HERITAGE IN REVERSE:
MATERIAL VALUES, WASTE & DECONSTRUCTION

Symposium Report January 23, 2019

Prof. Susan Ross
Carleton University
Overview

This report provides a preliminary overview of *Heritage in Reverse: Material Values, Waste and Deconstruction*, a symposium held at Carleton University from October 26-27, 2018. It provides a brief written and visual record of the public lecture, walking tour and symposium with nine speakers that composed the main events, expanding this with some of the initial feedback, summaries of highlights and suggested next steps. The report summaries were prepared with help from Nansen Murray.

The intent of the report is to provide an interim record, while potential follow up activities of broader scope with possibilities for in depth documentation and analysis are in development, including online publication of edited videos, a special issue of an academic journal, and follow up meetings or panels. It will be posted as a PDF on wasteheritageresearch.wordpress.org

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Acknowledgements

The symposium took place on the unceded traditional territory of the Omâmiwininîwag (Algonquin Nation). Migwetch (thank you) to our hosts for being the stewards of this land, and all that it has offered, and continues to offer to its inhabitants, for centuries before we began talking about heritage conservation and sustainable building.

The HERITAGE IN REVERSE symposium was organized by professor Susan Ross, Architect, School of Indigenous and Canadian Studies, Carleton University, with help from Donna Malone, Alison Creba, Kevin Complido, Nansen Murray, Sampoorna Bhattacharya, Simon Eden-Walker, and Robert Tombs. Contact susan.ross@carleton.ca

This event is made possible through the generous financial support of Carleton University, including:

- School of Indigenous and Canadian Studies
- Faculty of Arts and Social Sciences
- Office of the Vice-President Research and International
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- Carleton University Library

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- ERA Architects, Toronto
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- Milestone Project Management, Winnipeg
- Ryerson University, Toronto
- Solterre Design, Halifax
**Introduction**

Given the magnitude of waste generated by demolition, increasing attention is being paid in design, research and policy to partial or complete building deconstruction, and to methods for salvage and design with reclaimed materials. Built heritage conservation is often defined in opposition to processes of demolition. Despite this, conservation treatments – from rehabilitation to restoration – frequently involve a degree of demolition and deconstruction. These processes may generate quantities of ‘discarded’ building materials and components that are more or less explicitly managed as conservation decisions.

At the same time, ‘values-based conservation’ calls into question the relationship of heritage to ‘waste,’ often defined as the opposite of what has value. Recent scholarship on curated decay, toxic materials and urban mining introduce critical perspectives on alternate futures for built heritage. Increasing pressure to reduce waste and landfill production, to redefine all waste for reuse, are providing practical strategies. However gaps between critical waste and heritage theories, the emerging waste management practices and evolving policy frameworks, call for dialogues that foster more productive alliances.

The goal of this event was therefore to bring together individuals and organizations active in related areas of heritage conservation, urban, architectural and construction history, critical heritage and discard studies, building deconstruction, sustainable materials and waste management, in order to address possibilities for bridging between these areas as part of projects, policies, research or creative practices.

The structure framed discussions around:

1. Site lessons,
2. Recent research
3. Emerging policy contexts.

**Overarching questions included:**

- What can be learned from deconstruction sites about materials reuse opportunities in heritage work?
- What does recent research tell us about possibilities of connecting heritage conservation with waste?
- Which policies can guide difficult conservation decisions in the context of demolition and salvage?
Public Lecture

Architecture in the Circular Economy
Reclaiming Building Resources

Mark Gorgolewski  Ryerson University, Toronto

Friday, October 26, 2018 at 19:00
Carleton University, Tory Building, Auditorium/Lobby

Sponsored by NSERC CREATE Heritage Engineering
This event is free, but please RSVP at http://events.carleton.ca/architecture-in-the-circular-economy-reclaiming-building-resources/

Heritage in Reverse
Material Values, Waste & Deconstruction

Oct. 26-27, 2018

Symposium

What can be learned from deconstruction sites about materials reuse opportunities in heritage work? What does recent research tell us about values connecting heritage conservation with waste? Which policies can guide difficult conservation decisions in the context of demolition and salvage?

Saturday, October 27, 2018, from 9:00 – 17:30
Carleton University, Diston Tower, room 1017
Includes morning site visits. Lunch provided.

Brad Guy  Catholic University, Washington, DC
Jennifer Corson  Solaris Design/Renovators Resource, Halifax
Gerry Humphreys  Milestone Project Management, Winnipeg
Alison Creba  Carleton University / VU University Brusel
Tina McCarthy  Boston College of Architecture, Boston
Alison Arlotta  Columbia University, New York
Christienne Uchiyama  Letourneau Heritage Consulting, Toronto
Zohro Teshnizi  University of British Columbia, Vancouver
Chris Warden  MTBA Architects, Ottawa

This event is free, but there is limited seating.
Please RSVP early: https://events.carleton.ca/heritage-in-reverse-material-values-waste-and-deconstruction/

Sponsored by: School of Indigenous and Canadian Studies / Faculty of Arts and Social Sciences / Office of the Vice-President (Research and International) / ERA Architects (Toronto)

Organized by professor Susan Ross, School of Indigenous and Canadian Studies, Susan.Ross@carleton.ca

For more information see wasteheritage/research.wordpress.com/symposium/
Programme

Friday, October 26, 2018

PUBLIC LECTURE
19:00-21:00, Tory Building Auditorium
Mark Gorgolewski, Ryerson University, Toronto
  • Architecture in the Circular Economy: Reclaiming Building Resources

Saturday, October 27, 2018

OTTAWA MATERIAL RE-USE WALKING TOUR
9:00 -11:00 Ottawa Art Gallery/Wellington Street various sites
Leader Susan Ross with special guest Brenda Firestone

SYMPOSIUM
Carleton University Dunton Tower room 2017 (20th floor)
11:45-12:30 LUNCH
12:30-12:45 WELCOME
Susan Ross, School of Indigenous and Canadian Studies, Carleton University

12:45-14:00 SITE LESSONS
Chair Mark Gorgolewski (Ryerson University, Toronto)
Bradley Guy, Catholic University, Washington, DC
  • Towards a broader culture of reuse: perspectives from US projects, policy and research
Jennifer Corson, Solterre Design/Renovators Resource, Halifax
  • Optimizing the reuse of heritage building stock
Gerry Humphreys, Milestone Project Management, Winnipeg
  • Deconstruction site strategies: Reusing materials in church adaptations

14:00-15:15 RECENT RESEARCH
Chair Victoria Angel (ERA Architects, Toronto)
Alison Creba, Carleton University, Ottawa / Vrije Universiteit Brussel
  • ON-SITE: Place-specific analysis of architectural deconstruction and material reuse
Allison Arlotta, Columbia University, New York
  • Reciprocities in preservation and waste reduction: US policy context
Tina McCarthy, Boston College of Architecture, Boston
  • Deconstructing the culture of demolition: Deconstruction as a preservation strategy

Break

15:30-16:45 EMERGING POLICY CONTEXTS
Chair Sean Fraser (Toronto)
Christienne Uchiyama, Létourneau Heritage Consulting, Toronto
  • Heritage triggers for reuse in the Ontario policy context
Zahra Teshnizi, University of British Columbia, Vancouver
  • Vancouver pre-1940 houses: A mine for old growth forest wood
Chris Warden, MTBA Architects, Ottawa
  • Salvage in Context

16:45-17:30 CLOSING PANEL: Next stages?
chairs Mark Gorgolewski and Susan Ross
On Friday evening, with over 80 people registered to attend the public lecture, events began with a buzz in the lobby of the Tory Building auditorium, with out of town speakers arriving and meeting for the first time in person, or re-uniting in some cases for the first time since the 1990s. At the same time, despite reading week quietness on campus, a substantial group of interested students, and wide range of public participants from the heritage, architecture and environment communities mingled over snacks. Professor Susan Ross introduced the lecture, with remarks from Laurie Smith, coordinator of the NSERC CREATE Heritage Engineering programme, on behalf of professor Mario Santana, principal investigator in the grant, which paid for this part of the two-day events.

