OAKFORD ARCHAEOLOGY

Archaeological excavation and historic building recording in the Chapter House and the Chapel of the Holy Spirit, Exeter Cathedral

on behalf of
the Dean and Chapter of Exeter Cathedral

Report No. 21-24

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Archaeological Groundworks and Historic Buildings

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Summary

An archaeological excavation was carried out by Oakford Archaeology between November 2020 and February 2021 in the Chapter House and the Chapel of the Holy Spirit, Exeter Cathedral, Exeter (SX 9210 9251). The below-ground works were accompanied by building recording undertaken by the Cathedral Archaeologist.

The excavation in the Chapter House revealed a garden soil which had formed prior to the construction of the standing building. This had been disturbed in the 19th or 20th century during the refurbishment of the Chapter House. Sampling below this layer revealed a sequence of late Roman and post-Roman deposits which was the subject of programme of soil analysis and have been reported separately. The reputed grave of Serlo, the cathedral's first Dean who died in 1231, was found and his skeleton re-examined, and no other burials were encountered. Reports on the large collections of medieval floor-tiles and animal bone are appended.

The accompanying study of the standing building provided new records of the geology and phasing of the internal elevations prior to the replastering of the lower parts. It found fresh evidence for the form of the early 13th-century building, including a newly identified portion of the clerestory in its western bay which provides further evidence for the form of the primary timber vault.

Excavation in the Chapel of the Holy Spirit, accompanied by the stripping of cement from its walls, provided much new information about the architectural development of this poorly understood space. The interpretation that this area was formerly a slype can now be discarded; before the late 13th century the ground consisted of a steeply sloping garden soil. When the Chapter House was built in the 1220s on the adjacent plot to the south, it had substantial buttresses which projected into this area but these were removed when the chapel was formed. Its construction entailed enclosing the space with an east wall, then infilling the area with a raft of unmortared volcanic stone rubble, on which a tiled floor was laid. The chapel was provided with stone benches, the northern one being created by crudely cutting back the ashlar of the south tower. The excavation confirmed that, rather than dating from c.1500, the chapel was built in the late 13th or early 14th century, as suggested in the Archaeological Assessment of 2020.

The primary floor level was subsequently lowered slightly and replaced by a sloping floor, which would have served the Consistory Court of the 17th century, later a lumber room. Following the installation of the library in the adjacent Chapter House from 1820, the room was converted for the storage of surplus library books in 1825; rows of holes marking the library shelves were evident in the walls. A later flagged floor of York stone was exposed by the removal of modern surfaces. It reflects the return of the space to use as a chapel in the mid 19th-century; a square unpaved area marked the former position of a font. In the more recent past the space reverted to use as a lumber store.

1. INTRODUCTION

This report has been prepared for the Dean and Chapter of Exeter Cathedral and sets out the results of a limited archaeological excavation undertaken by Oakford Archaeology (OA) between November 2020 and February 2021 inside the Chapter House and the Chapel of the Holy Spirit, Exeter Cathedral, Exeter (SX 9210 9251). The work was required by the Archaeological Consultant to the Dean and Chapter of Exeter Cathedral and Historic England (HE) as a condition of consent by the Cathedrals Fabric Commission for England (CFCE) for building works.

1.1 **The site**

The Chapter House and Chapel of the Holy Spirit (Fig. 1) lie to the south of the south tower of the cathedral and on the eastern side of the cloisters, at a height of *c.*37m AOD. The underlying solid geology belongs to the Whipton Sandstone Formation, formed approximately 252 to 299 million years ago in the Permian Period, overlain by river terrace gravels and clayey soils. [1]

1.2 **Historical and archaeological background**

The background to the site has been described elsewhere on several occasions [2] and will be summarized only briefly here.

The site lies immediately inside the defences of the fortress of the Second Augustan legion, established in *c.*AD 50–5, on the line of the via sagularis and the intervallum and the barrack blocks to the northeast; excavation in the adjacent cloisters have shown that they lie *c.* 1.5–2m below the modern floor levels. [3] The fortress was succeeded by the Roman cantonal capital of *Isca Dumnoniorum*, which was founded in the late 1st century within the defences of the former fortress. [4] Towards the end of the 2nd century a new circuit of defences was built, enclosing a much larger area. [5] Much of the later Roman town seems to have been occupied by masonry buildings, but evidence for late Roman agricultural activities within the walls has also been recovered. [6]

The Roman town was probably largely deserted by the early 5th century. A cemetery had been established in the area to the west of the cathedral in the 5th or 6th century, and by the 7th century a minster had been built. The site lies far to the east of the main focus of the Anglo-Saxon minster at the west end of the Close but close to the probable site of the late Saxon bishop's palace. By the early 13th century it formed part of the garden of the Bishop's Palace, whose bounds may have been established in the late Saxon period. [7]

The structural history of the standing buildings has also been described elsewhere. [8] The key elements are:

1. The lower parts of south tower formed part of the first phase of the Norman cathedral (1114–33).

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[1] www.bgs.co.uk.
[2] Parker *et al*. 2013; Allan 2019; WSI for cloisters excavations.
[3] Bidwell 1979; 1980; Allan *et al.* 1984, 389–93; Henderson 1988; Allan 2011; 2019; excavations by AC Archaeology 2020 .
[4] Bidwell 1979.
[5] Bidwell 1979; 1980; Henderson 1988.
[6] Bidwell 1980, 67–79.
[7] In 1225 Bishop Brewer gave to the cathedral 'a sufficient area for making a Chapter House, next to the tower of St John' on part of his garden (D&C 2084). Chanter 1932, 10; Parker *et al*. 2013; Allan 2019.
[8] Allan 2019; 2020.

2. The eastern side of the cloister is marked by a boundary wall, built before the Chapter House, which separates it from the precinct of the Bishop's Palace. This now forms the lower part of the west wall of the Chapter House.

3. The Chapter House was built in 1225–31. The north and south walls survive up to the tops of their arcades and piers, and the east and west walls up to the sills of their windows.

4. The structure was remodelled in the Perpendicular style in the period 1418–39, probably after a fire in 1412. The building programme was apparently extended; glazing was carried out in *c.* 1456–63 and painting of the roof after 1465. [9]

5. It was converted to a library in 1820 by John Kendall, who added a gallery at the west end and inserted a fireplace underneath the east window.

6. The library was cleared from the Chapter House and the building restored in 1937–40. The books and book-cases were removed, while Kendall's gallery and fireplace were demolished.

7. The room underwent a further restoration in 1969–70 when underfloor heating was installed and medieval shafts were replaced.

2. AIMS

The principal aim of the work was to ensure the adequate recording of any historic fabric exposed, to establish the presence or absence, character, depth, extent and date of archaeological deposits within the site and to excavate and record them as necessary prior to and during the repair work; and to disseminate the results of the project by appropriate reporting and deposition of the archive.

3. METHODOLOGY

The work was undertaken in accordance with a project design prepared by the Archaeological Consultant to the Dean and Chapter of Exeter Cathedral and Oakford Archaeology (2020), submitted to and approved by Historic England prior to commencement on site. This document is included as Appendix 1.

By agreement with the Archaeological Consultant to the Dean and Chapter of Exeter Cathedral and Historic England the 1960s concrete subfloor was removed by the main contractors in advance of the archaeological work commencing. The site was then cleaned by hand and the nature of the exposed archaeological material investigated and recorded. This was then removed by hand to a depth of c.100mm below the base of the concrete slab.

[9] William Worcestre stated that 'The east window was the gift of Bishop Neville' [1456–63]. Leland added: 'Syns I heard that Edmund Lacy [1420–55] began the Chapter House and Neville performed it.' The glass formerly in the east window displays the arms of bishops of Exeter up to the time of Bishop Neville; the roof paintings include the arms of Bishop Boothe [1465–78], suggesting that the decoration of the building was completed in his time. For the glass: Brooks and Evans 1988.

The standard OA recording system was employed. Stratigraphic information was recorded on *pro-forma* context record sheets and individual trench recording forms, plans and sections for each trench were drawn at a scale of 1:10, 1:20 or 1:50 as appropriate and a detailed digital photographic record was made. Registers were maintained for photographs, drawings and context sheets on *pro forma* sheets.

Recording of the interior and exterior elevations was undertaken by the Archaeological Consultant to the Dean and Chapter of Exeter Cathedral in accordance with specifications applicable to Level 3-4 as defined in Understanding Historic Buildings: A guide to recording practice - English Heritage 2016. The building recording consisted of:

- A detailed written description of the buildings and more general record of the main building.
- A detailed photographic record of the buildings in colour (digital) format, and a basic record of the main building.
- A limited drawn record of the buildings, consisting of annotation of, and additions to, the architect's 'as existing' plans and elevations, to show the locations of any fixtures and fittings, building breaks, blocked openings or architectural detail.

4. RESULTS

4.1 **The Chapter House**

Excavation was conducted in the Chapter House in preparation for the installation of a new underfloor heating system (Fig. 2). The previous floor consisted of a concrete slab 0.4m deep, incorporating a defunct underfloor heating system installed in 1968–9. The scheme entailed the complete removal of the old slab and the lowering of the underlying deposit by *c.*100mm throughout the interior of the room. All excavation was carried out by hand. The following sequence was identified:

Deposits preceding the Chapter House

At the western end of the Chapter House an irregular modern hole about 0.8m deep was found to the south-east of the grave of Dean Serlo (Figs 3a, 'test pit', section 3b). This was enlarged, cut to a regular form and deepened to allow the sampling and analysis of the sequence of soils underlying the Chapter House. Since the top of the column of deposits was cut by the tomb of Dean Serlo, who died in 1231 (see below), the entire sequence is firmly datable to the period before 1231.

The lowest levels of the sequence of deposits encountered in the test pit included two floors (Fig. 3b, 1005, 1007). No dating evidence was recovered, but their stratigraphic position below late Roman/post-Roman dark soil (Fig. 3b, 1014) shows that they are of Roman date. The top of this sequence is likely to represent the use of the site as a garden – a use recorded in the grant of Bishop Brewer of the site of the Chapter House in 1225. [10] A column of soils was removed for micromorphological study and geochemical analysis by Dr Richard Macphail of the Institute of Archaeology, University College, London; a substantial report on the results of laboratory analysis has been presented elsewhere. [11]

[10] See n. 4 above.

[11] Macphail, R.I. & Carey, C. 2021 'East Cloister Walk and Chapter House Excavations, Exeter Cathedral, Exeter; Soil Micromorphology and Geochemistry', report to Den & Chapter, currently unpublished; Macphail, R.I., Carey, C. & Allan, J. forthcoming 'Contrasting use of space in post- Roman Exeter, UK: Geoarchaeology of Dark Earth and Medieval Deposits below Exeter Cathedral', *Antiquity*.

Serlo's grave

Above the sequence of soils, the sole medieval feature which remained undisturbed after the insertion of the concrete slab in 1969 was a stone-lined grave immediately within the western doorway (Figs 3a–d). This grave had been opened in 1939, and was then attributed [probably correctly] to Serlo, the first Dean of Exeter (d. 1231). On that occasion a doctor's examination of the skeleton concluded that it was of a man aged about 60 showing injuries to the skull and one rib (typescript in ECLA; modern analysis would probably be more cautious in concluding there were injuries to the head and would give a wider age range: see Appendix 1). Re-examination in 2020 showed that the burial had not been lifted in 1939 but was in poor condition; it seems to have decayed very considerably after that date. The bones were very soft and eroded, and it was no longer possible to determine the sex or approximate age at death (report in 3.1 below). The following observations were made, however:

1. The grave was 0.30m deep. Its lining consisted of volcanic stone rubble, with one stone hollowed out to form a semi-circular recess for the head; the inner surfaces were lined with mortar.

2. The top surface of the grave was a thick and level layer of yellow lime mortar containing much crushed Salcombe stone aggregate. This apparently undamaged surface was presumably the surface on which the grave's Purbeck marble gravestone sat. At 37.01–37.06m OD it lies *c.* 0.5m below the threshold of the west doorway. The grave cover is *c.* 0.22m deep; the top surface of the Purbeck marble grave cover would therefore have been buried below floor-level

3. The posture of the skeleton was clear; the hands were folded across the lower chest, with bones of the arms and skull touching the sides of the grave. Even allowing for some movement of the bones as the body decayed, this indicates that there was no coffin, and this is confirmed by the form of the western end of the grave with its separate semi-circular recess for the skull; the burial was presumably in a shroud, although no shroud pins were seen.

From at least the early 20th century the Purbeck marble coffin cover set in the floor of the west end of the Chapter House has been identified as the tombstone of Serlo, Exeter's first dean, who died in 1231. In fact, although Serlo was commemorated at the cathedral from the 13th century, no medieval record of his place of burial is known. [12] The earliest records of the grave cover are Carter's sketch of *c.*1792 and his published plan of 1797 (reproduced as Allan 2019, Fig 4; he measured its western edge as 10 feet from the eastern side of the doorway). Our excavation has shown that the tomb from which it was taken lay further to the west, almost touching the foundation of the west wall, indicating that the cover had been lifted and moved before it was recorded at the end of the 18th century.

Whilst there is no conclusive evidence that the occupant was Serlo, the traditional identification is likely; this was the only burial in the room and its position at the centre of the doorway into the Chapter House would be appropriate for the man who would have been in charge of its construction. Moreover, coffin-shaped Purbeck marble grave slabs went out of fashion at about the time that the Chapter House was built (from 1225); the slab of bishop Simon of Apulia (1223) in the Lady Chapel is another late example (but with an effigy).

[12] Lepine and Orme 2003, 255, 274, 317.

The overlying soil deposit

Throughout the Chapter House, the soil exposed upon the removal of concrete consisted of a dark brown humic deposit (1003) containing residual Roman and building materials including box-tile and grey lias roofing slabs, much animal bone and a few human bones, early medieval pottery and many fragments of worn 13th-century floor-tile (quantification in Appendix 2). Two sherds of 17th-century pottery were present in this layer but there were no later sherds. Cleaning of the entire surface at the maximum depth of excavation revealed one minor post-hole at the east end (probably truncated: Fig. 3a, 1034). At a depth of 0.5m the foundation trench for the Chapter House walls on the south and part of the north side, indicating that the pre-1230 ground level, was exposed (Fig. 3a).

The general character of the deposit, with its high humic content, and the presence roughly equal amounts of Roman and Saxo-Norman pottery alongside substantial amounts of Roman building materials, suggests that it is in origin the post-Roman dark soil, and is consistent with the documentary evidence that the site served as a garden in the period before 1225. The presence of numerous fragments of worn 13th-century tiles, scattered throughout the layer at a depth of 0.4–0.5m indicates, however, that the soil had been disturbed at a much later date, since they can only have been mixed into the deposit after the tiles had become badly worn and the tile pavement had been broken up. When John Carter visited before 1792, extensive areas of the room's medieval tiled floor were still *in situ;* the lowering of the soil over the entire room must have been undertaken after that date.

A possible context for the disturbance of the soil to a depth of 0.5m is the conversion of the Chapter House to a library in 1820–5. This entailed major interventions including the removal of the internal wall-seat at the foot of each wall (details of documentary evidence in Allan 2019). The lowering of the soil might explain a further feature encountered in the excavation: the projecting foundations supporting the shafts at the bay divisions north and south walls had been roughly cut back, also to a depth of at least 0.5m (Fig. 7e). This might perhaps have been carried out to remove obstacles for new floor joists. The floor might then have been infilled in the 1930s, after the room ceased to be used as the cathedral library.

The floor of the Chapter House after 1820, however, evidently contained extensive areas of medieval paving tiles, [13] and it seems likely that the boarded floor installed at that time was lain over the older pavement. Moreover, the explanation that the soil horizon excavated in 2020 represented infilling after the Georgian floor was replaced does not explain the fact that it was almost identical in character to the undisturbed pre-1230 garden soil sampled in the test-pit below it. The soil, therefore, represents backfilling of the whole Chapter House interior with the same material – something which would not arise if there was a long gap between its initial excavation and redeposition. It may in fact be of much later date, representing the excavation of the underlying soil in 1937 or 1969 to a depth of 0.5m, then backfilling with the same material when excavation to that depth was deemed unnecessary.

Structural features exposed by excavation (Figs 3–4)

At the maximum depth of excavation (*c.* 0.5m below old floor level), the top surface of a trench was exposed, running along the south wall and returning a little at the foot of the east wall (Fig. 3a, 'construction cut'). It probably indicates that these walls were built within a foundation trench which cut through preceding soils, although the possibility that this too was a late

[13] Allan 2019.

disturbance cannot be disproved. This feature was not apparent on the north side – perhaps because undisturbed medieval soils were not quite reached.

