

## Heritage and waste: introduction

“New heritage suggests that instead of finding the best, calling it heritage and fighting to keep it, we should look with open eyes at all that exists, accept that at some level it is all heritage and then decide how best to use it for social and future values. This may involve traditional preservation, but it may not.” G. Fairclough, 2009 “New Heritage Frontiers,” *Heritage and Beyond*, Ed. Council of Europe, 33.

## Contexts

Given the magnitude of waste generated by demolition and disasters, and concerns about resource depletion and landfill, increasing attention is being paid in research and policy to partial or complete deconstruction, and to methods for salvage and design based on the reuse of reclaimed materials. Waste, deconstruction and material reuse are also being considered in the context of environmental studies, industrial ecology, and cultural theory. The field of heritage conservation has, however, been slow to engage in an equivalent reflection on material waste or reuse. This is despite the frequently considerable quantity of discarded materials that may be generated as part not only of inescapable demolition but of any given conservation project.

The multiple impacts of construction, renovation and demolition and, in particular, the extraction, transformation and eventual discarding of materials, often after only a short life, are generating increasing interest in examining how all building processes, including heritage conservation, can enable material reuse. Furthermore, attending to the embodied environmental effects of building materials forces the field of heritage conservation to address the complexity of reusable materials and assemblies embedded in buildings. Not only unique crafted elements like carved stone but manufactured systems like modular ceilings form part of the wider inheritance of the entire existing building stock and infrastructure. Given its sheer volume across the globe, it is precisely the more recent material legacy –previously deemed to have little or no heritage value– that is becoming the focus of stewardship efforts in the twenty-first century. New approaches to conservation are thus required to address this expanding scope and specific issues of buildings, materials and assemblies of the recent past.

In parallel, recent scholarship on curated decay, toxic materials, urban mining and the circular economy (CE) has introduced critical perspectives on alternative futures for built heritage and, in some instances, practical strategies for stewardship and conservation. To begin with, waste management and material reuse processes are beginning to challenge traditional definitions of heritage that draw distinctions between “value-bearing” elements of the built environment and elements of “no value,” as part of policies guiding how the latter are to be managed. However, gaps between critical heritage theories, the emerging area of discard studies, and innovative waste management practices and policy frameworks, highlight the need for greater dialogue between these areas of enquiry, to foster productive alliances. The aim of this issue on “Heritage and Waste” is therefore to explore questions and ideas that arise at the intersection of heritage conservation, waste and value classifications, and material reuse. In making connections between previously disparate fields and practices, the goal is to encourage a critical reassessment of the concepts of heritage, waste, value, conservation and material reuse for the twenty-first century society.

This special issue of the *Journal of Cultural Heritage Management and Sustainable Development* was initially conceived as a follow-up to a symposium at Carleton University



(Ottawa, Canada) in October 2018, entitled *Heritage in Reverse, Material Values, Waste and Deconstruction*[1]. This event brought together pioneers of deconstruction and reuse in Canada and the USA with established practitioners and emerging scholars working primarily in heritage conservation and sustainable design. Four of the presenters have contributed to this special issue. The call for abstracts drew responses from scholars from Europe and other continents, adding perspectives from building science and anthropology, and case studies addressing post-disaster contexts in Italy and Syria, among others. Indeed, the high number of abstracts received suggests that the theme of “Heritage and Waste” has resonance on every continent.

This collection of articles draws attention to a growing interest in the transformative contexts and processes of disaster, demolition, deconstruction, salvage, reuse and recycling; and the broad range of values of the materials generated and/or utilized. It makes the case that heritage conservation can play a much greater role than it has to date in environmental sustainability, by helping to reduce resource consumption and landfill development. Moreover, it highlights opportunities to plan for material reuse in ways that are inclusive and socially equitable.

### Overview

These eight articles reveal the breadth and complexity of concerns associated with how heritage conservation and material salvage and reuse intersect, informed by their geographic and cultural contexts. The topics they address encompass the dynamic nature of heritage and value; the cultural meanings of demolition, deconstruction, and material flows; heritage conservation and the CE; entanglements of designers and materials in reuse design; and the environmental, cultural and social roles of material reuse in post-disaster contexts. They are summarized and discussed in related pairs below:

Articles by Allison Arlotta and by Tina McCarthy and Eleni Glekas challenge the traditional boundaries of heritage conservation and the field’s narrow focus on intact buildings and sites, traditionally limiting salvage to highly valued elements for collection or treatment as spolia. Both texts argue that processes of deconstruction and material reuse can in some cases not only sustain, but generate, associative and other values, in addition to conserving the embodied effects of materials, and expanding conservation’s role in broader reuse.

