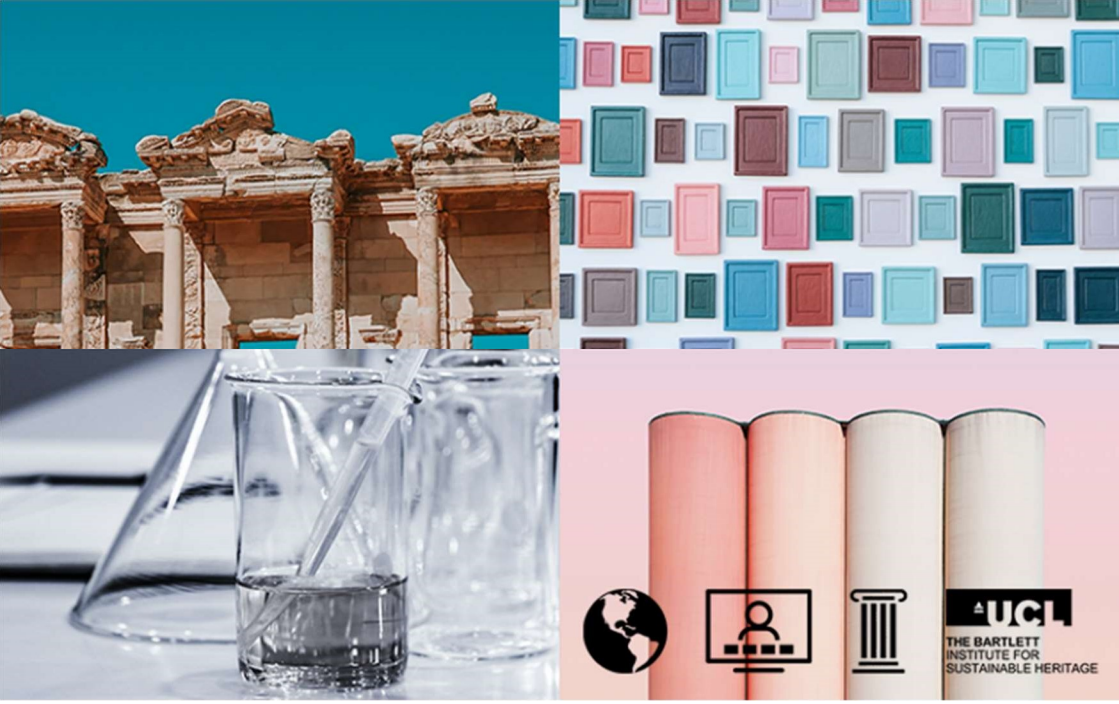


# Sustainable Heritage Bidecennial Conference: Strategic Research Questions

22 March 2021–25 March 2021

## Book of Abstracts

# 20 years of Sustainable Heritage at UCL

Research into cultural heritage inhabits the space between humanities and science. It is critical, collaborative and interdisciplinary. This makes it challenging on many levels, continually questioning experiments, concepts and theories; applying qualitative and quantitative methods of research; ideally moving fluidly between research, policy and impact and often doing so disruptively; requiring discipline-rooted researchers with an immense breadth of expertise.

**Welcome Address**
**Raimund Bleischwitz**, Director of the Bartlett School of Environment, Energy and Resources, UCL, 22 March at 4pm GMT

**Concluding Talk**
**May Cassar**, Director of UCL Institute for Sustainable Heritage, 25 March at 6:30pm GMT

The conference is chaired by **Matija Strlic**, UCL Institute for Sustainable Heritage

Organised under the auspices of:

National Heritage Science Forum

E-RIHS EUROPEAN RESEARCH INFRASTRUCTURE FOR HERITAGE SCIENCE

ICCROM


# Session 1: Heritage Risk and Resilience

**Theme Lead: Kalliopi Fouseki**
*UCL Institute for Sustainable Heritage*

Heritage is at risk of major socio-economic, cultural, political and environmental challenges. As much as heritage is at risk of major challenges many of which are unpredicted as the Covid-19 pandemic evidently showed, heritage can also be a significant catalyst for socio-economic, cultural and environmental resilience. Heritage can contribute actively to many of the Sustainable Development Goals agreed by the United Nations in 2016. To this end, there is a series of critical questions that emerge and which the conference aims to explore. On a conceptual level, should we rethink concepts linked to 'risk', 'resilience' and 'uncertainty'? How can recent and current challenges contribute to the reconceptualization of 'risk' and 'resilience' in the context of heritage?

