

The Archaeologist

Issue 111

Autumn 2020



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Themes and deadlines

TA112 *Is commercial archaeology embracing innovation? Innovation can take many forms but is the historic environment sector maximising opportunities to share knowledge and implement different approaches? Are lessons being learned from other sectors and industries? CIfA in collaboration with A/GAO recently completed a Historic England funded project focused on Building capacity through innovation which highlighted some of the issues being faced by archaeologists along with good practice examples. This edition of The Archaeologist will continue on this theme with CIfA's Jen Parker Wooding acting as guest editor. Examples of innovative practice will be showcased, with insight into the various challenges and barriers being faced.*

Deadline 1 December 2020

Contributions to *The Archaeologist* are encouraged. Please get in touch if you would like to discuss ideas for articles, opinion pieces or interviews.

We now invite submission of 100–150 word abstracts for articles on the theme of forthcoming issues. Abstracts must be accompanied by at least three hi-resolution images (at least 300dpi) in jpeg or tiff format, along with the appropriate photo captions and credits for each image listed within the text document. The editorial team will get in touch regarding selection and final submissions.

We request that all authors pay close attention to CIfA house style guidance, which can be found on the website: www.archaeologists.net/publications/notesforauthors

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Cover photo: MOLA Headland volunteer
gravestone recording 1. Credit: MOLA Headland
Infrastructure; © HS2 Ltd



EDITORIAL



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Archaeologists are a talented group of people, we know. We all bring an eclectic mix of knowledge, experience, skills and ideas to our variable roles.

Sometimes the skills we need to use are different to our original expectations – spreadsheets and logistics perhaps? Sometimes we do things automatically with everyday panache – excavating, analysing, communicating.



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Our curiosity to understand, explain and share our discoveries means that we are keen to learn from other disciplines, often taking practices from the construction industry or other environmental fields, for example. And here HS2 offers a hothouse of opportunities for knowledge exchange, for collaboration and lessons learned.

I hope that you will find words and practices that resonate and something perhaps to apply in your own work. The articles by colleagues working on HS2 show just how many different skills are needed in our profession and how much more there always is to know.



p12

LEAN management is only something I had learned on a management course. Caroline Raynor has demonstrated the value that putting theory into practice can bring to our work.

The importance of investing in our staff is highlighted by Guy Hunt as L-P: Archaeology look the skillset needed by today's archaeologist, which is widening beyond the 'core' archaeological toolkit.



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On HS2 there have been two major excavations of post-medieval burial grounds and Mike Henderson explains how this has given eleven early-career osteologists opportunity to work alongside experienced professionals.

Emma Tetlow writes about her varied career path and the transferable skills she brings to her specialist role. Resilience is something we all need more than we previously thought.

Community engagement is at the core of what we do as archaeologists; Mary Ruddy tells us about the response to COVID-19, ensuring that engagement not only continued but flourished through the online world, making great use of visualisations.

Tom Sparrow highlights the skills needed to use advanced digital capture methods and illustrates this with the work on the roundhouse at Curzon Street, linking old and new information sources to achieve incredible and accessible imagery.

Sometimes life puts you in its spotlight and for Rachel Wood this meant facing many facets of the media to share the remarkable discoveries at Wellwick Farm; read about her experience and think how you would have fared!

Tom Wilson shows us the perspective of a built heritage consultant, the nature of the resource and the collaboration required to deliver the HS2 Area North built heritage programme.

Finally, Mark Collard and David Bonner write about how they adapted to working in the COVID-19 world, coming up with new ways of working at the Wellwick Farm site and the challenges this brought to the investigation of a lead coffin using Microsoft Teams.

Our call for articles for this edition's theme in the end generated more content than we could include in this issue, so a couple of additional pieces will be published as online articles on the Cifa website. These include a case study from Paul McGarrity of MHI looking at the skills required to deliver the community engagement events held around recording and interpreting the funerary monuments in St James's Gardens. And as HS2 is about all things railway, Joe Critchley explains the requirements for safety and access while recording non-designated built heritage including the Parkway Tunnel outside Euston Station and the Statue of Robert Stephenson.

Helen Wass MCifA (918), Head of Heritage, HS2

LEAN in: how to help your team do more with less in commercial archaeology

Caroline Raynor MCIFA (9008), Project Manager and Lead Archaeologist – Costain Skanska JV

LEAN is a tool traditionally associated with production lines and business management. Nevertheless, it has applications across a large number of archaeological activities. Encouraging and supporting people to develop LEAN skillsets has been a key part of delivering efficiencies in archaeology on Costain's recent sites including the enabling works in HS2 Area South. By undertaking process mapping to understand how and why we deliver our specific activities, we, as archaeologists, are able to identify 'wastes' and open up a more pinpointed dialogue with construction partners around programme, productivity, and outcomes.

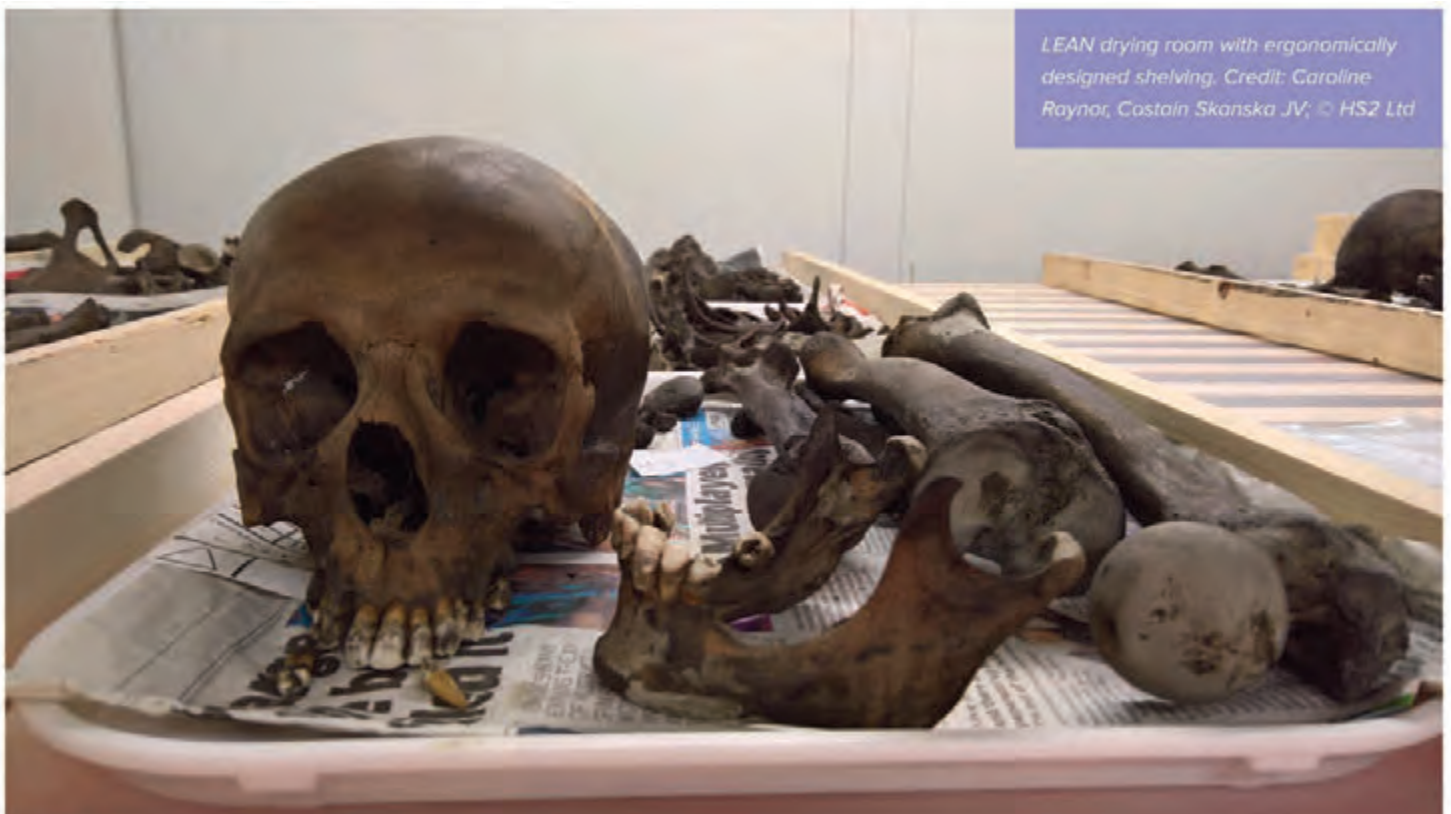
So, what is LEAN?

LEAN was developed in the manufacturing industry, specifically the Japanese car manufacturing industry (and even more specifically by Toyota). It was identified that production lines could be made more efficient by streamlining specific activities and that this could generate lots of potential benefits.

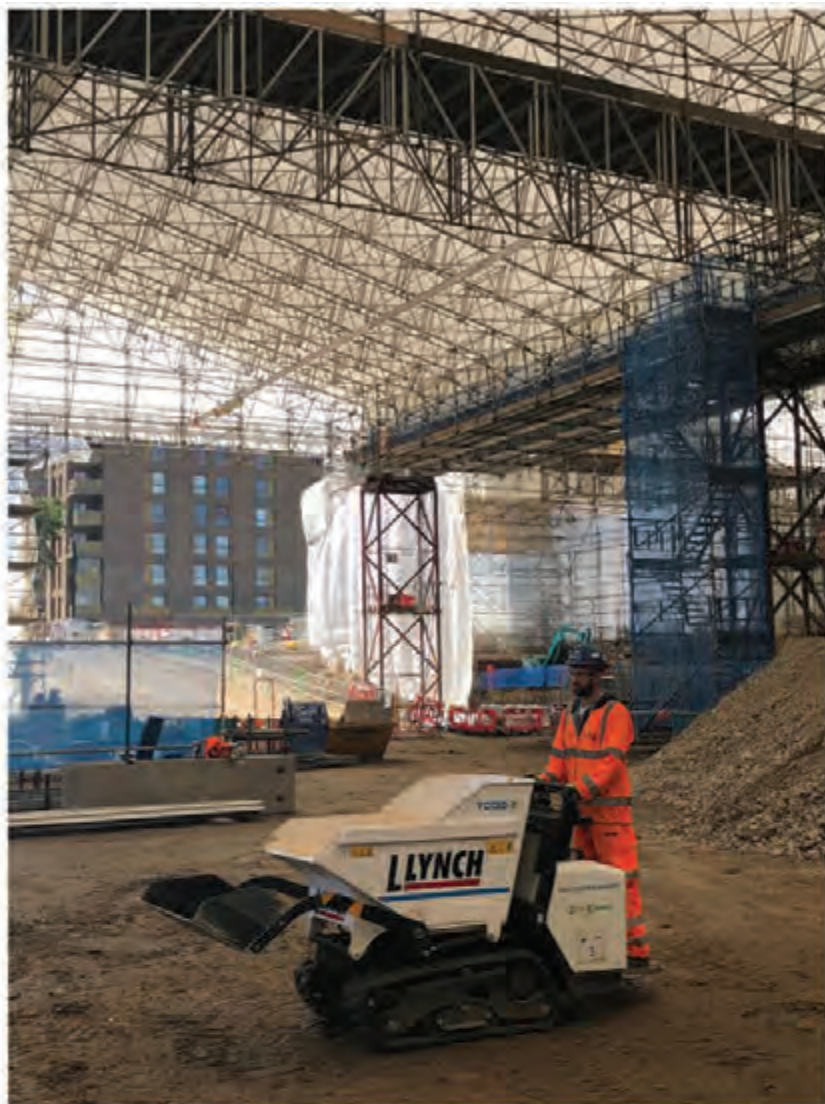
LEAN is essentially a process that allows you to identify and eliminate waste. In this instance waste does not refer to rubbish (although eliminating unwanted, hazardous or costly by-products may be a desirable output). There are eight wastes identified in LEAN practice:

- The Waste of Transport
- The Waste of Inventory
- The Waste of Motion
- The Waste of Waiting
- The Waste of Overproduction
- The Waste of Over-processing
- The Waste of Defects
- The Waste of Talent

Each task, no matter how simple, has multiple steps but we often fail to consider an activity in this way and so do not understand where the waste starts to creep in.



LEAN drying room with ergonomically designed shelving. Credit: Caroline Raynor, Costain Skanska JV, © HS2 Ltd



Small electric plant (1.9 tonne ride-on dumper) used to streamline materials management. Credit: Caroline Raynor, Costain Skanska JV, © HS2 Ltd



Encapsulation structure over the big dig at St James's Gardens in Euston designed by Costain Skanska JV. Credit: Caroline Raynor, Costain Skanska JV, © HS2 Ltd

Archaeology is not a production line and no two archaeological sites are the same. But archaeology as a discipline is process driven, and activities such as finds processing or excavating a feature or burial are governed by rigid methodologies.

Understanding activities and what they entail is known as 'process mapping'. This is a simple way of breaking down activities in a step-by-step manner, by creating a flow chart that shows each activity that leads to the completion of a task. Each task, no matter how simple, has multiple steps but we often fail to consider an activity in this way and so do not understand where the waste starts to creep in.

The most common wastes in archaeology are the waste of motion (walking across site seeking tools and equipment, finds registers, incorrectly placed welfare facilities); the waste of transport (moving samples and finds from site to office without checking labelling, volumes, etc); the waste of waiting (delays on site caused by weather, lack of plant, etc. leading to inefficient use of time on site when secondary activities could have been planned); and the waste of talent (not understanding or registering the key skills present amongst an often transient or temporary workforce).

At the HS2 enabling works, Costain Skanska JV used LEAN techniques and applied them to archaeological processes to increase safety, efficiency, and productivity. The first step was to process map all key activities where waste was likely to occur. High-level analysis indicated that waste of motion, transport and waiting occurred most frequently.

| Activity | Waste |
|---|----------------------------|
| Managing tools and equipment | Motion, Transport. |
| Accessing tools and equipment | Motion, Waiting |
| Management of spoil and muck shift | Transport, Motion, Waiting |
| Finds processing | Transport, motion, Waiting |
| Recording Including populating registers and context sheets | Motion, Waiting |

Measures were put in place to help reduce or remove wastes and the improvements were measured using a LEAN control board where 'time on task' and m³ of material removed was recorded each day as a measure of productivity. Productivity initiatives included the use of small all electric plant (1.9 tonne mini diggers and 1 tonne tracked barrows), digital recording, and the deploying of one site operative per five archaeologists to help with spoil management and muck shift.



Ergonomic/LEAN lab designed by Costain Skanska JV to support osteological works. Credit: Caroline Raynor, Costain Skanska JV; © HS2 Ltd

All team members from Project Officers to Field Archaeologists were invited to provide targeted feedback on measures to help shape improvements.

Similarly, finds management activities were also process mapped to identify opportunities for efficiency and a bespoke lab with a factory production line approach was built on site. This facility considered specific tasks, optimal production (*takt* time) and ergonomics based on a 43 per cent female demographic on site. Additional benefits were also identified where on-site processing provided earlier insight into the assemblage and helped to inform excavation and community engagement strategy over a 40-week period in line with HS2's Historic Environment Research Delivery Strategy (GWSI-HERDS).

The archaeological team were asked to nominate 'LEAN champions' who could provide feedback in a wider forum with other supply chain members. The nominated persons were also invited to help identify other opportunities and develop a wider appreciation of LEAN, through working with the project LEAN Practitioner and the Business Improvement manager. These activities could be registered as CPD by participants and are the first steps to using LEAN on other sites and projects as a natural response to identifying inefficiencies or wastes.

Process mapping, team work and a series of targeted efficiency measures combined to deliver a positive culture of collaboration between the engineers, archaeologists and site operatives as well as delivering measurable efficiencies where outputs at peak work flow exceed

original expectations by a factor of five. The application of LEAN has been embedded within the wider team and forms part of the legacy of HS2's archaeology and heritage works.

With thanks to HS2 Ltd, Costain Skanska, MOLA-Headland Infrastructure, TCS exhumations, Bowercross Construction Ltd, and Penmark Consulting for supporting LEAN archaeology.

See The Archaeologist 109 for an example of how LEAN techniques were used at St James' burial ground, Euston

Caroline Raynor

Caroline is a Project Manager and the Lead Archaeologist for Costain Group Plc. Her interests include aligning construction and archaeological approaches on large-scale infrastructure projects and engineering for archaeology.



Parallel skills

a look at new skills being added to the core skillset of the field archaeologist

Guy Hunt MCifA (5654), Partner Archaeologist, L – P : Archaeology

HS2 fieldwork projects have placed archaeologists and archaeological contracting companies at the sharp end of delivering large-scale, highly complex projects to the very highest standards for health and safety, environmental protection and quality. In many cases, the projects require the archaeological contractor to take on the major responsibilities of mobilising large sites in remote locations, constructing and installing welfare compounds, managing the site security requirements, and taking on the safety and logistical responsibility for working with large quantities of plant to the rigorous standards of the HS2 project.

Our response at L – P has been to embark on a programme of training and skills development to empower our archaeologists to take on this expanded role. These are skills that we could consider as parallel skills to the core archaeological skillset needed to execute fieldwork in the 21st century. However, the ability to conform to wider industry standards and legal responsibilities mean that in a way these are simply an extension of the core skillset for the modern-day archaeological fieldworker.



Lifting supervisors to overseeing lifting on site. Credit: L – P Archaeology; © HS2 Ltd

An alternative strategy to upskilling the archaeologists themselves is of course to work in conjunction with (or to employ) a third-party civil engineering contractor to take on the 'difficult bits' of the project, more accurately, the non-archaeological elements of the project. However, L – P have taken the view that if we were going to be taking on the considerable contractual risks involved in managing these elements of the project, that it would be best for us to build as much knowledge and skills within the organisation as possible.

To give an example, the use of lifting equipment within our sites means the design of lift plans, the provision of lifting

supervisors to oversee the lifting in the field, the presence of slingers to sling loads and signallers to safely oversee the movement of plant and delivery lorries. Whilst the design of the lift plans was subcontracted to a specialist, all other roles were filled by giving appropriate training to team members. All such roles within the HS2 system require fully certificated training (assessed by CPCS). By enabling our archaeological team to execute lifts when needed, we were able to make use of enhanced flexibility for our operations, without needing to spend precious resources contracting in third-party team members.

This approach to skills underpins our philosophy throughout, which is to provide our teams with the tools they need to fully execute a job, to retain this resource within our teams and to feed a virtuous circle where we are able to use this flexibility to retain archaeologists within the team in a more stable way.

Our philosophy of ongoing investment and upskilling of our archaeological team (arguably sometimes outside the core required skills of our profession), means we are in turn improving and enhancing their future employment situation. Clearly, we hope they will remain with L – P for the long haul, but if their employment situation changes, we can be confident that they have left us with more skills, experience and vital site knowledge that will stand them in good stead for any future career move.

By fully managing all aspects of our own sites, we have also been upskilling and investing in our management team. This allows us to not only retain control of our sites close to the core management team, but also enhance the management capability and capacity of our entire archaeological team. Running what is essentially an entire construction site brings new challenges and requires an appropriate allocation of people to cover the roles. One interesting corollary of this type of training is that it has helped us to see our other projects from a new perspective; we are better able to understand the parameters within which other non-HS2 clients see their sites and this means we are far better placed and resourced to respond to their needs.

The HS2 projects have acted as a catalyst for a process that was already occurring, albeit more slowly, of enhancing our ability to work with construction industry partners within their parameters. Most importantly, this kind of accelerated change requires the kind of radical investment in skills that is only made possible through a project like HS2.



*L – P:
Archaeology
staff working as
bankspersons to
safely oversee
the movement of
plant and
delivery lorries.
Credit: L – P
Archaeology;
© HS2 Ltd*

Running what is essentially an entire construction site brings new challenges and requires an appropriate allocation of people to cover the roles.



Organising the security detail on site. Credit: L – P Archaeology; © HS2 Ltd

Guy Hunt

Guy is a founding partner of L – P : Archaeology. Since its formation in 1999, he has worked on excavations in London and further afield. Guy has a BA in Archaeology from The Institute of Archaeology (UCL) and is a Member of the Chartered Institute of Archaeologists (MCIFA). He heads up archaeological projects both on and off site. As an on-site project manager, he enjoys the opportunity to spend time on site during the excavation phase before continuing the post-excavation work from the London office in Brick Lane.



EARLY CAREER OSTEOLOGY: developing new specialist skills for the sector

Michael Henderson, Senior Human Osteologist, MOLA Headland Infrastructure

Infrastructure projects and particularly large urban burial ground excavations present many challenges. It is vital that specialists have an appreciation of the nature of the excavation and its objectives from the start. In osteology, it is crucial to know the characteristics of the skeletons on site – the burial context, preservation and condition in situ – in order to understand the buried population. Burial grounds from the 18th and 19th centuries were intensively used and often include high-density burials, close plots containing multiple burials, and deeply interred burials within stacked graves. On-site osteologists are able to offer their specialist skills to support the archaeological team, advise on site-specific methods, give toolbox talks and share their knowledge of bone identification.

