



Government of **Western Australia**
School Curriculum and Standards Authority



BUILDING AND CONSTRUCTION

GENERAL COURSE

Externally set task

Sample 2016

Note: This Externally set task sample is based on the following content from Unit 3 of the General Year 12 syllabus.

Drafting

- read and draw plans utilising fundamentals of practical geometry with orthogonal projection and industry conventions
- estimate quantities
 - perimeter of drawn shapes
 - area of drawn shapes
 - volume of materials
- recognise and use industry specific conventions and building and construction terminology
 - set out construction tasks using string lines and formwork

Properties and selection

- material properties, including: hardness, elasticity, conductivity, flexibility and strength
- natural and pre-made construction materials, such as timber, metals, soil types, masonry, plastics and glass appropriate for different applications

Working with materials

- wood or metal frames and structures, including supportive trusses in construction
- different types of materials and construction methods

In future years, this information will be provided late in Term 3 of the year prior to the conduct of the Externally set task. This will enable teachers to tailor their teaching and learning program to ensure that the content is delivered prior to the students undertaking the task in Term 2 of Year 12.

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Disclaimer

Any resources such as texts, websites and so on that may be referred to in this document are provided as examples of resources that teachers can use to support their learning programs. Their inclusion does not imply that they are mandatory or that they are the only resources relevant to the course.

Building and Construction

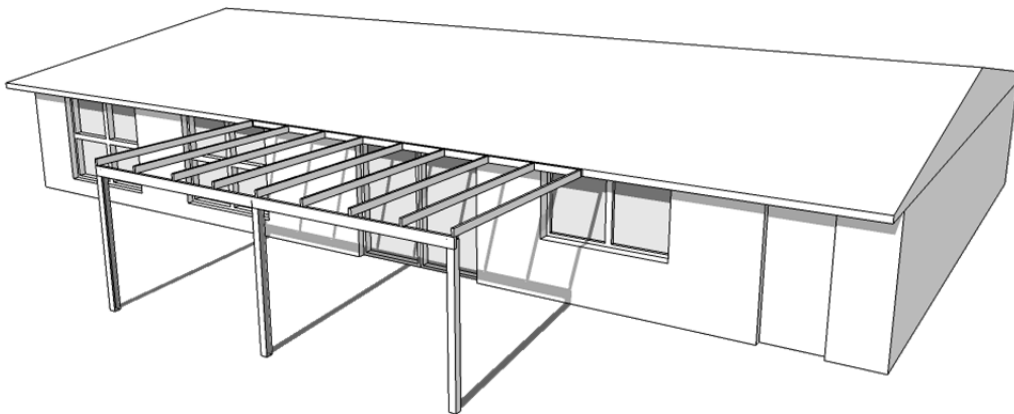
Externally set task

Working time for the task: 60 minutes

Total marks: 28 marks

Weighting: 15% of the school mark

You have been employed to replace a wooden pergola attached to the rear of a single storey house. The current pergola extends 6 m along the house and projects 3m out from the house. Termites have damaged one post and the main beam. These will need to be replaced.



After inspecting the current pergola you notice that the posts are fixed directly into the ground with no footings or fastenings. You have made the judgement from the way the posts are done that the pergola was most likely erected as a DIY job.

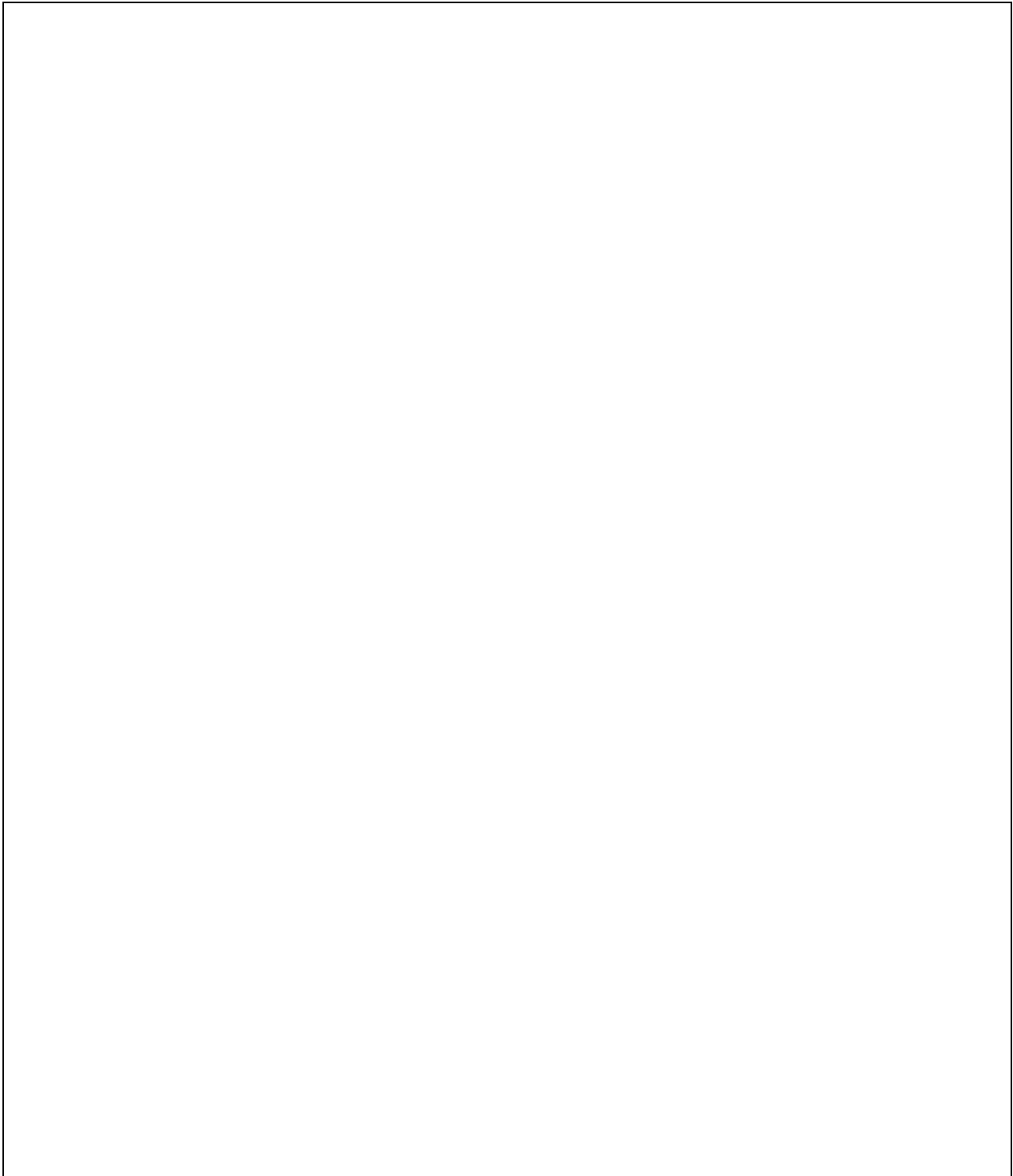
- 1(a) The owner has pointed out the termite damage to you. Besides this damage, you need to assess the complete pergola structure for suitability and compliance before agreeing to undertake any repair work. Describe **three (3)** items from either the materials used, the construction methods or the compliance issues that you would check. (3 marks)