Dr. Mark Gorgolewski spoke for about one hour, which was followed by about 20 minutes of questions from the audience. Mark’s talk entitled Architecture in the Circular Economy: Reclaiming Building Resources, drew largely from his recently published book Resource Salvation: The Architecture of Reuse (Wiley-Blackwell, 2018). This was one of his first speaking engagements on the subject since the book’s publication.

- Mark began by setting out important objectives regarding being able to transfer the heritage values attributed to buildings to the materials reclaimed from them, as part of their reuse.
- It is helpful to start from the work of artists like Anthony Gormley, Vic Muniz and Johan Dahlsen, who work in different ways with waste as a source of inspiration, critical insight and form-making. Gormley for example set fire to a sculpture of waste, to demonstrate loss of value of domestic objects whose materials were still reusable.
- Many new concepts have emerged, which suggest that the role of architecture will need to change, to address the cycles of nature and relate to material histories, and changes in building layers at different scales over time.
- A series of concepts around the circular economy, obsolescence, and architecture as process instead of product, can help develop new perspectives on the possibilities of reuse.
- Both the demand and the supply side of materials reuse need development.
To explain the possibilities, Mark discussed examples of materials reuse in new designs, following a categorization which also organizes the many examples in the book, namely:

- Adaptive reuse with component reuse, e.g. the Posner Centre in Denver (Tres Bird Workshop)
- Re-using what is available at the site, e.g. Ottawa’s MEC and the Nest project by Studio Gang
- Reusing construction materials from elsewhere, e.g. Superuse Studio’s harvest mapping to locate materials around a site, and the EU headquarters in Brussels
- Secondary use of non-construction materials e.g. used tires as a cladding system, and a deconstructed highway structure in new housing design.

Each example offered insights into how materials can be reused extending their lives, while telling stories of past use, giving new values, achieving new objectives and changing the nature of design.

These approaches give value to what is available locally, directly at the site, or in nearby areas, and replicate the way that buildings as a whole find a series of new uses over time.

Sometimes reuse can be very symbolic, such as a EU building with a new type of window walls comprised of windows reclaimed and repaired from all over Europe.

The notion of residual values is important defining a range of types (e.g. social, cultural, environmental, economic and financial) at the scale of material, component, or building.

Circular building offers a conceptual context for reconsidering who owns the materials, where are they stored, and how is their history documented.

Improving information available about reclaimed materials is essential for reuse. The information, e.g. about former sources uses and toxicity, can prevent them becoming waste.

New techniques are required, such as cutting modern brick clad walls into panels.

A new ecology of construction is being explored in these projects, which addresses or builds on industrial ecology, cyclical systems, service intensity, cultural potential, and more.

To develop both supply and market, sources and opportunities need to be understood, from materials on site, to those nearby, to those available from demolition contractors, salvage yards, and new type of brokers, like Rotor in Belgium, who locate materials for projects.

The reuse culture should ultimately impact also on new design processes.

The relationship to scarcity is important, and he quoted Jeremy Till, who argues “scarcity pushes us to see resources as part of a network of social and temporal relationships…”

Design needs to become concerned with the life of materials over time.

Recent events and publications demonstrate increasing interest and possibilities of reuse, such as the Deconstruction Symposium, at TU Delft in 2017, and The Re-Use Atlas.

The Q&A brought up questions about:

- The economics of this approach, on how to move from the current model of obsolescence of buildings to these approaches: Mark suggested will be informed by case studies that demonstrate how different models are developed, including meeting or reducing budgets, to build confidence, with projects sharing their information. Some drivers will help: carbon accounting of projects will help demonstrate benefits.
- Have any Canadian cities started tie demolition to reuse? Mark had experience trying to get Toronto to require demolitions share information on possible materials to reclaim. Embodied carbon will be a useful concept for measuring impact.
- Financial model for the leasing approach? Usually only on publicly owned so far, but the models will need to be worked at with banks. The challenge of guarantees that materials will continue to be reused following leasing was also brought up.
- What about for more ordinary housing and materials, what can be done? A change in culture away from disposable is needed. Important to not just look at short-term economic values.

Afterwards all participants continued the discussion back in the lobby for another half hour.
Walking Tour

Saturday, October 27, 2018, 9:00 -11:00

Ottawa/Materials/Reuse
Susan Ross, Carleton University, Ottawa

With special guest: Brenda Firestone, daughter of O.J. and Isabel Firestone. Ms. Firestone told the story of the house originally built for her parent’s collection of Canadian Art, now the Firestone Collection of Canadian Art at the OAG. When the house was demolished, it was documented and important components and materials were salvaged. The staircase from the house is a centrepiece of the new OAG design.

The intent of this tour – in the morning prior to the symposium – was to create an opportunity for participants to engage with buildings and their materials and observe directly a range of forms of material reuse in the city of Ottawa. It also provided the chance for out of town speakers to see something of the city while getting to know each other and additional participants. For Heritage in Reverse organizer Susan Ross, it was an approach to starting discussion through local examples. Many of the sites are documented on https://wasteheritageresearch.wordpress.com, and a folded handout with map and key information was created and also shared with all symposium participants. At least one additional tour is planned. See next steps.
Public lecture and organizer/tour leader biographies

Mark Gorgolewski, Ryerson University, Toronto
Mark Gorgolewski is Chair, Department of Architectural Science, Ryerson University, and the author of Resource Salvation: The Architecture of Reuse (2018). Mark is past director of the Canada Green Building Council (CaGBC) and former Chair of the Association for Environment Conscious Building in the UK. Mark was founding director of the graduate program in the building science of sustainable design. He has received many grants from public and private institutions to investigate issues of sustainable construction. His research areas include building performance assessment, sustainable housing, reuse of components and materials, and design for urban agriculture. Mark’s interest is in the area of closed-loop systems applied to the built environment. This includes strategies to enhance the performance sustainability of construction materials, building products, buildings as well as urban environments. His work addresses the integration of energy, water, materials and urban food systems.

Susan Ross, Carleton University, Ottawa
Susan Ross is a licensed architect (OAQ, RAIC, LEED AP, FAPT) and assistant professor in the School of Indigenous and Canadian Studies, where she teaches courses in heritage conservation at the graduate and undergraduate levels, including an advanced seminar on Heritage Conservation and Sustainability. Susan has over twenty years professional experience in Montreal, Berlin and Ottawa. She has been active for over a decade in writing and teaching about heritage and sustainability with respect to: urban, modern and industrial landscapes; values ontologies, rating systems and heritage planning policies; and, environmental histories of materials, buildings and sites. She has presented on questions arising from the examination of heritage and waste at the Association for Critical Heritage Studies, the National Trust for Canada, and the Society for the Study of Architecture in Canada; her writing on heritage and waste, and sustainable heritage conservation more broadly, is covered in the Research outputs section of this website.
Symposium Session 1 – SITE LESSONS

What can be learned from deconstruction sites about materials reuse opportunities in heritage work?
Session chair
Mark Gorgolewski, Ryerson University, Toronto
See above under public lecture.

