Excavations at Bestansur

March-June 2019 Field Report

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Central Zagros Archaeological Project

Excavations at Bestansur, Sulaimani Province, Kurdistan Region of Iraq
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Introduction

An eighth season of excavations was conducted at the Early Neolithic site of Bestansur, Sulaimaniyah Province, between 31st March and 14th June 2019. We are very grateful to Sulaimaniyah Directorate of Antiquities for all of their support, in particular to the Director, Kamal Rasheed Raheem, the Director of Slemani Museum, Hashim Hama Abdullah, and our government representatives, Kamal Rouf Aziz and Sami Jamil Hama Rashid, who helped us in very many ways and contributed greatly to the success of the season. The excavation team was co-directed by Professor Roger Matthews and Dr Wendy Matthews, with Dr Amy Richardson (field and data manager, small finds), Dr Sam Walsh (human osteoarchaeologist), Dr Ingrid Iversen, (microarchaeologist), Dr David Mudd (ground stone and chipped stone tools), Dr Charlotte Diffey (archaeobotany), Dr Rae Beaubien (conservator), Donna De Groene (zooarchaeology), Alessandro Guaggenti (excavations, micromorphology), Samira Idriss (excavations, conservation), and Firman Tawfiq, Kate Dudgeon, Paul Flintoft, Nick Pankhurst, Dan Wheeler and Mattia Cartolano (excavations, 3D photogrammetry).

Additionally, a team from the University of British Columbia conducted four weeks of excavations in Iron Age and Sasanian levels at Bestansur, directed by Dr Lisa Cooper and assisted by Dr Lynn Welton. Throughout the season we benefited from the expertise and hard work of local workers, including residents of Bestansur village, to all of whom we are very grateful.

We are delighted to have hosted visits by staff and students from Sulaimani Polytechnic University and the University of Sulaimani led by Dr Rozhen Mohammed-Amin and Dr Rafida Qaradaghy and to be building research collaborations on environment, ecology, and architecture at Bestansur, for example.

We are very grateful to the Directorate of Antiquities and Heritage for permission to export samples for scientific analyses.

The excavations were financially supported by an Advanced Grant from the European Research Council with the project title 'MENTICA – Middle East Neolithic Transition: Integrated Community Approaches'. We are very thankful for their kind support.

Excavations of Neolithic levels at Bestansur

Excavations of Early Neolithic levels at Bestansur focused on Trench 10 to extend excavations from previous seasons (Figure 1). There were three main aims for the Trench 10 excavations this season. Firstly, we intended to expand the plan of architecture to gain insights into the neighbourhood scale of activity in this area of Bestansur, with Building 5 at the centre of our investigations. Secondly, we aimed to make further progress in excavating and processing the high quantity of human remains located within Space 50 of Building 5. Thirdly, we planned to excavate significant external deposits likely to produce material relating to activities such as food production and waste disposal. These aims were all achieved during the 2019 season.

Figure 2 shows a composite plan of Trench 10, which demonstrates the minimum extent of the architecture that is being revealed below topsoil and later levels, and the importance of Building 5. It is clear that there are multiple Early Neolithic mud-brick buildings in this area of the site, with major potential for investigation of activity variability across different spaces and buildings which will be a major aim for future seasons. By expanding to the north, east and west, we connected Trench 10 to the previously excavated Trenches 1 and 6 where further Neolithic walls were articulated. We have previously dated Building 5 to ca. 9700 cal BP. We also carried out 3D photogrammetry of Building 5 and of specific features and materials as excavated in Trench 10. In the south-east area of Trench 10 we excavated stratified external surfaces and deposits rich in animal bones from wild species including aurochs, boar and deer. Upper levels of Iron Age and Sasanian date in Trench 10N and Trench 10W were excavated by the University of British Columbia team (see below).

Figure 1. View of Trench 10 after the spring 2019 excavations, looking northwest.

Figure 2 Composite plan of Neolithic buildings and walls in Trench 10.

New research on the architecture and built environment at Bestansur was initiated this season by Dr Wendy Matthews and Alessandro Guaggenti, ERC MENTICA PhD student. This research included characterisation of the walls, mudbricks, mortars and occupation deposits in the field, and sampling of them for micromorphological, geoarchaeological and phytolith analyses at the University of Reading. We are also developing integrated archaeobotanical and organic residue analyses and collected a range of samples for this research.

Human burials in Space 50, Building 5

We excavated more of the exceptional number of human remains buried within Building 5. Within Space 50 eight individuals were excavated (Figure 3), with numerous disarticulated bones left for future excavation.

