

**Stability, flexibility and resilience:
archaeological lessons for resource management and infrastructural investment**

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EXECUTIVE SUMMARY

BACKGROUND: THE ISSUE

Theme: Past and future models of governance

Sub-Theme: From a historical perspective, how has governance innovation progressed in the past, and what are the pitfalls to avoid as we move forward?

This project was inspired by the questions asked by the Social Science and Humanities Research Council (SSHRC) 2024 Knowledge Synthesis Grants (KSG) funding opportunity addressing global challenges identified through the Imagining Canada's Future initiative. Taking an archaeological perspective to the theme of past and future models of governance, we asked: "How can archaeological and Indigenous knowledge be effectively translated into tangible policy alternatives?". Archaeologists often justify their research through the idea that the study of the past through material culture can be deeply impactful on present-day societies. Through this KSG grant, we sought to explore tangible ways in which knowledge derived from archaeological research and Indigenous engagement can be translated into viable policy alternatives for governance innovation.

OBJECTIVES

This knowledge synthesis project brought together archaeological experts, scholars of contemporary policy, and Indigenous Knowledge Keepers to examine evidence-based case studies. One of archaeology's potential contributions to academia and to society is the perspective it can offer on long-term social change. In the context of the Anthropocene (the current geological age in which human activity has had the dominant impact on environment and climate), this long-term perspective is of vital interest to sociologists, political scientists, and policymakers, among others. However, the highly specialized nature of archaeological research can make it difficult to share knowledge in ways that might effectively inform and impact current policymaking. The goal of this knowledge synthesis project was to develop methods for bringing archaeological knowledge back into closer dialogue with others in academia and beyond, through specific case studies, focused on examining assumptions surrounding human and resource management in complex societies. Two workshops were held, each inspired by a specific case study.

RESULTS

Through the workshops, a variety of ideas related to archaeology, history, heritage, natural resources and contemporary infrastructure issues were discussed by archaeologists, historians, sociolinguists, architects, Indigenous knowledge keepers, heritage workers, museum curators, and public stakeholders. By reviewing multiple case studies and

considering their implications for contemporary problems, several key themes emerged, along with academic insights derived from comparative methods. The results of this project, beyond findings tied to individual cases, can be organized into three categories: sustainable infrastructure management, heritage management, and long-term resilience.

KEY MESSAGES

Sustainable Infrastructure Management

- Archaeological research can inform adaptive reuse.
- Traditional approaches are embedded in Indigenous Knowledge systems and practices, which need to inform their adaption to other settings.
- Several key considerations have been identified for applying archaeological evidence to contemporary issues.

Heritage Management

- Fully bottom-up or top-down approaches are problematic.
- Heritage management needs to be future-oriented and support, rather than restrict, contemporary stakeholders.
- Sensitivity to cultural knowledge and protocols is essential to operationalizing it.

Long-term Resilience

- Flat hierarchies can support resilience with lower density and lower impact than tall hierarchies.
- Strong relational networks allow smaller groups to come together without carrying costs of large-scale permanent structures or institutions.

METHODOLOGY

Our method involved bringing together scholars and knowledge users to report on their work or knowledge related to “envisioning governance systems that work” and the historical questions of how governance systems had progressed in the past. Participants were sought out whose work could contribute to studies of long-term resilience, long-term reuse, and/or policy translation from heritage to contemporary sectors.

The theoretical approach that underpinned this project presumed that analogical reasoning could be employed to translate observations from specific historical circumstances into more generalizable governance implications for Canada and the United Kingdom in the 21st century. Part of the method of applying this theoretical conceptualization was explicitly kaleidoscopic, juxtaposing academic and Indigenous knowledge in ways that could highlight connections and disjunctures. No effort was made to harmonize the theoretical underpinnings of the work reported on through the different presenters; the theoretical and methodological diversity was taken as constructive, inspiring new modes of thinking.

REPORT

BACKGROUND

David Graeber and David Wengrow (2021) begin *The Dawn of Everything*, their epic counter-narrative of social evolution, with an analysis of the Wendat nation's chief Krondiaronk's critique of European modes of government and property. This, and their subsequent review of the diversity of large-scale political communities over time and space, presents archaeological and Indigenous sources as a rich resource for imagining alternative futures for the governance of complex societies. In particular, they reject Robert Michels' (1915) 'Iron Law of Oligarchy' in which hierarchy is an inevitable outcome of social complexity and argue for the viability of consultation and collaboration as modes of governance. While inspiring, Graeber and Wengrow's vision is so grand and their horizons so broad, that it is difficult to imagine how the diverse and divergent human career revealed by archaeology might translate into tangible policy alternatives. This then is the question that drives our Knowledge Synthesis project "How can archaeological and Indigenous knowledge be effectively translated into tangible policy alternatives?"

Our research presents two distinct alternatives to the managing of people, resources and infrastructure in contexts of resource scarcity or fragility. The pressing need for policy alternatives for managing resources and infrastructure in the face of uncertainty, inequality and risk has been underlined by the impasse between rich and poor countries in relation to climate change initiatives. Climate change highlights the complex, difficult and interconnected relationship between scarce or unstable resources, economic investment, expertise and the distribution of decision-making power. Archaeological case studies do not provide direct analogies for this current crisis, history never repeats itself so simply. What archaeological cases provide is a well-spring of alternative principles by which to guide policy, principles that are often distinct from those that have dominated modernist policy formation and have their origins in Classic Political Theory.

This then is the question that drives our Knowledge Synthesis project: "How can archaeological and Indigenous knowledge be effectively translated into tangible policy alternatives?". Archaeologists often repeat the long-standing justification for archaeological work, and especially archaeological funding, that the study of the past through material culture can be deeply impactful on present-day societies. Presuming that most funders or public audiences have some passing familiarity with the cliché based on the general misreading of Toynbee's response to Santayana about history repeating itself, academic archaeologists and ancient historians often use this a tacit starting point for engagement with non-specialists. But in what ways do archaeologists actually address this issue? Of course, there are clear implications for heritage management, nationalism, cultural policy,

tourism, and other fields where archaeology tends to gain the attention of government, NGOs, and policymakers. Can archaeology provide insight into other issues?

Archaeologists, in recent years, have not participated very frequently in these kinds of discussions about contemporary policy. We think that this may point to two entangled issues: 1) a cautious awareness of the ethno-centrism, methodological naivete and colonial presumptions that have marked previous attempts to use the past analogically to think about the present and 2) a professional context that demands increasing specialization and short-term productivity within a Neo-Liberal model of competitive research funding (a context that tends to discourage lateral thinking and intellectual risk-taking).

Resolving these issues is well beyond the scope of this report; however, the KSG program offers interesting opportunities to counter these impulses of non-engagement. We have been inspired by the KSG opportunity to open a conversation around the possibilities, problems and processes of drawing on archaeological evidence and Indigenous knowledge to inform contemporary issues of governance outside of the more expected realms of heritage management, tourist economy, and national identity formation. We want to consider whether antiquity and ‘the Other’ can once again inspire scholars of contemporary governance, as it did for scholars such as Weber and Durkheim, not as a second-hand farce, but through focused, contextual examination of limited cases examined from the ground up.