Speaker biographies

Bradley Guy, Catholic University, Washington, DC
Bradley Guy is currently a Clinical Associate Professor, School of Architecture and Planning, The Catholic University of America (CUArch), Washington, DC. His research has focused on building deconstruction, sustainable and healthy materials, life cycle assessment, design to use reclaimed materials and adaptable design. His courses include design studio, design-build practicums, sustainable materials, ethical design, and sustainable design and the LEED rating system. Brad has received The Graham Foundation for Advanced Studies in the Fine Arts Research Fellowship and is currently a member of the LEED Social Equity Pilot Credit Working Group and the AIA Materials Knowledge Working Group. He is also an US ASTM TAG representative to ISO SC59/TC17 WG 1 Sustainable building for the development of standards for sustainable design, and design for deconstruction and adaptability. He was a member and Chair of the USGBC LEED Materials and Resources Technical Advisory Group during the development period for LEED v4. Brad was a co-editor for the book "Construction Ecology", and also wrote the on-line "Design for Disassembly in the Built Environment" guide for King County, WA. He has a M.S. in Architectural Studies from the University of Florida, and a B.Arch. from the University of Arizona, and is an Associate of the AIA and an USGBC LEED AP BD+C.

Jennifer Corson, Solterre Design/Renovators Resource, Halifax
Jennifer Corson, architect, business owner and author of The Resourceful Renovator, published in 2000, is a senior partner in Solterre Design, a small, integrated firm that delivers energy-efficient renovations, historic restorations, and innovative off-grid residential and commercial construction. Her environmental enthusiasm was the creative inspiration for the nationally aired television program The Resourceful Renovator. Jennifer is also president of Renovators Resource Inc., an architectural salvage and dismantling business, and past chairperson of the North American non-profit, Used Building Materials Association, now BMRA. She has promoted recycling building materials at events across North America. She has won awards as an entrepreneur and her work has been recognized for achievements in sustainability from the Canadian Agreement for Sustainable Economic Development, Environment Canada, NRC, CMHC and the ScotiaBank Eco-Living Prize. She brings a long-term understanding to the possibilities of reuse in the Canadian context.

Gerry Humphreys, Milestone Project Management, Winnipeg
Gerry Humphreys is the owner of Milestone Project Management, an environmentally responsible construction firm created in 1999 in Winnipeg, Manitoba. He is a C 2000 and LEED certified Construction Manager. Gerry has been a sessional instructor at the School of architecture of the University of Manitoba, and presented his work at the 2013 “Reclaim and Remake” workshop at Catholic University in Washington. MPM is cited by Gorgolewski as a model of reuse practice. The company promotes an integrated, participatory, and socially engaged construction process, and makes extensive use of salvaged building materials and components. A number of MPM’s projects involved places of community value and sometimes heritage designations. These projects required a balance between social, economic and environmental objectives. He will bring a real-world perspective to discussions, both due to his practical experience on deconstruction and reuse sites, and his involvement in projects with very ambitious social programs.
Bradley Guy (Catholic University, Washington, DC) began the Saturday afternoon portion of the symposium with his talk, “Towards a Broader culture of reuse: Perspectives from US Projects, Policy and Research.” Having worked in the field for decades, Guy was able to bring multiple examples from his own work of new ideas being put into practice, as well as useful costing figures comparing building deconstruction versus demolition. He was pleased to reconnect with the Canadian discussion, having previously met the other participants in his session, including at the early events of the Building Materials Reuse Association.

- Materials reuse is not a new concept: Guy opened his talk with the Roman Theodosian Code which examines the correct way to reuse elements of historic monuments into new ones.
- One of the keys to reuse is deconstruction. Deconstruction is quite literally reverse construction and adheres to the principal of last on first off. But it needs more than this to be successful. The materials must be planned for, either: reused on site or transported, stored and resold. This creates a material flow.
- Sustainability and reuse enter the policy discourse in the US in 1989 With Act Ab939 in California which aimed for 50% of waste diverted by 1995.
- Plastic, cans and bottles only account for about 10% of solid waste, therefore, quickly take notice of construction waste, which accounts for 50%.
- The Northwest area has been a leader in legislating for reuse, particularly Portland.
- Reuse in the US focuses on non-profits and tax incentives, and has struggled to make it into the large economy.
- After natural disasters specific opportunities arise, such as Hurricane Katrina in New Orleans, with over 10 000 homes slated for demolition. The scale of this context makes reuse more viable, local groups – including in preservation ones - started reuse stores. Most of the 9th Ward was deconstructed and the reclaimed materials used to rebuild similar buildings. Salvaged wood has also been used for sheds and fences. These are examples of how to honour the material.
- Guy also showed how the initial cost difference between demolition and deconstruction of one example, which favored demolition, was quite different when more variables were taken into account: Initially it was $13 000 for deconstruction vs. $7, 290 for demolition. However reusing salvaged materials saved $11 000, therefore, deconstruction ultimately only cost $2000.
- Guy’s team also experimented with different labour methods, bringing in more mechanised methods. However, due to the expense of mechanised labour and the smaller amount of salvage the most cost effective was to deconstruct by hand. Still, by adding mechanised methods, you do save time, which is one of the main concerns brought up by developers.
- By comparing the carbon use of deconstruction versus demolition, he established that to reach a net zero impact they would need to salvage over 55% of the building.

Guy ended by pointing out that to go from the current 0.2% of reused materials nationally to even just 5% would be a huge increase. He also had a few examples of how different ideas such as lowering the benchmark of % reuse to qualify for tax credits can remove any disincentive to reuse. This presentation gave a broad overview of deconstruction practices in the USA since the 1990s, which focused on many individual steps forward taken by numerous jurisdictions to move material reuse into the main stream. It showed how small steps still matter, but there is still along way to go.
Jennifer Corson, architect and salvaged materials business owner (Solterre Design/Renovators Resource, Halifax, NS) was the second speaker of the group of three reuse 'pioneers,’ speaking about “Optimizing the Use of Heritage Building Stock.” Her presentation combined an overview of strategies for saving buildings and reclaiming materials from her work with Renovators Resource since 1994, with three recent case studies from Solterre’s design work, which demonstrate the range of materials reuse possibilities, including in new construction and expansion of an older building. She put emphasis on the multitude of roles of owners, salvage crews and designers, and made the link to the materials reuse requirements of green building certification LEED.

- Jennifer argued that is always better to reuse an existing building, this is the most effective way to reuse materials since all the embodied craftsmanship and energy is preserved.
- She defined a clear hierarchy of options in terms of reduced impact: from reusing a building to moving, to panelized dismantling to deconstruction to demolition.
- Some of the barriers to reclaiming and reusing materials are related time, cost, code requirements, designer and client interests. She discussed the barriers for each type of strategy.
- Materials reuse is about understanding the local traditions and economy, and the reuse economy is well understood by those with less resources.
- Economic triggers have included when landfill tipping was made more expensive – this was how she acquired her first stock of materials, off the back of a demolition contractors truck.
- Her business generally restricts itself to pre-1950 materials and components, and focuses on elements in demand and widely available in the region.
- In deconstruction the big decision often deconstruction versus a strip out.
- She put a lot of emphasis on understanding the most effective process, at demolition and design phases, and the need to develop specifications that address deconstruction time requirements.
- Important to do salvage work ahead of abatement which damages other materials.
- She showed how an on site audit of available materials is transformed into a worksheet with dollar values, but also the correlated types of re-used materials lists required for LEED project certification.
- Her own office is located in a WWII-era structure with a BC Douglas fir structure, over which they built an addition. They were able to integrate cast iron radiators, staircases, doors, etc.
- She spoke to an era when many churches were closing and it was possible to move them to new sites, including an example of a church moved in panels from Nova Scotia to Oklahoma, where it was adapted for use as a photography studio.
- She described three case studies, two of which were for clients who had an educational motivation in promoting reuse since it related to their waste management or ecological mandates.
- She also described their off-grid LEED platinum concept house, which includes construction materials created from recycling of glass and tires that would otherwise be sent for processing out of province.
- As buildings become more energy efficient, the concern about materials efficiency will likely increase.

