

BRONZE AGE FORUM 2023



SCHOOL OF ARCHAEOLOGY AND
ANCIENT HISTORY

UNIVERSITY OF LEICESTER

11-12 NOVEMBER 2023



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WELCOME FROM THE ORGANISERS

Dear Bronze Age Forum delegates,

Welcome to Leicester! We are delighted to welcome you to this year's Bronze Age Forum. We have a packed programme, and a great range of posters and papers, covering everything from concepts of food security to hoards of gold objects. We can't wait to hear all the latest ideas on how we think about this fascinating period of our shared past.

In this programme you will find the schedule, the abstracts of the different papers and posters, and some helpful suggestions on where to eat in Leicester, at varying distances from our venue at College Court.

We would like to take this opportunity to thank the team at Leicester that have helped us: David Osborne, Jonny Graham, Matt Hitchcock, Christina Tsoraki, Dawid Sych. We are really grateful for their assistance this weekend and in the run up to the event. We also wish to thank the PST team in the School of Archaeology for all their help with everything – as ever they have proved invaluable.

If you have any questions during the conference please do come and chat to any of our team, we are here to help.

Enjoy the conference!

Rachel Crellin, Jo Appleby and Ollie Harris

CODE OF CONDUCT

The Bronze Age Forum is committed to promoting access for all at their conference. BAF requires that all participants, organizers, and delegates, conduct themselves in a professional manner at all times, within each and every conference venue. Queries regarding accessibility, harassment, and equality and diversity policies for the conference should be directed to the organisers (Rachel Crellin, Ollie Harris and Jo Appleby) in the first instance.

In putting this into practice, we endorse the Inclusive Archaeology project (<https://inclusivearchaeology.wordpress.com/>), and, at Leicester, adhere to the following policy statements, which delegates are asked to respect:

<https://le.ac.uk/about/equality>

CONFERENCE SPONSORS

We are grateful to the following organisations for their sponsorship of the conference



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PROGRAMME

Saturday 11th November

Timing	Title	Chair/Speaker
9am	Open for registration, posters on display	

Session 1	People and place	Rachel Crellin
9.30–9.40am	Welcome and introduction	Rachel Crellin
9.40–10.00am	Exploring Bronze Age mobility patterns: A comparison of new data on the Ginderup Woman from Thisted (Denmark) in relation to her contemporaries	Samantha S. Reiter and Karin Margarita Frei
10.00–10.20am	The Bioarchaeology of Early Bronze Age Ireland: Health, Disease, Trauma, and Care	Stephanie Robinson
10.20–10.40am	The Plas Maen Panel: landscape and tradition	Rachel Pope and George Nash
10.40–11am	Discussion and questions	
11.00–11.02am	Two minutes' silence for Remembrance Day	
11.02–11.20am	Coffee break	

Session 2	Animals, people and food	Ollie Harris
11.20–11.40am	What's Cooking? Organic Residue Analysis of Bronze Age pottery from Corrstown (Northern Ireland) in context	Kerri Cleary and Julie Dunne
11.40–12.00pm	The social worlds of Bronze Age animals	Joanna Brück, Floor Huisman, Kate Kanne, Nóra Nic Aoidh and Eleanor Swallow
12.00–12.20pm	Bronze Age animal mobilities at the fen-edge, Lincolnshire	David Osborne
12.20–12.40pm	FOODSEC: new approaches to food security in Bronze Age Ireland	Erin Crowley-Champoux, Meriel McClatchie, Kerri Cleary, Penny Johnston

12.40–1.00pm	Discussion and questions	
1.00–2.00pm	Lunch	

Session 3	Site sequences	Stuart Needham
2.00–2.20pm	Recent Excavation of a Bronze Age Stone Circle in South-west Ireland	William O'Brien
2.20–2.40pm	From funerary activity to domestic space: Emerging narratives from continuing excavations at Trelai Park, Cardiff	Oliver Davis and Niall Sharples
2.40–3.00pm	Recurring Funerary Deposition at Berkely and Camlin, Co. Wexford during the Middle Bronze Age	Ben Spillane and James Eogan
3.00–3.20pm	Discussion and questions	
3.30pm–3.50pm	Coffee break	

Session 4	Metalwork and metalworkers	Jo Brück
3.50–4.10pm	The coastal affinity of Early Metal Age multi-object deposits	Stuart Needham
4.10–4.30pm	Dredging up, and re-excavating, the Aylesford gold finds; and looking again at the ornaments in them	John Smythe
4.30–4.50pm	“Ze” Escalles hoard: an important deposit of EBA axes from the British Isles found on the other side of the Channel	Emmanuel Ghesquière, Henri Gandois, Emmanuelle Leroy-Langelin, Cyril Marcigny et Vincent Riquier
4.50–5.10pm	Stories hidden in gold: shedding new light on Early Bronze Age goldworking practices through microwear and compositional analysis	Christina Tsoraki, Chris Standish, Oliver Harris & Rachel Crellin
5.10–5.30pm	Discussion and questions	
5.30–7pm	Wine reception (followed by bar service when wine runs out)	

Sunday 12th November

Timing	Title	Chair/Speaker
9am	Open for registration, posters on display	

Session 5	Metalwork and Metalworkers (continued)	Jo Appleby
9.40–10.00am	Finding hidden treasure in the Portable Antiquities Scheme database: a study of Bronze Age hoards and find scatters in Oxfordshire	Ed Caswell
10.00–10.20am	Copper supply networks in the Irish Later Bronze Age. An introduction to a recently funded research project.	Carlo Bottaini, Dirk Brandherm
10.20–10.40am	The end of the axe	Roger Thomas
10.40–11am	Discussion and questions	
11.00–11.20am	Coffee break	

Session 6	Materials in the Bronze Age	Neil Wilkin
11.20–11.40am	Project Ancient Tin: Did British tin sources and trade make Bronze Age Europe?	R. Alan Williams, Kamal Badreshany, Matthew Ponting, Mariacarmela Montesanto and Benjamin Roberts
11.40–12.00pm	Bottoms Up: The Function of Bronze Age Pottery Through Experimentation and Analysis of the Bases.	Clara Freer
12.00–12.20pm	Bowled over: Wood and bark artefacts from the Late Bronze Age settlement at Must Farm – specialism, selection and craft	Michael Bamforth
12.20–12.40pm	Drinking without thirst under the sun of the Gods. Ceramic, social practices and symbolism along the Atlantic coast (2250–1650 BC).	Julien Ripoche, Théophile Nicolas
12.40–1.00pm	Discussion and questions	
1.00–2.00pm	Lunch	

