Ipswich Historic Core: Excavation archive 5746 ANL

End of Project Case Study

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Contents

Introduction

Scope of the project:

The project, Ipswich Historic Core: Excavation Archive Consolidation, Enhancement and Dissemination, was devised following guidance from English Heritage (EH, now Historic England) to test a new approach to dealing with a substantial archaeological backlog from a major urban centre. This approach was to optimise use of the Archaeology Data Service (ADS) as a means of disseminating information and of encouraging new research from the backlog resource while eliminating the need for a full archaeological assessment of the excavation material.

The backlog excavations were those carried out between 1974 (when an archaeological unit was set up for Suffolk under the county council that included a team based in Ipswich) and 1990 (the introduction of Planning Policy Guidance 16). They covered a broad area of the historic urban core, both north and south of the River Orwell, primarily to investigate the internationally significant Middle Anglo-Saxon *wic*. A fuller summary of the archaeological history of Ipswich is given in the Introduction in the Project Design (see Appendix 2, 19-21).

Project stages and duration

Stage 1 was the consolidation of the entire archive, material and documentary (including digital). This began in April 2009 and was originally scheduled for completion in one year, but was extended by two Variation Orders to completion in December 2011, with a detailed End of Project report completed in January 2012 (see Appendix 1). By the end of this phase the material archive was transferred to Ipswich Borough Council at Colchester and Ipswich Museums Service (CIMS).

Stage 2 (Appendix 2) covered the enhancement and dissemination of the consolidated documentary archive; the initial proposal included a publication but this was postponed by EH for a subsequent phase, currently under discussion. The original timetable ran from 12/03/2012 to 10/04/2013; this was modified by Variation Orders to a current completion (this report) in the autumn of 2015.

Objectives

1. To secure the complete archive of excavations in Ipswich between 1974 and 1990 for future use in an ordered fashion so that it can be made easily and widely accessible.

2. To present the archaeology of Ipswich and make the initial results of the excavations available to the widest possible audience.

3. To allow users an easy way to access sufficient primary data from the archaeological excavations to establish the potential for ongoing research, without having to examine the sometimes fragile physical archive in detail.

4. To provide clear signposting from the online data to the original material for the purposes of detailed research.

5. To provide a case study in methods for dealing with large urban excavation backlogs

6. To provide a basis for the future development of an Ipswich urban archaeological database within the Suffolk HER in order to advise future planning and management of the town

Objective 1 relates to the first phase of the project, objectives 2-6 to the second phase.

Outcomes and lessons learned from Phase 1 (see also Appendix 1)
A total 7,430 boxes of bulk finds of various types were re-packed, labelled and catalogued. Estimates of time and costs were reasonably accurate for this process (and provided a working basis for similar work funded by SCC on the remaining Suffolk excavation archives). The need to conform to specific museum requirements re-emphasised the well documented points that early consultation with the receiving institution is important and that establishing transfer of ownership should be done at the time of excavation rather than more laboriously 20 years later.

275 boxes containing metalwork and other small finds were re-packaged; there was considerable underestimation of the amount of re-bagging etc required – for example the number of bags with some information written in red, blue or even green biro -– and of the time taken to handle hundreds of objects in individual seal-easy bags.

The catalogues for box contents give an indication of which was is likely to contain any specific context or small find. However they do not show for certain where documented material is missing. It would have been helpful to identify such gaps, not least because groups of small finds in particular are still occasionally retrieved from specialists.

The documentary archive is now held in 139 archive containers (mostly appropriate archival boxes) which were very thoroughly catalogued. This provided a sound basis for similar work to be planned and carried through on most of the other Suffolk excavation archives in 2013-15 in advance of changes to the organisation and moves to new premises: this archive now holds around 750 boxes. The Ipswich document catalogues have proved a useful resource, both for identifying and locating material used in the second phase of the project and for answering other research and HER enquiries. Although there were various pre-existing counts of the quantities of material it transpired that this element of the archive was substantially under-estimated, probably because it was stored in a variety of places in several offices. The time spent on identifying documents containing only a site name rather than a site code confirms the importance of the SCC HER requirement that all documents be marked with the HER site code. The process of packing and cataloguing was designed as separate tasks in sequence in the project design, but in practise the two were carried out concurrently. It should be noted that the documentary archive includes material that was not derived from the 34 excavated sites, but that would have been more time consuming to extract than not.

The digital element of the documentary archive consisted of two main groups: a large number of data tables covering the site and finds records for each of the 34 sites and the reports and correspondence that were either digital in origin or had been digitised before or during the project. Selection of reports and correspondence for digitising (scanning and OCR) focussed on final versions of reports, including a group of English Heritage reports

(only the human skeletal reports could be provided by EH for this project). Although some of the digital documents were in very old versions of software it proved possible to read and update all of them, with some advice from ADS on conversion software. The main problems in the digital archive were in the multiple site data tables, which led to some over-run on time estimates. This phase of the project managed to identify the most recent/informative versions from multiple copies and to combine these into tables using compatible fields and number formats. Some data was identified as lost (particularly the iron finds descriptions) and many floppy discs (most of which contained backup rather than primary material) were unreadable.

One point that would be applicable more widely in similar circumstances is that some of the potential benefit from consolidation of the entire archive was lost because the documentary archive was often not easily available to inform the material processing. It would have been helpful to have the documentary, including digital data, work underway several months ahead to provide reliable key lists of material.

The documentary work did identify some significant gaps in the data tables, such as a lack of artefact identifier and possible date range in the small finds, that could efficiently be rectified while the boxes were still held by SCC. The inclusion by project variation of the rapid artefact identification and digital photographs of many of the pieces made a significant contribution to the value of the phase 2 product.

Enhancement phase

Timings, Staffing, Costs

The second phase of the project overran by over two years (total extent April 2012 – Summer 2015) but did not request any additional funds in the process. A major reason for the overrun was staffing issues – which might have been avoided if the project had been a single phase rather than discontinuous. All four of the original staff team, excluding managers, had either left the organisation or been re-deployed within it by the second month of phase 2. The situation was exacerbated by a lack of interest in an archaeological archive post in Suffolk as advertised in 2012, leading to the work being carried out internally. This particularly impacted on the development of the core database and the co-ordination of other digital documents for ADS. However the retirement of Keith Wade from the post of Archaeological Service manager at the end of 2012 meant that he could contribute directly to the project rather than guiding and revising the work of less experienced staff, particularly on the site summaries.

Achievement of objectives

Objectives 2-4 and 6 (objective 5 being completed with this report) were very largely achieved by those products which made up the data deposited and made accessible on ADS web pages. The final web pages are available at:
http://archaeologydataservice.ac.uk/archives/view/ipswich_parent_2015/index.cfm

The products correspond to those defined more fully in the project design (Appendix 2, 35-39) as:

1 Digital map of Ipswich excavations 1974 – 1990
2 Core database of Ipswich excavations 1974-1990

3 Site summary accounts for each excavation
5 Digitised images of Ipswich ironwork X-rays
6 Documents collection for Ipswich website
7 Image collection for Ipswich web pages and publication
8 Web pages: Ipswich excavations 1974 – 1990

(product 4 is the synopsis for an EAA publication, accepted by EAA in 2015 and the subject of a separate PD submitted to Historic England in October 2015).

An assessment of the results and lessons learned carrying out the tasks related to each product follows, with some additional general themes at the end.

Enhancement phase: Assessment of methods

Product 1 Digital map of Ipswich excavations 1974 – 1990

The digitisation of site plans, including corrections, (Appendix 2, 32-37, Tasks 12 – 17) was consistently delivered on time and with relatively few issues. The main issues were:

- Mislocation of site areas, missing trenches, features which were usually a result of misleading or missing primary data. The process of checking digital plans by staff working on the site data and summaries worked well, particularly where the checks were done by those with long term familiarity with Ipswich excavations (Keith Wade and Tom Loader).
- The methodology, caused by the vagaries of SCC IT provision, meant that the product for each site was only available to the non graphics team staff after completion when translated into MapInfo. This means that minor late stage corrections were not copied back to the AutoCad version. The version delivered to ADS has been clearly identified as the primary data and this MapInfo version is used by SCCAS.
- A percentage of individual features were slightly misinterpreted or mis-numbered during digitisation; many of these were picked up at the checking stage but there are probably proportionately more in the largest complex sites (IAS3104, IAS4106 and IAS4108).
- The time for task 17 (data linking from MS Access) was underestimated by *c*50% because in practice the period data had to be linked to be available visually for the checking phase and then re-done after all the corrections to both the mapping and the core database.

The resulting map layers as available per site and in the interactive map on ADS comprise the extent of development (not always applicable), the extent of excavation and individual feature plans, the latter with context number, period and feature type as linked data. This data is very useful for HER, development control and management advice by SCCAS, using it in conjunction with other available map layers within SCC. It will also be a useful resource for the Ipswich UAD project in2015-16.

Product 2 Core database of Ipswich excavations 1974-1990

The completion of the database from the tables consolidated in phase 1 involved some new data input (Appendix 2, tasks 1-3, 6, 9), combining and data cleaning of tables (tasks 5, 7, 8, 10), creation of new tables (task 4 revised to provide site image and object image tables), and checking and updating a key date field (task 11). Initial data input and correction went well, particularly in the first few months when one previous phase team member was

involved. This was disrupted by both relevant staff moving away from Suffolk, and this was the point at which as no external candidate could be recruited, probably due to a combination of geographic and economic factors. The work was picked up by a member of the SCCAS field team who completed the bulk of the data combination tasks and some data cleaning, with helpful support in a visit and notes from ADS. Issues that were identified included:

- Some data, particularly in the bulk finds and pottery tables, was more inconsistently recorded than had been identified in phase 1. For example it was not always clear whether quantities were by number or weight or indeed what unit of weight.
- The structure of the specific finds tables was very variable – task 10 was modified, as advised by ADS, to five object group tables rather than one.
- Staff lacked sufficient knowledge of Ipswich archaeology and of finds to carry out comprehensive checking and data cleaning – issues had to be passed over to JP which caused delays to progress.
- The phase/date checking exercise (task 11) proved impractical as a stand-alone desk based exercise and so the majority of entries in the date field result from the production of the site narratives and subsequent checking of texts against the database.

