Institution: University of EXETER

Unit of Assessment: ARCHAEOLOGY

Title of case study: Transforming museums through experimental maritime archaeology

1. Summary of the impact

Research into maritime and experimental archaeology at Exeter has played a major role in **transforming how museums connect modern communities with their seafaring heritage through experimental archaeology and the innovative approach of 'construction-as-performance'** (full-scale construction of a boat undertaken in front of the public using experimental archaeology). A major project held at the National Maritime Museum Cornwall (NMMC), supported by an AHRC KTF, has demonstrated the value of experimental maritime archaeology in engaging the public with the past. In addition to greatly increasing their visitor numbers, this project received considerable regional, national and international media coverage, and has given the NMMC the confidence to undertake subsequent projects and so develop their own research capacity. The impact of the Exeter/NMMC project is also reflected in how the **'**construction-as-performance' concept has been adopted elsewhere. Exeter's workstream in the EU-funded OpenArch project, for example, introduced staff from open air museums in mainland Europe to the Exeter/NMMC approach, and as a result Exeter staff were invited to take part in a boat reconstruction in Finland. Such was the success of these early projects, the British Museum, NMMC, and an open air museum in Italy have commissioned further reconstructions using 'construction-as-performance'.

2. Underpinning research

The University of Exeter's research that underpins this case study brings together the work by **Van de Noort** (at Exeter 2000-present) on prehistoric maritime culture and Bronze Age sewn-plank boats, **Hurcombe** (at Exeter 1996-present) on organic material culture and experimental archaeology, and **Harding** (at Exeter 2004-present) on the economic basis of the Bronze Age.

Bronze Age sewn-plank boats represent an important innovation in boatbuilding in Atlantic Europe. It is thought that this innovation is closely linked to the increased trade and exchange of gold, copper, tin and bronze in the Early Bronze Age, and the movement of these metals undoubtedly involved seafaring between Britain, Ireland and continental Europe. Van de Noort's research on maritime landscapes has included original research on the Bronze Age Kilnsea sewn-plank boat, a comparison of the remains of all ten known Bronze Age sewn-plank boats and boat fragments from the UK and their landscape settings, the re-dating of the three sewn-plank boats from North Ferriby in the Humber estuary, funded by English Heritage (**[1]**), along with studies of their distribution, environmental and socio-political contexts (**[eg 2]**). This research has re-ignited debates on the design of the sewn-plank boats and their seaworthiness, and the use of these craft in seafaring and the nature of long-distance trade and exchange in the Bronze Age, linking the practice of early seafaring with the emergence of powerful individuals in the Late Neolithic and Early Bronze Ages (**[3]**). Van de Noort's expertise in this area has been recognised in the production of the English Heritage *Marine and Maritime Research Framework*, in which he is a lead author of the section on the Neolithic and the Early Bronze Age.

Work by Hurcombe has focused on experimental archaeology and holistic approaches to artefact studies which promote awareness of the organic material culture component. Her research has included the use of experimental archaeology as a means of exploring this 'missing component' of the archaeological record (ie organic material culture) **[4]**, and on sensory perceptions in concepts of materiality **[5]**. The latter includes the significance of senses such as sound, smell and touch in understanding material culture, and provided the theoretical under-pinning for the development of

the concept of 'construction-as-performance' that lies behind the innovative public engagement seen in the reconstruction of a Bronze Age boat at the NMMC (see Section 4). Hurcombe has also received funding from the AHRC (£71,156) for exploring touch experiences in museums using a combination of modern and traditional technologies (Feb-Dec 2013), and from the European Union (£133,940) in an 11-partner project with archaeological open-air museums (The OpenArch Project, Sep 2012-Dec 2015). Her research into sensory perceptions in concepts of materiality moves experimental archaeology from a purely research technique into the public arena, providing a more rounded multi-sensory experience in a museum setting.

Harding's research has explored the Bronze Age of Europe in technological, economic and cultural terms (**[6]**). He has been particularly concerned with long-distance trade across Europe in the period 2000-1000 BC, and how that trade was carried out. This involves not only the materials that were moved (such as copper, amber, or tin) but also the transport technologies involved.

3. References to the research

[1] Wright, E. V., R.E.M. Hedges, A. Bayliss & **R. Van de Noort** 2001. 'North Ferriby boats—a contribution to dating prehistoric seafaring in northwestern Europe'. *Antiquity* 75: 726–734 (in international peer reviewed journal).

[2] Van de Noort, R. 2006. 'Argonauts of the North Sea; a social maritime archaeology for the second millennium BC', in *Proceedings of the Prehistoric Society* 73: 267-87 (in international peer reviewed journal, and included in the 2008 RAE).

