11. Hearth and home: Bronze Age structures in south Tipperary

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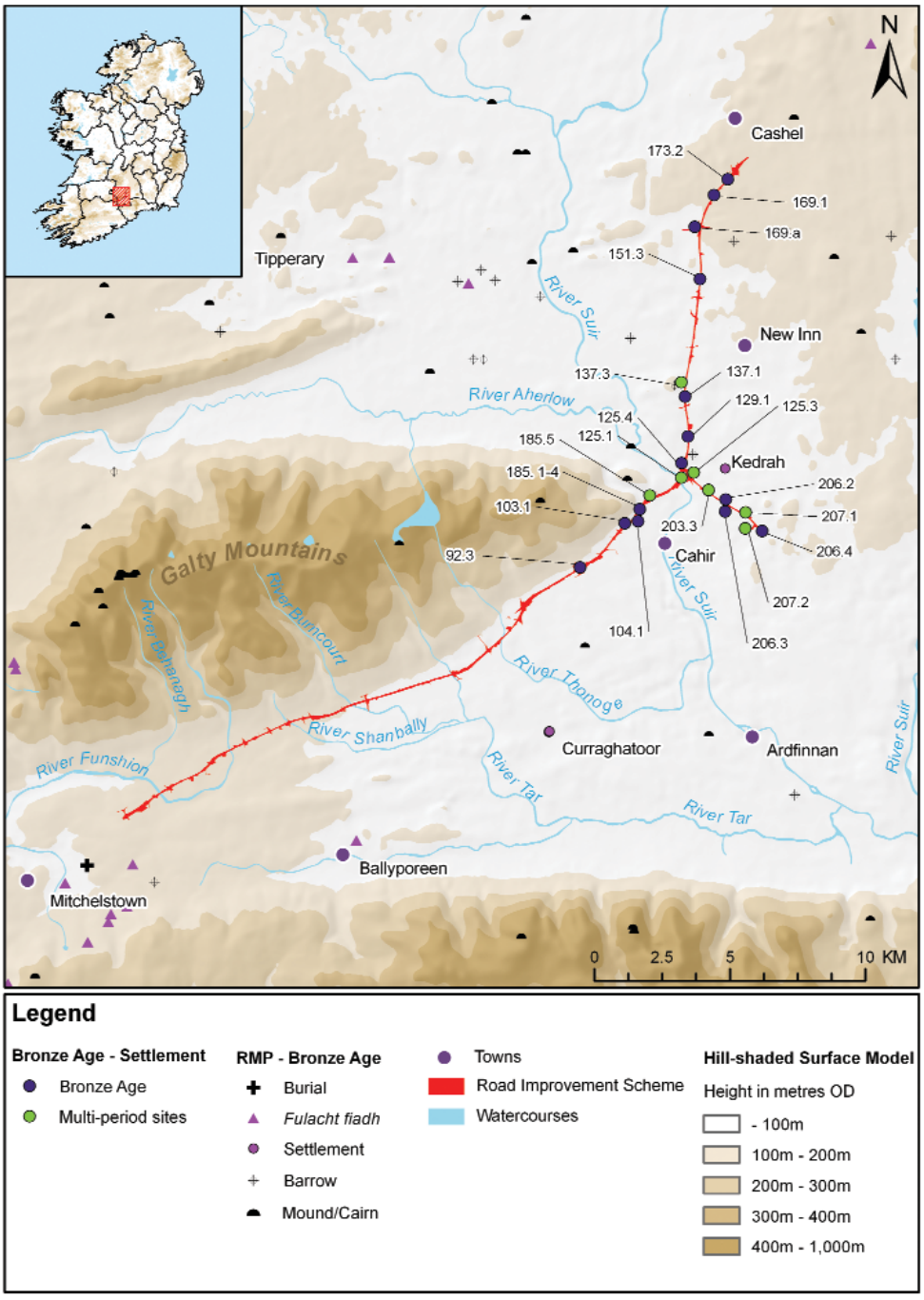
Archaeological investigations in advance of the N8 Cashel–Mitchelstown Road Improvement Scheme identified 57 previously unrecorded sites that ranged in date from the Early Neolithic period (4000–3600 BC) to the post-medieval period (AD 1550–present). The majority of sites (40) produced evidence for Bronze Age activity and this paper focuses on the structural remains from that period.

The road scheme, which opened in July 2008, comprises 41 km of improved dual carriageway from Cashel, Co. Tipperary, to Carrigane, Co. Cork. A link road to the N24 was also constructed to the north-east of Cahir, stretching for 3.8 km between the townlands of Kedrah and Knockmorris (Illus. 1). The road scheme extends south-westwards from Cashel through rolling agricultural lowlands overlooked by the Galty and Knockmealdown mountain ranges further south. Having crossed the River Suir just north of Cahir, the route travels along poorly drained land below the southern break in slope of the Galty Mountains. Here a series of small watercourses run down from the mountains, the largest of which is the River Funshion. The N24 link road runs eastwards from the N8 through an area of elevated farmland, to the north-east of the River Suir.

