

DAVE BROWN: RINGING IN A NEW ERA OF RECORDING

July 29, 2016 Oxford Archaeology Bronze Age, Buildings, Commercial Archaeology, Day of Archaeology 2016, Digital Archaeology, Photography, Post Medieval, Survey, UK Agisoft, bell, geomatics, Heritage Lottery Fund, Nassington, Norfolk, Northamptonshire, Oxford archaeology, photogrammetry

MY JOB

I am a Geomatics Supervisor working in the quite newly formed Geomatics team at [Oxford Archaeology East](#). My job has a great mix of both field and office work and often involves new forms of technology and experimental techniques and recording systems.

Over the past 5 or so years the company has changed from using primarily hand-drawn recording methods to a much more widespread use of digital recording. As a result, the divide between ongoing site work & what was traditionally post-excavation has become blurred. The Geomatics team pretty much operates within this blurred zone between field teams and graphics/post-excavation teams.

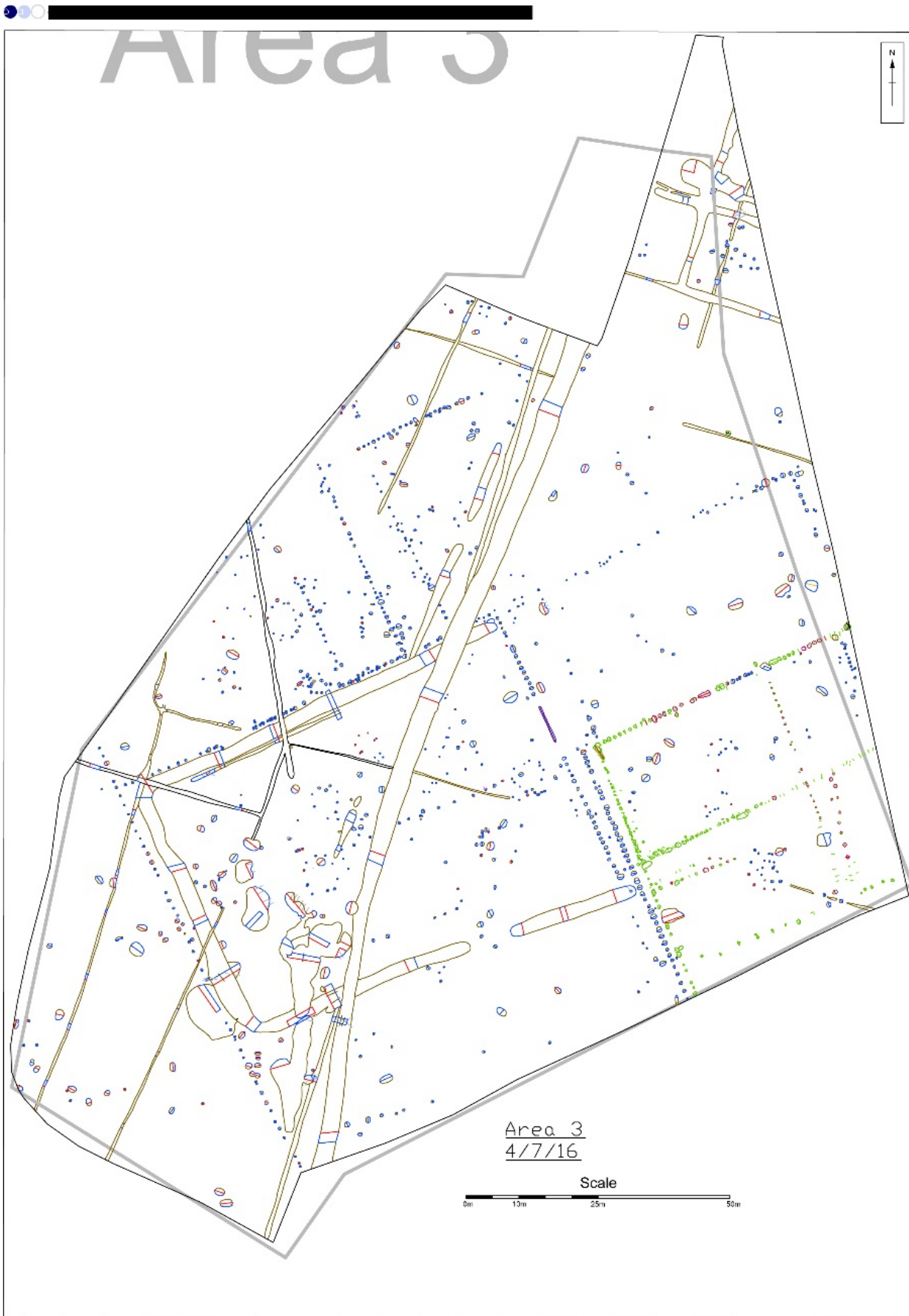


The essential tools of my trade! The car radio is permanently tuned to Planet Rock.

I enjoy the diversity of my role. On a daily basis I may travel across the Eastern Region to set out evaluation trenches or visit ongoing excavations. Or I may be inside creating trench designs or digitising site plans.

Today I am in the office catching up on my survey processing and working on some site plans for a large project recently completed in Norfolk.

One site in particular is very interesting. It has evidence of Bronze Age activity, including round structures within enclosures and remarkable post hole alignments.



A site plan from a large project recently completed in Norfolk

The archaeological features were planned on site using Leica DGPS. Every feature was accurately planned, including all of the postholes, well over 1000 of them!

The data was sent to me & after processing I imported it into AutoCAD. I'm am currently tidying the plan and adding other data.



The field team in action! Note GPS recording in background.

It is hard to imagine how long the process of recording all of these postholes would have taken with traditional methods.

SPECIAL FEATURE!- PHOTOGRAMMETRY DOESN'T QUITE RING TRUE

One of the most exciting recording techniques we have recently started to use is photogrammetry. It involves taking a series of photographs which can be processed and manipulated by sophisticated software to create scaled photorealistic 3D models of objects and georeferenced orthophotos of archaeological sites (amongst other things). It means we can record sites by the use of drones even!

This technique is new to me, so one evening earlier this week, partly as a training exercise, I decided to attempt the recording of some church bells. As part of a restoration project funded by local donations and

the [Heritage Lottery Fund](#), the [Nassington Bell Project](#) will see the restoration and overhaul of the existing 5 bells and frame and [the casting of a new bell](#).

As part of this project two out of tune bells will be recast and I thought it would be good to preserve a record of their original form. Unfortunately, the bells are 40ft up in the small, dimly lit belfry!



