



## TQUK Level 3 Certificate in Design, Engineer, Construct: The Digital Built Environment (RQF)

(603/2052/7)

Paper ID: KNIL – 11 Certificate

Assessment date: PASTPAPER2

**Please complete the details below using black or blue ink.**

**Use BLOCK CAPITALS.**

**You must use the Resource Document provided.**

Learner Name:	_____
Learner Number:	_____
Learner Signature:	_____
Centre Name:	_____
Centre Number:	_____

### Instructions:

- Use **black** or **blue** ink.
- Read **each** question carefully.
- Answer **all** questions.
- You should have **2** documents on your desk: this Examination Paper and the Resource Document.

### Information:

- You may use a calculator.
- The total mark for this paper is **60 (sixty)** marks.
- The marks for **each** question are shown in brackets.
- The use of dictionaries is **not** permitted.
- Use the Resource Document alongside the questions.
- Additional writing space can be found on pages **13** and **14**. If you use this, clearly indicate which question number you are answering.

**Time allowed:** 1 hour.

This paper **MUST** be invigilated in accordance with TQUK Invigilation Requirements.

**Do not open this examination paper until you are told to do so.**

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### Question 1

- 1a.** Identify **one** type of hydrological data collected when producing a hydrology study.

**Answer:**

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**[1]**

- 1b.** Hydrological data is used as part of a site survey.  
Identify **three other** types of data that should be used during a site survey.

**Answer:**

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**[3]**

**Questions continue on the following page**

**1c.** State **four** tools **or** pieces of equipment used during a site survey.

**Answer:**

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**[4]**

**Question 2**

**2a.** Identify **two** features of a shell structure.

**Answer:**

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**[2]**

**2b.** Identify **three** features of steel.

**Answer:**

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**[3]**

**Questions continue on the following page**

**2c(i).** Identify **two** advantages of a mass structure.

**Answer:**

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**[2]**

**2c(ii).** Identify **two** disadvantages of a mass structure.

**Answer:**

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**[2]**

### Question 3

**3a (i).** What is responsible procurement?

**Answer:**

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**[1]**

**3a (ii).** Identify **three environmental** reasons to use ethical sourcing practices.

**Answer:**

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**[3]**

**Questions continue on the following page**

**3b.** Explain **three** reasons a construction company would want to minimise waste.

**Answer:**

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**[6]**



**3c.** Look at the Resource Document.

Identify **three** positive and **three** negative impacts a large-scale construction project could have on a local community.

**Positive impacts:**

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[3]

**Negative impacts:**

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[3]

**Total for Question = 6 marks**

**Questions continue on the following page**

#### Question 4

**4a (i).** What is occupant comfort?

**Answer:**

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[1]

**4a (ii).** Identify **three** factors that contribute to occupant comfort.

**Answer:**

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[3]

**4b.** Look at **Table 1** in the Resource Document.

Both toilet spaces in the building require a lux of 200 and use 6-watt LED bulbs.

Calculate the **total number of light bulbs** required for the toilet spaces.

Use:  $\text{lumens} = \text{lux} \times \text{area}$

***and***

*Use: bulbs required = lumens required / lumens of 6-watt LED bulbs.*

You **must** show your workings.

**Answer:**

This image shows a blank sheet of white paper with horizontal blue or grey ruling lines. A large, light-grey watermark with the words "Fast pace" is oriented diagonally from the bottom-left towards the top-right across the entire page. The watermark is written in a clean, sans-serif typeface. There are approximately 20 horizontal lines visible on the page.

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**[6]**

**Questions continue on the following page**

**4c.** Look at **Table 2** in the Resource Document.

Calculate the lumens required for **cleaning** the auditorium.

*Use: lumens required = lux x area.*

You **must** show your workings.

**Answer:**

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[2]

### Question 5

**5a.** Identify **one** way the orientation of a building affects solar gain.

**Answer:**

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[1]

**5b.** Identify **one** way the orientation of a building affects natural ventilation.

**Answer:**

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[1]

**Question 6**

**6a.** Identify **four** things a feasibility study could include.

**Answer:**

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[4]

**Questions continue on the following page**

**6b.** State **three** benefits from creating a schedule of accommodation.

**Answer:**

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**[3]**

**6c.** Explain **two** responsibilities **of the client** in a construction project.

**Answer:**

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**[6]**

### Extra Writing Paper

Please use the page below if you require additional space for answers. Clearly indicate which question number and part you are answering.

[illegible]

### Extra Writing Paper

Please use the page below if you require additional space for answers. Clearly indicate which question number and part you are answering.

[illegible]



**This is the end of the assessment.**

Question	Marks	Question	Marks
1a		3c	
1b		4a (i)	
1c		4a (ii)	
2a		4b	
2b		4c	
2c(i)		5a	
2c(ii)		5b	
3a (i)		6a	
3a (ii)		6b	
3b		6c	

Total	
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