**Heritage Risk and Resilience Round Table Panellists**
**May Cassar**
*UCL Institute for Sustainable Heritage, UK*
**Joy Edeoja**
*PhD Student, UCL Institute for Sustainable Heritage, UK*
**Amr Elhusseiny**
*PhD Student, UCL Institute for Sustainable Heritage, UK*
**Lorika Hisari**
*PhD Student, UCL Institute for Sustainable Heritage, UK*
**Ewan Hyslop**
*Historic Environment Scotland, UK*
**Rohit Jigyasu**
*ICCROM, Italy*
**Elia Quijano Quinones**
*PhD Student, UCL Institute for Sustainable Heritage, UK*
**Luiz Souza**
*Federal University of Minas Gerais, Brazil*
**Rob Woodside**
*English Heritage, UK*

**Invited Paper 1: Climate Change and Cultural Heritage. Today's Progress and Tomorrow's Challenges**

**Cristina Sabbioni**
*Institute of Atmospheric Sciences and Climate (ISAC), National Research Council (CNR), Bologna, Italy*

Climate change urgently requires knowledge and solutions for a sustainable protection and management of cultural heritage, including urban areas. In addition, disasters and catastrophes impose new and continuously changing conservation challenges and needs for innovative preservation and safeguarding, particularly during extreme climate conditions. The research addressed in the past decades allowed to achieve important results opening future research directions. The prioritization of the most relevant climate parameters requires now the development of damage functions and vulnerability indicators specifically devised to quantify impact and change on cultural heritage. The production of future projections for forecasting the impact of climate change asks for improvement of models and downscaling.

The development of risk evaluation and strategies is urgent for successful cultural heritage management. Natural and man-made hazards, anthropogenic effects and extreme climate change events put natural and cultural heritage under pressure, with an increasing frequency over time. Ready to-use solutions have been specifically tailored and implemented in order to assist the process of prevention and intervention. The challenge is now to provide action plans, at national and local levels, for enhancing preparedness and preventive conservation and to develop adaptation strategies in terms of predictive maintenance, through an effective collaboration among researchers, cultural heritage managers and policy makers.

Monitoring cultural heritage, prerequisite for assessing the impact of climate with its change, is highly costly and time consuming and advanced technologies, including satellite data and products, are fundamental for tackling this challenge. Numerous projects have developed and applied remote sensing to the safeguard of cultural heritage. The challenge is now for cultural heritage to be identified as a priority in the next Earth Observation Programme.

**Invited Paper 2: The Sustainable Development Goals and the Expansion of Heritage**

**A. Ege Yildirim**
*ICOMOS, Turkey*

Cultural heritage conservation as a discipline, while long established, is in the midst of a transformation arising from the current challenges, pressures, emerging trends and future possibilities for global human societies. This is part of the response to the United Nations 2030 Agenda for Sustainable Development- and the associated Sustainable Development Goals (SDGs)- adopted in 2015, calling for the transformative change needed to tackle the crises of climate change, conflict, inequity, pandemics and other disasters that have human factors as their root causes. One way to express the fundamental forces driving the transformation in the cultural heritage field is 'expansion', meant to denote the widening of scope, silo-breaking and forming of synergies with new sectors and stakeholders traditionally considered external to heritage, but important for development policy and practice. The expansion and re-definition of cultural heritage as 'heritage', to address the inseparable nature of 'culture' and 'nature' that has been 'rediscovered by modern society', particularly in contexts like Indigenous heritage and cultural landscapes, is a major indicator of the wider trends. The culture-nature connection is also underpinned by the 1972 UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage, and the inclusion in the SDGs, of Target 11.4 to 'protect the world's cultural and natural heritage' under Goal 11 to 'make cities and human settlements inclusive, safe, resilient and sustainable'. This paper will seek to examine the transformative processes in question, with a view to identifying critical paths that may be taken for research and practice in the heritage field. Focus areas in this exploration will include inter-sectoral partnerships and evidence-based advocacy for creating change in policy, resource allocation, public opinion and good practice, with the ultimate goals of both supporting sustainable development objectives and keeping heritage relevant within the wider societal debates.

