A Greenhouse becomes a Technical Drawing Room

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Accommodation problems at the George Spencer School were acute, and the authority could not see its way clear to provide additional buildings.

An old greenhouse was pulled down and a new Technical Drawing room erected in its place. All the construction work (building of window frames, etc.) was done within the school and no factory-made prefabricated sections were used.

The local authority gave its blessing to the project and the whole undertaking was carried out under the direction of the author, assisted by one other member of staff, and boys of the fourth year.

The final cost of the room was well under £1,000 and on the estimate of one of the authority's architects, was some £2,000 less than the cost of an equivalent building erected by a private contractor.

To make the work as easy as possible, a 3ft. wide pathway was dug out, shuttered up and hardcore to a depth of 4" laid. The concrete for the pathway arrived and was screeded and floated off to make a solid base for the ladders when we later had to dismantle the existing rotten framework of the greenhouse.

To obtain a level floor inside to the correct height, a depth of 6" of soil had to be removed from the building. With the shuttering in position, 5" of hardcore was spread over the proposed floor and, again, ready-mixed concrete used to form a 4" thick solid floor. With this part of the job completed, the old framework was dismantled.

The existing brickwork had then to be made good for our intended building. Where the greenhouse boiler had been, we now had to make good all the brickwork and in one end open up a new doorway to comply with the fire regulations.

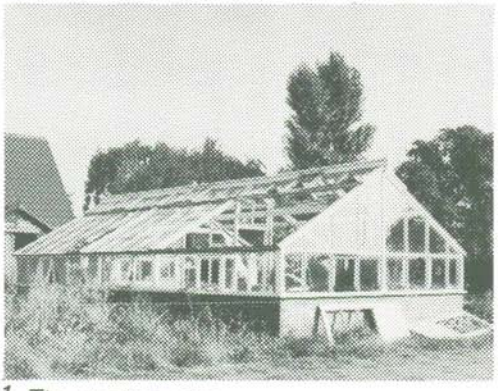
Standard section material was used for the framework which was scribed, mortised and tenoned by hand to make up the frames to size. After the various sets of boys had completed their particular construction, the framework, consisting of 6 side frames and 2 end frames, was glued together with cascamite. The corner posts of 4" x 4" were box tenoned and at the pre-erection stage checked for a good fit, paying particular attention to the mitres on the 6 x 3 cill. When completed, the frames were primed ready for positioning on the brickwork which had been plugged ready to receive them. The frames were bedded down on mortar with a D.P.C. inserted to stop rising damp.

For the construction of the roof, joists of 9" x 2" and 18' long were tapered from 9' down to 8" and by nailing a tapered piece of 1" to 0 in 9 ft. to the untouched half of the joist gave an 18ft. joist tapered from 8" to 10" in its 18ft. length.

The shaped joists were now fixed into place at 15" ctds. and the top covered with floor boarding. A box gutter was formed down one side with a 2" fall to a downright and soak-a-way. The facia and soffit were now fixed and pinned. The roof was now ready for covering and due to the nature of the job and the oncoming Winter, it was decided that a local roofing contractor would be contracted to carry out this operation. This was the only job not carried out by the boys in the school.

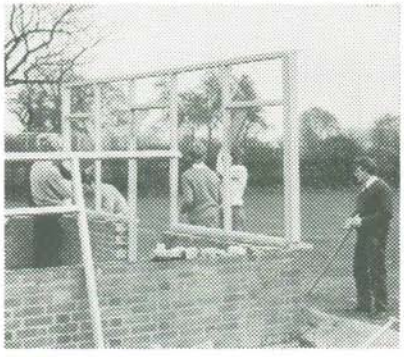
With the roof covered, glazing was completed. The doors (made in the school workshop) were hung, and the stormproof windows were fixed and glazed. Two panels on each side were covered with the ship lap Cedar boarding: this would enable us to have pin-up boards on the inside. At one end ship lap boarding was again used on half the outside to make provision on the inside for the blackboard.

With the building made weatherproof over the Christmas holiday, interior work was started at the beginning of the Spring Term. With assistance from the Science Department, the room was wired for light and power – 6' fluorescent tubes being used



1. The starting point

2. Concrete foundations



3. The frame up

4. Roofing timbers

5. Completion

for lighting.

Next, a suspended ceiling was fitted. For this, acoustic tiles were used which slipped into 'T' shaped 'angle' suspended from the roof joists. The materials for this ceiling proved difficult to obtain and only arrived after long delays.

A polythene membrane was now laid over the concrete floor and a screed of 1½" thick (again ready-mixed was used) to receive the thermoplastic industrial tiles.

A pattern was then worked out on graph paper for the laying of the tiles and the tiles fixed with adhesive.

We then fixed window boards and skirting board and made the pin-up boards from Sundela board, and the blackboard which was neatly finished with bullnosed and rebated architrave.

The classroom was now complete, with the exception of painting. Blue and White was decided as the colour scheme. Blue masonry paint was used for the brickwork and blue emulsion for the pin-up boards. Several coats had to be applied to achieve the correct quality finish. White gloss on undercoat was used for all the remaining woodwork, i.e. framing, skirting board, window board, etc. The blackboard required numerous coats of blackboard paint and rubbing down to give a good quality finish.

The whole project, i.e. the practical work, had been started in September and completed by April. The boys worked during normal woodwork hours and some private study time. Additional work was carried out during many lunch times and after normal school hours.

"Even though we are an open plan Design Department, you must bake your cake in the Housecraft area, Alice."

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