MOLA Headland Infrastructure
volunteer gravestone
recording & Credit:
MOLA Headland
Infrastructure
© HS2 Ltd



Excavations for HS2 at the site of the 18th–19th century St James’s burial ground in Euston, carried out by MOLA Headland archaeologists on behalf of Costain Skanska JV, were the largest of their kind from this period ever undertaken in Britain, necessitating a large team of osteologists working on site. Eleven Early Career Osteologists (ECOs) were recruited to work closely alongside a team of experienced archaeologists and human osteologists. All successful candidates had a degree in archaeology and a post-graduate qualification in osteology or a related discipline, but many had not yet had the chance to apply their knowledge of osteology in a professional setting. Bringing with them enthusiasm and willingness to learn, the role offered them a chance to gain experience in commercial archaeology and to continue their career development beyond university. The creation of the role as a route into specialist work on

MOLA Headland
volunteer gravestone
recording & Credit:
MOLA Headland
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© HS2 Ltd





Bob worked in MOLA Headland in an osteological laboratory for two years prior to joining as ECO. Credit: MOLA Headland Infrastructure @ MOLA Ltd

I wanted to work on this project as soon as I heard it was going ahead and was even more determined to when I heard about the ECO role. The main draw of the role was the opportunity to get professional commercial experience in osteology, especially on a project of this size. I am frequently encountering things that I have read about but never expected to see for myself. The on-site purpose-built osteology facility makes it possible to get a quick and direct flow of information between site and office, something that is not always possible on other projects I have worked on.

development-led projects also contributed to addressing potential future skills shortages within the sector, a key objective of the HS2 Historic Environment Research and Delivery Strategy (HERDS). The ECOs were involved at all stages from excavation and identification, through to careful washing and packaging, and recording for later analysis. The treatment of the human remains with due dignity, respect and care was at the centre of these approaches, supervised throughout by a team of senior osteologists in a bespoke lab which was purpose-designed by Costain Skanska JV.

On a project of this scale, lasting almost a year, and involving a huge team of archaeologists, it can sometimes be difficult for individuals on site to get an overview of the patterns and trends that characterise the excavation. At St James's, the large ECO team meant that osteologists were able to provide instant feedback to archaeologists about the osteological details of the skeletons excavated. Largely good preservation of the excavated remains allowed a wide range of pathologies to be identified, from more relatively commonly seen conditions in skeletal populations, such as dental disease, to rarer and unique examples including cases of bone cancer. Weekly talks to visitors and the field team provided the ECOs with experience in presenting findings and an opportunity to share interesting examples with the wider team, keeping them up to date with emerging patterns and trends related to the health and disease of the buried population.

Ultimately, for those just starting out in their careers in osteology, the site at St James's provided excellent experience of working on a large, commercial project. It demonstrated the importance of close collaboration with the client and other contractor teams, and enabled the development of skills to work rapidly and accurately, often under pressure and as part of a larger team (the mainstays of commercial archaeology). It was an opportunity for many of the osteologists, for whom



Bob has worked in commercial osteology for over 10 years, specialising in multi-period assemblages and is particularly interested in adult engagement through outreach. Credit: MOLA Headland Infrastructure @ MOLA Ltd

I'm loving getting a chance to share all the interesting things we can identify on the skeletons with the archaeologists as they're excavating. I think the close relationship between the archaeologists and the osteologists is a fantastic feature of this project and a really great way to ensure that we learn as much as possible whilst working on this unique site. I'm looking forward to the conclusions we'll be able to draw about life in the 18th and 19th centuries in London from such a large cross-section of the population.

excavating in central London was a novel experience, to learn how to overcome challenges often faced on site, while conveying their enthusiasm, expertise and energy to the team as a whole.

Michael Henderson

Michael is a Senior Human Osteologist with MOLA Headland Infrastructure and has undertaken osteological analysis of a variety of multi-period assemblages from around the UK, including Roman, Saxon, medieval and several large post-medieval burial grounds in London. Recently he was part of the team involved with the excavation at St James's Burial Ground, Euston.



Experience and enthusiasm... linear archaeological projects and lateral thinking

Dr Emma Tetlow MCIFA (6139), Senior Archaeological Consultant, Costain



Searching for mass graves in Bosnia using aerial photography, botany and geophysics.
Credit: Costain, © HS2 Ltd

The successful management of an archaeological project requires a number of skills most people would not associate with archaeology. I quizzed a number of colleagues on exactly what words spring to mind when archaeology is mentioned... answers included 'Fossils', 'Romans', 'Discovery' and 'Ancient bones' and all but the first are true; nonetheless, no-one mentioned the practical skills or preparation behind the activity that leads to the latter three.

Working in professional and research archaeology for 20 years, I've fulfilled a number of roles including the completion of three post-doctoral positions and work on five large-scale infrastructure projects, thereby bridging the worlds of academia and commercial archaeology in the UK and abroad. All of this has furnished me with a diverse skillset and is a world away from my first role as a delicatessen supervisor at Sainsbury's. However, all of these roles, even

my time at Sainsbury's, have contributed to the management skills I apply to the day-to-day running of archaeological works on major infrastructure projects.

Under pressure...

To this day, one of the most challenging jobs I have ever had was working for Sainsbury's and it is this role that laid the foundations for the way I tackle many of the challenges I face on a daily basis. The job was highly pressurised; not only did it involve the obvious – serving customers (client facing) – but also an eye for detail, ensuring the product looked attractive (delighting the client), that cleanliness was maintained to a high standard (COVID-19!), rigorous health and safety protocols were adhered to (risk assessments and method statements), stock and waste managed (quality control) and value considered (commercial).

The specialist

The basis of my technical knowledge is firmly rooted in my first degree and its emphasis on

To this day, one of the most challenging jobs I have ever had was working for Sainsbury's and it is this role that laid the foundations for the way I tackle many of the challenges I face on a daily basis.

geomorphology and applied ecology. I went on to develop this further at Master's level, studying palaeoecology and geoarchaeology – further enhanced by my PhD on palaeoentomology. It was also at this point I began to learn the basics of field archaeology. The diverse post-doctoral work refined my skills further and provided me with the ability to critically analyse the data sets I was presented with rather than accepting data at face value.

Stafford Area Improvements Programme (SAIP)

This project was my lesson in never saying 'no' and my second role on a large-scale infrastructure project. Staffordshire Alliance saw the construction of 6km of new railway between Yarnfield and Norton Bridge in Staffordshire. The challenges were mental and physical. I worked with a hugely talented multi-disciplinary construction and heritage team. In doing so I gained an appreciation of a dynamic evaluation/mitigation strategy and how best to manage the historic environment across such a large tract of land. If Sainsbury's gave me the basis for management, this work provided the knowledge to think laterally and challenge preconceived ideas. It also taught me how important it is that the archaeological works are seen as part of the construction process, not ancillary to it.

Walking the (railway) line

SAIP probably had the greatest impact on the way I manage my works and sites today as it encouraged me to be more tenacious and not afraid to take responsibility and make

difficult decisions. Developing my specialist knowledge and excavating in challenging environments provided me with the skills to design bespoke and highly specialised strategies.

From activities as 'simple' as micro-siting a river channel to preserve the archaeology in situ (this required the presentation of a convincing case for not undertaking the archaeological works to the curator, but also convincing the construction team, hydrologists and other specialists that we could make this work) to devising an excavation after complex waterlogged deposits were encountered on the commissioning critical pathway of the same project. Again, my response was a distillation of confidence in my own specialist experience, an eye for detail and planning, and an earnest desire to do the best job I could, to the highest standards possible.

Working with Costain Skanska JV also introduced me to the concept of LEAN. I had not realised how LEAN my work was at Sainsbury's until I came into contact with this practice last year. This technique of streamlining works and eliminating waste is now applied on our rural sites for HS2 enabling works in Area South to expedite the programme and ensure seamless working. Similar to ensuring the deli was well stocked and supplied, this simply boils down to ensuring that the archaeologists have everything they require to do the job efficiently, the process has been considered and the correctly skilled individuals are deployed to carry out the correct tasks.

The ability to work as part of a changing team is another key skill, along with promoting diversity and a culture of trust and reliance within that team. Having worked in the UK, Europe and Middle East with teams from nations as diverse as Eritrea, Brazil, Barbados, New Zealand, Fiji and Nepal gave me the perfect grounding in this, where skills such as compromise, tolerance and adaptability come to the fore.

Another much under-rated skill possessed by many archaeologists is resilience. The ability



*Excavating peat deposits in Staffordshire.
Credit: Costain; © HS2 Ltd*

to move from work site to work site, live away from home, make new friends, support new colleagues and learn new approaches should not be forgotten or overlooked. All of these contribute to the ability to support the wider team's well-being and mental health when projects become complex and deadlines are tight.

My personal experience of this was during an emotionally and mentally challenging project in Bosnia. Maintaining morale, openness and the ability to communicate problems within the team and providing a forum to do so are also key to the successful and timely delivery of a site.

There are so many more experiences I could write about that have contributed to how I successfully manage complex projects within wider portfolios of work. And when I left Sainsbury's, I could not have envisaged the job I do today. My plan is to keep learning from my experiences – positive and negative – and keep on improving all of the skills that contribute to archaeology... and writing this has made me reflect that most of them are not linked to wielding a shovel or a trowel!



*Clyde Wind Farm 2010. Credit: Kate Bain.
Credit: Costain; © HS2 Ltd*



*Archaeological Clerk of Works, Clyde
Wind Farm. Credit: Costain; © HS2 Ltd*



*Auger survey, Qatar. Credit: Costain;
© HS2 Ltd*

Dr Emma Tetlow

Emma is Senior Archaeological Consultant for Costain. She has previously held both environmental- and geo-archaeological roles and has worked on large-scale infrastructure projects for the last ten years.



Community engagement and diverse skillsets

Mary Ruddy
MCIFA (9220),
WSP

HS2 in the Midlands – Warwickshire, Staffordshire, Birmingham and Solihull

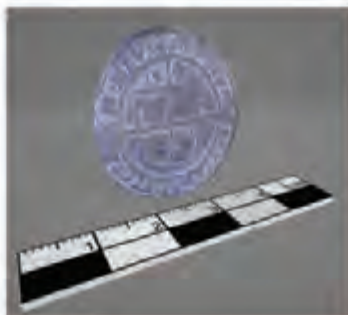
Across the Midlands, HS2 is drawing on broad range of skills and experience as community engagement becomes ever more integral to archaeological work. The variety of expertise archaeology can offer is being put to good use at key archaeological sites in Birmingham, Warwickshire and Staffordshire. Archaeological consultants, engineers, professionals from the museums sector, historians, visualisation specialists and re-enactors are supporting archaeologists in bringing stories of the heritage HS2 is unearthing to families, schools, universities, societies and laypeople.

