

Bringing a Roman bull back to life

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The use of digital technology in British museums is expanding at a rapid rate. The Collection is no exception to this trend, having initiated an innovative project in 2012 to make 3D scans of items from its archaeological and artistic collections freely available to artists and researchers (see www.lincoln3dscans.co.uk). The recent acquisition of a fragment of Roman marble statue from Lincoln has enabled us to take a step further into the world of digitisation, in this case combining technology and traditional sculptural skills to physically recreate how the statue may originally have looked.

The statue is in the form of the torso of a bull, 370mm long and 195mm high, sadly missing its head and most of its legs but still betraying the quality of its original carving. Sculptural marble is rare in Britain, with fewer than 40 examples known. The known sculptures are typically anthropomorphic, depicting Emperors, prominent citizens or deities. Zoomorphic sculpture is unusual, making the bull torso a significant find. Examination of the statue by Professor Martin Henig of the University of Oxford has determined that, on stylistic grounds, the bull dates to the 1st or early 2nd Centuries AD, and was perhaps even made prior to the conquest of Britain. It most likely originates from a domestic context rather than being part of a religious group or funerary monument.

The statue was discovered in a garden to the north of Lincoln, on the line of Ermine Street and on the edge of the known extent of the cemeteries and extra-mural occupation that lined the road as it stretched away towards the River Humber. Excavations at the site as part of the Lincoln Archaeology Group's Ermine Street Community Dig revealed that the area is much disturbed by later quarrying, and no Roman context for the statue could be determined. Although the statue is ancient, when it arrived at its final resting place is uncertain, and that the statue represents a Grand Tour import sadly remains a distinct possibility.

Despite being incomplete, the original pose of the bull is believed to be one well-attested in ancient art; a pose known as '*bos cornupeta*', the bull in the act of butting with head lowered and one front hoof pawing the ground. This image was particularly popular in the reigns of Augustus (27BC-AD14) and Vespasian (AD69-79) and appears particularly on coins and finger ring intaglios.

The process of reconstructing the bull used both traditional and digital methods. First the original torso was 3D scanned and printed. This was given to an artist, who used ancient comparanda to sculpt the missing elements in clay directly onto the 3D print. The resulting sculpture was then 3D scanned and printed again to produce the final reconstruction. A base was also modelled which incorporated a tree trunk support, matching a circular scar on the bull's belly where such a support originally existed to support the weight of the marble.

The original bull is now displayed at The Collection alongside the artist's model and the final reconstruction, helping to interpret this rare and significant sculpture for the museum's visitors, and proving that technology can be a major factor in helping us to bring incomplete ancient objects back to life.

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