**Invited Paper 3: Reconsidering endangerment through a heritage of religion**

**Trinidad Rico**
*Rutgers, School of Art and Sciences, USA*

Heritage scholars working at 'the margins' of a Euro-centric global heritage landscape have been arguing for a long time now that there is a structural problem within global heritage discourse that prevents it from engaging productively with diverse religious discourses and practices. This view is shared by an increasing number of scholars in 'critical heritage studies,' who have convincingly demonstrated the specific ways in which the backbone of contemporary studies in heritage and preservation fails to represent or incorporate religious discourses, traditions, and/or forms of stewardship. This scholarship is a key catalyst in the realization that some heritage preservation approaches are, in fact, responsible for endangering heritage value by dissociating it from the communities that sustain it. Broadly speaking, the responsibility to address the omission of 'the spirits' has fallen on the study of 'alterity,' that is, research that resists a dominant global discourse but is never truly incorporated into the 'canon' of heritage studies. In addition, with some notable exceptions, less effort has been put into revealing the strong secularist legacy that is embedded in a global heritage preservation policy, practice, and popular and professional discourse. In this discussion, I offer a historical review of the specific ways in which a global heritage discourse has been influenced by a rejection of religion, the legacies that are reflected in its current practices affecting specific sites, and the ways in which the critical heritage turn has attempted to resolve them.

**Invited Paper 4: The Long Tail – strategies for heritage resilience in a post-Covid world**

**Rob Woodside**
*English Heritage, Swindon, UK*
**Santiago Giraldo**
*Global Heritage Fund, San Francisco, USA*

The Covid 19 Pandemic has had a devastating impact on both peoples' health and the global economy. Heritage sites and organisations around the world have also been hit hard,

with many losing income from loss of visitors, restrictions on tourism and the redirection of funding. Communities who rely on heritage for jobs in tourism and maintenance have also been significantly challenged. Looting and vandalism have also been reported. Understanding the concept of resilience in the face of short and long term uncertainty is therefore critical. As we begin to imagine a world beyond Covid, what might be the long-term social and economic consequences – the 'long tail' – of the pandemic on heritage sites? How might we rebuild shattered incomes, reengage communities, restart projects and create the skills we need for effective maintenance – and what lessons can we learn from this that may inform our approach to resilience towards other major risks, notably climate change? What research, tools and technology might we need to make this happen? Drawing on the experience of two leading heritage organisations – English Heritage and the Global Heritage Fund – we will explore:

- The challenges UK and international heritage organisations have faced from Covid 19
- What we might have learned about 'resilience' in the light of uncertainty – from major sites to vulnerable communities
- How new technology might help
- What research questions we might ask that will help us plan and think ahead for the next decade and beyond


# Session 2: Modern and Contemporary Heritage

**Theme Lead: Katherine Curran**
*UCL Institute for Sustainable Heritage*

Increasingly, heritage professionals are being challenged by modern and contemporary heritage such as plastic museum artefacts, Brutalist architecture and the technologies, philosophies and movements that have shaped the modern world. The conservation of this heritage is crucial in order to understand its impact on modern society, for example its environmental impact. How do we value the tangible and intangible aspects of modern and contemporary heritage? How can we better understand the properties of modern and contemporary heritage materials, including their composition, fabrication and assembly methods, use and decay mechanisms? What evidence-based conservation strategies do we need for the storage and display of modern museum objects and repair, maintenance and replacement of components of modern buildings? Can traditional ethical frameworks be applied to the conservation of such materials, or do they need to be adapted? What about modern and contemporary heritage that has a more complex relationship with materials such as time-based media?

**Modern and Contemporary Heritage Round Table Panellists**
**Alejandra Albuerne**
*UCL Institute for Sustainable Heritage, UK*
**Gus Casely-Hayford**
*V&A East, London, UK*
**Rupert Cole**
*Science Museum, London, UK*
**Edward Denison**
*UCL Bartlett School of Architecture, London, UK*
**Susan MacDonald**
*Getty Conservation Institute, Los Angeles, USA*
**Jill Sterrett**
*Independent Arts and Cultural Heritage Advisor*

**Invited Paper 5: Modern Heritage in the Anthropocene**

**Edward Denison**
*The Bartlett School of Architecture, UCL, London, UK*

History is a record of power. The twentieth century – modernism's century – was dominated by 'the west'; its 'official' history bearing testimony to the west's dominance of 'others'. Modernist architectural history is a canon constructed by, for and of the west. This has major consequences for modern heritage and for architectural encounters with modernity outside the west, which are routinely overlooked or possess an assumed inferiority; a postulation asserted through inauthenticity, belatedness, diluteness and remoteness, geographically, intellectually, and even racially.