Opportunities online

The dynamic situation due to COVID-19 this year pushed for a rapid re-focus of engagement towards online activities such as webinars, digital exhibitions and workshops. Without doubt, the situation has presented challenges, but there are clear opportunities for the heritage sector too. Central to adapting to change is use of a range of expertise. One of the positives for engagement is that greater weight is being placed directly on innovative methods of visualising the past. Developing web content requires a raft of techniques and can include integrated laser scanning, structure-from-motion photogrammetry, 360-degree imagery, 3D modelling of artefacts, photography, video, Unmanned Aerial Vehicle (drone) footage and illustration.

By using virtual object handling and making visual reconstructions of archaeology accessible, the information

3D virtual reconstruction of Queen Elizabeth's coin, c.1577, from the roof of Castle Moat, Alton, Warwickshire by archaeological firm Domes Digital Media Technology, 2019/20



has wide appeal. A good example is the emerging imagery of the Curzon Street roundhouse; Tom Sparrow's article demonstrates the level of illustration now possible. Robert Stephenson's structure was at the Birmingham terminus of the London and Birmingham Railway (L&BR). It was lost under waves of building expansions, modifications and demolition, but thanks to excavation, its story as the world's first railway turntable and engine shed can re-emerge. The short film and drone footage on HS2's YouTube channel give a good background to the history and archaeology.

Online engagement has the potential to reach greater numbers with webinar attendance averaging one hundred, far greater than a typical public lecture, and at a fraction of the cost of traditional engagement. Webinars have been well received by stakeholders during archaeological excavations at Coleshill and Cubbington Wood, with Fosse Way, Packington Moor and Park Street to follow. One pleasing consequence of webinars featuring live links to archaeological sites is the enthusiasm of the teams in presenting discoveries direct from the field.

Skills in show-casing heritage

Visualising the past and show-casing heritage helps express its value graphically. This feeds into the project by demonstrating benefit, influencing design and creating a legacy.

Using a mix of media along with virtual and augmented reality are increasingly seen as important elements of community engagement, presenting good news stories and recognising the value of cultural heritage both within organisations and to communities and media in the outside world.

Not to be forgotten are presentation skills and storytelling, vital to communicating discoveries from site and their contribution to local and national heritage. Presentation will be important in the forthcoming conference, with a series of online mini lectures and discussion groups using specialists across archaeological teams from osteology and finds, to geoarchaeology and environmental. Sessions will be multimodal, using video, 3D imagery and photography. Exhibiting this range of expertise is valuable to the sector and to organisations, and has the potential to lead on to use of a diverse range of skills in post excavation, allowing international access to information from this multifaceted project.

HS2 continues to work closely with the Principal Contractor LM (a Laing O'Rourke & J Murphy & Sons Ltd joint venture), the enabling works design consultant WSP for heritage works (as part of the DJV) and archaeological companies such as Wessex Archaeology, Visualising Heritage (University of Bradford), Headland and MOLA Headland Infrastructure (MHI), Connect Archaeology and COPA to encourage participation and broadcast the historic dimension of HS2 in the Midlands.



Illustration of Colishill in the Bronze Age, reconstruction based on evidence of burnt remains. Credit: Wessex Archaeology © H&S Ltd.

Visualising the past and show-casing heritage helps express its value graphically.



Virtual reality headset being used at community drop-in session at Colishill. Credit: Wessex Archaeology © H&S Ltd.

Links

- <https://www.gotostage.com/channel/wessexwebinars>
- <https://www.wessexarch.co.uk/archaeology-online>
- <https://www.youtube.com/watch?v=EYS7PPIY2ig&t=36s>
- <https://www.youtube.com/watch?v=WkmshVABLGk>
- <http://www.lm-jv.com/>
- <https://www.wsp.com/>
- <https://www.wessexarch.co.uk/>
- <http://visualisingheritage.org/>
- <https://headlandarchaeology.com/>
- <https://molaheadland.com/>
- <http://www.connectarchaeology.com/>
- <http://www.coparchaeology.co.uk/>

Mary Ruddy

Mary is the WSP Cultural Heritage and Archaeology lead for Community Engagement. She has 20 years' experience in archaeology, heritage management, consultancy and research and has worked across the UK, in Spain, France, Albania and India.



Recognising the social value of heritage and archaeology, Mary has worked in schools, with the Coastal and Intertidal Zone Archaeological Network (CITIZAN) in Essex and on training excavations with Museum of London Archaeology in Iturissa, Spain.

Her underpinning interests are in Quaternary Science, geoarchaeology, Holocene environmental change, river evolution and reconstructing past landscapes. Publications include journal articles, contributions to monographs, technical guidance and articles in popular magazines.

VISUALISING HERITAGE

digital innovations bring new insights to Birmingham's earliest railway infrastructure

Tom Sparrow ACIfA (6175), Senior Scientist, School of Archaeological & Forensic Sciences, University of Bradford

The work that Visualising Heritage have been doing at Birmingham for HS2 has been to record and capture the archaeology in a way that helps to show the public what has been carried out behind the hoardings, using innovative and engaging methods.

We have used a varied set of advanced digital capture methods to document the

exposed archaeology (including Stephenson's roundhouse), and its setting within the past, present and future cityscape.

As a group we have developed our expertise in imaging, process, analysis and presentation of complex 3D data over the past ten years since our landmark digital bioarchaeology project, *Digitised diseases*. Since then our attention has been drawn to the need to be able to capture and record at varying levels of scale, from small objects

using micro CT and structured light scanning to large landscapes using drones and LIDAR data in a way that helps to bring realism and context to the data and ultimately the objects and landscapes we wish to understand and to communicate. By selecting the right methods of capture, we can give a different perspective to the data and see things that may not be visible at the time, or allow people to explore sites that they are not able to in person, for whatever reason (disability, safety, access, distance).



Our multi-scalar approach means that we are able to draw together information from varied sources and link them together with the data we capture on site. This allows us to produce a set of outputs that can be used in a variety of ways, from the traditional static reconstructions to more immersive animations, interactive 3D models and 'XR' mixed-reality experiences (VR and AR).

For the exposed archaeology at Curzon Street, and previously at Park Street, we have been using structure-from-motion (SfM) photogrammetry, combined with laser scanning to accurately record the exposed archaeology. This will later allow a viewer to explore the site as though they were standing there. Alongside the recording of the archaeology we have used 360-degree video to record some of the archaeological work while it was underway, with the use of cameras mounted in or on plant

machinery, specific tools and sometimes the archaeologists themselves.

In my role as Senior Scientist, I have been responsible for much of the development and evolution of our methods of capture, processing and display of data. For me, technology and archaeology have always gone hand in hand, right from my earliest experiences. While still at school, I worked with the County Archaeologist for Wiltshire, using CAD and GIS for the first time and learning how to rectify aerial photographs. Having grown up not far from Avebury, I wanted to learn and find out more. For me geophysics was a direct specialism that enabled this – a key reason why I chose Bradford for my studies.

My journey as an archaeologist has allowed me to work on some brilliant projects with some fantastic people and visit some

amazing sites and places; from each of these I have learned new skills. My way of working is very hands-on, often approaching a problem from a different perspective to others, something that I partly put down to my dyslexia. Archaeology is such an interdisciplinary subject and as archaeologists we can draw upon wide-ranging and transferable skills. Although I consider myself a field archaeologist and an archaeological geophysicist, I regularly call upon my skills as a surveyor, computer programmer, web designer, electronics engineer, 3D artist, photographer, illustrator, CAD and GIS technician, drone pilot and recently as videographer and field recordist.

As archaeologists we have always been good at adapting technologies and new methods of recording or reusing data, from the earliest uses for aerial photography, to using oil and gas exploration data to look at



Orthographic image from a work in progress 3D model of Stephenson's roundhouse. Credit: Visualising Heritage, University of Bradford; © HS2 Ltd

past landscapes in the North Sea. At Bradford we have been working at ways to capture more and record more quickly by adopting new technologies and equipment. Fifteen years ago, when I was working in commercial archaeology doing rectified photography, this would involve placing markers and recording at least four points for every image, then manually stitching them together in CAD, or when doing 360 photography, manually moving the camera around its nodal point and capturing lots of images. Although we sometimes still do this, we can now capture similar or far greater levels of information at a touch of a button, with the use of 3D laser scanners with

integrated cameras and off-the-shelf 360 cameras. With ever-increasing levels for data capture we are always looking at new and better ways to process, combine and display information in easier, more informative and more immersive ways.

At Curzon Street we are using similar techniques to those we have used in working on reconstructions of damaged or destroyed monuments in Palmyra, Syria and temples in Kathmandu, as we plan on using historic and crowd-sourced plans and images to help produce 3D reconstructions. We were the first university in the UK to purchase a GeoSLAM Zeb Horizon handheld scanner,

which we are using to capture the wider cityscape in Birmingham in order to link and provide context to the railway heritage that is being uncovered. We are working to combine this already-fast mobile capture system with RTK GPS and 360 video, to allow us to capture and quickly produce our own base maps and VR environments.

For me, although I work on lots of varied projects using many different techniques, my work is fundamentally all about data that shapes the world around us, both past and present. These layers, or commonalities, help us to relate a point in time, a location, etc, as we convert, fuse, and combine this data. Sometimes we may be trying to do things that have not been done before, or not viewed in the same way before – a key reason I taught myself computer programming, as I needed a way to do things that were not commonly done or possible before. The research and methods we use are being fed back into our teaching at Bradford to allow our graduates to be aware of and use these new methods of capture and recording.

Having worked in industrial commercial archaeology for a number of years before returning to Bradford, the opportunity to work on Stephenson's roundhouse is fantastic as it's such an iconic structure, from such a key time in the history and development of the railway infrastructure, that it can be seen as a 'henge' of its day.

360-degree video camera setup to record excavation. Credit: Visualising Heritage, University of Bradford; © HS2 Ltd



Initial reconstructions based on Stephenson's plans and the later redesigned roof. Credit: Visualising Heritage, University of Bradford; © HS2 Ltd



Tom Sparrow

Tom is a Senior Scientist based in the School of Archaeological & Forensic Sciences at the University of Bradford. He works at part of the Visualising Heritage team and has been at university for over ten years. Initially on an IFA bursary, Tom has since worked on a broad range of projects from surveying latrines in Tanzania for a Bill & Melinda Gates Foundation project to using UAVs to capture the fossil-bearing landscapes of Turkana Basin, Kenya with Louise Leakey, to mapping the temples and squares of Kathmandu damaged during the 2015 earthquake.