Excavation showed that the foundations of the Chapter House, below floor level, consist of rough uncoursed volcanic rubble. At the bay junctions of both the north and south walls, small internal projections below floor level provided additional support to the shafts; they had been badly damaged, probably in the 19th or 20th century (Fig. 7e).

Nowadays a wall-seat survives along both the north and south walls of Bays 2–4, but not in Bay 1 or along the east or west walls. Excavation exposed the damaged foundation of the continuation of this seat along the west wall, and cleaning of masonry showed clear evidence for its removal, both along this wall (where it had been refaced in Beer stone, a material not used in the initial construction) and along the east, north and south sides of Bay 1, where the repairs were cruder and in brick, no doubt because the repairs would be hidden behind bookcases. In the primary design, therefore, the wall-seat extended around the entire room. Inspection of the surviving lengths of the seat suggests that it has been largely or entirely rebuilt, mainly in Beer stone. A probable explanation is that it was removed in 1820 to accommodate the library bookcases, then rebuilt in 1937–40.

4.2 **The Chapter House: Study of the internal elevations of the standing building**

Prior to the excavation, the only detailed (stone-for-stone) records of the elevations of the building were those of the internal and external faces of the west wall, made in 1994–6 (Allan 2019, reproduced here with some amendments, Figs 4b–c). Downland's new photogrammetric surveys of both the internal and external faces of the south elevation, and outline (1:50) surveys and new sections of all the other walls, have provided much more detailed records of the building than have been available hitherto. They have formed the basis of new archaeological recording, currently ongoing.

Since the programme of refurbishing the Chapter House entailed the replastering of the lower parts of the walls, which had been stripped in 1969–70, a photographic record was made of these areas prior to replastering.

The west wall (Figs 4a–c)

The internal face of the west wall had been recorded rather hurriedly in 1996, when it was stripped of cementitious render and re-rendered in lime mortar in preparation for the arrival of Dean Jones. By 2021 much of the render applied on that occasion had failed, so it was stripped once more and re-rendered. On this occasion a photographic record was made without intervening scaffolding (Fig. 4a) and the survey drawings of 1996 were re-examined.

The general interpretation remains unaltered, but some of the details of the phasing have been revised, as follows:

1. The initial build, consisting of volcanic stone rubble with a scatter of large irregular blocks of Salcombe stone and a few fragments of red Roman tile, stands to a height of 7.7m. This is clearly earlier in date than the Chapter House, and presumably served as the boundary wall between the bishop's palace garden and the cloister. It incorporates a relieving arch of quite thin voussoirs, mainly of volcanic stone rubble but again with a few Salcombe stones, which stands to the south of the Chapter House doorway. The moulded stone doorway which would have stood within it must have had a broader

curve than the later Chapter House opening; it seems likely that it was round-headed rather than a Gothic arch.

2. When the new Chapter House was laid out after 1225 the older doorway was blocked up and replaced with a new one further to the north; it has Salcombe stone arch mouldings and stops, and stiff-leaf capitals and 'water-holding' bases of grey lias. The blocking was carried out in rather larger stones than the older masonry. At the foot of the new room, a wall-seat was provided (the footing exposed in excavation: Fig. 3a, its position above ground marked by two early 19th-century courses of Beer stone – see Figs 4b, 4c). Above this, two further courses of plain Salcombe stone ashlar were also inserted, corresponding to the single course of such blocks in the north and south walls (Fig. 5b).

   At the corners of the new room, dressed ashlar quoins with stiff-leaf capitals, water-holding bases and shaft rings of grey lias, formerly with free-standing shafts also of grey lias, were cut into the older rubble. A crucial detail survived above the capital in the northern corner of the room: a series of ashlar blocks with a smooth, curving outer profile was exposed on this side. Since the curve formed an arc rising from the middle of the upper face of the capital, this is interpreted as the masonry on which a vault rib would have been placed. It was not the *tas-de-charge* of a stone vault (which would have projected from the wall face) and is interpreted as the seating for a timber vault. The sweep of the curve can be projected to indicate a vault rising to a height of *c.* 12.7m (Fig. 4c). It should be noted, however, that the lower part of the curve was not in perfect alignment with the upper part.

3. When the Chapter House was rebuilt in the 15th century the west wall was raised to a height of *c.* 15m at the wall plate and *c*. 18m at the apex of the roof. New Beer stone shafts sitting on the older capitals were installed at the corners of the room; they were surmounted with very elaborate niches which supported the new timber roof. On the north side the narrow space between the base of the new corner shaft and the moulded blocks at the foot of old timber roof was infilled with Salcombe stone. To the south no such evidence survived; all the ashlar blocks seem to belong with the newer 15th-century work.

4. A horizontal run of sockets running across the wall above the apex of the doorway marks the position of the inserted floor joists of Kendall's western gallery of 1820–3. A disturbance at a lower level at their southern end probably indicates the position of stairs leading down to the doorway Kendall inserted in the arcade of the south wall (Fig. 4c). At the foot of the wall, the removal of the wall-seat and its replacement with tightly jointed large facing blocks of Beer stone ashlar, similar in appearance to Kendall's refacing of the outer face of the wall, is also attributed to this phase.

5. The lower area of the south side of the doorway including the base mould has been renewed in Bath stone, possibly in the late 19th century.

6. Kendall's upper gallery floor was removed in 1937–40; the resultant damage was made good in cement and rubble. The apex and north side of the doorway's hood moulding have also been renewed, probably at this time.

7. The shafts of the doorway and corner-shafts, formerly of Grey Lias, were replaced in Purbeck marble in 1969–70.

The south wall (Figs 5a–i)
It has long been known that the arcade and plain lower masonry of the north and south walls the Chapter House are elements of the primary early 13th-century building, and that the clerestory was added in a 15th-century reconstruction. The geology and proposed phasing of the south wall are shown in Figs 5b–c. In Bays 1–3 they are based largely on examination from ground level, with some observations from adjacent scaffolding at the west end; in Bay 4 a full examination, first from a movable hoist and subsequently from a fixed scaffold, was undertaken in 2020–1. The plain walling below the arcade was also photographed prior to replastering (Fig. 6).

The lowest masonry consists of roughly cut (probably axe-dressed) and coursed vesicular volcanic trap blocks set in a framework of Salcombe stone ashlar. A few pieces of Grey Lias are incorporated in the areas of volcanic stone (e.g. Fig. 5b, Bay 1 – one large block in the top course).

The profiles of the mouldings of the arcade were recorded in both the north and south walls (Fig. 5d). One example of the fine Grey Lias capitals with their 'wind-blown' stiff-leaf are shown in Fig. 5e.

It has not been noted hitherto that a near-vertical straight joint rises through the middle of Bay 4, marking the break between the 13th- and 15th-century masonry (Fig. 5f); a substantial fragment of the primary build rises above the arcade on the west side of the break, and this contains significant evidence about the primary form of the building. This corresponds to the position of the edge of the stair turret projecting from the external face, showing that this feature was retained in the 15th-century remodelling. The earlier masonry consists principally of Salcombe blocks but with a little Caen stone and a scatter of flat slabs of grey lias, the material used for capitals and shafts in the 13th-century work. The top edge of this masonry forms a low arch, rising towards the centre of the bay.

A preliminary record was also made of one of the wall-paintings which occupy the spandrels above the arcade of Bay 4 (Fig. 5g); further recording the paintings of the arcade is planned in the near future.

The north wall
More limited recording was carried out on this wall, since no stone-by-stone photogrammetric record has yet been made. The photographic record of the lower masonry prior to replastering is shown in Figs 7a–7d. The moulding profile of the arcade of Bay 4 is shown in Fig. 6c; the profiles of the window tracery in the same bay are shown in Fig. 6d.

The east wall
The photographic record of the lower masonry prior to replastering is shown in Figs 7a–b. Above the rubble foundation, the former presence of the wall-seat is marked by a band of 19th-century rubble topped with a course of Beer stone, corresponding to the height of the wall seat on the north and south walls.

The position of Kendall's library fireplace of 1820, a familiar feature of 19th-and 20th-century records which was removed in 1937–40, is evident at the centre of the elevation. Here the

position of the former wall-seat is made up in brick, set in a black mortar. Above it, the blocking was carefully done, with volcanic stone blocks providing quite a close match to the adjacent masonry and Doulting stone blocks carrying on the course of Salcombe stone blocks over the former wall-seat and undulating courses of volcanic masonry (hard to acquire by the 1930s?) above.

4.3 **The Chapel of the Holy Spirit**

The architectural history of the chapel as it was understood prior to excavation is summarised in its Archaeological Assessment, which illustrates all known antiquarian records relating to the structure. [14] The document drew the conclusion that the chapel was appreciably earlier in date than previous commentators had suggested, being datable to the early 14th century rather than *c.* 1500, but much of its walling was obscured, and even the visible wall surfaces were coated with thick whitewash.

Clearance of the room, followed by the removal of modern cement render from the east and south walls and the excavation of a narrow trench parallel to the south wall in January–March 2021 (Fig. 10–11), provided valuable new evidence regarding the architectural history of this space, which has been perhaps the least understood area of the cathedral. The following sequence was revealed:

1. At the eastern end of the trench the top surface of the ground preceding the chapel (Fig. 14b, 1027) was recorded at a depth of *c*. 0.8m below floor level – the very bottom of the trench. It consisted of very dark brown loam, closely comparable to the soil underlying the Chapter House. This certainly preceded the east wall of the chapel but no stratigraphic relationship with the Chapter House or south tower was visible. It is likely to be soil of the bishop's garden which preceded the construction of the Chapter House in 1225; the underlying deposit is likely to be an accumulation of the period *c.* AD 400–1200

2. The north wall of the chapel (Figs 12–13), which is the external face of the south wall of the Norman cathedral's south tower, is the oldest standing element, dating from c. 1114–33. A small excavation at its foot showed that the bottom of the wall visible today is in fact the bottom course of Norman ashlar; small rubble forming part of the foundation was visible below it. The old ground surface here was therefore c. 0.7m higher than its recorded position in the south-eastern corner of the room; the ground must have sloped markedly. The bottom course of the tower (which is deeper than most) contains alternating blocks of Salcombe sandstone and Red Rock sandstone (from the Paignton area/lower Dart valley) with a few blocks of volcanic trap, carrying on the pattern visible at the bottom of the west face of the tower. Above this level the facework consists of Salcombe stone ashlar courses of variable width, some of them readily recognisable on the internal face of the tower and on the west side of the exterior. The original face of the lowest 1.5m of this face of the tower have been crudely cut back (see below); above that level chisel-dressing parallel to the block faces, typical of early Norman masonry, is evident on some stones.

3. Recording in the 1990s established that the eastern wall of the cloisters, which forms the front of the Chapter House and Chapel of the Holy Spirit, preceded the rest of the

[14] Allan 2020.

range. [15] In 1797 Carter recorded a late Romanesque doorway linking the cloister to the Chapel of the Holy Spirit (Allan 2020, Fig. 3a) but this was removed in Kendall's repairs of 1814. The wall's internal face remains coated with limewash; no features are currently visible.

4. The south side of the chapel is formed by the external face of the north wall of the Chapter House, built c. 1225–31 (Fig. 14). Removal of modern cement showed that this wall, now flat, formerly incorporated two projecting buttresses whose positions are indicated by vertical bands of dressed blocks of Salcombe stone. Their positions correspond to those of the buttresses projecting from the south Chapter House wall. The ashlar blocks flanking the scars of the robbed buttresses, like those within the Chapter House, show vertical chisel-dressing, now generally lost from the other external wall faces. The walling between these features consists of roughly coursed blocks of squared (probably axe-dressed) volcanic trap. The masonry of the former wall cores within the buttresses is different, consisting of smaller uncoursed rubble. A further detail which has not been noted, and probably does not survive, on the other external faces of the building is the preservation of areas of coarse cream-brown mortar adhering to the outer face of the wall, showing that, unlike the exposed stonework visible today, the external wall faces of the 13th-century Chapter House were rendered with a coarse lime mortar.

The new evidence that the buttresses of the Chapter House formerly projected into the area which became the chapel, and that the ground formerly sloped sharply to the east and south, makes it is unlikely that this space served as a slype before it became a chapel (*contra* Bishop and Prideaux 1922 and others).

5. The room retains a fine barrel vault, formerly covered by a crown-post roof which was removed in the 19th century (for the vault: Fig. 11; for the roof: Allan 2020, Fig. 2, a–b). The old roof was of the same type as those over the cathedral's high vaults and is therefore datable to the late 13th or early 14th century. These two features may also be related to the construction of the chapel's east wall; taken together, they provide evidence for the conversion of the space to a new chapel. A sequence of newly excavated and exposed features can also be seen as part of this process. First, the Chapter House buttresses were demolished. Then a raft of unmortared but compacted volcanic stone rubble containing a few Salcombe stone fragments and occasional mortar lumps was laid throughout the area of the chapel, creating a level surface (Fig. 14b, layer 1008). The eastern face of the raft was formed by the east wall of the chapel, which consists of irregular volcanic rubble (Fig. 15). This wall abuts the Chapter House; a clear straight joint is visible at their junction. These relationships show that the chapel was built after the Chapter House, and that the east wall is a primary feature of the chapel.

A low offset of volcanic rubble (probably a narrow bench or wall-seat) was exposed along the foot of the south wall of the chapel, abutting the Chapter House (Fig. 14b, 1017). The masonry of this feature is continuous with that of the east wall, and the two features appear to have been built together.

Along the north wall a similar narrow projection at the same height was achieved by crudely cutting back the ashlar of the wall face between the heights of 0.42m and 1.74m above modern

[15] Allan 2019.

floor level (Fig. 12, c–d). No firm dating of this modification was found, except that it precedes Kendall's western stone screen of 1825 (described below). It seems likely, however, that this feature is contemporary with the corresponding bench on the south wall, and thus is part of the conversion of the space to a chapel.

The primary floor level of the chapel is indicated by the position of the base of the wall-seat along the south wall (Fig. 14b, 1011). This is more-or-less on the modern floor level. A few fragments of late 13th/early 14th-century floor-tiles from a lost medieval floor were found in later deposits within the room (Fig. 17; Appendix 2). They probably come from the primary medieval floor. It is significant that they are thinner and later in date than the tiles of the pavement of *c.*1280 in the Chapter House. Their patterns are also found in the eastern limb of the cathedral in areas paved *c.*1300 (Appendix 2). They provide the best dating evidence for the conversion of the space to a chapel, suggesting that this was carried out a little before the adjacent south tower was remodelled in the period *c.*1310–22.

6. That floor was subsequently removed and replaced by a lower floor, sloping downward to the west (Fig. 14b, 1023). Only a few patches of the mortar bedding of this secondary floor survived along the south wall; impressions of flagstones were visible in the mortar bedding.

The secondary floor may have dated from the 17th or 18th century or may have been the floor of Purbeck stone installed in October 1822, when Chapter 'ordered part of the Holy Ghost Chapel to be paved with Purbeck stone'. [16] Fragments of a late 17th-century ledger stone were found in the make-up layer below the 19th-century floor (Fig. 18).

7. In 1820–5 the Chapter House was converted to the Cathedral Library. The Chapel of the Holy Ghost was then converted from a lumber room to store the extra books which could not be fitted into the Chapter House (documents cited in Allan 2020). The stone screen incorporating a plain Gothic arch at the western end of the room is attributable to this phase, being 'the partition wall to be built to enclose part of the Holy Ghost Chapel for books', [17] built by John Kendall in 1826 at a charge of £28 9s. [18] The numerous circular holes drilled into the north wall, which incorporate round pegs, are interpreted as the remains of supports for the shelving installed in 1825, when Chapter 'ordered shelves to be put upon one side of the Holy Ghost Chapel to take books for which there is no room in the Chapter House'. [19]

8. The floor exposed upon the removal of a modern bitumen screed consists of large rectangular slabs of York stone; a square unpaved area was found at the centre of the room (Fig. 16). This can be identified as the 'new floor of Holy Ghost Chapel, except the part taken up by the present old font, which is 6ft by 6ft' for which Robert Cornish offered the following prices in 1843:
   If done with granite in store……..£16 6s.
   If large size York stone…….£12 8s
   If with old English ornamental tile…… £37–£39. [20]

[16] Fabric Orders, 7001/1821–5.
[17] D&C Fabric Orders, 7001/1821–5.
[18] CAB 21/22 Dec.
[19] Chapter Act Book 3580, 226–7.
[20] D&C 7003/1843/3.