Figure 3. Excavated human remains within Space 50, Building 5.

From a deposit of juvenile remains, associated with beads, were a poorly preserved infant aged c.2.5 years and another infant. Two adult female crania and some disarticulated long bones were excavated from square G; one of these crania was associated with a stone ear stretcher/plug (Figure 4). Three further adult skulls were excavated from the large deposit of disarticulated remains,

continued from 2017. Lastly, an adult skeleton was excavated from square F, an older probable female almost complete except for a missing portion of the spine.

Figure 4. Adult cranium with associated ear-plug/stretcher.

The following burials were also excavated outside of space 50:

- In Space 61 there was a pit containing the remains of five individuals, three adults and two infants. These individuals had been deposited in a distinctive sequence. Firstly the remains of an adult female were buried, who was disturbed by the burial of an adult male and an adult female, positioned so that the head was resting of the chest of the male. A skull, probably of the first burial, was then placed on top of this deposit. The remains of the two infants had been disturbed by one or more of the other burials.
- Within the eastern extension of trench 10 we excavated a child burial. Slightly to the east of this burial were articulated adult leg bones, which were not excavated this season.
- Disarticulated human remains of an adult and an infant were excavated from deposits in Space 27.
- Two human skulls were noted but not excavated this season, one slightly north of Space 50, and one to the south-west.

Overall a minimum total of 16 individuals are represented by the excavated human remains from this season. We are very grateful for permission to export human bones and teeth for analysis, including aDNA, diet, health and mobility. We will continue excavation of human remains and associated buildings in future seasons.

Small finds

Over the course of the 2019 season, the team recorded 104 small finds or groups of small finds. These include a total 583 beads and bead fragments made from stone and shell, which were plotted across the burial deposits in Building 5 and recovered in groups through heavy residue analysis. One notable cluster of beads (SF1007) was recovered in a linear pattern wrapped around an infant burial, possibly as a strung necklace or sewn onto fabric. Eighty-four percent of the beads recovered over the course of the season were made from perforated river molluscs (*Theodoxus jordani*). Fifteen percent of the beads are small (3mm diameter) red cylinder or red and white disc beads, made from calcium carbonate, possibly in the form of fossilised crinoids recovered from the abundant limestone deposits in the region. The remaining seven beads include four carnelian beads (SF909, SF911, SF912 and SF991) made in stone ranging from pale orange to very dark red (Figure 5). A small green chalk bead (SF922) is similar to an example identified in the previous field season (SF765). Two well-worn *dentalium* tusk beads, one fresh (SF912) and one fossilised (SF914), highlight the extensive distances from which materials travelled to Bestansur. The worked tips of two crab claws were found in Space 50, each with the distal tip removed and polish across the surface imitating the style of *dentalium* tusk beads in a locally available material. One of the crab claws was pierced and may have served as a bead (SF1015), the other was not pierced all the way through (SF1020).

Figure 5. Four carnelian beads found in association with human remains in Space 50, Building 5.

One of the most remarkable finds of the season was a tall stone disc with a waisted profile (SF1025). The stone is red marble with dark flecks, which is polished on the external surfaces but unpolished around its waist (Figure 6). One area of thinning at the edges is visible, possibly from a long period of use prior to deposition. The spool shape is typical of a labret or plug worn through the ear lobe (similar in purpose to modern ear-stretchers). The ear-plug was recovered from the side of a skull in approximate earlobe position (Figure 4), within Space 50 of Building 5. Labrets and ear-plugs are common from the Chalcolithic onwards, and are known from Zagros Neolithic sites, but are significantly less common. Labrets from the Jaffar-phase at Ali Kosh were found to correspond to dental wear. Examples from Jarmo and Abdul Hosein were from later phases (Kozlowski and Aurenche 2005: 7.6). Thus far, no known earlier examples have been identified.