Product 3 Site summary accounts for each excavation

The production of an introduction to the archaeology of each excavated site (Appendix 2 task 21) was originally allocated to SCCAS staff, to be checked by the retired original excavation manager (Tom Loader). As already mentioned the delays in the first year and the retirement of Keith Wade, the director of all 34 sites, meant that the entire production of the summaries could be 'externalised' to the two people most competent to do it

The advantages obviously included familiarity with sites, sequences, phasing etc, plus an elastic attitude to the amount of time input to the project.

Disadvantages were that progress could not be managed very closely and that the authors had limited access to the digital data; paper prints of the digitised site plans with provisional phasing and Excel extracts from the core database were supplied instead.

Product 5 Digitised images of Ipswich ironwork X-rays

As per task 19 the 1827 X-radiograph sheets identified as part of the archive in phase 1 were sent to Bradford and scanned in 2012. Additionally in mid 2014 a further 187 sheets were returned to SCCAS by a former member of the Ipswich excavation project team – until this point there had not been an awareness of the size of the shortfall although it was known that some sheets were missing. These were also scanned by Bradford and included in the ADS archive.

Because there are multiple objects on a sheet it is not always possible to identify a specific find; information about the placement of the finds on the sheet is held in the paper archive. This means that the online resource is less specifically useful than would be ideal, but the existence of the digital archive is very important given the poor condition of most of the iron objects.

Product 6 Documents collection for Ipswich website
The selection of relevant assessments and reports from the archive for inclusion online (Appendix 2 task 22) included 20 general reports and 68 site specific reports, plus the two project designs, one closure report and new summaries of the history of investigations, the archive statement and the chronological framework. Because of staff shortage and time pressures in the later phases of the project this task was not completed fully, in that specialists were not contacted and so no updated material was included. So far no feedback has suggested that this is a problem. Particular care was taken to check that correct dates and author details were included on the ADS download lists.

Product 7 Image collection for Ipswich web pages and publication
Various groups of site and finds images have been collated, catalogued into the core database and included on ADS (Appendix 2, tasks 18, 20) in addition to the scanned X-rays above.

The selection of plans for scanning was modified as the definition of what would be useful was reassessed. A base collection of 192 site plans (mainly the inked or photographic reductions) was used for the creation of the digital map layer and these have been included in the archive for reference to check potential errors etc. Although various phase plans for sites do exist they were not included because the digital mapping provides the most current view of phases. More useful are the plans of individual buildings, principally the cellared type (late Saxon and early medieval) which have been scanned where available (60 examples). Similar scans of the posthole buildings and property divisions would have been useful but were not generally available (creation of these forms part of the publication proposal, product 4, as they are a key element of the Middle Saxon town).

An existing collection of scanned copies of almost all the site section drawings (1700 sheets) was included, and the 349 individual site skeleton plans from two sites were scanned in phase 1 of the project for inclusion.

As an addition to the site-related images it was decided in 2014 that the slide collection should be digitised as it is both informative and in danger of deterioration (some slides had begun to discolour and some were lost). This provides a useful record of both individual features of interest as well as general site conditions. The high quality of the digitisation (carried out by The Hive, Worcs County Co,) means that this has already proved a useful resource for presentations as well as for research; these and the digital photographs of finds provide most of the illustration on the ADS pages. The monochrome photographic archive remains undigitised but is well packed and stored in reasonably stable conditions.

Finds images were collated and produced in the first phase of the project, predominantly 978 scanned finds drawings and 932 digital photographs.

Product 8 Web pages: Ipswich excavations 1974 – 1990
The digital data was collated and supplied to ADS (Appendix 2 task 23) who prepared a set of archive pages for each individual site collection (accessed from a list at http://archaeologydataservice.ac.uk/archives/view/ipswich_parent_2015/site_list.cfm) and a set of general pages:

http://archaeologydataservice.ac.uk/archives/view/ipswich_parent_2015/overview.cfm which include a searchable database and a map interface (task 24). The amount of time allocated for collation and preparation of metadata was too low, and would have been too low even if the 2-stage approach had not been implemented (see below).

The process of checking and commenting on the web pages should have been included as a separate task as it involved several days work. It would also be sensible for project staff to spend a short time looking at ADS archives before the final collation and checking phase as their pages follow a regular format. For example the need for a concise summary to go on the Introduction page of the larger sites (which have very substantial summary accounts created for the project) could have been anticipated and would have reduced the ADS workload.

The innovative elements of the webpages are the database and map searching facilities. The database (http://archaeologydataservice.ac.uk/archives/view/ipswich_parent_2015/query.cfm) identifies files (images, reports) related to the search terms such as a feature type or an object. Although in theory the various fields offered for searching could allow complex searches, in practice the data is often not good enough (or perhaps not predictable enough) to return results (eg 'coin' + 'silver' gives a very poor return of a few x-rays, whereas 'coin' picks up the coin report and 172 images, many of them silver). This compares unfavourably to the data that can be generated by using the core data tables in MS Access (which anyone can do by downloading them from the general page: http://archaeologydataservice.ac.uk/archives/view/ipswich_parent_2015/downloads.cfm?archive=Database), but is an interesting and probably useful way of exploring the online files.

The map search (http://archaeologydataservice.ac.uk/archives/view/ipswich_parent_2015/downloads.cfm?archive=Database) is probably a more user friendly and informative route into the data – first it provides the location for all the sites and then it can be refined by period (single) and feature type (multiple). Clicking on a feature provides the context number and thence links to available files. It also has a useful snapshot facility (see Figure 1 on page 12).

So far it is difficult to assess the usefulness of the resource to various types of user. One East Anglian archaeologist commented that navigation between the different parts was not very intuitive but that it was "fantastic to be able to download a lot of the documents, even if some aren't finished". The information has been circulated to as many interested bodies as possible, but the present programme of repeated moves of both offices and staff at SCCAS meant that a full publicity launch during summer 2015 was unfortunately not possible.

Integration into the HER and Ipswich UAD

Some of the data was immediately ready for HER incorporation at the end of the project, particularly the mapping. The descriptive data however needed further summarising, as the existing reports are too long, and the original estimate (Appendix 2, task 27) had not made enough allowance for extracting key terms (Monument and Finds types) which required a check back to the database tables, particularly for finds types represented at each site. Examination of the HER entries for the 34 sites forms an initial stage of the Ipswich UAD project in 2015-16.

The staged approach to data and site summaries output:
The splitting of the 34 sites into 3 groups, with an even distribution of the most major sites through the groups, was a useful tool for managing the project in stages. This was true despite the digital mapping being much more advanced than the other aspects, such as the site summaries, as the project progressed. It enabled accurate predictions of outstanding work following the delays that were due to staffing changes.

The collation of data for the stage 1 supply to ADS was extremely valuable, demonstrating that time allowed for preparing metadata and checking completeness had been underestimated in the PD (task 23, 3 days total should have been about 8 days). The option of a test web page creation from stage 1 data was not taken up by ADS. This was certainly economically sensible as much of the work would have had to be repeated and would not have fitted well with their archival process.

Identifying gaps in the archive
It became apparent during the archive consolidation phase that it was not easy to identify that material was missing – for example it was Keith Wade who identified that one category of bulk find and one of small finds that had not been returned by specialists and an outside research enquiry identified another missing group of small finds. During the rapid identification and photography of the main classes of small finds the absence of items was noted, but this was not followed up to check if there were groups of finds with specialists. Indeed one further group of missing material was identified, again because of a research enquiry, and retrieved during 2015.

On the ADS web pages the absence of reports and images related to a particular theme or type of artefact may leave potential researchers with an uncertainty about whether the raw material exists or is unstudied. The core database and the documentary archive catalogues are both available as downloads and would provide the answers to such questions but this is not a quick process for someone unfamiliar with the original data. It will be informative to note what kind of research questions are addressed to SCCAS and Ipswich Museum in the future.

Future modification
There is an issue with the future of the archive on the webpages because the ADS model is for a static complete archive, whereas the Ipswich material could clearly be substantially modified in future. In terms of deposition this would simply mean that a separate additional archive could be deposited (for example relating to the complete Worked Bone and Antler study which is currently in progress). The public perception however is of web pages as a changing resource and the “unfinished” nature of the archive may create some expectation that it will continue to develop.

Conclusion
Overall the project has achieved very positive results, making basic information about the 34 excavated sites in the historic core of Ipswich much more accessible than previously, both within SCCAS and externally via the ADS. As almost all the staff who could respond to research and management questions from personal knowledge have now retired from SCCAS this is a critical resource for the future.

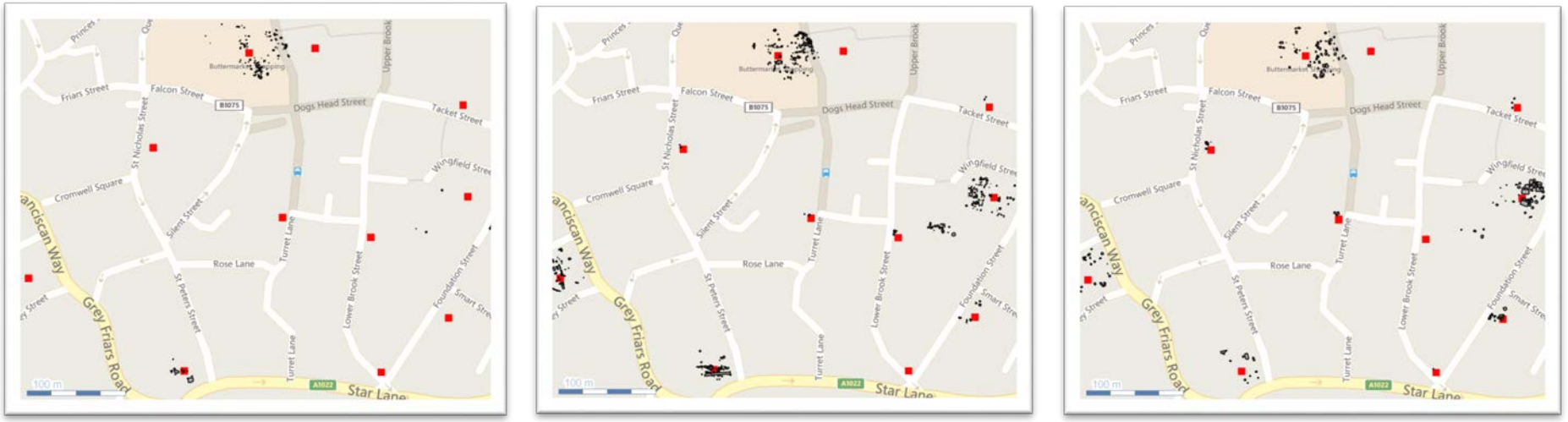

Figure 1 Downloads from ADS Interactive Map: All features (shown in black) for Early Middle Saxon, Middle Saxon and Late Saxon phases at sites (marked by red squares) in the centre of the town

