National Heritage Science Forum

Industry Consultation Workshop

Review of Draft Update of the

National Heritage Science Strategy

Full Report including Session Notes

8th November 2017

London

Contents

1   Programme

09:00 -09:30	Registration and Coffee	
09:30 -09:45	Welcome to Tate Welcome and introduction to NHSF	Prof Pip Laurenson, Head of Collection Care Research Alastair McCapra, Chairman NHSF
09:45- 10:45	3 Presentations on Heritage Science, its Uses and the National Heritage Science Strategy • National Heritage Science Strategy • Heritage Science and its Role in the Heritage Sector • Heritage Science Opportunities in Wider Markets and Applications	Nancy Bell, Northumbria University Dr Lyn Wilson, Historic Environment Scotland Prof May Cassar, UCL Institute for Sustainable Heritage
10:45-11:15	**Coffee**	
11:15-11:40	Split into Discussion Groups 1 and 2 Introductions from Attendees	Discussion Group 1: Alastair McCapra, Chairman NHSF Caroline Peach, NHSF Scott Allan Orr, SEAHA CDT Discussion Group 2: Nancy Bell, Northumbria University Lisa Randisi, Preservation Matters Ltd Robin Higgons, Qi3 Ltd
11:40-12:20	Round Table Discussion Theme A. Value: - Discussion on perceptions of real value and potential value	
12:20-13:00	Round Table Discussion Theme B. Mechanisms: - Infrastructure; Barriers/challenges to partnership; - How to find partners	
13:00-14:00	**Buffet Lunch and Networking**	

2   Introduction

The National Heritage Science Forum (NHSF) is seeking stronger links with industry to improve the impact of heritage science research in commercial markets and strengthen the scope for collaboration between research and industry. This goal is reflected in the work that NHSF is currently doing to update the National Heritage Science Strategy to align it more closely to wider government priorities – in particular the recently released Industrial Strategy.

As part of the programme, NHSF is seeking inputs from industry and heritage scientists to test the updated strategy and improve the impact of heritage science research in commercial markets. The workshop brought together a wide range of heritage scientists, heritage industrialists, and industrialists from other sectors who have a strong interaction or interest in heritage science to discuss draft proposals for a new National Heritage Science Strategy.

The specific objectives of the workshop were to:
- Give participants a clear understanding of the value of Heritage Science to their sector
- Present the updated National Heritage Science Strategy proposals in ways that are understandable and relevant to participants
- Encourage open, constructive discussion and inputs on the Strategy
- Build long-term relationships with participants to support the wider objectives of NHSF

The findings and conclusions of the workshop will be incorporated into the final version of the updated National Heritage Science Strategy, and will also help the NHSF to build stronger links and relationships with industry.

The National Heritage Science Forum thanks the participants for their inputs, comments and time. Their help has been invaluable in strengthening the latest work on the Strategy.

3   Summary of meeting discussions

The participants came from a wide cross section of heritage and non-heritage interests. This led to a broad discussion with a wide range of different views, ideas and thoughts. Following the presentations, the workshop participants split into two smaller groups to discuss the following questions:

Theme A. Value: - Discussion on perceptions of real value and potential value
Theme B. Mechanisms: - Infrastructure; Barriers/challenges to partnership;
                                              - How to find partners

The feedback from the discussion groups has been captured below. It is written as a set of comments and questions grouped around the thematic areas that arose, rather than a monolithic narrative, in order to capture the dynamic and wide-ranging nature of the discussions.

3.1   General

The strategy needs exceptionally wide promotion if it is to gain traction. It needs to appeal to a broad community of users, particularly early career researchers. Promotion and delivery should be seen as the start of the process, not the end.

Heritage science can be used to provide wider experiences for society (public impact) than just knowledge.

We need to evolve from "science is good" to "science does good" especially to support the government strategy of developing the regions.

Timescales are important. Impacts need to happen in the short-term as well as the long-term. What can Heritage Science deliver now as well as the future?

An important question is "Who does Heritage Science matter to, and why?"

Only a small proportion of researchers have used the first version of the National Heritage Science Strategy. The four 'Themes' of the revised version will be a big improvement. However, it needs to be made meaningful to young researchers as well as more established ones, and it will need better promotion and engagement with researchers.

It was suggested that the NHSS could be aligned with application areas such as precision farming to increase the possibility of innovation funding in these areas being available for suitable heritage research.

Heritage informs the future – heritage scientists applying their knowledge to new build is still heritage work!

Application and implementation of the research – ability to speak both the languages of science and the humanities is hugely valuable.

3.2   Value

The importance of recognising and accounting for different kinds of value was discussed. It can be financial (revenues, return on investment, investment); human (building training, knowledge, expertise and capacity to undertake interesting and satisfying jobs); public benefit; academic impact (for REF). We need to understand and account for our impact across the full range of value.