OBJECTIVES

Our main objective with this KSG project was to see how archaeological case studies could be invoked to answer questions about today. How can archaeological and Indigenous knowledge be effectively translated into tangible policy alternatives? To effectively address this question, we narrowed our perspective from the universal history of Graeber and Wengrow to two specific areas of concern as illuminated by our own archaeological research, originating out of projects in two chronologically and geographically distinct field studies. We brought our results into conversation with others addressing similar issues, in different historical and geographical contexts. Our knowledge synthesis project brought archaeological experts, scholars of contemporary policy, and Indigenous Knowledge keepers into discussion through evidentiarily rich case studies. One of archaeology’s potential contributions to the academy and to society is the perspective it can offer on long-term social change. In the context of the Anthropocene, this long-term perspective is of vital interest to sociologists, political scientists, and policymakers, among others. However, the highly specialized nature of cutting-edge archaeological research presents a barrier to the transfer of knowledge in a manner that might effectively inform and impact current policy formation. The goal of this knowledge synthesis project was to develop methods for bringing archaeological knowledge back into close conversation with different disciplines

in the academy and other sectors, through specific case studies, oriented around the questioning of assumptions surrounding human and resource management in complex societies. Two workshops were held, each inspired by a specific case study. Both case studies involve projects funded through SSHRC, one with an Insight Grant and another with an Insight Development Grant. The first workshop was inspired by the authors' work in Jordan; the second workshop was inspired by Bubel's and McGeough's excavations in Alberta. Brief descriptions of the case studies that inspired each workshop are provided.

Case Study 1: Managing Flexibility – Tells as Reusable Landscapes

The long-term settlement history of Jordan is marked by apparent 'boom and bust' cycles, with periods of high population densities and infrastructural investment interspersed with periods of high population mobility and limited sedentary settlement (LaBianca 1990). *Tells*, the artificial mounds accumulated over millennia, so characteristic of archaeology in the Middle East carry a particularly striking record of these trends (see Routledge 2025). While often portrayed as the products of settlement continuity, *tells* are more often the result of disruption and renewal. The site of Tell Dhiban, for example, was founded c. 3000 BCE and is still in active use today, despite lacking a natural water source. Over its 5,000-year history there have been at least four periods ranging from 300-1000 years each, in which there is no evidence for sedentary occupation on the *tell* (see Routledge et.al. 2013). Ethno-historical evidence from the 19th century shows that in the last of these gaps, pastoral nomads (the Bani Hamida tribe who still reside in the modern town of Dhiban) camped on the site in order to reuse water cisterns, graze flocks and carry-out low-intensity farming on the still-terraced slopes. At the same time, Tell Dhiban also saw episodes of urbanisation, serving as the capital of the Iron Age kingdom of Moab (Routledge 2004). What was common to occupation in the Dhiban area across this spectrum of diverse political economies and lifestyles was the intense reuse and recycling of the site's pre-existing materials and infrastructure. *Tells* are essentially repositories of infrastructure (e.g., water harvesting and storage facilities; building stone, walls, and wall footings; agricultural terraces; organically enriched soils, etc.) that are available for repurposing. This continually draws people back to the site by lowering the opportunity cost of changing one's modes of settlement and production. The work at Tell Dhiban is being amplified by SSHRC-funded work (Insight Development) at the Edomite centre of Busayra, a city of analogous scale as Tell Dhiban, but one that has had less dense occupational history and appears to display less evidence of recycling and urban reuse, making it an interesting comparative foil.

When combined with flexible forms of identity and organisation (e.g., segmentary lineages), as is historically the case in the semi-arid and arid zones of the Middle East, an adaptable, if

unstable, system emerges. This has allowed people to move in and out of sedentary and nomadic modes of existence in both short-term and long-term cycles that have responded to issues of climate change, global economic conditions as well as political and military conflict. Resilience is resident in this flexibility, in an orientation to infrastructure that sees it as malleable and multipurpose rather than fixed. Elements of these archaeological lessons are already present, especially in the literature on urban mining (Aldabei and Dombai 2021), architectural repurposing (Gorgolewski 2017), and sustainable design (Gengnagel *et al.* 2022). However, this literature generally works from only one side of the equation, focusing on the recycling or repurposing of material infrastructure without addressing the possibility of radical changes in the political economies and lifestyles that accompany this infrastructure.

Case Study 2: Managing Stability – Head-Smashed-In Buffalo-Jump

Bubel and McGeough's SSHRC Insight Grant-funded excavations at Head-Smashed-In Buffalo Jump UNESCO World Heritage Site (HSIBJ), conducted in tandem with our Blackfoot collaborators who work at the Interpretive Centre, build on decades of archaeological investigations of the site (Bubel *et al.* 2023). HSIBJ is an elaborate complex spread across the landscape (Brink *et al.* 1985; Brink *et al.* 1986; Brink and Dawe 1988; Brink and Dawe 2003; Brink 2008; Dawe and Brink 1991; Kooyman 1990; Reeves 1978; Reeves 1983a; Reeves 1983b) where, for at least the past 5,500 years, hunters used the natural topography to drive herds of bison off cliff edges and then process the animals in the vicinity. The site is remarkable not just for its striking topography but for its long-term use as the location for an important and ingenious subsistence strategy and cultural practice in the northwestern Great Plains. It is one of the most important locations for Alberta heritage. As our work, and the work of previous teams has shown, HSIBJ functioned as "keystone institution" (Holland-Lulewicz *et al.* 2022; Thompson 2023) for over 6,000 years (Dawe 2013), and perhaps as long as 10,000 years as our more recent discoveries have hinted at (Bubel *et al.* 2023; Bubel and McGeough forthcoming). A keystone institution is one that facilitates heterarchical relationships in systems that are flexible, typically non-authoritarian, and long-lasting, tethering other institutions and social elements together (Holland-Lulewicz *et al.* 2022; Thompson 2023). Despite changes in climate, changes in bison species, and changes in hunting technologies - spear, dart, arrow, rifle (Peck 2011; Bubel *et al.* 2012), the basic structures of the hunt and the processing of the animals remained relatively consistent for a scale of time that is truly unprecedented. Relatedly, the scale of meat and resource procurement was also unprecedented, with capacities equal to and likely beyond those of 19th-century whalers and more than any other attested hunting events in global history.