Following a geophysical survey and a programme of archaeological testing along the route of the road in 2005, excavations were carried out during 2006 and 2007 by Margaret Gowen & Co. Ltd for McCarthy Hyder CarlBro on behalf of South Tipperary County Council and the NRA. Just over half (21) of the excavated Bronze Age sites were settlements. These varied from small scatterings of pits and post-holes to larger sites with several structures. A total of 24 Bronze Age structures were excavated at 17 different sites along the scheme, several of which had evidence for multiple phases of occupation (Illus. 1) (see Appendix 1 for the radiocarbon dating results).

Distribution and siting of settlements

The distribution of settlement sites demonstrates a distinct concentration of activity in the fertile lands around the River Suir within the townlands of Ballylegan, Ballydrehid, Cloghabreedy, Knockgraffon and Killemly, Co. Tipperary. In contrast, there was a noticeable dearth of settlement sites along the 19 km stretch at the southern end of the road scheme, between the townlands of Clonmore North and Carrigane on the south flank of the Galty Mountains, where less-fertile peaty soils occurred (Illus. 1). The identification of hedgerow species from Bronze Age contexts along the northern end of the scheme suggests that some areas had been cleared of tree cover in order to make land available for grazing and/or the cultivation of crops. Little evidence of animal bone survived, but plant remains recovered during excavation indicate that arable farming was practised here (Geber et al. 2009). The availability of water was undoubtedly an important consideration in choosing habitation sites and selecting farmland, and the majority of settlement sites were located within 1 km



Illus. 1—Location of Bronze Age settlement sites excavated along the route of the N8 Cashel–Mitchelstown Road Improvement Scheme (Margaret Gowen & Co. Ltd).

of a stream or river. The distribution of sites also demonstrates a preference for gradual south- and east-facing slopes, which represent the sunniest and driest locations in the landscape (see Cooney & Grogan 1999) and would also have been relatively sheltered from the prevailing south-westerly winds.

Nature of settlement evidence

The evidence indicates that the Bronze Age population in this part of the country lived in unenclosed settlements. Most of these represented single homesteads but some larger sites with two or more buildings were also recorded.

The earliest Bronze Age settlement evidence came from three Final Neolithic/Early Bronze Age sites, which were dated by finds of Beaker pottery to c. 2500–2200 BC. These sites appeared as scatters of pits and post-holes and are typical of the settlement evidence from this period in Ireland, where a relatively small number of structures are recorded. More substantial evidence was uncovered for the Middle and Late Bronze Age periods, with the majority of settlement sites dating from the Middle Bronze Age (Table 1).

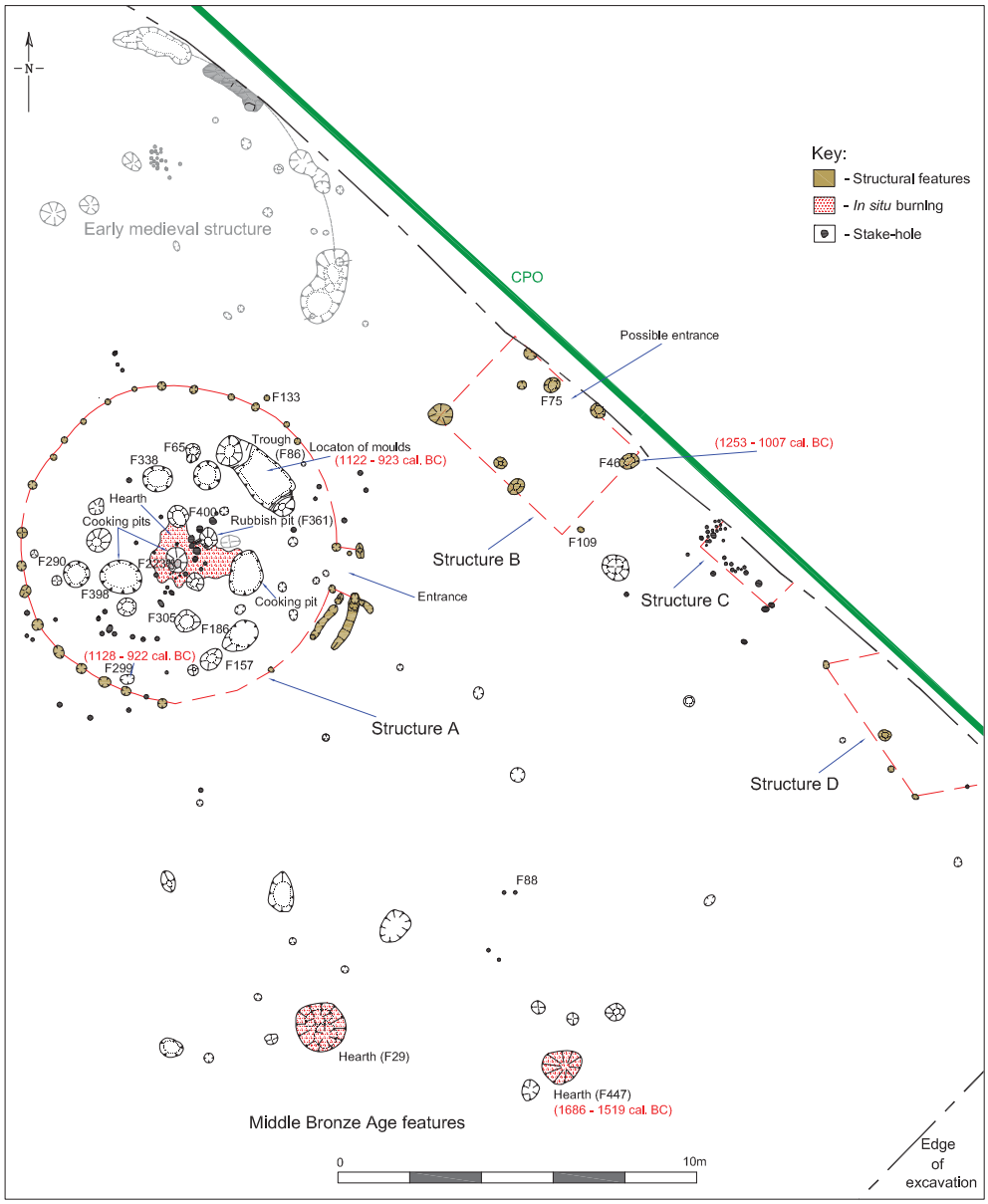
Table 1—Number of Bronze Age settlement sites and structures according to date.