Nowhere is this systemic inequity more conspicuous than in Africa, where, despite initiatives like UNESCO's *Modern Heritage Programme*, there remains a serious oversight globally of the legacies that transformed the continent, and our planet, throughout the twentieth century. Africa has one fifth of the number of cultural World Heritage sites compared with Europe, and fewer than Italy and Spain combined. Only one African World Heritage site is defined as exclusively 'modern' – *Asmara: A Modernist African City* the former Italian colonial city and capital of Eritrea, inscribed in 2017.

The 20th anniversary of UNESCO's *Modern Heritage Programme* this year presents an opportunity to reflect on the transformative cultural experiences and planetary consequences of the twentieth century and the anthropocenic epoch it created. This paper will reflect on the meaning of 'modern heritage' in the Anthropocene and introduce a new project established to interrogate this question: MoHoA (Modern Heritage of Africa / Modern Heritage in the Anthropocene).

Established in 2020 by members of the Bartlett School of Architecture (BSA), University of Cape Town (UCT) and the Arica World Heritage Fund (AWHF), MoHoA is a global collaborative with an African focus concerned with decentering and reframing modernist heritage discourse to comprehend more equitably our recent past in order to meet the planetary challenges of the future.

**Invited Paper 6: Modern heritage and the 2020 pivot: catching up and moving forward**

**Susan MacDonald**
*Getty Conservation Institute, Los Angeles, USA*

Despite the tremendous progress made to conserve modern heritage over the last 50 years, many challenges remain; modern places continue to be threatened with demolition and irrecoverable change at an alarming rate. The scope of research on modern conservation has remained surprisingly narrow for decades – essentially focused on European manifestations of Modernism, heavily influenced by the architectural community with an emphasis on values relating to design and innovation. Meanwhile conservation practice has shifted towards recognizing broader values and approaches.

Research on conserving modern heritage has focused in three important strands, historic research to identify which places we want to keep, philosophical questions on how conservation approaches apply to modern heritage, and technical/ physical conservation challenges. These three research areas remain as valid today as they were in the pioneering period of conserving modern heritage. However, the scope has changed significantly in line with shifts in conservation practice in response to greater societal imperatives. The confluence of three global events during 2020, the Covid-19 pandemic, the international response to the Black lives matter movement and the climate change emergency demand a pivot toward a more integrated approach, to better connect research to broader societal concerns. Whilst the scope shift had already begun, these events have given impetus to nascent efforts to catch modern heritage research up and push it toward alignment with broader conservation trends specifically in the following areas.

Greater recognition of a range of diverse heritage values, including social and intangible values, and the need for better practices to preserve them, has also raised awareness on the importance of inclusionary processes in heritage practice. Recognition that the global forces that shape culture manifests differently in different places is helping recognition of 'other' and local modernisms and places 'beyond' modernism. The scope of technical research expands as time passes and new materials and systems come into play, particularly sophisticated mechanical, automated and AI building systems. Physical conservation solutions increasingly need to be reconciled with responsible climate change responses and to meet sustainable development goals and targets.

Dealing with our modern heritage in ways that meets post 2020 expectations thus demands new research efforts and a pivot towards those that can demonstrate responses to, and relevance for broader society concerns.

**Invited Paper 7: Scaffolds: Heritage Thinking in the 21st Century**

**Jill Sterrett**
*Independent Arts and Cultural Heritage Advisor*

The racial, financial and health impacts of the global pandemic have put every aspect of our society under scrutiny. Cultural organizations of all kinds are reckoning with the ways we have built systems to help us make meaning in our lives. Making material culture mean more to more people requires addressing sustainability in all of its myriad forms. How does the cultural production of *now*—the modern and contemporary—contribute to developing sustainable heritage practice that is financially, environmentally, socially and psychically tuned for the 21st century? Dr. Sam Wineburg of Stanford University reminds us that our established modes of thinking are an inheritance that cannot be sloughed off and, yet, if we make no attempt to cast them off, we are destined to fuse continually the past with the present.

When people impart—generation to generation—the customs, practices, places, objects and values that carry and convey meaning in their lives, we call that cultural heritage. Imagined at a higher order of operation, cultural heritage could be devoted to humanity, quality of life and a great global corps of citizen stewards. To dream this audaciously requires vision and strategy: creative applications of science and technology driven by storytelling and purpose that put people at the center of outcomes; and educational outreach that attracts young individuals to this work for generations to come. Endeavors of similar aspiration embrace two forms of inquiry—the scientific and the artistic—precisely because of the boundless potential at this nexus.

