THE INSTITUTE OF CARPENTERS

Fellowship Examination

14th - 18th June 1999

Paper 1: CARPENTRY PRACTICE

TIME ALLOWED: THREE HOURS

The following instructions should be read by all CANDIDATES before they commence work.

To obtain full marks Candidates must answer SIX questions. The answer to each question should be submitted on a separate sheet of paper.

The question number and your candidate number must be clearly written in the top right-hand corner of each answer sheet.

1. (a) Sketch in detail the following timber connectors:

i) shear plate;

ii) double sided toothed plate;

iii) framing anchor suitable for use in studpartition.

(b) With notes and sketches explain how each of the above would be fitted to the respective joint, and why.

(c) Describe any special tools that may be necessary to aid assembly.

2. (a) Make an annotated sketch of a saw bench as used on a building site.

(b) Describe the current regulations to ensure safety in the use of the Saw Bench.

(c) State the precautions to be observed when using portable power tools on a building site.

3. (a) Timber frame housing has now become a part of housebuilding in the U.K. Give six reasons why this form of housing is taking the place of traditional forms.

(b) Prepare a method statement for the erection of a pair of semi-detached timber framed houses from setting out to completion.

4. An indoor swimming pool is to be roofed using laminated main beams with secondary plywood box beams.

(a) Use notes and sketches to show how each type of beam would be constructed.

(b) Name a suitable adhesive and describe its use in the construction of the beams.

(c) Describe essential protection after manufacture and erection.

(d) Make suitable sketches to show how :-

i) a main beam would be connected to a laminated post;

ii) box beams are connected to main beam.

5. "Putlog" and "Independent" are two types of scaffolding which are used in building work.

(a) Describe the difference between each type and give a clear example where each would be used.

(b) Sketch details of one type in line diagram naming all members.

(c) Prepare a scaffold schedule from your sketch.

6. A reinforced concrete building 3.000 between floors has 300 x 300 columns, 200 x 450 main beams. 180 x 360 secondary beams, and a 200 floor slab.

(a) Sketch the formwork for a concrete column. Use centre lines only to indicate the position of the yokes or column clamps and give reasons for their positions.

(b) Draw to a scale of 1:10 sections to show the formwork for :-

i) one main beam, secondary beam and part of floor slab;

ii) one column.

(c) List the necessary checks to be made on the formwork before the concrete is poured.

7. Hoardings are to be erected around a new building site adjacent to the highway. They are to be 2.4 high and used to display advertisements.

(a) Sketch a vertical section together with part of the elevation to show all construction. Name and dimension all members.

(b) Describe current Highway regulations relating to hoardings.

8. The ground floor wall of a three-storey building is found to be unsafe and in danger of collapse following an accident involving a road vehicle.

(a) With the aid of sketches, outline the procedure and method to be adopted in providing temporary support to the building during it's repair. Assume that enough space is available for necessary shoring.

(b) Explain with the aid of notes and sketches the necessary precautions to secure the safety of :-

i) general public;

ii) site labour.