While Jennifer pointed out that some of the same challenges are still there as thirty years ago when she started, she said it was good to see the new interest and energy coming to it, and she had not lost her passion to continue. Jennifer put a lot of emphasis on the context of Nova Scotia, with its relatively older building stock, and the need to see the work of reuse in the context of a local materials economy, which helps to ensure that abundant materials continue to be harvested and reused. As part of this, related skills and trades continue to be needed.
Gerry Humphreys brought over 20 years of construction management experience to the symposium, and is the owner of Milestone Project Management based in Winnipeg. His talk, “Deconstruction Site Strategies: Reusing material in church adaptations,” was full of examples material reuse showcasing the possibilities when you think creatively about sustainability. His company is also very involved with students and disadvantaged members of the community, passing on valuable information regarding sustainability and construction to those who need it most. He has also worked beyond sustainability in St. Mathew’s Church project, honouring its heritage and maintaining it as a cultural landmark.

• 20 years ago, Humphreys worked on the Winnipeg MEC which was the first LEED Gold certified building in Canada. In fact, it was certified in the US because there was no Canadian certification at the time. 98% of the building used salvaged materials.
• From this he developed a 5-step method for dealing with reused materials: Identify materials with potential; find markets for materials not required; identify materials modified in dimension for re-use; identify materials modified in form for re-use; identify materials unsuitable for recycling and destined for landfill. The key is to avoid the final stage.
• During the La Cuisine project Milestone built a series of buildings from 100% reused material, using pre-fabricated steel frame buildings and sea cans. Including a 5000sq-ft building costing only $4000.
• In the project to create a vestibule for the MacDonald House Historic Site, his company reused material from a number of reconstructed buildings in the area. Including brick from an apartment block and steel donated from the city from a rec-center renovation.
• A 2009 project to create the West End Cultural Center was used as a way to give local marginalised residents construction skills by employing them to work deconstruct buildings. Community members were also invited to come use material for their own renovations.
• Deconstruction teaches similar skills as construction including job site safety and tool use. A deal was created with the sub-contractors, that if one of the workers wanted to learn a trade, they could work for the sub-trade free for a week with the idea that if they were liked, they could be hired on full time. By the end of the project 80% of the workers had full time employment.
• In a project with a First Nation community to create the Urban Circle Training Center, the use of local labour and working with locals on design gave the community a sense of ownership even before the building was operational.
• Milestone’s more recent project was the conversion of St Mathews Church into the West End Commons: a social housing development built inside the church. This project had challenges as it was a community landmark built in 1913 and rebuilt in 1944 after a fire. The was a social services branch in the basement and all the renovations had to be done without removing paying tenants. There also needed to be large structural changes, lightening the entire structure by thinning the brick walls and adding more steel reinforcement. The building contains contemporary steel as well as steel from 1913 and 1944. The striped church fixtures were reused in the smaller church in the same space. For instance, the unused pews became wall panels. A children’s park was taken from an airport and used in an indoor common area. Another park outside reused the steps from the front of the building.

The presentation closed with how St Mathew’s still retained its recognisable façade and the same important landmark it had been before. Humphreys also outlined ideas to make reuse easier including: designing buildings with reuse in mind; creating and working from material catalogue; lightening the building code in certain areas; and building for deconstruction in temporary buildings. This presentation while focusing on the sustainability aspects shows us how these aspects can be integrated with heritage in a way that respects both. It also brings in ideas about respect for materials which is integral to both disciplines.
Symposium Session 2 – RECENT RESEARCH

What does recent research tell us about possibilities of connecting heritage conservation with waste?
Session chair
Victoria Angel, ERA Architects, Toronto
Victoria Angel is an Associate and the Senior Heritage Planner at ERA Architects Inc. Prior to joining ERA, Victoria worked for Parks Canada, where she managed the development of the Canadian Register of Historic Places and subsequently served as the Manager of the Federal Heritage Buildings Review Office. Victoria has a Bachelor of Arts (Honours) in Art History, and a Master of Arts in Heritage Conservation, both from Carleton University. She has taught heritage conservation at the University of Victoria and at Carleton University, where she is an Adjunct Professor. She is also a Faculty Associate at the Willowbank School of Restoration Arts in Queenston, Ontario.

Speaker biographies
Alison Creba, Carleton University / Vrije Universiteit Brussel
Alison Creba has been conducting research on Waste and Heritage since she began her master’s program at Carleton University in 2016. Through case studies and research internships she has pursued several broad and specific questions in the field. Her recent report, New Paradigms, New Tools: A Research Report: Developing digital tools utilizing heritage waste, chronicles findings from her internship with the Toronto firm, ERA Architects. In addition to presentations at DeCon & Reuse 17 in Portland, USA and CiPA’s Digital Workflows for Heritage Conservation, Creba is participating in a six-month internship with the established Belgian deconstruction architecture firm, Rotor. Finally, in her Major Research Project (MRP), Creba made a case study of the deconstruction and demolition of the iconic Honest Ed’s and Mirvish Village site in Toronto.

Alison Arlotta, Columbia University, New York
Alison Arlotta is an emerging voice in Heritage and Waste research. Her recent thesis, Heritage and Material Reuse: The Reciprocal Relationship Between Preservation and Waste Reduction, was completed under the academic supervision of Chris Neville within Columbia University’s Graduate School of Architecture, Planning and Preservation, Historic Preservation program. Her research deals with key themes of heritage, preservation, sustainability, reuse, deconstruction, salvage and values. She was awarded an Outstanding Thesis Award from Columbia’s preservation faculty, and worked as a Data Fellow with New York City’s Landmarks Preservation Commission. Allison presented at the Association for Preservation Technology Buffalo Niagara Conference: Points of Departure, as well as the Building Materials Reuse Association (BMRA)’s annual conference DeCon & Reuse ‘18, in Grand Rapids, Michigan.

Tina McCarthy, Boston College of Architecture, Boston
Tina McCarthy is an emerging scholar in the field of Waste and Heritage. She recently defended her thesis, Deconstructing the culture of demolition: Exploring deconstruction as a strategy for historic preservation, in the Boston Architectural College’s Master of Design Studies in Historic Preservation program which focused on themes of heritage conservation, historic preservation, authenticity, sustainability, deconstruction and reuse from a policy perspective. She has presented her research at the Vernacular Architecture Forum, New England Chapter and at the APT Buffalo Niagara Conference as well as the Building Materials Reuse Association annual conference DeCon and Reuse18, held this year in Grand Rapids, Michigan. In addition to her academic work, McCarthy is a skilled historic window restorer and has recently built a tiny house with salvaged materials.
ON-SITE: Place-specific analysis of architectural deconstruction and material reuse

Alison Creba

Reciprocity in Preservation and Waste Reduction: US Policy Context

Allison Iris Arlotta
Columbia University

MHS historic Preservation
Faculty advisor: Chris Neville

Saturday, October 27, 2018

Allison Arlotta

Deconstructing the Culture of Demolition

MHS Historic Preservation Thesis
Boston Architectural College, 2018
Tina McCarthy

Tina McCarthy

Q&A for session 2
Alison Creba, graduate of Carleton University’s School of Indigenous and Canadian Studies, MA in heritage conservation, was the first of three to address recent scholarship, speaking about “ON-SITE Place-specific analysis of architectural deconstruction and material reuse.” She grounds her approach in the relational experiences between actors, materials and places as “site thinking”. Her presentation encompassed work from two main sites, the demolition site of Honest Ed’s/Mirvish Village in Toronto, the subject of her Major Research Project, and the broader urban context of Brussels, the city where she just completed a six-month internship with the Belgian architecture/art deconstruction practice Rotor.