Session 7	From past to present	Ben Roberts
2.00–2.10pm	BAF housekeeping and poster prize presentation	Stuart Needham and Jo Brück
2.10–2.30pm	Peggy Piggott and Bronze Age metalwork	Brendan O'Connor
2.30–2.50pm	Cumulative chronontology: Hawkes' ABC and archaeological history	Steven Matthews
2.50–3.10pm	Bridging the Middle- to Late Bronze Age divide	Arjan Louwen
3.10–3.30pm	Discussion and questions	
3.30pm–3.50pm	Coffee and close of conference	

PAPER ABSTRACTS

Saturday, 11th November

Session 1: People and place

Exploring Bronze Age mobility patterns: A comparison of new data on the Ginderup Woman from Thisted (Denmark) in relation to her contemporaries

Samantha S. Reiter and Karin Margarita Frei (National Museum of Denmark)

Our case study revolves around recent strontium isotope analyses of the enamel from the second and third molars from Ginderup elite female grave (Grave A). Our results revealed that the strontium isotope ratios obtained from Grave A yielded a ratio that falls within the local baseline (M2) and one that falls outside the baseline (M3). Our results suggest that the Ginderup Woman was probably of local origin, but that she also was mobile during her life. The strontium isotope ratio of the M3 suggests that, at least at some point in her later adolescence early adulthood, she might have spent a significant amount of time outside the boundaries of modern-day Denmark (excluding the island of Bornholm). Recent research on the mobility/ies of young persons like the Ginderup Woman in Bronze Age Europe has provided a large amount of comparative data. Nevertheless, traditional interpretations revolve around marriage alliances as the cause for female mobility (and, conversely, raiding/trading as a cause for male mobility). In this paper, we situate the mobility pattern suggested for the Ginderup Woman within a broader landscape by referencing emergent gendered mobility trends throughout later prehistory both within Southern Scandinavia as well as throughout the Continent. In so doing, we explore similarities and difference in mobility patterns in relation to possible causes. As marriage has often been cited as a cause, we concentrate particularly on exploring the potential of other potential causes, such as may be linked to kinship building through fosterage.

The Bioarchaeology of Early Bronze Age Ireland: Health, Disease, Trauma, and Care

Stephanie Robinson (University College Cork)

The mortuary contexts of the Irish Early Bronze Age have been the focus for many studies, especially those interested in social structure and status. Despite the importance of funerary contexts, there has been very little detailed study of the human remains recovered from these graves. This study attempts to address this by undertaking the first integrated bioarchaeological analysis of the entire corpus of curated inhumations from the Irish Early Bronze Age, exploring insights into social relations, practice, organisation, and identity. Two main methodological frameworks were used: population health and Bioarchaeology of Care. Using the Biological Index of Frailty approach, this analysis identified comparatively low levels of frailty within the assemblage. There were no statistical differences in average frailty scores based on sex or burial attributes, suggesting that variations in status were unlikely to have had a significant impact on health. Three individuals were identified for Bioarchaeology of Care analysis, as they showed evidence of health care provisioning across multiple contexts. This analysis identified evidence for both physical and emotional care that did not disqualify one

from formal burial. This is paralleled by the noticeably low trauma rate, suggesting either a low frequency of such violence in the society or that death in such circumstances may have resulted in an archaeologically invisible burial rite. This study has allowed for deeper understandings of how social, cultural, and economic aspects of the Early Bronze Age impacted and shaped the lives of those who lived through this period of Irish prehistory.

The Plas Maen Panel: landscape and tradition

Rachel Pope and George Nash (University of Liverpool)

Here we introduce a new rock art find for NE Wales, of a developed type previously thought rare for the region. We will discuss elucidation of the panel scene, employing RTI modelling and night-and-light photography, as well as investigation of a potential source, using photogrammetry and elemental pXRF analysis – towards contextual meaning. The paper will discuss the rock art both in its landscape and regional Bronze Age setting, before identifying a new rock art tradition for NE Wales.

Session 2: Animals, people and food

What's Cooking? Organic Residue Analysis of Bronze Age pottery from Corrstown (Northern Ireland) in context

Kerri Cleary ^{1,2} and Julie Dunne ³ (Archaeological Consultancy Services Unit Ltd ¹; University College Dublin ²; University of Bristol ³)

Corrstown, situated on the north Irish coast, is one of the largest Bronze Age settlements excavated on the islands of Britain and Ireland. With at least 74 structures and evidence for 452 pottery vessels, it currently represents not only the largest cluster of houses uncovered on a single site but also the greatest collection of Middle Bronze Age pottery as yet found in Ireland. Although this excavation took place in the early 2000s, with publication following in 2012 under the editorship of Victoria Ginn and Stuart Rathbone, it was with the caveat that it was 'not intended as a definitive statement about the site. Instead, it is hoped that this volume represents a beginning of the study of Corrstown'. There was, for example, very limited insight into the diet and subsistence strategies of the inhabitants due to a paucity of environmental remains, including no faunal material due to high acidity levels in the soil. Accordingly, a programme of Organic Residue Analysis (ORA) was carried out in 2023 at the University of Bristol, funded by the Royal Irish Academy 2022 Archaeology Research Grants. This represents an important addition to the limited ORA undertaken on Bronze Age domestic pottery assemblages in Ireland to-date. This presentation will outline the results of that analysis and summarise how this and other sites have contributed to our understanding of foodways in the Irish Bronze Age, specifically household responses to questions of production, consumption, storage and management.

The social worlds of Bronze Age animals

Joanna Brück, Floor Huisman, Kate Kanne, Nóra Nic Aoidh and Eleanor Swallow
(University College Dublin)

Although cattle and sheep were central to the everyday lives and wellbeing of Bronze Age communities in northwest Europe, they are strangely lacking from our narratives of the period. After the Neolithic, it seems, archaeologists rarely consider domestic animals to be interesting. However, Bronze Age people clearly thought otherwise, as the careful deposition of complete and partial animal bodies in graves, pits and ditches suggests. The traces of cattle and sheep are present in other ways too, in hoofprints around waterholes and in landscape features like droveways that appear at this time, but we too rarely consider what such evidence can tell us beyond the economic significance of animals and their products. Integrating multispecies and posthumanist perspectives that highlight how living with animals involves intimate interaction and interdependency, we ask how it might be possible to explore the role of cattle and sheep as active participants in Bronze Age social worlds. By reconstructing the intertwining of people and animals in life and death, we can consider how together they generated Bronze Age worlds of work, sociality and meaning. We trouble concepts of personhood and trust ascribed to animals and human-animal relationships to push the dialogue forward into new theoretical territories, considering animals on their own terms while not ignoring power asymmetries in domestication relationships.

