

10. No corners! Prehistoric roundhouses on the N8 and N7 in counties Cork, Tipperary and Offaly

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During excavation, interpretative theories abound among members of the excavation team on the site. These are reviewed and tested in the post-excavation phase and reviewed again as more excavations take place and new evidence comes to light. In recent years, Eachtra Archaeological Projects has excavated a range of prehistoric structures in varying states of preservation and of varying complexity. One of the most common types is the circular house or roundhouse, usually dated to the Bronze Age. This paper presents a developing understanding of the patterns evident in the archaeological remains of roundhouses, an understanding that is changing as our ability to analyse detail and measurements quickly is being transformed by the fact that we have started to record our excavations directly into a Geographical Information Systems (GIS) package. This package combines a map of the site with a database of the archaeology found, allowing the various aspects of an archaeological site (context of recovery, soil samples and artefacts) to be viewed as a whole. This technology, along with an increased ability to produce 3D models of excavated structures, has breathed new life into the way we approach and interpret the buildings of the past.

The projects

The evidence that we examine here is of prehistoric structures found during some excavations along the routes of new roads in Cork, Tipperary and Offaly (Illus. 1 & 2). In County Cork, excavations of five roundhouses were carried out in advance of construction along the routes of the N8 Mitchelstown Relief Road in 2005 and the N8 Fermoy–Mitchelstown road scheme in 2006–7, with sites at Mitchelstown 1, structures A, B and C (Illus. 3), Kilshanny 1 and Ballynamona 2 (Illus. 4).¹ These sites were excavated on behalf of Cork County Council and the NRA.

In Tipperary and Offaly, eight roundhouses, or partial round structures, were excavated along the route of the N7 Castletown–Nenagh: Derrinsallagh to Ballintotty road scheme in 2007–8, at sites at Drumbaun 2, Co. Tipperary, structures A and B (Illus. 5), Drumroe 1, Co. Offaly (Illus. 6), Castleroan 1, Co. Offaly, structures A and B, Moatquarter, Co. Tipperary, and Derrybane 2, Co. Tipperary, structures 1 and 2.² These sites were excavated on behalf of Laois County Council and the NRA.

Only the structures from Mitchelstown 1, excavated in 2005, currently have radiocarbon dates. All three structures from this site were dated to the Middle Bronze Age; material from structure A returned a radiocarbon date of 1493–1305 BC (UB-6771; see Appendix 1 for details), structure B was dated to 1431–1267 BC (UB-6774) and structure C was dated to 1419–1213 BC (UB-6773). The post-excavation work on the remaining excavations is still ongoing but radiocarbon results are anticipated soon. Therefore the remaining buildings are tentatively assigned to the Bronze Age based on typology, with the understanding that this classification may have to be revised in the near future.