In fact work seems not to have proceeded until 1862, when payment was made for 'taking up the old stone and laying York stone flagging' in the chapel (E.L. Luscombe's account 7001/1862). Chapter had evidently chosen the cheapest option for the floor. The room had ceased to serve as a chapel by the end of the century; when the Bell's Cathedral Guide was published it still retained the cathedral's late 17th-century font but it was described as 'unused'.[21]

5. THE FINDS

5.1 **Analysis of the human skeletal in the Chapter House**

By Charlotte Coles

Introduction

The remains of a single articulated adult skeleton were found within the stone-lined grave near the western entrance to the Chapter House. This is believed to be the grave of Serlo, the first Dean of Exeter Cathedral (see above). The history of the burial is described above. The grave must have been disturbed before the end of the 18th century, since Carter's record of 1797 shows that the Purbeck marble grave cover had been removed and placed nearby (see above). The grave was reopened in 1939, when it was recorded that the bones were examined; they were then pronounced to be those of an adult male whose estimated age at death was about 60.[22] This report documents the current condition and presents an osteoarchaeological analysis of the remains, which was conducted with the bones *in situ*, since they were too fragile and fragmentary to be lifted

Methodology

As the remains were studied *in situ*, only a limited amount of information could be gleaned. An inventory of bones present was taken. All evidence of age, sex and any pathology changes was noted. The remains were too fragmentary for any measurements to be taken.

Orientation and position

The individual is laid east to west with the head to the west in a supine, extended position with the arms across the abdomen. The left arm is slightly below the right arm and both are laid over the lower thoracic and upper lumbar vertebrae. The legs are parallel with knees and feet together.

Preservation

Preservation is particularly poor, with fragmentation and erosion present on most parts of the skeleton. The skull shows signs of crushing and most of the pelvis is missing completely. The cortical bone is extremely fragile and powdery in many areas. The best-preserved parts of the skeleton are the teeth and some of the vertebrae.

Elements present

The parts of the skeleton surviving are the skull, including some of the frontal, the occipital and ten teeth. The parietals, temporals and maxilla have eroded away. Other bones present are both clavicles, the manubrium and sternum, left and right humeri, left and right radii and ulnae, left and right ribs, parts of all vertebrae; although the cervical vertebrae are very fragmentary,

[21] Addleshaw 1898, 62.
[22] Allan 2019, 9.

left and right femora, left and right patella, left and right tibiae, right proximal and distal fibula, left and right calcanei, left and right tali. There were also some hand phalanges and tarsals, metatarsals and foot phalanges present. Outside the grave, 69 pieces of disarticulated human bone were recovered from the excavations; some of these remains may have originated from this grave. The disarticulated human remains are documented in a separate report (below).

Ancestry
In view of the fragmentary nature of the skull and the loss of the facial bones which are diagnostic for ancestry analysis, this cannot be determined.

Sex
The pelvis and skull are in very poor condition and the only diagnostic element for sex determination surviving is the mandible. The gonial angle and flaring as well as the dental arch height all have masculine traits, [23] however as this is very limited, sex cannot be ascertained.

Age
All the elements that survive are completely fused but the sacrum and medial clavicles, the last bones to fuse, did not survive (Buikstra and Ubelaker, 1994, 43). The third molars do not survive and the pubis and auricular surface are also missing; therefore the skeleton can only as recorded as an adult of unknown age.

Stature
No complete long bones survive; it is therefore impossible to calculate stature.

Pathology
The fragmentary nature of the remains with many bones missing has limited the study of any pathologies present. The inability to lift the remains for further study also means that pathological indicators could have been obscured.

There is a small amount of lipping or osteophytes on the bodies of the middle thoracic and two of the lower lumbar vertebrae, this is extremely minor and is related to slight joint degeneration, this could be caused by age related changes or physical activity. [24]

No other pathologies were observed, this includes infection and dental pathologies. The report of 1939 on the remains noted injuries to the skull and a rib, [25] neither of these were seen. There was no detail in the 1939 observations as to which part of the skull was affected, therefore it is possible this has been eroded away or that there was a misdiagnosis and the previous excavators had mistaken post-mortem damage for pathologies.

Conclusions
The remains of this skeleton are now in such poor condition that the only thing which can safely be said about it is that it is an adult. It is probably male, but this identification is based on only one element – the mandible. This conclusion does correspond to that reached in 1939, when the bones were apparently in appreciably better condition.

[23] Buikstra and Ubelaker, 1994, 20.
[24] Roberts and Manchester 2010, 140.
[25] Allan 2019, 9.

5.2 **Disarticulated human bone**

By Charlotte Coles

All the disarticulated bone found in the excavations was retained and washed. Human and animal remains were then differentiated. A total of 69 pieces of human bone were found. The MNI (minimum number of individuals) was calculated and the element, age, sex and any signs of pathologies were recorded where possible. None of the long bones were complete; therefore stature analysis was not possible. The data were recorded on an Excel spreadsheet, deposited in the site archive.

Methodology

The MNI (minimum number of individuals) was calculated by dividing the number of examples of each element by the number of times those elements appear in the skeleton. Both sides and proximal or distal ends were taken into account, as well as whether the bone was fused or not.

Sex calculation was ascertained by skull and pelvis morphology based on Buikstra and Ubelaker, 1994, 18–20 for disarticulated material this is less reliable as only one part of the skeleton is available. For age calculation in adults bone fusion and the auricular surface [26] was studied, no public symphyses survives. As with the sex calculation these ageing techniques are in isolation from comparison with other parts of the skeleton in the disarticulate remains, therefore an age can only be suggested and is not reliable. The age of older individuals is also known to be underestimated using these techniques.

The minimum number of individuals of three, based on repeated elements and age of the remains. Many of these bones may have come from the articulated skeleton uncovered during the excavations and maybe have been disturbed in previous excavations of this grave. Other human remains are likely to have come from surrounding graves. The condition of the remains is poor to good, with most having fair surface preservation. The level of fragmentation is high with no whole long bones present.

Elements present

The pieces from the disarticulated human bone are mostly long bones, especially femur, tibia, ulna and radius. Also found were a scapula, a clavicle, a cervical vertebrae, a few crania and pelvis fragments, a mandible, several ribs and some hand and foot bones.

Age

All of the bones are completely fused apart from a single femur with an unfused proximal end from an individual under the age of 19 years old. Two auricular surfaces survived and age estimations of 39-42 years old and 50-59 years old were calculated. However without further observations from the rest of the individual's skeletons, it is not possible to be certain of these calculations.

Sex

Two bones could possibly be from a male individual, these are a piece of sciatic notch and a mandible. The sciatic notch is narrow and the mandible has a pronounced mental eminence. These are male traits, however as these are only disarticulated bones it is not possible to be certain of this.

[26] Meindl and Lovejoy 1989, 141.

Pathologies

Periostitis
Areas of periostitis were recorded on three femoral and three tibial shafts in the assemblage. Periostitis is a non-specific infection affecting the surface of the bone, this manifests itself as fine pitting and plaque like new bone on the original cortical surface, it is thought to be caused by infection, trauma, ulceration or varicose veins (Roberts and Manchester 2010, 172). [27]

Joint disease
A single bone has signs of joint disease, this is an ischium with part of the acetabulum (hip joint). The acetabulum has lipping around the margins of the joint, which is indicative of joint degeneration.

Dental pathologies
A small section of a mandible was identified in the assemblage. No other mandibles or maxillae were present but a single loose first mandibular molar was found. The mandible only has one surviving tooth – a right first molar which shows severe wear on the occulsal surface, nearly completely destroying the enamel and exposing the dentine. There is also ante-mortem tooth loss (AMTL) on at least eight teeth from the mandible. AMTL can occur for several reasons; the most common is periodontal disease, an inflammation of the gum that can transmit to the bone causing tooth loss. The disease is caused by poor dental hygiene, older age and sugar rich diets (Roberts and Manchester 2010, 73). [28] Roberts and Cox (2003, 263) [29] note that AMTL was very common in the medieval period with up to 75% of their sample of individuals having some tooth loss.

Conclusions
The 69 pieces of human bone recovered are presumed to represent disarticulated bone from the medieval graves within the Chapter House. They are a mixture of different elements from at least three individuals. Age and sex calculations were very limited due to bone survival. The pathologies seen are very common from skeletons of the medieval period.

5.3 **The animal bone**
By Charlotte Coles

Introduction
A large quantity of animal bones was recovered; they included 602 pieces whose species was identifiable. The entire collection came from context 1003 a layer which contains mostly Roman finds, therefore it is likely the animal bones are Roman. A total of 602 bones are identifiable to species and were fully recorded.

The condition of the bone is average to good with good surface preservation. found, these remains are likely to be Roman. Sheep/goat, cattle, pig, dog, horse, cat, bird and fish bones were all identified. Sheep/goat bones are the most common. All bones found represent domestic butchery waste with the exception of the horse, dog and cat bones, however these are also common species found from other Roman sites in Exeter.

[27] Meindl and Lovejoy 1989, 141.
[28] Meindl and Lovejoy 1989, 141.
[29] Meindl and Lovejoy 1989, 141.

Methodology
The animal bone was sorted into recordable elements and fragments of bone that could not be identified to species, such as ribs, pieces of vertebrae and long bone fragments. The unidentifiable pieces were not washed and those that could be recorded were washed. The animal bone present from the excavations are likely to be from the Roman occupation layers on site. The MNI (Minimum Number of Individuals) for each species were calculated from the most frequently occurring bone. For fusion analysis Reitz and Wing (1999) was used for cattle, sheep/goat and pig and Habermehl (1961) for cats. Tooth wear was recorded using Grant (1982) and Payne (1973). Measurements were taken according to von den Driesch (1976) using digital callipers. Withers heights were recorded using the formulae Teichert (1975) for sheep/goat, withers heights for other species were not possibly due to fragmentation. Species, element, fusion and ageing data, butchery marks and metrical data was recorded for all identifiable bones. An access database was used to record this information.

Results
Species present are sheep/goat, cattle, pig, horse, dog, cat, roe deer, domestic fowl, goose, duck, woodcock and fish. Sheep/goat is the most dominant species, followed by cattle and pig. Only two of the animal bones have gnawing marks, this possibly indicates that the bones were buried quickly after discarding, not allowing scavengers to access the bones before they were covered over. None of the bones have been burnt or charred.

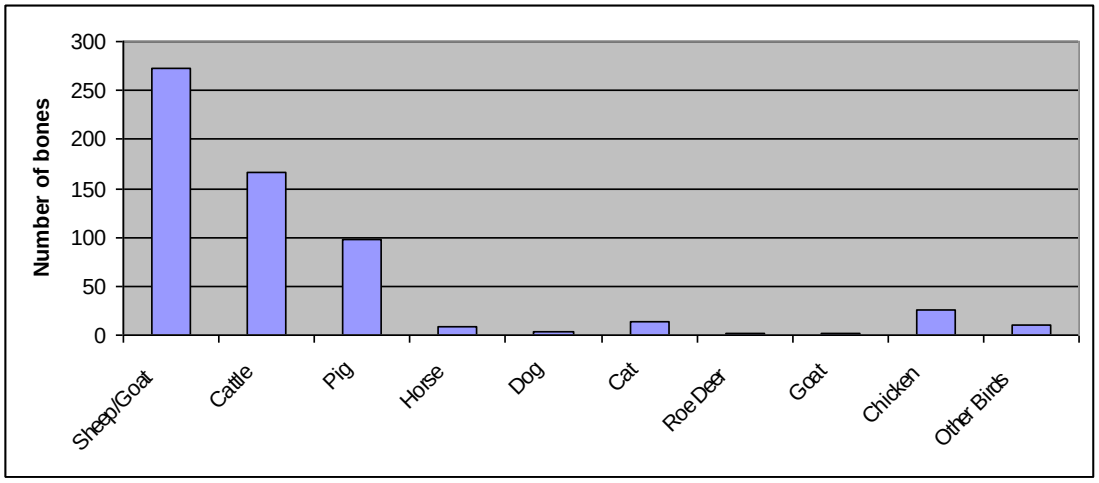

Table 1. Number of individual bones per species

Sheep/goat
Sheep/goat is the most dominant species with 273 bones recovered, this is a minimum number of individuals (MNI) of 13. The most common sheep/goat bone is the first phalanx with 107 bones, the rest of the bones are mostly loose teeth, long bones and pelvis as well as scapula and other foot bones. 55 of the sheep/goat bones are unfused and seven bones are particularly small and porous and are from very young animals or neonates. A loose tooth present is from a mature animal. The range of ages at death represented are also reflected in the Roman bones from the site of Princesshay, Exeter. [30]

Ten sheep/goat bones have butchery marks. These are all chop marks and are horizontally through long bone shafts or long bone epiphyseal ends with the exception of three pelvis chopped through the acetabulum or ilium and a scapula which was chopped through the neck.

[30] Coles *forthcoming*.

In total, 43 sheep/goat bones were measurable. Two withers heights were calculated, these are 51.7cm and 52.7cm respectively, these are slightly smaller than those found at Princesshay, where withers heights were between 552 and 575mm. [31]

Cattle
A total of 166 cattle bones were recovered, with a MNI of five. The most common elements are loose mandibular teeth; the rest of the bones are from all parts of the body. The vast majority of the sheep/goat bones are fused, the only unfused elements are one bone from an animal under the age of 36 months, one from an animal under the age of 42 months, three from animals from under 48 months and one from an animal under the age of 108 months. No neonate cattle bones were recovered. A cattle loose tooth is from an animal between 40-50 months old at time of death.

Twenty-one cattle bones show butchery marks, these are all chop marks with the exception of an astragalus with knife marks to the proximal end. All of the bones with chop marks are long bones, scapulae, pelvis, astraguli and a rib. A horncore was also chopped through the base for removal of the horn. The directions of the chop marks are mixed with signs of meat removal and disarticulation present. 31 cattle bones are measurable, these include two metacarpals with proximal end breadths of 46.1mm and 48.3mm and three distal tibias with breadth measurements of 54.1mm, 57.2mm and 63.4mm. The distal tibia measurements are comparable with the Roman bones analysed by Maltby, where the range was 49.7mm to 65.1mm. [32]

Pig
A total of 97 pig bones were recovered. This is an MNI of four. The most common pig bone is the tibia with nine bones present, the rest of the bones are from all parts of the body. 26 of the pig bones are unfused, two of these are early fusing bones, 13 are middle fusing bones and the remaining are late fusing. Five mandible wear stages were calculated, these are one 4-6 months, one 16-17 months, one 17-19 months, one 19-21 months and one 23-25 months. No neonate bones were present.

Two pig bones have butchery marks, these are a scapula with an axial chop through the proximal end and a radius with a chop through the distal end. Ten pig bones are measurable, this includes two distal humerii with breadth measurements of 28.1mm and 31.1mm and three radii with proximal breadth measurements of 23.9mm, 24.5mm and 25.5cm. These measurements are slightly smaller than those found by Maltby, where the proximal breath of the radius ranged from 25.5mm to 29.5mm. [33] Three pig canines were found, two of these are from female animals and one is from a male animal.

Horse
Nine horse bones were found: one astragulus, four loose teeth, one metacarpal, two phalanges and one scapula. The MNI for horse is one. All these bones are fused. One metacarpal displays butchery marks: an oblique chop through the shaft and an oblique chop through the distal end. A single horse bone is measurable: a first phalanx whose greatest length is 83.7mm.

[31] ibid.
[32] Maltby 1979, 168.
[33] ibid, 57.

Dog
Three dog bones were found: an ulna, a radius and a metapodial. Their MNI is one. All bones are fused and none have butchery marks. A single dog radius is measurable: the breadth of its proximal end is 19.4mm.

Cat
Thirteen cat bones were found: eight metapodials, one humerus, one loose tooth, one mandible and two ulnae. The MNI is one. Two of the bones were unfused: a distal humerus and a proximal ulna; these are from animals under the age of 11 months. [34] None of the cat bones had butchery marks and none are measurable. Maltby notes that cat bones are rare finds from Roman Exeter. [35]

Other mammals
A single roe deer bone was found: the proximal end of a metacarpal. This bone was fused and did not have any signs of butchery. A single goat horncore was recovered; it showed no signs of butchery.

Domestic fowl
A total of 26 chicken bones were found with a MNI of four. All the bones are fused except one unfused distal ulna. Three domestic fowl bones have butchery marks: a coracoid with a chop mark through the proximal end, a humerus with horizontal knife marks on the distal end and a femur with horizontal knife marks on the distal end. Nineteen chicken bones are measurable, including three femora whose greatest lengths are 69mm, 69.6mm and 77.9mm, and three humerii whose greatest lengths are 61.2mm, 62.5mm and 69.6mm.

Other birds
Eleven other bird bones were found. Three are duck bones, one mallard-sized, one teal-sized, the third from an unknown duck. All are fused and none have butchery marks. The mallard-sized carpometacarpal has a greatest length measurement of 47.6mm.

Three goose bones were present, all fused; they include a femur whose greatest length is 75.8mm. A single woodcock bone was recovered: a fused ulna. After ravens, the woodcock was the next most commonly encountered wild bird species from Roman sites in Britain. Cool comments that this wader would probably have been caught in winter. [36]
The species of the other four bones are unknown.