Bronze Age animal mobilities at the fen-edge, Lincolnshire

David Osborne (University of Nottingham)

Domesticated animals were an integral part of prehistoric communities and analysis of their remains can cast light on their movement as part of their husbandry as well as offering a proxy for the day-to-day mobility of their human companions. Studying these mobilities helps to reanimate our understanding of life in past societies and their use of resources in the landscapes in which they lived. This paper discusses the mobility of animals at smaller scales of both temporality and distance, seeking evidence of seasonal movements for grazing. Narrow paths between ditches marking extensive field systems at fen-edge sites have been suggested as 'droveways' for the herding of livestock between fields, potentially on to the Fenland saltmarshes. Isotope analysis compares remains of domesticates from two sites, one in proximity to marine water, the other inland in a predominantly freshwater environment. Sequential dentine sampling of fenland cattle and sheep molars is anticipated to show seasonal variation in marine sulphur due to summer saltmarsh grazing. In a complementary analysis, X-ray Fluorescence spectrometry (XRF) of soil samples from transects across a Bronze Age field system at the fen-edge explores use of the droveways. It is hoped that some elements will show elevated values where the sample transects cross a proposed droveway, possible evidence for the movement of animals along its route. By combining the different insights offered by these analyses, a picture should emerge of the small-scale movements that were part of Bronze Age daily and seasonal life and animal husbandry on the fen-edge.

FOODSEC: new approaches to food security in Bronze Age Ireland

Erin Crowley-Champoux ¹, Meriel McClatchie ¹, Kerri Cleary ² Penny Johnston ¹
(University College Dublin ¹; Archaeological Consultancy Services Unit, Ireland ²)

Intensification of agricultural production is evident during the Bronze Age in Ireland, however, little attention has been paid to issues such as food surplus, storage, and security that underpinned this intensification. While perceptions of food security itself are affected by many factors outside of productivity and the storage strategies employed, food security had important implications for those who controlled the means of production and distribution of produce. Excavations in Ireland over the past three decades have revealed evidence of extensive and varied Bronze Age settlement with a high standard of associated agricultural data and, as a result, our studies of agricultural economies for this period need to be revisited. Funded under the Irish Research Council COALESCE 2021 scheme, the FOODSEC project seeks to provide new insights into this evidence through innovative, multi-strand approaches that include integrating archaeobotanical and zooarchaeological data, investigating evidence for food storage facilities, and collaborating with food scientists and farmers in storage experiments with heritage grains. This paper will present preliminary environmental and experimental results from the project, which aims to provide a new scientific basis to understand food security in Bronze Age Ireland. Food security has a crucial role to play in our understanding of the social organisation of the period and how past societies managed food storage and redistribution, broadly.

Session 3: Site sequences

Recent Excavation of a Bronze Age Stone Circle in South-west Ireland

William O'Brien (University College Cork)

This paper presents the results of archaeological excavation conducted in summer 2023 at Gorteanish in the Sheep's Head Peninsula, west county Cork. The monument is a good example of an axial stone circle of the Cork/Kerry type, with orientation to the winter sunset horizon. An adjacent boulder-burial, possible fallen monolith and ancient field wall were also investigated. The circle was found in a collapsed state, with seven of its eleven stones fallen, all now restored. Excavation of the interior uncovered a central pit and evidence of ritual deposition of white quartz. Radiocarbon dates will be presented for charcoal from early contexts. No early artifacts or human remains were uncovered from either the circle or boulder-burial. This questions the significance of the latter, a monument type long regarded as megalithic grave markers of the later Bronze Age.

From funerary activity to domestic space: Emerging narratives from continuing excavations at Trelai Park, Cardiff

Oliver Davis and Niall Sharples (Cardiff University)

In 2022 archaeologists from Cardiff University's 'CAER Heritage' team discovered a Middle Bronze Age rectilinear enclosure in Trelai Park, south-western Cardiff, while investigating the environs of Caerau Hillfort. The enclosure is significant for two reasons. First, it is morphologically similar to South Lodge and Down Farm, a type of settlement common in southern England but previously unknown in south Wales. Second, exploratory excavations in

2022 revealed a roundhouse within the interior which possessed in situ floor deposits. In fact, Trelai Park has apparently never been subject to the destructive effects of deep ploughing and occupation deposits survive across the whole interior of the enclosure. Having reported this discovery at BAF in 2022, this paper provides an update from excavations carried out in early summer 2023. Initial findings have revealed the roundhouse to be a large (c.10m diameter) structure with south-east facing porch. A radiocarbon determination suggests it was constructed around 1500–1400 cal. BC before being replaced by a smaller roundhouse contained entirely within its ground-plan. A complex arrangement of pits, postholes and stakeholes has been identified within the structures with some containing unusual deposits possibly associated with their abandonment. Intriguingly a circle of nine pits, each containing cremated bone, was discovered sealed by the earliest roundhouse floor suggesting funerary activity pre-dating its construction.

Recurring Funerary Deposition at Berkely and Camlin, Co. Wexford during the Middle Bronze Age

Ben Spillane ¹ and James Eogan ² (University College Cork ¹ ; Transport Infrastructure Ireland ²)

Token cremation represents a key cultural shift in Irish mortuary practices from the Early to Middle Bronze Age. A significant aspect of this practice is the appearance of pit cemeteries. However, the exact chronology of these cemeteries has been difficult to establish, due to the statistical uncertainty of radiocarbon calibrations and the absence of stratigraphic evidence revealing sequences of deposition. Generally, the most that can be determined is that these cemeteries were used for several centuries between the Middle to Late Bronze Age. Two pit cemeteries at Berkeley and Camlin, Co. Wexford, excavated on the N25 New Ross Bypass in south-east Ireland, have potential to improve our understanding of the sequential use of these funerary sites. Both cemeteries have clear sequences of deposition, including initial phases of cremation pits, subsequently covered by spreads of sediment, followed by a second phase of cremation pits cut into the sediment layer. The secondary interments seem to be deliberately located on the sediment spreads, suggesting continued reverence for the locations as funerary sites. Bayesian analysis indicates that funerary activity at these sites began between the 16th to early 14th centuries BC and lasted until the mid-15th to mid-14th centuries BC, with no more than some decades between the first and second phases of cremation deposition. This paper will argue that the chronological sequence of these well-preserved pit cemeteries can help to understand short-term intergenerational veneration of funerary sites during an important period of social development and economic expansion in the Irish Middle Bronze Age.