- Alison provided a brief history of Honest Ed’s and the re-development project for the site which will see a wide range of forms of demolition/deconstruction* and material reuse, and described her site-based enquiry into its values during its unbuilding – looking at who and what participates. *Alison argued that demolition and deconstruction sometimes closely overlap or work in parallel.
- She noted the complexity of materials, and spoke to three specific contexts: the similar setting aside of both toxic (e.g. asbestos) and values heritage materials – two ends of the spectrum; the disassembly of the iconic signage into fragments, which quickly resurfaced in online evidence of salvaging; and the site-based categorization of other building materials (steel, timber, brick, concrete) that allowed for some salvage, in particular the timber, which became a popular story.
- To understand how to measure the changing values she referenced two sources: Cedric Price’s projects for site happiness, connected to worker health, and Nicky Gregson’s use of ‘follow the thing’ tracing material flows. Alison created a map documenting the movement of materials away from the site around Toronto, to help develop an understanding of the new lives elsewhere.
- She argued that the demolition site can itself be seen as a heritage site, as evidenced in public interest, the loss balanced by commemoration through ongoing processes of transformation.
- She then spoke about her time in Brussels, both with Rotor and at the Vrije Universiteit Brussel, where she collaborated on a related research report “What Have We Got Here?”
- The approach was ‘embedded research’ on Rotor’s work. Several outputs include an experimental essay: “Somewhere in Between” combining photography with text, describing her journey from the train station, past a modern office tower, and a converted Citroen factory. She explained the important role of the canal and its barges in the city’s historic and contemporary material flows.
- Her photographs of sculptural collections of materials abandoned alongside the walls near Rotor’s site shared physical and conceptual connections as liminal spaces. She related this to Gilles Clément’s “tiers paysage” – or transitional overlooked landscapes, which cultivate diversity. Another model was Building Brussels, which spatialized the materials economy of Brussels over time. The movement of materials can be connected to industrial heritage – which she linked to Baukultur, a concept embracing human activity in the built environment, which was recently endorsed in the Davos Declaration (European Ministers Conference).
- She concluded the Belgian report referencing the BBSN or le Bati Bruxellois, une Source de Nouveaux Matériaux, linking this to Rotor’s research on deconstruction history and the Opalis reclaimed materials inventory system and a site-based project around the city.

Relating back to her journey, Alison referenced Melanie van der Hoorn’s crossing of Thompson’s “rubbish theory” with Kevin Herrington “First and second burial” – to identify the importance of a liminal period in a material’s life cycle, both physically and culturally. These places and moments in-between explored through “site thinking” are important not only transforming associated value, but essential to cultivating and conserving diversity.
Allison Arlotta’s from Columbia University was part of the Recent Research panel. Her presentation, “Reciprocities in preservation and waste reduction: US Policy,” focused on the development of US policy. She focuses on municipalities specifically Portland, Oregon, because they have the power to regulate waste management. She also brought in other examples such as New York for contextualization. One of the most interesting elements of the presentation examined the decline of reuse in the middle of the 20th Century demonstrating how reuse is in fact a return to normalcy in the construction industry after the aberration of disposable materials in the late 20th and early 21st Centuries.

- The field of Heritage is starting to realize that it has a role in mediating environmental problems such as: climate change, environmental degradation and over extraction of resources. Its role is still emerging, but has a part to play in material reuse.
- Before the middle of the 20th Century demolition meant deconstruction. Wrecking companies would bid to deconstruct sites and then would make money by selling the materials, often at their own reuse stores. The work was done by hand and the material sorted and hauled away.
- Interesting to material reuse in a heritage context, is the example of a Catholic church in New York, which uses tiger stripe marble from the demolished National Academy of Design. The church is a designated historic site, and as part of its designation it notes that the reuse allows the building to be a reminder of the city’s recent past.
- After WWII there were large social and economic changes. The price of virgin material dropped while the cost of labour rose. The resale value of material could not keep up and deconstruction could not make a profit. The addition of the bulldozer and wrecking ball as new technologies meant the price of demolition dropped at the same time.
- In the US in 2009 there was a total of 165 million tons of construction and demolition waste. This leads to the overburdening of landfills, but more important is the energy expenditure, resource scarcity and environmental degradation caused by extracting and fabricating new materials.
- It is at the municipal level that power resides for regulating waste and reuse. Portland recently past in October 2016 an ordinance which, in order to get a demolition license, requires manual deconstruction rather than mechanical demolition of 1-2 family homes with a heritage designation or if they were built before 1917. The material can either be sold or donated. It is interesting that this ordinance came about through the advocacy of residents who were concerned about the number of demolitions and out-sized new builds being built, but was created through consultation with numerous stakeholders including developers.
- The date of 1917 was chosen for practical reasons, it was about 1/3 of demolitions—so the reuse infrastructure would not be over capacity—the material is more valuable, and they are easier to deconstruct.

Allison finished her talk with mention of the New York City Landmarks Preservation Commission’s reuse warehouse, which operated in the 1980s and 90s. It existed so that homeowners could do authentic renovations, but it all but forgotten now. It existed because of the economic circumstances of the time, and shows us that the goal of policy is to create the economic climate where material reuse is once more finically viable. She also states that there needs to be collaboration and skill matching between the fields of conservation and reuse.
Tina McCarthy from Boston College of Architecture spoke about her thesis, “Deconstructing the culture of demolition: Deconstruction as a preservation strategy.” She came to historic preservation from a sustainability standpoint, which is clear in her case study of the Missoula Mercantile in Montana. She firmly sees the culture of reuse as integral to the history of the area, as characterized by the Moon Randolph Homestead. When it was founded in 1889 there was no landfill, and reuse was part of survival. Reuse is issue of culture shown by patterns of reuse and disuse. She sees deconstruction as necessary to give materials the attention they deserve as part of preservation.

- As part of the intangible heritage of the Moon Randolph Homestead it is operated in the same culture of reuse as the frontier days. For instance, the roof was repaired by tin from the Missoula Mercantile to mirror a case of reuse form the 1930s.
- Historic Preservation traditionally seeks to save buildings, but sees no difference between deconstruction and reuse, compared to demolition and waste. She recognizes that some buildings cannot be saved, but what happens to them during their end of life still matters.
- The oldest parts of the Missoula Mercantile were built in 1882, and it remained the retail anchor of the downtown until 2010. There were plans to renovate it, but tenants could not be found, and between 2013-16 20 companies looked into purchasing the property. In 2016, a demolition permit was asked for, but public consultation showed enormous support for keeping the building. Finally, the court sided with city council and the building was demolished with the condition that they retained the pharmacy block, while the rest of the building was deconstructed rather than demolished.
- Their plan could be improved with better style and scale integration of the new construction with the historic building. The modern building looks like it is swallowing the pharmacy block.
- The demolition created deep divisions in the preservation community between the Heritage Preservation Committee and those who wanted to see reuse. Experts saw this as a total loss yet the community at large saw value in saving the material even if the building was gone.
- After the Mercantile loss, the preservation ordinance was rewritten to mandate deconstruction in cases where buildings could not be saved. This allows reuse to be considered a step toward preservation rather than surrendering everything once the building is gone.
- Heritage values which appear in deconstruction include: saving historic material; helping to repair other historic buildings with authentic material; gaining intangible knowledge of traditional construction techniques; and increased attention for preservation in the wider community.
- Guidelines for reuse retail: sell donated materials only from buildings about to be demolished; sell local to keep the heritage where it has meaning; no bulk discounts; and sometimes membership can be required.