Tom worked at various units including ARCUS and Oxford Archaeology for several years prior to returning to the University of Bradford, having studied there as an undergraduate and postgraduate, getting a BSc in Archaeological Science (2001) and a MSc in Archaeological Prospection (2004).



'You're going to be famous!'

Archaeology and the intrusion of the media



A few weeks ago, lockdown took a new turn for me. I had been asked to help HS2 with a story that could be put out in the press to tie in with the launch of the Festival of Archaeology. Working with the HS2 HERDS team, we decided that the site known as Wellwick Farm was the best candidate. Over the course of a week or so I put together a description of the site, its (outstanding!) archaeology, and gathered a selection of the showiest photos. This I dispatched to HS2 confirming I was happy for the text I had written to be quoted but otherwise without much of a second thought.

Then the day of the press release came around. I got a call from the HS2 communications team to say that it had generated an enormous amount of interest and would I be happy to talk to any journalists who requested it. Not long after I found myself giving a Zoom interview to ITV News Central to be shown in their weekend bulletins. The articles were made public the following day and I woke up to find that I had been quoted in everything from *The Guardian* and *The Bucks Herald*, to online news platforms

in Edinburgh, Belfast, Miami and Berlin. The article was even number three on BBC News most read – beaten only by President Trump and Will Smith's marital dramas. Career peak reached?

Over the following week I spoke to several magazines, from those covering the construction and railway industries to both *British Archaeology* and *Current Archaeology*. I was asked questions about the detail of the press release: Could I confirm what date the skeleton in the ditch was? Do we know how he died? Is it unusual to find someone 'buried' that way? Do I really think he was murdered? The conversations with the archaeology magazines were, as expected, more specialised and less focused on the sensationalist burial. I really enjoyed having these conversations as it was great to hear the fascination and enthusiasm of archaeological and non-archaeological journalists.

Despite the enthusiasm, the experience was initially immensely stressful, but in a very exciting way. I have never been involved with the press to this extent before and throughout my career, and had never been provided any kind of training for answering these sorts of questions. That said, the HS2 communications team did a fantastic job of briefing me for each conversation and making sure the journalists were going to stick to the archaeology, leaving the politics of the scheme out of it. It is the sort of situation where common sense goes a long way. Keep the client at the forefront, consider what you say before saying it, and stick to the facts!

Dr Rachel Wood
MCIfA (9442),
Archaeological
Consultant,
AECOM

It was great to hear the fascination and enthusiasm of archaeological and non-archaeological journalists.



The much-featured Iron Age skeleton found at the bottom of a ditch in no-discernible or deliberate grave cut. Credit: INFRA-JV, © HS2 Ltd

A view of some of the archaeology at Wellwick. You can see a large enclosure surrounding a horse-shoe funerary monument. This was just part of the very complex landscape uncovered at the site. Credit: INFRA-JV



The surprise feature of the site – a large circular monument made up of post-holes that would have held timber posts. The monument is over 65m in diameter. This is one of the earliest features on the site and later versions of a trackway can be seen to be respecting the centre. Credit: INFRA-JV; © HS2 Ltd

There is nothing quite like finding yourself in front of the camera to make your mind go completely and utterly blank. All professional words and information vanish!



Throughout my time with Fusion, I have worked with a documentary company, Lion TV, who are producing a piece on the construction of HS2. This has been a completely different experience to the news outlets. Essentially every time we find something interesting or are working on a site that we know has a great story, a film crew with a camera and microphone boom attend site. They ask us and the site teams to have conversations about what we are doing and our current interpretations of the features. Often, we've just had this conversation off camera and are asked to repeat what we've just said. There is nothing quite like finding yourself in front of the camera to make your mind go completely and utterly blank. All professional words and information vanish! After a few stumbled sentences though you soon remember that 'I am an archaeologist and I know what I'm talking about!' and the camera isn't so intimidating. It's something about knowing that what you are saying is going to be broadcast around the country for the whole archaeological profession and general public to watch and judge. I know, I've done it myself for other similar documentaries. You sit there and think: 'Well, I know they're saying it's a villa, but it really just looks like they've got a ditch and one piece of Samian...'. quickly followed by, 'I'm sure it makes much more sense on site'.

What you don't get to see from being an armchair observer is the amount of work that has gone into the site before the film crew turn up. Nor that the bit that makes the final cut was actually the twelfth time the archaeologist had said that to camera, and the seventeenth time they had pointed out that piece of Samian in the ground. Turns out making TV comes with an awful lot of repetition. Whilst initially annoying for those making their bid for stardom, the experience I have had with Lion TV has been extremely positive. This is not their first archaeological gig and their team members are really knowledgeable without ever having worked as archaeologists – they are like sponges for information! Just like the news journalists, they are also extremely enthusiastic and a captive audience for the archaeologists who love to explain what they are doing.

Of course, having extra people on site with TV cameras comes with additional issues these days. The global pandemic caused by COVID-19 has meant that we have had to reassess and change every approach we have to on-site health and safety. Measures such as additional welfare cabins, staggered break times, extensive cleaning and 2m social distancing have meant that we have been able to keep going throughout. We have worked closely with all our archaeological subcontractors to ensure the highest levels of cleanliness and protection for all staff, both on-site and back in the labs. It has certainly been a challenge and we continue to adapt, keeping in line with all government advice.

Whilst the involvement of the media and film crews can initially be an intrusion, I view it as an exciting and engaging side of the job.

Whilst the involvement of the media and film crews can initially be an intrusion, I view it as an exciting and engaging side of the job. I would never have predicted that I would need such diverse skills as an archaeological consultant. I certainly never thought I'd be giving interviews to the national news! While it is not something I do every day, it has come to be something I enjoy. I see it as a

crucial part of the engagement we do with the local public; and opportunities such as TV documentaries provide the chance to reach a much wider audience. Above all else, archaeologists love nothing more than enthusiastically sharing our findings with anyone who will listen!

Lights, camera... dig!



Lion TV filming the excavation of a lead coffin burial at Wellwick Farm. Credit: Fusion JV; © HS2 Ltd



Dr Rachel Wood

Rachel is an Archaeological Consultant for AECOM. For the past two years she has been seconded to Fusion JV as a Historic Environment (HERDS) Manager. Fusion is an enabling works contractor working for HS2 Phase 1 Central, London to Birmingham. In her role as HERDS Manager, Rachel is responsible for the archaeological investigation of a section of the central route of the scheme. The Fusion HERDS team works with archaeological subcontractors to deliver the wide range of investigations necessary in the construction of HS2. They liaise closely with stakeholders such as County Archaeologists and Historic England to ensure the highest standards of archaeological work. Before joining AECOM, Rachel worked as a field archaeologist after gaining her PhD from the University of York in Roman landscape archaeology, investigating the Crambeck pottery industry in Yorkshire.



Filming underway whilst a feature is recorded using photogrammetry. Credit: Fusion JV; © HS2 Ltd

New times, new ways of working life in the time of COVID-19 (with apologies to Gabriel García Márquez)

As part of the large-scale advance archaeological work during the enabling works for HS2 mitigation works between London and Birmingham, an area of 7ha has been excavated at Wellwick Farm, near Wendover, Buckinghamshire. Implemented on the ground by Infra JV, the works have been designed and managed by Dr Rachel Wood MCIFA of the Historic Environment Research and Delivery Strategy (HERDS) team at Fusion JV and led on the ground by Louis Stafford MCIFA of Infra.

Running from December 2019 to July 2020, the excavation has explored an unexpectedly complex and chronologically deep landscape across the area, including a previously unsuspected large earlier prehistoric timber circle, a possible Iron Age shrine, Iron Age and Roman settlement, early medieval settlement and a medieval smithy.

More than half the project has been carried out since the implementation of COVID-19 regulation and guidance. As a result of detailed, robust and imaginative health and safety solutions Infra was able to protect the team and continue site works throughout the pandemic without a hiatus.

New ways of working were introduced for the site team to allow social distancing. We were very early adopters of the 'Worker Household' concept, allowing team members living in the same household to travel and work together with appropriate social distancing, and also to ensure any need for self-isolation could be contained. All staff were issued with their own tools with no sharing and we instituted a system of dedicated recording and archive handlers to avoid transmission.

For those site staff who did not drive, we provided a 52-seater coach to transport them to site, socially distanced. Additional welfare cabins, staggered breaks and thorough cleaning regimes all contributed too. Back at our post-excavation facility in Cardiff, all finds and samples are quarantined for 72 hours on arrival from site. Processing of these has continued with social distancing measures. The success of the measures is shown by the fact that we have had no cases of the virus in the site or office teams and our procedures have been commended and recognised as an exemplar by the HS2 safety team.

Within the COVID-19 period, a square enclosure of Roman date with what was thought to be a well at its centre was uncovered on the eastern edge of the site. Further investigation showed that the upper part of this 'well' feature contained a lead coffin, presumed to be of Roman date, with its lid in situ. The relative rarity of this kind of burial and the potential for well-preserved remains within the coffin required detailed design of the archaeological methodology and safe systems of work.



*The skeleton under excavation.
Credit: INFRA-JV, © HS2 Ltd*

We engaged with our osteoarchaeological specialist for the project, Dr Malin Holst of York Osteoarchaeology, who could provide the benefit of her previous experience with lead coffin excavation. In normal circumstances, she would have attended site and supervised the excavation, but this was impossible at the time of lockdown, with travel restrictions and social distancing for the site team in place, and we had to adapt our ways of working.

The solution was for the site team, led by our on-site osteoarchaeologist Rosé Calis, to excavate the burial using a livestream feed via Microsoft Teams with Malin in York

supervising. An endoscope was used to explore inside the unopened coffin. The Teams call was recorded and will form part of the archive for the project.

Unfortunately, the endoscope showed that all that survived within the coffin were the human skeletal remains, as the seal had not been intact. The lid was then removed, and the skeleton excavated and sampled, again under Malin's direction. A detailed lift methodology was devised and implemented and the carcass of the coffin lifted, boxed and transported to one of our post-excavation facilities in Lincoln, the box looking like the final scenes of *Raiders of the Lost Ark*.

Once the coffin was removed, it was clear that it had been placed within the top of a deep well or shaft. At the time of writing this is still under investigation but the shaft has been excavated to a depth of 3m with no sign as yet of the bottom of the feature. The chronological sequencing of the 'well', the enclosure and the burial will have to be teased out in post-excavation.