The importance of being clear at the outset of a project, about what impact you intend it to have is paramount. Too often we do a piece of work first, and then when it's finished try to think about what impact it may have had.

Important to say not just what heritage science is important for but who it matters to.

A lot of Heritage Science work can be measured in terms of public impact – visitors, viewers, engagement etc. It also has value in Public Understanding of Science, Policy and industrial applications. For academia, how can the Impact of Heritage Science be presented in ways relevant both to the REF and to the wider community?

Productivity gain is a value - e.g. developments that enable companies to do things more quickly, using fewer people or with fewer resources (e.g. processes to speed up scans; or developments that enable storage to be not as such low temperatures leading to efficiency gain through reduced energy inputs and therefore improved economic gain).

One issue with people-centred impact measurement is that it focuses us on today's needs and users. Part of our role is to think about future publics and what they might want and need. We need to

recognise that we are working for other publics than just the current one, and that future publics may have different needs, wishes and interests.

The understanding of value is relevant to everyone's work. But is the public benefit value only preservation? And how do you measure this? How much should public spending be about giving back to the public?

What is missing from our assessment of value? It is not always possible to know at the start of the project what should/can/will be measured. How should we balance quantitative & qualitative measurement and data? Should pseudo-quantitative data or monetary representation of value or other ways be used? How do you measure fun (encourage participation)? How do you measure the value of something that does not directly engage with the public (e.g. buried remains)? When public engagement is <u>not</u> obvious, how do you measure impact/value?

Storage space requirements (and costs) are driving archive decisions. The role of curation is critical here in establishing value.

A key issue is around discoverability – the process, but also how to make it mechanized. The more other organisations work with heritage organisations, the more they discover quite quickly that often the research has been done. Better discoverability of research would add value to it.

The pharma model for sharing research data is worth exploring.

Thinking about information generated by the public – where can institutions bring value in how to find what's needed? There is value in curation and delivery. Public can increasingly contribute content – but not always find things. Assigning metadata is of major importance to enable this.

The multidisciplinary element of Heritage Science is valuable, and it opens doors with value and interest to those working across science. However, it also brings challenges – different sectors have different languages.

3.3   Elements of the proposed strategy

The four strands of the proposed strategy, particularly the broad aims of 'well-being' and 'economic benefit' seem to work well. There was some thought that 'skills and innovation' and 'research and innovation' would contribute to economic benefit, and by extension well-being. This would suggest a hierarchy of strategic priorities. The interdependencies between them are obvious as are the social and economic benefits, but this needs to be made explicit.

Comments on the four strands were:

3.3.1   Research and innovation
Matching the needs of practitioners against the interests of researchers requires a well-informed strategy that clearly articulates the research that is necessary. Making explicit the key challenges/research gaps would be useful.

Can Heritage Science address modern problems in new ways, leading to contributions to wider societal challenges such as Mental Health and Wellbeing?

How can Heritage Science research be translated into impacts, especially in non-heritage sectors?

Heritage Science is reactive rather than proactive. Tools and methods are developed in other fields and then applied according to government priorities/requests for evidence. Maybe we should start thinking as a community, "What is the next scientific step? What do we need to do?" rather than respond to government and current events.

Innovation. Way of attracting more funds to the sector.

There is potential to link the strategy to other "great technologies" (big data, digital, etc.) – an attempt could be made to align with those.

There is a huge volume of grey literature, not published in journals, but of potential value to Heritage Science. How do we access this, make sense of it, and extract value from it? There is a huge quantity of untapped value out there.

There was strong support for finding mechanisms to better translate the outcomes of research.

3.3.2   Economic benefit

Economic benefit is core to all outcomes. Research is needed on how to understand and quantify economic benefits through different vectors of exploitation to support the benefits that these other vectors provide.

ICOMOS report (2015) on the value of museums in a thriving society. Would it be possible to apply that methodology to UK heritage to produce evidence?

There needs to be greater emphasis on economic benefits in order to underpin / provide support for other benefits.

Translation of good Heritage Science into the SME (small or medium-sized enterprise) ecosystem is essential. There is a shortage of SMEs able to support Heritage assets. Development of the Heritage SME ecosystem both to support Heritage assets and to exploit Heritage assets (digitised?) in wider markets can make a significant economic contribution.

The Historic Houses Association changed their approach to presenting the benefits of their activities to pitch them in a language / concept that matched that of their audience. In this case, they redefined Historic Houses as SMEs. However, there are risks in doing this as defining Heritage purely as economic units may change the whole way it is treated, to its disadvantage. However, speaking in a language that resonates with funders / stakeholders can be very beneficial if done well.

Heritage can provide content for media / games / etc that is currently being recreated manually e.g. Cityscapes such as Venice.