This presentation will expand on the evidence of blending these two forms of inquiry to support a sustainable agenda that outlines and evaluates cross-disciplinary research, its applications in real-world policy, its impact on people and the active engagement of citizen stewards in addressing grand challenges of cultural heritage.

**Invited Paper 8: V&A East: How do we inspire a generation?**

**Gus Casely-Hayford OBE**
*V&A East, London, UK*

The traditional West African approach demonstrating value of material culture was through use.

And when valuable objects like cloth were conventionally conserved in West Africa, it is so that they might be used. Even today, the West African cloth store remains a valued forum in which it is possible to engage with important material culture, to demonstrate the love for it through the use of it and the use of it to extinction if necessary. This understanding of the importance of objects is in direct tension with a Western vision of a museum that demonstrates the value of its holdings by placing them behind glass, by keeping them in temporal stasis.

At the V&A East we are creating a collections centre, designed by architects Diller, Scofidio + Renfro, with an ambition to shift how we see museum objects, and who uses collections. It will be a collections centre where the floors will be glass, the balustrades transparent and visitors are placed directly in contact with the world of material culture it is our mission to collect, conserve but also to deliver meaningful engagement. To do so is to create a place in which we juggle with the equation of trying to conserve objects and also trying to make them truly accessible. We want to elevate the experience of engagement as a key metric for measuring the success of the institution. Success cannot just be quantified by the numbers of people coming through the doors of our collections centre but instead, through the consideration of the nature and quality of interaction with our collections. It is through the very act of engaging with the collections and the objects that I believe that we will most meaningfully touch and change our audiences, with the hope that those same audiences are then able to touch others. It is our audiences that hold the power to understanding the role of our institution in the future of heritage conservation and the objects that we take care of for public use.

In the process of developing a museum for the future the following key research questions arise: How do we redefine the material value of our collection objects and the work of the museum? How can we reconfigure access to modern and contemporary heritage to make it equitable for audiences that are truly diverse? Specifically – how can be we more imaginative in our understanding of the ownership and acquisition of objects, so that we can seek to build a more equitable relationships with museums globally that may not have the resources to build displays that Western museums conventionally do?


# Session 3: Heritage Science

**Theme Lead: Josep Grau-Bové**
*UCL Institute for Sustainable Heritage*

When the scientific method is used to study heritage, we are doing heritage science. However, what makes heritage science different from other branches of science? The complexity of cultural heritage as a focus of study usually pushes existing technologies beyond their limits, driving new scientific developments. We invite submissions that show how knowledge and techniques from other disciplines are transformed when they are used in heritage science. Data-driven approaches, for example, often need to be improved to deal with unstructured and complex historic data. Engineering solutions need to operate within the constraints of historic sites, which may be remote, protected, busy, fragile… Physical sciences need the social sciences, because understanding the human relationships with heritage is essential to understand deterioration or change. When does science become "heritage science"? This theme could usefully build on the Strategic Framework for Heritage Science for the UK, 2018-2023.

**Heritage Science Round Table Panellists**
**Cecilia Bembibre**
*UCL Institute for Sustainable Heritage, London, UK*
**Abdelrazek Elnaggar**
*Egypt-Japan University of Science and Technology, Egypt*
**Blen Taye Gemeda**
*University of Oxford, UK*
**Marco Leona**
*Metropolitan Museum of Art, USA*

**Invited Paper 9: Modelling of environmental pressures within the heritage sciences**

**Jenny Richards**
*St John's College, Oxford, UK*
**Peter Brimblecombe**
*National Sun Yat-sen University, Department of Marine Environment and Engineering, Kaohsiung City, Taiwan*

Modelling has not always been central to studies in the heritage sciences as it might be in chemistry, or geography. However, modelling offers the heritage sciences useful intellectual insights by linking observational or experimental studies to theory, which typically drive the model. Modelling also provides a useful tool to understand processes beyond those that are observable and can provide a common language and form a bridge between disciplines. It may not be constrained by time and can be extended to the distant past or far future. It can give information about objects in different places or environments, and can even imagine hypothetical objects, contexts or materials. It can enable destructive or extreme scenarios to be investigated allowing costly or risky options for heritage to be safely explored. It is not limited to physical processes and can be applied to ethical, societal and management issues. We will explore modelling and its application to five illustrative study contexts: (i) Gothic architecture and long-term stone in Europe under a changing climate leading to damage from frost shattering, salt weathering and pollution and an illustration of a situation where amplification of small changes in climate is shown to have severe effects. (ii) The impact of wind and rain, under current and potential future conditions, on the risk of earthen heritage deterioration at Suoyang Ancient City, Gansu Province, China. (iii) The use of modelling to test mechanisms for past landscape formation providing important environmental context for archaeology. (iv) Modelling the life cycle of insects to show how strongly this can be affected by even slight changes in environment, and while climate is important, habitat is also key as shown by infestation in museums under COVID-19 closures. (v) Seasonal change and the appearance of landscape and context to heritage and the effect on visitor experience and spring blossoms or autumn colours.