Our work has sought to understand the resilience of this keystone institution and understand what has changed in its over 6,000 years of use and what allowed it to be so resilient until the imposition of settler-colonial disruptions. The resilience of these Indigenous models of governance could inform Canadian Indigenization policy surrounding various issues. Taking climate change as an example, HSIBJ continued to function through altithermal climate changes and bison species changes (Asis *et al.*, 2024). Based on ours and other research, as well as Indigenous knowledge, it seems that the resilience of HSIBJ and its associated institutions were due to some key features of how it was integrated culturally. The keystone institution encouraged the integration of knowledge of land and animal engagement. It was not invested in through hierarchical structures per se, but through the creation of community interconnectedness. The archaeological investigations indicate the accuracy of Indigenous perspectives of the site, such as those shared with us by Waylon Yellowhorn, who sees the covenant between the Blackfoot and the bison as the fundamental orientation of the site, a covenant that was ruptured with the appearance of the horse and gun on the Great Plains (see also Little Bear 2012).

METHODS

Taking our cue from the instruction that a KSG was not about creating new knowledge but synthesizing knowledge that had already been produced, our method was to facilitate conversations between different scholars and knowledge keepers, to report on specific work that had already been engaged in that bore relevance to the questions of “envisioning governance systems that work” and the historical questions of how governance systems had progressed in the past. In particular we sought out participants whose projects contributed to one or more of the following issues related to these questions:

- Noteworthy case studies related to long-term resilience
- Noteworthy case studies related to long-term reuse
- Translating archaeological/anthropological insights into policy/practice
- Using archaeologically-derived or heritage lessons for contemporary governance

The workshops were held in December 2025 and January 2026, the first in Liverpool, United Kingdom, and the second in Lethbridge, AB. Participants came from mixed backgrounds. Archaeological disciplinary experts (academics, members of government, and museum personnel) working on the Great Plains and in the Iron Age Levant met with scholars of contemporary governance. Sociologists and political scientists learned about recent work in the Great Plains and Jordan, gaining access to specialist knowledge that is relevant for their work in other sectors. Archaeologists reported on the findings of their projects to non-archaeologists, including sociologists, political scientists, as well as Indigenous Knowledge Keepers, facilitating a cross-disciplinary synthesis in relation to

targeted questions. Archaeologists met with scholars in other fields gaining new perspectives that can inform their work on governance in different historic contexts. The second workshop also facilitated interactions with Indigenous Elders and knowledge keepers, engagement that is best facilitated through oral presentations in discussion settings. Some responses, such as those of Indigenous Elders, were transcribed in lieu of a formal academic paper. It is our intention to publish the papers and discussions that emerged from the workshop in an open-access monograph, after the SSHRC virtual knowledge mobilization forum (in order to include insights from that event). However, our initial results suggest to us that further events such as these should be held as part of the production of such a volume.

Before each workshop, we circulated a series of questions to guide the presentations of the speakers and the discussions at the events:

Workshop 1: University of Liverpool – Managing Flexibility

The archaeologically derived principles of flexible infrastructure will be defined. Policy oriented responses will focus on the following questions:

1. What would flexible infrastructure look like in the 21st century? What benefits might it bring? What threats or weaknesses might it introduce?
2. Where has the reuse and repurposing of infrastructure already been successfully implemented in Canada and the UK?
3. What barriers exist to the adoption of flexible infrastructure as a policy principle?
4. Is it possible to plan for epochal change in political economies and lifestyles?

Workshop 2: University of Lethbridge – Managing Resilience

The archaeologically derived principles of keystone institutions will be defined. Policy oriented responses will focus on the following questions:

1. What kinds of “keystone institutions” are present in Canada and the United Kingdom today? Are they “emergent” and unmanageable through governmental models or are there means through which they can be encouraged or even introduced?
2. How can Indigenous decision-making models be adapted outside of Indigenous contexts?
3. What kinds of flexibility encourage resilience, especially in terms of climate change and changes in animal-human relationships?
4. What kinds of positive and negative community relationships are created through keystone institutions?

Theoretical Background

It is important to consider here the multiple ways in which we understood analogical reasoning within this context (see Wylie 1985 for discussion of its typical use in archaeological reasoning). In some ways, analogy was treated in an ethnoarchaeological fashion, perhaps as Jesse Walter Fewkes (1896) conceptualized it in his study of the American Southwest, seeing in capitalism such a rupture with the past that ethnographic examples drawn from non-capitalist societies can offer alternatives that lie outside of a capitalist framework. Analogy allowed us to queer ideas of normativity in contemporary governance, through offering lived counterexamples. We also used analogy in a dialogic sense, here perhaps using these binary formulations of resilience and reuse in an almost Socratic sense, and perhaps as hypotheses designed to be explicitly refuted in a deductive nomothetic fashion. This larger issue of how analogy can be profitably employed in applying archaeological knowledge to different contexts was one that was not resolved in our two workshops but will be further explored by the authors.

Integral to the logic of this Knowledge Synthesis project is the related notion that one of archaeology's key contributions to the academy is its ability to speak to change (or the lack thereof) over longer scales of time than is typical of the social sciences and humanities. It facilitates the exploration of diversity on vast spatial and temporal scales. Yet both poles, stability and change, have been identified as conceptually problematic in previous efforts to use archaeology for long-term historical thinking.

Using archaeological and historical evidence to understand stability over long periods risks oversimplifications and essentializing approaches. In relation to the Alberta case study and workshop, problematic modeling has traditionally manifest along the lines of noble savage conceptualizations. The dehumanization that comes with noble savage mythologies, that seek to see Indigenous communities as static within nature, uncorrupted by progress or other elements of perceived civilizing forces is one of the concerning potential outcomes of a consideration of long-term resilience. Similarly, in the Near Eastern context, Orientalist tropes offer similar pitfalls, though originating in a different set of problematic conceptualizations. The unchanging, undifferentiated East is a conception that still plagues Near Eastern studies and so in conceptualizing resilience, care must be taken not to reify these conceptualizations.

Despite these exemplars of oversimplifying uses of historical evidence to theorize the nature of change or lack thereof, there was a time when ancient examples were inspirational in theorizing governance and science. The ancient world was unevenly invoked in these attempts, only in passing for example in Marx's science of history but fundamentally generative for Weber, Durkheim, Hegel, Klemm, and others. These theorists

and others operated within a milieu defined by conceptualizations of progress (whether they agreed with those notions or not). Often these were framed within the context of the general trend of evolutionary thinking, be that a Darwinian biologically-informed natural selection or more technocratic models inspired by the advent of the industrial age.

Within archaeological circles, however, the more dominant models for explaining change both seemed to decry the possibility of resilience or reuse. Unilineal evolutionary models articulated a stage-based vision of historical change in which stability/resilience would be antithetical to progress, and reuse could be little accommodated as anything other than epiphenomenal. Diffusion likewise could not meaningfully accommodate resilience or reuse within its framework of the movement of ideas and things spatially.

RESULTS

In some ways, the main strength and weakness of this project are the same opportunity/problem: the diversity of information presented. It was apparent during the sessions that there are numerous valuable case studies that offer much insight into contemporary issues. The problem has been how to synthesize and operationalize that diversity of case studies. Our briefing paper provides some key findings that crosscut the historically specific examples that were presented in the workshops. There are, in some ways, no end to the possible variety of case studies that could be drawn on to generate alternative policy ideas. What we present here as “results” then, are summations of the workshops, presented as abstracts and comments about the discussion sessions that ensued. The most significant results of this work are these papers and the fusion of ideas that emerged in the formal and informal discussions.

