

Institution: University of Wales, Trinity Saint David
Unit of Assessment: 17
Title of case study: The Newport Medieval Ship Project
<p>1. Summary of the impact. The Newport Ship Project is a collaborative project with the University of Wales Trinity Saint David as the academic lead, working with the Newport Museum and Heritage Service (Newport City Council) and the Friends of the Newport Ship, to protect, understand and display the most substantial medieval ship found in Britain in modern times. Impacts are demonstrated through a) significant developments in professional practice in the museum sector and b) in community engagement and educational outreach spheres which have seen substantial public collaboration and learning clustered around a major heritage project.</p>
<p>2. Underpinning research. The Newport Ship Project began in 2002 with the ship's unanticipated discovery during urban redevelopment on the riverside of the Usk in Newport, South-East Wales. Nigel Nayling (UWTSD) acted as an archaeological specialist overseeing the excavation of the ship on behalf of the archaeological contractors and the local authority, Newport City Council. Following a vociferous local campaign led by the Save Our Ship group, complemented by national representations, funding was secured for the ship's recovery, study, conservation, and eventual display. The ship was recorded, dismantled, and recovered to passive storage in 2002/3. The challenge of documenting and analysing the ship has been met through a sustained collaborative effort involving Nayling as archaeological consultant, and a project team at Newport Museum working together for over a decade. The scale of the endeavour, requiring the detailed recording of thousands of ship's timbers and associated artefacts, favoured the use of innovative digital methods of recording which have been developed and refined from approaches first utilised at the Viking Ship Museum in Roskilde, Denmark, but which are now becoming widespread in the field of nautical archaeology.</p> <p>Nayling has worked as a nautical archaeologist and dendrochronologist in the Severn Estuary region since 1991, including the excavation, post-excavation analysis, and publication of a thirteenth-century clinker built boat, the Magor Pill medieval wreck (excavated 1998, published 2000, conserved timbers in store at National Museum Wales), and a late Romano-Celtic boat from Barland's Farn (excavated 1994, published 2004, conserved timbers in store at Newport Ship Centre). He joined the University of Wales Lampeter (latterly UWTSD) in 1998. Recognition of his expertise led to his involvement in the Newport Ship excavations as a nautical specialist able to advise on the significance of the find (including providing tree-ring dating) and oversee the ship's recording, dismantling and recovery in 2002/3. Research activity, leading to subsequent publications, which underpins the impacts was generated as Nayling undertook an assessment of different recording methods in 2004 leading to the recommendation of the use of innovative digital recording techniques. Between 2004 and 2008 the digital recording of all the ship's timbers was carried out by a team including Nayling as consultant and dendrochronologist, providing oversight on the quality of the data being generated. In parallel with this, initial assessments of other materials including environmental remains and artefact groups were made. Through a substantial grant from the Heritage Lottery Fund (2006-8), the project team was significantly enlarged and dissemination and outreach activities promoted.</p> <p>Between 2008 and 2011 research shifted towards developing techniques which realised the full potential of the digital data collected in meeting the research goal of understanding the original hull form of the ship - a process achieved through new combinations of digital solid modelling, rapid proto-typing manufacture and assembly of a scale physical model. Most recently this research strand has returned to the digital environment to develop minimum and capital reconstructions of the ship to deliver a nuanced understanding of its sailing characteristics and cargo-carrying capacity. Synthesis of a wide range of palaeo-environmental and artefactual studies with this ship specific research has led to a number of recent research</p>

outputs and delivery of the single largest digital archive ever submitted to the Archaeological Data Service, numbering some 12,200 files totalling 124 Gb of data.

3. References to the research

- Nayling, N. 2000 *The Magor Pill medieval wreck*. CBA Research Report 115
- Nayling, N. and McGrail, S. 2004 *The Barland's Farm Romano-Celtic Boat* CBA Research Report 138
- Jones, T. and Nayling, N., 2011 ShipShape: Creating a 3D Solid Model of the Newport Medieval Ship, in Castro, F. and Thomas, L. (eds) *Advisory Council on Underwater Archaeology: Underwater Archaeology Proceedings 2011*, 54-60
- Soe, S., Evers, D., Nayling, N., and Jones, T., 2012 Additive Manufacturing for Archaeological Reconstruction of a Medieval Ship, *Rapid Prototyping Journal* 18.6
- Nayling, N. and Jones, T., 2012, Three-dimensional Recording and Hull Form Modelling of the Newport Medieval Ship (Wales, UK) in N. Günsenin (ed), *Between Continents Proceedings of the 12th International Symposium on Boat and Ship Archaeology*
- Nayling, N. and Jones, T. *The Newport Medieval Ship Archive*. Archaeological Data Service Archive arch-1563-1. doi: 10.5284/1020898
- Nayling, N. and Jones, T. 2013 The Newport Medieval Ship, Wales, United Kingdom, *International Journal of Nautical Archaeology*.
- Nayling, N. and Susperregi, J., 2013 Iberian Dendrochronology and the Newport Medieval Ship, *International Journal of Nautical Archaeology*