Appendix 1:

Ipswich Historic Core Project Archive Consolidation Phase HEEP 5746

End of Project Report

1. Introduction

The aim of the project was to secure the complete archive of excavations in Ipswich between 1974 and 1990 for future use in an ordered fashion so that it can be made easily and widely accessible in the near future. Products were to include

- An ordered and secure documentary archive, comprising physical and digital records
- An ordered and secure material archive of the finds and ecofacts
- Digital catalogues to allow easy location of all elements of the archive by event, material and context
- A proposal for making the key elements of the archive accessible
- Good documentation of the project processes

2. Duration and variation

The original project was designed to run from April 2009 to April 2010. In February 2010 the costs and timetable were re-assessed and a Variation Order obtained to cover over-runs on both material and documentary archive work, which had already been signalled by an extension of the timetable to July 2010. The main phase of documentary archive work was completed by January 2010 apart from a few minor partial tasks completed during the subsequent 6 months. The material archive was re-packed and largely despatched by December 2010 (slowed in the final 4 months by a 50% reduction in staff). Assessment of the content of the archives as part of the preparation for the phase 2 project design (dissemination phase) identified serious gaps in the small finds records which could most efficiently be remedied before the finds were transferred. This final variation (tasks 31 – 34) was agreed in January 2011 and the work completed by August 2011. The final project output was a project design for phase 2, submitted in December 2011 and it was agreed that this End-of-Project Report be completed by 1st Feb 2012.

3. Project results and lessons learned

3.1 Finds archive:
Ownership was transferred to Ipswich Borough Museum for each of the 34 excavation material archives.

3.1.2 Bulk finds re-boxing etc (PD task 5)
A total of 7,430 boxes of bulk finds were repacked and listed, of which 16 (pottery – illustration/report correlation queries) have been retained at Unit 4 Ipswich, the rest being transported to storage in Colchester. The total includes 6 pallets (architectural stone) and 30 outsize boxes (pottery).

Overall the time overruns on the bulk finds were relatively minor, though the proposed schedule was very tight; the departure of one member of staff on maternity leave slowed down progress in the late stages of re-boxing.

Practical issues that had not been identified at initial PD stage included:

Extra museum requirements: record box weights on heavy materials (building materials, fired clay, slag, querns, samples), a total 1,147 of the boxes; add new accession numbers to all box labels.

Poor former storage – loss of labelling from some large architectural stone; damp causing mould on the contents of a few boxes of HSR

Separation/combination issues – the general principle that material was to be boxed by material, grouped by site and OP (context) number, had to be modified eg where specialists had done part of the assemblage (animal bone) or had subdivided further (eg pottery). Some material had been lumped into context groups and was split again where feasible.

Outsize materials: architectural stone was cling film wrapped onto pallets; custom boxes had to be made in-house using Corex for a few complete pottery items that were beyond the board size available to the box manufacturer.

3.1.3 Small finds packaging and labelling (tasks 6-7)

275 boxes containing metalwork and other small finds have been re-packaged. 194 boxes of iron objects have been transferred to Colchester, but the remainder has been retained while the Ipswich Museum metal store was being re-furbished.

This aspect of the finds archive consolidation had the largest over-run: the extent of repackaging and re-labelling required was underestimated in the PD (in practice nearly 100% were re-bagged and labelled) and the basic time allocation for the process proved insufficient. Individual finds handling is very time consuming, as was better recognised for the later tasks dealing with type identification and photo record.

3.1.4 General

The finds processing team were both already experienced in the basics of finds management, and proved to be generally good at identifying and solving problems. No specific training requirements were identified as needed except for an introduction to the archaeology of Ipswich and a tour of the historic core with Keith Wade.

A benefit to SCCAS has been a raised awareness of the potential shortcomings in existing provision for other 1970's-1980's excavated material and this has led to better monitoring procedures in the finds stores.

3.2 Documentary archive (tasks 11-13, 19-22)

The Ipswich documentary archive is now held in 139 archive containers (mainly archive boxes but also 3 plan hanging cabinets), the contents of which are fully catalogued.

Although the finds archive from the specific 34 sites could be easily defined and separated this was less practicable in the case of documentary material. The collection includes elements from 208 individual IAS locations, but each of the non-project sites consist of 5 items or less in the catalogues, which contain around 3,250 items overall. To separate the documentary material would have taken far more time than inclusion and would have been impossible for items such as X-rays and photographs.

There is a strong likelihood that the long term repository will be the Suffolk Record Office but there is likely to be more requirement for access via the Archaeological Service than from elsewhere for the next couple of years and the archaeological paper store is secure and temperature and humidity monitored. In either case the material will remain the property of Suffolk County Council. The catalogue tables could easily be transferred from MS Acess to the Archives catalogue in DSCalm, and the system is now the model for the remainder of the SCCAS field archives.

There were some substantial underestimates of quantities – for example of the quantity of on-site and subsequent context sheets and of paper records relating to the conservation of artefacts. There is also a substantial amount of paper relating to analysis of various aspects of the sites, including numerous computer printouts of pottery information that have not been fully related to the draft copies of the report.

Although tasks 11-13 were identified separately it was found to be more efficient in practice to catalogue at the same time as material was being packed for much of the archive.

The importance of always using a site code on all material was reinforced – miscellaneous reports and letters with a site address only led to delays while the details were checked.

Items of both correspondence and reports (final versions or final drafts) were OCR scanned for future access (task 15). Email discussion with EH (Fort Cumberland) failed to produce digital copies of most of the AML reports (apart from HSR) and these were one of the largest group of items to be scanned.

There are specific issues with large plan sheets (task 19): most have been stored using adhesive plan hanger strips. The adhesive on these fails over time leading to damage as the plans are crushed at the bottom of the cabinet and loss of identification if it had been written on the hanger rather than the sheet. The use of masking tape or normal staples in repairs over the years add to the problems. Despite the advice in Brown (2007) to store flat if possible neither SCCAS not the SRO can do this for all material, particularly standard permatrace plan sheets. Plan hangers were replaced where needed using non-iron metal staples. Outsize plans have been loosely rolled and either tied or stored in large sectional plastic tubes.

Despite some concerns that a process of re-ordering by staff unfamiliar with the Ipswich sites would make it impossible to locate material quickly the opposite has already been shown to be true. It is now possible for any SCCAS staff to use the system to locate elements of the paper record to a particular box in a specific location (and often to offer a digital alternative as a first option).

3.3 Digital archive (tasks 8-10, 14-18)

The digital database material now comprises a set of original files plus extracted tables which have been standardised and combined for use as a working research archive. There are now 340 reports and other documents in digital format and 2066 digital images.

The process of software renewal (dBase to MS Access, generally via MS Excel, plus upgrades between versions of MS Access) had caused massive duplications of data tables, as well as copies used by different individuals, items on floppy disks etc etc. From the 1301 tables initially listed for comparison and identification of up to date versions 398 were finally incorporated into the research archive tables; occasionally there were uncertainties as to whether the selected table did include all the latest data and these were noted.

The use of MS Access introduced particular problems: metadata about editing is obscured at file level because it registers as modified every time the file is opened. The SCC systems had also introduced permissions problems such that tables in old versions of MS Access could only be examined by importing into the current version, losing metadata from the tables in the process.

There are 16,499 context records from 30 of the 34 archive project sites, a similar number of bulk finds quantity records and a larger number of individually catalogued finds records. Standardisation

of field names and of the format of site codes and numeric identifiers was possible but the addition of any interpretative or descriptive fields was not feasible at this stage, except for some of the small finds (tasks 31 under final variation order).

The most serious digital data loss seems to have been the most recent work on the iron small finds: no table contained the data recorded elsewhere as completed. The likely explanation is that the data was on a laptop used for finds work and that it was not copied off at redundancy.

It proved possible to recover all documents in earlier software (MS Works, Word 2.0, WordStar) though conversion from WordStar removed all formatting. Poor file naming led to time being spent untangling the figures and tables from two reports stored in the same folder.

The two staff on the documentary and digital team had some experience of Record Office archives practice and general IT experience. A more thorough grounding in manipulating tables in MS Excel and Access might have been useful but the necessary skills were acquired rapidly by experiment and reading. Brown (2007) provided invaluable focussed guidance on most aspects. The initial contact with ADS also provided useful support (for example text file conversion) and specific advice on a variety of digital questions.

3.4 General management issues

Working and storage space was identified at the start of the project as a potential issue but in practice the use of Ford House (Bury St Edmunds) plus three temporary container units meant that a steady flow of finds from Unit 4 Ipswich and on to Colchester could be managed without excessive double-handling.

Staffing on the project was stable throughout apart from one departure on maternity leave near the conclusion of the finds re-packaging. Provision was made for documentary staff to work outside the (windowless) archive store whenever practicable.

Although the concurrent running of the finds and documentary work meant that there was good cross-team communication for problem solving it was not always possible for the documentary team to provide definitive answers and data for site finds queries (eg eg previous separation or merging of artefact groups, apparent discrepancies in labelling) when they were most needed in the early stages of the project. Ideally the documentary work should have started several months ahead of the finds so that reliable site and finds data tables could be checked and annotated from the finds team. This was achieved in the later stages for the small finds (metalwork excluding iron).

The issues around specialists failing to complete work and return finds and documentation are common to all large field projects. Work on the Ipswich archive has led to the retrieval of various long outstanding classes of objects including the post-Roman coins and half of the hones (we remain optimistic that a second box of these will eventually turn up now there is an awareness that they exist!). Other material, specifically medieval window glass is still to be collected. Work is ongoing on worked bone and antler for publication and this will be fully re-integrated to the archive after submission of the publication report.

The inclusion of finds transfer at a late stage in the PD meant that new requirements arose regarding labelling boxes (as noted above), plus the need to establish in writing the ownership transfer from developers to SCC wherever possible as well as from SCC to Ipswich Borough.

4. Ongoing evaluation

The test of phase 1 of the Ipswich archive project will be in the future efficient retrieval of physical material in good condition.