Fish
Two fish vertebrae were recovered: one medium vertebrae and one large vertebrae. Their species are unknown.

Conclusion
The assemblage of animal bones from the excavations is most likely to represent Roman domestic waste. Sheep/goat is the most dominant species, followed by cattle and pig. Butchery marks present indicate disarticulation and meat removal and a range of ages of the main species were found. For the species present, the animal husbandry techniques and measurements of the bones were comparable with other Roman sites from Exeter.

[34] Habermehl 1961.
[35] Maltby 1979, 64.
[36] Cool 2006, 115.

5.4 **The medieval floor-tiles**
By John Allan

The Chapter House
In total, some 141 tile fragments were recovered from context (1003). With the exception of one thick piece which shows the wiped slip typical of later medieval plain tiles imported from the Low Countries, all the identifiable fragments belong to Exeter Series 1 as defined by Allan and Keen (1984). The following are present:
Inlaid tiles, designs identifiable: 15: Eames 1873 (x 3); 17 (x 1), 21 (x 2), 30 (x 4), 32 (x 2), 34 (x 1), 35 (x 3)
Inlaid, design unidentifiable: 27
Rectangular half-tiles with plain green lead glaze: 23 (equivalent to 11 complete tiles)
Square quarter-tiles with slip and yellow glaze: 2
Featureless, worn, scraps, etc: 73

Fig. 8 shows the patterns represented. All the designs represented were also present among the hundreds of tile fragments formerly displayed around the edges of the Chapter House floor. The two new features are the much fresher representation of the detail of design 21 on a newly discovered example and the recovery of more of design 16 (Fig. 8, designs 21 and 16a).

The Chapel of the Holy Spirit
Seventeen fragments were recovered from context (1008), as follows:
Exeter Series 1, inlaid: 4 including Allan & Keen 1984 design 51 and fragments of a design with a border line and a radiating motif at the centre. Thicknesses 20 and 23mm.
Low Countries, slip & yellow glaze with wipe marks: 1
Ditto, possible, with plain green glaze: 1
Scraps, unidentified: 11
Neither of the identifiable patterns is represented in the Chapter House, and these tiles are thinner than the Chapter House series. This minor collection is therefore different from, and later in date than, the late 13th-century pavement of the Chapter House. Although these pieces form a minor collection, therefore, they are significant in showing that the chapel had an early 14th-century tile pavement, probably repaired with plain later medieval tiles from the Low Countries.

5.5 **The pottery**
By John Allan

Introduction
This is an interesting assemblage from a relatively undeveloped area of the Close. The assemblage is composed of Roman and Medieval finds with some interesting imports. The sherds are largely in a good condition, although the material is abraded. The finds are briefly described below and itemised in Appendix 2.

Romano-British
A total of 58 sherds of residual Roman pottery from at least 40 vessels were found. The collection spans the entire Roman period, consisting of 21 sherds of Black-burnished ware (BB1) including flat-rim dishes, flanged dishes, jars with everted rims (late 3rd-4th century AD), 11 plain sherds of Samian, six sherds of late 1st-2nd century flagons, four sherds of Dressel 20 Amphorae, three sherds from late Roman South-western storage jars, two sherds of Mortaria,

a single sherd from a Rhenish colour-coated beaker (late 2nd-3rd century) and two sherds of wheel-thrown greyware.

In addition a total of 784 residual Roman tile fragments were recovered, consisting of 21 combed box tile fragments, 41 tegula fragments, 21 Imbrex fragments, 22 pilae fragments and 587 miscellaneous fragments. were residual within 1003.

Medieval
The medieval assemblage consisted of 41 sherds, consisting of 38 sherds of Upper Greensand-Derived (late 10th-13th century), including 12 jar rims, at least 10 of them from different vessels and including cupped rims, which seem to come into use around 1200, a single sherd from a Wessex coarseware Tripod pitcher (late 12th- early 13th century), one sherd from an Upper Greensand-Derived (late 10th-13th century) Tripod pitcher, and a single sherd from a jug with a sand-tempered fabric, origin uncertain (probably early 13th century). This collection fits with a date before *c.* 1225; its general character, mainly of Upper Greensand-Derived but with a few tripod pitchers and an early jug, is paralleled, for example in the assemblage dating from *c.* 1200 from Exe Bridge, Exeter. [37]

Post-medieval
Two sherds of 17th-century South Somerset slipware were the sole post-medieval wares.

5.6 **Fragments of ledger stone** (Fig. 18)
Two fragments of a late 17th-century or 18th-century ledger stone of Purbeck stone were found on the surface of the sloping floor (1010). They read ‘Here lyeth […] Vertuous and […] Wife of Joh[…] one of ye […]…….ai[…] dary […] ary […

6. PROJECT ARCHIVE

The site records have been compiled into a fully integrated site archive which is currently held at Oakford Archaeology’s offices under project number 1631, pending deposition with the Cathedral Library and Archives. Details of the evaluation, including a pdf copy of the final report will be submitted to the on-line archaeological database OASIS (oakforda1- 428595).

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[37] Allan 1984, 60–1.

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Von den Driesch, A. 1976 *A Guide to the Measurement of Animal Bones from Archaeological Sites,* Peabody Mus. Bull. 1.

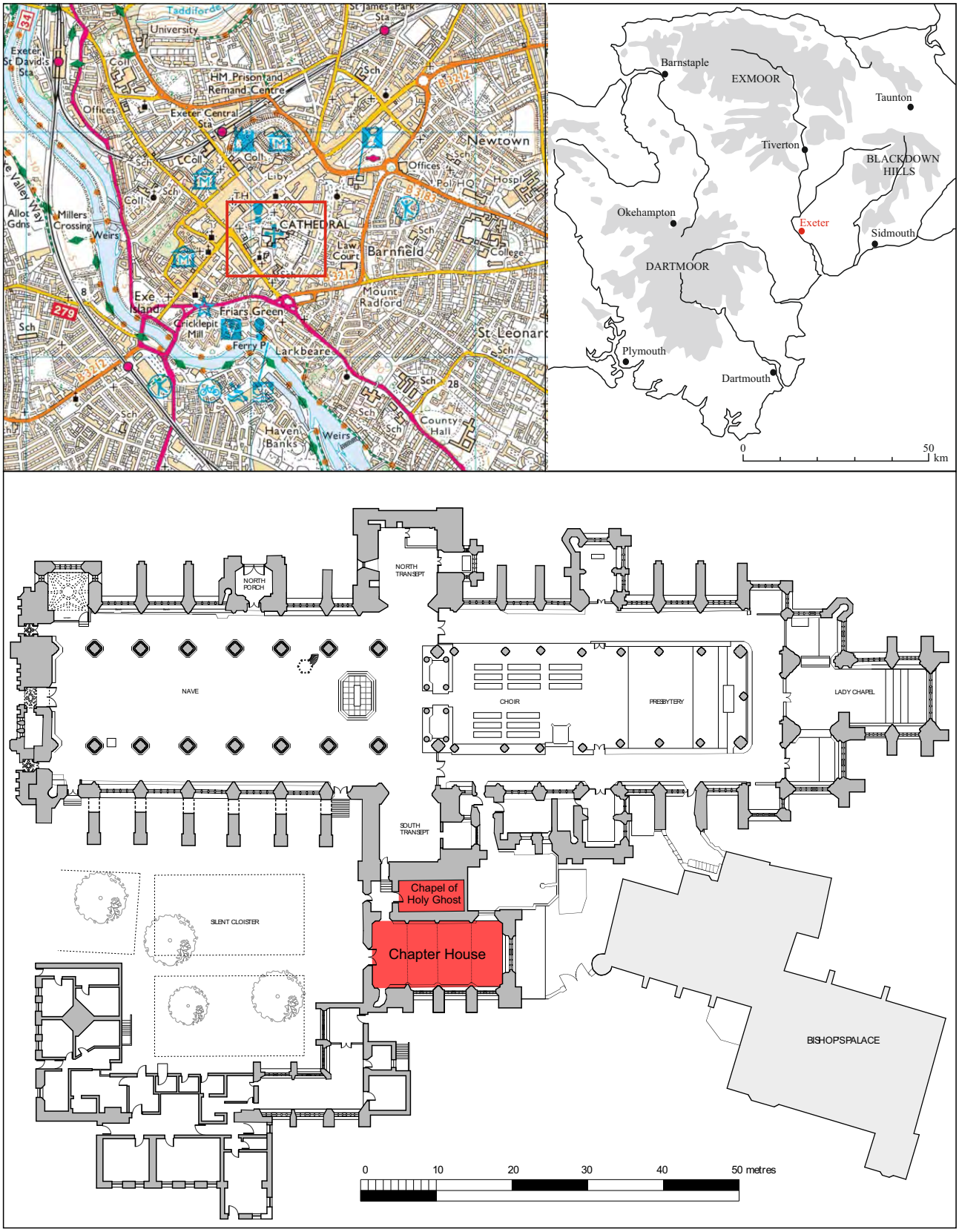

Fig. 1 Location of site

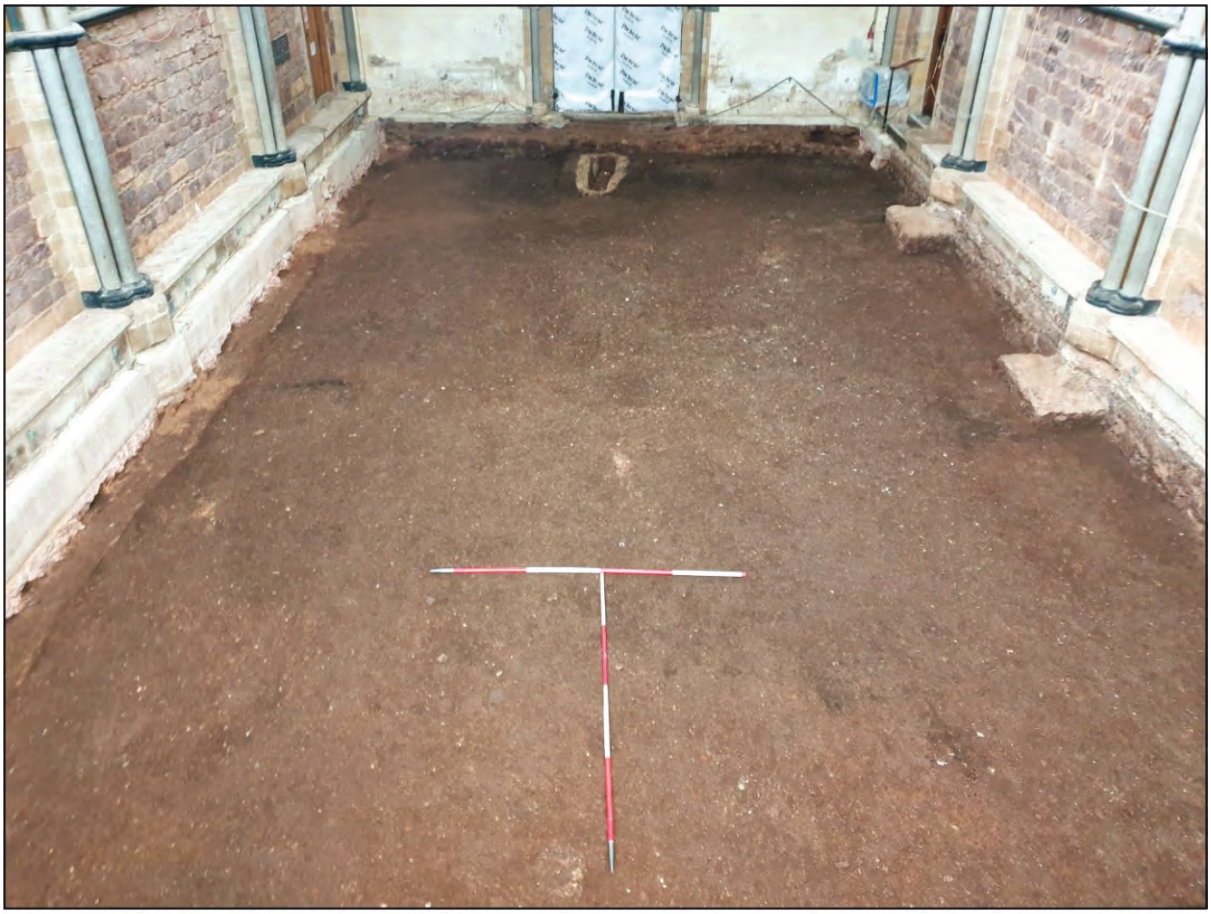

Fig. 2. The Chapter House after completion of excavation (*photo: M. Steinmetzer*).

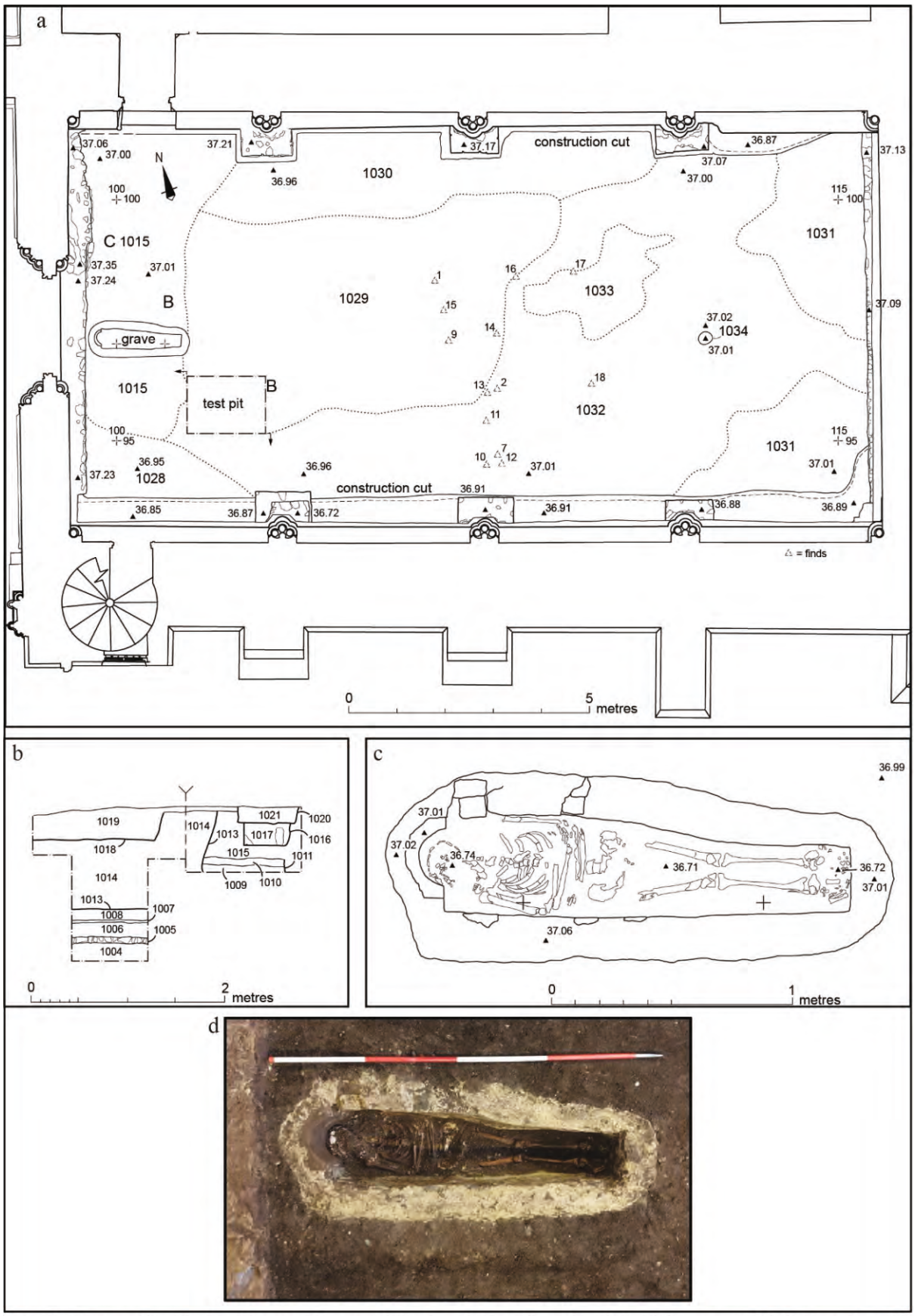

Fig. 3. Excavation in the Chapter House: (a) plan; (b) section; (c–d) Serlo's grave (*M. Steinmetzer/T. Ives*).

Fig. 4a. The Chapter House: internal face of the west wall after removal of modern render, 1 April 2021 (*photo: Gary Young*).

