

## eIUS: Archaeology Experience Report

Group interview with five interviewees, tagged in the text (= quotes) as follows: (int1), (int2), (int3), (int4), (int5);

### **Background/Research area/ Research question(s)**

- I'm an archaeologist, I'm a Roman archaeologist and my area of interest or principal area of interest is in Roman Urbanism, its origins, development, change through time. [...] In order to understand and characterise Roman Urbanism it's necessary to undertake fieldwork, and in the case of Silchester this involves large scale excavation. Silchester would be an example of a Roman town where we could address questions of the social formation of the settlement and how that changes through time, how the urban community is sustained, so systems of food supply, and then how the food is consumed, so diet and changing diet on the site, the economic basis of the community, another major question area, what is produced in the settlement and where is it traded to, what materials are brought into the site for consumption or for turning into manufactured materials, and again, how do these change through time. So, in order to address those questions, systematic excavation allows you to recover the evidence that survives, which may range from the very large, like big fragments of buildings, down to the microscopic, and the microscopic could be traces of metals, it could be traces of food in the form of minute carbonised or waterlogged seeds, or through the preservation of food such as fish and fish bones, that kind of thing. And in dissecting an urban community from its end, which is the top of the ground where you start, to its origins which are right at the bottom, you go down through time, you are collecting data according to the way the soil has been deposited over the centuries in which the settlement's been involved, and each of the soil layers that you define and you remove, contains within it, elements of all these sources for understanding life, economy, trade, and so on. And in order to understand and to research that you need a database and a management system that will allow you both to reconstruct and to interpret the sequence - what we call the stratigraphic sequence of the settlement - and with that structure in place then allow you to perform the analysis of all the individual categories of material, whether artefact or environmental, and to pull that together, all those strands of evidence to address those questions of development, change, social behaviour and so on. So very wide ranging agenda, lots of questions, for which we need robust systems to operate. (int1)

- I've actually got six teams on the site, and each team consists of a supervisor who is an experienced archaeologist who has done this sort of work for quite a few years, so there's a supervisor, there's an assistant supervisor who is learning the ropes, there's a trainee who is one of my students, third year student who I've selected to take part in this and who is getting experience to put on a CV to get jobs in archaeology, so those are the three within the team, the rest of the team are made up of students or people who are here for education and people out of interest, and their role is basically to do what they're told (int3)

- around the excavation you then have people whose experience are working with the artefacts, so you'll have a researcher probably leading that, and then a supervisor, a trainee working there, same with the science setup that we've got, so people who'll be looking at the soil samples, and doing the sieving and environmental work, I've got a whole drawing team, I've got a photography team... So they're, if you like, around the edge, the outside of the excavation, and are essential. So while the work happens in the trench area there, the material that's being produced is either being worked on by people like the finds or science, or is being checked by the drawing teams for example, and so information is

going in the trench and out of the trench at a constant rate. And then every week I do a summing up, so that's when we talk, all of us, about what has been found that particular week, and that's obviously a very key part of the process. (int3)

- for my MSc project I looked at a building at Silchester, looking at the way it had been used, the microscopic residues and how the use of space had changed through time, so then the PhD is a continuation of that, looking at a much bigger scale, lots more buildings on the site and addressing some of the issues that came out of the Masters about how you interpret what I was finding as well.[...] Essentially, looking at all the microscopic residues in the soil and in the buildings, trying to piece together from that information what the building was used for, spatial variations in use, trying to look at different rooms within buildings, how they were used differently, how they changed through time as well, and then looking for variations between the different buildings and whether different areas of the site were used in different ways, as well as looking at the limitations of those techniques that I use. (int5)

## **Research Lifecycle**

### **Literature review**

- often specialists not directly involved in fieldwork are asked to do literature review and comparisons based on material sent from an excavation site (int2)
- two types of literature relevant for what I'm doing: synthesis work (e.g. account of a city or of a Roman province), and specialist literatures (e.g. technologies, traded materials, food types) - although this is more relevant to individual members of the research team (int1)
- for the first stages of my research the [University of Reading] library database was the main thing I used. Yeah, the library's got a good database, actually that's quite user friendly, very easy to use. Then I use online journals quite a lot. I can access most of the online journals I need from the university, which is good. [...] Occasionally used Web of Science, an online database as well, which is very useful, however it's a bit harder to use, you've got to type in very specific key words [...] (int5)