Workshop 1: Introduction

The motivation for this workshop came from what we would call a ‘connect the dots moment’. In imagining a future where we consume less, care better for the earth, and reorganise our economy and our political systems to better meet the needs of all, it became clear that some basic facts would be true. Our collective reinvention would not occur in a vacuum but in the midst of a material world built for other purposes. So, if we change our ways what happens to all of the stuff generated by advanced industrial societies that are oriented towards consumption? How do we live differently amongst our own ruins? These questions were not necessarily answered in the workshop, but they inspired our discussions.

Our first set of papers explored how water systems are reused and repurposed in different historical contexts, addressing similar or different problems than those that spurred the initial construction of water systems. After that, different scales of reuse through case studies of a site in Israel, Tell Beth Shemesh, and a site in Jordan, Dhiban were presented. Following that, we learned about the adaptive reuse of heritage in Oman. The workshop concluded with a discussion of how language use shapes policy.

Workshop 1: Abstracts & Presenter Information

Stability, Flexibility and Resilience: Archaeological Lessons for Resource Management and Infrastructural Investment

Kevin McGeough, University of Lethbridge

The introductory comments set up the methodology and theoretical approach of the first workshop. It also provided insights related to excavations at Head-Smashed-In Buffalo Jump and used the reuse and adaptation of heritage architecture at the University of Lethbridge and University of British Columbia as examples of how historically informed reuse of infrastructure is operationalized in contemporary design decision-making.

Exploring the Feasibility of Revitalising Medieval Irrigation Systems in the Kathmandu Valley, Nepal

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Ensuring secure and equitable access to water is a key UN Sustainable Development Goal (SDG 6), but factors including rapid urbanisation, population increases, and climate change are intensifying resource shortages. The Kathmandu Valley in Nepal exemplifies these challenges. Containing one of the world's fastest growing urban populations, 20% of households have no domestic water source and 66% lack easy access to safe and adequate water supplies (Global Water Forum 2017). Rather than costly mega-infrastructure projects and unsustainable solutions, which include groundwater pumps or transporting water by road, it has been recognised that the Kathmandu Valley's existing networks of medieval

canals (*rajkulos*) brick-lined tanks (*hitis*) and ponds, with elements recorded from as early as the fifth century CE, could contribute localised, long-term mitigations to this chronic issue.

New investigations, sponsored by an APEX award, has brought together archaeologists, geoarchaeologists, engineers, epigraphists, curators, policy makers and local communities, to integrate scientific analyses from archaeological excavations, with historical sources, archive collections, and traditional knowledge to evaluate the feasibility for revitalising the Kathmandu Valley's hydraulic infrastructure to contribute low-cost solutions to acute and worsening water supply issues. Identifying that these systems have been adapted and redeveloped since their inception, potentially in response to political and environmental factors, the research also highlighted that water infrastructure continues to play dynamic roles as foci for communities and intangible traditions. Showing potential for revitalisation, challenges remain regarding the protection of historic irrigation systems relating to jurisdiction and management frameworks, in addition to continued threats from pollution, encroachment and urban development.

Restoring and Reusing Roman: Aqueducts in Venetian and Ottoman Crete

Amanda Kelly, University College Dublin

In this talk, I will present the Aqueducts of the Greater Iraklio Area (AGIA) in Crete as a diachronic study on civic water supplies showcasing the Roman aqueduct of Knossos, the 17th-century aqueduct of Candia and Mehmet Ali's 1838 aqueduct supplying Kandiye. My fieldwork in Crete initially targeted the Roman aqueduct supplying Knossos, but as architectural overlays were identified, my investigations expanded to explore Francesco Morosini's great aqueduct project of 1627/28 and Mehmet Ali's monumental 19th-century aqueduct which effectively channelled the imperial glory of both Rome and Venice through architectural overlay. My talk will therefore examine how water, as a constant, shaped archaeological landscapes through time. The appraisal will present architectural appropriations as both pragmatic and highly politicized, forging associations with imperial projects of earlier empires.

Tells as Reuseable Landscapes: A Multi-Millennial Perspective on Reuse.

Bruce Routledge, University of Liverpool

Tell is an Arabic word referring to artificial mounds formed by the repeated settlement of people in the same place, usually for several millennia and often in cycles of settlement, abandonment and resettlement. Living on a tell, the past is literally the ground beneath

one's feet. Reuse and recycling are a particularly significant aspects of how people living on tells have interacted with this material past. Indeed, tells can be thought of as reuseable landscapes, repositories of infrastructure, building materials and collective memories that continually draw people back to them in order to repurpose for at times radically different lifestyles and purposes. This paper uses the site of Tell Dhiban in Jordan to illustrate the phenomenon of reuse on a tell site, drawing policy lessons on how to think differently about infrastructure and reuse in order to live differently in the future. The potential and pitfalls of a 'tell model' will be considered, including the balancing of designing for reuse and urban mining with the need for heritage preservation and regulated recycling.

Palace Construction, Food Production, and Assyrian Resistance: Reuse and Multi-purposing at Tel Beth-Shemesh

Shawn Bubel, University of Lethbridge

The site of Tell Beth-Shemesh, located in the Shephelah region of Israel, offers important lessons in the reuse and multi-purposing of infrastructure in different historical contexts. From the Middle Bronze Age (c. 2000 BCE) to the end of the Iron Age (586/587 BCE), and in isolated occurrence afterwards, shifting historical circumstances resulted in older materials reimagined for new purposes. Middle Bronze Age tombs, which had been hollowed into the limestone, were repurposed as storage areas in Mamluk and Ottoman times. Middle Bronze Age fortifications were reused in the Late Bronze Age, but as walls, not defensive architecture. In the Iron I, what were once palace hallways became alleyways between houses where refuse was discarded. Lower portions of the palace walls became the foundations for walls of smaller houses. These examples of reuse took place within a time frame of decades, centuries, and even millennia. Short term examples of repurposing are also prevalent at the site. Olive oil presses that functioned as such following the harvest were used for grain storage at other times of the year. Tel Beth-Shemesh is now reimagined, not as a lived city, but as the focus of biblically inspired tourism in the region.

Repurposing Ruins to Reactivate Places – Design and Policy Lessons from Oman

Giamila Quattrone, University of Liverpool

This paper sketches out design and policy lessons learnt through fifteen years of built heritage research and management planning undertaken for the Government of Oman within the University of Liverpool's ArCHIAM Centre. From master planning to adaptive reuse design and implementation, historic settings and fabrics are re-envisioned to meet today's societal requirements, while built ruins are repurposed to make places resilient to economic, cultural and environmental change. Focusing on the Tourism Development Plan

produced for the historic oasis landscape of Misfat al-'Abriyin, in central Oman, and its Phase-1 implementation through adaptive reuse design interventions, the paper reflects on the challenges and opportunities encountered throughout the process – from financial constraints and lack of technical capacity to empowerment of local communities, an enlightened funder and a pioneering public-private partnership. The paper concludes with an overview of outstanding issues, including a lack of coordination and integration in heritage management and development planning policy, operational gaps in urban development governance, and a lack of control enforcement over individual-led physical change, which, while being a legitimate manifestation of adaptation to change, can irreversibly compromise heritage values if insensitively executed.