It has already been shown that documentary and digital information can be rapidly located within SCCAS in response to research enquiries, for example a PhD request for data on imported stone items. Phase 2, dissemination, will build upon this to make the digital resource much more accessible.
Access to the finds has been made more complex for researchers in that two bodies are now involved, SCC for intellectual rights and full documentary data and CIMS for practical access to the catalogued boxes. Several potential projects have already requested the possible use of Ipswich material and any that come to fruition will be monitored for any accessibility issues.

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January 2012

Appendix 2
Ipswich Historic Core: Excavation archive (Phase 2) Dissemination

5746 Updated Project Design

February 2012

Suffolk County Council Archaeological Service
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Summary
The consolidated archive of the internationally significant excavations in Ipswich town centre between 1974 and 1990 will be used to provide a web-based resource for future research proposals and linked to a published report on key aspects of the sites. Production of a website based on both a mapped and a database interface will require some upgrading and rationalisation of the existing databases and digitisation of the excavation plans, plus selection and organisation of supplementary research archive materials.

In a subsequent phase of work the publication, intended for an East Anglian Archaeology volume, will use the same materials to give a summary of the excavations and as a basis for a discussion about what has been learnt about the Anglo-Saxon and medieval town, and the opportunities the data offers for further research

1 Background

1.1 Excavations and knowledge up to 1990

The town of Ipswich is located in south-east Suffolk, 12 miles inland at the lowest bridging point of the River Gipping, at the point where the tidal channel of the river widens out into the Orwell Estuary. The town is centred at Ordnance Survey grid point TM 1590 4060. Administratively the historic town is within Ipswich Borough Council, at present a district council within the county of Suffolk

The modern town centre of Ipswich lies on the site of its Middle Saxon predecessor. Pottery and artefacts recovered over the past two centuries from within the historic core of the town have been accessed into the collections of the Borough Museum, and their location recorded on a card index. Investigation of the Museum's collections by John Hurst and Stanley West[1] in the late 1950s led not only to the identification of Ipswich ware as Middle Saxon (*c.* 650 – *c.* 850 AD) pottery, but also to the conclusion that it was being produced in quantity within the town, and being traded over much of eastern England during that period. Despite this recognition of the town's early foundation, little opportunity was taken to undertake archaeological excavation within the historic core of the town. While a number of developments were monitored by officers of the Borough Museum during the 1960s and early 70s[2], the only archaeological excavations carried out since Nina Layard's investigations of the late 19th- early 20th centuries[3] were by Stanley West, then employed by the Borough Museum.[4]

The recognition during the 1970s of Ipswich as one of only a handful of trading settlements, displaying urban characteristics (emporia), found to exist in western Europe during this period, elevated the town's archaeological status to one of international importance.

In 1974, the Suffolk Archaeological Unit was created, under the management of the Scole Committee for East Anglian Archaeology. The Unit aimed to provide a countywide rescue archaeological service, and was to create the post of urban archaeologist to monitor development in all the urban centres of Suffolk, although the post-holder would have special reference to Ipswich, which had previously been identified by the Scole Committee as a town under serious threat from a potential development boom.[5] The incumbent, Keith Wade, was established at the offices of the County Planning Department in Ipswich, and for the first time in the town's history an archaeologist was appointed whose specific brief was to excavate and record, where possible, archaeological sites threatened with destruction from new development proposals.

Funding for this work came originally from archaeological grants from funds provided by the Department of Environment, Inspectorate of Ancient Monuments, and latterly from Manpower Service schemes, utilising school leavers (Youth Opportunities Programme) and, later, unemployed young adults (Community Programme). From 1987, some three years before the introduction of Planning Policy Guideline (PPG) 16, limited developer funding became more available to supplement Central Government and Manpower Service scheme money.

[1] Hurst & West, 1957
[2] Owles & Smedley, 1963
[3] Layard, 1898, 1907
[4] West, 1963
[5] *Ipswich – The Archaeological Implications of Development*, Scole Committee, 1973

Planning Policy Guideline (PPG) 16 was introduced at a time when large scale excavations in Ipswich ceased, and its introduction had severe ramifications on the post-excavation programme. Problems over inadequate financial resources available for post-excavation analysis were suddenly exacerbated by the original project staff's jobs being changed, making them no longer available to spend time on the publication of the sites.

The distribution of excavated sites within the historic core of the town is shown in Fig. 1. With the exception of West's two excavations between 1958 - 59 (Fig. 1, sites 1 and 2) and Owles and Smedley's kiln site (Fig. 1, site 3) none of these excavation sites has been fully published to date.

A total of 36 major archaeological interventions (on 34 IAS reference sites) took place between 1974 and 1990 (fig.1, 5-40). These sites all lie within the historic core of the town; 27 within the Anglo-Saxon and medieval defences, and nine within the medieval suburbs. Publication has thus far been limited to short summaries contained in the annual *Archaeology in Suffolk* section of the Suffolk Institute of Archaeology and History proceedings and short reports in East Anglian Archaeology (Dunmore *et al* 1975; Dunmore *et al* 1976). Synthetic works have also been produced.[6].

1.2 Published results and archive content

In 2009 the first phase of Anglo-Saxon activity at the Buttermarket (Fig 1 nos 34 and 35), a seventh-century cemetery, was published along with the Boss Hall cemetery that lies 3km north-west of the town centre (Scull 2009). The Buttermarket cemetery consists of 71 certain inhumation graves lying to the north of the earliest settlement area, and included examples of individuals likely to be from the Merovingian Continent. Overlying settlement activity begins with 8th-9th century streets, post-built structures and an Ipswich Ware pottery kiln (Scull 2009, 133).

Site narratives, identifying the main site sequences, have been written for the major sites and some of the smaller excavations. Some site sequences have been dated (against pottery analysis and stratigraphic data only). In several specialist areas analysis is almost complete. Publication of summary results on the Anglo-Saxon animal bone assemblage is pending (Crabtree forthcoming) with a fuller report in archive. A publication in East Anglian Archaeology of the worked bone and antler is nearing completion (Riddler in preparation).

The archive consolidation phase of the current project was begun in April 2009 and completed in August 2011 with funding from English Heritage (HEEP project 5746, phase 1).

The material archive was re-packaged and re-labelled to appropriate museum standards. Ownership of the material from all 36 interventions has been transferred to Ipswich Museum and the bulk has been removed to the Colchester and Ipswich Museum Service store at Heckworth Close, Colchester. A total 7,430 boxes of bulk finds and 275 boxes of small finds have been processed.

Prior to transfer the small finds, other than iron which is in very poor condition, were checked for presence/absence against the digital finds tables and the existing drawings. All copper alloy was given an identifier term in the digital data tables and much of this and other key items were digitally photographed.

[6] Keith Wade, 1988a, 1988b, 1993, 2001

1. Cox Lane, 1958 (IAS 3503)
2. Shire Hall Yard, 1959 (IAS 6901)
3. Cox Lane, 1961 (IAS 3502)
4. Star Lane Extension, 1974 (IAS 5301)
5. Vernon Street / Gt. Whip Street, 1974 (IAS 7501
6. Cecilia Street, 1974 (IAS 5001)
7. Old Foundry Road, 1974 (IAS 1501)
8. Elm Street, 1975 (IAS 3902)
9. Gt. Whip Street, 1975 (IAS 7501)
10. St. Helen's Street, 1975 (IAS 3601)
11. Vernon Street, 1975 (IAS 7402)
12. Lower Brook Street, 1975 (IAS 5502)
13. Turret Lane, 1978 (IAS 4302)
14. School Street, 1979 (IAS 4801)
15. Foundation Street / Star Lane , 1979 (IAS 5801)
16. Arcade Street, 1979 (IAS 1804)
17. Tower Ramparts, 1979/81 (IAS 0802)
18. Lt. Whip Street, 1980-81 (IAS 7404)
19. Tacket Street, 1980-81 (IAS 3410)
20. Bridge Street, 1981 (IAS 6202)
21. Key Street, 1981 (IAS 5901)
22. St. Stephen's Church, 1982 (IAS 3203)
23. Greyfriars Road, 1982 (IAS 5201)
24. St. Peter's Street / Greyfriars Road, 1982 (IAS 5202)
25. Shire Hall Yard, 1982 (IAS 6904)
26. Fore Street, 1982 (IAS 5902)
27. St. Nicholas Street, 1983 (IAS 4201)
28. St. George's Street, 1983 (IAS 9802)
29. St. Helen's Street 1983 (IAS 8804)
30. School Street / Foundation Street, 1983-85 (IAS 4801)
31. Smart Street / Foundation Street, 1984 (IAS 5701)
32. Wingfield Street / Foundation Street, 1985 (IAS 4601)
33. Greyfriars Road, 1986 (IAS 5203)
34. St. Stephen's Lane, 1987-88 (IAS 3104)
35. Buttermarket, 1987-88 (IAS 3201)
36. Lower Brook Street / Foundation Street, 1988 (IAS 5505)
37. Neptune Quay, 1989 (IAS 6601)
38. Greyfriars Road, 1989 (IAS 5204)
39. Franciscan Way, 1990 (IAS 5003)
40. 85-87 Fore Street, 1990 (IAS 6106)
41. Northgate Street Library, 1993 (IAS 1002)
42. Crown and Anchor, Westgate Street, 1993 (IAS 0703)
43. 24-26 Westgate Street, 1995 (IAS 0602)

Fig 1 Excavations in Ipswich

The paper archive was assembled, catalogued and stored appropriately in the SCCAS archive store at Bury St Edmunds. Most of it is in 136 numbered archive boxes, plus three hanging cabinets which contain plans of all kinds. The material could be transferred in the future, for example to the county Record Office stores, with minimal effort as the catalogues specify the contents of each numbered box.

The digital archive (most of which is secondary rather than primary 'born digital' material) was re-organised, cleaned for cross-site compatibility and catalogued. It was also enlarged, for example by the addition of scanned typescripts, including all complete or final draft specialist reports, scans of finds drawings and finds photographs.

2 Research Aims and Objectives

As described above the 1974-1990 backlog excavation archive contains almost all the recorded information relating to the development of Ipswich from Middle Anglo-Saxon emporium to medieval town, including the period of Danish occupation. This data is crucial to understanding and managing the historic town now and in the future.

The aims of the project in phase 2 are:

- To present the archaeology of Ipswich and make the initial results of the excavations available to the widest possible audience. The specific research questions that this data should address are detailed in Appendix 4.