Session 4: Metal and metalworkers

The coastal affinity of Early Metal Age Multi-Object Deposits

Stuart Needham

Since Dennis Britton's classic overview of 1963, the number of known hoards and other non-funerary metalwork associations (collectively Multi-Object Deposits) of the Early Metal Age has almost tripled. The c. 120 sites now recorded gives a firmer basis for considering their geographical distribution and some striking patterns emerge. This paper will outline both the

national picture and a series of case-studies showing how multiple-object deposits are being placed strategically in relation to local topographies.

Dredging up, and re-excavating, the Aylesford gold finds; and looking again at the ornaments in them

John Smythe

In the 1860s two sets of gold finds were reported as coming from Aylesford or thereabouts in the south-eastern English county of Kent. The first synthetic account of prehistoric Kent in 1908 complained about the lack of a more precise location for all this Bronze Age goldwork. A century later Paul Ashbee suggested that both finds needed investigating further. This presentation aims to do just that. The Kent Archaeological Society purchased all of the ornaments for their museum. Using a wide range of original documents, including the surviving minutes and contemporary paperwork of the Society, it will probe behind the limited published record to see whether we can identify a more certain provenance and context for them. That investigation found a helpful witness statement about the first find, while the details about the later one came up with more than one surprise. These may well have resonance with those familiar with other gold finds elsewhere in Britain, Ireland and Atlantic Europe. We will then look again at all of the eleven ornaments. They may not have been examined since the 1890s, including by both Joan Taylor and George Eogan, other than by using the original pictures and descriptions. Given what we know now, what types of ornament are they? When do they date to? Might any of them be associated finds?

“Ze” Escalles hoard: an important deposit of EBA axes from the British Isles found on the other side of the Channel

Emmanuel Ghesquière, Henri Gandois, Emmanuelle Leroy-Langelin, Cyril Marcigny and Vincent Riquier (Université Lille, CNRS, Ministère de la Culture, UMR 8164 - HALMA - Histoire Archéologie Littérature des Mondes Anciens, F-59000 Lille, France)

Early in 2010, two metal detectorists found a hoard of about 61 flat axes near Escalles (Pas-de-Calais, France). Ten years on, we were finally able to retrieve 40 of the axes for study. The axes are clearly of British type (Needham's class 3/4 axes) produced between the 22nd and the 19th century BC and the hoard is the largest ever found in Europe of this type of axes. A comprehensive study is underway that includes X-Ray radiography, tomography, elementary analysis of the metal composition and lead isotope analysis of all the axes. A metallurgical study is also planned for a smaller selection. The hoard's discovery led to the setting up in 2020 of a collective research project (PCR) in the Pas-de-Calais that aims to gather all the available Bronze Age data in a wide area around Escalles. Other important hoards have been found nearby such as the well-known gold ornaments of Guînes and Balinghem, but the project has also led to the study of the recently discovered deposits of raw amber at Guînes and Saint-Tricat. The first one alone includes more than 7kg of raw nodules of amber of particularly good quality. The project also carries out fieldwork on some of the circular monuments identified in the area (some excavated in the 19th century and many identified via aerial photography). This multiscale project aims to study the local and wider area around Escalles within the context of north-west Europe during the Bronze Age.

Stories hidden in gold: shedding new light on Early Bronze Age goldworking practices through microwear and compositional analysis

Christina Tsoraki, Chris Standish, Oliver Harris and Rachel Crellin (University of Leicester)

Prehistoric gold objects have long been a source of fascination for archaeologists and the general public alike. Many archaeological approaches, embedded in contemporary perceptions of value, treat gold objects as symbols of high status and wealth. Moreover, their presentation in museum exhibitions is akin to that of art objects: with an emphasis on their aesthetic and visual qualities, most often museum displays offer limited insight into how people engaged with these objects when they made, used and repaired them in the past. Recent research on prehistoric goldwork, especially by Stuart Needham and Alison Sheridan (2014), has developed our understanding of many aspects of these objects including their dating, typology and elements of their production. In this presentation, we take a different direction and focus on in-depth technological and functional studies that scrutinise prehistoric gold objects through a framework that ponders on processes of making and using these objects. Our study focuses on prehistoric gold ornaments and other paraphernalia from Early Bronze burials in Wessex, a region famous for its gold-bearing graves that includes the rich burial at Bush Barrow. By applying microwear analysis and compositional analysis, our recent re-analysis of this set of material enhances our understanding of the production and decoration techniques of gold objects from this period and offers new insights into their use as items of adornment.

Sunday, 12th November

Session 5: Metal and metalworkers (continued)

Finding hidden treasure in the Portable Antiquities Scheme database: a study of Bronze Age hoards and find scatters in Oxfordshire

Ed Caswell (Portable Antiquities Scheme)

This paper presents a new framework for identifying and classifying clusters of Bronze Age finds recorded on the Portable Antiquities Scheme (PAS) database. The PAS details over 20,000 metal objects across over 9000 records. Through exploratory analysis it came to my attention that this dataset contained hundreds of previously unrecognised clusters of metalwork finds. These may represent unrecognised hoards, indicate landscapes chosen for repeated deposition of objects, as seen at Flag Fen, or in some cases be of objects that bear no direct relationship to one another at all. Categorising these clusters is of use for understanding the period's archaeological record and is also of legal importance in the application of the Treasure Act. However, no published framework exists that provides a guide as to how these should be identified or categorised. This paper provides one potential method of doing so using 55 metalwork clusters found in Oxfordshire. It shows how these clusters can be quickly identified and then assessed using material consistency, geographical and archaeological context. This paper will demonstrate a relative scoring system which categorises these clusters in a manner useful for archaeological analysis and the application of the Treasure Act. Significantly, it identifies previously unrecognised hoards, wetland regions of repeated deposition and potentially areas of settlement in significant numbers. As such, this paper will argue that there are large number of unrecognised Bronze Age hoards and archaeological landscapes which are identifiable, but hitherto 'hidden', in the PAS database.

