

PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in and relating to Portable Prefabricated Building Structures

We, ARCON (PROPRIETARY) LIMITED, a company organised under the laws of Great Britain, of 41, Welbeck Street, W.1, do hereby declare the invention for which we pray that a patent
5 may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to prefabricated structures for buildings and is concerned with a light-weight structure for supporting a roof cladding made up of sheets in order to give ground cover.

One of the pre-requisites of prefabricated
15 structures is that they shall be simple to erect, consist of the minimum number of parts and be capable of being made up into a compact pack for the purpose of transit.

The present invention has for its object to
20 provide an improved frame structure of the three-pin type, i.e. where the uprights supporting the roof are anchored to the ground at each side by pins, the third pin serving to connect together the roof frames where they meet
25 at the ridge.

The present invention comprises a prefabricated building structure of the three-pin frame type made up of leg frames and roof frames of triangulated construction in which
30 overhang frames are provided to form an extension of the roof frames, both the roof frames and overhang frames being supported by the leg frames and in which the overhang frames and leg frames have at least one side
35 of the same length and are so designed that when disassembled they may be superposed with equal sides together so that the periphery of one lies on or within that of the other.

In the preferred arrangement the overhang
40 frames are substantially identical both in size and construction to the leg frames so that the one frame member will serve one of two purposes. In some cases however where a smaller size overhang is sufficient to meet the area of
45 ground coverage required, we may make use

of an overhang frame, in which that side opposite the apex angle i.e. the angle which is to be arranged at the eaves end is equal in size to the side of the leg frame opposite the angle at which the frame is anchored to the ground the
50 other two sides being shorter than the corresponding sides of the leg frame so that both can readily be made up into a common pack.

The invention is illustrated in the accompanying drawings in which Figure 1 is a gable
55 end view of a building structure built up of prefabricated frame units in accordance with the invention.

Figure 2 is a perspective diagrammatic view showing two gables of building of Figure 1 as
60 seen from above.

Figure 3 is a half end view of a building structure similar to that of Figure 1 but having a small size overhang frame.

Figure 4 is a detail view of a pin fastening. 65

In the drawings there is shown a building made up of two side frames L hereinafter termed leg frames, which are suitably designed to provide a ground anchorage at 1, 1¹ by means of a single pin type fastening, being
70 secured to the upright of an inverted T base plate of steel which plate is secured by rag bolts to the foundation, (as described in connection with Figure 4) and two roof span frames R, R¹ of similar design to the leg frames
75 and adapted for connection one to the other at the apex by a single pin fastening at 2. The means of connecting the roof spans frames R, R¹ and of anchoring the leg frames L to previously sited ground anchorages which makes
80 use of a single pin, passed through drilled base plates, gives rise to the expression "three-pin frame suspension".

Thus, as is shown in Figure 4, in the case of each leg frame the bottom of the leg terminates in a T plate T, to which the tubular limbs are joined by welds, the stem of the T having a bolt hole, which is machined to a given diameter to receive a fixing pin P.

The ground anchorage comprises inverted T 90

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plates T¹ also with machined holes which do not require large foundation blocks and only need bolting to the concrete raft.

- 5 The leg frames L which are of triangulated construction are made up of two longitudinals 3, 4, preferably in the form of tubes joined together at their ends by an end tie member 5. 6 indicates bracing tubes.

- 10 Likewise the roof span frames R, R¹ are triangulated and each preferably made up of longitudinals 7, 8, spaced apart by tie pieces 9 and suitably braced as in the case of the leg frames. The means of connection between the roof frames and leg frames may be by means of bolt plates 10 secured such as by welding to the frames at the base corners B having holes for fixing bolts.

- In order to give increased ground coverage and to balance the weight of the roof frames R 20 R¹, the latter are each provided with an extension or overhang consisting of a triangulated frame, indicated generally at F, and made up of longitudinals 11, 12, which are joined to one another opposite the apex angle by an end member 13 together with suitable bracing bars or tubes 14.

- In the arrangement shown in Figure 1 the outline and construction of the overhang frames F is identical with that of the leg frames 30 L but if desired as shown in Figure 3 we may provide for a smaller overhang by utilising a frame F¹ made up of members 11¹ 12¹ and connected by an end member 16 of the same length as the end member 5 of the leg frames.

- 35 The overhang frames F F¹ are provided with bolt plates 10¹ by means of which they are attached to and supported from the leg frames L and likewise they are attached to the roof frames R R¹ by bolt plates 17.

- 40 In erection, sets of leg frames L, roof frames R and extension frames F are bolted together on the ground and lifted to a vertical position

with the bottom of the leg frame bolted to the foundation tee and with the end of the extension frame resting on the ground so that the roof frame is almost vertical. When two or more sets of frames have been fitted in this manner, the purlins 18 and roof bracing 19 are fitted and the roof sheeting 20 placed in position. After the frames on the opposite half of the structure have been erected in a similar manner, the two halves are lifted up at the eaves and bolted together at the pin joint 2.

It will be understood that while the prefabricated structure of this invention has been described in connection with tubular framing it is equally applicable to frames made up entirely or in part of L or T section strip.

What we claim is:—

1. A prefabricated building structure of the three-pin frame type made up of leg frames and roof frames of triangulated construction in which overhang frames are provided to form an extension of the roof frames, both the roof frames and overhang frames being supported by the leg frames and in which the overhang frames and leg frames have at least one side of the same length and are so designed that when disassembled they may be superposed with equal sides together so that the periphery of one lies on or within that of the other.

2. A prefabricated building structure as claimed in Claim 1, in which the roof extension frames are of the same size or substantially the same size and outline as the leg frames.

3. A prefabricated building structure substantially as described and illustrated in the accompanying drawings.

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