



Industrial Conservation at Parks Canada

Approaches to the preservation of Canada's industrial history

Authors: Antoine Pelletier and Megan O'Connor

Abstract:

Canada's industrial heritage within the Parks Canada Agency network of over 171 National Historic Sites, 46 National Parks, 1 National Urban Park and 5 National Marine Conservation Areas varies from the smallest cog to large scale industrial sites. Using examples from recent industrial conservation work at Parks Canada this paper aims to explore how legacy of treatment within the agency, current skill base, and the importance of context informs Parks Canada's hands on approach to industrial conservation.

The main challenge in industrial conservation has always been to reach a balance between a state of abandon and complete restoration. In the earliest days of conservation at Parks Canada the majority of industrial conservation knowledge and techniques were brought over from the United Kingdom, where several of the conservation staff were trained. As conservation training developed in North America different techniques and knowledge were added to the Parks Canada industrial conservation toolbox. This legacy of treatment style, and the nature of the Parks Canada industrial collection, has informed the current approach focusing on maintaining traces of use and original coatings when possible, the use of protective coatings that do not obscure original surfaces, and where repainting and replacement of components is considered only under special circumstances.

The risk of dissociation is high within a network of sites and storage facilities spanning the country. Parks Canada has maintained an approach to industrial conservation that values the whole context, be that from maintaining the parts of an engine, to maintaining the integrity of a site spread over a vast area. Removing components or parts from their context changes the value of the object. During the conservation process it is easy to look at an object on an individual basis. However, conservators have to keep in mind that industrial objects are often part of a group and that a continuity in treatment is essential in order to preserve the link to its context.

Gaining skills for industrial conservation at Parks Canada takes many forms. Not only are skills gained in formal training programs required, but on the job training, personal interest in related fields such as metal working and welding, and previous experience outside of the Agency are valuable. Working on projects with team composed of conservators with mixed levels of experience has been a key method of gaining skills for industrial conservation work at Parks Canada. Learning the skills of industrial conservation is not strictly tied to treatment methods, knowing how to speak the language of industrial conservation and learning how to engage clients and get them excited about projects while building solid relationships are also key elements.

This paper will explore these topics and how they have come to inform the hands on skills and methods of treatment for industrial conservation at Parks Canada.



La conservation du patrimoine industriel à Parcs Canada

Approches en matière de préservation de l'histoire industrielle du Canada

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Résumé :

Le patrimoine industriel faisant partie du réseau de l'Agence Parcs Canada, qui compte plus de 171 lieux historiques nationaux, 46 parcs nationaux, 1 parc urbain national et 5 aires marines nationales de conservation, va des petits engrenages jusqu'aux grands sites industriels. À l'aide d'exemples tirés des récents travaux de conservation du patrimoine industriel à Parcs Canada, cet article vise à examiner comment l'historique du traitement au sein de l'Agence, les compétences actuelles et l'importance du contexte guident l'approche pratique de Parcs Canada en matière de conservation du patrimoine industriel.

Le principal défi de la conservation du patrimoine industriel a toujours été d'atteindre un équilibre entre un état d'abandon et une restauration complète. Dans les premiers temps de la conservation à Parcs Canada, la majorité des connaissances et des techniques en conservation du patrimoine industriel provenaient du Royaume-Uni, où plusieurs membres du personnel chargé de la conservation ont été formés. Au fur et à mesure que la formation dans ce domaine se développait en Amérique du Nord, différentes techniques et connaissances se sont ajoutées à la boîte à outils de Parcs Canada. L'historique du style de traitement et la nature de la collection industrielle de Parcs Canada servent de base à l'approche actuelle, qui met l'accent sur le maintien des traces d'utilisation et des revêtements originaux dans la mesure du possible, ainsi que sur l'utilisation de revêtements protecteurs qui ne masquent pas les surfaces d'origine. Dans le cadre de cette approche, on n'envisage de repeindre et de remplacer des composantes que dans des circonstances particulières.

