

FEDERAL HERITAGE BUILDINGS REVIEW OFFICE

Review of Intervention Report

DATE: 2016-09-21

PROPOSAL TITLE: Train Station Fire Suppression System Upgrades

☐ Initial Review

☒ Follow-up to Review(s) Dated: 2016-05-12

IDENTIFICATION

FHBRO File #: 94-010

Designation: ☒ Classified ☐ Recognized

Building/Asset Name: Former Canadian National Railways Station

Street Address: 607 Connaught Drive

City, Province: Jasper, Alberta

National Historic Site of Canada (if applicable): N/A

Custodial Department: Parks Canada Agency

PROPONENT

Custodian Proponent: Flo Miller

Position/Title: Cultural Resource Policy Advisor

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DOCUMENTATION / INFORMATION REVIEWED

Documents Reviewed

Request for Review of Intervention, received 2016-08-01

Sprinkler System Adequacy Evaluation for Jasper Train Station, R. M. Arsenault Engineering Inc., February 1, 2015

Drawings FP-1 of 7 to FP-7 of 7, R. M. Arsenault Engineering Inc., Rev. 2, June 29, 2016

Email correspondence with Crystal McNutt, August 17 and 22, 2016, and September 1 and 15, 2016

References

Heritage Character Statement 94-010, dated 1996-01-08

The Standards and Guidelines for the Conservation of Historic Places in Canada, 2nd ed.

PROPOSAL

The Jasper Field Unit proposes to replace most of the sprinkler system in the Former Canadian National Railways Station. The original project scope was to replace only the sprinkler system in the attic. The scope has expanded to replacing all but the basement system due to inherent deficiencies in code compliance with the original installation.

PROTECTION OF HERITAGE CHARACTER

This review is an assessment of the potential impact of the proposed interventions on the heritage character of the Former Canadian National Railways Station as it is identified in the FHBRO Heritage Character Statement. The review applies the *Standards and Guidelines for the Conservation of Historic Places in Canada, 2nd Edition* that can be accessed electronically at:

<http://www.historicplaces.ca/media/18072/81468-parks-s+g-eng-web2.pdf>.

The proposed work comprises the replacement of most of the existing sprinkler system. As a project that entails alterations related to fire safety and the ongoing safe occupancy of the building, the appropriate conservation treatment is Rehabilitation. Standards 1 – 12 are applicable to Rehabilitation projects as well as the relevant Guidelines for Buildings. Since the proposed work potentially has an impact on character-defining exterior soffits and interior spaces, the Guidelines for Interior Arrangement, Interior Features, Mechanical & Electrical Systems and Plaster & Stucco should be consulted in particular.

Background

The Former Canadian National Railways Station at Jasper was built in 1925 by the line's Western Division crews, to designs prepared by the CNR Architectural Division. It was designated Classified for its architectural, environmental and historical significance. The station is valued for its irregular massing, rustic materials and robust detailing related to its park setting.

The Heritage Character Statement identifies character-defining elements potentially impacted by the proposed work on both the exterior and interior. On the exterior, "The materials and their arrangement on

the station are also representative of the rustic approach to design adopted in the national parks. The exterior walls have a cobblestone veneer base, a limestone drip course, and stuccoed brick walls above.”

As for the station's interior, the HCS states “the interior was designed using the same architectural vocabulary as the exterior, and was notable for its fine public spaces with heavy beamed ceilings, exposed trusswork, rough plaster finishes, elegant light fixtures, and built-in furnishings. These elements are still visible in the main waiting room and merit careful conservation. Elsewhere, many original elements are hidden. Exposing and restoring these elements, particularly in public spaces, would enhance the interior. Other (non-public) areas originally had simpler trim and detailing which should also be retained as part of the original building fabric.”

The existing train station has been altered a number of times in past years and underwent a major rehabilitation approximately 15 years ago. It was during that project that the existing sprinkler system was installed.

Proposed Work

The Jasper Field Unit engaged the services of a fire protection engineer to evaluate the existing sprinkler system. Six specific deficiencies were identified. The evaluation revealed that the existing sprinkler system did not meet the fire code at the time of its installation and is still deficient. As a result, the system is not active and is not able to provide any type of fire suppression capability.

One of the study’s recommendations was to “have the system corrected and upgraded concurrently with the dry pipe sprinkler system replacement project”. This led to a decision to replace the majority of the sprinkler system now since it is deemed to be the most practical solution to addressing the numerous identified deficiencies. The proposed project will provide a sprinkler system that meets current code requirements and provide fire protection capabilities to the building.

