A CRUCK BARN AT HENDRE WEN, LLANRWST, DENBIGHSHIRE

By Eurwyn Wiliam

In 1972 the writer supervised the dismantling of a four-bay cruck barn at Hendre Wen, Llanrwst, Denbighshire (SH 807858) for the Welsh Folk Museum. The barn measured 15·50 × 6·20 m externally and was 5·50 m high, with the western gable being carried in stone to its full height, and the eastern one to tie-beam level, at 2·80 m. Two large facing doors divided the building, with the single bay to the west of the threshing floor having its walls all of stone. The remainder of the two side walls were of stone only up to *c.* 1·50 m from the ground, the remaining height being carried up in timber-framing covered with planking. Such a technique is not usual in the region.[1] The single bay at the western end was entered by a small door in the north wall.

The barn gave the appearance of having been constructed of massive dry-walling. The footing course consisted of stones of up to 1·30 m by 0·60 m and weighing up to a ton. It is clear, however, that the barn was originally rendered externally with the same greyish-yellow mud that was used to bind the stones together. The eastern gable included a fair amount of cow-hair plaster in its make-up. The roof was originally covered with small rough slates of varying quality and size, held in place by wooden pegs.

Internally, the barn measured 13·75 m × 4·75 m. The existing floor consisted of large slaty slabs, well trimmed and laid out in precise rows. When these were removed, it was found that they rested on a gravel bed, 0·05–0·10 m. thick. This, in turn, covered the original floor, made of orange clay mixed with fine gravel and pounded hard. Associated with this floor, and sealed by the slabs, was the threshold of the north doorway. Inside the south-west corner of the building, and under the clay floor, was a soakaway, *c.* 0·50 m across and of comparable depth, composed of river cobbles.

Internally most of the building was rendered with mortar made of white lime plaster and gravel. This was only a surface

Fig. 1. The Hendre Wen barn before removal: view from the south

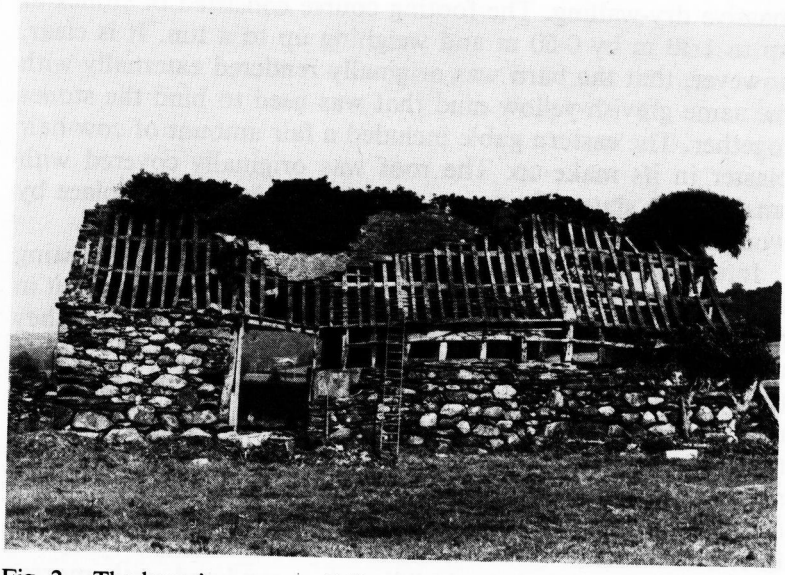

Fig. 2. The barn in process of dismantling: view of the crucks from the east

coat, and did not penetrate deep into the cavities between the stones, these gaps being already filled with clay. Some clay rendering survived on the eastern gable wall. Several fist-sized lumps of the mortar were found pressed into the clay floor near the small door, indicating that the barn had been rendered either immediately before or at the same time as the slab floor was laid, for otherwise the lumps would have been trodden on and broken up. Exactly comparable mortar is seen on the rear of the farmhouse (the front is whitewashed), on the low garden wall in front of it, and on an extension built against a small hut at the far end of the farmyard. This hut, measuring externally 3·25 × 4·00 × 4·15 × 4·75 m) has walls 0·55m. thick constructed of massive boulders rendered with mud, in a fashion exactly comparable to the barn; and the roof has similar slates. The single truss, which rested on the tops of the walls, had a tie-beam bearing the carved date of 1748 in contemporary script. All this does not enable us to date the rendering of the interior of the barn and the laying of the slab floor, but the machine-cut character of the slabs would suggest a nineteenth-century date rather than anything earlier.