Evidence of the quality. Grants and peer review:

- Newport City Council (N Nayling included as archaeological consultant) *The Newport Ship Recording Project*. The Heritage Lottery Fund, HG-05-00350. £799500. 2006 - 2008.
- N Nayling (UWTSD with NCC) *ShipShape: solid modelling and visualisation of the Newport Medieval Ship from 3D digital record*. AHRC, AH/G000905/1. £76,446.00. October 2008 - March 2011
- N Nayling (UWTSD with Birmingham University and NCC) *ShipShape 3D Communities*. AHRC Museums, Libraries and Archives Follow-on Funding Scheme, AH/J500794/1. £32,217. March 2011 - March 2012
- N Nayling (Co-investigator in project led by Newcastle University) *Intellectual Property and Informed Consent: Partnerships and Participation*. AHRC Museums, Libraries and Archives Follow-on Funding Scheme. £32,000. February 2011 - September 2011
- N Nayling (Co-investigator in project led by Durham University) *Tackling ethical issues and dilemmas in community-based participatory research: a practical resource*. AHRC, Research Grant, Follow on Fund, AH/J006645/1. £38,445. March 2012 - September 2012
- Newport Museum and Heritage Service (Nayling as specialist advisor). *Digitally reconstructing the Newport Medieval Ship: 3D designs and dynamic visualisations for recreating the original hull form and sailing characteristics*. CyMAL: Museum Archives and Libraries Wales, Innovation and Development Grant. £21,000. May 2012 - March 2013
- N Nayling (AHRC Fellowship) *The Newport Medieval Ship: Publication, Representation and Dissemination*. AHRC Fellowship £122,000. October 2012 - July 2013

4. Details of the impact

Overview: community based heritage conservation. The research on the Newport Ship from its discovery and recording in the ground through to its recovery and post-excavation study, to ongoing conservation, has been throughout an act of co-production between the project consultant, Nigel Nayling, and the Newport Museum and Heritage Service (NMHS) in collaboration with the Friends of the Newport Ship (FoNS). This has generated a number of impacts, most notably a major act of heritage conservation of international significance; the generation of key underpinning research and interpretative material which is enabling the public to learn about their heritage and enjoy the process of learning; research methodologies and working methods which have supported a wide range of people to take an active part in and

make decisions about heritage; and leadership to ensure that the project created opportunities for people to gain new or increased skills. Throughout each stage Nayling and NMHS have ensured significant interaction and support which has enabled different stakeholder groups to learn about their heritage through the integration of volunteers, school work experience, and student placements, into the work on the ship.

Conserving Heritage: The major act of conservation which Nayling's work has centred on has seen several established and ongoing impacts on the city's heritage and tourist assets. The initial development for example has seen a major new heritage facility and tourist asset in the establishment of the Newport Ship Centre. This continues to be the focus for a significant degree of volunteer involvement which has since 2008 seen some 298 volunteers contributing 5068 hours to the project, including school children on work experience, difficult to reach youth groups, university conservation students on work placements, and a wide range of Newport City citizens. The centre is now a recognised centre of excellence for curation, recording and analysis of archaeological waterlogged wood assemblages, through its unique combination of expertise, facilities and leading digital data capture and manipulation tools. As such, the Centre has been able to provide both facilities and specialist services to a range of clients including museum services, archaeological units, and other university projects.

Community engagement: Community engagement has been characteristic of this research from the outset when a group of predominantly local people established the Save Our Ship campaign. This campaign succeeded in securing the recovery of the ship and has evolved into the Friends of the Newport Ship (FoNS). A strong ethos of knowledge transfer has characterised the relationship between the research team and the FoNS, with research findings being transmitted to the friends for dissemination to their members and the wider public through, regular SOS newsletters and a substantial guidebook first published in 2010 and now in its second edition. The guidebook was written by members of the Friends using data and illustrations provided by the research team to ensure an accessible style focused on the interests of a wide audience. Friends have also received training to act as guides (using the guidebook) at the Centre's Open Days, which have become an established part of the outreach calendar for the ship project. These provide free public access to the research and the team. Data capture methods for these activities have varied over the period 2008-2013 but NMHS figures for the Newport Ship Centre for this period can be summarised for years 2008, 2011, 2012 and 2013 (partial) as 8118 visitors to the Newport Ship centre, including Open Days (usage statistics Newport Medieval Ship Project provided by NMHS). Education and outreach has likewise been undertaken by the NMHS ship team which continues to disseminate current research and use the ship project as a tool in outreach. This has been a key success in the project's impact strategy, with some 10,807 schoolchildren engaged with the Newport Ship through school outreach since 2008. These educational outreach activities encompass school visits to the Centre, workshops held in Newport Museum and workshops held in schools. A web-based Key Stage 2 history resource complements this schools outreach. Some 3172 attendees have likewise been recorded at public lectures (based on the underpinning research) given by ship team members. The NMHS has recently moved beyond the use of its website to provide information on the project to establish a dynamic Facebook page and a YouTube video channel to expand awareness of the project. In addition to the centre, public engagement with this heritage has been enhanced by an exhibition on the ship at the Newport Museum and Art Gallery which has significantly enhanced visitor experience since 2007 (visitor figures for which are not currently publicly available). This exhibition continues to provide the public with free access to information on the ship and its place in the history of Newport and the Severn Estuary.