Reflections on Language, Policy, and Practice

Nicola Bermingham, University of Liverpool

This presentation examines how language policy operates as a practice of power, focusing on the ways in which educational policies construct and manage linguistic diversity. Drawing on analysis of selected Spanish and Galician education policies, as well as interviews with primary school teachers in Galicia, I explore how linguistic and cultural identity, competencies, and language needs are defined when applied to minority, foreign, and migrant languages. I argue that Spanish (as the national, majority language), Galician (as the local minoritised language), the languages spoken by migrant families, and the more globally powerful English are assigned distinct and hierarchical roles within the Galician education system. These particularistic and divergent language positions reflect broader ideologies that shape how speakers of different languages are positioned both in Galicia and the Spanish state. As such, the analysis positions Galicia—a region with a long history of language policy and planning, and more recent experiences of immigration—as a site of intersecting minoritisations. Against this backdrop, the talk reflects on the ideological tensions at play in multilingual education systems, and on the possibilities for reimagining language policy from an asset-based perspective.

Workshop 1: Results

While we have not yet fully processed the results of the first workshop, some preliminary analysis is already possible. Beginning with the ancient Middle Eastern case studies that inspired the workshop, some results are already apparent. Tells, and the reusable reuseable landscapes that they offer, continually draw people back to the sites by lowering the opportunity cost of changing one's modes of settlement and production. When combined with flexible forms of identity and organization, as is historically the case in the semi-arid and arid zones of the Middle East, an adaptable if unstable system emerges. This has

allowed people to move in and out of sedentary and nomadic modes of existence in both short-term and long-term cycles that have responded to issues of climate change and global economic conditions as well as political and military conflict. Resilience is resident in this flexibility, in an orientation to infrastructure that sees it as malleable and multipurpose rather than fixed. So here was a lesson from archaeology with possible relevance for future policy oriented to living differently. Rather than approaching infrastructure in terms of fixed assets in need of constant renewal, we should consider approaching infrastructure as something that will inevitably be put to another purpose in the future.

Because of the nature of this project our conversations were directed towards lessons for policy formation around the theme of reusing and recycling infrastructure. Some examples of these lessons include:

1. The fundamental importance of co-creation of policy between stakeholders from the beginning of projects. Many of the failings of past mega-infrastructure projects arose from the top-down imposition of solutions, for example large scale dam building. In terms of reuse, past projects to reintroduce rainwater harvesting features and cisterns to address Jordan's significant water deficit have suffered from a lack of community buy-in.
2. Past resource management infrastructure cannot be isolated from the economic, cultural and historical context in which it was embedded. As these have changed, reuse must always be adaptive and Indigenous systems of infrastructural governance often need to be restored and adapted alongside physical infrastructure. This was evident in the case of Nepal's extensive and interconnected historic water distribution system.
3. Resilient reuse must be future-oriented, providing viable livelihoods and uses to prevent museumification. This was evident in the adaptive reuse of buildings in an oasis town in Oman.
4. Deriving principles from the past is more important than replication. For example, designing ahead for the flexible reuse, or regulated urban mining, of infrastructure is preferable to much of the unregulated recycling evident on tell sites. For example, the regulated remelting of decommissioned copper cables is preferable to the opportunistic stripping of lead from the rooves of churches, as presently occurs in the United Kingdom.

Workshop 2: Introduction

The motivation for this workshop emerged from Bubel and McGeough's SSHRC-funded research at Head-Smashed-In Buffalo Jump UNESCO World Heritage Site. The center of that research is an excavation project, jointly run by the University of Lethbridge and Royal Alberta Museum (RAM), co-directed by Bubel and McGeough as well as Bob Dawe of the RAM. Through our excavations, that aim to understand the earliest uses of the site, 6,000 years ago and longer, we have been inspired by the incredible durative power of the site. From at least 6,000 years ago, until the middle of the nineteenth century CE, the site was used in the same fashion. There are few, if any, analogous sites in the world that demonstrate such resilience in the face of climatic, technological, and other kinds of change. Thus, we wanted to bring together scholars who are interested in issues of resilience in this region and in others to enter into conversation with one another.

Workshop 2: Abstracts & Presenter Information

Managing Resilience: Indigenous and Archaeological Examples for Sustainable Resources Management Policy

Bruce Routledge, University of Liverpool

This paper summarized the results of the previous workshop and offered comments on reuse and resilience in preparation for the ensuing discussions.

Lessons Learned? Looting, Loss, and Landscape at an Early Bronze Age site, Jordan

Morag M. Kersel, DePaul University

Jordan, like many nations, faces a persistent and complex problem of looting driven by the demand for cultural artifacts. The illicit excavation and trade of illegal antiquities from Jordan is fueled by a network of looters, intermediaries, and collectors who often acquire objects without scrutinizing their origin stories or the legality of their acquisition. Regardless of robust efforts by local communities, the Ministry of Culture, the Department of Antiquities, and various cultural heritage NGOs, the destruction of archaeological landscapes continues unabated. Sites are pillaged, invaluable historical data is lost, and local communities are increasingly alienated from their own heritage. An integrated approach to assessing the issue of looting includes archaeological evidence, archival documents, ethnographic interviews, and pedestrian and aerial surveys using unpiloted aerial vehicles (drones), provides valuable lessons regarding looting, loss, and landscape at a series of Early Bronze Age sites (3600–2000 BCE) along the Dead Sea Plain in Jordan. This is an examination of how archaeological material goes from the ground to the consumer

(individual and institutional), the various pathways artifacts take, the laws and policies in place which facilitate or hinder the movement, and the consequences of demand for archaeological objects.

Parallels to Head-Smashed-In: Indigenous Hunting in Jordan and Syria

Yorke Rowan, University of Chicago

In the early 20th century, British and French pilots flying over the Black Desert of present-day Jordan and Syria spotted thousands of structures. In this arid land, one type of structure stood out to them for the similarity in shape to a child's kite. These 'desert kites' are known now to occur in the thousands, stretching from northern Saudi Arabia to southern Syria, with similar features found even further afield. Although those aviators thought the desert kites might be to corral domesticated animals or be defensive, current consensus holds that these kites are drivelines gradually converging towards an enclosure or kill site. Like hunting drive lines in other regions of the world, the structures frequently use local topography to advantage, obscuring the enclosure and trap cells. Recent research suggests that these kites began to be built during the later phases of the Neolithic, around 7000 cal BCE, but they may have continued in use for millennia. The construction of hunting infrastructure on such an impressive landscape scale required on-going, extensive and organized labor investment, indicating a major shift in the ways people used the landscape and interacted across large regions.