Date	Settlement sites	Structures
Final Neolithic/ Early Bronze Age (also known as Beaker period) (c. 2500–2200 BC)	3	0
Early Bronze Age (c. 2200–1700 BC)	4	1?
Middle Bronze Age (c. 1700–1100 BC)	24	16
Late Bronze Age (c. 1100–600 BC)	9	7

Several sites demonstrated a continuity of settlement during the Bronze Age. At Ballydrehid (site 185.5), for example, radiocarbon dating and artefactual evidence indicated occupation in the Final Neolithic/Early Bronze Age, Middle Bronze Age and Late Bronze Age.[1] At Knockgraffon (site 137.3) a similar prolonged, if episodic, use of the site was evident, with Early, Middle and Late Bronze Age activity being identified.[2] Other sites with evidence for multi-phase activity include Ballylegan (sites 207.1 & 207.2), Cloghabreedy (sites 125.1 & 125.3) and Killemly (site 203.3) (Illus. 1).[3]

Structural design

The structural remains recorded along the road scheme generally represent circular or subcircular buildings, the majority of which measured between 5 m and 7 m in diameter, with some larger examples measuring up to 8.5 m. They compare well with other published examples of Bronze Age roundhouses in Ireland, which typically range from 5 m to 9 m in diameter (Doody 2000, 139; Tierney & Johnston, this volume). Not all of the buildings excavated along the scheme were circular in plan, however. There were subrectangular



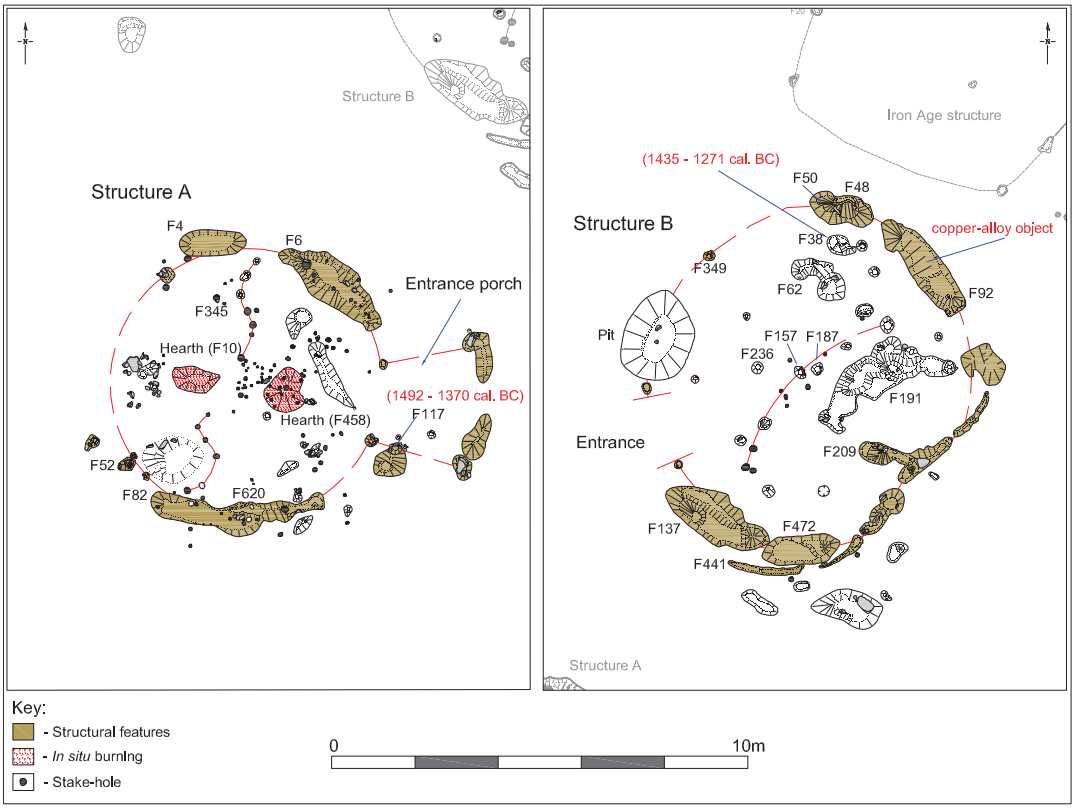
Illus. 2—Subrectangular structures and a circular structure defined by post-holes at Ballylegan, site 207.2 (Margaret Gowen & Co. Ltd).