A small doorway in the north wall at the north-west corner, 1·50 m high and 0·70 m wide, was blocked up with slabs, including many broken flooring slabs, suggesting that it was closed at the same time as the slabs were laid. It was certainly covered by such a thick growth of ivy that it must have been sealed for at least fifty years. The timbers of the door were re-used and badly decayed, but sufficient remained to show that the door had pivoted inwards from the western post. The door was harr-hung. The only surviving receiving-piece was re-used.

The western gable wall had a step on the inside, about 1·90 m up from the floor. At a comparable height both blades of the nearest cruck (Cruck III) had mortice holes, obviously for holding a beam between them. These two details, together with the provision of the small door, show that when first built the barn had a loft over this one bay. The beam between the cruck blades must have supported a timber partition but no trace of this was found on the floor underneath despite a search. The little room thus separated will presumably have been for livestock. This view is supported by the soakaway noted above. The door was high enough for cattle, but not for horses (or, at least, heavy

horses) though half-a-dozen large horseshoes were discovered just outside the door. The loft above would have been used to store the threshed straw. Similar barn-layouts are known from other areas of Denbighshire. In the gable was a small window made of re-used timber. It had held five mullions (though it was re-used even then) but was so placed that one mullion hole was built into the wall, and the timber was upside down. It seems clear that this window had been merely an opening, with no purpose other than to shed light on the otherwise dark loft. It was clearly too small and too high up to have served as a pitching-hole.

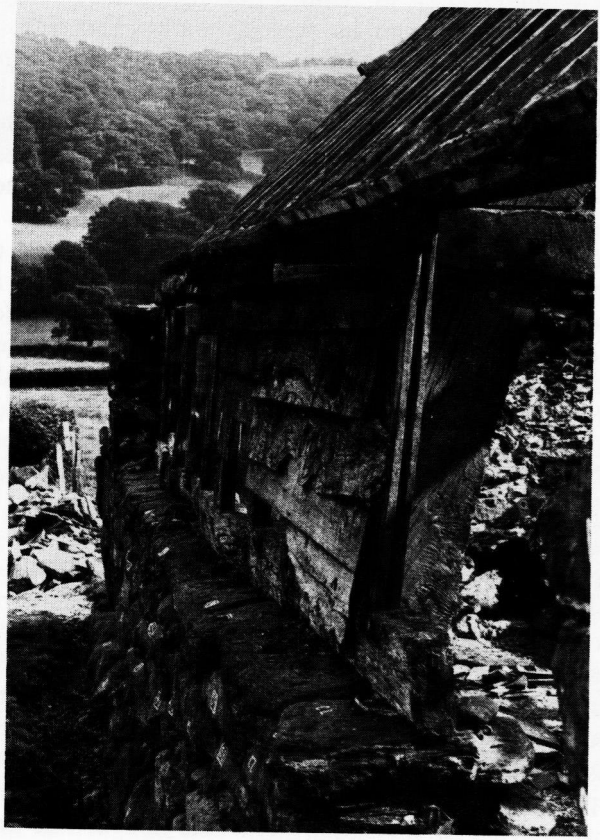

Fig. 3. Detail of the timberwork on the northern side

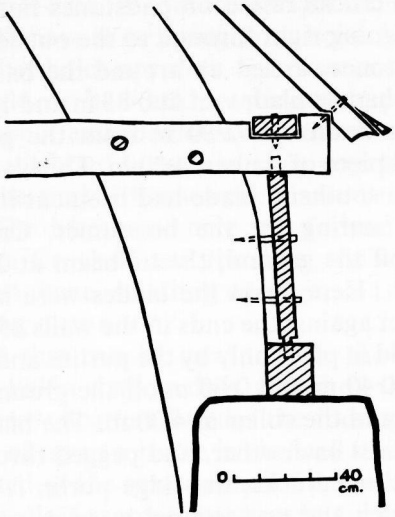

Fig. 4. Detail of cruck II

The stone wall at the eastern gable did not go higher than wall-plate level. On top of the wall was laid a heavy re-used beam (which could have been a very crude cruck blade) and into this were tenoned the other timbers of the truss (also re-used). The blades were held to the wall-plate by a pair of sloping struts. How this truss was filled is unclear. It was very badly decayed on the outside and no trace of any planks survived. All the timbers carry either grooves or pegholes on one edge that seem to refer to the timbers' original use, but could have been partly re-used.