- To allow users an easy way to access sufficient primary data from the archaeological excavations to establish the potential for ongoing research, without having to examine the sometimes fragile physical archive in detail.

- To provide clear signposting from the online data to the original material for the purposes of detailed research.

- To provide a case study in methods for dealing with large urban excavation backlogs

- To provide a basis for the future development of an Ipswich urban archaeological database within the Suffolk HER in order to advise future planning and management of the town

3 Business case and project interfaces

3.1 English Heritage priorities

The project addresses the problems of managing and disseminating the results of a variety of scale of excavation projects in advance of development, including some very large areas, carried out during the 1970's and 1980's in a single urban area. The data is key to future understanding of the town, but has been virtually inaccessible since fieldwork was completed. It falls within NHPP Activity 8A5, Offsetting unavoidable loss through knowledge which supports wide public dissemination of the results of significant projects.

The project is also an important step towards providing enhanced protection of the urban archaeological resource of Ipswich, addressing priorities in the English Heritage National Heritage Protection Plan (NHPP) measure 4 (Understanding: assessment of character and significance), specifically activity 4A1.204 where Ipswich is identified as one of the remaining major historic towns without an Urban Archaeological Database.

It also addresses the current English Heritage objective SHAPE *Sub-Programme 43213.110: Community Archive Enhancements*, to provide an innovative and effective system of digital access to urban excavation data. The documentation of the methodology of the project will provide a case study for other urban backlog projects.

More specifically the draft Thematic Research Strategy for the Urban Historic Environment (April 2010) identifies the provision of syntheses of past archaeological investigations as a priority, stating that:

> "Such syntheses should aim to provide new insights into the evolution and character of the urban historic environment. These insights will then inform the better understanding of significance and the future conservation and management of historic towns (including the design of future development-led work and the protection of specific assets). Crucially they can also feed in to the work of local and regional museums, education programmes and popular publication reinforcing the public value of developer-led intervention."

3.2 Regional priorities

Access to the results of the Ipswich excavations has been identified as of critical importance, and publication as a priority, in the regional research framework (Brian Ayers in Brown and Glazebrook 2000, 28 and re-iterated in Medleycott 2011, 56, 58). (see also Appendix 4)

3.3 Current opportunities

Of the two key personnel involved throughout the excavations one (Tom Loader) has taken early retirement and is currently available as a freelance consultant and the second (Keith Wade) is eligible to take retirement. It is highly important to progress this project while this expertise is available to SCC.

There has long been a recognition that the Ipswich material as a whole has the potential to deliver more interesting and insightful results than might be realised by traditional individual site publications – for example study of the bone- and antler-working across the town and through time is already well advanced. A background is now in place with the publication of the two early Anglo-Saxon cemeteries containing 7th century material at Boss Hall and Buttermarket (Scull 2009).

The rapid developments in digital accessibility, particularly via the internet and using mapping systems, now offer exciting scope for an innovative approach to making this internationally important archive widely available. Potential audiences include:

- Academic researchers: SCCAS regularly receives requests for access to Ipswich data and the primary archive from Britain and abroad.
- Local research and education: the University Campus Suffolk has a strong interest in local history and heritage, as has the new 6th form academy, Suffolk One in south-west Ipswich; both have already worked with SCCAS staff.
- Museums: in particular the Colchester and Ipswich Museum Service now has a large archive of finds relating to Ipswich and could develop exhibition and education resources around this.
- Planners, archaeological consultants, archaeological curators involved in development proposals in the urban core.

3.4 Interfaces

Within the current phase of the project the key organisational relationship is with the Archaeological Data Service (ADS) who will work with SCCAS to ensure data standards are met and that the web output fulfils the project objectives. They comment on the significance of the project from their perspective as follows:

While the ADS holds other resources pertaining to individual urban sites and excavations, much of this data is delivered as adjuncts to a publication (i.e. a set of digital appendices to a larger monograph) and, of course, stands alone often geographically isolated. The Ipswich digital archive is currently unique in two respects; firstly it offers researchers the full depth of available archives, some as yet to be fully analysed, offering great opportunities for new research questions to be considered on fresh data rather than a more traditional re interpretation of results. Secondly research opportunities are hugely enhanced by the close geographical nature of the sites and their archives allowing research to either focus on the individual site or, perhaps more excitingly, consider the archaeological questions based on the rich archive of a whole town. Certainly finding this richness of resource may only currently be compared to the Channel Tunnel Rail Link archive, which fails to encompass the intimate geographical aspect that the Ipswich archive offers.

As noted above there are several key individuals whose input will maximise the research benefits of the project – Keith Wade and Tom Loader as former site directors /managers /researchers and Paul Blinkhorn on the pottery. There will be close contact with the current publication work by Ian Riddler on the worked bone and antler as his volume will draw on the current project for background data and his digital data can be incorporated into the web pages.

The first phase of the project, consolidating the archive, involved a regular practical relationship with Colchester & Ipswich Museums Service as ownership of the 34 material archives was transferred. The current phase will not directly impact on their holdings, but information needs to be made available to them regularly.

Although the current backlog includes the most important interventions in the historic core of Ipswich this has to be seen in the context of earlier work (summarised in 1.1 above), small scale works such as 'watching briefs' during 1974-1990 and all works since 1990. Most of the small scale 1974-90 documentary material has been catalogued as part of phase 1 but none has been referenced out to the HER and the digital elements will not be included in the phase 2 dissemination products. Many of the small scale interventions in central Ipswich since 1990 have been completed in the form of grey literature reports, a complete set of which is available to the Suffolk HER and the data is recorded on OASIS at ADS since 2004 (and copies of reports since 2006) for wider access. However there have been a series of major excavation interventions in the waterfront are of the urban core between 2000 and 2008, since which time every developer has gone into liquidation resulting in a total cessation of post-excavation analysis; this material was the subject of a project proposal for synthesis under NHPP topic 3A5.201 submitted to EH in December 2011 as being complementary to project 5746. Currently a decision on this proposal is postponed, pending consideration of its relationship to the current PD.

The relationship of this project to the Suffolk HER and a future UAD is ongoing. The digital output for the 34 sites in this project will be incorporated as event and monument updates in the HER (currently the data is held as a series of monuments with minimal data and poorly mapped outlines) – this will clarify the approach to be used in a future UAD and will provide data for many of the key large event areas.

4 Methods statement

4.1 Digital data – the existing resource

The digital element of the archive is crucial to achieving maximum dissemination.

The primary documentary archive for the individual 34 sites is mostly paper-based rather than digital, reflecting available methods in the period 1974-1990. However much of the key data (context lists, quantities of finds, registered/small finds, pottery analysis) also exists in digital format with versions in MS Access (derived from dBase originals) currently being used and updated as research tools. Details of the process of collation and combination of the data tables in phase 1 were recorded as part of the archive record.

Security scanning was done in *c*.2002 of the A4 section drawing sheets from most of the sites (mainly .gif and a few .jpg files, 1717 sheets) and of site drawings of skeletons (all.gif files) from IAS 4801 (345 drawings), and IAS 4601 (4 drawings). Archive standard .tif files were not included because of local constraints at the time.

In addition there is a more variable amount of 'research archive' relating to some or all of the 34 sites, much of which was created digitally or was digitised before or during the first phase of this project. For most sites there is at least a short summary of the excavation results (as published in the annual Proc Suffolk Institute Archaeology 'Archaeology in Suffolk 19XX') and for some a longer account of the basic site phasing. Finds information forms the bulk of the research data, and is very variable. Individual aspects of the human remains have been published and copies and bibliographic details are included in the archive catalogue. Two aspects are pending publication – comparative results of work on the animal bone assemblage (Crabtree describing Middle Anglo-Saxon Husbandry in Suffolk, based on the full Ipswich animal bone report held in the archive) and the worked bone and antler (Ian Riddler). Various aspects have been assessed or reported on at some time, and new data continues to arrive, for example the Anglo-Saxon and medieval coin catalogue (received late 2011) and analysis (pending) from Marion Archibald.

Some useful digital data, most notably the animal bone analysis, no longer exists in digital form (last recorded as being on paper tape backups, location now unknown). The data are available in print-out, currently held at SCC, the majority as microfiche (and a set of printouts is held by Pamela Crabtree). The records indicate that 90,000 items were catalogued; 58 microfiche negs (ie 2030 pages of A3 printout) are identified as relating to individual sites, another 46 hold 'All Ipswich' information. This material has been used by Pam Crabtree in her report – all her texts, tables etc will be made available on the web pages for download, as well as the research conclusions being available in Crabtree forthcoming. Any reconstruction of the primary digital data would be a major task and would not be justified given the level of summary data that will be available. Researchers could currently access the data for individual sites by establishing total quantities per context in the site data tables and checking the report tables (or the box catalogue) as to whether the specific group was analysed (all of which stages will be possible using the online data) but will then need to examine microfiche or extant paper printout for further detail.

Various other datasets produced by specialists exist as lists or tables within MS Word documents - plant remains, fishbones, architectural stone, querns for example. To partially offset the imbalance in the proposed online searchable interfaces the existence of plant remains, fish bone and animal bone data will be recorded in the bulk finds context records.

4.2 Digital data – modifications and upgrading (products 2, 5, 6, 7)
The MS Access tables for the 34 sites will be copied, improved and combined to provide the data to underpin both a website and future research for a publication. Data standards will follow recommendations from ADS.

(Task 1, 2, 3, 5) Gaps in the context lists in existing site tables will be filled from the paper records – realistically the detail cannot be 100% checked for completeness and some checking of the paper

originals will always be advisable in future research. The objective of the project is to have complete lists of contexts (OP and context groups) by site with site relationships. To make the site data searchable (internally by site and across all 34 sites) new fields will be required, specifically a context identifier (following standard SCCAS wordlist, based on NMR thesauri), and a verified period/phase term based on the existing Ipswich system (see Appendix 3 for current terms lists). Verification of the period terms will require cross checking with other data tables (see Task 11).

(Task 8) For the bulk finds the post-excavation tables of quantities per context provide a baseline for each site, and the combined tables will indicate overall presence across the town. These tables will be enhanced by the addition of true/false fields to indicate whether animal bone was examined at EH, whether data exists about plant remains and whether fish bones were identified.

