

# How the ‘Evidence of Past Human Activity’ Was Lifted from its Context

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## ABSTRACT

Located in Bursa Province, the site of Barcın Höyük yielded a residential complex of rectangular rooms dating to the seventh millennium BCE. Just inside the threshold of one of the dwellings dating to 6400 BCE, the 2014 excavations discovered a set of two human footprints. The preservation of such features is rare in archaeological contexts, yet given the unusual sequence of burning and plastering episodes, the imprints survived the ensuing 8400 years practically unharmed.

Following the presentation of some background on the Neolithic Period to which this set of footprints belongs to, the paper discusses the archaeological and symbolic aspects of footprints placed in thresholds in Anatolia and the Near East. While the discovery of a horned cattle cranium directly beneath the footprint adds to the symbolic nature of the find at Barcın Höyük, it nonetheless complicated the process of lifting the block unharmed.

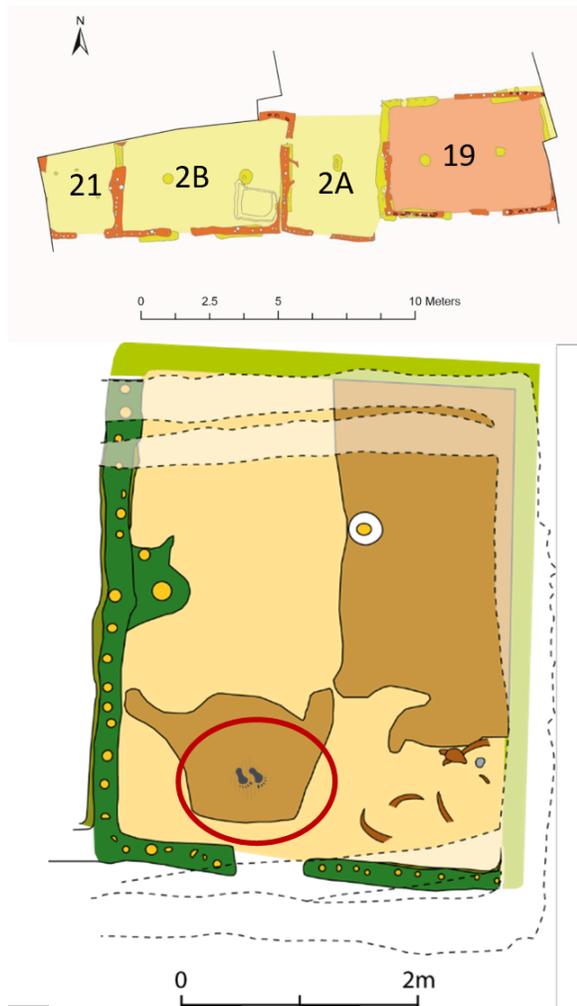
The main focus of the paper is the planning, lifting, conservation and restoration phases that enabled the feature to be removed as a complete block, which was eventually transported intact and delivered to the İzmit Museum. In particular, attention is given to the conservation and restoration treatments and techniques as well as the methods and materials used when the feature/block was supported, lifted carried, stored and installed.

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## 1.0 INTRODUCTION

Excavations at Barcın Höyük, located in Bursa Province, yielded a series of architectural phases dating to the Neolithic Period or the middle of the seventh millennium BCE (Gerritsen et al. 2013a, 2013b). While the oldest levels yielded at least two large timber structures, the level above was burnt and showed better preservation. Exposed in this burnt level called VI d1, were four structures aligned of alternating size; from west to east these have been called structures 21, 2b, 2a and 19 (Fig. 1). Dating to 6400 BCE, The

smaller structures 21 and 2a were flanked on either side by larger ones. While all structures show some level of burning, the intensity of the fire was especially strong in both of the smaller structures. This burning activity in Structure 2a is what preserved the two human footprints which are the subject of this paper (Fig. 2).



*Figure 1: A schematic diagram of the structures in Phase VI d (above) with structure 2a showing the location of the footprints in the structure (below)*