[3] Van de Noort, R. 2011. *North Sea Archaeologies: a Maritime Biography (c.10,000 BC to AD 1500).* Oxford: Oxford University Press (book proposal underwent anonymous peer review, and a draft of the complete text sent to an anonymous reader; paperback edition published in 2012; listed in REF2).

[4] Hurcombe, L. 2007. *Archaeological Artefacts as Material Culture.* Routledge (book proposal underwent anonymous peer review; included in the 2008 RAE).

[5] Hurcombe, L. 2007. 'A sense of materials and sensory perception in concepts of materiality', *World Archaeology* 39: 532-545 (in international peer reviewed journal, included in the 2008 RAE).

[6] Harding, A. 2011. 'The Bronze Age', in S. Milisauskas (ed.) *European Prehistory*. Springer.

4. Details of the impact

The expertise of these Exeter researchers was combined in the AHRC Knowledge Transfer Fellowship 'Connecting communities and their maritime heritage: Cornwall and the sea in the Bronze Age' (October 2011- March 2013; funding to Exeter: £177,000; PI: Van de Noort; CIs: Harding and Hurcombe). This project had the full-scale reconstruction of a Bronze Age sewn-plank boat as its focus. The project's aims were to connect local, regional and national communities with their ancient maritime heritage, and to support building the NMMC's research capacity to enable its re-positioning as a centre of research excellence. These objectives addressed the strategic aims of the EU Objective One programme for Cornwall in assisting the economic recovery of the region, in particular through developing high-quality tourism and a stronger knowledge-based economy. Over the course of the project, opportunities were also seized to increase the impact of the Exeter/NMMC project through promoting the concept of **'**construction-as-performance' generally, and the theme of connecting communities to their maritime heritage specifically, to a wider professional audience. This has led to it being adopted elsewhere, including in Finland where a log-boat has already been reconstructed in this way. Further projects inspired by the Exeter/NMMC project are planned at the NMMC, the British Museum, and in Italy.

The AHRC-funded project with the NMMC involved the first full-scale construction of a Bronze Age sewn-plank boat undertaken in front of the public (the concept of 'construction as performance'), thereby providing visitors with a new perspective on the size and complicated

design of such a vessel. This innovative 'construction-as-performance' project also involved a far wider range of sensory perceptions (e.g. vision, smell, sound, touch) than is normally achieved in static exhibitions, offering museums a new concept for engaging with their visitors. Along with presenting research through experimental archaeology, it created unprecedented opportunities for engagement with local, regional, national and international audiences. During the course of the project in October 2011-March 2013, the live construction was accompanied by:

(i) an exhibition focussed on Cornwall in the Bronze Age and on the connections of the UK in that period with continental Europe and Ireland, and which featured the first UK display of the master copy of the Bronze Age Nebra Skydisc (found in Germany in 1999) whose gold and tin content may have come from Cornwall;

(ii) a programme of lectures and education activities aimed at primary school children in the Falmouth region,

(iii) the dynamic dissemination of progress in the construction of the sewn-plank boat through social media such as Facebook (the first time a specific exhibition at the NMMC had its own Facebook page), which has to date received more than 1,289 'likes' (59% from outside the UK including mainland Europe, Egypt, Australia and the Americas), and up to 21,621 views the most popular individual post (**[A; E]**),

(iv) the posting of monthly time-lapse videos on YouTube with over 20,000 views to date (**[B; E]**).

The project has been reported in 59 separate international, national and regional printed press reports (eg *The Times*, *The Sunday Times*, *The Daily Mail*, *The Guardian*, *The Independent*, *Current Archaeology*, *British Archaeology and a* full page feature in BBC History Magazine), and 66 individual online media sites across the world (eg *www.springer.de*) (**[C]**). The University of Exeter's own web stories were viewed 3,100 times. The project, and the successful launch of the boat in April 2013, were reported by the BBC and ITV in extended reports on national and local television and radio (e.g. **[D]**). The interest generated is reflected in the filming that has taken place for a series of documentaries including the Discovery Channel's 'Stonehenge Boat', BBC's 'Stonehenge Connections', BBC Coast 2014 series, and Time Team Special on Bronze Age seafaring (to be broadcast in 2014).

During the project, 131,835 visitors witnessed the building of the boat in person, over 500 individuals attended one or more of the public lectures, over 1,000 children took part in one the specially designed education programmes, and over 100 volunteers gave at least one full day to the project. During the exhibition there were 18,000 additional visitors compared to the previous year, and during an Archaeology Week in June 2012 there were 7,500 visitors (compared to 4,500 in the same period in 2011) (**[E]**). Qualitatively, the project was highly rated by visitors leaving feedback, and the project gained consistently positive feedback in questionnaires and surveys undertaken by the NMMC (**[E]**).

