

Email to: GProakis@somervillema.gov

October 4, 2012

Mayor's Office of Strategic Planning & Community Development
City of Somerville
93 Highland Avenue
Somerville, MA 02143

Attn: George Proakis, Director of Planning

Re: Structural Peer Review – Phase II Project at 100 Fellsway, Somerville

Dear Mr. Proakis

Weston & Sampson is pleased to submit our findings and recommendation as part of the structural peer review for the above referenced project in accordance with our agreement dated September 27, 2012.

Several documents were provided by the City for review by Weston & Sampson that include: a Landscape Plan (drawing L-100); Geotechnical Engineering Evaluation, prepared by McPhail Associates, dated Jun15, 2012 and a Structural Evaluation letter report prepared by Room & Gaurracino, dated June 26, 2012. There were also test results of brick and mortar samples that were summarized by The Thompson & Lichtner Co. dated May 22, 2012 and May 1, 2012, respectively.

On September 18, 2012, this writer met Mr. Charles Zammuto and his associate Val DaCosta on site to perform a cursory walk-through inspection. We started on the uppermost level of the multi-story building and stopped at each floor down to the first level (basement) and observed the condition of the adjacent one-story building. A walk around the entire perimeter of the(4) story building was also done. Several representative photo graphs were taken to record the typical existing conditions of the interior and exterior framing, flooring, brick.

In the multi-story building there are many structural deficiencies that were found such as split and checked wood beams and columns, lack of connection details, evidence of previous structural repairs, un-level floors, water damage, buckled flooring, noticeable deflection of beams and new shoring members on the 2nd level and in the basement. There were cracks in the brick walls and at window headers. The previously dug test pits revealed deteriorated and rotten column bases in the basement and questionable rubble stone foundations. The basement slab has random cracks throughout and is un-even. Mortar joints were soft and the brick surface scaled. The water marks on the basement wall indicate that the building is subjected to water intrusion during storm events. Around the exterior of the building there are numerous locations where the brick walls are cracked and mortar joints missing. The top of the brick chimney is in a state of disrepair. The elevator shaft appears to be settling and rotating away from the main structure. The brick test reports indicate substandard compressive values. The geotechnical report identifies poor soils (organics and clay) susceptible to continued settlement unless they are reinforced with a deep pile foundation system.

Based on our understanding of the project, the International Existing Building Code (IEBC) defines the proposed work as a Level 3 Alteration and there will be a Change of Occupancy. To comply with the IEBC requirements for a Level 3 Alteration, a complete structural evaluation and analysis of the building is required, which will corroborate the amount of work to both the substructure and building superstructure that is needed.

The level of work and the extent of the structural improvements will ultimately depend on the re-use program for the building, such as parking (below), commercial space and residential condominiums on the upper floors. The actual floor loading conditions, both increased dead loads and current live loads dictated by the IBC will need to be determined. Analyzing the floor system elements with the new load conditions will need to be done in order to determine whether beams and columns need to be reinforced or replaced. The most significant structural activities will be the underpinning of the foundation system. A series of drilled mini-piles and concrete foundation walls and /or needle beams will need to be installed to prevent future settlement and to make the foundation capable of meeting the seismic loading criteria. Once the building is stabilized, the existing masonry deficiencies should be corrected by methods that would include removing and replacing broken bricks, re-pointing soft and damaged mortar or repair masonry using an epoxy crack injection system. As mentioned above, the elevator shaft is rotating away from the main building. At a minimum the foundation will need to be underpinned as described in the above paragraph. To determine the appropriate corrective measures, a more in depth review of existing conditions will be necessary; by removing the exterior siding and interior finishes to expose connection details. Based on the findings, the elevator shaft may require full replacement or structural reinforcement and additional connection modifications made back to the main building.

Given the current condition of the structural elements it is my opinion that the conclusions and recommendations provided in the Roome & Guarracino report are valid and that the large quantities of structural renovation work that is likely to be required, goes well beyond typical activities that would normally be done to stabilize and reuse a building of this type and size.

If you have any questions concerning our recommendation, please contact me directly at (508) 698-3034 x7402, or via e-mail at campbellr@wseinc.com.

Very truly yours,

WESTON & SAMPSON



Richard A. Campbell, PE
Team Leader/ Structural