Durable Disorder and the Bronze Age

Adam Miglio, Wheaton College

The complexity of political systems raises questions about how they form, hold together or collapse. Such systems can be 'presumptive' (Richardson 2012), 'fragile' (Yoffee 2019), and/or 'resilient' (Graeber and Wengrow 2021). Yet, theorizing the complexity of political systems often relies on largely unexamined assumptions about their 'order.' While 'order' may appropriately serve as a cognitive anchor for many Western scholars' understanding of modern social and political realities, an alternate framework provided by the concept of 'durable disorder' (DD) offers ways to refocus academic attention on the degrees of acceptable social and political 'disorder' in various historical periods. Fragility and resilient call attention to systemic vulnerability or adaptability, whereas DD foregrounds the persistence of disorder as a constitutive feature of political life. This paper will draw examples from the Bronze Age Near East to explore how models of DD may catalyze fresh research programs for the ancient world.

The Road to Head-Smashed-In Buffalo Jump: Collaboration as Governance

Bob Dawe, Royal Alberta Museum

Contextualizing HSIBJ within the earliest habitation of Alberta, Dawe demonstrates how the development of communal hunting marked a dramatic change. Earliest hunting in the region involved using high points to hunt large game but reflected more of a reaction to finding animals than a cooperative venture. With the Ice Age, people started following herd animals (such as caribou). Out of this developed the kind of hunting that we see at HSIBJ, where groups of people worked in tandem, with strategies based in a profound knowledge of bison behaviour. The development of these cooperative approaches were fundamental to the development of collaborative governance.

Resilience and Flexibility at Head-Smashed-In: Some Thoughts on Long-Term Stability and the Impacts of Settler-Colonialism

Shawn Bubel and Kevin McGeough, University of Lethbridge

Until the late nineteenth century, the site of Head-Smashed-In Buffalo Jump had been used in roughly the same fashion for at least 6,000 years, despite dramatic changes in technology, climate, animal species, and cultural life in the region. Our ULeth-RAM joint excavations have shown that the site has been visited for almost 10,000 years, although we have not yet identified what exactly people were doing at the site at that time. It is this phenomenal durative power of Head-Smashed-In, unparalleled elsewhere to our knowledge, mixed with the radical transformations beset first by the introduction of the horse and rifle, and then, shortly thereafter, by the expansion of the Canadian state and settler colonialism, that suggests to us that Head-Smashed-In offers interesting lessons in governance for today. In this paper we explore how HSIBJ functioned as a “keystone institution”, a flexible, non-authoritarian type of institution that facilitated organizations of people through regular and perhaps regulated practices but typically prevent the emergence of centralized authorities.

Fireside Chat: Buffalo Culture

Elder Herman Many Guns¹ and Lowell Yellowhorn²

1 Blackfoot Elder, Brave Dog Society, HSIBJ Elders Advisory Council

2 Head-Smashed-In Buffalo Jump Interpretive Centre

Over two sessions, Blackfoot Elder Herman Many Guns and Blackfoot Knowledge Keeper Lowell Yellowhorn offered insight into Blackfoot ways of knowing. They introduced us to Buffalo Culture and explained how Buffalo Culture operates both similarly and differently from academic culture. In particular, they emphasized the differences between written and

oral cultures and the disconnection that comes from academics not speaking Blackfoot (and the problem that there are few fluent Blackfoot speakers left). Many Guns and Yellowhorn explained how knowledge is transferred in Buffalo Culture, the importance of ceremony and protocol, and the responsibilities that come with knowledge transfer rights. Whereas academic knowledge is presented in papers, knowledge in Buffalo Culture is maintained in song, and the song is evidence of truthfulness. Many Guns discussed an issue that is troubling him: how do we give spirit to technology in this world? In Buffalo Culture, it is understood that everything has spirit, but the issue of technology is one that is not resolved. He ended the second round of discussions by telling us that the closest word to “archaeologist” in Blackfoot is “researcher of the things in the ground from the ancient people” (*kasko owkiinotak*). If we can say the name, Many Guns explained, we can offer protection.

‘Give Us Good Measure.’ Indigenous - Fur Trader Relationships in Western Canada

Heinz Pyszczuk, University of Lethbridge

This paper explores whether past methods of governance and interaction between European traders and Indigenous Peoples in Canada were as restrictive as they appeared during the latter half of the 19th century. These relationships underwent a prolonged but continual erosion of Indigenous autonomy, starting in the late 17th century and ending with cessation of Indigenous territories and treaties. The oral, documentary and archaeological evidence indicates that 1st Nations were not passive traders or consumers in the Canadian fur and hide trade. They showed considerable resiliency to changing economic and environmental conditions, which is often expressed with: 1) retention of indigenous material culture; 2) incorporating trade goods for Indigenous purposes; 3) unique fusion of European and Indigenous material culture; and, 4) repurposing European trade goods. These, and the retention of Indigenous histories through stories and spiritual rituals, were tangible expressions of identity, continuity, and continual resistance against historical and ongoing colonial pressures.

Royal Alberta Museum Archaeology Collection: Accessibility, Knowledge, Community

Karen Giering, Royal Alberta Museum

In this paper, Karen Giering, Assistant Collections Curator (Archaeology) at the Royal Alberta Museum explained how museum collections support resilience. The RAM currently has about 13 million artifacts (18,000 boxes in warehouse, 550 artifacts on permanent display, and 14,069 on active loan), and the mandate of the museum is that these artifacts are to be used by communities. In 2024-2025, 164,254 people visited the RAM, not

including 40,000 people who participated in the drop-in program and 20,000 children who participated in teacher-led visits. These statistics hint at the scope of the RAM's outreach, which creates a space for people to come together to learn, providing access to collections and cultivate learning about cultures. In this presentation, Giering highlighted some of the different programs that support Indigenous cultural resilience, such as the Museum School and Internship Program.

Heritage Alive: Communities and the Care of Protected Places

Aaron Domes, Head-Smashed-In Buffalo Jump Interpretive Centre

The site manager of Head-Smashed-In Buffalo Jump offered insight into his work there for the past three years and previous work at Writing-On-Stone. The paper explores how “living” heritage is preserved at these sites, not heritage that is “finished” or “static”. Stewardship at such sites is not about predicting outcomes but managing relationships (and understanding that what is shared is sometimes only intended for that relationship). Interpretation is one of the most powerful means of heritage preservation at such sites, and tourism should be understood as a relationship of exchange not extraction. Heritage lessons work best when communities associated with the heritage offer interpretation first, and local communities participate. Without the support of the public, site preservation is not possible. A major challenge is navigating government systems without ignoring the community; it is essential to make room for community participation and recognize that not everything fits into bureaucratic boxes. The talk ends with a discussion of a “toolbox” approach that uses formal agreements in which respect for enduring relationships is prioritized over project timelines and specific deliverables.