Le risque de dissociation est grand dans un réseau de sites et d'installations d'entreposage couvrant tout le pays. À l'égard de la conservation du patrimoine industriel, Parcs Canada a adopté une approche qui accorde de l'importance à l'ensemble du contexte, qu'il s'agisse de l'entretien des pièces d'un moteur ou du maintien de l'intégrité d'un lieu s'étendant sur un vaste secteur. Le fait de retirer des composantes ou des parties de leur contexte modifie la valeur de l'objet. Pendant le processus de conservation, il est facile d'examiner un objet du point de vue de sa spécificité. Cependant, les restaurateurs doivent garder à l'esprit que les objets industriels font souvent partie d'un groupe et qu'il doit y avoir une continuité dans le traitement pour préserver le lien avec le contexte des objets.

L'acquisition de compétences en matière de conservation du patrimoine industriel à Parcs Canada prend diverses formes. Non seulement les compétences acquises dans le cadre de programmes de formation structurés sont-elles nécessaires, mais la formation en cours d'emploi, l'intérêt personnel pour des domaines connexes, comme le travail des métaux et la soudure, et l'expérience acquise à l'extérieur de l'Agence sont précieux. Travailler sur des projets avec une équipe composée de restaurateurs ayant des niveaux d'expérience variés a été une très bonne façon d'acquérir des compétences en conservation du patrimoine industriel à Parcs Canada. L'acquisition d'un savoir-faire dans ce domaine n'est pas strictement liée aux méthodes de traitement : savoir parler le langage de la conservation industrielle et apprendre à mobiliser les clients et à susciter leur enthousiasme à propos des projets, tout en créant des liens solides, sont aussi des aspects importants.



Cet article examinera ces questions et la façon dont elles en sont venues à servir de guide pour les compétences pratiques et les méthodes de traitement en conservation du patrimoine industriel à Parcs Canada.

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Parks Canada currently manages 171 National Historic Sites, 46 National Parks, 1 National Urban Park and 4 Marine Conservation areas.

Industrial heritage at Parks Canada ranges in both type and size, from scientific equipment at Tanquary Fiord, a former research station within Quttinirpaaq National Park, to the industrial landscape at Grosse Ile and the Irish Memorial National Historic Site, to the remains of the site of the first oil well in Waterton Lakes National Park, where humans are not the only visitors interested in Western Canada's first oil well's dating to the 1890's.

With a vast network of industrial heritage across Canada to care for, our approach to industrial conservation has always been practical.

Today's talk will use examples from recent industrial conservation projects to highlight:

- The evolution of our industrial conservation treatment approach
- Our values as they apply to the preservation of industrial heritage
- And our methods of passing knowledge to the next generation of industrial conservators

Beginning in the 1970s site-oriented thematic studies grounded in archival research were used to identify and commemorate industrial history sites in the Parks Canada network. During these early years of industrial conservation at Parks Canada conservation treatments consisted generally of highly interventive techniques, such as stripping and repainting artifacts to protect stable surfaces and meet curatorial expectations.

As most industrial objects at National Historic Sites were found and displayed outdoors, stripping artifacts to bare metal was thought to provide the best surface for paint adhesion. This technique mirrors what was going on in the wider world of industrial conservation. Then as Industrial Archaeology grew as a specialty in the United Kingdom, preserving original paints, finishes and traces of use emerges as a priority. In these early days of conservation within the agency, conservators were trained more often than not in the UK, which undoubtedly informed their techniques as these ideas slowly permeated Parks Canada.

Since the 1990's, conservation at Parks Canada has been guided by the Cultural Resource Management Policy, the first edition of which emphasized: undertaking least possible intervention, long term monitoring and maintenance, and use of reproductions with discretion and clear identification. The 2013 update to the Parks Canada Cultural Resource Management Policy builds upon these themes and further adds that character defining elements should be recognized, that conservation take into account conveying heritage values over the long term with consideration of the availability of human and financial resources, and that a consistent approach based on common processes and clear accountabilities be used.