McCarthy ended with the strong recommendation that the Secretary of the Interior’s standards for historic preservation are inadequate. They need to be changed to acknowledge that demolitions are not the end, and material reuse can become part of a sustainability system. This has the ability to transform historic preservation. It will no longer be preservation against the world, and ‘why are we not understood?’ but instead enter a larger discourse on sustainability. The US government must show leadership in preservation, and McCarthy has found the maintenance, and preservation of park buildings where she worked, was woefully inadequate. Proper documentation was not done, and 12% of buildings were facing demolition by neglect, while many more had collapsing roofs and poor paint. The culture of disposal has penetrated to the point where maintenance is a last choice. To make progress this culture needs to be changed, and funding made available to fix federal heritage buildings. By leading on this the government can help bring change to the culture of waste.
Symposium Session 3 – EMERGING POLICY CONTEXTS

Which policies can guide difficult conservation decisions in the context of demolition and salvage?
**Session chair**  
**Sean Fraser, Toronto**
Sean Fraser has worked across Canada and internationally in the field of cultural heritage conservation for over 25 years. Between 1996-2006 he participated on a number of archaeological excavations in the Middle East as project architect as well as supporting cultural tourism development projects in the region. Sean lectures on archaeology, sustainable design, sustainability, industrial heritage, cultural landscapes, heritage law, planning, professionalism and adaptive re-use at educational institutions and at conferences. He teaches online courses on Determining Significance of Heritage Resources and Heritage Conservation in Context at the University of Victoria in the Diploma in Cultural Resource Management. Formerly Director of Heritage Programs and Operations at Ontario Heritage Trust (2001-2017), he is currently the Director, Programs and Services, at the Ontario Ministry of Tourism, Culture and Sport. Sean brings ideas from his experiences in consulting, teaching and government to this event.

**Speaker biographies**  
**Christienne Uchiyama, Létourneau Heritage Consulting, Toronto**
Christienne Uchiyama is a Heritage Consultant and Archaeologist with more than a decade of experience working on heritage aspects of planning and development projects. Ms. Uchiyama received her M.A. in Heritage Conservation from the Carleton University School of Canadian Studies in 2012. She has written, as lead author or co-author, more than 100 technical cultural heritage reports, including: archaeological license reports; collections management materials; inventories; cultural heritage evaluation reports; and heritage impact assessments. She has worked on development projects ranging from individual properties to large-scale energy and resource extraction projects. She has a great deal of experience working with multi-disciplinary teams, providing advice on compliance with heritage policies and legislation, on development and planning proposals, and has been involved in development proposals at all levels of government.

**Zahra Teshnizi, University of British Columbia, Vancouver**
Zahra Teshnizi, is the research manager at UBC Sustainability Initiative and is in charge of the collaborative research projects with Vancouver Zero Emission Building Exchange. She is the author of Opportunities and Regulatory Barriers for the Reuse of Salvaged Dimension Lumber from Pre-1940s Houses, written as the City of Vancouver Greenest City Scholar in 2015. Zahra holds a Master in Advanced Studies in Architecture from the University of British Columbia with a focus on the influence of multiple stakeholders on sustainable use of construction materials throughout the building lifetime. She has a diverse background in project management, applied research and outreach, focusing on green buildings, sustainable development and design case studies, policies, guidelines, and tools. She is a Certified Passive House Designer and a LEED Green Associate and a steering committee member for the Living Future Vancouver Collaborative.

**Chris Warden, Senior Associate, Architect, MTBA, Ottawa**
Chris Warden (OAA, RAIC, CAHP, LEED AP, APT) has over 13 years of experience in the Architecture and Conservation fields. He earned both a Master of Architecture (2005) and Bachelor of Architectural Studies (2003) from Carleton University, and a certificate in Masonry Conservation (2013) from Willowbank School of Restoration Arts. Warden’s developing expertise includes creative reuse of heritage buildings while still maintaining their heritage character value. At Mark Thompson Brandt Architect & Associates Chris’s work included the award-winning Sir John A. Macdonald Building rehabilitation. Along with firm principal Mark Thompson Brandt, Chris is the co-author of Building Resilience: Practical Guidelines for the Sustainable Rehabilitation of Existing Buildings in Canada. Chris is also chair of Docomomo Ontario, the Ontario working party of the international organization for documentation and conservation of monuments of the Modern movement, and curator of Capital Modern, an online resource focused on Modern era buildings in Canada’s Capital Region.
Christienne Uchiyama is a heritage consultant, trained archaeologist and graduate of the Carleton MA programme (Létourneau Heritage Consulting, Toronto). Her presentation, “Heritage Triggers for Reuse in the Ontario Policy context,” provided insight into some of the impediments and opportunities of materials reuse as part of three different types of building demolition contexts in the Ontario municipalities of Kitchener, Hamilton and Whitby.

- Christienne started by framing heritage conservation work in the Ontario planning policy context, which is delegated to municipalities, referencing the main laws and tools.
- She noted that waste diversion and cultural heritage planning are completely separate objectives within planning documents. She noted that the language of the Ontario Heritage Act is predicated on preventing demolition, but also any type of removal, so by definition it does not allow for/foster materials reuse.
- The three projects she spoke about addressed mitigation, a conservation strategy and interpretation.
  - The first, mitigation example of a row of houses in Kitchener, emerged within a class Environmental Assessment process in response to a road widening. Through a resulting cultural heritage assessment from 2009-2013 an inventory was created, which informed the selected alternative, but nevertheless included demolition of 40 properties, none of them designated. The EA process identified mitigation measures, including documentation of values and elements, as well as salvage. The regional government identified a partnership with Habitat for Humanity, who inventoried the sites for materials in parallel to the heritage assessment. Following that first stage of deconstruction, a for-profit contractor carried out further salvage. So the approach addressed cultural, social and environmental interests.
  - The second example in Hamilton could be seen as part of a conservation strategy. The City has specific requirements for a documentation and salvage report in the context of a demolition, including artefact curation and reuse, with a detailed inventory of salvageable materials. The detailed inventory is also useful as a comparative record for conservation of other purposes.
  - The third example demonstrated a way of framing reuse of materials reclaimed from demolition through interpretation. Initial cultural heritage evaluation of a house, was part of a project intended to integrate the building. This was based on OHA Section 9.06 criteria, which are quite specific to architectural, historic and contextual values. The “Ontario cottage” styled house was originally built in the 1870s for a well-known marble works company owner. Original marble mantelpieces had been removed at an unknown earlier time. The house was also associated with a former mayor who re-clad the building in brick during the time he owned. It eventually became less likely to be integrated in new plans. Thus the building had associated historic values with two individuals, but its architectural values were less obvious. The approach proposed following the decision to demolish was based on reclaiming materials to create an interpretative space, to retain some aspects of the history.
  - Interpretative aspects are important for provincial clients, for example railway bridges. Combining materials reuse with interpretation is another strategy.