Item one _____

Item two _____

Item three _____

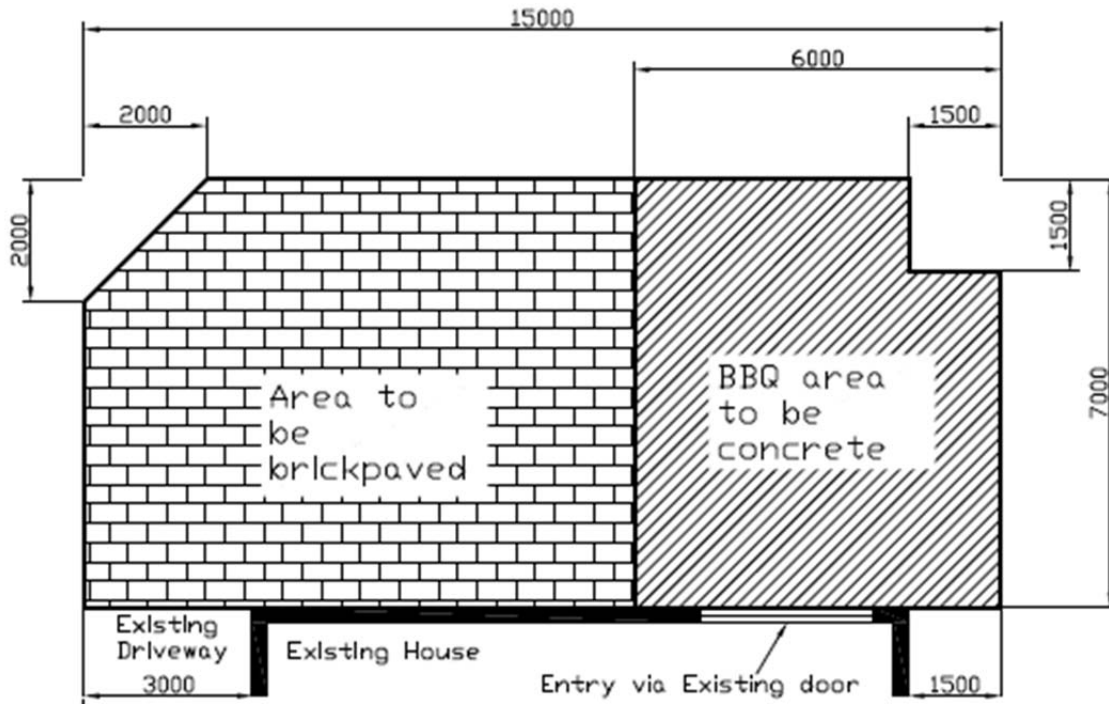
- (b) Sketch a sectional detail of a correct method for fixing a pergola post to the ground. Show the ground in the diagram in relation to the fixing, and include all necessary symbols to show ground or fill, and materials used. (8 marks)



- (c) From your detailed sketch in Question (b), list all of the materials that you would use to fix the post in place. For each material, describe its most important property in this application. (8 marks)

Material	Properties

The diagram shows a proposed courtyard. This sketch is not to scale.



In the construction of the courtyard, one area is to be paved. The remainder of the courtyard will be a barbecue area to be concreted with a 125 mm thick slab.

2(a) Calculate the area, in square metres (m^2), of the barbecue area. (4 marks)

- (b) Calculate the volume of concrete (m^3) to order for the barbecue area. (3 marks)

- (c) Identify one possible hazard and safety control measure that may be encountered in the construction of the courtyard. (2 marks)