structures at Ballylegan (site 207.2) (Illus. 2) and Ballydrehid (structure B, site 185.5) (Illus. 3), a four-posted structure at Knockgraffon (site 137.3) and a D-shaped building at Loughfeedora (site 173.2).[4]

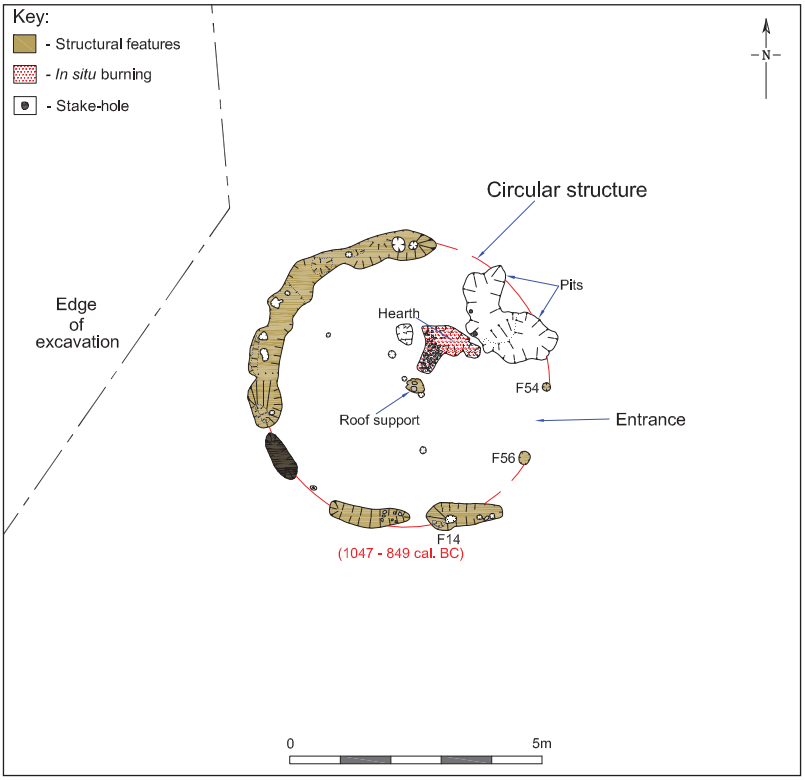
The walls of the structures were defined by post-holes (structure A, Illus. 2), slot-trenches (Illus. 4) or a combination of both (Table 2). The analysis of charcoal remains recovered from these features suggests that the buildings were constructed of oak posts and hazel wattle (Geber et al. 2009). Some of the larger slot-trenches, such as those at Ballydrehid, site 185.5 (Illus. 3), could have supported wooden planks, while alternative walling materials may also have been used, such as earthen sods or even animal skins. The walls may have

Table 2—Types of structures identified along the N8 Cashel–Mitchelstown road scheme.

Ground-plan	**Location**
Single circle of post-holes	Knockgraffon (sites 137.1 and 137.3), Cloghabreedy (site 125.1), structure A at Ballylegan (site 207.2) (Illus. 2) and Clonmore North (site 92.3)[5]
Circular slot-trench and a concentric ring of internal posts	Structure A at Cloghabreedy (site 125.4) (Illus. 5)[6]
Circular slot-trench foundations	Structure A at Ballydrehid (site 185.5) (Illus. 3) and Ballylegan (site 207.1) (Illus. 4)
Large subrectangular slot-trench foundations	Structure B at Ballydrehid (site 185.5) (Illus. 3)
Subrectangular arrangement of posts	Structures B–D at Ballylegan (site 207.2) (Illus. 2) and Knockgraffon (site 137.3)
Double circuit of post-holes	Structure D at Cloghabreedy (site 125.4) (Illus. 5)
D-shaped arrangement of posts	Loughfeedora (site 173.2)



Illus. 3—Circular structure (structure A) and subrectangular structure (structure B) with slot-trench foundations at Ballydrehid, site 185.5 (Margaret Gowen & Co. Ltd).