In addition to the guidance provided by policy, the duality of the agency as steward of Canada's cultural and natural heritage is also influential to our approach to industrial conservation. Close ties to the Natural Resource Conservation Branch, the group within the agency that works to improve the ecological integrity and sustainable use of National Parks and National Marine Conservation Areas, allows us to be at the



forefront of environmentalism in Canada. When planning treatments we work closely with our allied colleagues within the agency on various environmental concerns,

- Such as the environmental impacts of cleaning and coating, for example we used sheeting to protect the soil in the Chambly Canal warehouse facility where we cleaned and coated the LaSalle Coke Crane, a crane from the Lachine Canal National Historic Site that was dismantled due to the deterioration of its physical integrity. The sheeting protection used is two-fold, the bottom layer is an impermeable layer against petroleum based product leakage, the second being a non-woven polypropylene geotextile mat to absorb any liquid or solid contaminants produced by the crane's machinery as well as cushioning against any part of the machinery puncturing the impermeable layer. As you can see, industrial conservation gets messy so these kinds of protections are necessary;
- another concern is removing hazardous materials from sites associated with industrial activity, at Chilkoot Trail National Historic Site we are involved in identifying and providing extraction solutions for arsenic that is impacting plant growth left behind from an area where warehouse-style storage tents were once located;
- we also work with Park Wardens who have the knowledge of sensitive local flora when clearing vegetation from around cultural heritage to reduce moisture and make them more visible;
- like our colleagues in Visitor Experience who lead the "learn to camp" workshops, we too adhered to a leave no trace policy. Everything we bring in to a site must leave with us, if we use 20 pounds of abrasive powder onsite, 20 pounds of abrasive powder leaves with us, along with any refuse we may have created during treatment.
- increasingly treatment decisions are influenced by climate change, which is affecting Parks Canada's collection of largely outdoor, or semi outdoor, industrial heritage, such as along the Chilkoot Trail where recent condition survey work indicates that ice and snow coverage is changing, affecting melt water erosion patterns and exposing artifacts to new deterioration factors.

Conservators at Parks Canada try to maintain an approach to industrial conservation that values the whole context of a site as much as the artefacts themselves. The cultural resources found in our network of sites are directly linked to the period or events commemorated on site. They are shown as often as possible in their original context. They may not necessarily be the prime example of a certain machine or the most pristine example in existence, but what matters most is that it is the machine that was originally there is displayed. This direct link with the past is what we aim to share with our visitors.

Working with our archaeological services, historians, and other specialist we piece together the material history of a site, understand the setting, and regroup and reassemble objects or components that may have been displaced overtime. Like most industrial heritage places, our sites have undergone several modifications overtime and often have been through a period of abandon before *becoming* a National Historic Site. The artefacts may have been reused, recycled or modified to suit the needs of the time either before or after the period of time being commemorated. We have to keep in mind that certain objects may not have been brand new when they were in use and even if they were they did not necessarily stayed in pristine shape for long. Understanding how events and daily routines have affected the artefacts during their lifetime informs treatment choice and preserves traces of use which tells a story. It is a balancing act in which the conservator often has to go between conserving as much of the original finishes as possible while at the same time making sure that deterioration processes are under control. There is a risk in using aesthetic to guide treatment choices because most industrial sites are a collection of odd ducks, the old trusty beaters sitting next to barely broken in machines. In a historic site setting, the buildings, the furniture, the hardware, the industrial components can be all linked together to create the context of a site: an environment, a setting, the link between the material and the immaterial.

During the conservation process it is easy for conservators to forget about the environment in which the object was set and its relationship with the other components, because we tend to look at an object on an individual basis at a micro level. We have to look at industrial artefacts like they are a macro organism. Every single cog, nut and bolt can be essential in the inner working of the artifact. Removing components, parts or even original coatings can cause deterioration not only to the objects, but to the whole site. It is critical that conservators take these relationships into consideration when planning and choosing treatments. This will



help dictate the level of intervention, the types of products used and the aesthetic. Which will then insure a flow of continuity in the treatment for objects treated in batches. Batch treatments of multiple artifacts, or the many components of one large artifact, often has to be interrupted and picked up at a later time due to budgetary and access constraints as well as staff availability. Continuity of treatment across many field seasons and staff member changes is essential. Using products and techniques that can be applied to a variety of surfaces is a requirement of our approach.