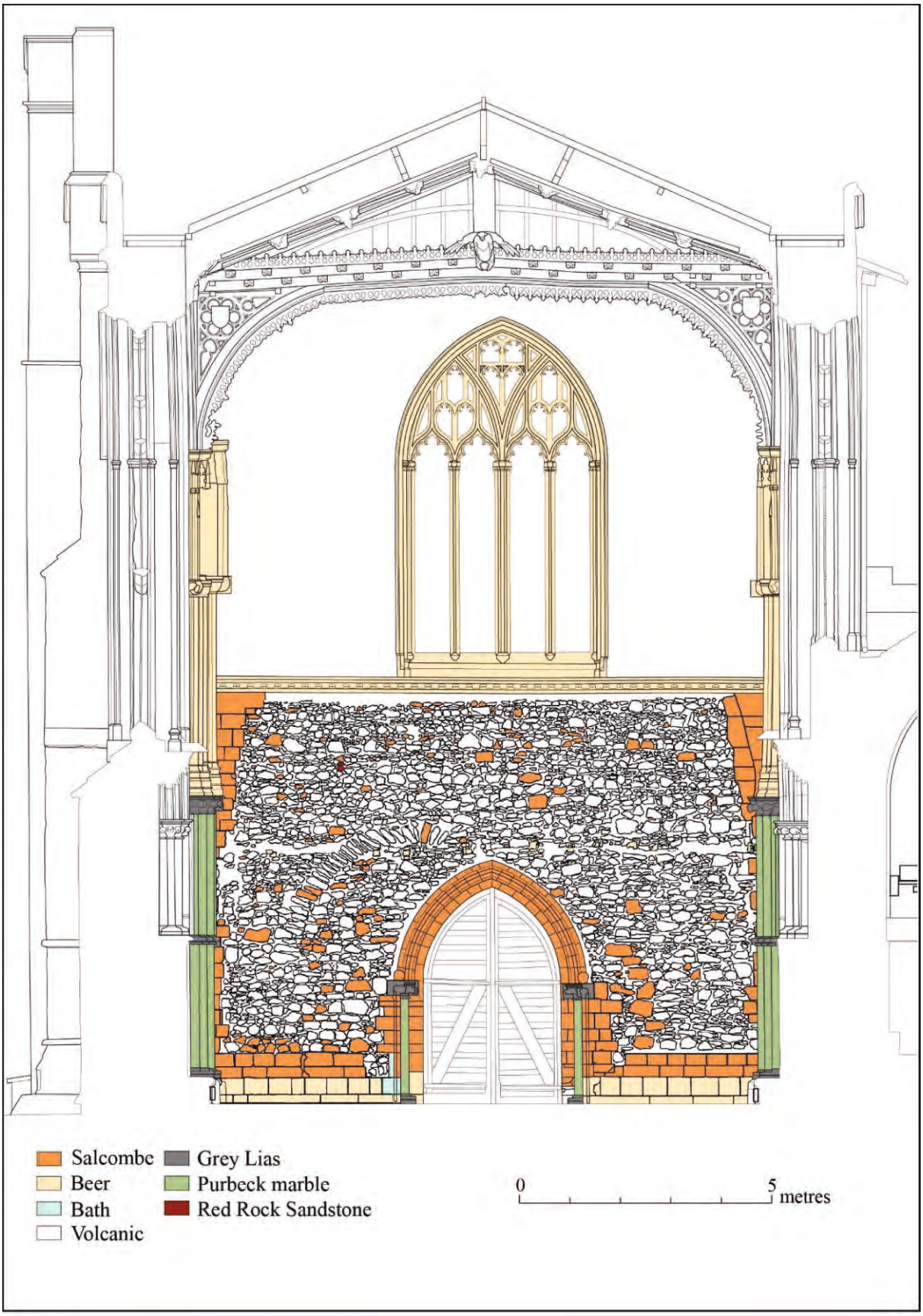

Fig. 4b. The Chapter House, internal face of the west wall: geology *(J. Allan & J. Sampson 1996, with new survey, Downland 2020, and corrections/additions, J. Allan 2021)*.

Fig. 4c. The Chapter House, internal face of the west wall: phasing with reconstruction of primary wooden vault (*J. Allan & J. Sampson 1996, with corrections/additions, J. Allan 2020 and 2021*).

Fig. 4d. Chapter House, west wall: building break above 13th-century capital on north side providing evidence for early vault (*photo: J. Allan*).

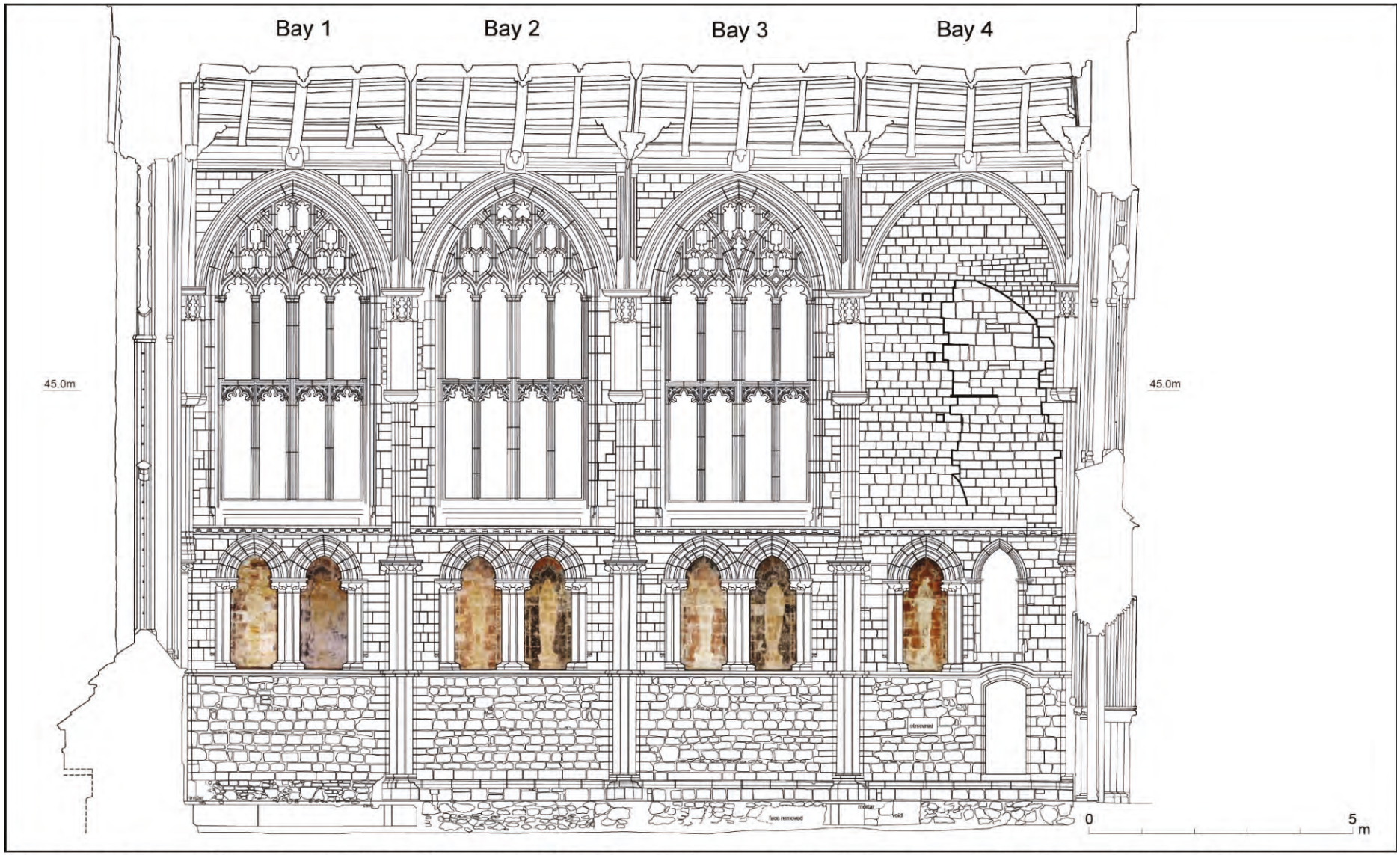

Fig. 5a. The Chapter House, internal face of the south wall: the Downland survey, with paintings concealed in 1975 and minor additions/corrections 2021 (*RCHME 1975/Downland/T. Ives*).

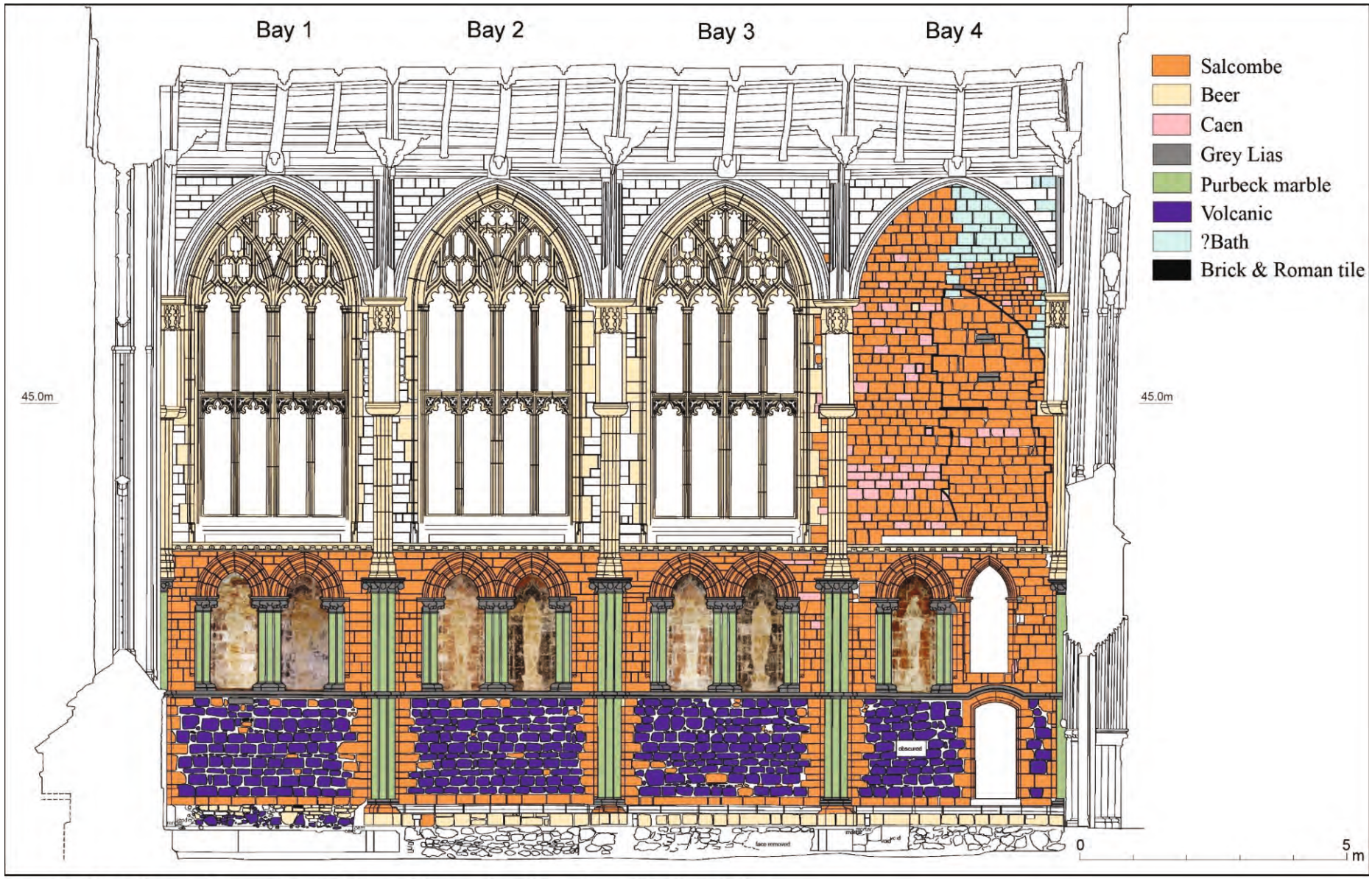

Fig. 5b. The Chapter House, internal face of the south wall: geology (*J. Allan/T. Ives*).

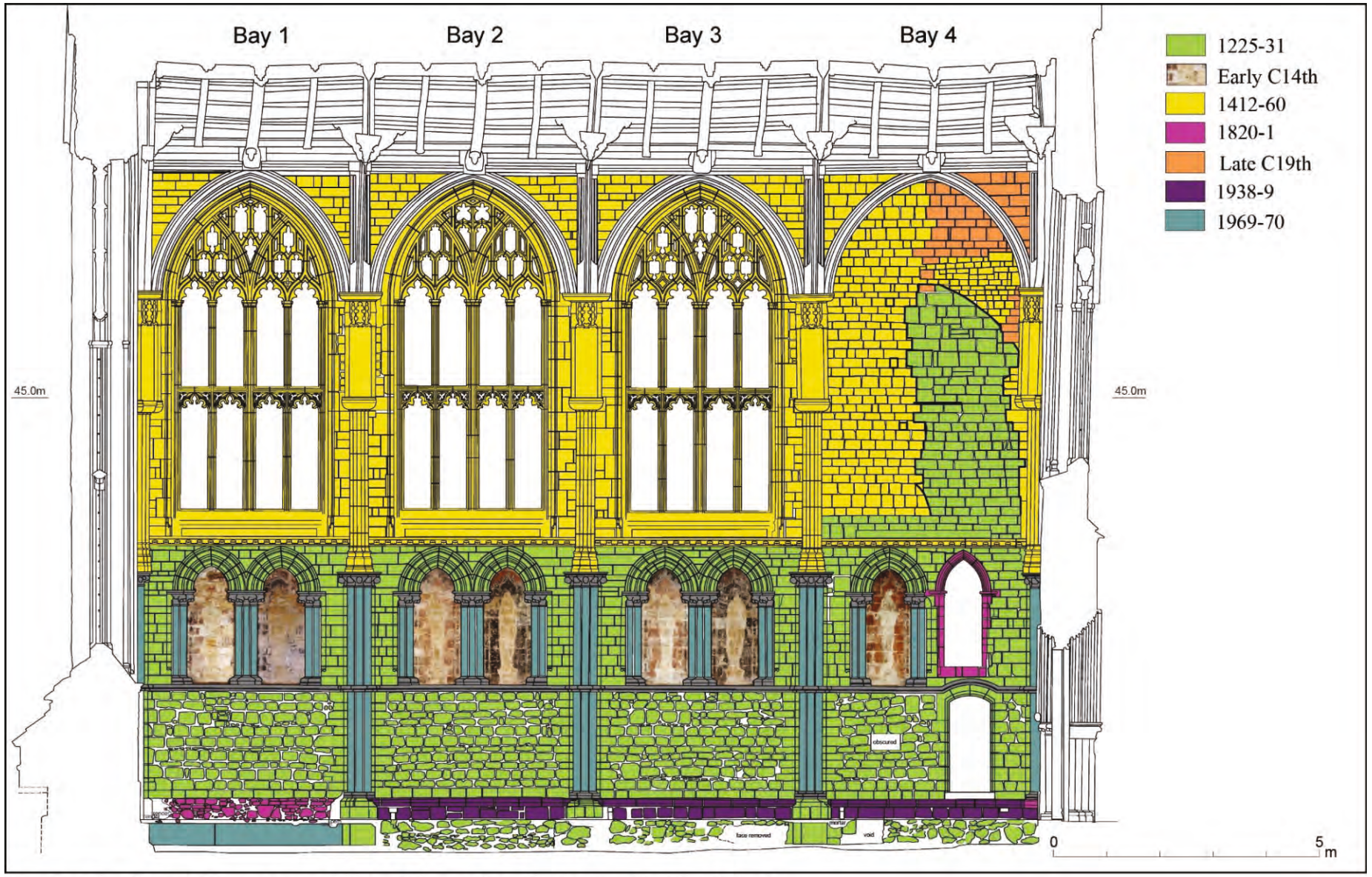

Fig. 5c. The Chapter House, internal face of the south wall: phasing (*J. Allan/T. Ives*).

Fig. 5d. Chapter House, south wall: one of the arcade capitals.