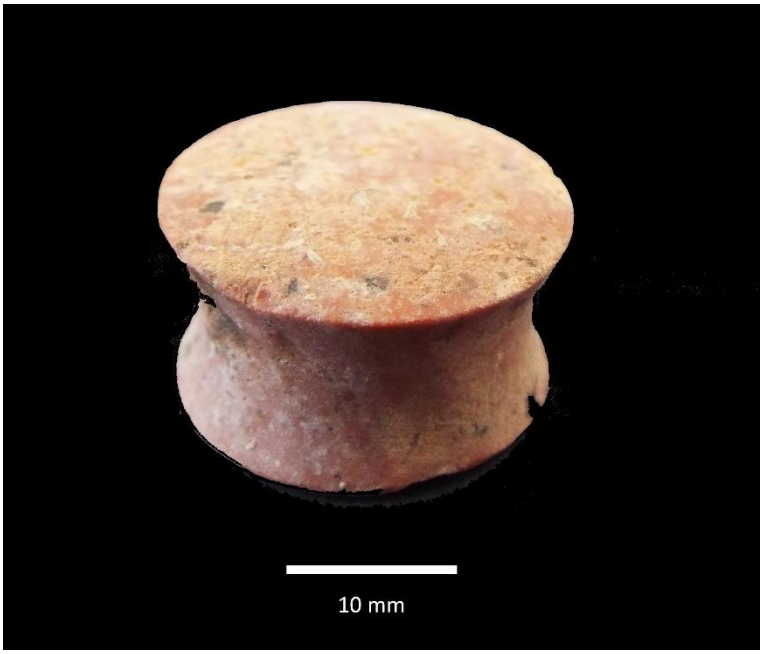

Figure 6. SF1025, an ear-plug or *labret* found in association with human remains in Space 50, Building 5.

One complete cowrie (SF1023) and three cowrie shell fragments (SF908, SF910, SF934) were recovered from Space 50 in close association with skulls. Three of the cowries had evidence of piercing at the apex, and may have been strung or sewn to clothing at one point in their use-life. Although the skulls bore no evidence of bitumen, all four cowries had bitumen residues embedded into the cavity exposed by the cut dorsum. In one case this bitumen was observed to spread over the apex perforation indicating it was not used in the funerary deposition. A large, ovoid piece of bitumen (SF994) was identified close to the eye socket of a skull in Building 5 Space 50 and has a fragment of shell embedded in its surface. A subsample of bituminous material from the eastern extension of Trench 10 (SA3259) has been exported for analysis to trace the origin of the bitumen used by the people of Bestansur.

A total of 45 clay objects were recorded during the course of excavations at Bestansur, of which 36 were judged to come from Neolithic activity at the site. In close association with the burials in Space 50, 21 small clay objects were clustered in C1970, comprising a range of shapes some of which may be fragments of larger complex objects. In the expansion of Trench 10 and investigation of external spaces, we recovered a further 15 Neolithic clay objects. Conservator Rae Beaubien provided guidance on successful extraction and preservation of the clay objects, many of which are fragile. Five clay balls (SF928, SF988, SF999, SF1001, SF1027) may have been used as tokens or in the context of childhood play. Within the assemblage there is evidence for the production of anthropomorphic (SF901, SF923, SF925) and zoomorphic (SF903) shapes. The remaining clay assemblage includes a small disc (SF953), and a fragile pair of objects (SF1017, SF1018), which appear to be a tool and working surface or mortar.

Four stone balls made from marble (SF1014, SF1029-31) were found across the trench, all of a similar size (27-37mm diameter). The surfaces of the stone balls all show scars from rubbing or impact, indicating that these were tools used for a variety of purposes. A white marble disc with black and red veins (SF1011) also appears to have been used as a tool, based on the repeated impact scars. A small axe-head (SF1012) made from a fine green stone was retrieved in the open area south of Building 5 (Figure 7). The axe has hundreds of fine striations running parallel to the blade edge

indicating that this was used rather than decorative. Axes were also found from earlier periods at Zawi Chemi Shanidar and Karim Shahir but the shape of SF1012 is unusual for the eastern branch of the Fertile Crescent and is more akin to the western Fertile Crescent bifacial tradition than the type of triangular tools known from Nemrik, M'lefaat, or Qermez Dere (Kozlowski and Aurenche 2005: 2.2.5.1-2).

Figure 7. A stone axe-head SF1012.

Other stone tools recorded in the Small Finds Assemblage include a bell-shaped pestle (SF1003) found in an oven (FI17), and a fishing net sinker (SF921) from the eastern trench extension similar to those recovered from Trenches 12/13 in previous seasons of excavation at Bestansur. A group of five small chert bladelets have been included in the Small Finds assemblage (SF962); one of the bladelets was found between the vertebrae of a human skeleton in Space 61 in Building 9, and the remaining four around the back and legs. These may have been used as arrow barbs, and embedded in the flesh of the body.