Pointing to recent scholarship on “past-presencing” and to second-hand markets, in which objects gain increasing layers of associations and meanings in present uses, Arlotta proposes that the concept of heritage be understood to exist on a spectrum, from reliquary and stable to dynamic through reuse. She also argues that, in practice formally valued artifacts and waste co-exist, and that a new understanding of both could be derived by considering them collectively, rather than separately. Ultimately, both heritage conservation practitioners and waste managers work with “valued” materials. As such, much could be gained by moving beyond a focus on buildings, toward a greater engagement with building components and fragments, and with the flow of materials from building to building and place to place.

McCarthy and Glekas focus on the absence of a treatment type for buildings entering the end of their lifecycle. Using the case study of a Savannah, Georgia not-for-profit, Emergent Structures, they consider how the deconstruction industry might evolve through the consideration of the heritage value of materials. Through this example, they reveal how an understanding of the sometimes difficult cultural history of materials can influence approaches to material reuse and stewardship. They also highlight how deconstruction and heritage materials practices can not only play a role in mitigating the loss of buildings and sites, but be carried out in accessible and equitable ways for communities and people.

The pair of papers by Satu Huuhka and Inge Vestergaard and by Zahra Teshnizi develop the focus on heritage values and processes with perspectives from sustainable

---

design, construction and waste management, to expand the goals of building and building materials conservation with reference to recent theory and policy.

Huuhka and Vestergaard take a theoretical approach built on reviewing recent literature to explore the CE, which they argue has not yet gained traction in the discussion of sustainable heritage practice, but could. They connect the CE-based efforts to measure the values in prolonging the lives of buildings and materials to those of building conservation. While the CE does not currently pay as much attention to the existing building stock, a conservation focus on the entire building and heritage values, limits the development of tools to facilitate their whole or partial reuse, including as material banks that recognize ecological and other material values.

This theoretical approach could help to break down conceptual barriers around types of values and their roles in managing materials throughout their lifecycles. In counterpart, Teshnizi's article offers a concrete example from the city of Vancouver, one of the increasing number of municipalities experimenting with a form of legislated deconstruction. While less explicitly linked to CE theory, her arguments also build on measuring ecological value of materials and environmental impacts over the lifecycle. Such local policies are emerging as a North American counterpart to initiatives happening at a regional scale in the EU. Teshnizi's paper considers the potential of old growth wood in the city's pre-1940s houses, which often stands to not only retain ecological values, but gain economic value through its recovery.

In theory the Vancouver context provides a case study of how municipal policies or regulations might through waste management also address objectives for heritage conservation. However, the policy reference to heritage is underdeveloped, and the tools and practices for deconstruction remain premature without the context of an organized salvage industry or a thriving reuse and design market. These perspectives also highlight the need to support the roles and practices of those who actually do the work of unbuilding and re-design.

The next pair of articles, by Alison Creba and Staffan Applegren, then looks at perspectives from changing practices, exploring entanglements of matter and living beings as part of deconstruction and transformation. Here, the authors' research involved embedded approaches to documenting demolition/deconstruction sites and in salvage/reuse processes and projects. While Creba spent time observing a large-scale and highly watched demolition site in Toronto, Canada, Applegren reports on time working with a pile of reclaimed oak flooring in a re-design company studio in Gothenburg, Sweden.

For Creba, the evolving relationships of materials and people from a once iconic discounted retail hub are both connected and disconnected in a complex choreography on and off site and over time. Making reference to "follow-the-thing" or object biography, while following popular discussion on social media, she argues that we should be mapping material flows to appreciate the new values attributed to what might otherwise be considered lost. Her phenomenological approach draws attention to individual stories of attachment to place through efforts to salvage more unusual materials like neon-signage, while pondering the environmental responsibilities of disposing of what was once considered architectural trash.

In contrast, Applegren pursues a sensory ethnographic approach, involving close contact (through touch and odor) with reclaimed oak flooring, to understand how the processes of reclaiming and designing with salvaged materials is informed by co-constituted human-animal-material lives. He argues that concepts like CE that are helping direct waste management in Sweden, need to be better informed by processes that recognize socio-historic values but also the risk and messiness of reuse processes. These insights from time spent alongside demolition contractors or interiors reuse designers offer complimentary new perspectives to broaden the usual focus on associated values, while like McCarthy also highlighting limitations in established notions of what constitutes conservation work.

The last pair of papers explores human-material interactions within post-disaster contexts, where earthquakes and war have destroyed or disrupted lives, communities, and urban fabric, in addition to generating post-disaster material debris at a massive scale. In contexts examined here, in Italy following earthquakes and in Syria as a result of the Civil War, rubble management issues are quite distinct from those associated with development-based demolition debris, amplifying the close connection between material and human destinies, as more or less equitable human choices.