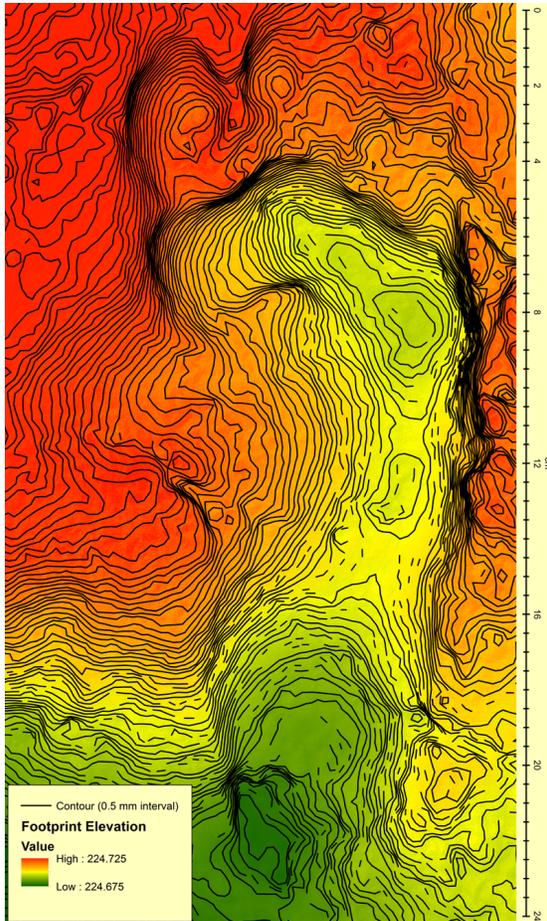
The footprints stood at the threshold of Structure 2a (Fig. 1) and mark this entrance to the space. There are two footprints that are practically aligned although the left footprint lies a half foot in front of the right one. Anthropological studies of the footprints suggest that they were produced by standing and not by walking. This observation is based on the fact that the body weight was fully distributed across the heel, metatarsus and the toe bones (Atamtürk et al. 2018) and suggests that rather than being haphazardly placed in midstride, that the footprints may have had been intentionally plunged into the wet plaster of the floor.

Such an observation, in fact, fits with the other lines of evidence discovered during our excavations. One surprise was the discovery of a cattle skull immediately underneath the left footprint. The resistance from the cattle skull beneath was also the reason why the left footprint was shallow, while the right, was plunged deeper into the clay enabling it to be better preserved. Bucrania were associated with much symbolism in the Neolithic and are found across many sites including the contemporaneous site of Çatalhöyük (Russel 2012). The placement of handprints or stencils of handprints is a custom that has been practiced since the Paleolithic (Garcia-Diez et al. 2015), also known from Çatalhöyük and is believed to carry symbolic connotations as well (Lewis-Williams 2004).



*Figure 2 : A photo of the right footprint showing the toes and the heel*

Footprints similarly are a clear indication of one's presence and may be used to symbolically signify that one belonged to a particular place. Placing footprints in the doorways or thresholds of structures furthermore, is a practice found elsewhere and may have wide ranging connotations. One such example of an engraved set of footprints at the entrance of a structure comes from the Ain Dara Temple in Syria dating to the Iron Age. Thomas interprets these footprints as a way of marking posterity and the presence of a deity.



*Figure 3: An elevation diagram of the right footprint*

When combined with the cattle bucranium, and the intentionality of the manner in which the footprints were planted on to the plaster, it becomes possible to argue that they may have carried symbolic significance. While structure 2a is not necessarily a shrine, it is flanked on either side by larger residences, one of which (Structure 19) has a red floor. Red floors are often believed have carried special significance in the Neolithic of Anatolia (Duru and Özbaşaran 2005; Erdoğan and Ulubey 2011).

This article describes the steps taken in preserving, consolidating and lifting the footprint and how it was thereafter delivered to the İznik Museum for eventual display. The careful conservation work and the silicon mold and plaster replica cast made thereof enabled further anthropological work on the footprint. Research by Atamtürk et al. (2018) and specifically the comparative measurement of the heel breadth and footprint breadth showed that the footprint most likely belongs to a male. It was also Atamtürk's assessments that determined that the footprints were not a result of walking, rather that they were produced by standing still. These observations were made possible by the silicon mold and the plaster replica.

## 2.0 CONSERVATION TREATMENTS

### 2.1 Onsite Treatments

The main focus of conservation treatments was the planning, lifting, active conservation and restoration phases that enabled the feature to be removed as an intact complete block which was subsequently delivered to the İznik Museum. Prior to conservation treatments which began on site, the set of two footprints were drawn, mapped and photographed also using 3D technologies (Fig. 3).



*Figure 4: A photo indicating the process of consolidation and setting the borders*

The conservation proceeded thereafter with an initial consolidation of the footprint block. This was undertaken with the usage of Primal AC33 in water. The block was strengthened by increasing the concentration of the consolidant gradually (5%-10%-15%). In order for the block to be removed from the site in an intact fashion and transported to the excavation house, the excess soil on its side was carefully thinned and reduced in size (Fig. 4).

This thinning of the surrounding soil enabled the block to become smaller and thus less heavy. Reducing the weight ensured that fewer risks would be encountered during the lifting process. The block was eventually brought down to a size of 41 x 53 cm and prepared for lifting (Fig. 5).



*Figure 5: A photo of the consolidated block prior to lifting*

Prior to lifting, a silicone mold was applied to ensure full documentation of the footprint in the event of a failed intact removal and to give the footprint additional support (Colas 2005; Rochow 1987). During this process Vaseline petroleum jelly was applied to the footprint block to protect the surface. This sealed the cracks and isolated the liquid silicone and prevented it from penetrating the pores of the consolidated block. During this process, a brand of putty-like modelling clay made from calcium salts, petroleum jelly and aliphatic acids called Plasticine was placed along the edges to prevent the silicone from running off the block. The silicone rubber used was a two-component mixture called RTV2 comprised of a base and curative (A + B). Initially the silicone rubber was placed across the block as a thin layer. A half hour later a thicker layer was added. The silicone rubber was thereafter supported by a layer of plaster to ensure safe transfer to the excavation house. Cardboard was used along the edges of the pedestalled block to encase the plaster which was thereafter spread across the surface of the block and left to dry.



