

Write your name here	
Surname	Other names
<b>Edexcel</b> <b>Principal Learning</b>	Centre Number
	Candidate Number
<b>Construction and the Built Environment</b> <b>Level 3</b> <b>Unit 4: Create the Built Environment:</b> <b>Health, Safety and Environmental Influences</b>	
Friday 28 May 2010 – Morning <b>Time: 1 hour 30 minutes</b>	Paper Reference <b>CB304/01</b>
<b>You do not need any other materials.</b>	Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*

### Information

- The total mark for this paper is 60.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

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**Answer ALL questions. Write your answers in the space provided.**

**SECTION A**

**1** Describe **two** benefits of using wind turbines as a source of energy for a new building.

1 .....

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2 .....

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**(Total for Question 1 = 4 marks)**

**2** Describe **two** hazards associated with operatives working in a confined space during construction operations.

1 .....

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2 .....

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**(Total for Question 2 = 4 marks)**



**3** Describe **two** requirements contained within the current Control of Substances Hazardous to Health Regulations (COSHH).

1 .....

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2 .....

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**(Total for Question 3 = 4 marks)**

**4** Explain **two** environmental impacts of sourcing materials or components from outside the United Kingdom for a construction project.

1 .....

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2 .....

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**(Total for Question 4 = 4 marks)**

**TOTAL FOR SECTION A = 16 MARKS**



**SECTION B**

**5** Describe **three** key processes for ensuring good sustainability design of a complex construction project.

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**(Total for Question 5 = 6 marks)**



**6** (a) Describe the use of underpinning to safeguard adjacent structures during the construction of foundations for a new building.

(2)

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(b) Draw an annotated cross-section to illustrate a method of underpinning.

(4)

(Total for Question 6 = 6 marks)



**7** Describe, in detail, **two economic costs** incurred by a contractor of not complying with health and safety or environmental legislation on a construction project.

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**(Total for Question 7 = 6 marks)**



**8** (a) Explain what is meant by the term **life cycle costing** in relation to a project's sustainability.

(2)

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(b) Describe **two** types of cost that should be considered in relation to the **life cycle costing** of a proposed building.

(4)

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**(Total for Question 8 = 6 marks)**

**TOTAL FOR SECTION B = 24 MARKS**



## SECTION C

All questions in Section C refer to the following construction scenario.



Three-storey office development project

The office development consists of a three-storey steel frame structure with masonry cavity wall cladding. The roof is constructed of traditional timber rafters supported on steel trusses and covered with concrete tiles. The external envelope is currently 70% complete.





9 (a) Describe and analyse **two** physical factors that the Principal Contractor should include in the Health and Safety Plan to ensure the **safety of site operatives** during construction of the roof.

(4)

1 .....

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(b) Describe **three** duties of the Principal Contractor for the office development project, under the current Construction (Design and Management) Regulations.

(6)

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**(Total for Question 9 = 10 marks)**



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10 There is a global need to reduce carbon emissions and the use of renewable energy is encouraged.

Produce a **structured report** to the client, describing and analysing the benefits and disadvantages of using photovoltaic cells as a renewable energy source for the completed office development.

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