

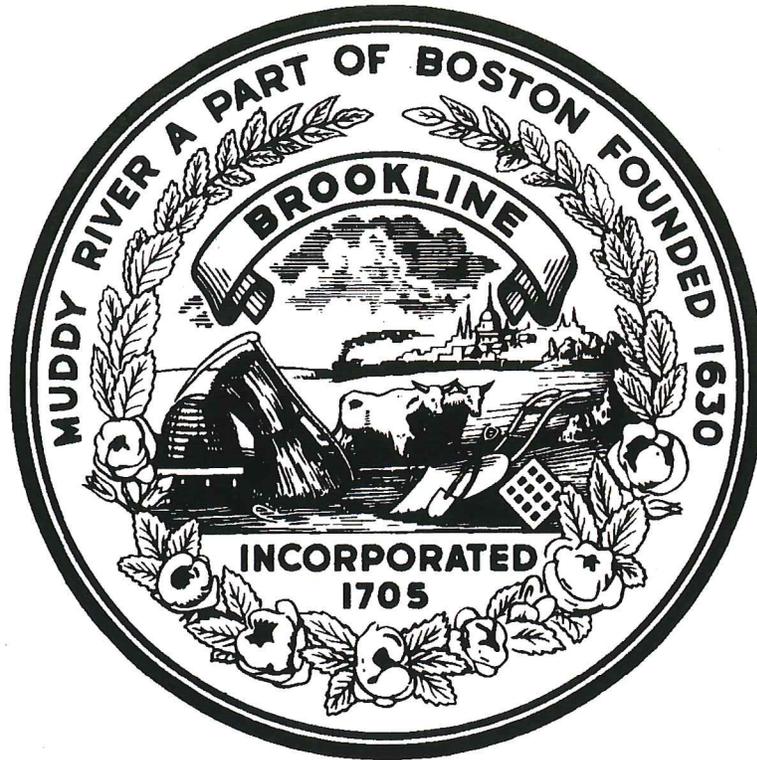


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Masonry Evaluation of Town Buildings Brookline, Massachusetts

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September 18, 2013

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Tel.: (617) 264-6449
 Email: rmasak@brooklinema.gov

Proj.: Brookline Masonry Evaluation of Town Buildings
 Re: Capital Needs Study
 CBI Job No.: 13078

Dear Ray:

CBI Consulting Inc. (CBI) is pleased to present the following Capital Needs Study for masonry repairs to various buildings for the Town of Brookline, Massachusetts. This evaluation is based on 37 masonry buildings throughout the Town and is based on a report prepared by McKenna & Sons that was commissioned by the Town of Brookline in 2012. Based on the McKenna report, CBI was directed to review six (6) buildings whose cost estimates were over \$500,000. Those buildings are Baker School, Driscoll School, Main Library, Old Lincoln School, Physical Education Building, and the Public Safety Building. CBI conducted a visual evaluation of those six (6) facilities in order to prepare a more detailed cost estimate and determination of need for planning purposes.

Ultimately, one of the main purposes of this report was to incorporate the cost estimates for each of the 37 masonry buildings into an existing capital needs estimate prepared in 2010 by Russo Barr Associates for all the roofs of all the buildings (80) in the Town of Brookline. CBI has incorporated the estimated cost of masonry work within this 20-year capital needs spreadsheet as a way for the Town to make budgeting decisions on a yearly basis. The intent was to spread out the masonry costs over the 20 years. The costs reflect the masonry repair needs in regard to severity and priority but also provide a plan for an ongoing repair program that will address the needs of the Town on a long-term basis. This is a prudent approach from a Facilities Management standpoint which will address masonry deficiencies in a timely manner and help to reduce future costs.

The McKenna report broke down the costs into three "priorities". Priority One is the most severe and urgently needed work. Priority One work includes life safety problems, tripping hazards, and structural problems. It also addresses open joints and other openings in the exterior of walls that allow water into the system which can cause accelerated deterioration

Priority Two work has lesser urgency but is still needed. There is certainly more flexibility in a timeframe to have Priority Two work completed. However, Priority Two work needs to be accomplished to maintain the integrity of the building envelope. Priority Two work left unaddressed will certainly become Priority One work, potentially compromising the building structure and costing more in the future.