### **Data collection**

- short periods of intensive data collection (Silchester - 6 excavation weeks annually over last 12 yrs) (int2)
- key challenge for the online database: involve people who are not on site in what is going on on site. Not just passive users but active contributors (int2)
- use digital pens and other devices to make data available online quicker and reduce time lag between excavation and analysis (int2)
- need robust database and management system allowing to both reconstruct and interpret stratigraphic sequences of the settlement, perform analysis of individual categories of material (artefact or environmental), pull all strands of evidence together to address questions of development, change, social behaviour on the site (int1)
- there are different methods of recording finds: general finds (ceramics, animal bone, building material) are simply related to the layer in which they were found, while small or accession finds (rare unusual distinctive objects, such as jewellery) are assigned 3-dimensional coordinates within the trench (int1)
- there are 10,000 units with datasets associated to them- it's important to have good spatial positioning

in the trench so that you can then re-analyse it and see it in terms of the chronological sequence of the development of the site (int1)

- the first step with this excavation and indeed with any other excavation of this complexity, so an urban excavation, involves you in establishing the stratigraphic sequence, and to control that with dating evidence. Your database contains a mass of information, and you want to pull it together as best you can, to reproduce the way in which it developed through time back in the Roman period, so that you can reproduce those layer-by-layer developments with your database (int1)

- a key component [...] is developing the matrix and testing that matrix against the evidence produced from the study of the artefacts which give you dating. This matrix basically is a link that tries to link together and, insofar as one can, to reproduce the original stratigraphic development for the site (int1)

- the traditional approach has been [that] you describe your layers and write them by hand on a pro forma, you do all your records, handwritten and all your plans are just drawn in pencil on permatrace. What we're trying to do here is to reach the point where everything is entered digitally right from the start, so immediately you write your context record using a digital pen, you can [upload] that information in the database. You can draw a plan of the layer, or a plan of the wall, and immediately that information can be [uploaded] straight into the database, rather than having a whole set of different datasets which you then subsequently have to link up. [This] is speeding up the process [and] you can start analysing at a much earlier stage [...] (int1)

- with all the data that I am collecting on site, once I'm back in the office, each context sheet, each record, I'll check it's on the database, check that it's properly on there, like spelling and the archaeology and check all that's right so that other people can use it, and then that'll probably take a few weeks because there's not just the ones that are being done with the digital pens, there's all the ones that've been recorded normally as well (int4)

- [data collection] for me it's collecting soil samples, so that's done at Silchester. [...] Gathering bags of soil and intact blocks of layers of soil, which are then tightly wrapped so they're all intact. There is then the levels and coordinates, so the grid reference, which is recorded using the EDM [electronic distance measurer], [which is] a piece of surveying equipment that gives you [location details], it's tied in with the Ordnance Survey Grid reference, so it gives you an Easting and a Northing, so you can get a precise location of your sample, which then ties in with the site grid, so I know exactly where this has come from on the site.[...] Then all the information gets recorded, paper copy, which then goes on to the IADB database, so all the information about the sample's on there. I then can cross check my sample with any other information about the deposit from where it came from, so this could be the finds records, anything that came out the floatation tank, so I can cross check it with a range of different materials that have come out that deposits, as well as photographs as well. (int5)

- I then take all the samples back to the university [lab] and process them.[...] Some of them I have to make into blocks, impregnate them with resin under vacuum and make them into slides that can be looked at using a microscope. Others, I extract plants cells from the sediment using heavy liquid separations with a centrifuge, and then they get made into the plants cells that go on to the slides as well. I also do geochemical analysis using an x-ray spectrometer. Well I don't use it, they get put into it and somebody else does all the work for that. (int5)

- being able to take microscopy pictures is crucial [for my research].It's [done with] a USB camera on top of a microscope. [We use] LEICA digital cameras for the microscopes, and they make the microscopes as well. [There's also] LEICA camera software on the computer, which supports the database in which you can store your images, and then you can take your images from that onto a CD and take them wherever you want and do whatever you want with them. (int5)

- the public can access certain bits of [the IADB] from the Silchester website. Anyone else can sign on as a guest I think, but they can't change things, and then certain people have passwords to input data and change things. (int5)

## **Data analysis**

- post-excavation research often takes all the time between two excavation periods. Process of abstraction, attempt to put together a story explaining what was going on on the site (int2)

- only basic data is entered in the database during excavation. Most is sent, with background info, to specialists. They analyse data, compare with similar published, and produce reports. [int1 and int3] synthesize these reports into publications (int2)

- the database developed over the past four years allowed us to do a whole range of analysis which would be more difficult on a conventional excavation. Without it we wouldn't have been able to start understanding this site because there is just so much information, and the combination of stratigraphy, the volume of finds, and the complexity of it all just demands an electronic system for management (int1)

- Three dimensionality is actually an incredibly useful tool; we use it to a degree in recording off the site, we haven't yet developed a way in which we can reproduce that record in three dimensional form, which would be a visualisation of the archaeology, but it's not a real [one]; do you see what I'm trying to say? That would be incredible; that's something that we're working on now. Then, only when you've, as it were done you're allowed to; can you then begin to think of speculating about a three dimensional virtual reality type reconstruction, that's very much far down the line. Before you get there, you've got this intensive analysis of the stratigraphic sequence and its associated finds. (int1)