The following quantities of bulk finds were made from all excavations at Bestansur in spring 2019, totalling more than 155kg:

- 39kg of animal bone
- 8.5kg of human bone
- 8kg of fired clay
- 7.5kg of chipped stone
- 58kg of pottery
- 11kg of shell
- 22.5kg of ground stone

Flotation and heavy residue processing

A total of 218 integrated flotation and wet-sieving samples, amounting to 4592 litres, were collected and processed during the season. The heavy residue from 152 samples collected in Neolithic contexts (totalling 3464 litres) has been sorted while a further 34 samples have been stored and will be fully sorted at the start of the next season. The average sample size was 23 litres. Samples processed from burial contexts accounted for just under half of all Neolithic samples, totalling 66 samples and 1627 litres. A further 25 samples were collected from an area with visible evidence of activities using a grid in order to examine any spatial differentiation.

The heavy residue from samples collected and floated from Post-Neolithic contexts (32 samples) has not been sorted but has been stored. The light residues have been retained and will be studied over the coming months.

Outreach

We assisted Slemani Museum in the redesigning of its Prehistory Gallery, which is supported by a grant from the US State Department. We provided text and advice on selected objects for display in new cases and wall displays. At Bestansur on 2nd May 2019 we hosted a visit of 40 third-year undergraduates from Sulaimani University, and on 29th May we met with 12 staff and students from Sulaimani Polytechnic University to discuss collaborations in the fields of environment, urban planning, zoology and botany. Three members of our team (Roger Matthews, Wendy Matthews, Amy Richardson) delivered talks during a workshop jointly run by the Cultural Heritage Network and Erasmus+ at Sulaimani Polytechnic University on the topic of 'Archaeology, Heritage and Sustainability', which was attended by more than 80 academic staff, students and heritage professionals.

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Report on University of British Columbia Excavations in Trenches 10W and 10N, Bestansur, Spring 2019

Lisa Cooper and Lynn Welton

Excavations in Trenches 10W and 10N at Bestansur were carried out between 22nd April and 21st May 2019, by an archaeological team from the University of British Columbia (Canada): Lisa Cooper (Professor of Near Eastern Archaeology), Kathryn Kelley (Postdoctoral Fellow), and Amber Leenders (MA student). Lynn Welton, a Marie Curie Postdoctoral Fellow in the Department of Archaeology at Durham University was also a member of the UBC team and supervised the excavations of Trench 10W. The initiative was supported financially by an Insight Development Grant from the Social Sciences and Humanities Research Council of Canada (2015-2019). The UBC team has been grateful for the continued support it has received from CZAP co-directors Roger and Wendy Matthews. Excavations also benefitted greatly from the assistance of a work force from the village of Bestansur, and from the project's Iraqi government representatives, Kemal Raouf Aziz and Sami Jamil Hama Rashid. The UBC team's efforts were concentrated in two areas on the mound of Bestansur, characterized by post-Neolithic period archaeological remains. The areas consisted of Trench 10W, located on the eastern side of the mound directly west of Trench 10 and Trench 10N, directly to the north of Trench 10.

Trench 10W

The area of Trench 10W had been previously investigated during the 2012 season through the excavation of Trench 1, which demonstrated the presence of at least one post-Neolithic stone architectural phase overlying Neolithic mud-brick architecture. The 2019 excavations in Trench 10W revealed a series of small stone structures built against the sloping eastern side of the mound. In their latest preserved phase, directly under the surface of the mound, two such structures were identified as having curvilinear forms, created by arc-shaped walls constructed of small and medium sized field stones along with pieces of re-used stone artifacts such as mortars, grinding stones and baked bricks (Figure a). It is conceivable that on the eastern side of the mound, the stone walls of these enclosures were actually set into the slope of the mound, at least in their lower courses, forming retaining walls. These structures represented the last phase of re-use of earlier and more substantial domestic constructions. However, in these latest phases, their ephemeral construction, along with the fact that they did not bear traces of clear occupational surfaces or domestic installations, suggest that they were not used for human habitation. Rather, based on their similarities in form and dimensions to round structures identified from satellite imagery from the Mughan Steppe of north-western Iran, a region known to have been the pasture grounds of several pre-modern tribal groups, these could represent the enclosures of semi-sedentary pastoral groups who used the structures to pen temporarily their flocks of sheep and goats (Alizadeh and Ur 2007). Samples were taken of the deposits from within these structures in their later phases, and preliminary spot samples confirmed the presence of dung spherulites, consistent with the penning of animals.