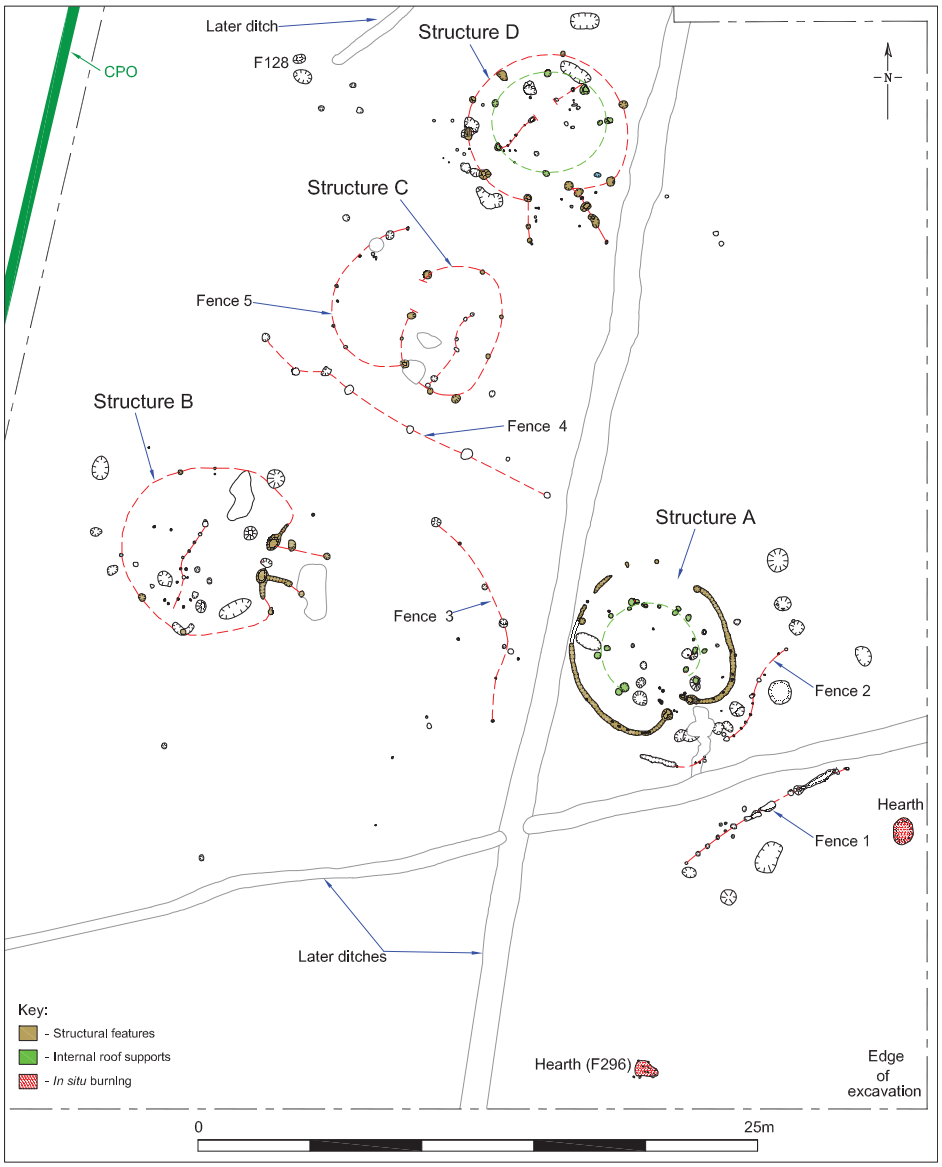
Illus. 4—Slot-trenches defining circular structure, with central roof support, at Ballylegan, site 207.1 (Margaret Gowen & Co. Ltd).

been weatherproofed by the addition of mud daub, burnt fragments of which were recovered from structure A at Ballydrehid, site 185.5. The use of daub has been recorded from other Bronze Age sites such as Grange and Ballingoola, Co. Limerick, as well as Lisheen and Curraghtoor, Co. Tipperary (Doody 2007, 93).

The circular buildings probably had conical roofs of thatch or sod (Illus. 6). The roof would have rested on the external wall, possibly with an inner circuit of roof supports (Cloghabreedy structures A and D; Illus. 5) or a centrally placed post (Illus. 4). Some structures, such as Knockgraffon (site 137.1) and Cloghabreedy (site 125.1), had no internal post-holes, which may indicate that their roofs were supported entirely by the external walls. Experimental reconstructions have shown that thatched conical roofs do not require internal supports, provided that a correct roof angle of 45° is maintained (http://www.flagfen.com/iron_age_roundhouse.htm, accessed November 2008). This angle also allows rainwater to be shed quickly and efficiently.

