

# **STRUCTURAL INSPECTION REPORT**

(Property Address: 336 Summer Street, Somerville MA)

## **1 Objective**

The objective of this report is to document results of a structure inspection performed on the property located at 336 Summer Street, Somerville MA.

## **2 Inspection Results**

### **Basement**

Due to historic water damage, the concrete slab in the basement was torn apart without its debris removed. Just cleaning up the basement and pouring a new concrete slab can be very expensive, due to a confined working space within the existing house. It is important to note that a concrete slab is necessary.

Many of the structural beams, which support the 1<sup>st</sup>-floor, either have been significantly overstressed or have deflected unacceptably too much. Consequently, lally columns have been added over the years to reduce the spans of deficient beams. However, most of these added columns sit in the mud without any evidence of concrete footing underneath them. Some show rusty bottoms, because no concrete footing/slab provides them with protection from moisture.

By engineering judgment, basement brick walls do not have wall footing. It is observed that some sections of the brick walls show serious deterioration over time and need expensive repair like adding footing below them.

### **First Floor**

Due to uneven settlements of the foundation and unacceptably large deflections of the beams in the basement, floors of all the rooms on the 1<sup>st</sup>-floor are not leveled, so sloped to make daily living uncomfortable. Some hallways are about 30" wide and thus need widening. The stairs have too high risers and too narrow treads. However, structural deficiencies of the existing house make any alteration too expensive to implement

### **Second Floor**

Due to uneven settlements of the foundation and unacceptably large deflections of the beams in the basement, floors of all the rooms on the 2<sup>nd</sup>-floor are not leveled, so sloped to make daily living uncomfortable. Some hallways are about 30" wide and thus need

widening. The stairs have too high risers and too narrow treads. However, structural deficiencies of the existing house make any alteration too expensive to implement

### Roof

Rafters are 2X6, spaced approximately at 24" center to center. 2X6 @ 24" not only are structurally deficient for code-required snow load of 30 psf but also are insulation deficient, creating an environment-unfriendly living.

### **3 Conclusion**

Based on as-is conditions, the conclusion is that It is prohibitively expense to retrofit the existing house to meet requirements of the current Massachusetts Building Codes. A careful examination of the house also shows that this house does not have any architectural details of historic values nor provides any diversity to the neighborhood. Its worn-out conditions can only adversely affects the image of the community. A new house in its place, however, will definitely help revitalize the neighborhood and beautify its image.



Chunjian Xu, Ph.D, PE, Licensed Construction Supervisor

P. O. Box 1533  
Andover, MA 01810  
781 354-0975