The curvilinear structures of Trench 10W proved to be the latest of a sequence of structures that were constructed in this particular sector of the site. Several earlier phases of stone architecture were identified for the Central Building, and for the structure directly to the north-east, henceforth referred to as the North-East Building. Regarding the Central Building, although it had a curvilinear form in its latest preserved phase (Figure 8), it revealed at least five earlier phases directly underneath featuring more clearly rectilinear stone walls (Figure 9). That the building was in use over a more or less continuous period of time is indicated by the re-use and continued modification of its stone walls throughout the sequence. This was particularly noted with the western wall #1920, to which stones were added in at least four phases, leading to its repeated reconstruction and

modification. At least four distinct and consecutive earth deposits, one of which featured a possible surface, were also successfully traced on the interior of the building as part of its earlier phases. A hearth filled with white-grey ash surrounded by a red circle of burned earth was found in association with one of the earth deposits in the building's fourth phase of use, while an elaborately constructed clay tannour – equipped with a flue near its base and set into a pebbled platform – was constructed in the building's earliest phase and was associated with two or three phases of use within the Central Building (Figure 10). Such fire installations may indicate a domestic use for the Central Building in its earlier occupations, thereby possibly attesting to its transformation from a domestic residence for human groups to a later function as a temporary enclosure for animals.

Figure 8. Late curvilinear phase of Central Building.

Figure 9. Earlier rectilinear phase of Central Building.

Figure 10. Tannour with flue in earlier phase of Central Building.

The North-East Building may also have experienced a similar change from a domestic structure to an animal enclosure. Compared to the Central Building, however, it currently demonstrates fewer phases of construction and modification. It appears to have been constructed with a curvilinear form late in the sequence of reconstructions of the Central Building, with a floor of small pebbles (Figure 11). As described above, this phase produced evidence for dung spherulites in spot samples taken from deposits immediately above the floor of the structure. Prior to the construction of the North-East Building, a doorway, represented by a gap in the northern wall of the Central Building, provided access to the Central Building to the south-west. Interestingly, excavations in the last days of work revealed an occupation level below the phase of the North-East Building with the pebbled floor, with a thickly plaster-lined oval pit and the upper parts of three sunken storage pithoi (Figure 12). This indicates that, as observed in the Central Building, an earlier phase of domestic occupation appears to have preceded the later curvilinear structure. The filling in of the doorway of the Central Building seems to have been part of this change in function, and one of the sunken pithoi was sheared off at the neck and a wall constructed over it as part of this reconstruction. Excavations of the North-East Building in future seasons should clarify further the exact nature of this phase of occupation, and could possibly identify earlier levels of use and relate them more directly to the construction sequence identified in the Central Building.

Figure 11. Late curvilinear phase of North-East Building.

Figure 12. Earlier phase of North-East Building, with plaster-lined oval pit (front, centre) and three sunken pithoi (back, centre).

A possible third structure, located in the south-western area of Trench 10W and consisting at present of a single rectilinear wall and an associated surface, is likely to have been associated with the earlier phase of rectilinear domestic architecture observed to the north-east. However, the position of these deposits downslope and directly under the surface of the mound resulted in their being more heavily disturbed by erosion than observed in other sectors of the trench.

Further examination of the recovered artifacts will be required to ascertain the date and duration of the Central and North-East Buildings in Trench 10W, but preliminary observation of the pottery from these contexts suggests that much of the occupation of these structures took place during the Sasanian period (3rd-7th centuries AD), and possibly extending into the subsequent early Islamic period (7th-8th centuries AD). Tannours (particularly on the south-eastern side of the trench) in Trench 10W encountered outside of the Central and North-East Buildings may prove to date even later, up to the Ottoman period of the recent past.

Trench 10N

Excavations in Trench 10N were focused on the northern 4 m (N-S) x 10 m (W-E) sector of the larger 10 x 10 metre square. By making a probe in this sector we were especially keen to shed further light on the post-Neolithic stratified burned deposits that were first encountered in Trench 6 in 2012, a small trench located directly to the east of Trench 10N.

Excavations in the western two-thirds of Trench 10N revealed a number of discrete concentrations of stones and mudbrick at varying elevations that represented work surfaces, short wall partitions or the remnants of firing installations. Judging from the pottery and other artifacts found in association with these remains, these features date to the Sasanian or later periods. Included among the later constructions was a baked clay circular tannour at the extreme western side of the trench associated with a small surface into which its lower third was set, and a small stone-lined hearth in the midst of which was found an Ottoman clay pipe (probably 19th or early 20th century AD). Excavations further below these features revealed a series of earth deposits sloping from west to east, containing materials that appeared to have washed down the mound over a long period of time. The pottery

found within these secondary layers was quite mixed in date, with Sasanian period vessel forms but also extending back in date to the Iron Age (c. 8th-7th centuries BC).