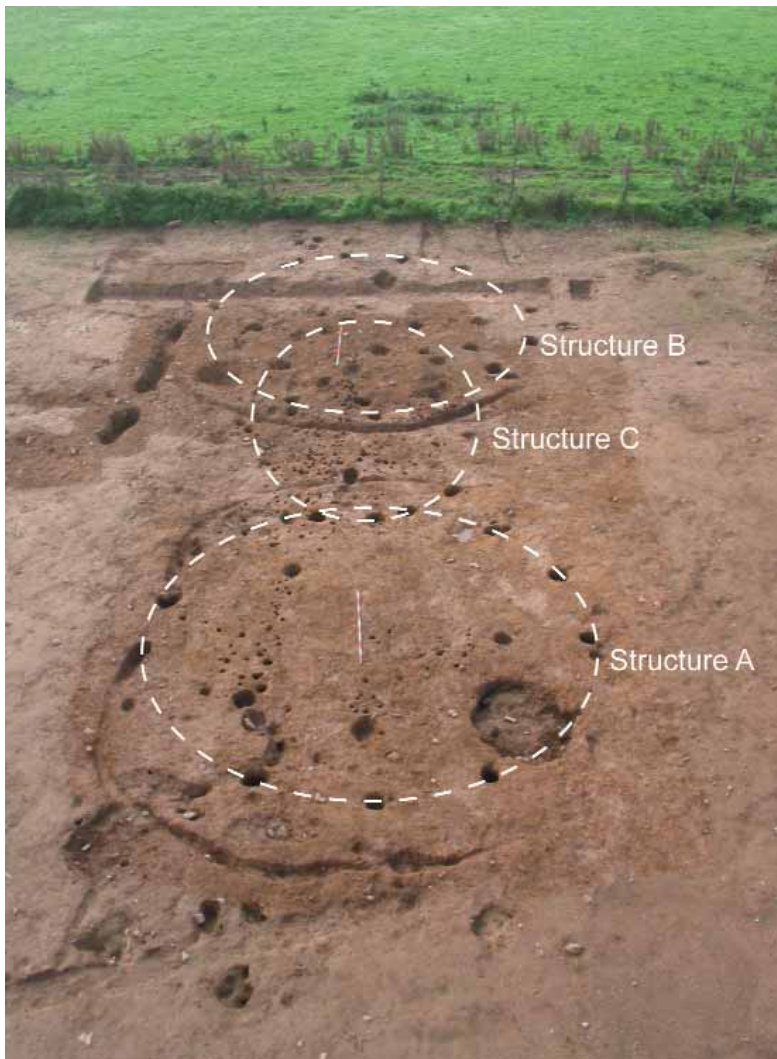


Illus. 1—Location of sites in County Cork discussed in this paper (based on the Ordnance Survey Ireland map).



Illus. 2—Location of sites in counties Tipperary and Offaly discussed in this paper (based on the Ordnance Survey Ireland map).

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Illus. 3—Elevated view of roundhouses A, B and C excavated at Mitchelstown 1, Co. Cork, from north-east. The dashed lines only show the main structural elements of each structure and not the hypothesised wall lines differentiated from the drip-gully of structure A (Eachtra Archaeological Projects).

Illus. 4 (below)—Excavations at Ballynamona 2 roundhouse, Co. Cork, from the south-west (John Sunderland).





Illus. 5—Excavations of structure A at Drumbaun 2, Co. Tipperary, from the east (John Sunderland).

Reconstructing the past: 3D models of Bronze Age houses

Reconstruction modelling is an area of growing technological development. In order to recreate accurately a likeness of a prehistoric building, archaeologists must engage with issues such as the nature of walls, their location, identification of the main structural supports, baseplates, wall-plates, rafters, roofing materials, thatching styles, etc. It goes beyond a simple record of layout and dimensions. This is sometimes quite difficult, particularly since most Irish prehistoric roundhouses have no surviving superstructure (Doody 2007, 92). The exercise of 3D modelling, however, forces us to nail our colours to the mast.

Some of our decisions are based on evidence that has been collated from a number of different excavations of Bronze Age houses. The size and type of the structure influence the type of material that is used in the superstructure. The relatively large scale of our roundhouses and the evidence for substantial support posts suggest that the roof was quite heavy, possibly made from thatch. A combination of lighter wattling may have been interspersed between heavier timbers: examples of hazel and willow wattling are known from Ballyveelish 3, Co. Tipperary (Doody 1987), and Knockadoon at Lough Gur, Co. Limerick (Cleary 1995). There is generally very little evidence for wall coverings, however. Daub was found at Grange and Ballingoola, Co. Limerick, and at Lisheen and Curraghatoor, Co. Tipperary (Doody 2007, 93). Some walls may also have been covered in animal skins, and several houses may have had walls partly made from sods. A generic idea of what Bronze Age roundhouses may have looked like is presented in Illus. 7, a computer-

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Illus. 6—Entrance to the roundhouse excavated at Drumroe 1, Co. Offaly, from east (Eachtra Archaeological Projects).