Professional Conservation Practice. In addition to impacts on community engagement with their heritage and the subsequent up-skilling of volunteers, Nayling's research and collaboration with NMHS has generated new methods to meet the very significant challenges of excavating internationally important ship and boat finds, contributing to the definition of best practice by professional bodies and associations in the international field of maritime conservation practices, not only within the academic field, but also with heritage agencies and

museums. The lack of appropriate standards for responding to archaeological discoveries of ship-remains at the time of the ship's discovery made excavation of the Newport Ship problematic and was a major driver in the production of the Institute of Archaeologists' *The standard and guidance for nautical archaeological recording and reconstruction*. Nayling used his research experience on the ship project to deliver significant input in delivery of this standard which was formally adopted as Institute for Archaeologists approved practice at the Annual General Meeting of the Institute held on 15 October 2008. As an invited member of the Medieval Working Group, Nayling also contributed towards delivery of the Maritime and Marine Historic Environment Research Framework for England.

Nayling's work continues to promote best practice in digital approaches in nautical archaeology, extending his contributions to changes in professional standards, guidelines and training. In this Nayling is a founding member of the Faro Rhino Archaeological User Group (FRAUG) which has been developing innovative digital approaches to archaeological ship documentation, analysis and dissemination. Meetings of this group have taken place at the Viking Ship Museum, Roskilde, Denmark; the Vasa Museum, Stockholm, Sweden; the University of Southern Denmark, Esbjerg; Newport Ship Centre and the Kogge Project, Antwerp, Belgium. The 6th Annual meeting and workshop of the network was held at the Newport Ship Centre in 2012 offering workshops and training throughout the week in advance of the formal meeting which is traditionally chaired each year by Nayling. Members include practitioners from a wide range of organisations, such as state heritage agencies (e.g. the National Service for Cultural Heritage, RCE Lelystad in the Netherlands), national maritime museums (e.g. Norwegian Maritime Museum, Oslo), universities (e.g. University of Connecticut, USA) and ship project groups (e.g. Yenikapa, Istanbul, Turkey). The next meeting of the group will be hosted by the Traditional Boats of Ireland Project in Baltimore, Ireland (May 2014) with workshops on boatbuilding, traditional sailing, laser scanning and hull form reconstruction. Training opportunities for members are aimed at developing their practice, and subsequent deployment of these methods have been seen at numerous ship projects in the museum sector including the Bremen Cog, the Barcode Project, Norway; Aber Wrac'h, France; and Roman Barges of the Rhine, Netherlands.

Ethical aspects of the co-production or community-based participatory research model employed on the Newport Ship project have likewise been explored through AHRC Connected Community projects leading to academic publication and also production in 2012 of guidance for researchers working with museums: *Earning Legitimacy: Participation, Intellectual Property and Informed Consent*. (<http://eprints.whiterose.ac.uk/74491/4/EarningLegIPICJuly2012.pdf>.)

5. Sources to corroborate the impact

- i) Museums Officer, Newport Museums and Heritage Service.
- ii) Vice-Chair, Friends of the Newport Ship.
- iii) News coverage: search for 'Newport Ship' at <http://www.bbc.co.uk/news/wales>
- iv) Press Coverage: search for 'Newport Medieval Ship' at <http://www.southwalesargus.co.uk/>
- v) Friends of Newport Ship: <http://newportship.org/>
- vi) NMHS Outreach:
 - <http://www.newport.gov.uk/heritage/index.cfm/ship/>
 - <https://www.facebook.com/newportship>
 - <http://www.youtube.com/user/newportmedievalship>
 - https://hwb.wales.gov.uk/cms/hwbcontent/Shared%20Documents/vtc/ngfl/2007-08/history/newport_ship_project/index.html
- vii) Maritime and Marine Historic Environment Research Framework for England http://archaeologydataservice.ac.uk/archives/view/mhe_research_eh_2011/index.cfm
- viii) Faro Rhino Archaeological User Group <https://www.facebook.com/pages/Faro-Rhino-Archaeological-User-Group-FRAUG/156359647780449>