

Conservation of Heritage Structures

Project Case Studies

A three-day workshop featuring case studies of conservation projects that utilised practical strategies based on technical concepts

Three Major
Conservation Projects
at the Workshop
Location



Numerous
Designated Structures
including Six
National Historic Sites

Wednesday to Friday
23rd to 25th October 2019

Basilica of Our Lady Immaculate
Monsignor Dennis Noon Basement Hall
28 Norfolk Street, Guelph, Ontario

WORKSHOP INFORMATION

WORKSHOP DESCRIPTION

This three-day workshop has been developed to provide examples of critical factors that can influence the successful restoration, preservation and rehabilitation of heritage structures. Projects will be visually presented as case studies to highlight key technical and practical aspects. Sometimes the presentations will use an individual project - from the investigation stage through to completion of the restoration - and sometimes a number of abbreviated (mini) case studies will be used to cover specific factors. The projects include institutional, residential and municipal buildings, churches, a masonry memorial tower, a lighthouse, museums and more - many of them National Historic Sites. A variety of different types of masonry construction and restoration methods will be illustrated by the case studies.

SPECIAL FEATURES

- Attendees may register for one or two days or for the full three-day workshop.
- The topics will be presented using digital slide projection with extensive use of photographs, charts and graphs.
- Many topics will also include video presentations.
- A tour of the "Catholic Hill" sites, including the Basilica, will take place at the end of the third day.
- Dinner (optional) will be organized on the first and second evening at local heritage building restaurants

WORKSHOP MANUAL ~ A purpose-designed manual for each day of the workshop ~ containing comprehensive educational information, photographs and technical data ~ will be provided to each registrant. The manual cost is included in the registration fee.

CERTIFICATE OF ATTENDANCE ~ A Certificate of Attendance will be provided, which may be used for applying for Professional Development Learning Hour Units where appropriate.

DISCUSSION & DEBATE ~ Although questions will be encouraged at any time, at the end of each day there will be Discussion & Debate Session when attendees will be invited to discuss the various topics and share their own experiences.

BREAKFAST, REFRESHMENTS & LUNCH ~ hot breakfast and lunch, as well as break-time refreshments, will be provided on each day ~ the cost of which is also included in the registration fee. Registrants are encouraged to use this opportunity to meet and greet other participants and share experiences.



SPECIAL ACKNOWLEDGEMENT

A very special Thank You to the Basilica of Our Lady Immaculate's previous Rector, Monsignor Dennis Noon and the new Pastor, Reverend Father Ian Duffy for graciously allowing us to use the Basilica's basement hall for this Workshop.

REGISTRATION & SCHEDULE

Registration will take place between 8.00 and 8.30 am on the first day. (Please arrive early for your breakfast)

Presentations will be between 8.30 am and 12.00 noon and between 1.00 pm & 4.30 pm each day.

Coffee & Conversation breaks will be between 10.00 am & 10.30 am and between 3.00 pm and 3.30 pm each day.

Wednesday, 23rd October 2019

Introduction ~ Guelph's Historic Catholic Hill ~ A brief overview of the historical buildings at the workshop location, including the Basilica of Our Lady Immaculate (dedicated in 1888 and known for generations as "the Catholic Church on the Hill"), the Rectory (built in 1857 originally as a college and subsequently converted to a residence and administrative building), and the Guelph Civic Museum, also built in 1857 as a nun's residence and boarding school but serving for decades as a convent for the Loretto Sisters.

Conservation Strategies - The Idealistic, the Pragmatic & the Disastrous! ~ This introductory presentation highlights the influencing factors that should be considered when developing strategies that meet the guiding principles of the recently developed text-book "Standards and Guidelines for the Conservation of Heritage Places in Canada." The benefits and cautions of the various components that make up an objective strategy are evaluated - and how they can influence the success or failure of a project. Examples of strategies other than those associated with good conservation practice will also be discussed!

Conserving Cultural Heritage Resources - Avoiding "Demolition by Neglect" ~ Guest Presenter Stephen Robinson.

As Senior Heritage Planner for the City of Guelph, our guest presenter is well-placed to understand the challenges in avoiding demolition by neglect of cultural heritage resources when they are in critical need of attention and repair - especially when funds are limited. This presentation evaluates these challenges from the municipal heritage planner's perspective and discusses ways in which heritage evaluations, impact assessments and conservation plans can benefit the property owner and the community.

The Importance of Investigation, Monitoring and Cause Analysis ~ A compilation of mini-case studies will be used to illustrate where structured investigations formed a critical part of the restoration strategy development process. The studies will feature the use of non-destructive testing techniques - such as Ground Penetrating Radar to investigate hidden conditions - as well as movement and moisture monitoring devices, such as laser measuring equipment, displacement gages, and RH sensors.