Illus. 7—Reconstruction of two roundhouses at Mitchelstown 1 (Digitale Archäologie).

generated reconstruction of structures A and B excavated at Mitchelstown 1, Co. Cork. This illustration is a still from a 3D-animated representation of the site created by Digitale Archäologie, which has featured in an exhibition in Cork Public Museum (Conran 2008; Hanley 2008). In this reconstruction both structures appear very alike. A re-evaluation of the Mitchelstown house plans was called for, however, in the light of new discoveries and more recent excavations.

Comparing Mitchelstown 1 to local examples of Bronze Age houses was relatively easy in north Cork as two houses, possibly of similar date to Mitchelstown (pending radiocarbon dates), were excavated at Kilshanny 1 and Ballynamona 2.

At both Kilshanny 1 and Ballynamona 2 the narrow foundation trenches of the houses were associated with post-holes, but the post-holes did not form an arc and there was no obvious pattern to their arrangement. The perimeter of Kilshanny 1 was 61.7 m in length and the perimeter of Ballynamona 2 (structure A) was 56.05 m. This is larger than some post-built roundhouses; for example, the perimeter of the ring of posts in structure A at Mitchelstown 1 was 23.4 m. Even when the perimeter of Mitchelstown 1 is measured to include the linear trench (which does not survive all the way around the house) it is much smaller, at 31 m, than the perimeters of Ballynamona 2 and Kilshanny 1.

This begs the question as to the function of the curvilinear trenches around the circular houses. At Ballynamona 2 the trench was extremely narrow (0.18 m wide and between 0.12 m and 0.18 m deep) and did not include support posts. This was too insubstantial to form the foundation of the building, and much of the support for the roof probably came from internal post-holes. The excavator, Linda Hegarty, noted impressions of straight panels visible at regular intervals (each panel c. 1 m in length) along the top of the trench, and speculated that the trench housed upright panels of wattle-and-daub or planks that formed non-load-bearing walls around the house. The excavator of Mitchelstown 1, Eamonn Cotter, also interpreted the curvilinear trench around structure A as a wall, although the trench was not as well defined as the example at Ballynamona 2 or at Kilshanny 1. On the other hand, some interpret the irregular trenches around the structures as drip-gullies, channelling water that ran off from the roof. If some of the trenches were drip-gullies, their identification as such provides evidence for the extent of the overhang of the roof. All these considerations affect the way that we then reconstruct these buildings.

For example, does the fact that more post-holes were found near the back of a structure suggest that the roof needed more support in this part of the building? What could cause this? An additional floor or loft at this part of the house, perhaps? Or did the trenches outside the houses serve as additional support for the roof, given that they are generally found near the entrance of houses rather than at the backs, which meant that fewer posts were needed at the front? Or perhaps the deeper and often larger entrance posts at the front of the house meant that not as many post-holes were required in this part of the house. To what extent did the thatched roof overhang the walls? And so on.