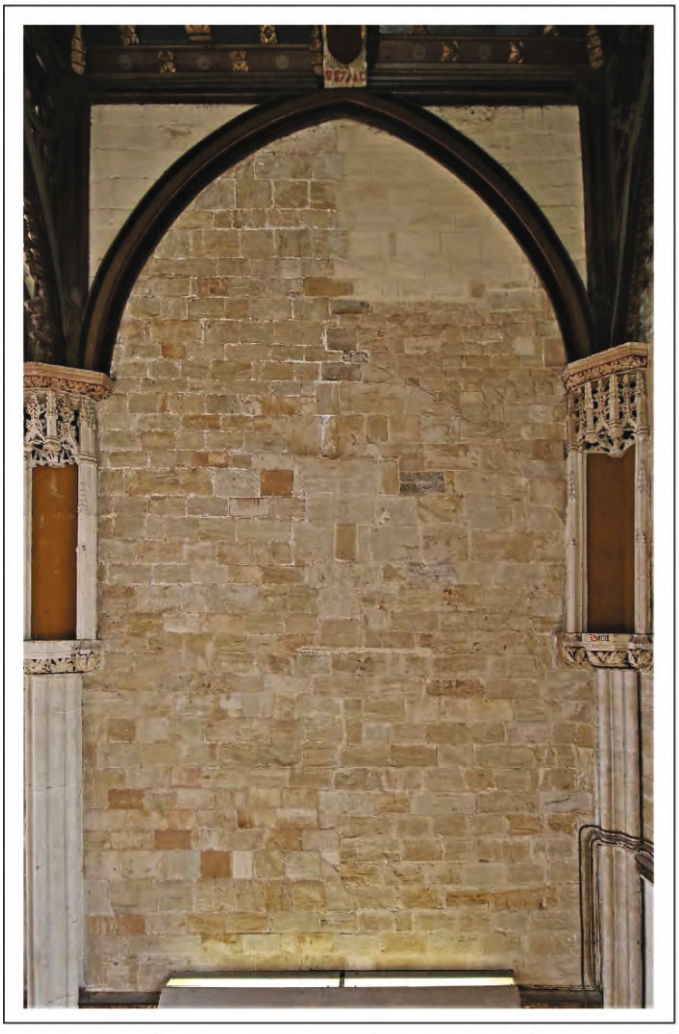

Fig. 5e. Chapter House, south wall: the upper part of Bay 4, showing two periods of masonry (*photo: Hugh Harrison, 20 Oct 2020*).

Fig. 5f. Chapter House, south wall, Bay 4: spandrel of wall-painting in arcade, enhanced in (ii) (*photo: J. Allan*).

Fig. 5g–i. Graffiti on south wall, Bay 4, enhanced in gg & hh, with location (i).

Fig. 6a-b. The Chapter House: internal face of the south wall, March 2021. (a) Bays 1 and 2. (b) Bays 3 and 4. The plain masonry was replastered subsequently (*photos: Gary Young*).

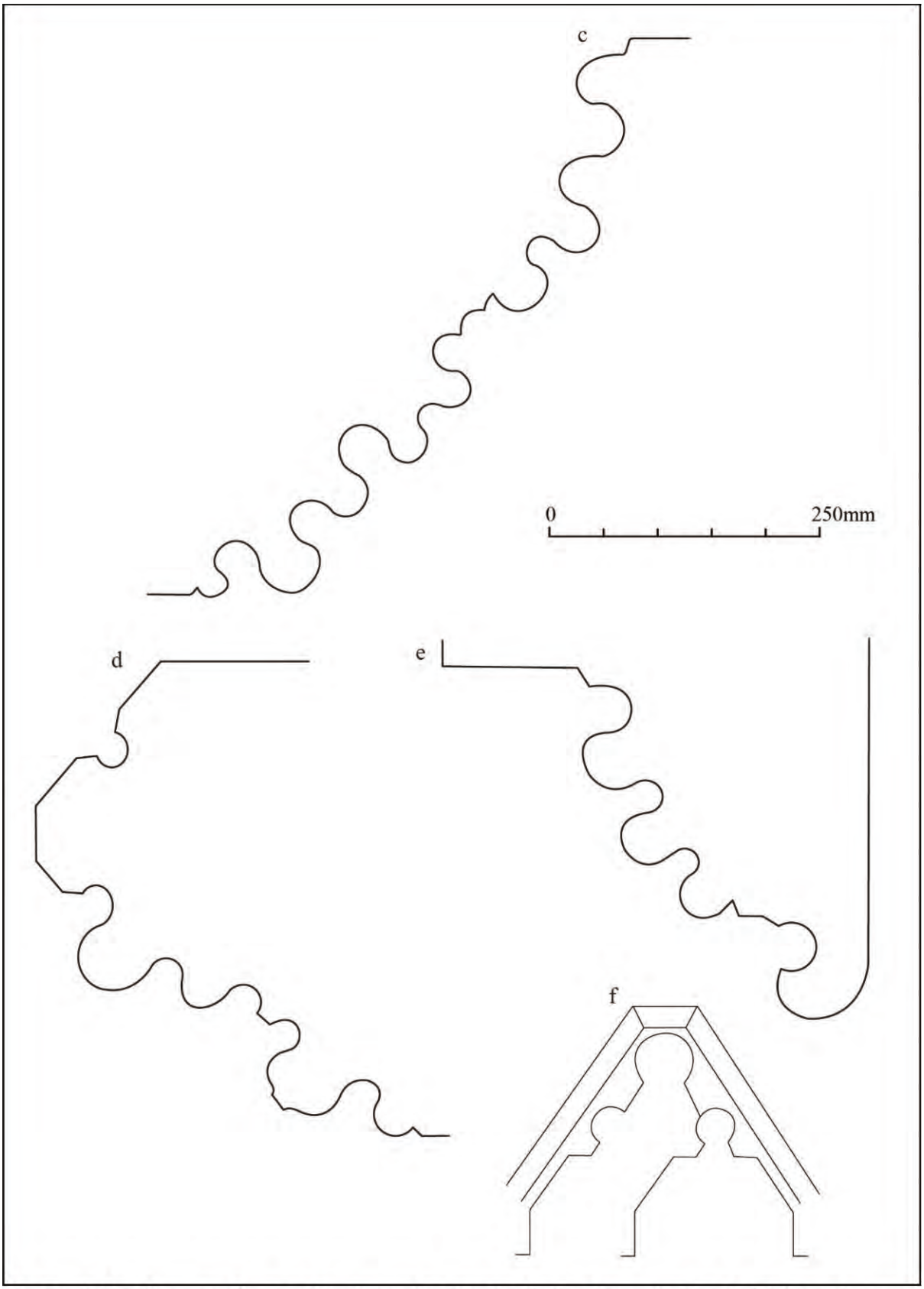

Fig 6c–f. Moulding profiles. (c) North arcade, Bay 4. (d) South arcade Bay 4. (e) West doorway, hood mould. (f) Clerestory Bay 4, north window, common and king mullion (*J. Allan & A. Steinmetzer/D. Gould*).

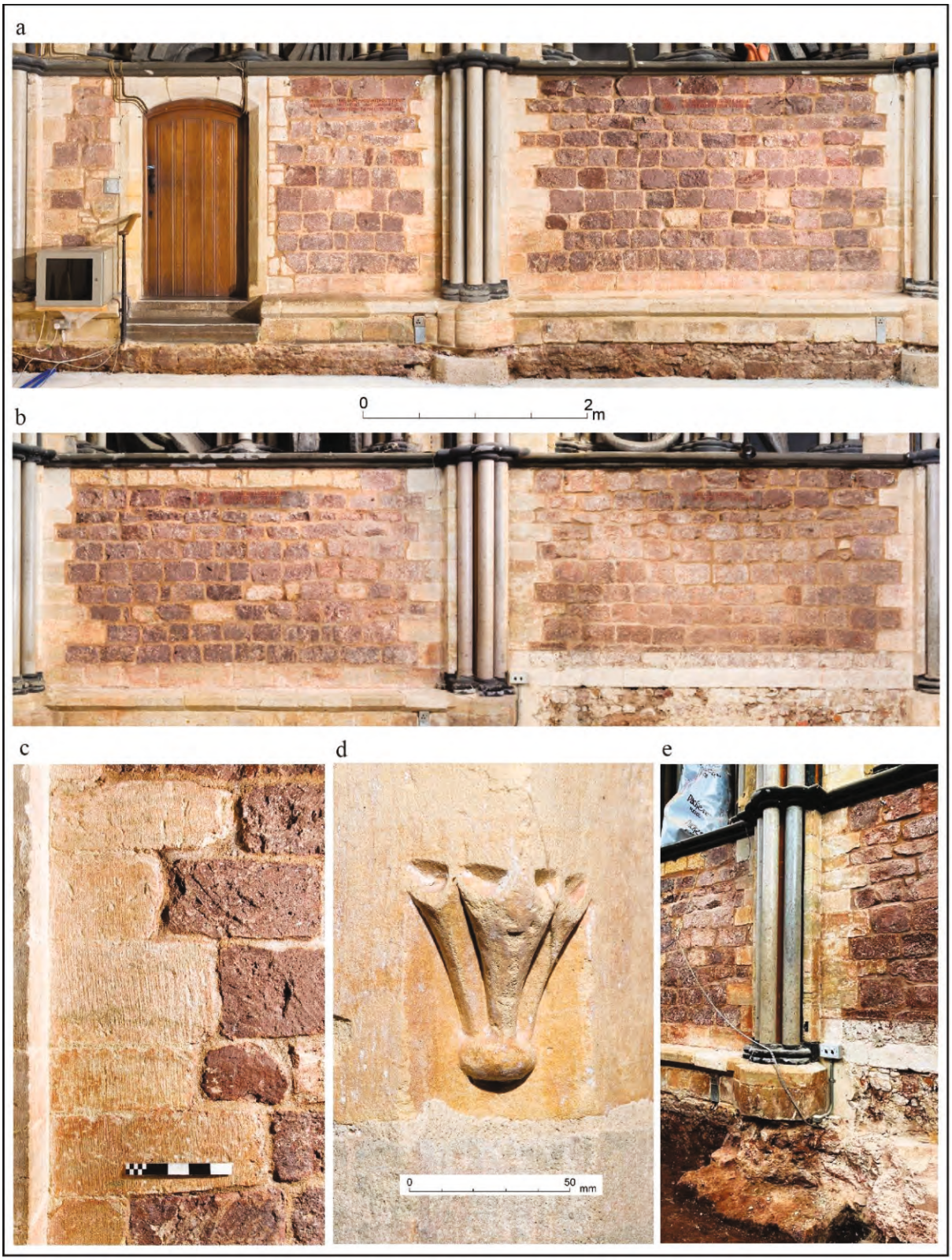

Fig. 7. The Chapter House, internal face of the north wall: photographic record prior to replacement of render. (a) Bays 4 (left) and 3. (b) Bays 2 and 1. (c) Chisel-dressed Salcombe stone ashlar with ?pick-dressed volcanic stone wallstones. (d) Moulding stop, pier between Bays 1 and 2. (e) North wall, of the pier between Bays 1 and 2, showing later damage to the foundation (*photos Gary Young/J. Allan*).

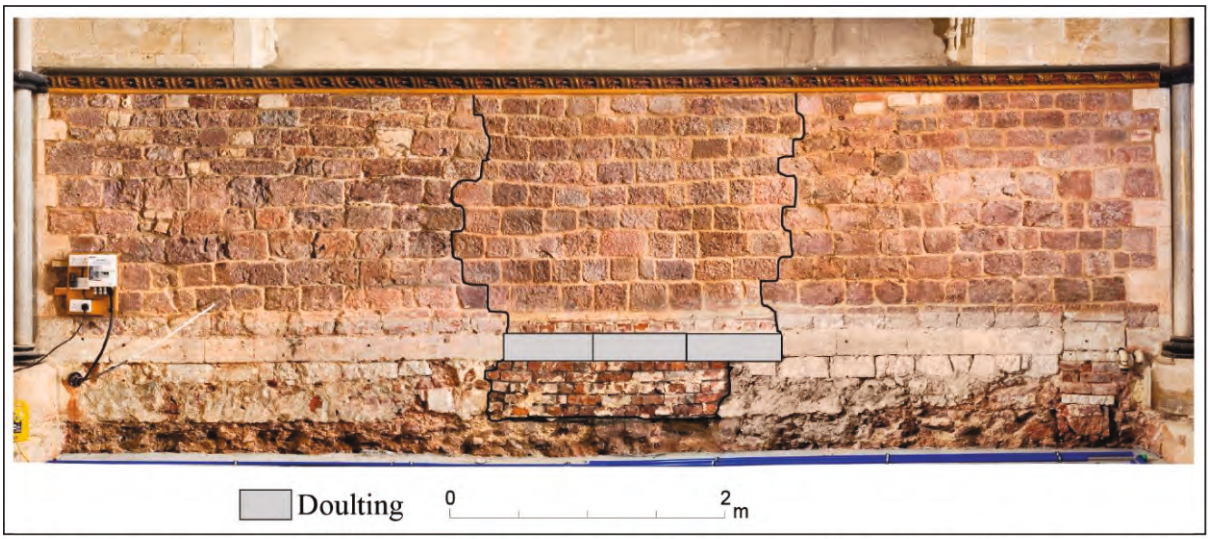

Fig. 8. The Chapter House, internal face of the east wall: photographic record prior to replacement of render, showing the scar of Kendall's fireplace of 1820, infilled in 1937–40 (*photo: Gary Young*).

Fig. 9. Outline of a painted scroll, seen below modern brown paint, on the west side of truss 3/4. (a) Drawn record. (b) photograph (*J. Allan & A. Steinmetzer/D. Gould*).

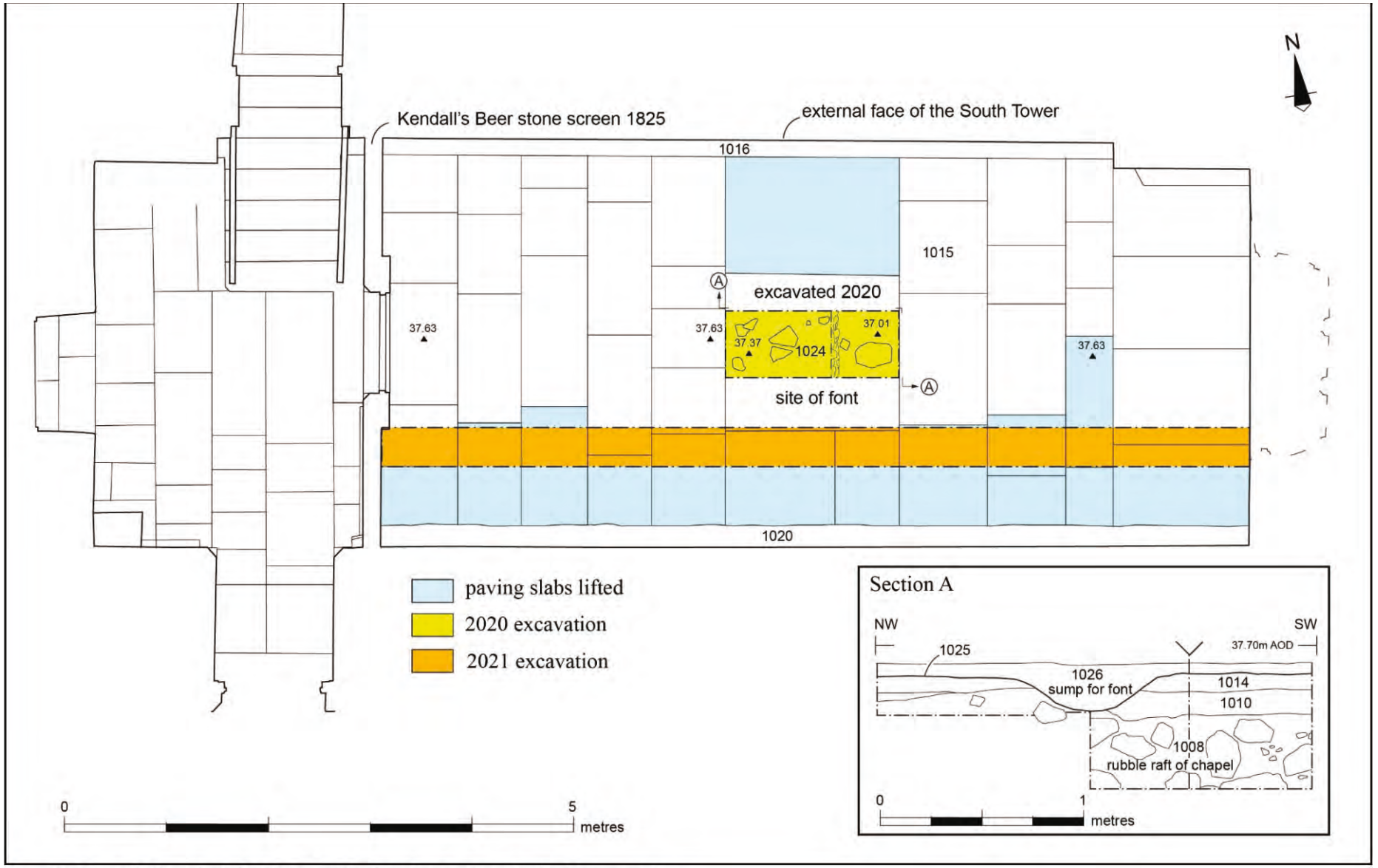

Fig. 10. Plan of Chapel of the Holy Spirit showing archaeological interventions.