**Invited Paper 10: Heritage data science as exploratory enquiry**

**Scott Allan Orr**
*UCL Institute for Sustainable Heritage, London, UK*

Society is undergoing a 'digital transformation', witnessing the widespread integration of digital technologies with implications for heritage. Data science, whether considered as a parallel development or embedded within this transformation, has equally important implications for heritage. Potential applications of data science within heritage are diverse and seemingly infinite. Rather than ask '*what* should data science contribute to heritage?', this presentation prompts further discussion in response to '*how* should data science contribute to heritage?'.

In this talk, I will explore the identity of 'heritage data science', drawing on wider discourses within heritage and data science and examples from my research on climate and heritage. A case will be argued for heritage data science as a distinct field to its data-driven counterparts in other domains, based on the unique conceptions and use of 'value' in heritage. Positing this leads to another question: when does heritage science become data science? Data-driven approaches are associated with a proposed fourth paradigm of science: an exploratory mode of scientific investigation. This mode disrupts the established scientific method, in which data is collected to test a proposed hypothesis. The fourth paradigm reverses this model and collects or aggregates data first, asking questions later. Drawing on diverse examples from my research, including assessing climate change impacts, monitoring sites with citizen science, and understanding historical bell manufacturing techniques, I will explore the implications of the fourth paradigm and other aspects of data-oriented thinking for how data science is undertaken and by whom within heritage.

**Invited Paper 11: ArcHives - Beeswax as a Biomolecular Record**

**Matthew Collins, Christian Carøe, Alberto Taurozzi, Tuuli Kasso, Alister Sutherland**
*The GLOBE Institute, University of Copenhagen, Denmark*
**Samuel Johns, Mélanie Roffet-Salque**
*Organic Geochemistry Unit, School of Chemistry, University of Bristol, UK*
**Renée Enevold**
*Moesgaard Museum, Denmark*

The study of our cultural and natural heritage has seen quantum leaps in the last years because of new technologies and methods. After a short introduction to the value of biomolecular methods and the advantages of this type of data in heritage science, this paper
presents the ArcHives project (University of Copenhagen). ArcHives aims to unlock the biomolecular record of historical and ancient beeswax to study the archaeology of beeswax as a material and the past of *Apis mellifera* and beekeeping in light of the current honeybee decline. ArcHives is optimising methods for extraction of proteins, DNA, pollen and isotopes from beeswax: we add beeswax to the continuously growing and wide ranging list of materials to study cultural heritage and explore the past.
Humans have a long history of beekeeping and honey hunting, yet even today, beeswax is valued more than the sweet nectar of the bees. Due to its unique properties it has been used
as a water-repellant, in the lost-wax casting method, medium for painting, providing illumination and as authenticating seals. The recent catastrophic decline in bee populations has grave implications for ecosystems worldwide and has highlighted bees' vulnerability to environmental change, making the discussion of mankind's impact on bees more relevant than ever.
Beeswax records the (i) colony and (ii) the microbiome of the hives (iii) the pollen from plants
visited by the bees, and (iv) the humans that handled the wax. Comparing pre-crash populations of the past to modern day counterparts; in terms of genetics, microbiome and foraging habits may shed light onto the causes of honeybee decline which remain frustratingly illusive. If we can recover human DNA trapped inside e.g. medieval wax seals we can explore the potential for an archaeology of the individual.