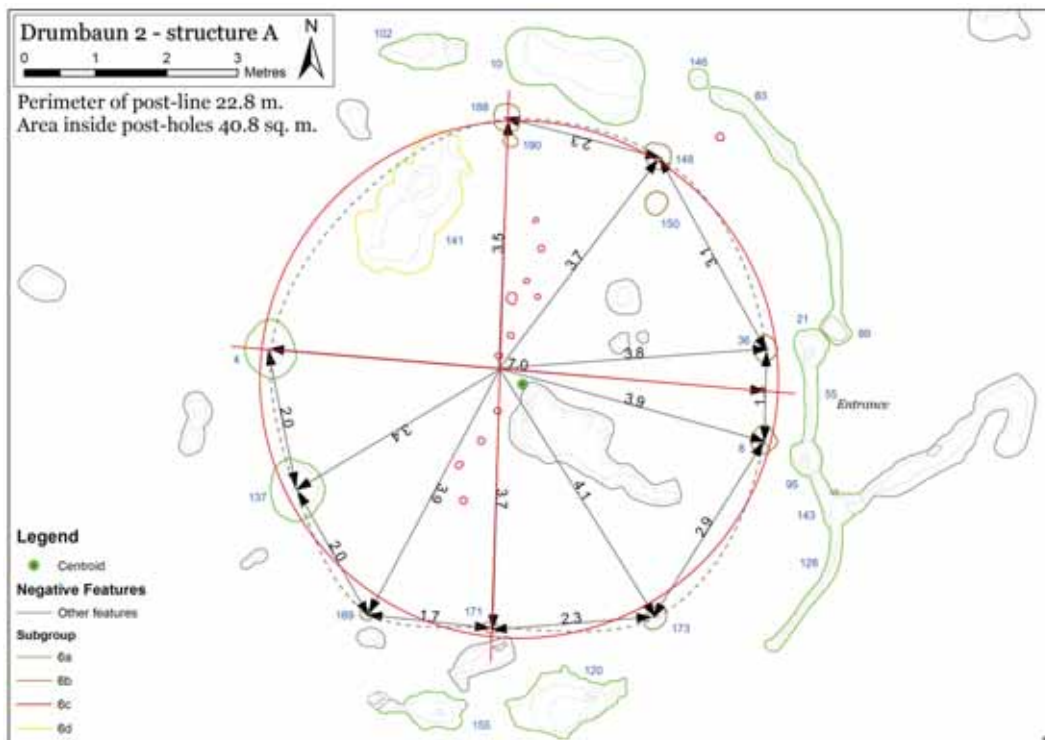
These are all ideas to consider, accept or reject. For example, the drip-gully interpretation at Mitchelstown 1 was rejected by the excavator, who thought that the slope at the site would have meant that it channelled water in the wrong direction (i.e. towards the entrance rather than away from it). This demonstrates that in order to take this analysis further we need to engage more intimately with the basic archaeological record as we analyse measurements, not merely looking at detail in plan, but using the field record as the basis for examining other factors as well, such as the depths of different features across the

site and their levels. Because the field record is the basis for all of this analysis, it is essential to record these structural features in detail during excavation. Entire reconstructions could hang on post-pipe dimensions or the recorded angle of insertion, for example, and all of these data can be dealt with by GIS.

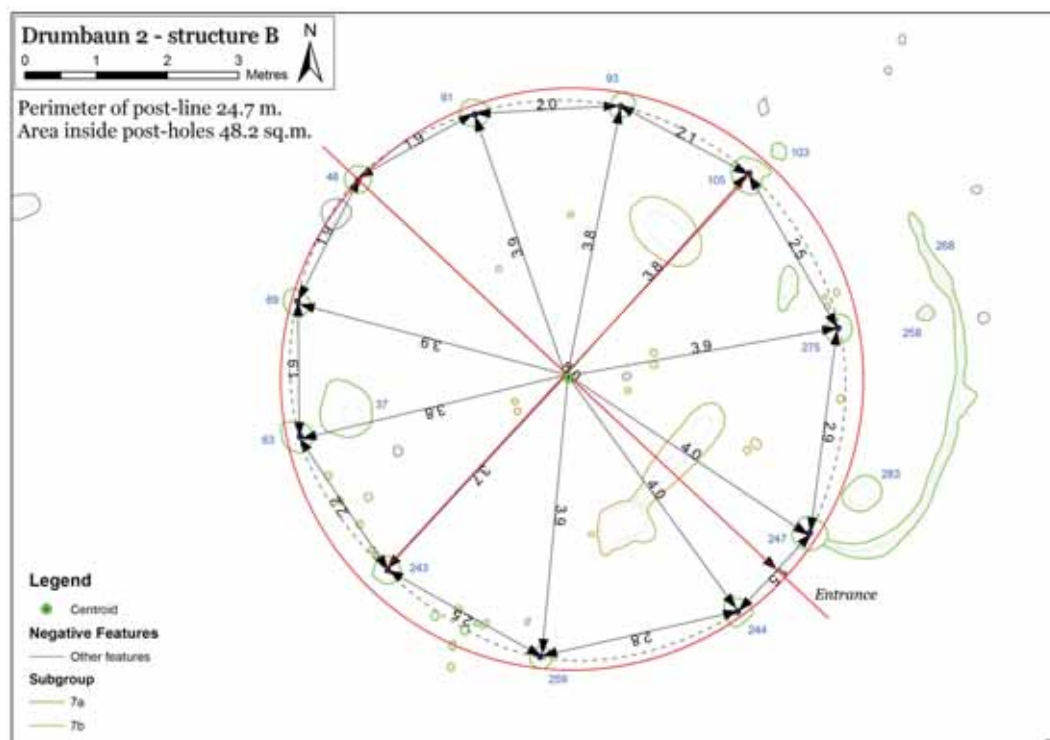
Using GIS to identify patterns within Bronze Age roundhouses

