



Society of Antiquaries  
of **Scotland**

The RHIND LECTURES, a series of six lectures delivered annually on a subject pertaining to history or archaeology, by eminent authorities on the subject, have been given since 1876. They commemorate Alexander Henry Rhind of Sibster (b.1833-d.1863) who left a bequest to the Society of Antiquaries of Scotland to endow the lectures which perpetuate his name.

For further information and to book your place please visit the Society's website [www.socantscot.org/events](http://www.socantscot.org/events) or call **0131 247 4133**.

## THE RHIND LECTURES **2018**

### **Drystone technologies:**

Neolithic tensions and Iron Age compressions

*Dr JOHN BARBER MA, BA, FSA, FSA Scot, MCIfA*

Society of Antiquaries of Scotland  
National Museums Scotland  
Chambers Street  
Edinburgh, EH1 1JF

Tel: 0131 247 4133  
Email: [info@socantscot.org](mailto:info@socantscot.org)  
Web: [www.socantscot.org](http://www.socantscot.org)  
Twitter: [#socantscot #Rhinds2018](https://twitter.com/socantscot)  
Facebook: [/SocietyofAntiquariesofScotland](https://www.facebook.com/SocietyofAntiquariesofScotland)



These Rhind Lectures will be repeated in Wick, Caithness in Autumn 2018.  
Please contact Ian Giles by email ([iangiles01@btinternet.com](mailto:iangiles01@btinternet.com)) for more details.

Cover image: Mousa Broch © Kieran Baxter [www.topofly.com](http://www.topofly.com)  
The Society of Antiquaries of Scotland is a Scottish registered charity, Charity No. SC010440.

**22-24 June | FREE and open to all | booking advised**

Auditorium, National Museum of Scotland  
Edinburgh, EH1 1JF

*With thanks to Tomatin Distillery Co. Ltd,  
sponsor of the Rhind Lectures 2018*



# THE RHIND LECTURES 2018

*Sponsored by Tomatin Distillery Co. Ltd*

**Drystone technologies: Neolithic tensions and Iron Age compressions**

**Dr JOHN BARBER MA, BA, FSA, FSA Scot, MCIfA**

---

The technical engineering capacities of prehistoric builders of large Neolithic and Iron Age structures are intriguing. Invasive introduction has been the favoured explanatory mechanism for structural innovation, rather than the converse appeal to domestic design genius. However, drystone engineering so constrains the builders' design ambitions that similar structures result from the limitations of the technology more than from the social interconnections of their builders. These lectures explore the interplay of technological capacity and design freedom in prehistoric Scotland.

John Barber was born in Cork, Ireland, and graduated from University College Cork, before going on to a career in archaeology and founding the AOC Archaeology Group. He recently graduated with a PhD in Architecture at the University of Edinburgh, building upon two decades of specialist interest in large drystone-built structures in Western Europe in general and the British Isles in particular. He has recently excavated three Neolithic chambered cairns and five brochs including the excavation and conservation of brochs at Clach toll, Castle Grugaig and others.

## Friday 22nd June

### 6.00pm **The urge to build: invariant & canonical forms - pathways to decomposition**

The role of instinct and instinctual behaviours in building is explored as a counterbalance to the social determinism of many current narratives, distinguishing between the abstract and real-world observations. Canonical monument forms are not only constrained in their original design, but also influence the nature of their subsequent anthropic modifications and predetermine some pathways to decomposition over millennia, and thus ensure the form of the original structure is discernible. Technical issues affecting drystone building are introduced and the relationship between the concepts of monumentality and engineering efficiency is discussed.

*Followed by a Reception*

## Saturday 23rd June

### 11.00am **Corbelling, the horizontal arch and polyclope walls in the construction of loose fill monuments**

Addressing the specifics of drystone building, we will first explore the probable commodification of stone during the Neolithic. Chambered cairns will be used to set out the engineering challenges of construction and the difficulty of identifying the chronological implications of deformation, reconstruction and reuses. Monuments, *sensu* memorialising, as opposed to monumentality, *sensu*

Alois Riegl's 'age value', will be considered alongside the interrelationships of monumentalising and aggrandising on the one hand, and of canonicity and mutability on the other.

### 2.00pm **Spandrels: architecture as an unintended consequence of engineering**

John Ruskin considered architecture to comprise all the parts of a structure that were not necessary for its structural integrity, the rest was merely 'building' (or 'structural engineering'). In building an archway within a rectangular frame, two vaguely triangular areas are excluded in the upper left and right corners: these are spandrels. Available for architecture, for social manipulation, they became highly decorated over time. In Neolithic chambered cairns, the primary structural challenge of the entrance passage produced a range of engineering solutions which created spaces and structures that became available for acculturation.

### 3.30pm **Towers in drystone construction**

Evolutionary theory asks what the value of complex structures like wings and eyes might be, and the same question may be applied to the broch tower. There is no evolutionary or developmental potential for gradualist formation of a 15m high tower. This assertion will be explored via a revision of the paradigmatic 'standard model' broch. A structural analysis of the broch tower model reveals essential structural assemblies that never existed before towers were built. It will be argued that these present us with possible evidence for unique acts of Iron Age creation, possibly even of architectural engineering genius.

## Sunday 24th June

### 2.00pm **Full fathom five: the repair, rebuild, reuse and abuse of brochs**

Gurness and Midhowe exemplify the scale of modification of broch towers and their chimerical nature as excavated for public presentation. Thrumster broch presents evidence of significant remodelling over time, paralleled elsewhere, and the broch at Clach toll had already undergone at least one, and probably more, significant structural failure episode before it was abandoned. Despite the observed high levels of mutation and destruction, it can be argued that the original monuments were almost unswerving from the revised 'standard model'. The complex diachronic nature of these monuments present difficulties for their interpretation, conservation and presentation.

### 3.30pm **The economics of tower building: 'For which of you, intending to build a tower, sitteth not down first, and counteth the cost, whether he have sufficient to finish it?' Luke 14: 28-30**

Agricultural surplus is argued to found an economic model that could represent a generic Iron Age social context. A measurement of construction effort is developed that is keyed to the simple physics of lifting and moving mass to assess the 'building costs' for brochs of varying scales. Accepting modern studies of the constant operational rating of human beings, this can be converted to the minimum numbers of person-days required. This commodification of human effort provides a common currency in which the relative values of Iron Age broch towers and Neolithic chambered cairns can be considered.