**Invited Paper 12: Multimodal Imaging Spectroscopy in Cultural Heritage Science: Future Directions**

**John Delaney**
*National Gallery, Washington DC, USA*

A variety of imaging spectroscopy modalities have shown their utility to answer questions in cultural heritage ranging from what artists' materials are used (pigments and paint binders) to how they are distributed across the work of art, as well as providing new insights in the artists' working methods. The majority of research has focused on visible and near infrared reflectance imaging spectroscopy (400 to 2500 nm) and XRF imaging spectroscopy. Researchers have also expanded into the mid-IR to access the rich spectral information in this part of the electromagnetic spectrum, despite the increased complexity of the instrumentation and the data analysis required. Studies which merged the reflectance image cubes from the visible, near infrared, and mid-IR spectral regions demonstrated that such broad spectral band imaging spectroscopy is transformative, especially when combined with elemental information from XRF scanning. Building scanners capable of collecting such multi-modal image cubes remains an important goal. In this paper, a result from such an envisioned scanner will be presented. Another important goal of these scanning modalities is to expand from imaging nearly flat objects like paintings towards 3-D objects of large scale. Examples and concepts of such sensors will be given as well. Finally, the development of semi-automatic processing algorithms optimized for image cubes obtained from cultural heritage objects is becoming more critical. Progress in the adaptation of algorithms and data analysis strategies developed for remote sensing including neural networks have been made and some examples of this work will be discussed. In summary, the field of imaging spectroscopy in cultural heritage science is moving into other regions of the electromagnetic spectrum, trying to find ways to image 3-D objects and put into place image processing work flows to exploit these new multi-modal image cubes.


# Session 4: Future Heritage

**Theme Lead: Richard Sandford**
*UCL Institute for Sustainable Heritage*

As novel materials and technologies emerge, as new patterns of consumption and production develop, and as what is valued changes within society, the nature of heritage will evolve, and in doing so, the capacity of heritage to support future societies in their response to planetary challenges will change as well. What new forms of heritage might be anticipated? What new challenges might they present for heritage science and management? What resources can heritage offer that support people to accept and live through change? How might heritage contribute to, critique, and enrich the development of positive future imaginaries? What different roles might heritage play in future society?

**Future Heritage Round Table Panellists**
**Monika Stobiecka**
*Faculty of Liberal Arts, Warsaw University, Poland*
**Shadreck Chirikure**
*British Academy Global Professor, School of Archaeology, Oxford University, UK*
*Department of Archaeology, University of Cape Town, South Africa*
**Dan Hicks**
*University of Oxford, UK*
**Stephen Witherford**
*Witherford Watson Mann architects, London, UK*

**Invited Paper 13: Digital sustainability: what happens when we digitize everything?**
**Monika Stobiecka**
*Faculty of Liberal Arts, Warsaw University, Poland*

The last few years have shown that in heritage policy all over the world priority has been given to digitization. International, national, and regional authorities and academies generously support researchers and technicians working on digital heritage. Almost everything considered valuable is registered, stored in databases, or presented in museums, and finally, saved for posterity in various digital formats. However, this ubiquitous turn towards the digital that has taken over heritage studies still lacks a proper theoretical and critical framework. Many authors notice this severe theoretical lack, which often leads to techno-fetishism, particularly visible in projects where researchers, following the fast-science track, indiscriminately collect more and more data by applying the latest methods, to create more and more representations, reconstructions, simulations, or even simulacra. All too often, digital heritage is based on a simple problem-solution mechanism, dismissing the ethical implications. It is high time to think about the future of digital heritage and repeat the question posed by Harold Thwaites: what happens when we digitize everything? (Thwaites 2013). Or go further and ask: what are the ethical implications of this mass digitization – will the digital replace the material?
In my presentation I will discuss if digital heritage can be sustainable, and if the practice can be slow and thoughtful, instead of fast and managerial. My questions will embrace aspects of digital heritage related to digital materiality, energy use, and accessibility and public use. My speech will be illustrated with the preliminary results of a study on Polish digital and virtual collections.
Throughout my talk I will investigate the future of digital heritage. Assuming that we are witnessing digital heritagization, I will ask further about the implications of this preference for the digital for sustainable heritage development.
References:
Thwaites, H. 2013. "Digital Heritage: What Happens When We Digitize Everything?" In Visual Heritage in the Digital Age, edited by E. Chang et al., 327-349. London: Springer-Verlag.

