

# **BORGAL- JOKINEN REPORT**

## **ON THE CONDITION OF THE STRUCTURES**

In early 2005 BCLG made a request through the architectural Conservancy of Ontario for an assessment of the lighthouse and the keeper's house, in order obtain a professional opinion of their condition. An inspection was conducted by Christopher Borgal of Goldsmith Borgal and Company Architects, Toronto, and Eric Jokinen, a Burlington based structural engineer. The following is excerpted from their report.

### **4. Condition Report:**

#### **4.1 Foundations:**

The foundations appear to be performing very well on both buildings. No significant cracking or settlement was noted.

#### **4.2 Superstructure:**

Lighthouse: The masonry tower shaft is stable and is not showing any serious deformations and cracking. A number of masonry joints are open, particularly on the east side facing Lake Ontario. The joints have opened due to weathering, causing freeze/thaw action in the joints which eventually leads to their deterioration and failure. Thus the observation of greatest deterioration occurring toward Lake Ontario makes sense as this is where precipitation borne on the east wind off the lake occurs.

Deteriorated or inadequate mortar joints must be replaced by a qualified heritage mason in accordance with good conservation practices. All loose joints made with inappropriate materials must be rebuilt. The deterioration of masonry will continue unabated in this environment. The pace of deterioration will accelerate exponentially from this point on and restoration work should proceed without delay.

The interior surface of the masonry is in much better condition, reflecting its protected location.

The wood stairs are unsafe and must be rebuilt and should be done so to conform with the original details, including the beaded stringers which are very typical of 19th century sites.

There are broken windows in the lantern which must be replaced. Originally, these windows would have been of plate glass which is heavy and expensive. A suitable alternative would be the use of laminated glass which can withstand weather and vandals and which does not look substantially different from the original.

An environmental clean up of the pigeon guano must be done by a licensed hazardous waste contractor. After that is done, it is very important that the buildings be secured to prevent re-contamination. In addition, original coatings of lead-based paint should be removed, particularly from the lantern, and replaced with rust-stabilizing coatings (based on Tannic acid or other similar compounds).

The structure of the lantern appears to be stable and sound. This can only be confirmed after the environmental clean-up is completed. The usual clean up and painting tasks will be required. Access is difficult and this will be the largest cost item related to the lantern.

It must be noted that while the lantern is unusually complete when compared with other lighthouses in Eastern Canada, the handrail at the lantern level is not secure. Some repair to metalwork and to the supporting deck must be done to make this level safe.

Access for masonry repairs must be coordinated with the repairs to the lantern to minimize access costs. We assume that the shaft will have to be scaffolded in order to get good access for masonry repairs.

### **Light Keeper's Cottage**

This building was originally a 2 story 2 unit residential structure. The structure itself is sound and no major structural repairs are required.

Minor structural repairs are required in the basement where a post is not adequately supported and some beams may need reinforcing due to inappropriate modifications that have weakened them.

The Wooden shed at the back has settled, perhaps due to rot in the supporting timbers. The presence of split lath, the appearance of a similar (though differently clad) rear addition in early photographs and the general arrangement suggest that this was a frame summer kitchen for the building. A frame addition would reduce the amount of heat generated by cooking activities in the main house during the summer. This addition is therefore an important part of the main house.

Masonry restoration is required. There are several areas of loose bricks, near the foundations, and at the top of the gable walls. The original coping on the top of the gable walls has been removed and not replaced. This allows water to enter the middle of the brick wall. Of note are the small chimneys at the roof which sit on "shoulders" formed by the truncated remains of the original chimneys.

There is sufficient photographic and in situ information to permit a complete restoration of these elements.

We were not able to check the condition of wood members framing into foundation walls or upper exterior walls. This should be done at every opportunity where exterior walls are opened.

There are signs of water infiltration into the building at the gable ends of the second floor ceiling as evidenced by failing plaster. This may be due to the lack of copings on the gable walls.

## 5. Architectural Assessment:

The composition of the lighthouse together with the keeper's house is remarkable for its completeness and its proximity to a major urban area. Both the house and the lighthouse, while modified since original construction, sufficiently complete in their details, or remnants of details, that a good quality restoration can be undertaken.

### Lighthouse

The details of the lighthouse include the masonry generally, the entrance door, the interior wood landings, floors and stair (which requires considerable repair and restoration), and the cupola/lantern. The latter is very complete and includes the vent from the last fitted light source (presumably carbon arc). It is noted that the lantern house does not conform to images published as late as the 1870's and it is suggested that the existing may be a replacement. Early lantern houses of European manufacture typically had rounded tops. Further research is recommended.

### Keeper's House

The exterior masonry of the Keeper's House is multiple-wythe masonry in excellent condition, and of a high order (Flemish Bond on the front wall with English bond on the sides and rear). Although some changes were done to the windows, notably on the south elevation, these are easily discernable due to the manner in which the brick is cut and detailed (notably at the voussoirs) and these interventions can be reversed if deemed to be in the best interests of a restoration.

Interior trim is sufficiently intact and original to be able to deduce earlier arrangements of doors and changes. This is particularly the case around the trim at the door at the bottom of the main stair where at least one significant change occurred as is evidenced by cut and modified trim.

The fireplace is original as is the base course of pressed brick which would have backed up the original hearth. Of interest, too, is the rear shed which is of frame construction with wood siding to the exterior and lath and plaster at the interior. The lath is hand-split, dating to no later than the mid-1800's which suggests strongly that this addition is original to the house and most likely served as a summer kitchen. Early photos do show a wood addition, albeit with a different arrangement of siding. Therefore, some siding removal is recommended with a view to researching the original cladding arrangement and verifying the originality of this wing.

A prime feature of the original house would have been the chimneys which are currently too small in relation to the original. However, the bases of the original chimneys are clearly visible on the peak of each gable forming a "shoulder" under the current units. Using this evidence and early photographs, an entirely appropriate restoration is possible.