(Tasks 6, 7) A key data set is the pottery as it is fundamental to the dating of the site phases. The paper record of pottery analysis exists for all 34 sites and the majority is in digital format; missing records (c.250) will need adding to the tables. An extracted and merged version of the pottery tables (with standard terms linked in to update the existing numeric codes) will form part of the site/context interface on the website.

(Tasks 9, 10) The registered/small finds per site lists have been updated and are mostly also merged (by material/class across site) though some significant gaps have been identified (most notably that some of the ironwork is completely missing, and the existing lists of iron lack an object type field). The worked bone/antler also needs checking and updating from lists currently maintained by Ian Riddler. Registered finds are linked to site and to context; following rationalisation and further combining of the tables they will also form part of the searchable online interface.

(Task 23) Scanned drawings (910) and digital photos (950) are now available for many finds categories (such as copper alloy, coins, stone, organics) and will be linked to the individual finds records on the website. File naming is already based on site and object identifiers.

(Task 19) There is a serious concern about the iron objects which are in very poor physical condition, variably recorded in the data tables and best accessed from the X-rays. The current condition of the X-rays is good, having been stored previously in light resistant envelopes and rarely used. During phase 1 of the project the X-rays were transferred to clear polyester pockets stored in controlled conditions which will allow some future handling by specialists with minimal risk. No deterioration of the film was noted during the re-packaging. To make the X-ray record available more widely, and in case of future deterioration, they will be scanned to provide both an archive copy (high res .tif file) for security and a smaller .jpg file for web access. This work will be carried out at Bradford University under the supervision of Dr Sonia O'Connor – a similar X-ray digitisation project for the RAF Lakenheath project at SCCAS has proved that the quality of the digital product is close to the original and immensely useful for researchers.

(Task 22) Existing finds assessments and reports will be viewable from site specific web pages and also accessed from a central resource page. Authors will be contacted and told how the information will be made available; the descriptions of these files will include clear date-stamping of when reports were produced as updating does not form part of the current project. The only exception to this will be a few days specialist input by Paul Blinkhorn to select the correct version of the existing pottery reports and to identify key drawings and undrawn examples for future illustration.

(Task 23) Data from the finds and documentary box catalogues will also be integrated to provide a complete link from online data to the material archives in Ipswich, Colchester and Bury St Edmunds.

(Task 23) All new data tables and other research and image files will require metadata records before transfer to ADS to their approved standards.

4.3 Preparation of geospatial data (product 1)
Locational data, mainly site plans, exist solely in non-digital form at present. Inked copies exist of all (except one, IAS 5505) site originals and many (21 sites) have also been photographically reduced to 1:100 scale negatives or positives. Site location information is generally held on paper copies of 1:1250 OS maps.

Standard SCCAS graphics procedures use AutoCAD for digitising detailed site data and output from this to MapInfo for use in landscape scale mapping, ie in this case for web mapping and for the HER. The AutoCAD data is also retained for use (with Adobe Illustrator) in the preparation of publication standard plans.

(Tasks 12-17) Each site grid and outline will be geo-referenced to the Ordnance Survey. The site plans will be scanned and traced into AutoCAD, each closed entity (feature/context) identified by Site and Context reference. Fields from the MS Access data table will provide context type and period data for each entity, allowing separation by phase into layers.

This will provide a single cross-site map of the archaeological features and site extents based on the OS which will be exported for web use to MapInfo.

(Task 27) The MapInfo layer will also be used to provide accurate Event polygons for the county Historic Environment Record, crucial for efficient planning-related decisions and the core of a future HER-based Urban Archaeological Database.
The combination of digitised site plans and the core data table will form the basis of the searchable web interfaces to be produced and hosted by ADS.

4.4 Collation and creation of the descriptive elements for dissemination (product 3)
Most of the 34 sites already have either a short summary or a more detailed account of the basic stratigraphy/phasing; (one (5201) has neither and at least nine sites only have a short summary).

(Task 21) The existing site summaries will be reviewed and standardised, for example to include more quantification (the context identifiers added to the site data tables will facilitate this), and checked for obvious gaps and misinterpretations. These will be dual-function documents providing the introduction to the site page on the website and identifying key points about each site for the future publication. Tom Loader will provide essential personal knowledge of the sites, reading and commenting on the drafts prepared in-house. The summaries will also be used to update the HER records (Task 27).

Name	Year	IAS Number	No of Contexts	Plan sheets
Stage 1				
Old Foundry Road	1974	1501	?70	1
Cecilia Street	1974	5001	?158	1
Greyfriars Road	1982	5201	?20	1
Lower Brook St/Foundation Street	1988	5505	?50	1
Wingfield Street/Foundation Street	1985	4601	1181	24
Tower Ramparts	1979/81	0802	163	4
Arcade Street	1979	1804	57	2
St Stephen's Church	1982	3203	81	5
Tacket Street	1980-81	3410	68	1

St Helen's Street	1975	3601	69	1
Elm Street	1975	3902	508	5
11 sites			*2425 contexts*	*46 plan*
Stage 2				
St Nicholas Street	1983	4201	84	2
Turret Lane	1978	4302	83	1
School Street/Foundation Street	1979; 1983-85	4801	3048	41
Franciscan Way	1990	5003	1040	9
St Peter's Street/Greyfriars Road	1982	5202	13	1
Greyfriars Road	1986	5203	856	10
Greyfriars Road	1989	5204	325	3
Lower Brook Street	1975	5502	736	5
Smart Street/Foundation Street	1984	5701	254	2
Foundation Street/Star Lane	1979	5801	92	1
Key Street	1981	5901	356	1
Fore Street	1982	5902	191	4
12 sites			*7078 contexts*	*80 plan*
Stage 3				
85-87 Fore Street	1990	6106	85	1
Bridge Street	1981	6202	626	5
Neptune Quay	1989	6601	152	1
Shire Hall Yard	1982	6904	73	1
Vernon Street	1975	7402	389	3
Lt Whip Street	1980-81	7404	120	1
Vernon Street/Gt. Whip Street	1974/1975	7501	105	3
St Helen's Street	1983	8804	133	1
St George's Street	1983	9802	46	1
St Stephen's Lane	1987-88	3104	5112	34
Buttermarket	1987-88	3201	453	3
11 sites			*7294 contexts*	*54 plan*

Table 1 Sites listed in order for work programme

4.5 Data accession to ADS and website creation

(Task 24.2) ADS will accession the data into the archive on its receipt; this activity, common to all their archives, includes data checking and validation, migration to acceptable archival formats where necessary, checking and or creation of some metadata, ingesting the data and administration data into the collections management system. They also create versions of the data to be held in a deep storage preservation server at the UK Data Archive in Essex and arrange its secure transfer.

(Task 24.3) As with all ADS archives they will make the data available as downloads so that researchers may take away raw datasets and reuse them on their own computers. This will include the GIS layers and database tables in csv form. This 'work package' therefore involves the preparation of the files in suitable formats, matching them to the correct metadata, creating a range of web pages on which to host the downloads creating introduction and overview pages to the collection and checking data integrity

(Task 24.4) The reason behind the use of a map interface lies primarily with the nature of the data. The datasets are large (numerous) and we therefore have to think of meaningful ways in which a user can navigate the resource. Experience shows that displaying things on a map is one of the most popular and useful ways of doing this. The map interface could therefore be viewed in two ways; as a means of finding the data you're interested in but also as a research tool in its own right. It was agreed that a level of functionality that allowed filtering on period and feature type and some other

levels (rather than a full complex GIS) would be enough to enable a refinement of searching at the same time as directing the user towards the relevant files that could then be downloaded if required. Map interface design especially web accessible ones are quite time costly.

(Task 24.5) Dissemination/navigation of the data using a searchable interface to the main database will be necessary especially for more serious researchers to allow them to find the data they want to focus on.

(Task 24.7) A charge for future storage and migration is included.

4.6 Publication
(Task 25) Future publication is proposed as a single volume in the East Anglian Archaeology series via the standard editorial process. As part of the current phase of this project a detailed synopsis will be submitted to EAA. (Task 26) This synopsis and an updated Project Design will be submitted for EH support on conclusion of the current phase of work. The updated PD will address the topic of what research questions cannot be answered in proposed publication as well as those that can.

5. Management, staffing, timetable, tasks
5.1 Stages within the project
Much of the data preparation for the web database interface will not involve site specific queries or problems. However there will need to be careful timetabling and liaison to ensure that the site specific tasks coincide as far as possible to allow problems to be resolved across all aspects (digital data, site plan digitisation, summary accounts) simultaneously. The suggested order for dealing with the sites is shown in Table 1, based on the numeric ordering with adjustments to put those sites with gaps in their digitised data at the beginning, followed by one of the larger sites (IAS 4601) with the two large Buttermarket project sites (IAS 3104, 3201) together in the final stage.

The division into 3 phases provides internal benchmark points and a point at which a first trial dataset can be sent to ADS for testing and comment in June 2012.

Any changes to the order of dealing with sites will need to be agreed by all relevant members of the project team.

5.2 Tasks
See Table 2 (below) for the complete list of tasks and members of the project team involved in each

5.3 *Timetable*
It is proposed that the project commence in March 2012 and continue for 12 months, spanning two financial years ending at the end of February 2013. Table 4, Gantt chart (below), shows the tasks within this 12 month framework.

5.4 *Project review*
There will be regular (monthly) meetings of all those staff in SCCAS involved in the project and Tom Loader. The web proposal and progress will be discussed with ADS following the completion of stage 1 (end of June 2012), and updated at the end of stage 2 (end Sept 2012) to confirm timings for final data transfer during Dec 2012), in addition to individual consultation as necessary.

Monitoring by English Heritage with Highlight Reports for them should also relate to the stages – suggested dates are mid-July once the stage 1 products have been trialled by ADS and mid December 2012 when all data should be with ADS; completion report and updated PD to be with EH by end of February 2013..

5.5 *Project team*
Core staff will include two project officers (PO), one senior graphics assistant (GA), one project manager, Faye Minter (FM) who held this position in the archive consolidation phase of the project. The PO and GA posts will be determined internally or (less likely) advertised externally if appropriate staff are not available.

Overall management and budget control will be by Jude Plouviez (JP), Archaeological Officer and Keith Wade (KW), Archaeological Service Manager.

Input to the understanding and interpretation of the Ipswich sites will be provided by Tom Loader (TL) and Keith Wade (KW) and TL will contribute substantially to the site summaries.