Rosé Calis
livestreaming
with Dr Malin
Holst. Credit:
INFRA-JV;
© HS2 Ltd



Mark Collard and David Bonner

Mark Collard is Project Director and David Bonner is Operations Director for the Infra Joint Venture between Rubicon Heritage and Network Archaeology, working for the enabling works contractor Fusion JV to deliver archaeological fieldwork for the scheme on behalf of HS2. Mark is a Director of Red Group which includes Rubicon Heritage and Red River Archaeology and David is a Director of Network Archaeology. Both companies have long track records in the archaeology of infrastructure projects.

The lead coffin boxed and ready for transport. Credit: INFRA-JV; © HS2 Ltd



BUILT HERITAGE ON HS2 PHASE 1 NORTH:

quantifying, managing, monitoring, mitigating, innovating

Tom Wilson, working on behalf of WSP (DJV) for LMJV

WSP are the lead heritage consultants for HS2 Phase One Area North, working with LMJV on behalf of HS2. As part of our role we review, design and enact the programme of works for built heritage assets potentially impacted by HS2

For a built heritage consultant, a qualification in building conservation offers a different philosophical background to archaeological theory and provides a deeper understanding of context, significance and setting, as well as practical knowledge of buildings and materials. Experience is also key for a project on the scale of HS2. Having a diverse skillset, developed through multiple roles as curatorial and contract archaeologists and built heritage specialists, provides a better understanding of the lifecycle of large projects. Successful delivery also requires skills in project planning, engagement with stakeholders and other specialists, and understanding of the obligations that different parties hold.

Baseline – what kind of buildings are we dealing with?

Phase One Area North crosses Warwickshire, Birmingham and Staffordshire. The Environmental Statement (ES) identified 628 built heritage assets, of which 28 would be physically harmed and 212 would experience harmful changes to their settings. These assets range in size from single structures, for example a listed 18th-century plunge bath, to conservation areas incorporating parts of villages, or suburbs like the Jewellery Quarter in Birmingham.

Area North is largely rural, with built heritage comprising post-medieval and modern farmhouses, agricultural buildings and gentry houses, although a few much-altered possible late medieval houses and a scheduled 15th-century bridge at Stoneleigh Abbey are also present. The landscape becomes urban and industrial as the route travels into Birmingham, with railways and canals well represented. The most famous site may be Old Curzon Street Station's iconic Principal Building, but other buildings and manufactories that served as important parts of the canal and railway network are distributed along the Birmingham Spur, including the former Carriage and Wagon Company works at Washwood Heath.

Quantifying and managing the work

The ES identified baseline conditions and outlined how HS2 would mitigate harm in general terms, supported by the research framework. WSP reviewed the baseline conditions against HS2 design (including an audit of design alterations since the HS2 Phase One Act passed) and considered where mitigation measures were warranted and would further HS2's research aims. This involved an across-the-board review of the original land-take, reassessing all of the buildings and structures that



Stone 2 Asset
Location: Stone
Moor Farm
Shropshire, 18th
Century
Proposed for
excavation and
reconstruction
Owner: HS2
© HS2 Ltd



Scheduled and Listed 15th Century Stone Bridge, Stoneleigh Abbey
Work is currently underway for crossing (Credit: HS2 Ltd)



Grade I listed London and Birmingham Railway terminus Principal Building, Old Curzon St. IR38 (monitored for movement and cracking; influencing the design of the new station). Credit: Stonebow Heritage. © HS2 Ltd

The Environmental Statement (ES) identified 628 built heritage assets, of which 28 would be physically harmed and 212 would experience harmful changes to their settings.



would be demolished or altered, or that might receive noise abatement mitigation (such as secondary glazing).

The review identified seven additional heritage assets. One example is a row of 'estate cottage' style 1930s houses built for municipal workers at a sewage purification works near Water Orton, which contribute to a research aim to investigate the role of interwar social housing. Another example is identification of original buildings associated with the extensive Carriage and Wagon Company works at Washwood Heath, a site associated with the early development of the railways and production of First World War munitions. Little research has been undertaken for the carriage works, so recording of the original buildings was planned, managed and completed, with building material and fittings considered for architectural salvage prior to demolition.

Working together, the government and HS2 to design

One of the critical responsibilities on such a large project is to identify key professionals and stakeholders and maintain regular communication to ensure that all are involved in our emerging plans for mitigation. With so many individuals involved, it was also important to develop a system for recording and tracking those interactions.

HS2's consents process differs from the normal planning process. Demolitions and alterations to non-designated built heritage are already consented by Act of Parliament although engagement and consultation with stakeholders is required to record and consider their views on approaches to mitigation. For designated built heritage Schedule 18 of the HS2 Act names specific assets that are

- Birmingham
- Coventry
- Derby
- Epsom
- Exeter
- Glasgow
- London
- Manchester
- Milton Keynes
- Nottingham
- Oxford
- Reading
- Southampton
- Stratford
- Telford
- Wakefield
- Wolverhampton

exempt from Listed Building Consent. Instead, Heritage Agreements were made with local authorities, requiring work to be completed according to method statements agreed by Local Authorities.

Collaboration with engineers, designers and specialists from a range of disciplines is vital. This included being part of the design team that developed the consents applications for the new HS2 terminus at Curzon Street. This complex site is the location of Birmingham's first two railway stations (including recently discovered remains of the world's first engine roundhouse) and includes the Grade I listed Curzon Street Station Principal Building. Having built heritage professionals included as a core part of the design team made it possible to explain and discuss how the new Curzon Street Station could celebrate in the public realm the earlier stations, and the people who lived, worked and were buried in the area around it.

Hazards, not just harm

A considerable amount of our work has been devoted not to mitigating harm, but to managing potential hazards to designated assets that could cause physical harm.

including the effects of vibration, such as crack widening, settlement or other damage during construction or operation of HS2.

Understanding conservation principles, knowledge of historic fabrics and the desired outcomes of monitoring are key to successful monitoring strategy design. WSP's conservation engineers produced monitoring specifications, including ways to fix instruments to designated assets that would cause minimal and reversible damage to the least significant fabric, prevent water ingress, avoid permanent marks and avoid visual intrusion.

Setting as [unclear]

HS2 has taken an innovative stance by identifying setting-related harm as at least in part a loss of evidential value that should therefore be mitigated through research, and have produced a *Technical Standard for Setting Recording* that follows a similar model to Historic England's *Understanding Historic Buildings: A Guide to Good Recording Practice*. WSP have expanded on HS2's approach to setting research, to record the changing landscapes of fields, farms, industry and transport that HS2 crosses, and produce an understanding of how the settings of the buildings within them have developed.

Understanding Setting and Area Context: Curzon Street Station Principal Building (Grade I listed building) showing the original Great Hall (1854) and the 1920s extension.



Tom Wilson

Tom is a consultant for Stonebow Heritage. He has worked on EIA and delivery of HS2 in various roles, prior to which he was Network Rail's heritage advisor for Crossrail. Tom started as a digger in the 1990s, before moving into project management and then consultancy, increasingly involving historic buildings. This brought new challenges, not least learning to apply conservation principles to design work, and a lot of work on settings. Linear infrastructure has been central to his career (roads, pipelines, renewables and railways), but he has been lucky enough to also be asked to undertake some more unusual work, including some freelancing for Historic England, some lecturing, and a couple of projects overseas. As well as being built heritage technical lead for HS2 Area North, Tom is heritage advisor to the Environment Agency, and still carries out a few smaller assessments and historic building surveys.

Curzon Street Station Principal Building (Grade I listed building) showing the original Great Hall (1854) and the 1920s extension.

OPINION

The 'platform approach', and a response

In the last edition of *The Archaeologist* (110) Brendon Wilkins' article *From pipeline to platform: redesigning archaeology's place* provided an insight into how, by reframing the social purpose of archaeology, legacy can be in-built from the outset. In response to this, Mark Samuel has provided the following opinion piece.



Better late than never! Tracery from Merton Priory found in 1959 goes on display in 2002 after analysis. Credit: Museum of London, Hazel Forsythe

Experience in map regression allows a major urban excavation to be correctly sited (just!). Credit: Mark Samuel

Social media platforms are a natural way forward for widening engagement in archaeology, allowing the young to have a direct input into excavating, processing, interpreting and publishing sites, but 'not as we know it'. Archaeology field schools around the country have, however, been running active courses for decades. The Kent Archaeology Field School tapped into this appetite for learning on the job early on. Many other units have had a relatively informal 'field school' element but usually as a pro bono method of public engagement. The Kent Archaeology Society (very much alive) has an annual field school.

Social media enables civic participation in archaeology and heritage projects and every participant gets an archaeological qualification approved by CfA. Furthermore, the reach and sophistication of the use of social media as a method of self-funding is unique.





Office provision for post-excavation analysis has to be built into projects, although an old airfield may do. Credit: Mark Samuel



An updated project design is vital to ensure unexpected finds are properly dealt with. Credit: Mark Samuel

Young people see themselves confronted with an ecological catastrophe and naturally wonder 'How did we get here?' and 'How does my archaeological experience fit into the bigger picture?'

Perhaps a disruptor such as DigVentures was called for? The traditional 'Levels of publication' were not invented by Barry Cunliffe. The truth is more complicated. Yes, Cunliffe chaired at a joint working party of the Council for British Archaeology and the Department of the Environment in 1983, but the complications introduced by developer-funded archaeology were not addressed until 1992. The challenges posed by digital publication were addressed at a workshop as recently as 2017 with Sir Barry as workshop facilitator. It remains a live issue, not some past and outmoded form of restriction.

DigVentures enlists as replacements: 'Publishing hubs, online learning resources, e-commerce crowd-funding payment systems, and a read/write recording system enabling project participants to collaboratively produce archaeological data'. Are these satisfactory? Observe that the language used is that of the market. The excavation report is seen as a consumer product. The phrase 'pipeline workflow' is repeatedly used to describe the traditional process of report writing.

It is inevitable that archaeologists serve an increasingly political and advocacy role. The changed role of archaeology in an increasingly polarised present is an interesting aspect of what DigVentures potentially offers. In my own experience of

excavation in the 1980s, the personal view was scrupulously avoided; now it is as scrupulously demanded. Young people see themselves confronted with an ecological catastrophe and naturally wonder 'How did we get here?' and 'How does my archaeological experience fit into the bigger picture?'

Taryn Nixon has validly called upon 'our very human need to connect to other human stories and understand how we belong'. The *Power of Place* document (2000) has, however, introduced some confused thinking into DigVentures. Is it always desirable that the receiving population acquire a stronger sense of bounded, local identity? Recent events suggest this is not always a desirable outcome. Sometimes emotional responses must be guarded against.