How can Heritage Science engage with / align with the agendas and strategy of the LEPs (Local Enterprise Partnerships) to maximise regional impact? How can Heritage Science develop great products that people can consume? Improving regional products (these products can be anything), taking regional specialisms and working across the industry to encourage growth and public impact will all contribute to government policy. The priority is science that supports placemaking, growth and skills development. The British Council is repositioning itself and may usefully inform strategy development.

3.3.3   Skills and knowledge development

Emphasising the interdisciplinary nature of heritage science in the strategy was encouraged and the need to resist the 'conservation science' cul-de-sac. Demonstrating the transferability of heritage science skills should be trumpeted. Agility is key.

Heritage can be used as an exemplar for the applications of Science and Technology, providing examples for education and outreach that will be more attractive / accessible to some students

Heritage science can contribute to the upskilling of the Tourism sector to provide greater value; add and improve productivity (aligned to gov. policy).

Such upskilling can also be used to support Government agendas such as building Tourism up in the regions and developing better Heritage products to attract visitors. This is about linking science with place to improve quality and economics of life in places like Grimsby.

Training in Heritage skills can be used as a route to integrating unemployed and veterans in society, acting as a stepping stone to wider employment. There is a Veterans' network doing this.

Historic England has mapped the National Science Curriculum to Heritage Science to use as exemplars to engage students uninterested in more conventional approaches. The report is on their website. There is also a brief being circulated for discussion on Heritage Careers Advice for 11-14 year olds.

There is also a survey underway (by NHSF) on why people don't apply for post-doctoral work and careers in Heritage Science.

The inter-disciplinary nature of Heritage Science and its breadth makes it applicable / useful to a wide range of other sectors and a very powerful training route to creating "Agility in the Workplace".

There is a wide range of academics for whom Heritage is a small part of their overall work and interest. They should be engaged with more actively, both to bring new techniques and knowledge to Heritage Science and to use Heritage Science as exemplars of science in application.

There is still a perceived hierarchy of employment – at least in academia – where non-academic employment is still considered second best after academic – a document like the strategy would help; there are tremendous opportunities outside of academia.

How does training in Heritage Science provide students with a range of career options? Importance of giving prospective heritage scientists realistic expectations of what the discipline is (avoiding the "trap of forensic science"). Soon 40 SEAHA PhD students are going to be looking for 40 jobs, not necessarily in heritage science. The have interdisciplinary skills useful in many industries that can be applied in a wide range of environments and projects, almost irrespective of field – *could we make this more clear and visible in the strategy document?*

There was general agreement that the multidisciplinary aspect of heritage science is absolutely essential.

3.3.4 Wellbeing

Wellbeing

"Wellbeing" was highlighted as interesting by several participants. "It's unusual." Wellbeing is very much embedded in several participants' organisations; general endorsement. Wellbeing ties in with DCMS priorities.

There is a parallel with volunteering and the Wellbeing benefits that are being discovered.

Question: a lot of wellbeing comes from direct engagement e.g. looking at a painting. Where does heritage science specifically come in and what is its relationship with health and wellbeing?

Message drawn from NHSF Health and Wellbeing event (earlier this year) is that case histories alone do not make convincing evidence for Government – we haven't quite reached the level of convincing evidence that is needed.

Heritage science as creating a social experience rather than as a means of communicating knowledge. This is the kind of angle that can propel heritage science into the wellbeing agenda and cross the bridge into policy lead and impact.

Health

Should include improved outcomes for Mental Health at work. Heritage can be used as a catalyst and support tool for both Wellbeing and Mental Health. An example is a scheme to train veterans in archaeology.

Can Heritage be used as a support in therapy? There is a potential link to the UCL Health Humanities Centre and its work on health, illness and well-being.

The real issue is convincing doctors that social prescribing works. Need to build evidence base that will allow heritage professionals to have this conversation with physicians as a step towards implementation of research results.

3.4 Infrastructure

The main infrastructure needs to emerge from this conversation were:

> a). access to the knowledge contained in the enormous mass of published but not readily accessible information

> b). the human infrastructure of other people, and their willingness to engage, share ideas and collaborate.

Transparency / visibility is the key - knowledge of who is doing what, where to find funding opportunities, what project objectives are. Some form of signposting would be most useful. Examples from the RSC, Google, Law, and Amazon were highlighted, among many, but provenance of the data and curation were raised as key issues.

There was very little discussion about the need for new or additional physical infrastructure.

Key decisions impacting heritage are made by people far away from the issues, without access to relevant information or resources. We need transparency of decision making so there is a possibility of factoring in relevant considerations.

We need accessibility of digital resources, without paywalls, firewalls, IP restrictions and other barriers.

Major emphasis on discoverability.

As a matter of policy, we must require all publicly funded research to produce free, publicly accessible data, readily searchable.

Potential use of AI to search huge troves of data to find new correlations.