The project is in the design development phase and the design is being done based on an external (i.e. exposed) installation. This installation method has been selected since it is significantly less expensive, does not cause as much disturbance/impact to the walls and ceilings, and reduces disruption of the occupants.

Discussion

According to the engineer's report, the existing sprinkler system from circa 2003 has enough deficiencies that it is not reasonably repairable and must be replaced. The original intent of the project had been to salvage and upgrade the existing system to address the identified deficiencies but further investigation led to the recommendation that nearly full replacement was the most viable course of action. The goal of the project is to provide a fire protection system that will accomplish life safety and building protection objectives while meeting Fire Code requirements and conserving heritage value.

Jasper Field Unit is proposing to replace the existing sprinkler system with a new exposed sprinkler system throughout the first and second floors and in the attic. The existing exposed sprinkler system in

the basement will be retained and will receive some small upgrades. The Request for Review of Intervention (RROI) notes the exposed piping and sprinkler heads “may add an “industrial” look to the ceilings” in the public rooms and interior spaces which could impact character-defining elements, especially those related to the waiting area of the train station.

The RROI states that the proposed design approach is based on Standard 3 which recommends conserving heritage value by adopting a minimum intervention approach. It is felt that opting for an exposed sprinkler system will minimize changes to character-defining elements while maintaining the area coverage that the sprinklers require to be effective in a fire. It is also stated that this installation method will minimize the extent of renovations and disturbance to leaseholders in the building.

Assessment

While the stated intention to do the minimum necessary to accomplish objectives, in conformance with the guidance of Standard 3, is commendable, the general thinking behind the Standard, and its place within the spectrum of all 12 standards, has been obscured. The Standards and Guidelines contains this explanatory material with respect to minimal intervention.

“Minimal intervention in the context of heritage conservation means doing enough, but only enough to meet realistic objectives while protecting heritage values. Minimal does not mean doing “little or nothing”, or “the least possible”. In fact, enough intervention to arrest and correct deterioration, meet codes, or introduce new services, can be quite extensive. Determining minimal intervention is a matter of rigorous assessment, options analysis and creativity to identify the intervention that balances technical and programmatic requirements with protecting heritage value. Minimal intervention has different meanings for Preservation, Rehabilitation and Restoration. In the context of Rehabilitation, it might mean limiting the proposed new use, addition or changes.”

The stated goal of the proposed work is “to provide a fire protection system that will accomplish life safety and building protection objectives while meeting Fire Code requirements and conserving heritage value”. The desire to provide improved fire protection to a Classified building is laudable. The Standards and Guidelines provide some high level recommendations to help guide the design as it moves forward.

Standards to keep in mind as the project progresses include:

- Standard 3 – conserve heritage value, adopt an approach calling for minimal intervention;
- Standard 7 – use the gentlest means possible, respect heritage value when undertaking an intervention;
- Standard 8 - maintain character-defining elements as a first priority, repair second, replace in-kind if repair is not possible;
- Standard 9 – make interventions to character-defining elements physically and visually compatible, document any interventions for future reference; and
- Standard 11 - make new work physically and visually compatible with, subordinate to and distinguishable from the historic place.

The following paragraphs discuss the various components of the proposed work.

Sprinkler System Removal

The proposed work will be achieved by removing the second floor and attic sprinkler systems in their entirety and by removing the exposed portions of the first floor concealed system. The submitted documents and correspondence do not specifically identify what action will be taken where brackets, fasteners, hangers, etc. are removed.

Sprinkler heads for the concealed system will be removed whereas the piping will be abandoned in place within the walls and ceilings. Holes in the walls and ceilings, left behind after the removal of the heads, will be patched and repaired. The submitted documents and correspondence do not specifically identify the repair types and materials.

Correspondence with the proponent states that on the building's exterior existing sprinkler heads located at the soffits will be removed and the holes left in place to receive the new heads.

When undertaking the removals, respect the guidance of Standard 7 by carefully removing the existing components so as not to damage character-defining elements. Repair the affected surfaces keeping in mind Standard 8, which advises to replace in-kind missing character-defining elements, and in accordance with the Guidelines for Interior Features No. 12 which recommends making repairs by "patching, piecing-in, consolidating or otherwise reinforcing, using recognized conservation methods". Consult the Guidelines for Plaster and Stucco for further recommendations.

Basement

The existing exposed sprinkler system in the basement will remain in place. Some alterations will be made to bring the system into compliance. New mains and risers will be installed to service the upper levels of the building. The proposed work in the basement is acceptable since it will not be visible to the public and will not be located in identified character-defining spaces. The proposed work follows the recommendations of the Guidelines for Interior Features and Mechanical & Electrical Systems which both advise to install new systems in non-character defining spaces.