The eastern third of Trench 10N comprised a stratigraphic history distinguished primarily by the remnants of a large 'Burned Building' whose western walls had been set into the eastern slope of the mound and whose burned remnants had originally been picked up along the eastern side of the mound in Sounding 6 in 2012. The western walls of the Burned Building (#2036 and #2034) extended in a line from north-east to south-west. The northern stretch of the wall (#2036) was constructed of packed clay or pisé about 55 cm in thickness, preserved up to a height of about 60-70 cm. It had been set directly in and against the eastern slope of the mound. Further to the south, this same pisé wall had been either destroyed or cut down to a lower level and rebuilt of small to medium sized fieldstones, set in two rows and preserved for about 7-8 courses (#2034). This latter wall had been built slightly to the west of line of #2036 and oriented in a stronger south-westerly direction. The stone wall also appears to have been built up and against the downward sloping fill of the mound.

The interior of the Burned Building has thus far been identified to have experienced two major burning events. During the latest conflagration, the whole area of the building exposed in the trench experienced a collapse of a burned roof, distinguished by a fairly thick layer of broken chunks of burned orangey-red or dark brown mud and ash. Analyses of spot samples of these deposits revealed phytoliths of reeds, consistent with the suggestion that this layer represented roofing material of mud plaster and reed matting that had burned and collapsed during the conflagration of the building. Directly below this layer of destruction debris was a thick horizontal charred deposit, dark-brown and ashy in appearance, which may represent a burned floor of the building or deposits immediately above (Figure 13). The burning of this phase was heavy enough to scorch the interior face of the stone wall #2034, leaving many stones smoke-blackened, and turning the surface of the inner face of the pisé wall #2036 into an orange crusty layer.

Figure 13. Charred deposit of later phase of Burned Building.

Directly under the latest burning event just described was encountered a thick layer of grey-brown clayey earth, full of black charcoal flecks, which appears to have been deliberately filled into the building, and which was almost entirely devoid of pottery and other artifacts. Below that were the deposits of the earlier conflagration event: a layer of burned mud plaster and bricky rubble together with several pieces of wood charcoal – some in very large chunks, especially concentrated at the northern end – over a thick, mostly horizontal layer of dark ash containing many charred seeds. This in turn lay directly over a floor layer, traced quite easily in some areas as it had been slightly burned

and hardened to a grey-white colour in the conflagration. Interestingly, a sounding to the east, further into the layers below this floor proved that this was the latest floor of several, each distinguished by a thin, pale grey-coloured, horizontally deposited layer of flooring material. Found within the destruction layers of the earlier burned building and extending slightly up into the grey-brown clayey fill above were the remnants of a wall extending at right angles to #2036 and running in an easterly direction to the area at the side of the trench just to the west of Sounding 6. Constructed of a combination of rectangular mud bricks, packed clay and field stones, this wall, #2093, had partitioned the space in the Burned Building into two rooms, one to the north which was distinguished by a layer of burning and floor(s) underneath, and which was still defined by the pisé wall #2036 on the west; and one to the south, which was filled with grey-brown clayey earth whose bottom had not yet been reached by the last day of excavations (Figure 14). At this lower level, this room's western wall was defined by the pisé wall found underneath the later stone wall #2034.

Figure 14. Earlier burning deposits directly over floor of Burned Building, with remnants of Wall #2093 (centre).

Other than the presence of the Burned Building, no other structures have yet been identified that can be associated with this building. Judging by the long, horizontal line of charred deposits visible in the entire section of the eastern side of Trench 10N (representing the later conflagration event), and by additional excavations undertaken at the extreme southern side of Trench 10N, which also dug through this ash deposit, the Burned Building would have been a large structure. It is perhaps significant to note the near-absence of pottery and artifacts found within the layers of destruction debris of both conflagration events, as well as within the grey-brown clayey fill in between. The lack of good diagnostic pottery from the Burned Building has made a precise date for its occupation and destruction difficult to establish, although judging from what meagre sherds were found, it is believed to date to the Iron Age. It is conceivable that the destruction events in the Burned Building are contemporary with the destruction by fire of the structures encountered in Trench 14 in 2013 and 2017 to the south-east of the mound, where abundant pottery forms attest to occupation from the 7th century BC.

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