

**6720-004**

**Level 2 Design and Planning  
the Built Environment**

Version 1.0 - November 2016

**Sample Mark Scheme**



**1**

Name **four** features of a sustainable community.

**Answer**

Award 1 mark each for any four of the following; maximum four marks

- Environment
- Equity/equality
- Economy
- Housing and the built environment
- Social and cultural
- Governance
- Transport and connectivity
- Services

**Test spec reference:** Unit 205, 1.2

**Total: 4 marks**

**2**

Explain the difference between a working drawing and a presentation drawing.

**Answer**

Answers should include at least two from each of the following and clearly differentiate between working and presentation drawings.

**Working drawing:**

- Shows more technical detail and specifics about a project
- Larger scale
- 2 dimensional
- Used for actual construction

**Presentation drawing:**

- Presentation of a finished project
- Show the overall finished design
- 3D
- In colour

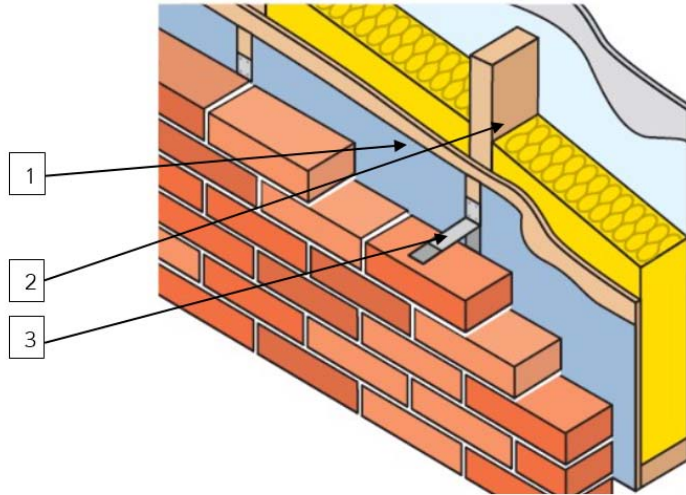
**Test spec reference:** Unit 207, 1.2

**Total: 4 marks**

3

Referring to the image, name the materials labelled 1, 2, 3.

(3 marks)



<http://www.ursa-uk.co.uk/SiteCollectionImages/TF%20Wall.jpg>

**Answers**

Material

1. vapour control layer (damp proof membrane, Tyvek, damp check)
2. Timber (timber stud, wood)
3. Wall tie (restraint tie, anchor)

**Test spec reference:**

Unit 206 3.2

**Total: 3 marks**

4

Identify the materials below from their hatch patterns.

(3 marks)

A		<input type="text"/>
B		<input type="text"/>
C		<input type="text"/>

**Answer**

- A - Soil  
B - Hardcore  
C - Stonework

**Test spec reference:** Unit 207 2.2

**Total: 3 marks**



5

Compare **two** methods of modelling a building.

**Answer**

1 mark to be awarded for identifying computer and 2 marks for any of: cheaper to produce, easily stored, easily adapted

1 mark to be awarded for identifying physical model and 2 marks for any of: easy for people to relate to, can be set in context of whole area, can be moved around.

**Test spec reference:** Unit 207 2.3

**Total: 6 marks**

6

Explain how each of the following features of the built environment contribute to social cohesion and wellbeing.

- a) Open spaces
- b) Local services
- c) Safety and security

**Answer**

- a) Award up to 3 marks for each explanation containing the following points: Open spaces reduce density and create areas for recreation and for wildlife (1), they create a general feeling of wellbeing and increase the opportunity for physical activity and exercise (1). They break up the street scene and improve the overall aesthetic (1)
- b) Award up to 3 marks for each feature discussed. Local services reduce the need for transport (1) and allow easy access for the residents (1). They also provide opportunities for employment (1)
- c) Safe design gives the residents a level of comfort in their neighbourhood (1), it encourages social interaction and for people to use the open space (1). Good design can reduce crime and this in turn improves the feeling of wellbeing (1).

**Test spec reference:** Unit 205 2.1

**Total: 9 marks**

7

The table shows four elements of a building.

Complete the table.

- a) Describe **two** functions of each element.
- b) Name **two** construction materials for each element.