Web pages design and execution will be by ADS (planning carried out so far by Michael Charno) who will also advise on data structure and archival standards throughout, in conjunction with the SCCAS archive and digital data officer, Mike Feider (MF).

Advice on graphics preparation will be from Crane Begg,(CB) Field Projects Team Graphics Officer.

5.6 Health and Safety
The project will be undertaken in line with Suffolk County Council's Health and Safety statement and policies. Policies relating to the workplace such as checking workstation layout will be applicable and no project-specific H&S risks have been identified at this time.

6 Resources
6.1 Non staff and specialist costs
SCCAS will provide office space with standard PC's including MS Office Pro for the project officers and for a graphics officer with AutoCADLite and Adobe Illustrator. An extra licence for MapInfo v.9 will be required for the graphics station – these are currently tightly rationed by SCC and acquiring another will probably require a purchase. Other minor IT requirements will include portable USB storage devices to transfer scanned data. Total new IT costs of £900 are included.

Large format scanning will be done at one of the local graphics suppliers in Bury or Ipswich already familiar with archaeological archive requirements; quotations average at £4 per scan depending on size giving a total requirement of £1344 for 336 scans

Specialist X-ray scanning at University of Bradford has been quoted at £2828 for 1616 radiograph plates.

Web pages production and hosting and data management advice will be provided by the Archaeology Data Service (ADS) who are the sole national providers of digital archiving for archaeological data and also have good experience of designing mapped interfaces16,675. The quoted price of £16,675 includes allowance for an initial visit to ensure appropriate data management procedures are in place and for using test data at the end of Stage 1 for trial web page.

6.2 Budget

The total budget is £108,514.82 which is divided as £21,793.09 in financial year 2011-12 and £86,721.73 in financial year 2012-13

7 References

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Wade, K. 1993	'The Urbanisation of East Anglia: the Ipswich Perspective' in Julie Gardner (ed), Flatlands & Wetlands: Current Themes in East Anglian Archaeology, *E. Anglian Archaeol.,* 50, 144-151
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Table 2 Task List

Task No	Tasks	Staff	Days
	Site data and related finds tables (Product 2)		
1	Add missing OP's(=context numbers) from paper records (at least 300 from 4 small sites) to standard OP listing.	PS	3
2	Insert a feature type field into the OP lists for 34 key sites (16499 records at present, potentially up to 17,000 total) and complete it using the controlled list of terms (App.3.1)	PS	15
3	Update from the paper originals any fields crucial to understanding stratigraphy/functions (eg site IAS5003 noted as lacking feature relationships).	PS	5
4	Create section sheet table to link site contexts to scanned image sheets	PS	1
5	Create a core data table by merging the existing OP lists	PS	3
6	Add missing pottery data (c.245 records) to pottery analysis tables.	PS	3
7	Create a combined pottery table (c.68,860 records) with link tables to replace number codes with terms.	PS	6
8	Combine the 34 general finds tables to a single table linkable by site ref and OP to the core table of the interface – document any problems or gaps created by discrepancies between sites. Add presence/absence fields for environmental data	PS	8
9	Complete missing/incomplete SF tables from paper records. Use a standardised version of the finds numbering (eg F or Fe, and separate the find number from the site element).	PS	10
10	Combine the SF tables to a single table, linkable by site ref and OP number to the core table, documenting any gaps or problems due to inconsistencies etc.	PS	11
11	For each of the 34 sites (in Table 1 order): Compare the existing date fields in the site, pottery and key finds tables, investigate discrepancies and update to a new key date field in the core data table. Where applicable (6 sites) also check against matrices (.xls files) and update these for use as reference files on website.	PS	35
	Advice on existing and proposed changes to phasing sites	TL	5
	Site plans (Product 1)		
12	Extract large plan sheets (c.30) for the 13 sites lacking photo-reductions and send for external scanning to .jpg files.	GS	1
13	For those sites (21 of) having photo-reductions of site plans (c.120 of), scan in-house to .jpg files (naming by site code/grid locations).	GS	4.5
14	For each of the 34 sites (in staged order as Table 1) establish a geo-referenced location plan in AutoCAD and exported to MapInfo.	GS	3
	Check site location with advisor (TL/KW)	TL	2
15	Copy features to AutoCAD from .jpgs (created in tasks12,13) for each of 34 sites using georeferencing established in task 14. Associate site codes and feature numbers with plan entities. Staged order as Table 1.	GS	90
16	Check site plans against site narratives etc and return problems/corrections for updating.	TL	23
17	Import period field and identifier fields from Access tables. Export to MapInfo. (to do at end of each stage in Table 1).	GS	3

Task No	Task	Staff	Days
	Other visual material (Products 5, 7)		
18	Extract existing phase and other complete/semi-complete plan sheets (c.306) and send for external scanning to .jpg files. Save/name and metadata on return	PS	3
19	Extract iron object X-rays from archive and deliver to Bradford for scanning	PS	2
20	Check existing scanned sections folders and re-combine large sheets (c.80 of) in Photoshop	GS	4
	Site narratives (Products 3, 6)		
21	Prepare a descriptive introduction to each site, using the existing summaries as a basis but expanding them to include quantification etc as defined in Product 3. Follow staged site order as Table 1.	PS	50
	Each draft to be checked and edited	TL	15
22	Select and collate other specific reports relating to each individual site for inclusion on website and provide a short summary of content, author, date written. (Product 6). Notify specialists/report authors as to plans to include their information on website; accept and incorporate any free updates.	PS	30
	Arrange visit by PB to resolve pottery report issues	PB	5
	Web dissemination (Products 8, 11)		
23	Collation and delivery of all data files organised as required by ADS with full metadata table, initially after stage 1 and then final product. Provide archive summary	PS	3
24	*Tasks carried out by ADS:*	ADS	
24.1	Advice and guidance		4
24.2	Accessioning and ingest of the datasets into the ADS archive		8
24.3	Preparation of files and creation of webpages for dissemination of the data as downloads		6
24.4	Dissemination/navigation of the data using a map interface		17
24.5	Dissemination/navigation of the data using a searchable interface to the main database		4
24.6	Management and admin		4
24.7	Storage and refreshment fee to cover ongoing migration into the future		
	Publication (Products 4)		
25	Prepare and submit synopsis to EAA editorial committee. Incorporate any feedback into synopsis and definition of Product 9	PS	2
26	Updated project design	PS	2
	Historic Environment Record		
27	Incorporation of the site mapping and site summaries into new and existing HER records	PS	2
	Management, advice, monitoring		
29	Project management, collation of highlight and closure report s	FM	40
	Budget control and Project management pre-May 2012	JP	20
30	Database advice & training	MF	10
	Graphics advice & training	CB	5

PD Appendix 1 Products

1.1. Summary List

1 Digital map, Ipswich excavations 1974 – 1990
2 Core database of Ipswich excavations 1974-1990
3 Site summary accounts
4 Publication synopsis
5 Digitised images of Ipswich ironwork X-rays
6 Documents collection for Ipswich website
7 Image collection for Ipswich web pages and publication
8 Web pages: Ipswich excavations 1974 – 1990
9 Publication: Ipswich excavations 1974 – 1990 (postponed to later phase)
10 Closure report
11 Archive summary

1.2 Products

***Product number* 1**

Product title Digital map, Ipswich excavations 1974-1990
Purpose of the product To provide base data for the website mapping interface
Composition CAD and GIS layers 1. Individual site outlines for 34 sites with site code and name labels 2. Site grid and individual feature entities with site code, feature number, feature identifier and period data.
Derived from Scanned plans (various formats), site location paper records, core database
Format and Presentation AutoCAD working files, exported to MapInfo for website and for HER
Allocated to Graphics assistant
Quality criteria and method ADS specification
Person/group responsible for quality assurance M Charno, ADS
Person/group responsible for approval Project Manager, ADS
Planned completion date Stage 1:Month 3; Stage 2: Month 6; Final Month 9

***Product number* 2**

Product title Core database of Ipswich excavations 1974-1990
Purpose of the product To provide the base data for the web interface and a research tool for the site summaries and other publication accounts
Composition MS tables comprising data from each of the 34 sites. Base tables include site data, finds quantities, registered finds, box lists, section sheet lists, pottery analysis
Derived from Archive MS Access tables (IAS_OPLists.mdb, IAS_FindsSummaries.mdb, IAS_Archive.mdb plus other individual finds groups in same folder) derived in phase 1 from multiple dBase and MS Access data. Additional gap-filling from paper records. Additional key fields context identifier and period to be added throughout.
Format and Presentation Single Access database with single site/finds/specific finds tables incorporating the 34 sites
Allocated to Project officer
Quality criteria and method as specified by ADS
Person/group responsible for quality assurance M Charno, ADS
Person/group responsible for approval Project manager, ADS
Planned completion date Stage 1: Month 2/3; Stage 2: Month 5; Final: Month 7

***Product number* 3**

Product title Site summary accounts

Purpose of the product Provide key information about each of the 34 excavated sites for use on the website and in the publication
Composition
Each account will include:

Site identifiers – Site reference (IAS), Historic Environment Record (IPS), CIMS Accession number, commonly used Name(s)

Date and circumstances of excavation, funder(s), central NGR,

Extent in sq m (or ha), any areas/trenches, constraints

An account of the stratigraphic sequence by period (and any site specific phasing) represented by excavated features, with quantification of the feature types by period (and unphased).

Activity identified in each phase, including known notable finds

Summary of numbers of features by type (feature identifier per phase and undated - Tabulated (Excel).