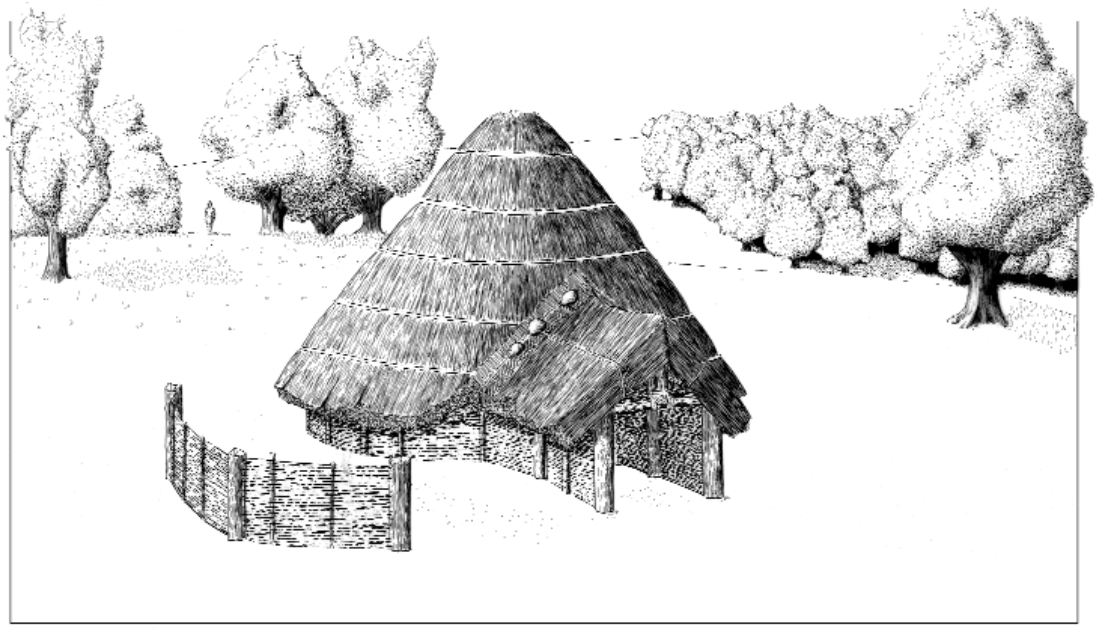
A second possibility is that the ring of posts that defined several structures, such as Ballylegan (site 207.2; Illus. 2), may be the remains of roof supports rather than the external wall, in which case the external non-load-bearing walls could have been made of lightweight material such as sods or wattle that may not have left an archaeological impression (see Drewett 1982, 327; Cleary 1995). The building remains indicate that wood and/or other organic materials were predominantly used for construction and it is likely that these would have required regular maintenance and repair, evidence of which was recorded at several of the structures.

Entrances were evident at just over half of the 24 structures, and they varied from simple gaps between post-holes (Ballylegan, site 207.1; Illus. 4) to more substantial porches



Illus. 5—Structural remains and sections of fencing at Cloghabreedy, site 125.4 (Margaret Gowen & Co. Ltd).

(Cloghabreedy, structures B & D, site 125.4; Illus. 5; Ballydrehid, structure A; Illus. 3) that would have afforded greater protection from the elements; the average door width was 0.8 m. Entrances tended to face the south-east or east, thus avoiding the prevailing south-westerly winds while also maximising the amount of natural light entering the buildings. A smaller number of north-west-, north-, south-west- and west-facing doorways were also recorded, however. In some instances these were in buildings that appeared to have had a non-domestic function, while in clustered settlements such as Cloghabreedy (site 125.4) the entrances of some buildings (structure B) were orientated towards what was presumably the main residence (structure A) (Illus. 5).



Illus. 6—Reconstruction of a Late Bronze Age house excavated at Knockgraffon, site 137.3 (Johnny Ryan for Margaret Gowen & Co. Ltd).

Use of internal space and the function of the buildings

Having described their design and construction methods, discussion now moves to the use of internal space and the function of the structures. Internal divisions, defined by short lines of post-holes or stake-holes, were evident within several buildings. In each case these divisions appeared to separate the rear of the building from the front (Illus. 2 & 4). Assuming that light entered mainly through the doorways at the front of the building, these internal divisions would have left the back of the structure largely in darkness. This area may have been used for sleeping in, while the brighter front of the building may have been more suited to daytime activities such as food preparation. Similar divisions, separating the front of the building from the rear, have been recorded at Bronze Age structures elsewhere in Ireland, for example at Caltragh, Co. Sligo, Tober, Co. Offaly, and Knockdomny, Co. Westmeath (Danaher 2007; Walsh 2007; Hull 2007, 348).

