

**UNIVERSITY OF SOUTH AUSTRALIA  
SCHOOL OF NATURAL & BUILT ENVIRONMENTS**

**PROGRAM(S): Bachelor of Construction Management & Economics &  
Diploma in Built Environment**

**COURSE: QUANTITY SURVEYING 1N, BUIL 1015 (10289)**

**EXAMINATION: Internal Examination, Semester 2, 2004**

**DURATION: 10 minutes of Reading time plus 3 Hours of Exam time, a total  
of 3 Hrs 10 Min. For ENTEXT students 10 min of Reading  
time plus 3.5 Hrs of Exam time, a total of 3 Hrs 40 Mins.**

**EXAMINER: Jeremy Coggins, Tel: 83021069**

**REVIEWED BY: Tony Ma**

**INSTRUCTIONS TO CANDIDATES:**

- This exam is worth 50% of the total course marks
- This question paper consists of 9 pages including the cover sheet
- Attempt **all** questions
- The value of each question is shown in brackets adjacent to each question
- Calculator is allowed
- No reference materials are allowed other than the Australian Standard Method of Measurement of Building Works Fifth Edition (ASMM5)
- Answer Question 1 in the answer booklet provided
- Answer Question 2 on the dimension paper provided. Ensure that your name is on every sheet of dimension paper submitted, and that all sheets are securely fastened into your answer booklet.

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*Questions start on next page*

**Question 1 (35 marks)**

- (a) Describe the functions of a Bill of Quantities (BQs) in the tendering of building works, explaining the advantages in the use of BQs as a basis for tendering. (11 marks)
- (b) Explain what is meant by the following terms in relation to the measurement of bills of quantities:
- (i) Trade format;
  - (ii) Attendance; and
  - (iii) 'Measured net as fixed in place'. (12 marks)
- (c) You are a quantity surveyor employed by a large independent quantity surveying company, Ryder & Brown, in Adelaide. Ryder & Brown offers traditional, as well as contemporary 'cutting edge', cost consultancy services to the construction industry.

A prospective client contacts you to enquire about the advantages of hiring Ryder & Brown to provide traditional quantity surveying services on an upcoming \$30 million commercial construction project which will, most likely, be procured on a lump sum contractual basis.

Draft a letter on behalf of Ryder & Brown to the client, describing the services you propose to provide throughout his project and explain to the client how employing your services on this project will be of benefit to him. In addition, your letter should include details of two optional 'non-traditional' contemporary services Ryder & Brown can offer to the client with an explanation of how these services will benefit him. (12 marks)

**Question 2 (65 marks)**

Drawings 2.1, 2.2, 2.3, 2.4 & 2.5, on the following pages, show plans, sections and details of a small office building. Based upon these drawings and the specification notes overleaf, take-off the quantities for:

- (i) the brickwork to the external and internal walls; (15 marks)
- (ii) the internal finishes and painting; (15 marks)
- (iii) the timber roof framing; and (20 marks)
- (iv) the roof tiling. (15 marks)

Note: Squaring of the dimensions is not required.

### **Specification Notes for Brickwork**

*BRICKS – All brickwork exposed externally shall be constructed with selected face bricks P.C. \$700 per thousand delivered to the site. All other brickwork to be constructed with sound common bricks.*

*MORTAR – All brickwork shall be constructed with 1:1:6 composition mortar.*

*BOND – All brickwork shall be constructed in stretcher bond.*

*JOINTS – Joints in face work shall be raked.*

*CAVITY TIES – Provide and build in 4mm diameter galvanised wire ties to all cavity walls spaced 900mm apart every fourth course in height and staggered.*

*SILLS – Sills to windows shall be snapped header face brick on edge sills, set to weather.*

*CLEANING DOWN – Clean down all face brickwork on completion with 5% hydrochloric acid solution and wash off with clean water*

### **Specification Notes for Internal Finishes**

*CARPET – 300 x 300mm Dunlop ‘Springtex, carpet tiles on 60mm cement/sand screed*

*SKIRTINGS – 19 x 100mm chamfered and rounded hardwood skirting including 2 coats polyurethane*

*RENDER TO WALLS – Finish all internal brick wall surfaces with 15mm (minimum finished thickness) two coats render (4:1 sand:cement). Finish render off with a sponge faced trowel. Return render into all window and door D1 reveals and round all salient angles.*

*PAINTING TO WALLS – Two coats of emulsion to cement rendered walls*

*PLASTERBOARD CEILING LINING – Ceilings to all internal rooms shall be 10mm thick recessed edge gypsum plasterboard lining finished with flush joints and fixed direct to timber framing.*

*PLASTERBOARD CORNICE – Cornice to all internal rooms shall be 90mm coved gypsum plasterboard cornice, mitred at angles and fixed in accordance with AS 2589.*

### **Specification Notes for Roof framing**

*All roof framing to be seasoned F5 Oregon.*

*Frame up roof with members of the following sizes:*

*125 x 50 rafters spaced at 600mm maximum centres*

*150 x 25 ridge and hip rafters*

*125 x 75 underpurlins*

*100 x 50 collar ties fixed to rafters with 4 no. 10mm diameter galvanised bolts. Collar ties to be fixed to rafters adjoining ridge only.*

### **Specification Notes for Roof Tiles**

*CONCRETE ROOF TILING – Cover all roof slopes with selected colour Roman pattern concrete roof tiles. Fix tiles to 38 x 25 Oregon battens spaced to suit the tiles. Finish ridge and hips with matching cappings and accessories bedded in cement mortar and point up with coloured mortar. On completion sweep down all roof slopes and clean out all gutters.*