architect or engineer performing the inspection, and the date of the inspection.

The report includes a description of the building, including height, type of construction, use and occupancy, and the existence of any appurtenances, as well as a description of the method of inspection, documenting recent structural or envelope repairs and describing the conditions found (i.e. structural condition, weathertightness of the façade, condition of flashing, sealant, locations of cracks, displacements etc), recommendations for repairs, if any, and the degree of severity. Upon receipt of the stamped report from a registered architect or engineer reporting a safe condition, the Commissioner will issue an exterior wall certificate, without which a building cannot be occupied.

Although simply stated and seemingly straightforward, there are two factors that hinder the implementation of this requirement: *cost* and *competition*. Many building owners or owners' representatives are reluctant to spend the money to have the facade reviewed. At a minimum, the charge will be the *cost* of the survey, which does not appear to have any tangible return if there are no deficiencies recorded. In the worst case, the professional will discover deficiencies that need to be corrected, which to the owner means even more money.

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Some owners simply view this as an insurance issue — as long as insurance is in place, which is all that the owner really cares about. Then comes the *competition*. A structural engineer who responds to a Request for Proposals (RFP) for a façade survey, proposing that the study be done from a lift — for how else can you make a rational assessment of the upper floors of a sixteen story building? — will be at a distinct disadvantage

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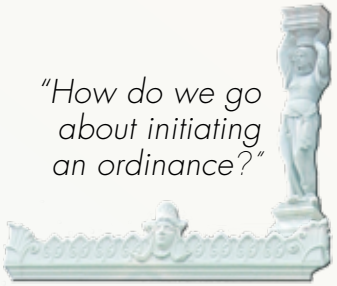
when a competitor tells the owner that it can be done from the street level with binoculars for one quarter of the cost.

So, how should the structural engineering profession address the issue? First, we should agree that there is a need for façade inspection, so that the public is protected in the best possible way. Is it the municipal bureaucracy that should establish and police the ordinance? Probably not, as some bureaucracies are simply asking to have an engineer's letter in the files so that the municipality can be protected. Is it the owner or the owner's representative? From the previous discussion, you can pretty much sense why that won't work. Is it the insurance company that pays the claim when somebody is injured? Not likely, because there aren't sufficient cases of injury to register on the insurance companies' scale. Is it the public that is being protected? No, because they are only inspired to the extent that the press fires the issue up, or if they know of someone who has experienced an injury.

How do we go about initiating an ordinance? It depends on the municipality. Those that simply monitor their files, so that on a periodic basis there is a letter from a professional in that file, will probably deal with a detailed ordinance in the same way they would deal with a casual ordinance. Working directly with the inspectional service level folks may be a viable opportunity. The façade inspection program may be viewed suspiciously by the administrating body, as more work for an already overworked staff. In that case, structural engineers will need to become involved and work through the state SEA and other local professional organizations. A properly established program can be self-sustaining through a nominal fee structure so that it is not simply adding operating costs for the municipality.



For the municipality that needs to strengthen a weak program or set up a new procedure, the question becomes what type of program or procedure should be implemented? The promoting professionals could view the programs presently in place in Boston, New York, Chicago, and perhaps other cities of which they are aware; add to that library ASTM E2270-05, *Standard Practice for Periodic Inspection of Building Facades for Unsafe Conditions*, and then pick resources from those references that will best fit the locality. Where structural engineers band together to do something, mountains can be moved. Look at what we have done with building codes, education, and certification – façade inspection is merely a small hill.▪

Craig E. Barnes, P.E., SECB is principal and founder of CBI Consulting Inc. As an engineer registered in both the civil and structural fields, Mr. Barnes has over 40 years of experience designing, coordinating, and managing structural and civil engineering projects throughout New England. Craig currently serves on STRUCTURE® magazine's Editorial Board.