Understanding Masonry Construction & How it Influences Durability ~ Several mini-case studies will be used to illustrate the considerable number of different masonry assemblies that can be encountered during condition assessments of buildings and structures. Also discussed will be how the transition from traditional mass masonry construction to modern cavity walls sometimes created buildings that suffered accelerated deterioration and damage due to inappropriate design and detailing.

Stabilizing, Repairing & Strengthening Cracked Traditional Masonry ~ Two case studies will be presented to illustrate techniques that may be considered when faced with restoring buildings suffering from severe cracking of masonry components. The causes of the cracking will be evaluated and how this influenced the development of restoration strategies. Below grade waterproofing and the use of core rubble grouting techniques will be presented, together with the installation of retrofit masonry ties and joint reinforcement.

Wall Anchoring, Reinforcing & Stabilizing Systems ~ Guest Presenter, Stephen Franks ~ This presentation utilises actual projects to evaluate the options and considerations that should be considered when faced with the need for stabilizing and/or strengthening heritage structures and older buildings that have suffered from damage caused by overload, differential movement, inner core rubble or collar joint deterioration, missing or corroding wall ties and anchors, etc. Available systems are discussed together with key factors that should be considered.

Discussion & Debate Session

Adjournment ~ Optional Dinner at a local restaurant in a Heritage Building

Thursday, 24th October 2019

A Holistic Approach to Conserving Heritage Structures ~ A comprehensive study of how a 100-year old badly damaged art gallery and museum was restored to a durable condition will be presented from investigation to completion. The primary and influencing causes of the damage will be examined, together with some novel techniques that countered what had happened to the building during past restoration and renovation work. The importance of the investigation process and understanding how the masonry assembly can be vulnerable to original design factors will be presented, as well as lessons to be learned when renovation work includes a dramatic change to the gravity load distribution dynamics of a structure.

Cape Race Lighthouse - A History of Restoration ~ Constructed in 1905 and designated a National Historic Site in 1975, Cape Race Lighthouse is believed to be the oldest reinforced concrete lighthouse in North America. Over the decades, it has undergone three major attempts at restoration, each failing to address the cause of the deterioration - with more damage being the result. The history of these attempts is reviewed by the presentation, together with details of the most recent comprehensive and novel restoration project which - hopefully - addressed both the cause and the result!

Considering Structural Aspects & Implications ~ Guest Presenter Gerry Zegerius ~ Damage, deterioration and defects within the exterior fabric of buildings and structures can often be caused by structural inadequacies. For example, a structural deficiency can sometimes cause cracking which subsequently leads to poor durability. For example, sometimes insidious corrosion of hidden metal components can be contributing to problems that may eventually become more serious. Case studies will be used in this presentation to evaluate some of the concerns that should be considered when faced with the potential poor "structural health" of heritage structures and older buildings.

Conservation of Fredericton City Hall ~ Built in 1876, Fredericton City Hall is a National Historic Site. Over the years, restoration work had been carried out to restore cracked masonry - but the cracks either reopened or continued to occur at other locations. This case study will comprehensively review details of the investigation phase which identified several influencing factors that caused the cracks, as well as the restoration work which addressed the causes and restored the building to a durable condition.

Masonry Conservation of the Guelph Civic Museum ~ Guest Presenter, Gerry Zegerius ~ This presentation highlights the key components of a strategy developed to conserve the exterior masonry of this heritage municipal building - formerly a convent. The condition assessment and its findings will be discussed as well as the work to stabilize the foundations by core rubble grouting and masonry tie installation. The conservation work also included total repointing of the dimension stone masonry. The presentation will also include the use of video.

A Tale of One Tower! ~ The case study highlights major restoration work carried out on the Dingle Memorial Tower in Halifax, Nova Scotia, to address the extensive damage that had occurred to both the interior and exterior of the stone tower. The causes of the damage will be discussed, together with the reasons why the masonry had continued to crack - even after previous restoration work had been carried out some years before. The presentation will also highlight the combination of conventional and novel restoration materials and techniques that were used to restore the tower to a durable condition.

Discussion & Debate Session

Adjournment ~ Optional Dinner at a local restaurant in a Heritage Building

Friday, 25th October 2019

Accommodating Excessive Differential Movement ~ A University Fine Arts building in Sackville, NB and a stone church in Moncton, NB will be used to illustrate where strategies can be developed to counter excessive differential movement that sometimes occurs between building components. How the strategies can help to prevent re-occurrence of damage will also be presented.

Conservation of the Basilica's Rectory & Parish Office ~ Guest Presenter, Roberto Chiotti ~ Currently, this fine old building - formerly a seminarian college - is in its second year of major restoration and renovation. Our guest speaker, the Architect for the project, will present the challenges from drawing board, through investigation, strategy development, project implementation and administration.