Using GIS we have identified an interesting pattern in the plans of some roundhouses, one that may have implications for the way we reconstruct the houses. During 2007 two roundhouses were excavated at Drumbaun 2, Co. Tipperary. Based on their typology, these houses were possibly Bronze Age in date. The supervisor on the site, Paul Rondelez, was fascinated by these buildings and he started examining the measurements between the post-holes in one of the roundhouses (structure A). He soon noticed an interesting symmetry: although circular, the house seemed to be arranged on a sort of 'axis' between the entrance and a post-hole directly opposite it. Two post-holes flank the entrance and the remaining post-holes have a corresponding partner at either side of the axis, apart from the single, unpaired post-hole opposite the entrance (see Illus. 8). The distances between post-holes on either side of the axis are roughly the same. This indicates that although the post-holes were not evenly spaced they were symmetrically arranged.

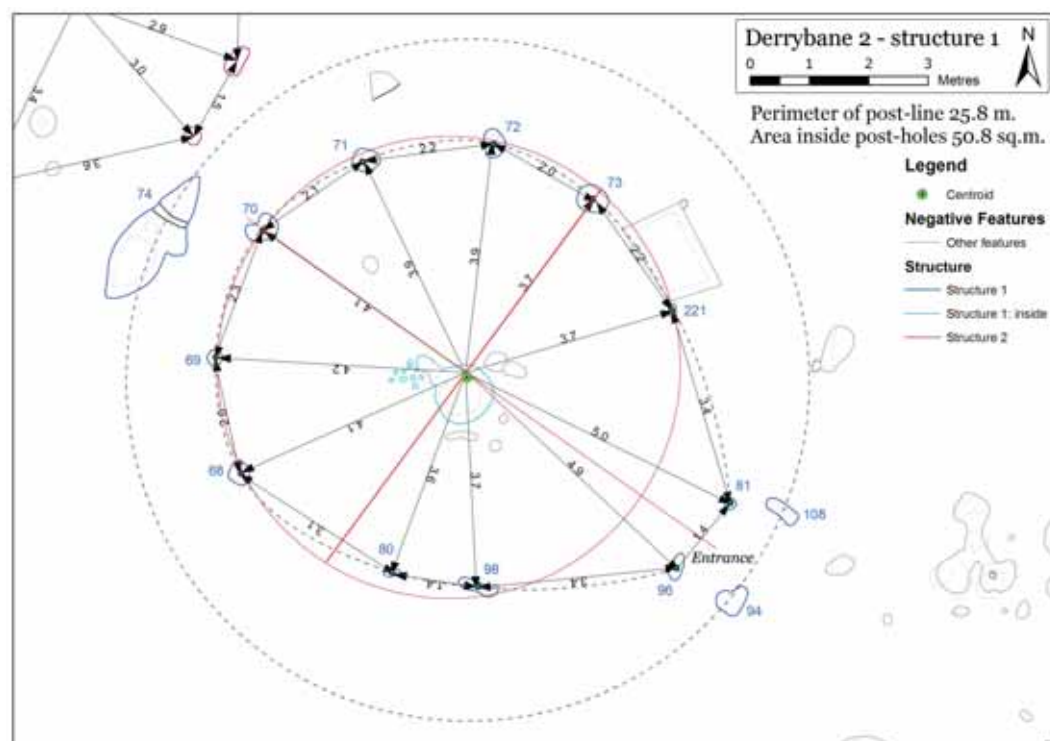
Continuing Paul's site work, our GIS specialist, Maurizio Toscano, investigated whether the remains of other structures excavated by Eachtra along the route of the N7 Castletown–Nenagh road scheme also displayed axial symmetry. His results (Illus. 9 & 10)