- developing on the IDB the capacity to reproduce stratigraphic storeys [...] would be highly desirable. I'm not aware of tools that we could import to the present system, I think it's something that's got to be developed. (int1)

- stratigraphy and the development of the matrix is something that's very much been developed particularly in the last three or four years, and is an absolutely crucial part of the analysis. Until you've done that and validated that stratigraphic storey, you can't really be confident of passing the correct information to other members of the research team who are working on the pottery or the coins (int1)

- I'll probably help the specialists and the rest of the archaeologists answer questions, because although they've got access to the database and although they could answer them themselves, they tend to email me because I'm quicker at it than they are. Right okay they don't have time, they just want to answer, they don't want to have to get it themselves, which is fine. So I probably spend quite a lot of time getting stuff back out in a different way, because once you've got these cards, you know you can do all the different queries and you do maps and distributions and proper archaeological questions but I won't know what they are until someone asks me because I won't be asking them myself, I'll just be telling them (int4)

- some people just want to know what this is above and below, or percentage of bone in it or something, and all you have to do is look at it, then some people might want to ask a complex thing like how many early Roman context had less than five percent, you know, and you've got to think about how to do that and they don't want to have to do it so they just ask me (int4)

- I think definitely the most common question is just to do with where things were, so they've got an object from a certain context and they were like, what else is in that area? That's the most common one, and probably the second most common one is that's they've got a small find or an object and they want

to know what else, yeah, just what else was in that area and anything was associated with [...] The other thing is the matrix, the order of the archaeology, the dating thing, because that's quite complicated anyway, it's just like, this record is above this and below this, and people usually just want to check that that's right, that what they've got written; usually they've already got an idea in their head of what the answer might be and they just want to check what it is. (int4)

- [my data analysis] is quantitative and semi-quantitative I suppose. The slides that I use, you work out percentages of materials by eye, the geochemistry's computer-generated results, so I'd say that's quantitative. The plant cells are percentage of weight, so that's quantitative as well. (int5)

### **Collaboration: Discuss/compare results**

- less IT literate specialists initially may have simple technological requirements (e.g. list of images of coins which they can print), in time these may evolve (e.g. plot images on map of trench), ideally gradually in addition to just querying the database they will start contributing back the secondary data they produce (reports, dating) (int2)

- our database is accessible to anybody who wishes to use it, and that immediately brings with it the assumption that everybody can get broadband and can get online, but not all members of our team have been able to do that because of the remote locations where some of them live (int1)

- my idea is that everybody is using the database and developing it for their own purposes as well as using it as an essential resource (int1)

- people who have been comfortable using [the database] will then email their questions, so email is the [preferred communication] device rather than the common sharing of a wiki. [...] The team is very big and they're not all working together at the same time, so [...] there might be one month when there are fifteen people working together, but the rest of the time they're not, so it's actually quite difficult to engage people who will only be working intensively for short periods with the database (int1)

- the database we use has a built in wiki, so sometimes they look at that, but mostly it's email, definitely, the vast majority of questions are emailed; it's just the way that they work [...] The wiki in the database has most common questions and how to do certain things, but even though it's there they still like to email you rather than use it. [...] I think they kind of maybe look at that and then I think they decide no, that's not actually what I want and even though it is, they feel better asking you to make sure. (int4)

- I do think there is always going to be a place for actually asking a person, because then you know that; I don't know, I think people just feel more comfortable with it, don't they? And I think, probably, it's because a lot of the research team at Silchester are quite old and they wouldn't ask a computer anyway, if they had a choice, they'd phone someone or email, so it just depends on the person really. [...] Some people use the wiki or use the frequently asked questions, or ask other people that've done it already, but then some people just always choose the person, which is fine, it's just they've got the option of both which I think is the important thing. Because I think as well, sometimes, if you want to ask someone, that's fine but you might not have time to get into a conversation with someone, you just want the answer, you don't want to be like oh, how are you, how's the weather, you don't want to talk on the phone for ages, you just want the answer, so I think having the choice is a good thing. (int4)

- you can have as many guidelines and ideas as to the way things should be done; you can have millions of them, but it's getting people to use them [that is difficult]. Because we've got loads of guidelines and ways of doing things in place, but it's still ultimately up to that one researcher, whether they choose to use it or not, and you can't force them. And you can try all you like to make it as friendly



for them as you want, but in the end, if they don't use it, they don't use it. They might have their own special way of doing things. I think that's probably the thing I've learned, the thing I've got out of the last couple of months: there's as many different ways of doing things as there are people.[...] Even when you're supposedly doing the same thing, people just do things differently. It's like when you learn to write at school, and everyone starts off with that really neat writing, and then by the time you get to primary three, you're all writing differently. You're all taught the same way but you all do it differently. (int4)