Cladding Panel Deterioration ~ Solving the Mystery ~ For many years a mystery existed regarding Mount Allison University's Convocation Hall in Sackville, NB - why was it that the sandstone cladding wall panels at the base of the imposing entrance were deteriorating so badly? How the mystery was eventually solved and how the surprising cause was discovered and addressed are the topics of this presentation.

Restoration of Stone Porticos and Steps ~ Completed in 1827 at the University of New Brunswick's Fredericton Campus, the Sir Howard Douglas Hall building - commonly referred to as the Old Art Building - is the oldest university building still in use in Canada. The building was designated a National Historic Site in 1951. This presentation discusses a major restoration project to address the extensive deterioration of its entrances. The project - carried out in several phases - included dismantlement of the entrance columns, canopy, step units and wing walls. The columns and canopy units were repaired and rebuilt but the step units, platform and wing walls were replaced with new fabricated sandstone. The challenges of the projects - including stone sourcing and fabrication, as well as a new design of the treads - are discussed within the presentation.

Conservation of Heritage Wooden Windows - Guest Speaker, Mark Shoalts ~ Using two of the buildings already used as case studies - the Basilica of Our Lady, in Guelph, and Fredericton City Hall, this presentation discusses the key materials and techniques that can be used to conserve wooden heritage window, including the use of Dutchmen and consolidation. The Basilica's major window conservation will be visually illustrated in comprehensive detail.

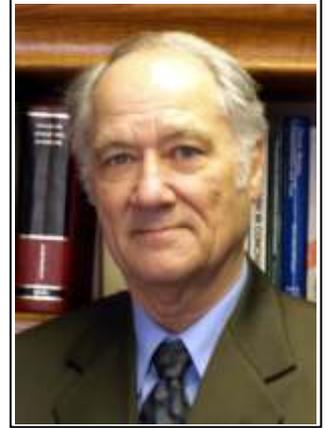
A Tale of Two Towers ~ This presentation highlights the award-winning restoration of a National Historic Site in Guelph, Ontario - Church of Our Lady Phase I - Tower Restoration project. Deterioration mechanisms will be discussed, as well as the condition assessment process. Also examined will be the way in which the investigations assisted in the development of a restoration strategy to address the serious damage that had occurred - despite major restoration work carried out just 15-years before.

Discussion & Debate

Workshop Close - walking tour of the Basilica's interior and the Catholic Hill

Main Presenter

Paul Jeffs (PJ Materials Consultants Limited) has a career spanning over 40 years within the construction industry and has experience from around the world having lived and worked in the U.K., Bahrain, Iran & Japan. He transferred to Canada with his family in 1983 and in 1989 founded PJ Materials Company to serve construction related industries utilising his knowledge and experiences in materials technology and practices. Although also specializing in concrete structures, Paul now predominantly provides consulting services for the conservation of historic buildings and structures.



Paul Jeffs

Paul provides professional technical training in Ontario through PJ Materials Consultants Limited and across other Provinces within Canada through the Continuing Technical College of Dalhousie University. Those who have attended include Engineers, Architects, Authorities, Contractors, Materials Suppliers, etc. He has also been an instructor for the Professional Development Centre of the University of Toronto providing course modules and special event courses as part of their Building Science Certificate Program. Paul has also presented for many organizations, such as the Capital Projects & Design ~ Precinct Properties Branch of the Legislative Assembly of Ontario, the National Capital Commission, the Canadian Society for Civil Engineering, the Canadian Dam Association and the Ontario Building Envelope Council (Toronto & Ottawa Chapters).

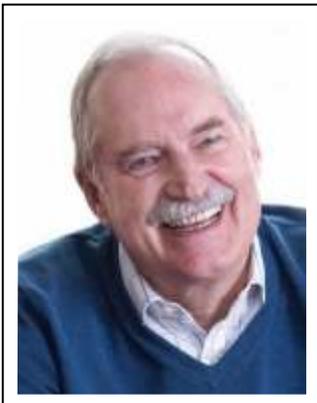
Paul has been a guest lecturer at several Canadian universities, he has authored and presented papers at many national and international conferences and has been a regular presenter of technical training courses in the Middle East. He has also written many technical articles for North American magazines and journals.

Guest Presenters

Gerry Zegerius, Tacoma Engineers ~ Gerry has over 12 years of experience in the construction industry, from both sides of the blueprint. Beginning his career as a carpenter, he comes equipped with a practical mindset to all of his projects. Following his experiences as a tradesperson, Gerry earned a degree in Civil Engineering with a focus on structures from the University of Waterloo. His work experience over the last 5 years as a key member of the structural investigations team at Tacoma Engineers includes many local historical landmarks and buildings. His grasp of technical solutions and mathematical methods, coupled with his passion and enthusiasm for structures of heritage significance, have enabled him to play an integral part on most of the heritage projects successfully completed during his time with Tacoma Engineers. Gerry is an active member of several local heritage groups, including the local branch of the ACO, INTBAU (International Network for Traditional Building, Architecture, and Urbanism), and ICOMOS.