Internally, the barn was divided into four bays (one being taken up by the threshing floor) and demarcated by the three cruck trusses, slightly askew to the building. The four bays were approximately 3·65 m, 3·68 m, 3·70m and 2·70 m wide. The three cruck trusses were *c.* 4·80 m wide at the base and 5·50–5·60 m high at the apex, and were of similar construction. Cruck I, easternmost, is inferior to the other two trusses, but all three have a "good" and a "bad" side, carefully worked and un-trimmed respectively, the "good" sides in all cases facing the threshing-floor. This is also the side on which the tie-beams and collars are placed. The tie-beams project to hold the wall-plate. The

bases of all the crucks rested on padstones built into the wall, these normally going right through to the outside, with the wall above the padstones carried up around the bases of the cruck blades. Cruck I had its blades set at 0·85 m and 1·00 m above the ground. The tie-beam was 2·80 m from the ground, and the collar, a re-used piece of timber, 4·20 m. The blades were halved at the apex. The southerly blade had been cut into to provide a 0·20 × 0·10 m seating for the bressumer. Cruck II had its blades 0·60 m off the ground, the tie-beam at 2·60 m, and the collar at 4·10 m. Here again the blades were halved together. Cruck III was set against the ends of the walls of the fourth bay, and thus was held in place only by the purlins and its own weight. Its blades were 0·40 m and 0·60 m off the ground, with the tie-beam at 2·70 m and the collar at 4·30 m. The blades at the apex were butted against each other, and pegged through from edge to edge. In all three crucks, the ridge purlin *c.* 0·15 × 0·15 m rested in a V notch and was secured by pegs.

The side purlins, two to a blade, were set into the crucks, with their upper surfaces flush with the outer side of the cruck blades. The purlins overlapped at or near to the trusses. They lapped on the cruck itself at II and III, but slightly away from the cruck at I. Throughout, the purlins were fixed to the trusses by long pegs. Superfluous peg holes showed that several, if not all, of the purlins had been re-used.

The north and south walls were treated in a slightly different fashion from each other. The north wall was carried up in stone to a height of *c.* 1·40 m, at which height it was capped with thin flat stones. On top of these was laid the bressumer, 0·20 × 0·20 m in cross-section and here composed of four different pieces of timber scarfed together, again with signs of re-use. Uprights jointed into the bressumer held up the single-piece wall-plate. These uprights were *c.* 0·20 m wide and *c.* 0·07–0·10 m thick, and were so spaced at intervals of from 0·68 m to 0·90 m that each cruck was masked by an upright. The uprights had originally been designed to hold wattle and daub panels, since several had a slot in one edge and lath-holes in the other. The normal practice in making such a panel would have been to insert the laths in the holes, and then spring them into the slot in the opposite piece of timber. The wattles would then have been woven around the horizontal laths, and finally the daub applied.[2]

Here, however, it is obvious that the upright timbers are re-used, for some "panels" have slots facing slots, holes facing holes, and others with neither holes nor slots. Every second upright on the western side, held or had held, a projecting piece of timber, notched at its upper end, obviously meant as a ladder-hanger.

The southern wall had been carried up to a height of 1·70 m in stone, with the timber framework above being correspondingly slighter. The bressumer here was formed of two re-used timbers. Between Cruck II and the door, the wall consisted of a single large flat stone, standing on edge, *c.* 1·70 × 1·50 m in size and weighing over a ton.

The only find that can be used to date the erection of the barn was about half a shallow dish, glazed on the inside, found as thirty-five sherds scattered under the footing course and at varying heights of up to a metre in the wall itself. These sherds were concentrated at the eastern end of the barn, coming from under all three walls, but some sherds came from near the doors. Other comparable sherds, though not of the same pot, were found in similar circumstances and are of the same general age. The date of the dish is crucial to the dating of the building. Being securely sealed in the fabric, the dish gives the building a *terminus ante quem*, i.e. the barn could not have been built before this type of dish was manufactured. The sherds were submitted independently to three experts, all of whom agreed that it was Buckley ware of the late eighteenth century.[3]

The barn as it stood in 1972 was thus erected in the late eighteenth century, and this poses some problems of interpretation.[4] In many cruck buildings with stone walls it can be shown that the stone walls are a replacement of earlier timber-framing. Here, however, the crucks can only have been erected at the same time as the stone walls. Since the bases of the crucks are all at different levels there was not an original low sleeper-wall of stone with timberwork above. As noted already most of the woodwork involved had been re-used. The only major pieces of timber for which re-use cannot be shown are the crucks, but the lack of evidence is not unexpected. Assuming that a cruck was to be re-used, it would be comparatively simple to lower it, pull out the wooden pegs on the ground, transport the blades to the new site, insert new pegs in the old holes and raise the cruck. Alternatively, if the distance to be covered was short, the cruck

could have been dragged whole by an ox team. In short, the re-use of a cruck is not always demonstrable.