*Figure 6: A photo showing how the consolidated block was sandwiched by metal plates and transported to the excavation house in a firmly fastened manner.*

Following all the consolidation and support operations, the footprint block was cut from beneath with the help of nylon rope similar in many ways to the string cutting of clay by ceramic artists. The cut block was supported by a metal plate with a thickness of 2 mm. During this process we came across some unanticipated difficulties resulting from the fact that a cattle skull had been placed immediately beneath the left footprint. As described above, this skull may have been intentionally placed here by the inhabitants of Barcın Höyük, in order to imbue the building with some symbolic significance. The footprint may also have been intentionally placed precisely over the skull for the same reason. The presence of a bucranium just beneath the footprint, made cutting and lifting the plate challenging. Nonetheless, the pedestalled block was cut successfully from the surroundings and carefully removed, lifted and subsequently brought to the excavation site intact. A second sheet plate of the same size held on firmly by a thick rope was used to sandwich the block (Fig. 6).

## **2.2 Treatments in the Excavation House Conservation Laboratory**

Conservation treatments continued at the excavation house. This included the removal of the supporting plaster edges, the thinning of the back surface, the cleaning and further consolidation of the block. The block at the excavation house was supported by a thick sponge in order to give it further support and to be able to turn it to the back side in a controlled manner. On the back surface of the pedestalled block much work took place including its levelling and mechanical cleaning. For this procedure the burnt soil was removed with a spatula and a scraping tool. Further consolidation also took place, this time with the help of 20% Paraloid B72 in acetone which was applied to the cracks along the back face. The cracks on the back surface were filled with Primal AC33 10-15% in water+sand+lime mortar and air dried, and thereafter a final layer of geotextile was attached to the back surface with the help of 20% Paraloid B72 to provide additional support (Fig. 7).

The treatments on the front face took place once the back surface was complete and the block was turned over. The plaster support and the silicone rubber support were easily removed from the front face (Fig. 8). The latter yielded a one-to-one positive impression of the footprint, which enabled the anthropological work described above. The removal of the isolation layer from the front surface was done mechanically. The isolant, Vaseline petroleum jelly, was cleaned with brushes and then buffered with paper towels, using a petroleum ether solution. The edges of the block were supported with a geotextile strip which was applied to the edges with 20% Paraloid B72 in acetone.



*Figure 7: Photo showing how the consolidated block was supported with geotextile and how Paraloid B72 was applied to it.*

The cut block was also aesthetically finished with a mortar. In order to select the best color and texture that fits well with the original block, several samples were tested, and each was checked to see how well they matched. The selected sample was strong and durable and pigmented with earth colors and textured with a stiff brush (Fig. 9). A plaster replica was simultaneously prepared by creating a cardboard frame around the silicon mold and pouring the plaster mixture into the frame and allowing to dry.



*Figure 8: Image showing how the silicone rubber was removed from the consolidated block*

The consolidated original block was thereafter placed in a custom-made wooden box which provides it support (Fig. 10). The box has been placed in the İznik Museum Depots. As of August 2019 construction has begun to build a new museum, in which the original consolidated footprint may be put on display.



*Figure 9: Photo of the silicone rubber mold on the left and original restored footprint block on the right.*

### **2.3 Storing and Preservation of the Consolidated Block**

The applications for stabilizing the footprint in the field and in the conservation laboratory at the dig house allowed the consolidated block to be quite secure and stable. The footprint should be stored at a constant temperature 20-21 °C with a relative humidity of 50-55 gr/m<sup>3</sup>. To ensure that no fungus or other biological activities take place, the consolidated block must be well-ventilated and cleaned and checked once a year by a conservation specialist. Should it be placed on display, a UV filter light source is recommended. Preferably an expert conservator should be called in to prepare the footprint for exhibition.

### **4.0 CONCLUSION**

This conservation study not only acts to preserve a “Neolithic moment” but it enabled further anthropological work to be carried out on the footprints (Atamtürk et al. 2018). The symbolic character associated with the footprints and the intentionality suggested by the way in which the footprint was pressed within the surface of the clay add to this special interpretation. This suggestion is further supported by the fact that the bucranium was directly associated with the footprint as well as the fact that footprints have been found in other structures and temples in other contexts in the Near East and Anatolia. Much of this interpretation is a result of the conservation work that took place on site and in the conservation laboratory at the dig house.



Figure 10: Image showing the custom-made wooden protective box before the consolidated footprint left for the İznik Museum

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