Mains, Risers and Fittings

There will be eight new risers passing through the first floor. These will serve various sprinkler zones at the first and second floors and in the attic. Three of them pass through the Parks Canada office space, three through a mechanical room, one through an operational area, and one in the southwest corner of the main waiting room. Horizontal and vertical offsets occur at some locations to clear obstacles.

The proposed piping and fittings are typical of standard sprinkler systems with black steel pipe and bulky mechanical couplers. It is assumed that these components will be painted to match the adjacent surfaces as is the case with the existing installation.

The proposed riser layout generally follows Standard 7, which advises to respect heritage value when undertaking an intervention. The exceptions are those risers located in the public areas. When locating the risers, respect Standard 7 as well as Standard 11 which advises to make new work physically and visually compatible with, and subordinate to, character-defining elements.

Consider also Guideline 26 of Mechanical & Electrical Systems which advises to install vertical runs of pipes in non-character-defining spaces, such as closets, service rooms and wall cavities.

First Floor

The existing sprinkler system at the first floor is a concealed system. It is proposed that the new sprinkler system on this floor will be fully exposed. Important first floor interior spaces, as cited in Heritage Character Statement, such as the waiting room and adjacent rail customer service areas, as well as other areas such as the retail sector at the north end of the building and the Parks Canada office reception area, are all accessible public spaces. The central waiting room is a particularly fine high-ceilinged space with wood trusses and beams influenced by the “Craftsman” movement and the then-popular rustic park styles. An exposed sprinkler system in these spaces would be physically and visually detrimental to the interior features.

Consider the recommendations of Standard 7, which advises to respect heritage value and Standard 11, which advises to make new work physically and visually compatible with and subordinate to the historic place. The Guidelines for Interior Arrangement, Interior Features and Mechanical & Electrical Systems all advise to install new systems in non-character defining spaces. The Guidelines for Interior Features also recommend “installing sensitively designed fire-suppression systems that retain character-defining elements and respect heritage value”.

It is recommended to consider other options for these important interior public spaces and re-submit to the FHBRO.

Second Floor and Attic

The new sprinkler system at the second floor and in the attic will be fully exposed, matching the general appearance of the existing sprinkler system. It is assumed that the second floor components will be painted to match the adjacent surfaces as is the case with the existing system. Repairing or replacing the system in these areas ‘like-for-like’ is acceptable since they will not be visible to the public and will not be located in identified character-defining spaces. The proposed work follows the recommendations of the Guidelines for Interior Features and Mechanical & Electrical Systems which both advise to install new systems in non-character defining spaces.

Where possible, plan the new sprinkler system to make use of existing hanger and pipe locations to minimize the number of new penetrations into existing materials.

Exterior

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Correspondence with the proponent states that the existing holes in the soffits will be re-used for the new sprinkler heads. Replacing the system like-for-like in these areas is an acceptable approach.

Repair the affected surfaces in accordance with Standard 8 which advises to replace in kind missing character-defining elements. It is recommended to avoid creating new openings in the soffit. If patching or repairs are required, consult the Guidelines for Plaster and Stucco.

RECOMMENDATIONS

It is recommended that the following should be considered in the further development and implementation of the design for this project:

- **Sensitively design the fire-suppression system to retain character-defining elements and respect heritage value;**
- **Develop other option(s) for the important interior public spaces;**
- **Locate new sprinkler system components in non-character-defining spaces;**
- **Plan the new sprinkler system to make use of existing hanger and pipe locations to minimize the number of new penetrations into existing materials;**
- **Avoid creating new openings in the soffits;**
- **Carefully document the conditions and materials prior to, during and afterwards to provide a record for future reference; and**
- **Submit the final sprinkler system intervention details to FHBRO for follow-up review.**

Please do not hesitate to contact the undersigned should you have any questions about this review,

Sincerely,



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The original plans designed an exposed wet system installed in the vaulted ceiling area of the main lobby. Following recommendations from this document the design was altered to incorporate a separate dry system installed via the attic to cover this area, in order to minimize the physical and visual effects the sprinkler system would have on the wooden trusses and beams in the central waiting area of the public space. This is the current and final design.

Crystal McNutt, Project Manager Parks Canada

This Review has been prepared on behalf of the Federal Heritage Buildings Review Office. Any requests for clarification on the content of this report should be directed to the Author(s) listed above. The provision of additional information in response to the report, or any related follow-up review submissions should be directed to the FHBRO.