Copper supply networks in the Irish Later Bronze Age. An introduction to a recently funded research project

Carlo Bottaini ^{1,2}, Dirk Brandherm ¹ (Queen's University Belfast ¹ ; University of Évora, Portugal ²)

According to available data, Irish copper sources dominated the metal supply in the British Isles during the Early Bronze Age (2500-1500 BC). However, from the mid-2nd millennium BC, Irish copper mining began to decline and slowly became a marginal economic activity. As a consequence, during the Later Bronze Age (1500- 800 BC), Ireland went from being a copper exporter to having to import the copper needed to sustain domestic metalwork production. Interestingly, the decline of mining activity coincided with a period of remarkable growth in metallurgical production throughout the island. Given this background, this paper aims to introduce a recently funded project that focuses on a central question: where did the copper used for metalwork production in the Irish LBA come from? To answer this question, an ambitious programme of metal analysis of copper-base metal artefacts from the Irish LBA is currently underway. At the same time, a programme of radiocarbon analysis of organic material directly associated with diagnostic Irish metal artefact types is being undertaken. This combined multi-analytical approach will provide us with the minor/trace element and lead 'fingerprints' of Irish LBA metallurgy, as well as a chronological framework for reliably dating

changes in copper supply patterns. Understanding changes in copper supply will in turn improve our knowledge of the social and economic dynamics of local LBA communities and draw new connections between Ireland, the wider Atlantic world and Europe. The project is financially supported by the European Commission/URKI through a Marie Curie Individual Fellowship and the Portuguese FCT (2022.04844.PTDC).

The end of the axe

Roger Thomas (University of Oxford)

Two types of artefact are especially characteristic of the British Bronze Age. The first is axes (flat, flanged, palstave, socketed). The second is bladed weapons (daggers, dirks, rapiers, swords). Both types were clearly significant in exchange and in deliberate deposition, and both therefore seem to have performed important social and symbolic roles. However, the two types have very different long-term histories. The axes of the Bronze Age continue a tradition (polished stone axes) which goes back to the beginning of the Neolithic. At the end of the Bronze Age, though, the axe disappears almost entirely as a socially and symbolically important form. By contrast, bladed weapons first appear in about 2500 BC, but the form continues to be important beyond the end of the Bronze Age: throughout prehistory, the historic period and even down to our own time. This paper will expand on these observations, paying particular attention to how we may interpret (1) the disappearance of the axe as an important form after nearly three and half millennia, (2) the significance of the rise of bladed weapons and their subsequent persistence beyond the end of the Bronze Age, and (3) the possible relationship between these two phenomena.

Session 6: Materials in the Bronze Age

Project Ancient Tin: Did British tin sources and trade make Bronze Age Europe?

R. Alan Williams ¹, Kamal Badreshany ¹, Matthew Ponting ², Mariacarmela Montesanto ³ and Benjamin Roberts ¹ (Durham University ¹; University of Liverpool ²; Università degli Studi di Firenze ³)

A remarkable change occurred in c. 2200 BC when Britain and Ireland were the first regions in Europe to completely switch over from copper to harder and more gold-coloured bronze for their tools and weapons, typically with around 10% tin. This change (bronzization) spread across the rest of Bronze Age Europe and the Mediterranean over the following centuries, reaching southern Spain and Greece only by c. 1500/1400 BC. The tin required to make the bronze was much scarcer than copper, with the main potential sources being in South-West England (Cornwall/Devon), the Germany-Czech border (Erzgebirge), the Iberian tin belt and smaller deposits in France (Brittany and Massif Central). Even at 10% of the bronze, large amounts of tin were required for the copper production from the 50+ confirmed Bronze Age copper mines across Europe, with two of the largest probably requiring around 10,000 tons of tin. As South-West England possessed probably the richest and most accessible tin deposits in Europe and close to the coast, there has long been speculation that this region traded tin across the continent and even supplied Bronze Age civilizations in the Eastern Mediterranean. Identifying a major role in this vast production and trade network for the dispersed and small farming/mining communities of Bronze Age Britain would radically change the perception of the island's relationship with the rest of Europe and beyond. In parallel, the relationship

between Bronze Age sites in Cornwall/Devon with tin deposits will be examined with a GIS database. Project Ancient Tin, funded by the Leverhulme Trust, has sought to ‘fingerprint’ tin ores and tin artefacts from Britain relative to those from tin sources elsewhere in Europe using three independent analytical techniques (multi-element chemical analysis, lead and tin isotopes). This builds on the work of the ERC Bronze Age Tin project that was initially focussed on tin isotopes of ores and bronzes but later used these three techniques on tin artefacts. We have now extended the use of multi-element chemical and lead isotope analysis to tin ores, despite the technical challenges, and applied this approach to over 100 tin ore samples collected from across South-West England and, in addition, those from elsewhere in Europe mainly provided by CEZA Mannheim. Furthermore, we have obtained several samples of Bronze Age tin artefacts from across Europe and beyond for analysis. During 2023 the results of all these analyses will be examined and the initial conclusions regarding tin provenance and tin trade in the European Bronze Age and beyond will be presented. The project is led by Durham University in collaboration with the University of Liverpool with support from CEZA, Mannheim, the Cornwall Archaeological Unit and many other organisations and individuals.

Project website: <https://projectancienttin.wordpress.com>

Bottoms Up: The Function of Bronze Age Pottery Through Experimentation and Analysis of the Bases

Clara Freer (University of Exeter)

The Bronze Age needs continued study, particularly the pottery. This research uses experimental approaches to understand the construction and function of vessels. Using a comparative approach between experimental and experiential assemblages and a range of original pottery from the two case study regions of Cumbria and Wiltshire. Experiments were conducted to explore the construction, use and deposition of four common Bronze Age vessel forms. The construction of the pottery explores the time, resources and skills needed to make the vessels. While the use wear experiments look at the storage of constructed pots, the function of the pots as storage vessels, particularly the use of coverings and signs wear on bases. It also considers the effects of weathering and of deposition on a vessel through long term experiments. Many of the experiments were conducted over several months to better replicate hypothesised use. The data was explored within the broader context of the Bronze Age and what that can reveal about the people making and using the pottery. The patterns of wear seen during the experiments also occur on experiential and original pottery. Different degrees of production and use wear can be seen across burials, sites and regions indicating a broad function of vessels in Britain. Understanding function helps with our understanding of the Bronze Age people and how they viewed and interacted with their everyday items. Giving insight into Bronze Age pottery in the case study regions and the broader period when unglazed vessels were being made, used, and deposited.