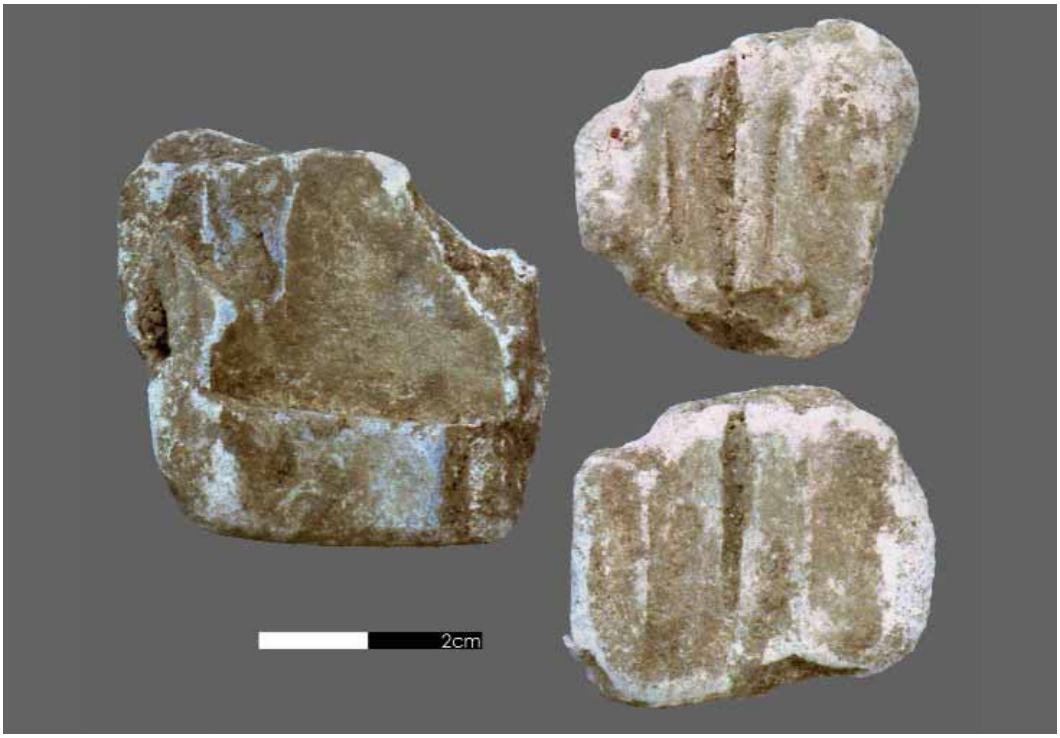
No intact floor levels survived in any of the excavated structures, and only six of the buildings had evidence for internal hearths. External hearths were recorded in several instances, indicating that some buildings may not have had an internal fireplace and, if such buildings had served as dwellings, their occupants may have done their cooking outdoors. It is possible that some of the buildings could have had a raised hearth, which would have left little or no archaeological evidence. Alternatively, the absence of internal hearths and floor levels may be due to truncation caused by deep ploughing, which had left furrows across many of the sites. Whatever the reason for their absence, hearths are not recorded frequently within Bronze Age structures and Doody's (2000, 145) study recorded an incidence of only about 30%. Interestingly, an unusual example of a building with two internal hearths, one in each room, was recorded at structure A in Ballydrehid (site 185.5) (Illus. 3).

Pits were frequently recorded within structures, which is not surprising since they have a greater chance of surviving truncation than other non-cut features. Internal pits appear to

Illus. 7—Decorated spindle-whorl from Killemly, site 203.3 (John Sunderland).

Illus. 8—Baked clay loom-weight (99 mm long) from Knockgraffon, site 137.1 (John Sunderland).

have been used for refuse disposal or storage purposes. The analysis of charred plant remains recovered from such pits indicates that the diet of the occupants comprised cultivated crops (barley and wheat) as well as wild foods (hazelnuts, cherries, crab-apples). One of the pits within structure A at Knockgraffon (site 137.1) contained large quantities of charred cereal grain, indicating that it may have been used to store harvested crops. Grain storage pits are a common feature of the archaeological record in Britain, where experimental archaeology has shown them to be an efficient way of storing crops (Shaw 2003). Other evidence for the processing of foodstuffs comes from saddle querns, two examples of which were reused as packing stones within the foundation trenches of structure B at Ballydrehid (site 185.5). The recovery of pottery sherds is also an indicator of domestic activity related to the preparation, storage and consumption of food. Visible accretions were noted on several sherds of domestic Cordoned Urn recovered from Cloghabreedy (site 125.4),



Illus. 9—Metalworking mould from Ballylegan, site 207.2 (John Sunderland).

demonstrating that they came from vessels that had been used for food preparation (Grogan & Roche 2009).

While small amounts of food could have been stored and/or processed within dwelling-houses, other buildings may have been constructed specifically for the purpose of storing grain. The four-posted structure at Knockgraffon (site 137.3) and three slightly larger multi-post structures at Ballylegan (Illus. 2) are very similar to raised granaries recorded on Bronze Age sites in Britain, such as those from Hayne Lane, Devon, Green Park, Reading, and Thorny Down, Wiltshire (Fitzpatrick et al. 1999, 99, fig. 48; Brossler et al. 2004, 21, fig. 3.7; Brück 1999, 147, fig. 1). The function of these buildings is difficult to prove, however, since organic plant remains rarely survive in archaeological contexts unless they have been charred, and stored grain is unlikely to have been burnt.

It is also likely that dwellings were multi-purpose buildings where numerous activities besides eating and sleeping were carried out. Many crafts, such as textile production, were probably indoor activities. Evidence of such activities comes from spindle-whorls (Illus. 7), used for spinning yarn, which were recovered from three different sites, and the discovery of a baked clay loom-weight (Illus. 8), which is a rare find from an Irish site, suggests that weaving was carried out at Knockgraffon (site 137.1). Further evidence of craftworking came from examples of burnishing stones, which may have been used for textile production or, more likely, in leather-working.

Although there was no clear evidence that metal was being produced in or adjacent to any of the buildings excavated along the road scheme, two of the sites produced finds that indicate that metalworking was carried out in the wider area. Part of a copper-alloy object of Middle Bronze Age date was recovered from Ballydrehid (site 185.5), and fragments of

a Late Bronze Age metalworking mould that had been used for casting an axehead or spearhead (Illus. 9) came from Ballylegan (site 207.2). Similarly there was no evidence that the flint artefacts (six flakes and a barbed-and-tanged arrowhead) recovered from the settlement sites had been manufactured at those locations and they had probably been discarded there after use.