Fig. 11. The Chapel of the Holy Spirit looking east after excavation and removal of cement from the walls, 25 March 2021 (*photo: Gary Young*).

Fig. 12. The Chapel of the Holy Spirit: the north wall (external face of the south tower). (a) Photogrammetric record. (b) Footing exposed by lifting of paving slabs. (c–d) Details showing rough dressing, indicating that the face has been cut back (*photo: a, c–d Gary Young, 8 Feb. 2021; (b) J. Allan, 9 March 2021*).

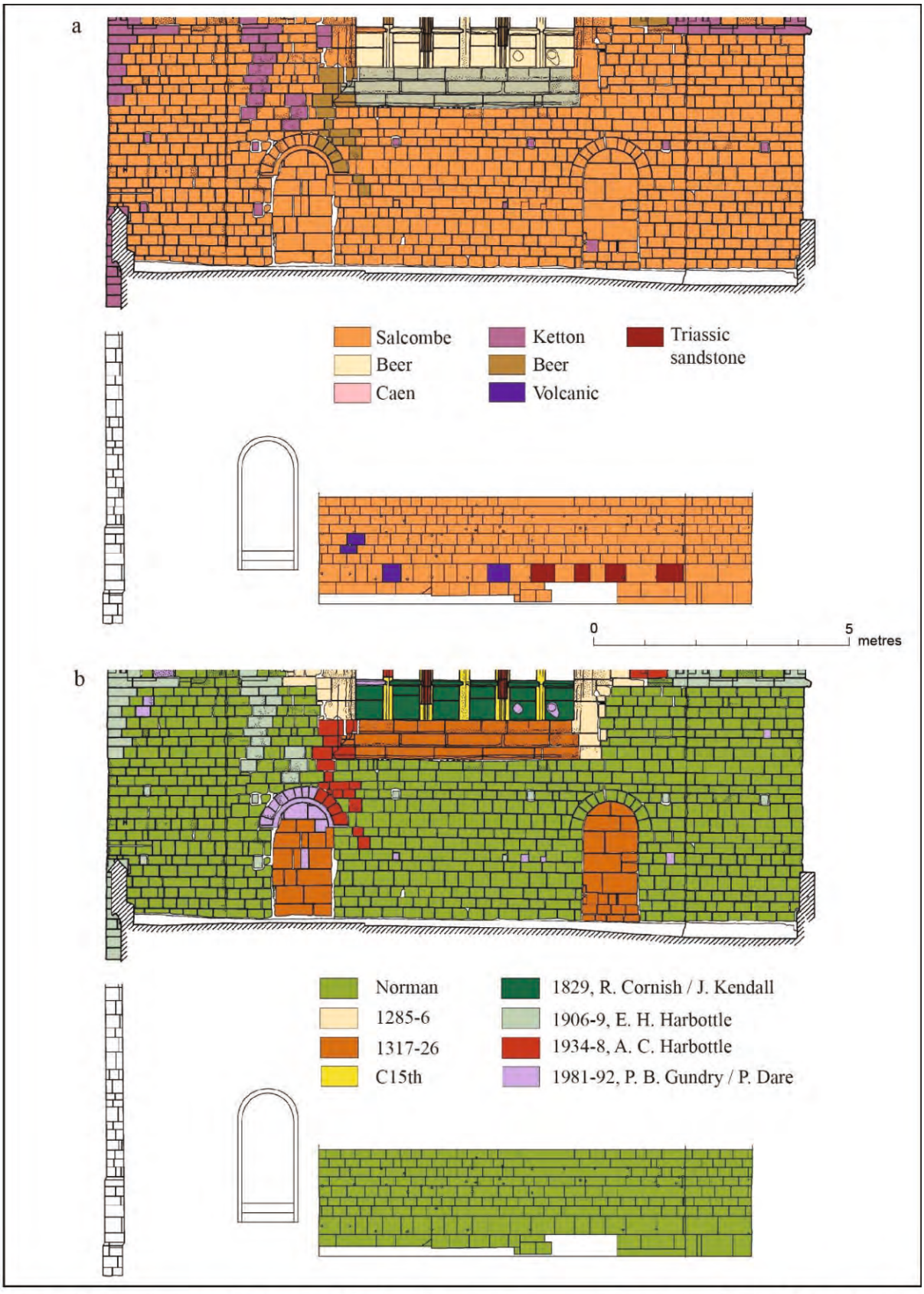

Fig. 13. The geology and phasing of the south tower masonry newly exposed in the Chapel of the Holy Spirit, with its relationship to the higher parts of the tower elevation recorded in the 1990s.

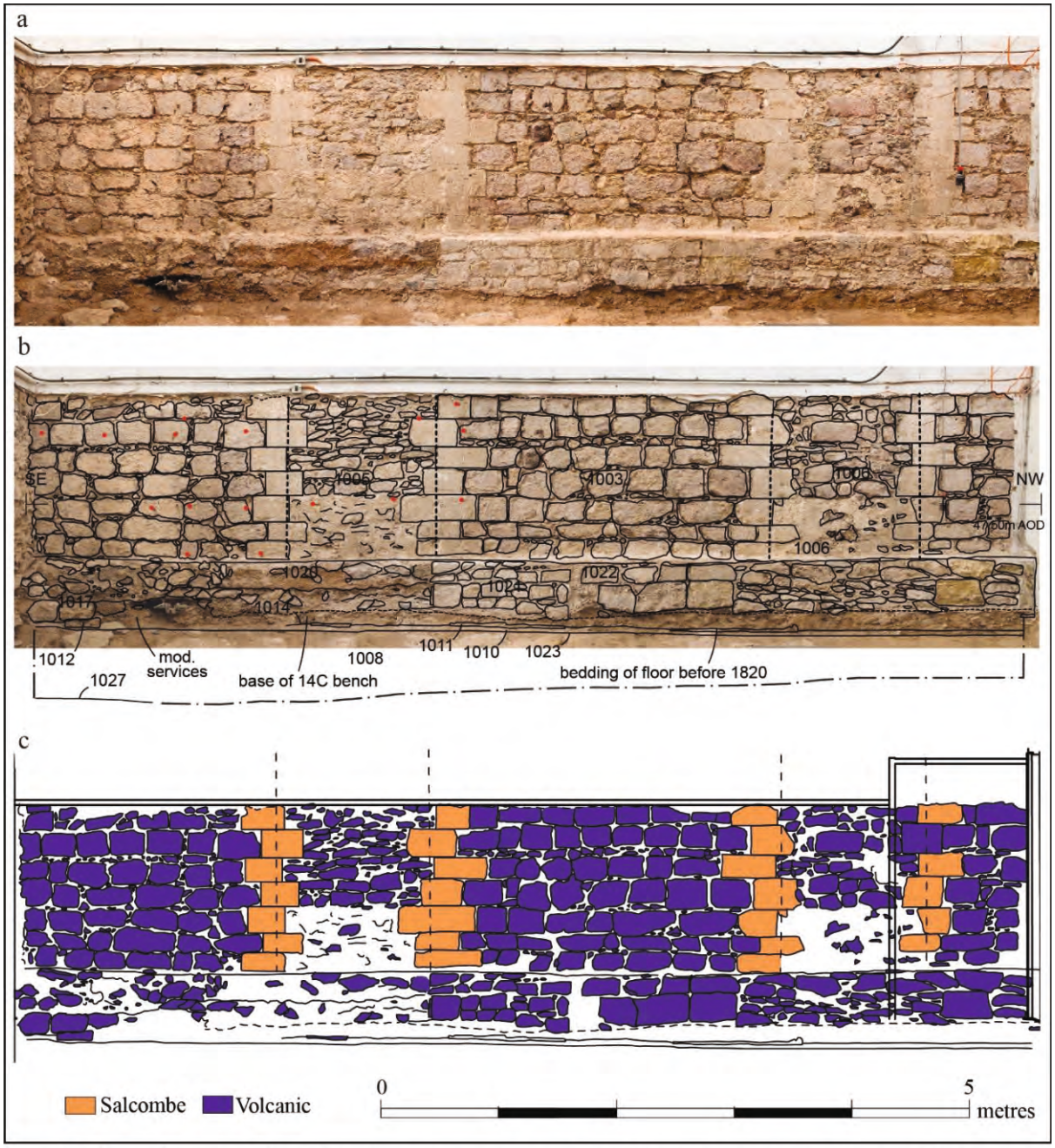

Fig. 14. The Chapel of the Holy Spirit: the south wall (external face of the Chapter House). (a) Rectified photographic record. (b) Line drawing showing the scars of the former buttresses, the bench and floors below, and the outline of the trench excavated below that. (c) Geology (*photo a: Gary Young, 8 Feb. 2021*).

Fig. 15. The Chapel of the Holy Spirit: rectified photographic record of the east wall after removal of cement render (*photo: Gary Young, 8 Feb. 2021*).

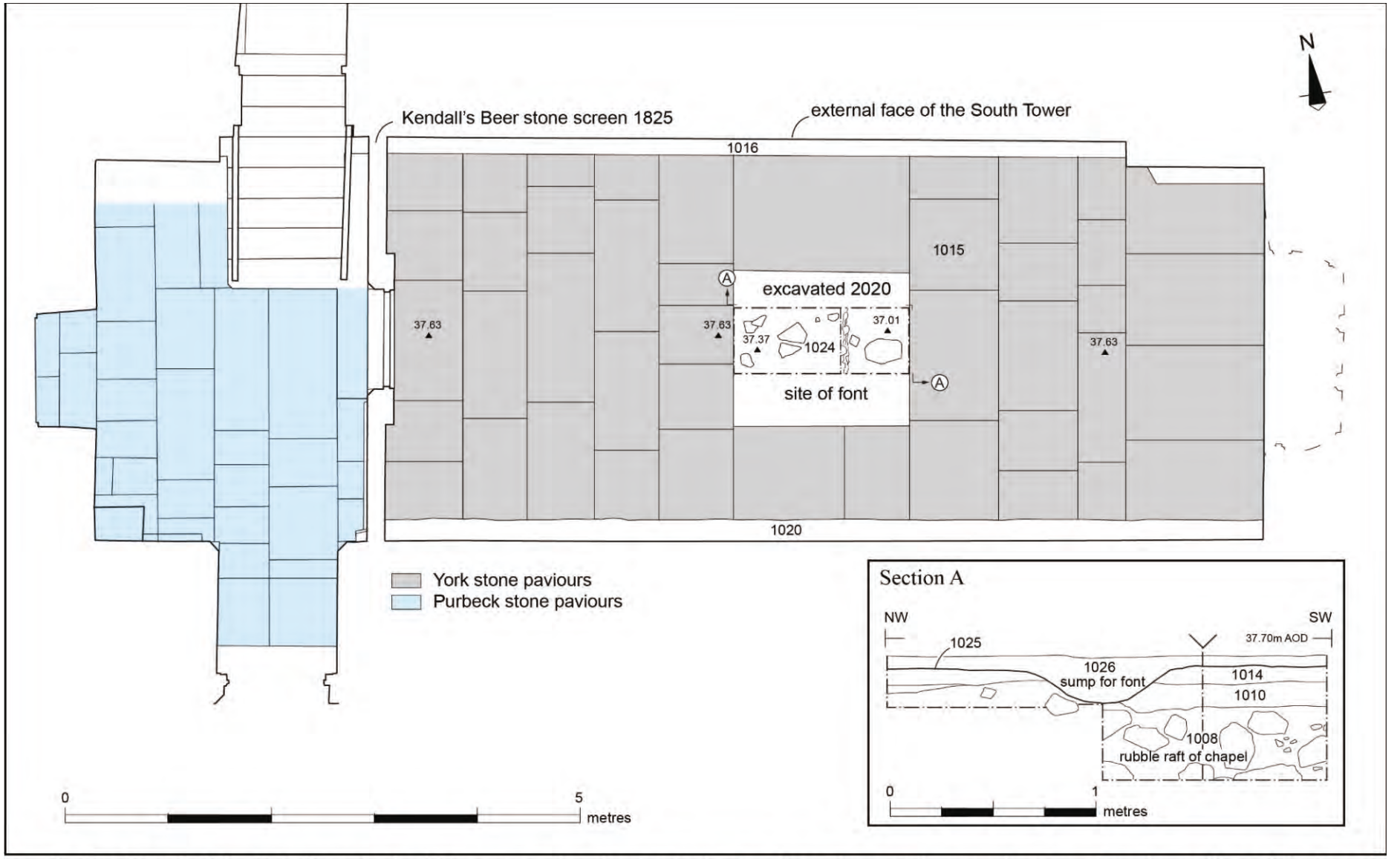

Fig. 16. The Chapel of the Holy Spirit in the 19th century: plan showing York stone floor, the central unpaved area marking the position of the font (*M. Steinmetzer/T. Ives*).

Fig. 17. Floor-tiles from the Chapter House.

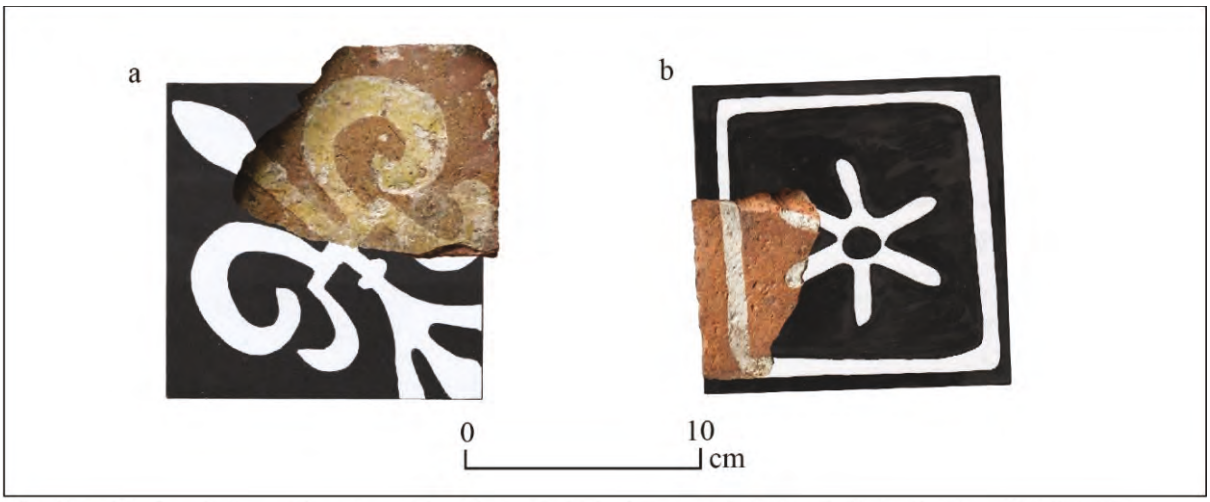

Fig. 18. Medieval floor-tiles from the Chapel of the Holy Spirit. Scale 1:3 (*J. Allan/D. Gould*).

Fig. 19. Fragments of ledger stone from 19th-century make-up in the Chapel of the Holy Spirit.

Appendix 1:

Written Scheme of Investigation for Archaeological works

1. THE PROPOSED SCHEME

1.1. The Dean & Chapter of Exeter Cathedral are developing proposals to make better use of the Chapter House (Figs 1–2 at the foot of this document). The proposed scheme is presented in the following: Acanthus Clews drawings Job No. 19-032, Drawings 103B–110A and 206B–216A; Mann Williams Project 10153 Drawings 101, 111, 201, 301, 302, 303; project 190-032, drawing 207A. Chris Reading and Associates Job No. CRA/1925, Drawings 1–5 and 10.

1.2. The purpose of the present Written Scheme is to describe the procedures for archaeological work which will be carried out as mitigation in the proposed development.

1.3. The principal element of the proposal which requires archaeological work is the replacement of the defunct underfloor heating of the Chapter House with a new underfloor system. We are advised that, if the form of new floor which will operate most efficiently is to be installed, this will entail digging out the concrete floor of 1970 (which is 300mm thick) excavating below the entire floor of the Chapter House (excepting the small areas of reset fragments of 13th-century tile pavement around its fringes) to a total depth of 500mm below the existing floor surface. A drain from the proposed new sink beside the N wall of the Chapter House will also be required. A favoured route (Fig. 2, route A), entails drilling a hole below floor level through the N wall of the Chapter House; an alternative option (Fig. 2, route B) is also indicated. The second may require a small separate trench below the new floor level.