Bowled over: Wood and bark artefacts from the Late Bronze Age settlement at Must Farm – specialism, selection and craft

Michael Bamforth (University of York)

Nearly 200 wood and bark artefacts were recovered from the Late Bronze Age stilted settlement at Must Farm, Cambridgeshire, during excavations by Cambridge Archaeological Unit between 2006–16. The settlement was destroyed by a catastrophic fire, perhaps as little

as a year after construction, with the buildings of the settlement and their contents collapsing into the soft muds of the river below. The combined effects of the conflagration and the rapid burial in waterlogged deposits led to exceptional preservation of organic remains, with many of the wooden artefacts recovered from their original positions in the collapsed buildings. The completeness of the assemblage, which includes a variety of bowls, hafts for axes, gouges and spears, textile tools and a complete tri-partite wheel, alongside the spatial context of the objects, has provided a wealth of data. This has furthered our understanding of Late Bronze Age wooden artefact production and has also provided valuable insights into the selection and use of wood, whilst allowing inferences on the possible distribution of woodworking skills and specialists within the settlement, and hinting at a localised trade in complex wooden objects.

Drinking without thirst under the sun of the Gods. Ceramic, social practices and symbolism along the Atlantic coast (2250–1650 BC)

Julien Ripoche ¹, Théophane Nicolas ² (Service Archéologique de la Ville de Lyon, UMR 8215 Trajectoires ¹ ; Inrap Grand Ouest, UMR 8215 Trajectoires ²)

From the spread of the Bell beaker phenomenon in Western Europe, an individualisation of the ritual is seen in social practices. Despite another increase of the social hierarchy during early Bronze Age, these practices seem to acquire a community dimension. A larger part of the population is then involved in the ritual life (elite, intermediate social ranks) from which emerges new social behaviours as feasting practices and symposium. In Brittany, ceramics appear as a low social ranking feature among funerary deposition. However, vases play a major role at both consumption and depositional scale, and a larger set of ceramic types is from now on deposit. By extension, many domestic ceramic sets, seen as waste and garbage, yet display particular organisation related to meaningful gestures and original practices. The ceramic artefact itself is renewed in terms of form and ornamentation. A significant number of vessels are associated with handles (one to four and more), authorizing more complex social interactions and transmissions during ritual activities. Those decorative schemes, also known on metallic artefacts, can be interpreted as astral (solar and lunar) representations. As the object carrying them, they are closely linked to ritual and social practices. This presentation, based on recent discoveries of ceramics from closed and dated contexts, will be the occasion to discuss the evolution of the social structure of Bronze Age community through ritual, in particular meaningful occasions but also along everyday life activities.

Session 7: From past to present

BAF housekeeping and poster prize presentation

Stuart Needham and Jo Brück

Peggy Piggott and Bronze Age metalwork

Brendan O'Connor

This presentation will highlight the contribution of Peggy Piggott to the study of Bronze Age metalwork. During the 1940s and '50s she published as C M Piggott on razors in Britain and Ireland, the Middle Bronze Age in southern England and Late Bronze Age pins in Scotland. We shall examine this aspect of her work at the time it was written, in the light of the studies of

her career by Rachel Pope and Mairi Davies, and as the topics concerned subsequently evolved.

Cumulative chronontology: Hawkes' ABC and archaeological history

Steven Matthews (University of Groningen)

With the beginning of the second half of the 20th century, Glyn Daniel (1951) issued a challenge to British archaeologists to develop a new kind of chronological system, as Continental schemes (e.g. Montelius and Reinecke) typically conflated units of time (periods) and content (culture). Hawkes' own early endeavours (1932, 1948) followed this same pattern, being revolutionary in content if not in design. In his presidential address to the Prehistoric Society, however, he addressed Daniel's call, stating the need for "something better". Fulfilling these ambitions became one of Hawkes' primary goals during the 1950's, resulting in his infamous ABC's for the Iron (1959) and Bronze Ages (1960; Gerloff and O'Connor 2019). Ultimately, the former was criticised upon publication, and the latter was left unpublished: more traditional schemes instead proliferated. As a consequence, Hawkes' scheme now endures mostly as an important historical document concerning the development of British Bronze Age studies during a formative period. Moreover, the overall contribution of Hawkes remains largely neglected, due to the fact that unlike Childe no particular theory or approach is easily discernible. Here I argue that his 'Scheme for the British Bronze Age' was more than a simple chronology but a highly sophisticated chronontology, and an important figurative representation of Hawkes' views on the nature of archaeology itself. Cultural continuity, and not just change, was an essential feature of his concept of archaeological history, and his ABC schemes can be viewed as part of a wider global trend to develop Culture History in new directions.

Bridging the Middle- to Late Bronze Age divide

Arjan Louwen (Leiden University)

Traditionally, in the Low Countries the Middle- and Late Bronze Age are studied as two completely different chapters of later prehistory. The most important reason for this divide exists in the differences in funerary traditions between the two epochs. Where in the Middle Bronze Age it was the custom to bury the dead in what are usually called 'family barrows' in the Late Bronze Age the dead were interred in vast urnfields. This latter tradition is still often regarded as a Central European phenomenon that gradually found its way to Northwest Europe from the 13th century BCE onwards. However, when Middle Bronze Age and Late Bronze Age graves are studied more closely, one cannot help but to also see clear similarities in how the dead were treated, provided with certain categories of objects and were finally anchored in specific places in the landscape forming communities of ancestors that still played an active part in daily life. In this paper it will be argued that many of the typical hallmarks of Late Bronze Age urnfield graves were already present quite early in the Middle Bronze Age. It even seems that Late Bronze Age funerary practices were in fact rooted in local ideas about how people, objects and land(scape) were very much entwined and that urnfields in this corner of Europe can therefore almost be regarded as a logical result of these developments.