The risk of dissociation is great, it has happened in the past. Still today, it could be a risk within a network of sites and storages facilities spanning the country. Even on a single historic site, industrial components can be spread over a vast area. In-Situ treatment is often preferred not only because the size and scale of artefacts may be prohibitive for transport but also because it lowers the risk of dissociation and promotes a continuity in treatment. In order to help prevent dissociation, a group of industrial artefacts or large scale artefacts with many components are numbered using the archaeological numbering system.

Because it can be used to identify parts of objects in specific spatial positioning within a three dimensional grid. For example on the LaSalle Coke Crane, a complex vertical object with many components, we can differentiate between the multiple motors and on which level of the crane they were found. This system gives us a better understanding of the artifact's assembly. It also make it easier for numbering components if we have to disassemble the machine for treatment.

From policy, to environmental concerns, to decades of experience from conservators, and research into new materials and technology from both the conservation field and commercial industry, these contributing factors have led to an industrial conservation style at Parks Canada that favors:

- intervening as little as possible; For example, during the treatment of equipment from the now dismantled Garage LaPalme, part of the industrial complex of the Lachine Canal National Historic Site, motors and other technical equipment were removed from the building and prepared for storage at a Parks Canada collections storage facility, it was decided that only a basic cleaning to reduce dirt, oil and loose paint would be undertaken, we refrained from using any coatings as the object was known to be going into a stable storage environment;
- we also minimize the loss of historic evidence like use-wear and adaptations, as well as promote greater contextualization by making treatment choices a macro, rather than micro, level;
- we focus on the use of low toxicity products, due to disposal constraints, inability to provide sufficient health and safety for workers, or restrictions on environmental contamination;
- we preferentially use proven products with known properties that are easy to apply due to the necessity of completing a treatment in a short period of time; For example, in a recent project to clean and coat iron wash basins used in a laundry facility at Grosse-Ile and the Irish Memorial National Historic Site, the wax based product Tectyl 506 was used to coat iron elements as its properties are well known to us, it has been used successfully in the past at the site, and it can be easily applied in the short period of time we had available on site.
- we also use coating products that are easy to maintain taking into account the availability of human and financial resources; for example, at Fort Prince of Wales we are moving towards using a custom created self-healing asphaltum-based product by Corrosion Control Coating Limited, to coat cannons as it is known to perform well in the fluctuating temperatures of the sub-arctic climate, though the coating does need to be reapplied it can be done by staff at the site with guidance from a conservator.
- And finally, we have to take into account the ability to transport materials to remote sites; some sites are only accessible by aircraft, or on foot for example, therefore products we use in treatment need to be easily portable. Pictured are our supplies for one week of work at Grosse Ile and the Irish Memorial National Historic Site, which had to fly in on a prop plane, we also had to bring along enough food to feed ourselves for the week we were working there.

At Parks Canada the majority of the Industrial conservation projects are done by the object group. While all of our members have formal conservation training in object conservation, there is no specialized training in industrial conservation. The set of skills required are accumulated from a large scope of previous experiences and interest: ranging from metal fabrication, lifting and rigging, industrial painting, mechanics,



studies of modern materials, field logistics and the list goes on. Industrial conservation comes with its share of uncertainty but it can be tackled by daring to take calculated risks and using creative problem solving, which were instrumental in the early days of our profession. Sharing experience and inspiring passion with emerging conservators has proven to be a valuable learning tool.

In my own experience as a conservator in the early years of my career, the majority of my industrial conservation training came in the form of on the job skill building through mentorship with more senior and experienced staff. My training in metals conservation did prepare me with the basic knowledge of the history of technology of industrial artifacts, however it is a unique experience to fly into a site with all your tools and equipment for an industrial conservation treatment with little to no ability to access supplies other than what you brought with you. These are things that are difficult to learn in a classroom.

We invite you to visit the Parks Canada places near you. Right here in Nova Scotia you can visit, among many others, Grand Pré National Historic Site, Kejimikujik National Park and National Historic Site or even Halifax Citadel National Historic Site just up the street. Thank you for your time.

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