Mention of evidence for phases only represented by finds

Brief discussion of any key aspects, significance and potential for further research, including a statement of what material remains unanalysed within the archive

Derived from Existing site summaries and stratigraphic accounts; site data tables, including pottery and small finds; existing phase plans; digitised location and site plans
Format and Presentation MS Word document for each site with appropriate standard file naming. Any references to existing plans of specific aspects (eg buildings) should refer to the digital filename.
Allocated to Project officer and Tom Loader
Quality criteria and method Follow the defined order for sites to correlate with site plan production. Initial drafts by project supervisor will be passed to TL for comment.
Person/group responsible for quality assurance Project manager
Person/group responsible for approval Project team
Planned completion date Stage 1: Month 3; Stage 2: Month 7; Final: Month 8

***Product number* 4**
Product title Publication synopsis
Purpose of the product Establish the outline of proposed publication in the EAA process
Composition Standard EAA synopsis with research basis, summary, proposed chapters, lengths and quantities of visuals
Derived from Project design and research archive
Format and Presentation Word document
Allocated to Project officer
Quality criteria and method EAA requirements
Person/group responsible for quality assurance Tom Loader & Keith Wade
Person/group responsible for approval EAA editorial committee
Planned completion date Month 4

***Product number* 5**
Product title Digitised images of Ipswich ironwork X-rays
Purpose of the product To provide images of iron objects for dissemination and archive
Composition Scanned copies of each of the X-ray plates of iron objects (c.12,000 objects, many now very badly decayed)
Derived from 1616 X-ray plates
Format and Presentation .tif files for archive storage, .jpg files for dissemination
Allocated to Bradford University
Quality criteria and method
Person/group responsible for quality assurance Sonia O'Connor

Person/group responsible for approval Project manager
Planned completion date Month 2

***Product number* 6**
Product title Documents collection for Ipswich website
Purpose of the product To make available existing assessments and reports relating to all or any of the 34 excavations
Composition Selection from the archive of most recent versions of all relevant reports, estimated c. 100 items. Metadata catalogue entry and summary of contents for each. Notification to be sent to each author
Derived from 289 catalogued digital report items (34 sites and general IAS)
Format and Presentation MS Word files and .pdf files. Images to be extracted from MS Word files for archive
Allocated to Project officer
Quality criteria and method Follow site order (Table 1). Consult SCCAS Finds Manager and TL and KW on relevance of content
Person/group responsible for quality assurance Project team
Person/group responsible for approval Project manager
Planned completion date Month 8/9

***Product number* 7**
Product title Image collection for Ipswich website and publication
Purpose of the product Illustrations of excavation and finds data
Composition Site section drawings, skeleton plans, detail plans, complete/near complete publication plans, finds drawings, finds photos and iron X-rays. Copy as stored by site, summary of metadata information/naming conventions.
Derived from existing archive, scanning of existing publication plans and product no 5
Format and Presentation .jpg files
Allocated to Project officer
Quality criteria and method
Person/group responsible for quality assurance
Person/group responsible for approval Project manager
Planned completion date Month 4

***Product number* 8**
Product title Web pages: Ipswich excavations 1974 - 1990
Purpose of the product: Dissemination of research archive for the Ipswich project to enable the public including potential researchers to assess the available data. As well as providing the detail of the 34 excavated sites it should offer information to the less specialist researcher interested in the history of Ipswich, particularly in the Anglo-Saxon period.
Composition
Two linked interfaces will allow entry to the data:

- Mapping interface using GIS layer based on site plans (Product 1). The smallest unit of measurement in the map is the context, which will have filters based on period and on feature type. Links from the mapped features will take users to the same results page as used by the database interface. It will use Google Maps and Open Street Map rather than the OS open access data as the OS API would restrict functionality and either provides an adequate modern context. A historic map view might be provided by the SCC owned OS 1st or 2nd edition 1:2500.

- Database interface using a database made up of the tables in the research archive (Product 2) with defined search fields which will take the user to a search page of results for browsing plus a map to provide geographical context.

The data available to be examined will include a general introduction to the archaeology of Ipswich, early maps, general thematic accounts of aspects of Ipswich, site specific excavation accounts, general and site-specific specialist reports, context, bulk and small finds and pottery data tables, site section drawings, site skeleton plans, plans of individual structures (eg buildings, kilns), pottery and small finds drawings, small finds photos, iron X-radiographs. Tables will include archive lists (finds and documentary) so that the original data can easily be located to a box in Colchester, Ipswich or Bury when necessary.
Feedback and query forms will be directed to SCCAS.
Derived from Digital data co-ordinated and cross-referenced at SCC (products 1,2,3,5,6,7)
Format and Presentation Website hosted by ADS with links to/from SCC and Heritage Gateway
Allocated to Archaeology Data Service
Quality criteria and method ADS data archive and management guidelines
Person/group responsible for quality assurance SCC project manager, ADS
Person/group responsible for approval SCC project team
Planned completion date Month 14 (end of project)

***Product number* 9 (postponed for a subsequent phase of work)**
Product title Publication: Ipswich excavations 1974 – 1990
Purpose of the product Print dissemination of a summary of the excavations, discussion of the development of the town and key themes
Composition
Summaries of individual sites with plans arranged in order of excavation
Discussion of: the chronological development of the town,
the layout of plots and streets, the waterfront and the defences, buildings, trade and industry, food, religion and burial
Potential for further work, with reference to material available on website
Derived from Synopsis definition as agreed (product 4), 34 site summaries (Product 3), map of town with sites (Product 1), phase plans (some product 7, some Product 1), existing specialist reports and assessments (product 6), personal knowledge from Tom Loader and Keith Wade
Format and Presentation East Anglian Archaeology, single volume
Allocated to
Quality criteria and method EAA guidelines
Person/group responsible for quality assurance Project manager, TL, KW
Person/group responsible for approval EAA editor and outside reader
Planned completion date

***Product number* 10**
Product title Ipswich excavations 1974-1990: Closure report
Purpose of the product To give an account of the overall progress of the project and to bring together information useful for future projects of similar type
Composition An account by members of the team describing positive and negative aspects of the project programme and individual tasks, particularly experience gained from it that could prove advantageous in other situations
Derived from Risk log, archive statement
Format and presentation MS Word re-formatted to .pdf on completion
Allocated to Project team with ADS
Quality criteria and method MORPHE defined
Person/group responsible for quality assurance Project manager

Person/group responsible for approval Project team; English Heritage
Planned completion date Month 14

Product number 11
Product title Archive summary
Purpose of the product To provide a guide to the archive content for general use including as an accompaniment to the online resource
Composition A summary account of the archive composition
Derived from Archive statement, digital data metadata/catalogues
Format and presentation MS Word re-formatted to .pdf on completion
Allocated to Project officer
Quality criteria and method
Person/group responsible for quality assurance Project manager
Person/group responsible for approval Project team
Planned completion date Month 10

PD Appendix 3 Key terms

A3.1 List of context identifiers
A3.2 List of period terms used in Ipswich excavations data tables

Term	Full name	Date ranges?/ defined by
ES	Early Anglo-Saxon	6th-early 7th century-EAS pot/other finds
EMS	Early Middle Saxon	7th century(majority of pot is hand made wares with or without Ipswich ware)
MS	Middle Saxon	c.700-c.850 :Ipswich ware
ELS	Early Late Saxon	Late 9th century-maybe just into 10th:Thetford Ware only
MLS	Mid Late Saxon	10th century: Thetford ware with St Neots Ware
LS	Late Saxon	Late 9th-10th century-insufficient pottery to pin down to ELS or MLS or even EMED
EMED	Early medieval	11th-early 12th century: Early medieval wares present
LMED	Late medieval	Late 12th to mid 15th century: typical medieval glazed/coarse wares
LMT	Late medieval/transitional	Late 15th-16th century-type ceramics
PMED	Post medieval	17th-19th century-type ceramics
CTM	Contaminated	Obvious intrusive material of later date than strat suggests
U/S	Unstratified	

PD Appendix 4 Research Questions
Keith Wade 17 February 2012

Background
There is no agreed national research framework for the medieval period but the origins and development of towns is clearly one of the top priorities, if not the most significant contribution, that archaeology can make to our understanding of the period.
The regional research frameworks for the East of England (Glazebrook1997, Brown and Galzebrook 2000 and Medlycott 2011) emphasise the urgent need to publish the evidence from Ipswich excavations as a priority.
The evidence provided by the 1974-1990 excavations in Ipswich demonstrates that Ipswich was one of handful of emporia (*wics*) which were established around the North Sea littoral in the seventh century and grew into substantial towns in the 8th and early 9th centuries. As such, they are the earliest European towns after the hiatus of town life in the 5th-6th centuries.
In England, there appears to have been one such town per Anglo-Saxon Kingdom with convincing evidence from London (*Lundenwic)*, Southampton (*Hamwic)*, and York (*Eorforwic).* These early towns were both international ports and craft production centres.
In the late Saxon period, the market economy developed and towns were established at regular intervals across the country. Ipswich was also a major late Saxon town (with Danish settlement in the late 9th century).
During the medieval period, Ipswich declined in importance but remained a regionally significant port and market town.
The evidence provided by the 1974-90 excavations and the post excavation work already undertaken is a rich source for urban studies.
The major periods of occupation which can be defined by archaeological evidence are:
Early Middle Saxon (7th century)
Middle Saxon (8th-early 9th century)
Late Saxon (late 9th –10th century)
Early medieval (11th-12th century)
Late medieval (13th-late 15th century)
Post medieval (16th -18th century)

Research Questions
What is the evidence for the chronological sequence:
-stratigraphic
-absolute dates (coins, C14, etc)

For each period of occupation, the evidence should be synthesised to answer the following questions:

1. What is the spatial extent of settlement?
2. What is the physical character of the settlement?
   -Is there evidence of central planning?
   -Is there evidence of defences?
   -what evidence is there for quays/waterfront structures?
   -what building types are present?
   -can the functions of buildings be determined?
   -how do the buildings compare with those from the rural hinterland
   -can tenements/burgage plots be identified?
   -what activities were carried out on identifiable tenements?

3. How was the town provisioned?

-was it a consumer or producer of food?
-where did the provisions come from?

4. What was the nature of craft production?
   -was it concentrated in any particular locations in the town?
   -on what scale was it practiced (domestic/industrial)?
   -is there evidence of foreign artisans?

5. What can we deduce about the nature of the population?
   -sex ratios
   -life expectancy
   -diseases prevalent
   -immigration

6. What evidence of religious practice?
   -foundation of churches
   -nature of burial practice

7. What is the evidence for trade?
   -what goods were imported and from where?
   -what goods were exported and to where?

8.. How does Ipswich compare with contemporary towns in England and North-West Europe?

Glazebrook.J., (ed), 1997, *Research and archaeology: a Framework for the Eastern counties, 1. Resource assessment,* East Anglian Archaeology Occasional paper No. 3
Brown, N., and Glazebrook, J., (ed), 2000, *Research and Archaeology :a framework for the Eastern Counties, 2. research agenda and strategy,* East Anglian Archaeology Occasional Paper no. 8.
Medlycott, M., 2011, *Research and Archaeology Revisited: a revised framework for the East of England,* East Anglian Archaeology Occasional paper No 24.