POSTERS

Between the barrows. New perspectives on Bronze Age activity around Lincoln and in the Witham Valley

Diana Fernandes ¹, Raquel Margalef ¹ and Peter Chowne ² (Network Archaeology ¹ ; University of York ²)

The archaeological intervention on the Lincoln Eastern Bypass has provided an important opportunity to investigate a remarkable prehistoric landscape spanning both sides of the river Witham. The excavated features included possible settlements, as well as funerary remains which have given us valuable insights into the burial practices and beliefs of Bronze Age societies. Preliminary research has identified complex use of this landscape from the late Mesolithic to the Iron Age, where the ancient form of the river Witham seems to have acted as a significant link and cultural agent between people either side of the river. Despite the geographic division, the interpretation of all artefactual, biological and social evidence has been pointing to the presence of a unified community. This poster will present the results of the most recent archaeological research on the Bronze Age of this area, including a group of seven excavated round barrows and the evidence discovered in between these monuments. The funerary elements comprised mixed burial practices of inhumation, cremation and possible cenotaph, with this last type of funerary ritual being noted in, at least, two occasions. It is the authors aim to give special attention to this specific rite and explore the collected evidence in this presentation.

Desirable Bronze. Start of a Dutch project on lead isotopes

Liesbeth Theunissen (Cultural Heritage Agency of the Netherlands)

Mid-September 2023, a brand-new project on prehistoric copper alloys was launched in the Netherlands, financed by the Cultural Heritage Agency. It focuses on gaining a more detailed understanding of the copper/bronze provenance of late prehistoric objects from the Netherlands, bringing a deeper understanding of metal circulation and exchange networks in the period 2000-800 BCE. This way, we aim to position the Netherlands more firmly in the broader North-West European discussions on production, movement and consumption of bronze (Jay Butler's beloved 'Bronze Age connections'). This Dutch lead isotope project is a collaboration of archaeologists and specialists from different organisations. It can be seen as a follow-up to the recent study by Arnoldussen et al. (2022), A not so isolated fringe, in which a large corpus (>370) of copper and bronze objects from the Bronze and Iron Age (from 2000 to 12 BCE) was analysed by pXRF. In the new project the pXRF dataset will be verified and supplemented with new data and the provenance of the copper ores will be evaluated on the basis of lead isotopes. Our aim is to sample 150 bronze objects (e.g., axes, swords, bracelets, pins, chisels, moulds), dating from the Bronze Age and found across the Netherlands. The candidates must be well dated, have distinct find contexts and known landscape settings. In addition, this study has contemporary societal relevance, in that it strives to communicate the new stories linked to objects in museum contexts, to a broader interested public, including metal detectorists whose recent finds will also be analysed.

BOOKSTALL



Archaeopress will run a bookstall during the conference.

HELP AND ADVICE FOR BAF

THINGS TO DO IN LEICESTER

Leicester is a historic city, with plenty to do and see if you arrive early or are staying until Monday. A few highlights include:

The Richard III centre <https://kriii.com/>

You may not have heard, but we found a king once. If you'd like to know more, especially about the role of Bronze Age specialist turned king finder Dr Jo Appleby this is the place to go. It is in Leicester City Centre.

The Guildhall <https://www.leicestermuseums.org/leicester-guildhall/>

A beautiful medieval building in Leicester, well worth checking out and combining with a visit to see Richard III. He's that king we found one time.

Leicester Museum and Art Gallery
<https://www.leicestermuseums.org/museum-art-gallery/>

On New Walk (the oldest pedestrianised street in Britain) you will find this rather nice museum, although disappointingly it doesn't have much to say on either the Bronze Age or Richard III. Excellent German impressionist collection though and often has interesting exhibitions.

Unfortunately Leicester's main archaeology museum, Jewry Wall is closed for refurbishment, and the Cathedral, home to the tomb of, well, you can probably guess, is also currently closed.

FOOD AND DRINK

Places to eat and drink immediately by College Court

The Craddock Arms – Decent pub just round the corner from College Court.

Queen's Road – around 15 minutes walk from College Court

Food

Halcyon Kitchen – Contemporary Cuisine

Friends Indian – North Indian (standard) curry

Barceloneta – Tapas restaurant

Fingerprints café – Sandwiches and Coffee in the day time

Martin Brothers Pizzeria – seriously excellent pizza and outstanding beer selection but very small

Port and Nata – Portuguese food, but closes 8:30pm on Friday and Saturday and 3pm Sunday

Grounded Kitchen – excellent Korean food, both take away and eat in but no alcohol served

Drinks

Babelas – Bar with beer and decent wine and a delicious cheese board

Dos Hermanos – Cuban themed bar which also does brunch on Saturday and Sunday

Queen's Road Tap – micropub with a good range of changing beers

Further into town – London Road – 30 minutes walk from College Court

There are a lot of places to eat and drink on London Road of various levels of quality – a few we would recommend:

The Marquis – university favourite with Everards beer and standard pub food

Sichuan Brothers – probably the best Chinese in Leicester

Chettinad – very solid south Indian curry

Shimla Pinks – large and popular north Indian curry house

Beyond the train station – 40 minutes walk from College Court

This takes you to the edge of town and there are a lot of restaurants and bars to suit all tastes and budgets. Just to mention two great curry houses:

Kayal – superior south Indian food

Herb – Kayal's sister restaurant, vegetarian only. The dosas are not to be missed!

COLLEGE COURT TRAVEL INFORMATION AND MAP

Bike

College Court provides 34 secure covered cycle parking spaces. All of the roads surrounding us are advisory cycle routes and in addition, there are some marked on-road cycle routes on Knighton Road and London Road.

Visit www.leics.gov.uk/index/environment/countryside/cycle_trails/leicestercyclingmap.htm#downloads to download a map of Leicester City Centre cycle routes.

Bus

There are a number of excellent bus services around College Court, operated by Arriva Midland. You can catch numbers 44 and 44A between Leicester City centre and Knighton approximately every 10 minutes Monday to Friday, and every 15 minutes on Saturdays.

In addition, services 80 and 80A run past the front of College Court, along Knighton Road between Leicester City centre, the University of Leicester and the Oadby Halls of Residence.

There are two bus stops closely located to College Court, one at the end of Queens Road, opposite the front of College Court and the second on Carisbrooke Road, at the rear of the overflow car park.

Please refer to the map overleaf for further details. Visit www.arrivabus.co.uk for timetables and maps of bus routes in Leicester.

Car

College Court is conveniently located within easy reach of the M1 and M69 motorways. **Please use the postcode LE2 3TQ or Knighton Road, Leicester when using a SatNav device.**

College Court offers ample complimentary car parking spaces, including designated disabled bays. Access is available from Knighton Road and barriers control access to and from the car park.