**Invited Paper 14: Imagining heritage futures in Africa and elsewhere: great expectations or great trepidations?**

**Shadreck Chirikure**
*British Academy Global Professor, School of Archaeology, Oxford University, UK*
*Department of Archaeology, University of Cape Town, South Africa*

Heritage connects the past, present and future. Cumulatively, it is the sum of everyday experiences. Heritage is full of contradictions, from the personal and impersonal to eclectic things such as subsistence, technology, infrastructure, emotions, luxury, poverty, abundance, and scarcity. These contradictions also sum up the contemporary world wherein globalisation continues to network distant regions, simultaneously creating wealth in some areas but poverty and squalor in others. The rise of nationalism and exceptionalism in America and elsewhere appears to contradict universalism and multilateralism. The negative planetary consequences of hyper consumerism are engraved everywhere, from plastics to toxic waste. These contradictions create unpredictable futures for heritage and its conservation in Africa, given the global power dynamics currently against it. Will the future of African heritage deal with toxic heritage, and how will the future celebrate tools that are responsible for deepening impoverishment and pollution? How about the present's obsession with futurism – will it result in the neglection of heritage conservation, or will unconstrained consumption destroy all the places and things that Africans call heritage? Will the world find a way to balance excess consumption with sustainable conservation? Given power and wealth asymmetries between the world's regions, will the heritage of poor Africans be celebrated? Will Africa have more places on the World Heritage List controlled by rich countries, or must the continent create its own list? This contribution addresses these and other questions, to imagine Africa's heritage future drawing on examples from the continent and elsewhere. Guided by a trans-disciplinary approach, it argues that heritage has potential to become a planetary saviour, if lessons embedded in it are applied to solve contemporary challenges such as pollution, climate change, and inequality. It concludes that because the future is ever shifting, we must plan for the heritage future we want now, not at any other time.

**Invited Paper 15: Brutish Heritage**

**Dan Hicks**
*University of Oxford, UK*

Many have observed that the relationship between the nation state and the idea of "heritage" is a very close one. In Britain, the ongoing legacies of empire as a central element of national heritage has more recently been recognised, for example in connections between Atlantic slavery and the National Trust's country houses. But as a wider, pan-European reckoning with the later periods of colonialism, especially that period between the Berlin Congress of 1884 and the defeat of fascism in 1945, is now getting underway, what does this mean for how we understand and manage historic places, buildings and collections in Britain?

This paper imagines the situation in 2030, five years after a British government had in 2025 formed a new Commission to tackle this question. As a kind of counterpart to the preservationist role of English Heritage (formed during the first term of Margaret Thatcher's government in 1983) and Historic England — this commission is named Brutish Heritage.

Building on ideas from my recent book The Brutish Museums, my contribution examines what it would require for such a body, or for individual institutions, physically to dismantle those parts of our Brutish Heritage through which colonialism has been made to endure in the form of monuments and memorials to violence, dispossession and white supremacy, from statues in the streets to displays in museums - causing hurt to many stakeholders, communities and audiences in the present.

Thinking through the public-led work of this future body - managing fallism in the streets and restitution of stolen African art from our museums - the paper imagines a future heritage sector which foregrounds the democratic agency of citizens to remove enduring symbols of intolerance and racism, and so to remake our historic cities, landscapes and institutions so they keep in step with their times - and are fit for the 21st century.

**Invited Paper 16: Constructing Ruins – architecture of imperfection**

**Stephen Witherford**
*Witherford Watson Mann architects, London, UK*

> *'As porous as this stone is the architecture. Building and action interpenetrate in the courtyards, arcades, and stairways. In everything they preserve the scope to become a theatre of new, unforeseen constellations. The stamp of the definitive is avoided. No situation appears intended forever, no figure asserts its 'thus and not otherwise'. This is how architecture, the most binding part of the communal rhythm, comes into being.* [1]

I shall set out to describe the role of imagination in working with what exists. Through the interpretation of the 'grain' of what endures, working with things as found, I shall consider how we can create something that never existed, but is entirely dependent on what went before.

Considering two projects undertaken by our practice, Astley Castle and the Bankside Urban Forest, I shall sketch out an approach to how we might make our future cities. Both projects address things with complex histories that were felt, by the bodies that commissioned us, to be failing or neglected. Our approach to these two places, responded neither with acts of scholarly reconstruction, or polite reverence for the past by the new. Instead we felt our way patiently into a process of re-imagination that necessitated the mutual dependency between the old and the new. We re-imagined what had endured and how this could be experienced differently, with an intensity that might enable the deep characteristics or conditions under which the thing evolved to be amplified through this experience. We found ourselves drawing on the skills you aren't formally taught; empathy, approximation, opportunism, negotiation, letting-go.

I would like to conclude on how the things made remained profoundly incomplete, reliant on the experience and imagination of those who occupy them for their resolution. Astley Castle and the Bankside Urban Forest remain partial; porous - things left open to the weather of our moods and half thoughts.

[1] Walter Benjamin and Asja Lacis, Naples; from *One-way Street and Other Writings*