Gerry Zegerius



Stephen Franks

Stephen Franks, Blok-Lok Limited ~ Stephen has more than 40 years experience in the construction industry. Graduating as an engineer in England, Stephen spent four years in the Middle East where he established a formwork rental company, and almost twenty years in South East Asia where his business evolved into a design and build construction company specializing in medium rise condominiums, and high rise commercial and industrial buildings. Since 2002, Stephen has been working with Blok-Lok Limited to develop their range of solutions for the restoration market. Drawing on his vast experience of problems encountered during construction, and using his inherent pragmatic approach, Stephen has been responsible for developing economic solutions to the many challenges encountered in a wide spectrum of buildings from historical restorations, to veneer stabilization of hurricane damaged facades.

Guest Presenters

Roberto Chiotti, BES, B.ARCH, MTS, OAA, FRAIC, LEED® AP, CAHP ~ Roberto Chiotti is a Toronto architect and founding partner of Larkin Architect Limited, an award-winning firm specializing in the design of Sacred Space. In addition to obtaining his professional architectural degree in 1978, Roberto completed his Master of Theological Studies degree from University of St. Michael's College, University of Toronto in 1998, with a specialty in Theology and Ecology granted by the Elliott Allen Institute for Theology and Ecology at St. Michael's. In 2003, he achieved LEED® Professional Accreditation and in 2013 was invested into the RAIC College of Fellows. Since 2017 he has been a member of the Association of Preservation Technologists (APT) and has achieved his Canadian Association of Heritage Professionals (CAHP) designation. Having completed over 100 building projects for parishes in Southern Ontario, Roberto has developed significant expertise in heritage restoration/rehabilitation, liturgical design, facilitating the design process for sacred space, giving expression to theological imperatives within architectural form, and the integration of sustainable design principles for sacred space. These strategies assist in ensuring the long-term legacy and ongoing viability of our religious architectural heritage. His firm's recently completed renovation work at the Basilica of Our Lady Immaculate in Guelph has attracted both national and provincial heritage awards. He is currently working on the restoration of the adjacent historic rectory building.



Roberto Chiotti



Stephen Robinson

Stephen Robinson, MA, CAHP ~ Stephen holds a BA from the University of Toronto and Sheridan College in Art & Art History (1986) as well as a Master's Degree in Canadian Art & Architectural History from Concordia University in Montreal (1992) and a certificate in Heritage Planning from the University of Waterloo (1999). While studying in Montreal and later in Brantford, Stephen began to follow a long-held passion for architectural heritage conservation as a private consultant and was recognized in 2005 by the Canadian Association of Heritage Professionals as a Heritage Researcher for the City of Brantford's Heritage Inventory Project. From 2005 to 2009 Stephen was the Cultural Heritage Coordinator at the City of Vaughan and was hired as Guelph's first full-time heritage planner in 2009. Stephen and his family live in the Hespeler part of Cambridge in an good old heritage house.

Mark Shoalts, P.Eng., CAHP ~ Mark is a professional engineer, a member of Professional Engineers Ontario, The Ontario Society of Professional Engineers, the Canadian Association of Heritage Professionals, the Heritage Canada Foundation, and the Early American Industries Association. Mark is a board member for the Ontario Association of Heritage Professionals, and he is past chair of the Pelham Heritage Advisory Committee and a past member of the Niagara Region's Culture and Heritage Committee, working on Regional policy for the preservation and promotion of heritage resources in Niagara. He has hands-on experience in historical restoration, having personally performed restoration work on many sites such as Butler's Barracks and Fort George in Niagara-on-the-Lake, Balls Falls in Vineland, and Dundurn Castle in Hamilton. Mark also teaches a course in heritage restoration at Willowbank School of Restoration Arts in Queenston.



Mark Shoalts

Conservation of Heritage Structures ~ Project Case Studies

WORKSHOP REGISTRATION DETAILS

Please complete the form accompanying this brochure - one form for each registrant.
Space is limited, so please register early ~ late registrations may be emailed, with payment mailed or presented at registration

COURSE REGISTRATION FEES

Registrations may be made for one, two or three days

One day: \$375.00 + 13% HST (\$48.75) = \$423.75

Two days: \$700.00 + 13% HST (\$91.00) = \$791.00

Three days: \$975.00 + 13% HST (\$126.75) = \$1,101.75

Fee includes course materials, hot breakfast, break-time refreshments and lunch
Please note: attendees are responsible for their own overnight accommodation/s.

All course information - including Registration Forms that may be completed on your computer and emailed
- may be downloaded from the "What's New" page of PJ Materials Consultants Web Page on
<http://www.pjmc.net>