The presence of qualified archaeologists and experts on site is advertised on the DV website, but will *user feeds* determine whether certain types of finds are to be retained? Some finds such as worked timber and architectural fragments are a nightmare to remove, conserve and store and can as a result end up on some units' spoil heaps! Unfamiliar classes of find may only emerge as important long after excavation. What happens when such unexpected and demanding discoveries are made? Can the paying 'participants' cope? What about

conservation and storage costs that can stretch indefinitely into the future? The Prittlevell princely burial was excavated in 2003 (under Taryn's aegis). This required a world-class MOLA team both for excavation and publication (2019). This permanent staff had access to their own museum laboratories staffed by experts.

Ruptions occurred when outside bodies started seeing *Time Team* as a satisfactory competitor to established and highly equipped units working under pressure to excavate very difficult archaeology. DigVentures risks going down this path if its role is not better defined and its limitations better understood.

Mark Samuel PhD FSA MCIFA (2175)

Further reading

CHAT, 2018 *CHAT ACT: Agency, Action and Advocacy*, School of Culture and Society, Aarhus University, Denmark (Moesgaard Museum, Friday 26–Sunday 28 October 2018)

English Heritage and Historic Environment Review Steering Group, 2000 *Power of Place: The Future of the Historic Environment*. London: Power of Place Office

Gadano, P, ed, 2018 *Eco-Visionaries: Art, Architecture, and New Media after the Anthropocene*. Hatje Cantz Verlag, Berlin

Jones, S, MacSween, A, Jeffrey, S, Morris, R and Heyworth, M, 2003 From the Ground Up: The Publication of Archaeological Projects: a user needs survey. A summary, *Internet Archaeology* 14. <https://doi.org/10.1114/ia.14.4>

Oxford School of Archaeology, 2017 *21st-century Challenges for Archaeology Workshop 6: 'Challenges for archaeological publication in a digital age Who are we writing this stuff for, anyway?'* 7 December 2017, <http://www.arch.ox.ac.uk/contact.htm>

Response to Mark Samuel

Thanks for taking the time to read and respond. You're right – despite Cunliffe being principle author on the cited 'levels of publication' paper, it would be unfair to lay the blame for this concept at one person's feet – no matter how big the professorial boots.

The broader point is that framing archaeological knowledge production as a series of six ascending steps was a sensible way to bring order to the Rescue Revolution, but the unintended consequence was that this became an organising principle for the marketisation of over 90 per cent of all subsequent archaeological excavation.

The question in my article was therefore, in this scenario, how much, if at all, do the public benefit from how archaeology is currently organised?

The market logic of these predominantly client-funded investigations is to understand a site's formation processes, reporting results in 'grey literature' (levels 2 and 3). When research occurs, it is usually conducted by a much smaller academic sector and paid for by research grants (level 4). We may enjoy writing and reading these specialist publications, but the wider public benefit of archaeology is assumed to be achieved when results are finally made digestible for a non-specialist public and media (levels 5 and 6).

Fifty-two per cent of people working in the commercial sector in the UK are employed by charities with a social

and educational mission, so it is ironic that the sum of community, public archaeology and educational work undertaken by archaeological organisations in the UK was calculated at just 2.1 per cent of those organisations' annual turnovers. Seemingly bucking the trend, *The Prittlevell princely burial* is undoubtedly a major contribution by a world-class team, but the fact that this gold-plated case study took 17 years to publish rather illustrates my point.

In stepping forward as a 'disruptor' and redesigning archaeology as a digital, peer-to-peer platform, our question was simple: what if archaeology could do more?

Our answer is that it can and should do more, and our role (and its limitations) within that is extremely clear to us.

As a CIFA Registered Organisation, the archaeological work performed by our team is quality assured, in the same way as every other organisation so designated. A more urgent worry about the standards being delivered on site might actually be to examine the 'established and highly equipped units' excavating difficult archaeology and ask what they're doing to help advance the practice of archaeology and future-proof the profession? I hope that this helps allay your concerns, though I fear that if you believe that the rot set in with *Time Team*, we are unlikely to see eye to eye!

Brendon Wilkins MCIFA (4494), Projects Director, DigVentures

DYSLEXIA is my SUPERPOWER

exploring dyslexia in archaeology

Cara Jones ACIfA (6085) and Alex Llewellyn MCIfA (4753), ClfA; Amy Talbot, Mentoring Women in Archaeology and Heritage

In March 2020, Cara and Amy had a chance conversation (in person – remember them?!) about the high volume of dyslexics in archaeology. We both admitted that while there is a lot of anecdotal evidence, some labour market intelligence and also the excellent work by Theresa O’Mahony on the subject, there was still a gap in our knowledge regarding dyslexia in archaeology. This tied in neatly with the case studies Amy and Rosie Loftus were already preparing for the last edition of *The Archaeologist*, sharing their experiences of how dyslexia and dyspraxia have impacted their working lives.

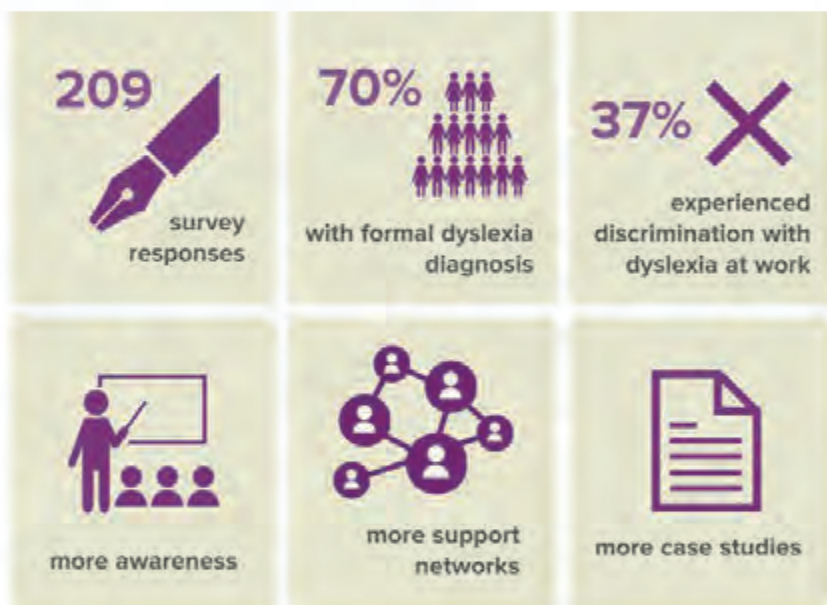
who have provided invaluable data on past experiences and current challenges. The results were sobering, with 37 per cent of respondents reporting discriminative actions from co-workers and senior members of staff, highlighting that in some workplaces, outdated views that ‘dyslexic people are stupid’ persist. A summary report of the results is available on our website.

While these results provide us with evidence to guide the future actions our profession needs to tackle perceptions of dyslexia in the workplace, this article is not about focusing on that aspect of the results. Instead, it explores how archaeologists with dyslexia can be incredibly valuable assets to our workforce who should be celebrated and not dismissed.

Dyslexia is not a new phenomenon, and one respondent drew our attention to the ‘unusual spelling’ on a Roman tablet displayed as a graphic at the Roman Baths in Bath, possibly due to them being dyslexic. The term ‘dyslexia’ was coined by Rudolf Berlin, a German ophthalmologist and professor in Stuttgart almost 130 years ago, so we might rightly ask why there is still a lack of understanding.

The value of dyslexia in the workplace is something dyslexia charities and think tanks have championed in recent years. Initiatives like ‘Made by Dyslexia’ showcase high-profile case studies promoting the advantages of having dyslexia – recognising that in fact it can be a ‘superpower’. It was widely reported in 2019 how GCHQ are actively hiring neurodiverse employees because of the unique strengths and cognitive abilities they hold.

This was reflected in our survey results, where we asked, ‘What positive benefits has dyslexia brought to your work?’ Respondents highlighted strengths in spatial awareness, problem solving, seeing different angles/ scenarios in situations, excellent long-term memory, digital visualising skills, communication and more. All of these skills make excellent archaeologists!

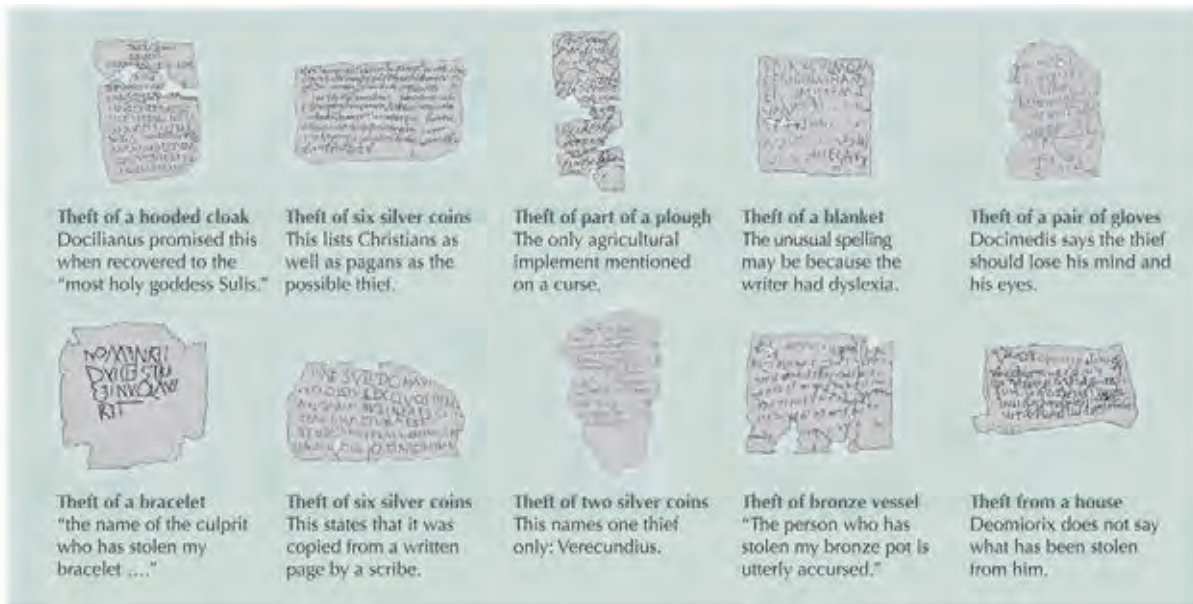


Summary infographics from the dyslexia in archaeology survey carried out in June 2020

Keen to gather new data, to identify the barriers dyslexic archaeologists face and promote ideas as to how the profession might adapt to overcome these, ClfA (Cara and Alex) and Mentoring Women in Archaeology and Heritage (Amy) developed two short questionnaires, aimed at both employers and employees. These were shared widely through email lists and social media.