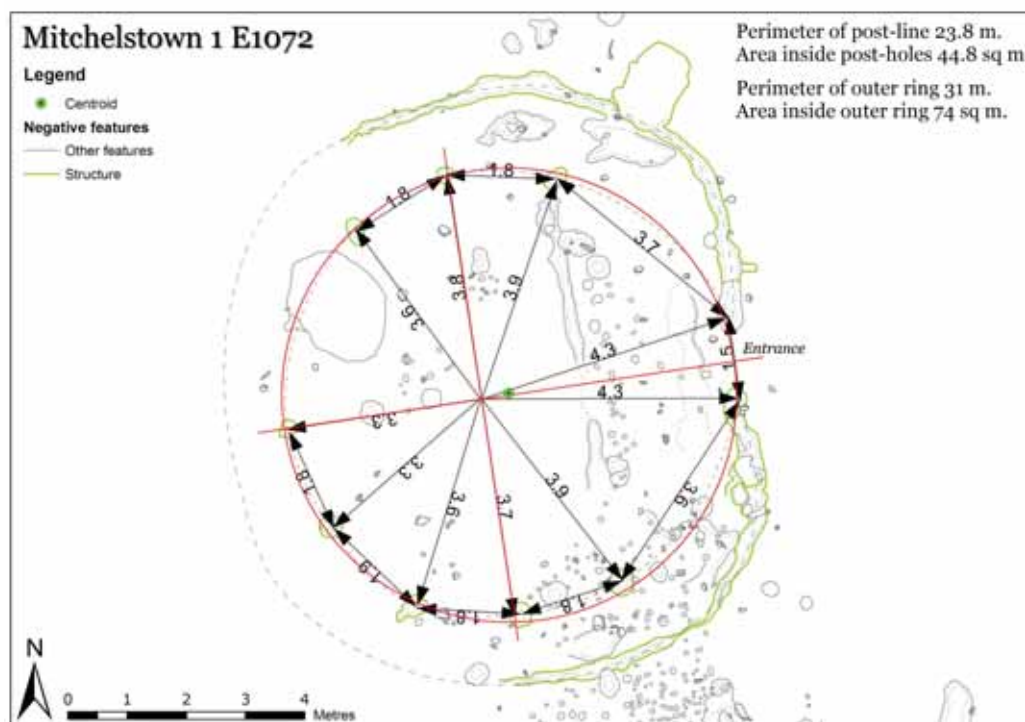
Illus. 8—Plan of structure A at Drumbaun 2, showing the symmetrical arrangement of the post-holes (Eachtra Archaeological Projects).



Illus. 9—Plan of structure B at Drumbaun 2, showing the symmetrical arrangement of the post-holes (Eachtra Archaeological Projects).



Illus. 10—Plan of structure 1 at Derrybane 2, Co. Tipperary, showing the symmetrical arrangement of the post-holes (Eachtra Archaeological Projects).



