

Best Practice

Albert Street Memorial Bridge Restoration

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THE PRACTICE

The Albert Memorial Bridge is designated as a Municipal Heritage Property. The restoration of the bridge was undertaken according to direction provided in the *Standards and Guidelines for the Conservation of Historic Places in Canada*. In 2007 a detailed bridge condition evaluation was completed. The Albert Memorial Bridge was showing signs of deterioration as significant portions of the asphalt wearing surface was cracking and beginning to pothole and exposed portions of the deck underside were exhibiting signs of moisture penetration and deterioration. The numerous terra cotta balustrades and terra cotta light standards were also cracked and chipped.

THE PROCESS

During the restoration, the City of Regina undertook the repair of the historic terra cotta on the Bridge, in an attempt to retain as much of the historic material as possible. This was consistent with the direction provided by the *Standards and Guidelines for the Conservation of Historic Places in Canada*.

To ensure that no heritage properties were lost in this restoration the following things were done:

1. The removal of all terra cotta balustrades from the bridge structure, the replacement of existing mild steel with stainless steel, and repairing the exterior face of the balustrade.
2. The original light fixtures were in too poor condition to restore. New high efficiency light fixtures were selected to match the existing ones.

THE RESULTS

The terra cotta restoration process exceeded expectations for two reasons:

1. The coring process worked well with the stabilizing apparatus and coring though the soft grout enclosing the rebar was easier than expected.
2. The restoration and coring process for the most part was completed in a controlled atmosphere, where temperature and moisture was not an issue.

There was also a higher risk associated with coring the balusters to replace the existing rebar when compared to installing galvanic protection. The potential vibrations created by coring were unpredictable and could potentially cause damage to the balustrades. Test balustrades were used before a method was established for coring all the terra cotta balustrades.

There were a number of pros and cons associated with this project.

Pros Included:

- The existing heritage materials were restored and reused.

- There is no maintenance work associated with changing galvanic cells

Cons Included:

- Time consuming process
- Highly skilled artistry

LESSONS LEARNED

The method for coring the balustrades was successful in this situation due to the low strength grout that was used in the original construction between the rebar and terra cotta molding. The coring apparatus was able to cut through the grout without disturbing or vibrating the terra cotta to the point of failure. There were also some bonding issues with terra cotta plaques that were repaired on site that were not in a controlled environment.