Need for translational research hub. Render current research into readily accessible and user-friendly formats.

Regret for the demise of 'Reviews in Conservation'. Could we restart something similar?

Lots of barriers in licensing and IP we need to get rid of.

Each individual project needs to create its own infrastructure – project management software, document sharing, image management. Can we train people to navigate this more effectively?

Shortage of specialists in many fields; need to speak to people in their sixties who did relevant research a generation ago

Our ideas of 'good enough'. Is our research environment broadly good enough? Could we raise our game and our expectations of what is normal?

Looking for knowledge that is 'good enough' can be an issue – enough to get the job done is required – but not the desire to go further and explore the best solution.

3.5   Other inputs and comments

3.5.1   Big Data
A major challenge in curation.

- Uncertainty of data formats/resolutions in future
- Not a new issue: 2D (e.g. digital/physical copies), analogous to 3D data NOW
- Who owns digital archives?
- Discoverability
- Ownership of data
- Safeguarding of data: reproducibility enables multiple copies, perhaps better for longevity

Lessons from big pharma: shared information, findings

- Heritage records should be publicly available
- Danger of being selective (e.g. present data output, not data itself)

- Commercial sensitive information
- *Heritage-sensitive*, wider publics access
- Data scale issue (e.g. biological sciences)
- Data: storage is not the concern, but managing the metadata is

3.5.2 Metrics

Large companies are starting to use a range of different metrics to establish value and drive change. These can relate to sustainability, wellbeing, environment, etc. Can metrics be established for Heritage that highlight these contributions?

Can metrics also be developed that align to desired policy outcomes to show value add and drive change in desired directions?

Capturing these metrics appropriately is important. Involvement of industry in Heritage Science research so that they can metricate industrial impacts, both qualitatively and quantitively is a powerful approach.

Sustainable ethos – different metrics to record sustainability. Maybe change the metrics? In terms of how heritage is added to the economy.

A wide range of metrics are available: value for money, bid success, repeat business from clients, grants, measurable targets, e.g. web visit numbers, engagement, # of times, etc… There are internal/external metrics.

Metrics for Public benefit are needed – measure in knowledge gain, outputs and impact.

Mechanisms for iterative improvement need to be considered, such as post-bid review (dialogue with colleagues), delivery targets.

3.5.3 Public engagement

All large infrastructure projects have a need for public engagement, and AR / VR are useful tools. The large experience the Heritage industry/sector has in public engagement and in the use of such tools could be of great value to these projects.

As GDP winds back, and consumerism decreases (argued by some) heritage science has a role to play in demonstrating social value through for example, volunteering, re-use of buildings as centres of community cohesion.

3.5.4 Global culture and soft power

Heritage science is at the forefront of the global competition between different cultural challenges (e.g. extremism). Can it be used to support the widening of cultural understanding, knowledge and values to create a more inclusive, understanding global society, reducing threats such as extremism?

Preoccupations with security are linked to how we present intersections between cultures.

Communities are very important because when it goes wrong and wellbeing decreases dramatically this is when radicalisation occurs [looping back to security as a government priority]. Increasing community wellbeing is crucial. How can Heritage Science assist?

The UK leads the world in development and application of Heritage Science across sectors. How can this be used to enable / support the UK standing in the World and improve it? What is the contribution that can be made globally to world economy, social inclusion, infrastructure, etc that will enhance UK benefit? This could be assessed as the total contribution to global benefit, and how much is retained in the UK.

3.5.5   Conservation and heritage

No real separation between conservation and heritage, despite the use of difference language of reference. E.g. an historic woodland conservation volunteer is also effectively a heritage volunteer. The pool of potential evidence for Heritage and for Wellbeing, is much larger than is usually recognised or made explicit.

4   Conclusions for the draft National Heritage Science Strategy

The discussions were very wide ranging, reflecting the changing world that Heritage Science operates in and the wide range of opportunities and challenges it has in front of it. However, among the breadth of feedback, some key conclusions can be formed.

- The objectives and structure of the Strategy was deemed to be appropriate for the economic and societal environment that Heritage Science operates in at the moment.

- When articulating and presenting its value to wider society, Heritage Science needs to understand and account for its impact across the full range of values important to society.

- To do this, Heritage Science needs to speak in the language of its stakeholders and customers, but without compromising its positioning.

- Economic benefit is core to all outcomes. Research is needed on how to understand and quantify economic benefits for different values and through different vectors of exploitation to support the benefits that these other values provide. This will align the National Heritage Science Strategy with Government strategy.

- Infrastructure needs to centre around the management of and access to knowledge rather than physical infrastructure.

Further information about the National Heritage Science Forum and the National Heritage Science Strategy can be found at www.heritagescienceforum.org.uk/what-we-do/national-heritage-science-strategy.

You can also contact the NHSF at administrator@heritagescienceforum.org.uk.