Illus. 11—Plan of structure A at Mitchelstown 1, showing the symmetrical arrangement of the post-holes (Eachtra Archaeological Projects).

demonstrated that at least three of the round, post-built structures were constructed along the same principle (Drumbaun 2, structures A and B, and Derrybane 2, structure 1). The structures at other sites may also originally have been constructed using the same pattern, for example at Castleroan 1, structure B, and at Drumroe 1. Only the partial remains of these buildings were excavated, however, and it is therefore difficult to be certain. On the other hand, some of the excavated prehistoric structures did not fit into this pattern at all. Buildings at Derrybane 2 (structure 2), Castleroan 1 (structure A) and Moatquarter demonstrated no evidence of this symmetrical pattern in their layout. It was therefore a pattern that was identified in three of the eight circular structures excavated as part of the project, and was possibly present in two more structures. This was a relatively large proportion of the structures found during the project. Could this pattern be identified at other sites as well? We applied the same GIS analysis to a wider area, comparing some material gathered from our excavations in north Cork. Of the three post-built roundhouses excavated at Mitchelstown 1, only one building, structure A, demonstrated axial symmetry (Illus. 11).

The analysis also showed that in most of the houses with axial symmetry the post-holes were more closely spaced towards the back of the buildings, rather than near the entrance. In addition, all of the houses demonstrated evidence for trenches near their entrance, with the exception of Derrybane 2, structure 1.

A similar phenomenon has already been identified in roundhouses in Britain. Guilbert (1982, 68–9) identified axial symmetry at Moel y Gaer, Clwyd, Wales, amongst a large number of post-built roundhouses dating from the sixth and fifth centuries BC. These structures were defined by between seven and 13 post-holes, forming a ring 4.3–8 m in

diameter, and with an entrance, usually to the south-east, that comprised two to four additional post-holes and resembled entrance porches. Brück's study of 86 Middle Bronze Age roundhouses in southern England also identified 18 buildings (21%) that were constructed using axial symmetry. She suggested that the roundhouses could be seen as a model of the Middle Bronze Age universe in a microcosm (Brück 1999, 155–8). As an interesting aside to this idea, axial symmetry is also evident in the layout of Cork/Kerry-type stone circles, where the entrance is flanked by two portal stones, with an opposing recumbent stone at the other side of the circle, and paired standing stones on either side of the axis between the entrance and the recumbent stone (Ó Nualláin 1984, 3; Fahy 1959, 15).

On a more practical note, does the identification of a clear pattern in the construction of roundhouses add to our understanding of these buildings, how they were built and appeared in the past? Does it mean that structure A at Mitchelstown 1, where the plan of the building demonstrated axial symmetry, looked different to the adjacent structure B, where there was no evidence for axial symmetry? Will this discovery contribute to the way we approach 3D modelling in the future? We hope to move on from our plan-based analysis in the near future to a more thorough 3D GIS analysis of the buildings, to look at issues such as post-hole depth, angles of insertion and levels. This will not merely be for the purposes of reconstruction. It will also enable us to analyse the uniformity and the pattern in the construction of these structures, thereby perhaps identifying more formal patterns in the layout and construction of Irish roundhouses during the Bronze Age.

Acknowledgements

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Notes

1. Mitchelstown 1: NGR 180869, 113639; height 106 m OD; excavation licence no. 04E1072; excavation director Eamonn Cotter. Kilshanny 1: NGR 183091, 112389; height 95 m OD; excavation reg. no. E2430; ministerial direction no. A040; excavation director James Lyttleton. Ballynamona 2: NGR 182792, 111731; height 95 m OD; excavation reg. no. E2429; ministerial direction no. A040; excavation director Linda Hegarty.
2. Drumbaun 2: NGR 20422, 181746; height 150 m OD; excavation reg. no. E3912; ministerial direction no. A038; excavation director John Tierney. Drumroe 1: NGR 205195, 181703; height 160 m OD; excavation reg. no. E3773; ministerial direction no. A038; excavation director John Tierney. Castleroan 1: NGR 206324, 182969; height 160 m OD; excavation reg. no. E3909; ministerial direction no. A038; excavation director John Tierney. Moatquarter: NGR 206009, 182426; height 170 m OD; excavation reg. no. E3910; ministerial direction no. A038; excavation director John Tierney. Derrybane 2: NGR 193326, 179173; height 80 m OD; excavation reg. no. E3591; ministerial direction no. A038; excavation director Laurence McGowan.