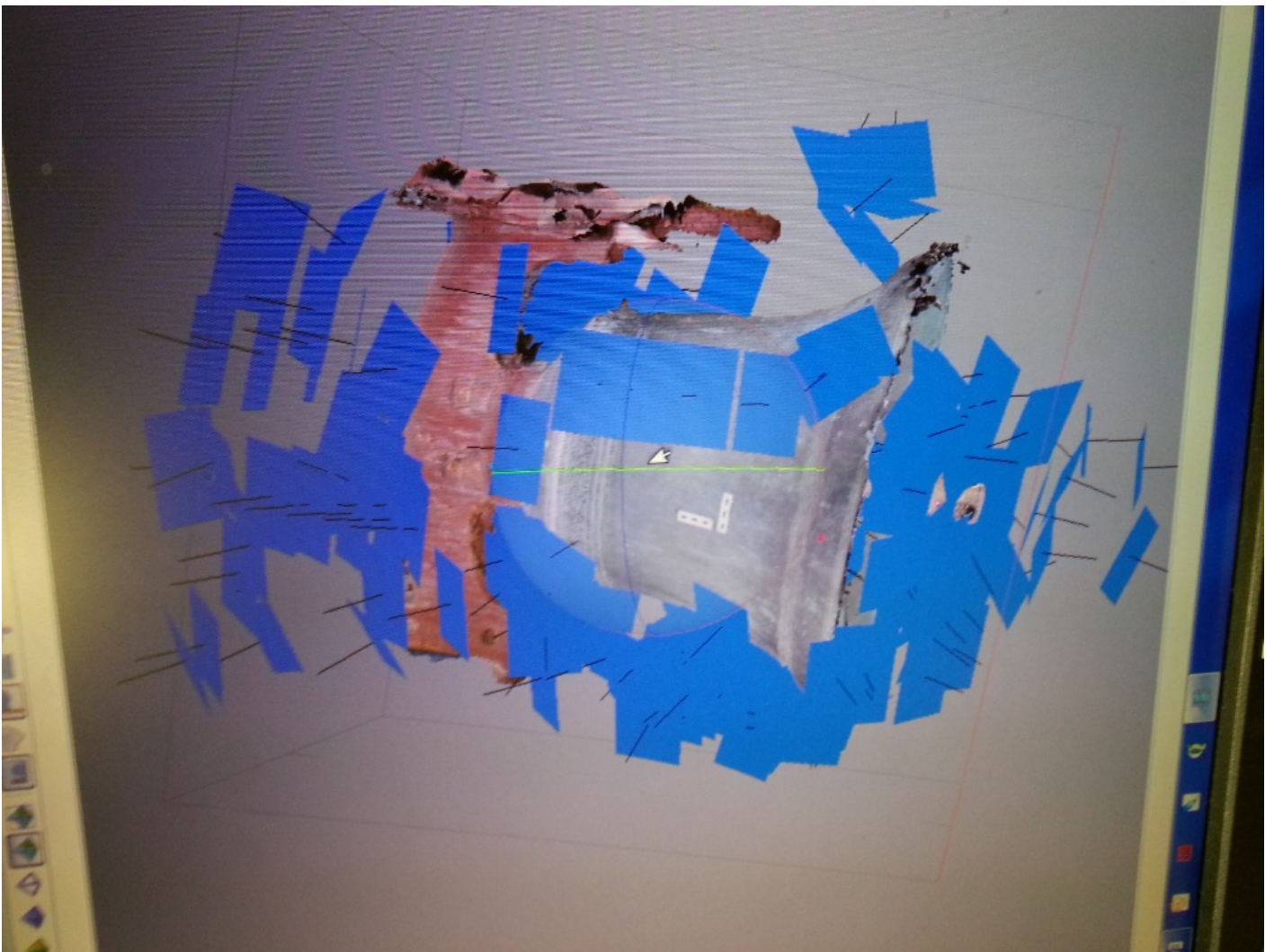
My helpers- Libby 9 & Owen 7, with Hilary the church Warden & Brian the tower captain

Having gained access to the belfry I placed markers on the bells to help the software and put up bed sheets to mask out unwanted parts of the bell frame.