Ahmadreza Shirvani Dastgerdi and his four co-authors use the 2016–2017 earthquakes in central Italy as a case study to challenge traditional philological approaches to the management of post-disaster rubble (or heritage waste). They question how top-down, expert-driven approaches are employed to identify and catalogue historically and architecturally significant building material, with the goal of carrying out scientific restorations of damaged monuments. The authors argue instead for more integrative, community-based approaches to rubble management, influenced by “new paradigm” thinking in the field of heritage conservation, as well as the UN Sendai Framework for Disaster Risk Reduction and its call to “Build Back Better.” These approaches place greater emphasis on community participation in reconstruction, and the importance of safety and resilience in an earthquake-prone region, with the intent of ensuring the long-term sustainability of historic towns and villages.

Christine Kousa and Uta Pottgiesser examine the value and potential of material debris in Syrian post-conflict reconstruction efforts, where very little guidance yet exists regarding material debris management and reuse. In this context, appropriate stewardship of material debris is critical for improving quality of life and people’s ability to return to their homes, while also avoiding increased landfill. Appropriate management and reuse of material debris may also, however, help to sustain memory and traditional building forms and practices. The examples selected in this article suggest the broad range of forms that should be considered for reuse, from landscape elements in revitalized public space to needed infrastructure for renewable energy. Such examples reinforce the arguments of many authors in this issue on the important role that reuse can have in both sustaining and transforming values.

### **Looking forward**

At the 2018 symposium on “Heritage in Reverse,” Mark Gorgolewski, Canadian architect, educator and author of *Materials Salvation, The Architecture of Reuse* (2018), identified the need to connect the carbon accounting of existing materials to storytelling about material lives. If cultural heritage conservation needs to pay more attention to material reuse considerations, the reuse industry can also better use heritage processes to support the arguments for reclaiming the materials. Other key conclusions from the symposium worth highlighting here include the need for new economic and accounting models to help bridge values, and support development of related fields and industries. This will include research to establish the relative economic values of building and materials reuse in multiple contexts. Taking conclusions of the 2018 symposium and this special issue as a starting point, it can be anticipated that further research will be needed in a number of key areas:

To address new principles and values categories, heritage and conservation policies and processes of evaluation will need to be adapted to more expansive and inclusive. While established conservation principles like reversibility can be redefined to connect to reuse, place-based values may need to expand to address the full lives of materials. Discussions of material compatibility must also build on expanded understandings of the diversity of embedded values of existing materials.

To foster material reuse, conservation treatments could be redefined as part of a greater continuum of actions that include building relocation and deconstruction in part or in whole. Establishing a continuum will help build recognition of the critical importance of all building and

---

material reuse in the decarbonization of our environment, without pitting material reuse against built heritage conservation, or limiting the focus on official inventories of historic buildings.

To acknowledge the inherent tension between conservation of historic sites, deconstruction, and material reuse, in parallel to adaptation of evaluation tools, research is needed that demonstrates how to quantify the differences between building and building materials reuse. The maintenance of the existing building stock, heritage or other, also keeps materials in use. The arguments used to promote heritage conservation need to better connect to arguments in favor of building stock reuse in general.

To address gaps in current capacity, re-education of participants in heritage and conservation processes on the greater potential of reuse is needed. The full spectrum of conservation related practices from maintenance to adaptive reuse and urban infill need to involve new perspectives, support new trades, and pilot project and policy models. Through informed communities and practices, conservation, adaptive reuse and infill projects should become places where reclaimed materials are valued.

To reflect the vast legacy of the building stock of the twentieth century – both ordinary and outstanding – survey, inventory and evaluation systems should, in future, be designed to place greater emphasis on the functional, social and material values of the whole of our built inheritance. This broader complex legacy –that is also habitat to many millions of people– was often constructed with a much shorter material lifecycle in mind. As it ages or lose value in its current built form, new ideas about cultural heritage, sustainability, and material reuse should propel conservation, sustainable design and waste management sectors to reconsider how this vast resource bank can be kept in use through dynamic processes, while offering continuity and in many cases, more equitable access to resources.

New directions in building and materials reuse require a combination of looking back and looking forward. There is much to be done to move the “Heritage and Waste” discussion forward and into concrete actions. We would like to thank all our authors for sharing their original ideas and perspectives, and also acknowledge the 15 reviewers whose comments were invaluable to the quality of the papers as published.

**Susan Ross**

*School of Indigenous and Canadian Studies,  
Carleton University, Ottawa, Canada, and*

**Victoria Angel**

*ERA Architects, Toronto, Canada*

**Note**

1. Susan Ross, 2019, Heritage in Reverse, Material Values, Waste and Deconstruction. Symposium Report. <https://wasteheritageresearch.wordpress.com/symposium/>