Element	Function 1	Function 2	Construction Material 1	Construction Material 2
Foundations				
Walls				
Roof				
Floor				

**Answers**

**Foundations**

Functions: transmit loads from above to ground below(1), provide a floor(1) **(2 marks)**

Material: 1 mark each to be awarded for concrete, brick, stone or steel (piles) **(2 marks)**

**Walls**

Functions: Any two from provide security, fire separation, structural support **(2 marks)**

Material: 1 mark each to be awarded for any of brick, block, stone or timber **(2 marks)**

**Roof**

Functions: Any two from weather protection, provision for plant, to provide insulation, enclosure, security **(2 marks)**

Material: 1 mark each to be awarded for timber, concrete, slates or tiles (or other suitable answer). **(2 marks)**

**Floor**

Functions: Any two from structural support, fire separation, acoustic separation **(2 marks)**

Material: 1 mark each to be awarded for timber or concrete **(2 marks)**

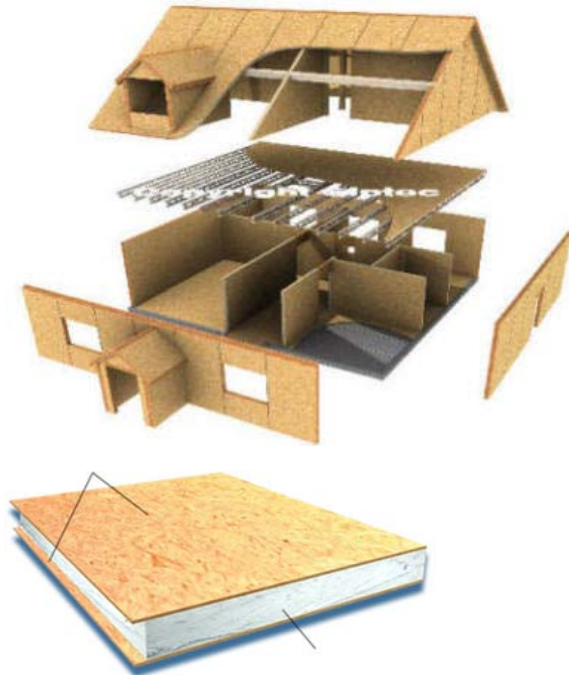
**Test spec reference:** Unit 206 3.3, 4.1

**Total: 16 marks**

**a) 8**

**b) 8**

The image below shows a method of construction.



**Sources of images**

<http://siptec.com/images/cutaway-Siptec.jpg>

<http://www.sipbuildingsystems.co.uk/images/sips-explained/sips-explained.png>

- a) Identify this method of construction
- b) Describe five advantages of this method of construction

**Answers**

- a) SIPs or Structurally insulated panels (1)
- b) 1 mark each for any of the following, up to 5 marks:
  - Excellent Thermal Performance
  - Integral Insulation
  - Habitable Roof Space
  - Do not require roof trusses, therefore providing an additional habitable room in the roof.
  - Pre-engineered in a factory environment which results in less defects and wastage throughout the manufacturing and construction processes.
  - Fast Construction Method
  - External and internal follow on trades can start work sooner as when wrapped with a breather membrane, offers a weather-tight shell helping you complete your project faster.
  - Design Flexibility
  - Excellent Air-Tightness

**Test spec reference:** Unit 206 3.2

**Total: 6 marks**

**a) 1 mark**



	<b>b) 5 marks</b>
<b>9</b>	
<p>A new housing development is being planned. A design company has been asked to develop designs for the scheme.</p> <p>Discuss the factors that impact on the design process. <span style="float: right;">(9 marks)</span></p> <p><b>Answer</b></p> <p>Factors:</p> <ul style="list-style-type: none"> <li>• Community needs</li> <li>• Social impact</li> <li>• Technical issues</li> <li>• Aesthetics</li> <li>• Materials specification</li> <li>• Infrastructure requirements</li> <li>• Legal issues</li> <li>• Environmental issues</li> </ul> <p>Design presentation methods</p> <ul style="list-style-type: none"> <li>• Presentations</li> <li>• Drawings</li> <li>• Models</li> <li>• Walkthroughs</li> <li>• Videos</li> </ul> <p><b>1-3 Marks</b> A limited discussion that identifies issues such as need, available money and how much space is available.</p> <p><b>4-6 Marks</b> A coherent discussion which compares several different factors with basic reasoning for their inclusion.</p> <p><b>7-9 Marks</b> A thorough discussion that covers a range of factors that impact on design with clear reasoning for their inclusion.</p>	
<p><b>Test spec reference:</b> Unit 206 1.1 Unit 205 1.1, 1.2 Unit 207 1.1, 1.2,2.2,2.3</p>	<b>Total: 9 marks</b>