Uchiyama concluded by saying that while the three projects all involved demolition, the approaches for reuse emerged as part of different aspects of the planning process and referenced different local tools. She also suggested that the level of controversy about the approaches had varied.
Zahra Teshnizi is a research manager at the University of British Columbia, and has worked on many sustainability related projects around Vancouver. Her presentation, “Vancouver pre-1940 houses: A mine for old growth forest wood,” focused on the City of Vancouver’s initiatives to encourage the reuse of wood and other materials from older houses. These old houses contain wood from the old growth temperate rainforest, which are now almost entirely gone. When beginning her research, she saw that as a society we now know how and why material reuse is needed. Therefore, she asks why we still do not implement it at the scale required for a sustainable society.

- The natural heritage of old growth forests is hidden in our houses, and once gone, cannot be brought back.
- Focus on the lifecycle of the material rather than on the lifecycle of the building.
- Recycling and reuse are much more common on large construction sites than on small ones. Single family dwellings and renovations create a smaller total amount of rubble, but a larger percent is sent to the landfill. Reasons or this are that for smaller operators separating the waste means more trips to more facilities, leading to more time and money spent.
- The municipalities of greater Vancouver have come up with numerous plans to reduce landfill waste, starting with the Metro-Vancouver Integrated Solid Wastes Resource Management Plan (2010) and zero waste by 2040. Construction waste is a huge part of this. 90% of construction waste comes from demolition and 60% of demolition is wood.
- In 2014 a demolition by-law came into effect which made it mandatory in pre-1940 homes for 75% of material diverted from the landfill, and 90% from character houses. Since these laws have been passed, it has diverted 40 000 tons from the landfill. The law has a 98% compliance rate with an average of 80% being diverted. However, this was almost all recycled, rather than being salvaged and reused. The bright point here is that contractors have been following the law, showing that by-laws can be successful at guiding industry toward sustainable methods.
- Reasons for this include the time required, the high cost of land means that the value of salvage is inconsequential, and high labour costs mean that the resale of salvage is 10x more than virgin material. Salvaged wood only makes up 10% of new wood being used so large-scale projects are out of reach. The supply chain surrounding reuse is also is not established. Large salvage centers don’t exist and small operations lack capacity. Another major problem is salvaged wood needs to be regraded by an engineer before it can be used in structural situations.
- One study suggested a universal stamp for reused timber so customers have an easy way to identify salvaged wood.
- In 2019, the by-law is set to expand up pre-1950 homes and mandate that all homes older than 1910 must be deconstructed.
- Another initiative is the development of a deconstruction hub for salvaged materials.

Teshnizi wrapped up by saying that the main limits on reuse are affordability and time. Her solutions include: learning from other jurisdictions such as Portland and Seattle; moving methodically and consulting with industry; supporting peer knowledge sharing and case studies; and finding experienced contractors to train those less experienced. Lastly and very importantly, she tells us that although the cultural heritage on the west coast is relatively recent, the forests from which buildings are built are ancient and irreplaceable.
Chris Warden closed out the last session of the symposium with his presentation, “Savage in Context.” The talk was divided in two sections, the first was on the Sir John A. Macdonald Building Renovation, and the second was based on “Building Resilience.” This is a document that Walden’s company MTBA Associates wrote, building on the sustainability considerations in the “The Standards & Guidelines for the Conservation of Historic Places in Canada.” Because of The MacDonald Building’s designation as a federal heritage building, and high value placed on both the external and internal heritage values there were unique challenges and constraints placed on the renovation.

- The Sir John A. MacDonald building was built as the Bank of Montreal in 1931 for almost a million dollars, and designed by E.I. Barret.
- The bank had not done many renovations so it was very authentic to the original design.
- There was great pressure to maintain the heritage elements. The building was divided into primary, secondary and tertiary values. The primary was maintained but for the others it was not always possible. Some of the intangible heritage connected to its previous use was lost.
- The project relied heavily on the Canadian Center of Architectural Archives, allowing them to follow the original design whenever possible.
- Marble from the washrooms was reused, and features such as cigarette stains were maintained.
- As part of an addition to the west, the West Annex was deconstructed, and the Queenston limestone was reused to repair the resulting damage to the wall. The difference in the stone is visible allowing differentiation between the original and the renovation.
- An interesting note is that a clock to replace an original was purchased on e-bay due to the prohibitive costs of building a new one. This shows a creative solution to find a similar clock which maintains heritage holistically if not completely authentically.
- The new conference areas flanking the entrance required significant alteration allowing for elevators, stairs, and expanded washrooms. Changes in the wall used metal dividers between the wooden panels rather then the original wood dividers. This once more allows for a harmonious differentiation between the old and new.
- Another heritage element which was of paramount importance to maintain was the French Pretoria marble from the Pyrenees originally part of the teller counters in the main hall. The counters were completely documented before disassembly, a task made easier by the segmented nature of the marble. They were reused as benches and credenzas in a number of locations throughout the building. Marble is a very forgiving material to work with both in durability, and its many colour scheme making it easier to integrate into a new area. This idea links strongly to the idea of building resilience.
- The “Building Resilience” section of the presentation made important points in how heritage renovations should be conducted.
- Being careful on a theoretical level of redefining relationships within a space.
- Building for redundancy and durability, in a historic building the materials used in renovation need to equal the robustness of the original materials. Like in the case of the marble in the original washrooms and counters, this builds in adaptability and becomes part of the story.
- Look at the whole building ecology, look for the logic of prior interventions. What was originally sustainable. Adding in mechanical and electrical can severely damage a buildings entirety.

Warden closed his talk with the reminder that the focus on heritage reuse to this point has been on buildings built prior to 1940. To have a larger impact on sustainability these ideas must be brought to the huge number of modern building stock existing post 1940s. It will be difficult due to larger numbers of buildings and modern construction techniques, but these challenges are also why they can have a much larger impact on society’s long term sustainability.
Closing session and highlights from all sessions

Mark Gorgolewski, Ryerson University, Toronto
Susan Ross, Carleton University, Ottawa

The following are an initial assessment of some of the key observations and recommendations re-organized to suggest some initial areas of strength or needed focus.

Changing attitudes? Empower heritage/materials conservation together
- Consider contrasting images of demolition and deconstruction: it is a problem when historic preservation sees these as equally ‘wrong’.
- We know why we should reuse, so why don’t we?
- Salvage gets dismissed in the sustainability discourse.
- Instead of saying that we already know all about salvage and reuse and it does not have enough of an impact on the environment, consider how much stronger the argument becomes when you group it with heritage values. Join goals and forces.
- Two models for reuse are project management and charitable— a third model is regulation?
- Need to continue to push governments to put in place regulation.
- Subsidizing demolition still needs to be addressed.
- Need for flexibility, to look more at constraints from codes.
- Using the right tool in the toolbox— fix heritage tools that don’t allow reuse.
- Making the business case for salvage or deconstruction.

Social sustainability and values, embodied carbon and stories
- Need to connect with broader ideas of social and cultural sustainability, like the FARO convention calls for.
- The social values and benefits of deconstruction, its possible role in reconciliation.
- Sustainability and embodied energy as values.
- The potential for gaining carbon credits for reuse.
- Importance of telling stories; the qualitative counterpart to the idea of carbon accounting.
- Reinventing labour as meaningful work.
- Having fun with reuse.

Giving value to the entire building stock
- Need to take on the entire existing building stock.
- Problem of the neglect of the existing building stock.
- Importance of maintenance, and connecting this to salvage. Both to preserve in place and for longer term reclamation.
**Reusing materials including modern and contaminated**
- Reuse is essential, salvage is meaningless without it.
- Building an infrastructure for reuse.
- A pre-1940s cut off was set in the 1990s salvage work, based on materials that are difficult to disassemble.
- Need to also consider the potential of repair and re-use of elements still in demand that are widely available, like ceiling tiles or light fixtures.
- Modern material may be in good condition, in buildings being demolished for other reasons.
- Relationship between contamination and heritage value.
- Looking more at contamination, the heritage of waste, materials like drywall, suspended ceilings.
- What are principles that connect reuse and heritage work? E.g. reversibility. Alterations like adding spray foam that are not reversible block the future in reuse, just as they can lead to loss of possible heritage values.