Foot

There are street-lit footways on both sides of Knighton Road and Carisbrooke Road that connect to the wider pedestrian infrastructure within the city. Please refer to the map overleaf for further details.

College Court is committed to promoting and encouraging the use of sustainable travel for both employees and visitors. We actively encourage visitors to utilise the extensive public transport network available within Leicester city and provide covered cycle racks for those choosing to take advantage of the National Cycle Route and designated cycle lanes that pass right outside our entrance.

Train

College Court is only 1.4 miles from Leicester Train station, where guests can travel only 70 minutes from central London. There is a taxi rank based at Leicester Train Station. A taxi to College Court shall cost approximately £6.00.

Car Share

This is a free scheme, set up by Leicester City Council and Leicestershire County Council. The website allows people to log in, state where they are travelling to and from, and whether they are seeking or providing a lift. Car sharing matches are then sent over a secure email.

www.leics.gov.uk/transport_downloads – includes links to bus maps and timetables within Leicester city, as well as Park and Ride facilities.

www.sustrans.org.uk – provides maps of walking and cycling routes.

www.nationalrail.co.uk – provides train information including live departure and arrival times, fares, discounts, special offers and a journey planner.

www.travelineeastmidlands.org.uk – provides public transport journey route maps, stops along a route and the specific bus numbers covering a journey.

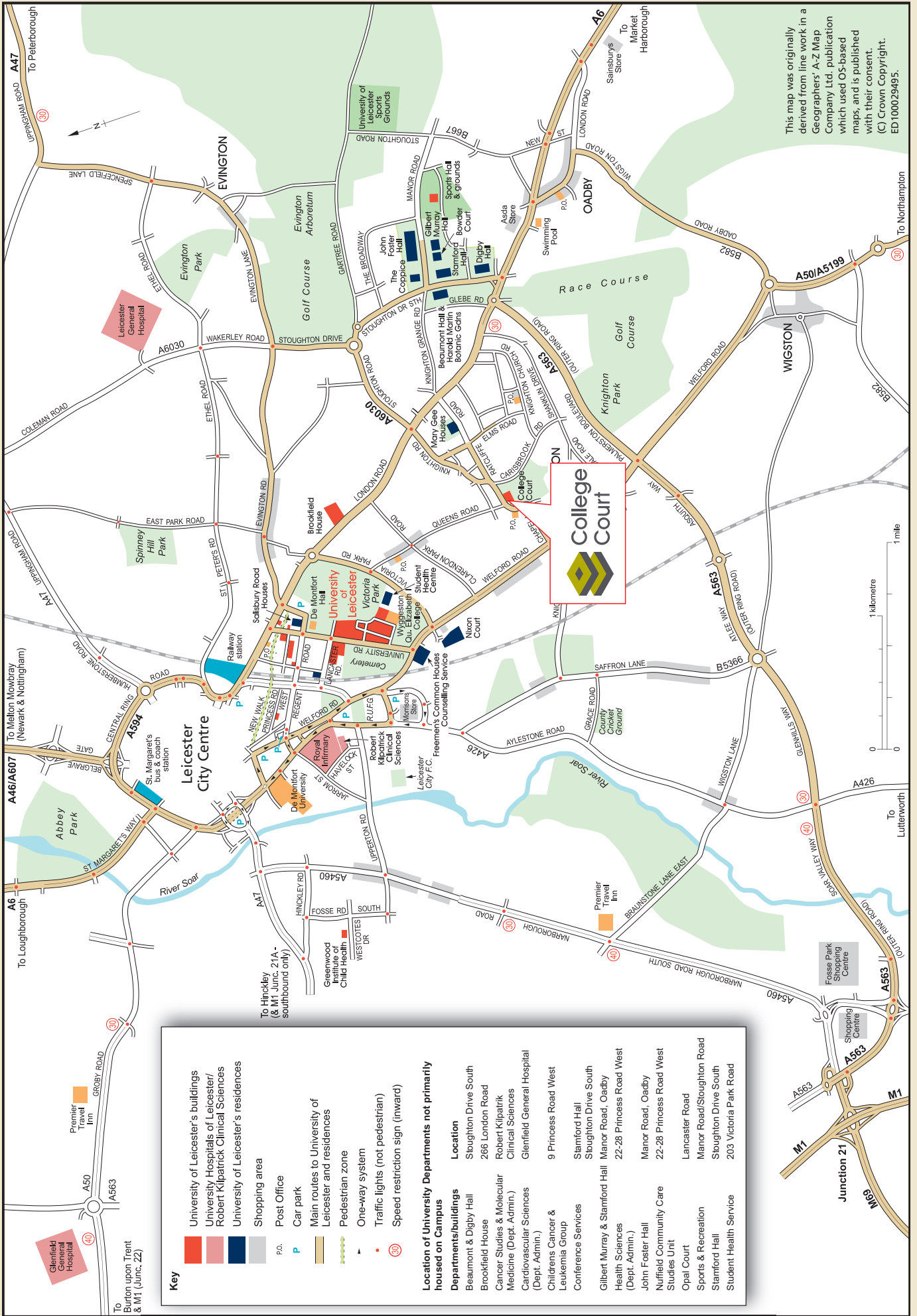
For more information visit: www.collegecourt.co.uk

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Key

- University of Leicester's buildings
- University Hospitals of Leicester/ Robert Kilpatrick Clinical Sciences
- University of Leicester's residences
- Shopping area
- Post Office
- Car park
- Main routes to University of Leicester and residences
- Pedestrian zone
- One-way system
- Traffic lights (not pedestrian)
- Speed restriction sign (inward)

Location of University Departments not primarily housed on Campus

Department/buildings	Location
Beaumont & Digby Hall	Stoughton Drive South
Brookfield House	266 London Road
Cancer Studies & Molecular Medicine (Dept. Admin.)	Robert Kilpatrick
Cardiovascular Sciences (Dept. Admin.)	Clinical Sciences
Childrens Cancer & Leukemia Group	Glentfield General Hospital
Conference Services	9 Princess Road West
Gilbert Murray & Stamford Hall	Stamford Hall
Health Sciences (Dept. Admin.)	Stoughton Drive South
John Foster Hall	Manor Road, Oadby
Nuffield Community Care Studies Unit	22-28 Princess Road West
Opal Court	Manor Road, Oadby
Sports & Recreation	Lancaster Road
Stamford Hall	Manor Road/Stoughton Road
Student Health Service	Stoughton Drive South
	203 Victoria Park Road