Several sites had multiple broadly contemporary structures, some of which may have had non-domestic functions such as the storing of grain, the housing of animals or craft production. This is particularly relevant in the case of Knockgraffon (site 137.1), where the aforementioned loom-weight was recovered from the smaller of two buildings and may suggest that the larger structure was the main dwelling. This would parallel the archaeological evidence from Britain, where Middle Bronze Age circular buildings often occur in pairs, with the larger building being the domestic dwelling and the smaller structure being associated with craft production, particularly weaving (Ellison 1981). There may also have been a division of functions between the two roughly contemporary buildings at Ballydrehid (site 185.5), where structure A had a hearth in each of its rooms and appears to have been the main domestic dwelling, while structure B had no evidence of a hearth and may have had an ancillary function. The two quern-stone fragments recovered from the latter structure could indicate that it was used for food-processing and/or storage.

Conclusions

The 24 structures and other Bronze Age settlement evidence recorded along the N8 Cashel–Mitchelstown Road Improvement Scheme are an important addition to the archaeological record not only of Munster but of the country as a whole. The evidence shows that settlements were sited consistently in sheltered locations in areas of good land that lay in close proximity to an available water source. The structural remains recorded at these sites provide an insight into social organisation and architectural design, while the environmental evidence and material remains indicate the diet of the inhabitants and some of the activities, such as textile production, in which they engaged.

Most of the settlements were characterised by circular structures, and comparative evidence suggests that Bronze Age settlements often comprised two or more buildings. Variations in the number and layout of structures may reflect different social patterns, with single buildings representing the farmsteads of individual families and the more extensive settlements indicating larger extended family groupings. It is unlikely, however, that all of the structures on the excavated sites were dwellings; for example, some may have been granaries. Conversely, houses were probably not used exclusively for domestic activities such as eating and sleeping.

This paper has focused on the settlement evidence, but a broader view of the Bronze Age evidence recorded along the N8 Cashel–Mitchelstown Road Improvement Scheme indicates that settlement and burial sites were integrated within the contemporary landscape. Furthermore, several of the Bronze Age settlement sites demonstrate a continuity of settlement or in some cases a return to a site occupied several centuries (and in some cases millennia) previously. This may have been because the sites were ideally located or perhaps because there were ancestral ties to the site (for further discussion see McQuade et al. 2009).

Acknowledgements

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Notes

1. Ballydrehid, site 185.5: NGR 204290, 126280; height 67 m OD; excavation reg. no. E2267; ministerial direction no. A035; excavation director Melanie McQuade.
2. Knockgraffon, site 137.3: NGR 205924, 131121; height 76 m OD; excavation reg. no. E2270; ministerial direction no. A035; excavation director Colm Moriarty.
3. Ballylegan, site 207.1: NGR 208095, 125845; height 96 m OD; excavation reg. no. E2265; ministerial direction no. A035; excavation director Melanie McQuade. Ballylegan, site 207.2: NGR 208158, 125770; height 90 m OD; excavation reg. no. E2265; ministerial direction no. A035; excavation director Melanie McQuade. Cloghabreedy, site 125.1: NGR 205770 127530; height 51 m OD; excavation reg. no. E2273; ministerial direction no. A035; excavation director Colm Moriarty. Cloghabreedy, site 125.3: NGR 205900, 127450; height 49 m OD; excavation reg. no. E2273; ministerial direction no. A035; excavation director Colm Moriarty. Killemly, site 203.3: NGR 206988, 126486; height 63 m OD; excavation reg. no. E2126; ministerial direction no. A035; excavation director Melanie McQuade.
4. Ballylegan, site 207.2: NGR 208158, 125770; height 90 m OD; excavation reg. no. E2265; ministerial direction no. A035; excavation director Melanie McQuade. Ballydrehid, site 185.5: NGR E204290 N126280; height 67 m OD; excavation reg. no. E2267; ministerial direction no. A035; excavation director Melanie McQuade. Knockgraffon, site 137.3: NGR 205924, 131121; height 70 m OD; excavation reg. no. E2270; ministerial direction no. A035; excavation director Colm Moriarty. Loughfeedora, site 173.2: NGR 207400, 138213; height 113 m OD; excavation reg. no. E2292; ministerial direction no. A035; excavation director Martin Doody.
5. Knockgraffon, site 137.1: NGR 205838, 130415; height 70 m OD; excavation reg. no. E2270; ministerial direction no. A035; excavation director Colm Moriarty. Cloghabreedy, site 125.1: NGR 205770, 127530; height 51 m OD; excavation reg. no. E2273; ministerial direction no. A035; excavation director Colm Moriarty. Clonmore North, site 92.3: NGR 202085 123905; height 91 m OD; excavation reg. no. E2294; ministerial direction no. A035; excavation director Bernice Molloy.
6. Cloghabreedy, site 125.4: NGR 205840, 127850; height 50 m OD; excavation reg. no. E2274; ministerial direction no. A035; excavation director Colm Moriarty.