**Material values and place values**
- Old materials buried in young heritage.
- Importance of characterizing materials, their strength, toxicity, etc to assess how reusable they are.
- Some materials are more forgiving, like patterned marbles.
- Material flows important to understanding place values.
- Need to shift beyond “in situ” heritage values; values can be associated with materials even when they are moved.
- Important to recognize the multiple provenances that came together over time in the construction of a building/landscape. E.g. local extraction, regional and broader patterns of import, including the labour and craftspeople.
- Unlocking the values of materials.
- Need to minimize how much waste is created in adaptive reuse.

**Who was there/is involved/should be – expanding the conversation**
- This event was an exchange between the ‘pioneers’, young scholars and emerging professionals working in different disciplines, contexts of practice and jurisdictions across North America. It demonstrated the potential of peer-to-peer knowledge sharing and training. We should look at different constituencies to involve (e.g. the trades, economists).
- Need to recognize the different stakeholders at different stages, disconnections in the decision-making process over time.
- Taking this conversation into other events. Propose panels at different conferences.
Selected texts by the speakers


Additional references by the speakers and others are found here:
WASTEHERITAGERESEARCH.wordpress.com
Follow Up
Feedback
Selected comments received from participants

First off, warmest congratulations on the extraordinary success of your symposium. It genuinely pushed the conversation about ‘heritage’ and ‘value’ forward in a meaningful way – something that has proven to be very difficult to do. I felt inspired and uplifted by the event, and will be thinking about the implications of the presentations and discussions for some time to come.

Victoria Angel, Associate, Cultural Heritage Lead, ERA Architects, Toronto

It was great to see everyone, both old acquaintances and new. I am also inspired by the powerful message of "waste heritage" that you have created. I am looking at books I have this morning from the Netherlands along this line and think there is also then a great potential for this two-country gathering to be even more international given interests in the EU especially. I echo Jennifer's statement that I am also inspired anew and especially with the participation of the next generation. Thank you so much for the opportunity to share and learn.

Brad Guy, Catholic University, Washington, DC

I am just calling to say, how amazing that weekend conference was. I was really, really, impressed. I wrote a lot of notes, but I could not stay for whole thing. You just kind of peaked a whole new area that we can look at, especially in my work. Just want to say thank you. Thanks for organizing that. Wish I could have made it to everything. What I will do is maybe at some point come and meet you at Carleton and listen to you some more, because that was really fascinating. So just congratulations, and talk to you later.

Andrew Waldron, National Heritage Conservation Manager, BGIS, Ottawa

I wanted to echo the sentiments that have been flowing in following the Symposium - It was a great pleasure to share the time and space with all of you on this subject. It was very encouraging to return to Canada from Europe and to enter into this discussion - one which revealed the scope of work, perspectives and potential embodied in this field, on this side of the ocean.

Alison Creba, MA Canadian Studies, 2018, Toronto

Let’s keep an eye on building something on this topic into the National Trust conference in Winnipeg next year – October 17-19, 2019. We need a larger national conversation about building reuse-deconstruction as I’m not sure mainstream heritage people entirely understand the topic, let alone the opportunities for panelizing brick walls, etc.

What were the next steps identified in your last session at the Symposium on Saturday? Is there an opportunity to build on last weekend’s symposium to bring together a handful of key players in Winnipeg? I’m sure there would be broad appetite to go further… Meanwhile just reading in the Economist that Canada produces 600kg of waste per person alongside Germany, while, say, China produces 150kg – we have a problem!

Chris Wiebe, National Trust for Canada, Manager, Heritage Policy and Government Relations

Thanks to Susan for putting this together and everyone for contributing to this event. It is important to get together face to face sometimes to exchange ideas and to get to know new people working in the field. I agree that the Waste Heritage message is an interesting one to pursue and I hope we can all find time to continue the discussion.

Dr Mark Gorgolewski Professor & Chair, Department of Architectural Science, Ryerson University
Next steps

This interim report and video editing for posting on the Waste Heritage Research website
- Currently in development by Susan Ross with help from Nansen Murray, Aditi Singh
- Follow up meeting with CU Library about longer term archiving of videos/event content

A special issue of the Journal of Cultural Heritage Management and Sustainable Development
- Theme of “Heritage and Waste” – accepted by the journal editors (Nov.19), and the process is being formalized with the publishers.
- Victoria Angel has agreed to be co-editor, and several speakers are interested in submitting papers.
- A wider call for submissions will go out to additional leading and emerging scholars in the field in the USA, UK and Europe.

Follow-ups for collaboration/related events
- Dalhousie University (also involve EAC, Halifax?) – proposed event proposed by Jennifer Corson (speaker)
- National Trust for Canada conference in Winnipeg in October 2019 – related event proposed by Chris Wiebe, NTC.
- Ottawa government/property management – federal possibilities, meetings proposed by Vince Catalli (PSPC) and Andrew Waldron (BJLC)
- Ottawa Art Gallery – possible publication on the Firestone Staircase and House – proposed by Brenda Firestone (walking tour presenter)
- Knot Gallery – interest in a workshop with artists who design light projections on Ottawa Buildings – Neven Lochhead

Walking tour part 2
- Ca.10 people who had wanted to join the tour but were not able to due to the maximum group size. The possibility of a second tour was raised
- In addition, Knot Gallery mentioned above included a possible version of the tour.
Documentation

The following documents are available for further use in analyzing the event and the possible next steps, including ensuring wider dissemination of any publications.

Attendee list
- Expected attendance list for the public lecture is captured in the online registration, plus all the speakers and students helping who were not required to sign in.
- Attendance for the walking tour is available from a sign in list
- There was also a sign in list for the public symposium; those attending the walking tour did not sign in again

Photos
- Photos of the walking tour were submitted by Alison Creba
- Photos of the symposium were taken by Sampoorna Bhattacharya and Susan Ross
- The photos could be captioned with names of people

Powerpoint/PDF slides
- All presenters have shared their presentations with the organizers and each other through a common dropbox.

Videos – list
- Separate videos are available, have been edited, and will eventually be ‘published’ through the Carleton Library Services. The highlights of each paper above were prepared in part from the videos.
- Public Lecture – the complete lecture by Mark Gorgolewski, not including the introductions by Susan Ross and Laurie Smith, since the recording microphone had not been turned on.
- The overall introduction by Susan Ross was not taped.
- Symposium 1.1 Introduction by Mark Gorgolewski, Brad Guy
- Symposium 1.2 Jennifer Corson
- Symposium 1.3 Gerry Humphreys
- Symposium 1.4 Q&A with Guy, Corson and Humphreys
- Symposium 2.1 Alison Creba
- Symposium 2.2 Allison Arlotta
- Symposium 2.3 Tina McCarthy
- Symposium 2.4 Q&A with Creba, Arlotta and McArthy
- Symposium 3.1 Christienne Uchiyama
- Symposium 3.2 Zahra Teshnizi
- Symposium 3.3 Chris Warden
- Symposium 3.4 Q&A with Uchiyama, Teshnizi and Warden
- Symposium 4 Q&A with Susan Ross and Mark Gorgolewski

Also being compiled are follow up emails and notes on calls and meetings with remarks