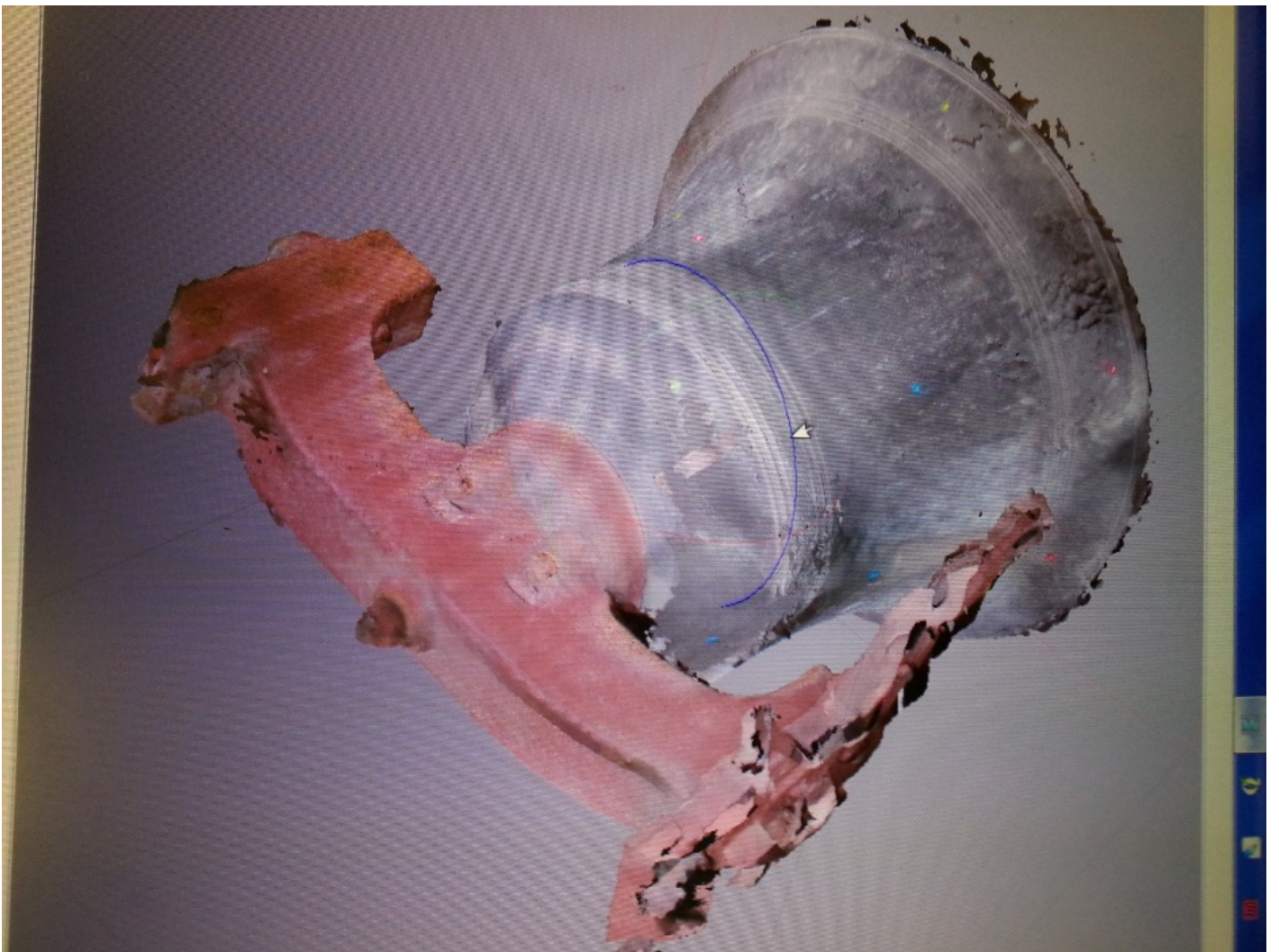
Bell 4 cast in 1642 by Thomas Norris of Stamford, weighing approx.. ¼ tonne

I have run the data through the OAE's Agisoft software overnight and I'm astonished by the results! I had to use a flash for every shot. I thought the smooth regular shape of the bell would also cause problems.



Each blue rectangle represents the position of my camera. I used only a basic digital SLR and its inbuilt flash

More processing and experimenting is required but, for a first attempt, I am quite pleased. I intend to upload the model to Sketchfab eventually to make it more freely available.



Doesn't quite ring true- there is currently a hole in the top of the model!



THE END

Thanks for making it to the end of this blog! I hope it has given you some idea of the diversity of roles and interests in archaeology. Dave

Dave Brown is a Geomatics Supervisor at Oxford Archaeology's East office in Cambridge. For more information about [Oxford Archaeology](#) and our specialist geomatics services, visit our website: <http://oxfordarchaeology.com/professional-services/specialist-services/16-oxford-archaeologys-services/fieldwork/21-geomatics>