We were overjoyed at the number of responses to the survey – 209 respondents

The value of dyslexia in the workplace is something dyslexia charities and think tanks have championed in recent years.



This graphic in the Roman Baths at Bath shows a tablet (four in on the top row) possibly written by someone with dyslexia. Credit: Roman Baths, Bath

By looking at the positives of dyslexia, can we start to think about what roles dyslexics in the past may have had in society. We know that dyslexics think differently, using different parts of their brain to solve problems, find solutions, be creative – would these not have been valuable attributes historically? Dyslexics think strategically and laterally; they often have exceptional communication skills and are fantastic storytellers. And in the case of our potentially dyslexic Roman, are there other examples where we can spot neurodiversity in the past – stories which could be woven into our outreach activities, to highlight representation and encouraging future archaeologists to enter our profession?

Our survey results show that going forward we need figureheads, role models and mentoring to change the cultural perceptions of dyslexia in archaeology and to support dyslexic archaeologists to advance in their careers. If you can help with this, we need to hear from you!

WHAT'S NEXT?

We are at the start of our work with this and other areas of neurodiversity and archaeology. This work focuses on dyslexia, although we recognise that there are many other elements to neurodiversity, and we hope in future to have further conversations about this.

We are so grateful to all the individuals and employers who took the time to complete the survey. There is a lot more detail in the



Dyslexics think strategically and laterally; they often have exceptional communication skills and are fantastic storytellers.

responses and we are taking the time to read these in detail and reflect on what they say. Keep an eye out for our next steps – we are proposing to

- host an informal participant-led coffee chat for all members and non-members about what they want to see happen
- create surgeries/online meet ups where people with dyslexia can talk to others about themed experiences, i.e. dyslexia

with budgets, dyslexia in the field, dyslexia in academia

- create dyslexia-themed resources, which will include links for employers to erase the 'dyslexics are stupid' attitude, and more individual case studies – some of which are already in the pipeline
- Host a 'dyslexia awareness in archaeology' week in October coinciding with Dyslexia Week (5 to 11 October), themed 'Dyslexia creates', so please keep an eye on our social media and join us in raising awareness

If you would like to submit a case study or take part in some of the activities above, please get in touch with Alex at alex.jlewellyn@archaeologists.net

Digital tea breaks: my experience as an early career archaeologist

Sabrina Ki, Student (10930)

As a recent MSc graduate and museum volunteer, when lockdown began I started really missing the regular conversations about archaeology and history that I'd taken for granted before. Cue emails floating into my inbox advertising a new initiative: digital, informal tea break chats about a series of topics open to all members of CIFA.

Being fairly junior in archaeology, I was initially a little nervous to drop into my first tea break, but the atmosphere was so jovial and welcoming with several new people (not just me!) that I soon relaxed. It helped that I saw a few familiar faces from a previous workshop on PCIFA accreditation, another really useful talk that made me feel a lot more comfortable with the application process.

What I really like about these tea breaks is getting to hear about archaeology and heritage all over the UK and projects in a wide range of archaeology sub-disciplines. In addition to that, I have really appreciated meeting archaeologists at all career stages, hearing how they got there, and I have never felt like I was being left out. I know I was a bit quiet in my first few tea breaks, preferring to listen more than talk but there were definitely opportunities for me to speak if I wanted to.

More than just welcoming, I felt like these tea breaks have been actively encouraging towards early career archaeologists (like me) by including highly relevant topics like entry routes into archaeology, advice for early career archaeologists and training and development opportunities. These have all been especially beneficial for me, from learning the essentials for entering commercial archaeology (such as a CSCS card), to how non-archaeological work or volunteer experience is still valuable in an application, to demystifying professional archaeology – for example, noting that academic vs commercial archaeology isn't an either/or situation.

There are plenty of other topics 'on tap' as well that aren't specifically targeting early career archaeologists but that are great for meeting others interested in the same field, and full of opportunities to learn. For example, the 'volunteering in archaeology, outside of excavation' talk signposted some useful resources that I wasn't aware of, such as guidance from Digital Skills for Heritage about working with young people online. Another advantage of these chats is that by virtue of having a group of archaeologists present, their advice can cover a whole range of

research/career interests – all you have to do is ask!

My favourite tea break so far was about archaeology in the media, something I'm highly interested in as I really enjoy outreach and community archaeology, especially after watching the inspiring panel 'Archaeology in the Time of Black Lives Matter'. Several topics were considered, such as problems with sensationalism and the struggles of balancing public access to excavations/research with ethical treatment of human remains. We also chatted about the issue of diversity in UK archaeology, how the popular image of 'the archaeologist' remains an older white man, and concerns about handling research topics in sensitive/politicised arenas. Surprisingly, my book blogging hobby turned out useful here as we discussed how sensitivity readers (often used to review book manuscripts) could be helpful in making archaeology more inclusive and self-aware. It was great to feel like I could make a tangible contribution to the discipline!

I'm glad I started attending these tea breaks regularly. Accessible and engaging, they're a great way to stay connected with archaeology during this surreal situation.

New members



| | | | |
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| Member (MCIFA) | 11098 Michelle Burpoé | 11259 Andrea Bonci | 5205 Jeff Morris |
| 6643 Martin Banikov | 10779 Steven Bush | 11097 Rose Britton | 11071 Tiberiu-Gabriel Nica |
| 5578 Ross Cameron | 8229 David Cockcroft | 11261 Bronwyn Chomitz | 11084 Sacha O'Connor |
| 11011 Catherine Coutts | 5658 Jenny Durrant | 10938 Simon Davies | 11133 Anna Rojek |
| 11014 Lauren Hardiman | 11073 Daniel Firth | 9448 Jonathan Dodd | 9314 Yago Terroba Souto |
| 11085 Aidan Harte | 11012 Lorna Goring | 11072 Philippa Foulds | 11256 Ioannis Thanos |
| 10979 Sophie Hueglin | 9696 Samuel Griffiths | 10044 Ana Foz | 11192 Steve Tomlinson |
| 11074 Helen Saunders | 11076 Rosemary Lansley | 10088 Kody Hedder | 8848 Jessica Waterworth |
| 9678 Zoe Schofield | 11190 Mateusz Polakowski | 11136 Christof Heistermann | 11191 Natalie Wood |
| 11134 Philip Stastney | 11132 Jonathon Smith | 11137 Philip Hill | |
| 6294 Adam Thompson | 10919 Catherine Whitehouse | 11144 Adrian Jacklin | Affiliate |
| | | 11038 Paul Keeley | 11062 Natalie Aldrich |
| | Practitioner (PCIFA) | 11275 Barnaby King | 10805 Dominic Allen |
| | 8689 Georgina Barrett | 9538 Maria Kneafsey | 5573 David Applegate |
| | 11194 Shannon Birds | 11193 Megan Lowrie | 11092 Adrian Blake |
| | 11099 Michael Blake | 11143 Carlos Mellén | 11179 Frederick Blakey-Lodge |
| | | 11274 Judyta Mlynarska | 11264 Joseph Brooks |
| | | 11195 Erik Moreno Perez | |

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| 11222 | Zinnie Denby-Mann | 11240 | Hannah Britton | 11123 | Sophie Hobday | 11225 | Alison Reep |
| 10035 | Peter Drummond | 11205 | Daniel Broadbent | 11183 | Sophie Honey | 11039 | Haley Reinhard |
| 11234 | Sophia Feist | 11189 | Andrew Bradley | 11167 | Sasha Houghton | 11042 | Karna Reinmoeller |
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| | | | | 11119 | Mitchell O'Toole | 11203 | Madison Witcomb |
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| | | | | 11262 | Shana-Leigh Pearce | 11161 | Benjamin Wooster |
| | | | | 11263 | Charley Porter | | |
| | | | | 11183 | Ryan Postlethwaite | | |

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| 11206 | Maria Bellissimo | | | | | | |
| 11158 | Chantelle Bennett | | | | | | |
| 11198 | Caitlin Bowles | | | | | | |
| 11153 | Sophie Bradley | | | | | | |

Upgraded members

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| 6229 | Patrick Daniel |
| 9422 | Amy Farrington McCabe |
| 6032 | Lilly Hodges |
| 5781 | James McNicoli-Norbury |
| 6329 | Elizabeth Stewart |

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| 9766 | Brett Howard |
| 9268 | Marjaana Kohtamaki |
| 8705 | Neal Mason |
| 8519 | Anna Moosbauer |
| 5712 | Alexander Veillet |
| 8649 | Joshua White |
| 7929 | Lauren Wilson |

Practitioner (PCIFA)

| | |
|-------|-------------------|
| 9938 | Leo Buylis |
| 10379 | Vanessa Oppermann |
| 10294 | Emma Smith |
| 10017 | Hazel Whitefoot |

NOTICEBOARD

Dates for your diary

As COVID proceeds, we are continuing to develop our online events programme and working on presenting quality CPD events to help everyone stay up to date with their personal development. We have been trying to keep these costs as low as possible, but as time goes on, we may introduce more paid options. We will aim to ensure there are bursaries available for any of these events; if you find the cost prohibitive, please get in touch with us for information.

Booking for events can be made at www.archaeologists.net/civicrm/event/ical?reset=1&list=1&html=1. While not every event will be certified, remember that any training relevant to your personal development can be recorded as CPD.

Here are some of the events coming up over the next few months, but keep an eye on our event calendar for more information and additions.

CIFA Annual General Meeting

Our next AGM will be held at 12:30pm on **Tuesday 17 October 2020** via Zoom and all members are invited to attend. The AGM notice and other documentation is on our AGM website page www.archaeologists.net/cifa/agm

Tea break chats

We are continuing our regular tea break chat sessions, which allow informational networking and discussion of a variety of topics (see Sabrina Ki's article on page 30 for more information). Dates for upcoming tea breaks are:

- **Friday 2 October** (afternoon) – topic theme will be dyslexia and archaeology
- **Monday 19 October** (morning)
- **Tuesday 3 November** (afternoon)

Decolonising archaeology toolkit – Wednesday 9 December

Laura Hampden (Museum Detox, Historic England) and Hannah Cobb (CIFA Equality and Diversity Group, University of Manchester) will be running the second workshop in our series of events to develop a decolonising archaeology toolkit. The workshop will provide delegates with the opportunity to explore how racism and colonialism impact your own practice and you will leave with clear take-aways about how you can actively challenge these, and be actively anti-racist, throughout your own heritage practice.

CIFA conference 2021

Sponsored by Towergate Insurance

CIFA2021 will be held **21–23 April 2021**

As the edition of the magazine is being put together, we are finalising our plans for the 2021 conference, but anticipate that this will be run as an online event. Please see our webpage for more information about sessions and networking events – www.archaeologists.net/conference

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