Workshop 2: Results

As with workshop 1, we have not yet fully processed the results of workshop 2. That being said, just as is the case with Workshop 1, we can offer some preliminary comments.

The discussion period of the second workshop led directly into related discussions of institutional governance. As Lowell explained, relationship-based approaches to governance are particularly key for generating resilience. He explained that one of his goals in working at Head-Smashed-In and at other educational institutions has been to create positive experiences for the community, both the Blackfoot community and the communities that visit the site. He wants his grandchildren, who are Blackfoot, to be treated with respect when they go out in the world. Aaron Domes followed up by describing the strong culture on site at the Head-Smashed-In Interpretive Centre that extends out to the Blackfoot community, centered on relationships. Other participants reacted by describing

moments in their work with other institutions in which they felt relationships had been broken, and how those were particularly divisive. Acts of exclusion, emphases on audit cultures, and risk aversion were examples of ways in which modern institutional practices undermined relationships. While perhaps seeming to reflect good managerial practices, such behaviours erode the resilience of institutions. One of the key lessons that we took away for governance was rooted in the Blackfoot knowledge that was shared with us at the event. Successful long-term governance requires concern for relationships, not specific or immediate outcomes.

IMPLICATIONS

Through the workshops, a variety of ideas related to archaeology, history, heritage, natural resources and contemporary infrastructure issues were discussed by archaeologists, historians, sociolinguists, architects, Indigenous Knowledge Keepers, heritage workers, museum curators and public stakeholders. By reviewing multiple case studies, and considering their implications for contemporary problems, several key themes emerged, along with academic insights derived from comparative methods. The results of this project, beyond findings tied to individual historical cases, can be broadly organized into three categories: sustainable infrastructure management, heritage management and long-term resilience.

Sustainable Infrastructure Management

- Archaeological research can inform water management and the adaptive reuse of infrastructure and built environments.
- Traditional approaches to infrastructure management are embedded in Indigenous Knowledge systems and practices, which are central to applying archaeological lessons from the past.
- When archaeological evidence is applied to contemporary resource and environmental issues, including water management, several key considerations are important:
 - ancient solutions should not be applied without modification and must account for changed historical, social and environmental contexts
 - archaeologically derived approaches are more likely to support community-level or micro-level outcomes than large-scale interventions
 - these approaches are best understood as supplemental contributions rather than replacements for existing infrastructure
 - archaeologically derived solutions should be integrated into existing systems to be effective

Heritage Management

- Fully bottom-up or top-down approaches are problematic:
 - co-creation is essential
 - regulation remains necessary for consistent outcomes aligned with best practices in heritage management, as well as health and safety and sanitation guidelines
 - community consultation needs to begin early and be sustained over time
- Heritage management needs to be future-oriented, providing viable livelihoods and uses to prevent museumification
- Approaches should support, rather than restrict, contemporary stakeholders
- Visual character should not take precedence over integrity and authenticity
- Effective heritage management requires a management plan and assessments of heritage value
- Not all cultural knowledge is meant to be shared and it is important to be sensitive to beliefs surrounding who should be allowed to operationalize it and what protocols need be followed

Long-term Resilience

- Flat hierarchies of keystone institutions can support the continuity of ideas/things with lower density and lower impact
- Strong relational networks allow smaller groups to come together for short-term, large-scale moments, events, institutions without carrying social, economic, environmental costs of large-scale permanent structures or institutions

Policy Implications

Projects involving archaeologically inspired solutions to contemporary problems need to embed policy implications from the outset, through stakeholder consultation as part of policy co-creation, rather than attempting to add them after the fact.

We need to be careful about how definitions of heritage can be problematically embedded in policy language.

- language must reflect goals of all stakeholders
- consider that heritage NOT be taken as monolithic; seek to support multiplicity of heritages
- renewal is a better orientation than preservation

Heterarchical and flexible policy orientation creates longer term resilience of heritage projects.

- environmental management that has dispersed oversight, with more people invested with responsibilities at local levels, avoiding hierarchical decision-making structures, provides longer-term resilience and community “buy-in”

Observations on How Indigenous Ceremony Can Inform Practice

One implication for practice that emerged from our second workshop was tied to how Elder Herman Many Guns and Lowell Yellowhorn began the event, involving the participants directly in Blackfoot ceremony. Our workshop started in a teepee that the Head-Smashed-In Buffalo Jump Interpretive Centre staff set up for the event. We all gathered in the teepee, and Many Guns led us in a pipe ceremony. He explained the importance of medicine wheels, the nature of reflective governance, and how the practice of ceremony regulates different societies within Blackfoot culture. Many Guns then led us in the pipe ceremony with Lowell participating as his assistant. Offering a blessing and then smoking from the pipe, Many Guns then invited each one of us to smoke or hold the pipe to our shoulder and offer a silent prayer or moment of thought. As Many Guns explained, a pipe ceremony is a traditional method of opening talks between different people, a means of centering the participants and encouraging respectful and truthful dialogue.

After the workshop, one of the participants, Karen Giering offered her reflection on how the pipe ceremony offers an example of how Indigenous models of governance could be helpfully imported to other governance systems. She wrote:

Herman called the ceremony a good way to start and I agree with him. It gave everyone a shared common experience that was calming, connecting and personal. When people share like that before a discussion, it helps the discussion be more open and productive. They are able to drop or soften their anxieties or fears about how the meeting will go. We don't actually do anything like that before we have meetings in our society. I don't think the government starts cabinet meetings that way nor do we at the museum. I'm sure at the university too, there is no 'ceremony' or connecting activity before the discussion starts. So, perhaps Indigenous ceremonies that were practiced around events like HSI jumps [Head-Smashed-In Buffalo Jump] were not just religious but served to bring the community together for a common purpose, for at least 6000 years.

For all of us who attended Workshop 2, the pipe ceremony, and the camaraderie that emerged from it, was the clear highlight.

CONCLUSION

To return to the theoretical issue that underpinned this project, the appropriate use of analogical reasoning, a few points can be made as conclusions. Two strands of that reasoning seemed particularly productive, although as we thought through the theoretical issues, it became clear that what we might have originally considered discreet approaches were actually entangled. The first was to seek examples of governance solutions that lay outside of capitalist, post-industrial, and neo-liberal frameworks. Recognizing that the archaeological examples are from radically different lived contexts, using analogy allowed the transfer of different ideas between contexts. The second strand, very much related, is how these analogies allowed us to step outside of normative modes of thinking about governance. Recourse to case studies about the past afforded us the opportunity to “queer” our perspectives on the present.

A number of future areas of research are apparent to us as this KSG grant comes to a close. It is clear to us that this is beginning of a larger research project, not the conclusion of one. Future work on resilience and reuse in the archaeological record will doubtless reveal further insights. However, it is also apparent that other similar themes can and should be identified and that is likely the next direction our research will take. In the short term, we intend to host similar events in order to produce an edited collection of these and future papers. Over the long term, however, we feel that this is the beginning of an active research program to bring archaeologists into conversation with other knowledge users.

