

CONSTRUCTION 2N/CONSTRUCTION DESIGN 3

EXAM, June 2000

Time: 3 Hours

Instructions to candidates:

- No references are allowed
- Attempt all questions
- The value of each question has been indicated in brackets
- Note that if, say, six items, reasons etc. has been asked for, please give six only as otherwise only the first six will be assessed.
- State any assumptions made

Question 1

(6 marks)

For 'multi-story', and 'multi-linear' commercial construction projects the speed of construction is very important. List six of the main principles for achieving rapid construction when you are construction an in-situ concrete frame.

Question 2

(6 marks)

- a) Describe what 'Flying table forms' are and how they are used in the construction of a concrete frame for a commercial building.
- b) The fixing of the steel reinforcement is one of the main activities when constructing in reinforced concrete. Describe how this activity now commonly is made more efficient compared to the 'traditional' attitudes to steel fixing.

Question 3

(6 marks)

- a) There are three general types of joints that may be introduced into the concrete floor of a large industrial building. Name and describe, including sketches, the three types. Also describe the purpose of each type of joint.
- b) Describe, with sketches two different ways of subdividing a large concrete slab on ground, into a series of manageable pours. Also, which is the most common and what are it's main advantages?

Question 5

(6 marks)

- a) Steel and reinforced concrete are the two most common materials used in multistory building frames. List three arguments why steel can be considered 'better' than concrete and three arguments why concrete can be considered 'better' than steel.
- b) Describe, with sketches, two examples of 'composite' construction in a multistory building frame.

Question 6

(6 marks)

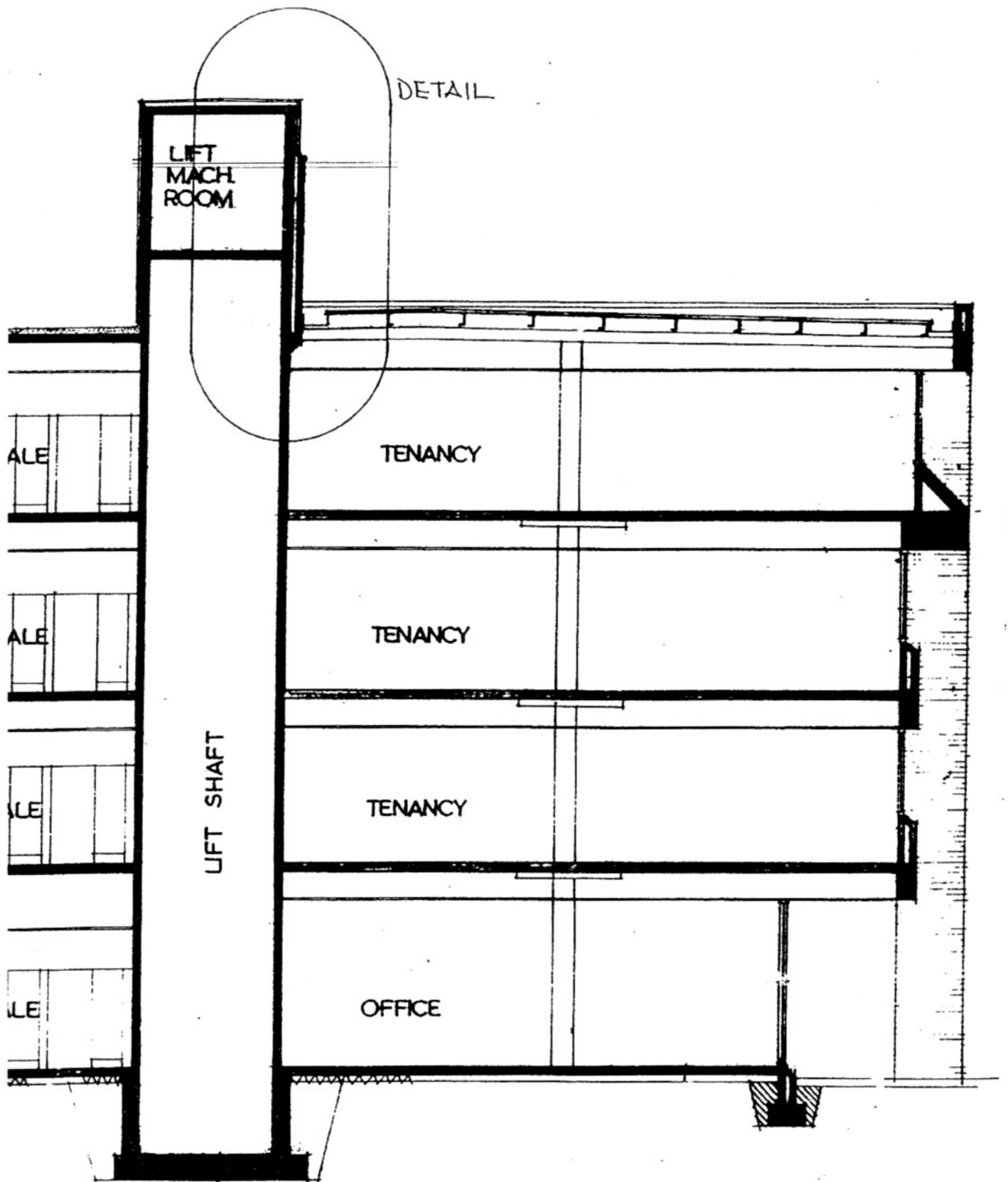
Describe the main disadvantages with using a glass curtain wall cladding on a multistory building in Australia and comment on how the use of pre-cast concrete cladding panels can overcome those problems.

Question 7

(12 marks)

Enclosed is part of a section through a concrete framed building clad with brickwork. The main roof consists of steel I-beams, cold-rolled steel purlins, sisalation (foil insulation) and sheet metal decking. You are required to produce a fully annotated and dimensioned drawing of the detail marked at 1:10 scale. You can 'cut' the detail to make it fit in the exam book. Make assumptions about sizes, dimensions, materials etc. not mentioned above.

END OF QUESTIONS



SECTION 1:100