Priority Three work is referred to as deferred maintenance. It is work that should be accomplished if funds are available. It is the most flexible of the work categories and while this work should be done, the practicalities of budgeting means that most of this work can be

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put off to a later date. Again, however, if left unaddressed Priority Three work will soon become Priority Two, etc.

The CBI review of the six buildings included the same type of prioritization of costs.

While the McKenna report provides a big picture view of the problems in each of these buildings and their associated costs, we feel that the Town should carry a contingency to cover areas in the report that do not address the entire problem or miss the mark in terms of evaluation. (Therefore we have increased the McKenna estimates based on the following comments and including a design contingency. Please note that this in no way means that CBI is taking responsibility for the content of the McKenna report.) Our experience, however, leads us to note the following items that either need further exploration or that the Town should put aside additional funds for in the event that more work is required than what was described report:

- In general, we find that evaluations of cupolas are consistently underestimated. Most cupola evaluations are done visually from a distance and it can be hard to quantify all the deterioration. Wood can only be evaluated by sounding and probing. So we find that deteriorated wood is often under quantified and a large contingency should be carried for any cupola work. A large contingency should be carried for any other deteriorated wood work as quantities tend to grow once the material is removed and the substrate is exposed. Additionally, if paint is missing from wood, it is already beginning to rot and, therefore, should be properly examined for further deterioration.
- Our experience is with municipal governments is that funds are dear and any product applied to the building should be a long-lasting, low maintenance product. Therefore, we recommend silicone sealants rather than urethane sealants to extend the life of the product from 5 years to 20 years.
- Throughout the McKenna report, roofing work is included. It is likely that they felt that these roofing issues would affect the exterior walls. We are unclear as to whether or not the roofing work noted in the McKenna report is the same roofing work listed in the Russo Barr cost estimate. Evaluating this portion of the work is beyond our scope. However, we have broken out the roofing from each of the McKenna lists and provided it in a separate column so that the impact of the masonry can be viewed on its own.
- A fair amount of the work noted on the "masonry" evaluation includes replacement of sealants around windows and penetrations. This connection of the masonry to the material in the openings is critical to keeping the interior of the wall dry and is important as part of this project. There are some buildings in the McKenna report that do not address sealants.
- The McKenna report also notes the need for chimney liners in many circumstances. For the six (6) buildings in our detailed evaluation, we engaged the services of Boston Chimney Company to provide that expert evaluation and their report is included. We know that water intrusion into the chimneys causes deterioration, however, we feel that chimney liners fall into the mechanical category. That being said, we have broken out all the chimney liner references into a separate column.



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- We are concerned that the McKenna report does not address the need for replacing steel lintels over windows in a sufficient quantity. We have added a contingency for this item.
- In one particular area we feel that there is more than likely a structural problem that must be addressed that cannot be fixed with "pointing". The large round chimney at the United Arts Building (UAB) has several large longitudinal cracks and we observed displacement of the masonry. We feel that further evaluation of this structural element is warranted.
- Our scope did not involve any other evaluation or detailed analysis of the McKenna report and CBI is not responsible for the results of the McKenna report.
- In several instances the McKenna report recommends patching material for limestone decorative elements. This is a discussion that must be had with the Town regarding longevity. Patching material for natural stone it is not a long-term solution and in some cases is not a good aesthetic solution. However it is the most low-cost solution. The option of installing stone Dutchmen should be considered along with costs. Repair of "cast-stone" usually involves patching and is appropriate.
- A contingency should also be carried on the larger historic masonry buildings such as the Lawrence School. We feel that there is likely much more work in terms of masonry repairs and waterproofing that will be observed, investigated, and noted in future reports by consultants hired to prepare plans and specs for future work.

Our submission also includes elevations of the six (6) buildings that were reviewed in detail to note the locations of the deterioration with a detailed legend. In this way, future consultants can refer to the elevations as a way to relate the work to the cost estimates and budgets used by the Town to prioritize and plan for future work to locations on the buildings.

Additionally, we have included our detailed cost estimate for the six buildings as well as hazardous material reports for the six buildings and the chimney liner report for the six buildings. Finally, CBI was requested to review the windows in five buildings and those observations and recommendations are attached in Section 6.

We are available to meet to discuss the findings of our report. Please call with any questions.

Very truly yours,
CBI Consulting Inc.

Michael S. Teller, AIA, NCARB, LEED BD + C
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MST/rar
 13078 L001 Capital Needs Study 09-18-13



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