The barn is listed as a Grade II building under Section 32 of the Town and Country Planning Act 1962, and in the official schedule is described as being "probably 16th century; stone and timber with slated roof. Roof has three cruck principals". The sixteenth-century date is presumably derived from the good form of the crucks, which were the only "dateable" features in the building before its demolition. In conventional terms the Hendre Wen crucks would be classed as either sixteenth or possibly early seventeenth century in date, since later forms become cruder and less symmetrical due to lack of suitable timber.[5] The late eighteenth-century date for the building of the barn leaves two options: (a) all the timberwork, including the crucks, came from another building, demolished shortly before the barn was put up, and re-used in it; or (b) the crucks should be dated to the late eighteenth century. The only objection to the re-use of the crucks is the fact that their bases are at different levels. It is true that some of the blades, particularly those of Cruck I and the southerly blade of Cruck III, show considerable signs of deterioration, but the narrowness of the feet of Cruck I makes it unlikely that the blades were originally much longer, while Cruck III blades are certainly preserved whole. It can be argued that either these crucks were made specifically for the Hendre Wen barn, supporting theory (b), or that the building whence they came had footings at slightly different levels. However, the greatest difference in levels between any two blades was only 0·45 m, while three of the blades had their feet at exactly the same level. There is therefore a strong case for the crucks being re-used.

The Hendre Wen barn is of single-period construction, put up in the late eighteenth century but using materials considerably older. It is salutary to reflect that if had not been demolished, the barn would still be regarded as being of sixteenth century date.

Addendum

Since the above was written, two articles have appeared which emphasise the importance of the Hendre Wen barn (David L. Roberts, "The Persistence of Archaic Framing Techniques in Kesteven, Lincolnshire—I", *Vernacular Architecture* 5 (1974),

18–20, and J. T. Smith, "The Early Development of Timber Buildings: The Passing-brace and reversed assembly", *Arch.J.* 131 (1974), 238–63). Both articles discuss the lately recognised concept of "reversed assembly", in which the tie-beam is placed *under* the wall-plate, not above it as is normal. This is identified as an archaic feature, though in Lincolnshire it was still found in the 17th century. Identified examples so far come from eastern England. The Hendre Wen barn, however, is a classic example of reversed assembly, in its original form either 16th or 17th century in date. Reversed assembly is also found at another 17th century barn in the vicinity, Ysgubor y Glyn, Trewydir (RCAHM, *Caernarvonshire III* (1964), 127 and pl. 63).

Notes and references

[1] Peter Smith and C. E. V. Owen, "A Short Architectural Note on Ystradfaelog . . ." *Mont. Coll.* 59 (1965–66), fig. ii, 103, and 102–4. Mr. Smith now believes (in letter, 29.xi.72) the tradition of half-timbered building came much farther west in north Wales than he formerly considered.

[2] It is normal for the laths to be vertical: for another example of horizontal laths, see the Stryt Lydan barn from Penley, Flintshire, also in the Welsh Folk Museum.

[3] Sherds were submitted to Mr. John Lewis, Department of Archaeology, National Museum of Wales, who regards them as being nearer 1800 than 1750 in date; Mr. J. H. Kelly, City Museum and Art Gallery, Stoke-on-Trent, who notes: "This type of vessel in general form and glaze seems to start in the late 17th century and continued until the late 19th century. The early pieces are rarely glazed on the rim, as yours is, and the feel and appearance of this fragment strongly suggests to me a date after 1750. . . . In my opinion this fragment is from a 'late' example and is likely to have been produced by a country potter between 1750 and 1850 with a date midway between them, most likely"; and Mr. K. J. Barton, City of Portsmouth Museums, who confirmed that it was late eighteenth-century Buckley ware.

[4] I am most grateful to Mr. Peter Smith for his comments on this problem.

[5] For references to the formerly wooded nature of the area, see Sir John Wynn, *The History of the Gwydir Family* (ed. J. Ballinger, 1927), 53, 58, 59, etc.