1.4. A further aspect of the scheme is a change in the use of the adjacent Holy Ghost Chapel, which serves at present as a store. It will be converted to use as a Green Room with storage, and with a sink and two lavatories beside the S wall. The proposals for change in this area, which have been drawn up in consultation with the Consultant Archaeologist to achieve the least archaeological impact, entail the excavation of new drain runs linking the sink and lavatories with existing drains in the sunken yard to the E. Since the chapel is physically separate from the Chapter House, the archaeological work required there will be described after that in the Chapter House.

THE CHAPTER HOUSE FLOOR

2. ARCHITECTURAL CONTEXT AND ARCHAEOLOGICAL BACKGROUND

2.1. Architectural setting

The Chapter House, first built *c.* 1225–30, and heightened, roofed and glazed in the period 1413–*c.*1470, is a structure of a high level of historical, artistic and architectural importance. Its structural history and significance are described fully in: Allan, J.P., *Archaeologist's Preparatory Report on the Chapter House of Exeter Cathedral, 2019.* The document assembles all known antiquarian and archival records relating to the structure and subsequent interventions in it, provides new detailed elevation drawings showing the complex development of some of its elevations, and presents all known documentary references to the building's architectural history.

2.2. The floor and buried archaeology

The *Archaeologist's Preparatory Report* brings together all known information about the history of the Chapter House floor; in particular, it stresses the high significance of its former late 13th-century tiled pavement – a little-known feature, much of which survived until 1939. It also describes the evidence for the tomb of Dean Serlo (ob. 1230), who was buried inside the west door but whose grave was disturbed in 1939 and 1969/70.

2.3. Results of trial trenches and earlier evaluation trenches

The two trial trenches dug in July 2019 confirmed that the modern concrete slab of 1969/70, in which the floor sits, is 300mm deep. In both trenches the installation of the slab had resulted in considerable disturbance of the underlying soft garden soil – to a depth of *c.* 400mm or slightly deeper in both trenches examined. If these are typical, the maximum depth of stratified archaeological deposits which would be removed if a 0.5m-deep floor is to be created is 0.10m (4 inches). The results of the evaluation trenches excavated in the E cloister walk, to the W of the Chapter House, in 1997 should also be considered. The medieval and post-medieval deposits in that trench were 0.9m deep in total, with 0.55m of Roman below and natural at 1.45m.

2.4. Archaeological potential

2.4.1. The possibility of encountering the following should be considered:

1. Later Roman buildings and associated deposits.
2. Pre-Norman soils which will require sampling, conceivably with associated buildings.
3. Make-up layers which were dumped in the 1220s to raise the ground level within the building to that of the cloister to its W.
4. Medieval burials.
5. Remnants of the late 13th-century medieval tile pavement, and of the floor which presumably existed before it was laid.
6. Evidence of post-medieval use, e.g. in the Civil War.
7. Features connected with Kendall's restoration of 1815–20.
8. Features left from the installation of underfloor heating in 1939.

2.4.2. Since the natural ground level around the Chapter House slopes downward to the E and S, the top of Roman layers will probably be deeper than the 0.9m at which their top surface was encountered in the E cloister walk, and thus appreciably lower than the maximum 0.5m depth whose removal is envisaged here.

2.4.3. At the E end, where the interior of the Chapter House is now about 2m above the external ground to the E, the most likely deposits to be found are item (3): layers dumped to raise the floor. Pre-1220 soils may well be encountered, however, especially at the W end. They will be of great interest, being undisturbed since *c.* 1220, and may preserve important environmental evidence. The importance of micromorphological analysis of deposits of this sort is emphasised in a forthcoming survey of the city's archaeology (Rippon and Holbrook forthcoming). [1]

[1] Rippon, S.R. and Holbrook, N. forthcoming *Exeter a Place in Time I,* (University of Exeter/Oxbow.

2.4.4. It is difficult to see how any portions of the medieval tile pavement could have survived, since its surface was at the same level as the present floor, and its tile bedding will have been something like 0.05m deep – far shallower than the 0.4m disturbed in 1969/70. The installation of the existing floor will probably have destroyed both the pavement and its mortar bed, although we may hope for tile fragments.

2.4.5. Dean Serlo's burial, formerly marked by a plain Purbeck marble ledger stone, is the only one known in the Chapter House. He was lifted and examined in 1939, and must have been encountered again in 1969/70, but there appears to be no record of the treatment of his bones at that time; there seems to be no record of whether his remains were preserved or reinterred. The survival of extensive areas of 13th-century tile pavement into the recent past may show that there were not many other burials.

3. PROPOSED MITIGATION: METHOD

3.1. Staff

The site work will be carried out by Marc Steinmetzer of Oakford Archaeology in close consultation with the Consultant Archaeologist.

3.2. Preparation.

Before excavation is undertaken, the site staff will familiarise themselves with previous archaeological work in this part of the cathedral, starting with the Archaeologist's Preparatory Report on the Chapter House.

3.3. Procedure on-site

Removal of modern soils and decision about underlying deposits.

3.3.1. The modern floor will be broken out in stages by other contractors, starting at the E end. Archaeological mitigation will first entail the monitoring of these other contractors to ensure that underlying deposits are not damaged. All soils disturbed in the 20th-century interventions below the floors will then be removed and hand-sorted by archaeological staff. This exercise will include the use of a metal detector to check for metal small finds.

3.3.2. Once the E third of the floor has been removed, the exposed stratified deposits will be cleaned and a site meeting will be called to determine whether the removal of stratified deposits below is justified or even necessary. The following will be present: the consultant archaeologist; the contracting archaeologist; the cathedral architect; the consultant engineer and the Exeter City Council planning archaeologist; a CFCE representative will be invited to attend that meeting.

3.4. Procedure on-site: removal of stratified deposits

3.4.1. If it is decided that stratified deposits are to be removed, the following standard recording system will be employed:

- survey and location of deposits or archaeological features using EDM surveying equipment and software;
- standard single context record sheets; survey drawings, plans and sections at scales 1:10,1:20;
- colour digital photography;
- labelling and bagging of all excavated finds on site. (Post-1750 unstratified pottery will be discarded on site after listing).

3.4.2. If deposits containing potential environmental evidence are encountered, they will be assessed on site by a suitably qualified archaeologist, with advice as necessary from Allen Environmental Archaeology or the Historic England Regional Science Advisor, to determine the possible yield (if any) of environmental or microfaunal evidence, and its potential for radiocarbon dating. [2] If deposits capable of yielding environmental evidence survive, HE Guidelines for Environmental Archaeology [3] will be followed, including the implementation of a sampling strategy based upon research questions, and outside specialists will be chosen to undertake further assessment and analysis. Material deemed suitable for C14 dating will be sampled and submitted for dating.

3.4.3. Human remains will be excavated in accordance with the CI*f*A 'Guidelines to the Standards for Recording Human Remains' (M. Brickley and J. McKinley, 2004) and the CI*f*A Standards for Recording Human Remains (P.D. Mitchell and M. Brickley, CIfA 2017). Should any articulated remains be exposed, they will be fully excavated initially but left *in situ*. An assessment will then be made to consider whether preservation *in situ* is possible; this will be our preferred approach. If removal is deemed necessary, it will be undertaken in compliance with the relevant Ministry of Justice licence, which will be obtained on behalf of the Chapter and the remains cleaned and stored for the post-excavation assessment, described below. Where articulated human remains are identified, soil samples will be collected from the head, torso/pelvis, hands and feet areas. All human bone including disarticulated material will be retained for analysis and reported upon. The question of C14 dating of selected burials (if encountered) will also form part of the post-excavation assessment, which will be submitted for approval by CFCE.4 After analysis, human remains will be reburied within the Cathedral precinct; the possibility of reburial in a small chamber within the floor of the Chapter House will be considered.

3.4.4. The cleaning, conservation, packaging and any stabilization of artefacts and ecofacts will be undertaken in accordance with relevant professional guidance [4] (see specifically 'First Aid for Finds' Watkinson, D and Neal V, London: Rescue/UKICAS 2001 and CI*f*A 2014

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[2] See https://historicengland.org.uk/images-books/publications/environmental-archaeology2nd/environmental_archaeology/.

[3] see HE/CfA Guidelines for Environmental Archaeology (HE CfA Guidelines 2002/1) and EH/CfA Guidelines 2nd edn, 2011 at: For the procedure in other contexts, where HE rather than the CFCE is the relevant body, see: https://www.archaeologists.net/sites/default/files/14_Updated%20Guidelines%20to%20the%20Standards%20for%20Recording%20Human%20Remains%20digital.pdf.

[4] *First Aid for Finds (*UKIC & RESCUE, 1997; English Heritage 2008. *Investigative Conservation [@* https://historicengland.org.uk/images-books/publications/investigative-conservation/; Fell, V., Mould, Q. and White, R. 2006. *Guidelines on the X-Radiography of Archaeological Metalwork* [@ https://historicengland.org.uk/images-books/publications/x-radiography-of-archaeological-metalwork/).

'Standard and guidance for the collection, documentation, conservation and research of archaeological materials'). If specific problems arise, the advice of the consultant conservator will be sought (see specialist consultants below). Subject to the requirements of the receiving museum, finds will be marked with the site and find codes, and relevant accession numbers. Stratified metalwork (including all iron objects) will be X-rayed by a suitable specialist following HE guidance (see n.4 above).

3.4.5. Should artefacts be found that fall within the scope of the Treasure Act 1996, they will be removed to a safe place and reported to the local coroner according to the procedures laid down in the Act. Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the finds. Historic England will also be notified immediately.

3.4.6. The project will be organised so that specialist consultants who may be required to report on other aspects of the investigations can be called upon (see below).

3.4.7. Health and Safety requirements will be observed at all times by archaeological staff working on site, particularly when machinery is operating nearby. Personal protective equipment (safety boots, helmets and high visibility vests) will be worn by staff when plant is operating on site. A risk assessment will be prepared prior to work commencing.

4. ADDITIONAL WORKS IN THE CHAPEL OF THE HOLY GHOST

4.1 The proposed scheme

4.1.1. The room has a modern floor, raised 0.35m above the early 19C floor at the W end, and presumably raised above any medieval floors. The proposals entail the excavation of a shallow drain from the two lavatories and a sink against the S wall to existing drains in the Masons' Yard to the E of the chapel. Its base will touch the surface of the E19C (and earlier?) floors at the W end but will slope gently to the E (Figs 2–3).

4.1.2. The scheme also entails the removal of existing tall cupboards against the N, E and S walls of the chapel and erection of modern partitions, staircases and other features.

4.2. Archaeological potential

A trench along the S wall might encounter information about the following:
(a) underlying Roman deposits
(b) Post-Roman dark soils
(c) medieval deposits preceding the construction of the chapel
(d) the form of the Chapter House foundation
(e) the relationship of the Chapter House wall to the E wall of the chapel
(f) medieval floors, perhaps tiled
(g) post-medieval floors including remains of the documented 19C ones
In practice, however, the excavation is so shallow that we may not recognise the soil encountered.

4.3. Proposed mitigation

4.3.1. The archaeologist will monitor the removal of the modern floors and features where the new lavatories and a sink are to be installed. After their removal, a trench will be dug in the position marked in Fig. 2 below, following the procedures outlined above for the Chapter House excavation.

4.3.2. We are reassured that the existing wall surfaces will be undisturbed, Nevertheless, close attention will be given to the recording of any above-ground features made visible by changes to the room. Upon the removal of the existing cupboards, elevations of the exposed medieval walls will be examined, and if historic surfaces are exposed they will be cleaned and drawn (including the external face of the Norman S tower, which has not hitherto been visible). The possibility of seeing traces of medieval wall-paintings, or remains of the late 16th/early 17th-century panelling which once lined the chapel, will be investigated carefully.

5. REPORTING

The contractor will:

5.1. Present the results of all phases of archaeological work and historic building recording in a full report within six months of the date of completion of all archaeological site work. The report will contain the following elements as appropriate:

• location plan;
• a written description of the exposed historic fabric and a discussion and interpretation of their character and significance in the context of any available historical evidence from any nearby sites and historic mapping;
• a site location plan at an appropriate scale, and a plan of the site showing the location of the recorded elevations;
• phased and annotated floor plans, along with copies of other drawn records (elevations, cross sections, etc) as appropriate to illustrate features of historic or architectural interest and/or the development of the building;
• location plan and overall site plans showing the positions of the groundworks and the distribution of archaeological features;
• a written description of the exposed features and deposits and a discussion and interpretation of their character and significance in the context of the known history of the site;
• plans and sections at appropriate scales of features of significant historic or architectural interest and showing the exact location and character of significant archaeological deposits and features;
• specialist assessments and reports as appropriate, the level of reporting of any specific classes of find which may require further investigation (e.g. dating; analysis of organic materials) will be agreed with the Consultant Archaeologist during the course of the project;
• if necessary, an assessment of what further work is necessary to analyse and publish any

particularly significant finds and/or results.

5.2. Submit a .pdf copy of the updated summary report, together with the site details, to the national OASIS (Online AccesS to the Index of Archaeological investigationS) database within 12 months of the completion of site work; additional copies will be sent to the Exeter City Historic Environment Record and the Cathedral Library and Archive.

5.3. Produce, if results of any significance are found, a short report summarising the results of the project for inclusion within the "round up" section of the journal *Medieval Archaeology*.

5.4. Produce an ordered and integrated site archive with reference to *The Management of Archaeological Projects (English Heritage, 1991 2nd edition)* upon completion of the project. The archive will consist of two elements, the artefactual and digital - the latter comprising all born digital (data images, survey data, digital correspondence, site data collected digitally etc.) and digital copies of the primary site records and images, compiled in accordance with the ADS Guidelines for Depositors (2015). The digital archive will be deposited with the Archaeology Data Service (ADS) within 12 months of the completion of site work, while the artefactual element will be offered to the RAM Museum, Queen Street, Exeter (contact: Tom Cadbury, Curator of Antiquities). A museum accession number will be requested before fieldwork begins. The hardcopy of the archive, including the conservation records, will be deposited with the RAM Museum or the Cathedral Library and Archive. Notify the Consultant Archaeologist upon the deposition of the digital archive with the ADS, and the deposition of the material (finds) archive with the RAM Museum and/or or the Cathedral Library and Archive.

5.5. *Specialists contributors and advisors*

The expertise of the following specialists can be called upon if required:
Medieval and post medieval finds - John Allan (Exeter) and associates
Roman finds - Paul Bidwell (Newcastle);
Prehistoric ceramics and lithics – Henrietta Quinnell (Exeter);
Dating techniques: Scottish Universities Environmental Research Centre, Glasgow;
Clay tobacco pipes – David Higgins (Liverpool);
Charcoal identification: Dana Challinor;
Coins and tokens - Norman Shiel (Exeter);
Finds conservation - Exeter RAM Museum Conservation Service (contact Alison Hopper-Bishop);
Environmental sampling –Geoflo (Somerset); Allen Environmental Archaeology (AEA);
Faunal remains and human remains – Charlotte Coles; Mandy Kingdom; Philip Armitage (fish)
Plant remains – John Georgi
Geological identification and mineral analysis – Roger Taylor (Exeter)

6. GENERAL

The project will be undertaken by suitably qualified and experienced archaeologists, in accordance with the Code of Conduct and relevant standards and guidance of the Chartered Institute for Archaeologists (*Standards and Guidance for an Archaeological Watching Brief,* 1994, revised 2008), plus *Standards and Guidance for Archaeological Excavation* 1994, revised 2008). The project will be overseen by John Allan, Archaeological Consultant to the Dean and Chapter. The contractor will confirm that his business has appropriate insurance cover, including public liability insurance, and all archaeological works within this scheme will be carried out in accordance with current *Safe Working Practices (The Health and Safety at Work Act 1974*).

John Allan, Archaeological Consultant, and Marc Steinmetzer, Oakford Archaeology
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Exeter
EX2 4RL
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Appendix 2:
Finds quantification

Context	Feature	Spot date	Quantity	weight	Notes
1003			883	46.76kg	21 sherds of Black-burnished ware (BB1) including flat-rim dishes, flanged dishes, jars with everted rims (late 3rd-4th century AD), 11 plain sherds of Samian, six sherds of late 1st-2nd century flagons, four sherds of Dressel 20 Amphorae, 3 sherds from late Roman South-western storage jars, 2 sherds of Mortaria, 1 sherd from a Rhenish colour-coated beaker (late 2nd-3rd century), 2 sherds of wheel-thrown greyware, 784 Roman tile fragments, 38 sherds of Upper Greensand-Derived (late 10th-13th century), including 12 jar rims, at least 10 of them from different vessels and including cupped rims, which seem to come into use around 1200, 1 sherd from a Wessex coarseware Tripod pitcher (late 12th- early 13th century), 1 sherd from an Upper Greensand-Derived (late 10th-13th century) Tripod pitcher, 1 sherd from a jug with a sand-tempered fabric, origin uncertain (probably early 13th century).