The transformation of the NMMC into a centre of research excellence in experimental maritime archaeology has made significant progress. This is evidenced by the co-authorship of academic papers published in international peer-reviewed journals that report on the reconstruction of the Bronze Age sewn-plank boat **[eg F],** and the way that the NMMC are now building upon their experience and have commissioned two further projects. The first of these, with the British Museum, concerns the full-scale reconstruction of a Viking-period *fearing* in 2013-14 that will be finished in the courtyard of the British Museum as part of their special exhibition on the Vikings **[E]**. The second NMMC project concerns the full-scale reconstruction of the Romano-Celtic Barland's Farm Boat (from near Newport in South Wales), a craft from around AD 300 which was built in a fashion that incorporates Mediterranean and British boat building traditions. This project will take place in collaboration with the Universities of Exeter, Southampton, and University of Wales Trinity Saint David, and Newport Museum in 2014 **[E]**, providing further evidence of the transformation of the NMMC's research capacity.

In addition to the British Museum initiative, a further example of how the Exeter/NMMC project

has been taken up elsewhere is as part of the separate EU-funded collaborative OpenArch Project, in which Hurcombe is a core participant, that aims to improve the visitor experience within open air museums **[G]**. Hurcombe's OpenArch work package 'Dialogues With Science' includes organising a series of workshops for archaeologists from open air museums and heritage centres, one of which (October 2012, involving members from Finland, Italy, the Netherlands as well as the UK), visited the Exeter/NMMC Bronze Age boat reconstruction **[H]**. A participant museum included the Kierikki Stone Age Centre in Finland who, inspired by the Exeter/NMMC Bronze Age Boat project approached Hurcombe to advise them on carrying out a similar exercise at Kierikki. This led in July 2013 to a staff exchange with Hurcombe going to Kierikki with Brian Crumby (who supervised the construction of the Bronze Boat at the NMMC) in order to take part in the reconstruction of a log boat (of northern European late prehistoric type) as part of one of their 'Stone Age Days' public events **[I]**. This was carried out in front of visitors using the 'construction-as-performance' approach pioneered at the Exeter/NMMC project. It was seen by c.700 visitor and attracted local press coverage, and the boat is now a permanent resource used by visitors **[J]**. Another participant at the 'Dialogues With Science' event and who visited the Exeter/NMMC project – the Parcomontale Terra Mare (the open air site of the Modena Municipal Museum, Italy) – are also planning a boat reconstruction using the 'performance-as-construction' approach **[J]**.

5. Sources to corroborate the impact

[A] National Maritime Museum Cornwall Facebook page for the Bronze Age boat reconstruction: http://www.facebook.com/2012BCBronzeAgeBoat#!/2012BCBronzeAgeBoat

[B] Example of YouTube time-lapse video: http://www.youtube.com/watch?v=SOl8rHHJFmE

[C] Example of international press coverage of boat launch at NMMC: http://www.spiegel.de/wissenschaft/mensch/ausgegraben-archaeologe-baut-boot-aus-der-bronzezeit-nach-a-903045.html

[D] Example of UK TV coverage: http://www.bbc.co.uk/news/uk-england-17775009

[E] Letter of support from Director, National Maritime Museum Cornwall, Discovery Quay, Falmouth, Cornwall, TR11 3QY, 01326 313388.

[F] example of co-authorship of the academic papers published in international peer-reviewed journals that is developing the NMMC's research profile: Van de Noort, R., Cumby, B., Blue, L., Harding, A., Hurcombe, L., Wetherelt, A., Whittamore, J. and Wyke, A. in press, '*Morgawr*: the construction of a Bronze Age-type sewn-plank boat based on the Ferriby boats', *International Journal of Nautical Archaeology*.

[G] EU-funded OpenArch Project, Hurcombe's 'Dialogues with Science' work package, University of Exeter and Kierikki Stone Age Centre (Finland) collaboration: http://openarch.eu/work-packages/dialogue-science;

[H] first Exeter-based 'Dialogues with Science' workshop that included a visit to the NMMC boat reconstruction: http://openarch.eu/work-packages/activities/1st-exeter-dialogue-science-workshop

[I] reconstruction of a log boat at Kierikke open air museum in Finland, led by Hurcombe from Exeter: http://openarch.eu/staff-exchanges/openarch-staff-exchange-report-kierikki-stone-age-village-finland

[J] Letter of support from the OpenArch Project Coordinator, Organisme Autònom Municipal, Fundació Castell de Calafel, Plaça de Catalunya 1, 43820 Catafell (Tarragona), Catalunya, Spain, +34 647 752 266.