- there's an online database for the phytoliths plant cells that I look at [maintained by UCL?], they're silica remains of plant cells [...] It's micro images, so it's basically a database of photographs that I can compare what I've got to what they've got.. If I have something that I can't identify it's critical for me to be able to go and look at other places. I mean, we're trying to build up a reference slide collection at Reading as well, so I use that as well.[...] Phytoliths analysis it's sort of in its infancy really, so there's not much in the way of materials that you can use to identify what you've got. I suppose the best way that I would do it is to use just a reference collection of other slides, and if I can't find anything in there then to access a database of images to compare what I've got. (int5)

- the way I interact with people is going to workshops with all my slides. They have them quite regularly, it's the International Soil Micromorphology Working Group, which happens usually yearly, so I tend to go to those. Then you can take all your slides and ask for other people's opinions. And everyone else brings their slides as well, so that's quite good, that's probably the most useful way that I find of looking at my research in the context of other people's really. [...] You could [share the images online], but I think the problem with looking at this stuff online is that you're looking at microscope images, so it's often difficult to interpret something just from a photograph.[...] Because [if you are there] you can look at the slide as a whole, also the person might have photographs of the site that it's come from, but I really need to look at the whole slide rather than just one little bit. [...] I do email backward and forwards the odd photo and ask for their comments or whatever, but it's not the same as being there.[...] I email individual people [rather than mailing lists], I usually know who to target to ask specific things. (int5)

## **Dissemination**

- Silchester: combination of traditional paper and web publications. Main challenge: integrate narrative, interpretative reports with evidence data. Better done in web publications (int2)

- interpretation of data is subjective and personal. In traditional paper publications - difficult to track data on which conclusions were drawn. All evidence associated with one's narrative should be provided, so that others can build alternative interpretations based on that data (int2)

- most archaeological publications represent a sample of what's been found, or a sample and a synthesis, so there are categories of data which are not easily available (some are in the archaeology database in York, some are in the museums where the finds were deposited, and some are with individual researchers). Need to develop systems where you can not only read my, or other project members', synthesis, but but you can find through the database their original primary data (int1)

- Internet Archaeology is really well suited for publication of a lot of our data, but in addition to that I think we'll continue to use ordinary journals; printed as well as e-journals and monograph publication as well, so a variety of media (int1)

- my ideal is to continue to develop the model we've published in Internet Archaeology because that does bring everything together in a brilliant way and allows anybody to search across these various constituent databases. If I had my way I would do much more [electronically], and produce fewer

traditional printed publications. But you have to understand that in this research team you've got people who are at different stages of the development of their career, different stages in the development of their comfort with information technology, so they feel that the traditional printed publication is absolutely the best; they're a bit nervous about how their peers will regard publications which are solely electronic (int1)

- we also published a website that links with a publication, so for example, in the Antiquaries journal, published in 2004, there was an overview of what the Victorian, the early excavators, did here [...] On our website, the Silchester website, we published the electronic resource for that alongside it. And we did the same again in 2005-6, when we'd published a book on the last Roman archaeology of this area, linked to the website. So those two methods complement Internet Archaeology, which actually has everything. So that's another way of seeing the contrast between what a book-type publication would do and what you can achieve with the electronic media, electronic resource (int1)

- we do have a pretty up-to-date bibliography on the website of what's been published, and certainly I think for you a good starting point would be Internet Archaeology, and then you might compare the other websites we've developed, what we call the late Roman website, with the printed publication that runs alongside. But if you want to get a feel of traditional archaeological publication then the journals I've mentioned are as good as any insight into traditional archaeological publication.[...] As a series, to get an idea about the publication of urban archaeology, look at the publications of the Museum of London Archaeology Service [...] it's a very impressive publication series and it gives you a very good insight as to how, in traditional form, people are trying to publish, so you could again compare that with what we're trying to do (int1)

- I've already done one conference paper.[...] It was within the university, so I collaborated with people there, so there was a lot of emailing the paper backward and forwards, and then I presented it in Dublin. [...] It's going in a paper journal, I think it might be online as well though, I'm not sure.[...] From the thesis I'd hope to get a few publications into the Journal of Archaeological Science, which is both paper journal and online, as well as chapters in monographs for Silchester, which would be a paper, a hard back copy. (int5)

- I can upload my microscope images onto the IADB [...] so anybody I'd be collaborating with [on a paper] would have access to them [...] I can give them a context number, or a sample number, and they can go and look it up. (int5)