We want to end this report with a case study that lurked beneath the surface of these two workshops and is part of work that Bubel and McGeough are engaging with at the University of Lethbridge. There, the social science and humanities programs are housed in a large heritage building, although the kind of heritage that does not seem like heritage outside of or even inside of Canada – Canadian brutalist architecture. University Hall (UHall) was designed by, arguably, Canada’s most famous architect, the Vancouver based Arthur Erickson. Erickson merged an eclecticism that borrowed from world architectural traditions, especially Japanese, Classical, Middle Eastern, and Mesoamerican. He is most noteworthy for his work in concrete, with hints of wooden beams, replicating different architectural traditions in grey hues through monolithic geometric designs intended to help the buildings blend into and bring in the surrounding environment. UHall was meant to blend into the surrounding hills of the Lethbridge river valley and provide an entirely insular living, studying, and research environment in a setting where, when first opened, there were no other facilities nearby. Now, close to sixty years later, the building is in bad shape, in desperate need of a massive overhaul. It is considered by some to be a heritage building, but is not officially one, and so there are a number of possibilities for what is to be done with it. The building (and this is true of Erickson’s work in general) is loved by

architects yet despised by the public, who often think Canadian brutalism is an architectural phase that should be forgotten rather than preserved.

Arthur Erickson was a public figure who studied the past in order to develop better modes of living in the present. In a pamphlet written for the Canadian Design Council, he used examples from Roman Pompeii to offer suggestions for multiple family housing structures in Canadian cities (Erickson 1966; Stouck 2013: 175). A trip to Mesoamerican sites in and around Mexico City and Oaxaca led to his design ideas for Simon Fraser University (Stouck 2013: 184-185), as did previous visits to Greece. As Stouck explains (2013: 198), his invocation of Mesoamerican and Fifth Century Greek public spaces were not because they were of the past but because they had been made to create new futures for the people who used that space. They were referenced as solutions, not as fossils of past practice. Here was an architect that was inspired to use the past to find new solutions in the present.

Yet Erickson's buildings, as in the case of UHall, are in need of revitalization. How does one imagine reusing these buildings that were inspired by the past but have now become heritage buildings themselves, in a way that does not fossilize them. How can they be made to be resilient? One redesign of Erickson's work that we have found particularly instructive has been the demolition and reconstruction of the University of British Columbia's famed Museum of Anthropology (MOA), one of the most visited tourist sites in Canada, and home to one of the most important collections of Pacific Northwest Indigenous art. In terms of funding the renovations, the provincial government was convinced to invest in the project because of those two justifications, tourism and Indigenous stewardship.

The original building was itself a masterwork in repurposing existing architecture. Located on a dramatic site on the Point Grey Peninsula overlooking English Bay, the museum was designed to be reminiscent of Northwest Coast First Nations' architecture, built in concrete rather than the expected post and beam architecture. The superstructure masks the remains of an older building, a submarine watchtower and Canadian Forces Base in World War II. Most prominent were the gun emplacements that had been designed to protect the Canadian coast from Japanese invasion, structures that could not be removed easily. Erickson incorporated them into the design of the building, with one of the platforms repurposed as a podium for a piece of commissioned art by Bill Reid. The piece he designed, *The Raven and the First Men* is one of the most noteworthy pieces of Canadian and Indigenous art and one of the primary draws for tourists to the museum. The single piece of carved cedar, depicting a raven opening a clamshell to discover the first humans is seamlessly integrated into the gun emplacement. There is no hint that the concrete base or surrounding superstructure had not been designed intentionally to display this masterpiece.

By the 2000s, the building was showing its age. As work to revitalize the Museum of Anthropology advanced, it became clear that significant elements of the physical structure of the building could not be saved. The massive concrete pillars that were central to the architectural majesty of the building were all hollow and incredibly dangerous in this seismically active area of the coast. The Arthur Erickson Foundation, and others, recognizing the dangers of the building, agreed that it could be torn down and rebuilt. They recognized that the original building was not necessarily what mattered, and the architects behind the project, some of whom had worked with Erickson, used the analogy of the Ise Shrine in Japan, an architectural feature that Erickson was influenced by. That shrine is deconstructed and remade every twenty years as part of a Shinto belief in *tokowaka*, the pursuit of a kind of divine eternity, but also as a means of teaching building techniques to the next generation. This analogy helped guide the architectural redesign and engineering process.

Likewise, the redesign offered an opportunity to reimagine the Indigenous relationships between UBC and local communities. While the Museum of Anthropology is best known for its connection to Haida art, the territory it sits on is Musqueam, traditional enemies of the Haida. The museum sits on the promontory from which the Musqueam would watch for approaching Haida war canoes. Despite his eclecticism and respect for world architectural traditions, Erickson had not been sensitive to these issues, treating Pacific Northwest peoples as all fundamentally the same. The project, however, involved both Musqueam and Haida communities in different ways. Features that had troubled the Musqueam community were corrected. For example, the museum entrance was once bedecked by two large, ornate wooden doors, carved by Haida artists. Their placement was unacceptable as a welcoming point to the museum, but Musqueam representatives were fine with them being moved to the gift shop, opening and closing that area. For Haida communities, the lowering of totem poles and monumental wood carvings was distressing. However, by blindfolding the carvings who would be disturbed by this, the Haida representatives were comfortable that the Elders manifest in the carvings would be able to tolerate the treatment and the power of the pieces would not be undermined. Thus, the reuse of the UBC MOA afforded many types of transformations with lasting benefits, through the thoughtful consideration of how to preserve and reuse this iconic architecture.

The approaches taken by the MOA redesign team at UBC offer important lessons for our work at the University of Lethbridge, and by extension, to others undertaking similar ventures. As we learned from that example, resilience and successful reuse need to support rather than restrict current stakeholders. There are important lessons to be learned from the past, but one of those lessons is not that the past should be preserved at all costs. Managing heritage is about the future not about the past.

KNOWLEDGE MOBILIZATION ACTIVITIES

This particular knowledge synthesis project is essentially a concerted effort at knowledge mobilization. Our Knowledge Mobilization Activities were inspired by the objectives of the Knowledge Synthesis Grant and the challenge of Envisioning Governance Systems That Work. Our KMP targeted the theme of Past and Future Models of Governance, and all of the questions identified by SSHRC under that theme, but most specifically: “From a historical perspective, how has governance innovation progressed in the past, and what are the pitfalls to avoid as we move forward?” Each workshop brought together area specialists, specialists in contemporary governance, and other stakeholders, such as Indigenous Knowledge Keepers. The KMP facilitated communication between researchers who have already had research outcomes but allowed them to communicate the results with stakeholders who are not typical target audiences. The synthesis that will result, especially the open-access monograph, will provide a unique tool for envisioning future governance systems that work based on historical evidence.

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