



TQUK Level 2 Certificate in Design, Engineer, Construct: The Digital Built Environment (RQF) (603/1992/6)

Paper ID: NAYER - 10 Certificate

Assessment date: PAST PAPER 1

Mark Scheme

Mark scheme information

This mark scheme is intended to support the valid and consistent marking of the examination paper identified above. This mark scheme includes:

- the total mark available for each question
- the individual subject content coverage of each question
- further considerations which could or should be followed.

Information for the marker

- All marking **must** be completed consistently and applied fairly
- Markers should award full marks if the candidate deserves full marks
- Markers should be prepared to award zero marks if the candidate's response is not worthy of credit according to the guidance for that activity
- Crossed-out work should be marked unless the candidate has replaced it with an alternative response
- There are **no** marks for spelling, punctuation and grammar in the Reading papers; therefore, errors are **not** penalised
- Unless indicated, quotations and candidates' own words are acceptable.

Key

SC	Subject Content Coverage (as identified in the Qualification Specification)
Text in brackets	May be included but is not essential to be awarded the mark

Marking Term	Definition
(CAO)	Mark awarded for a correct answer only
(FT)	Follow-through marks are applied when there are earlier mistakes in the method. The candidate should not be penalised.
(M)	Method mark awarded for application of a correct method.

Grade boundaries:

C	26
B	41
A	54
A*	67

Q	Answer	Marks	SC
1a	<p><i>What does 'benchmark costs' mean?</i></p> <p>Award 1 mark for the correct definition. For example:</p> <ul style="list-style-type: none"> • a process for measuring / comparing costs (1) • reference point for measuring / comparing costs (1) • process that allows companies to measure how their costs compare. (1) (to competitors, based on industry wide data or averages) <p>Accept any other suitable responses.</p>	1	1.1.3

Q	Answer	Marks	SC
1b	<p>The space for the community centre has approval for a design with a footprint of 1,760m². <i>Calculate the build cost of the community centre footprint only. You must show all your workings.</i></p> <p>Award 1 mark for the correct calculation and 1 mark for the correct answer:</p> <p>£2,180 x 1,760sqm (1) (M) = £3,836,800 (1) (CAO)</p>	2	1.1.3

Q	Answer	Marks	SC
1c	<p><i>Look at the resource document. Use your answer to question 1b. Calculate the build cost of the community centre footprint and the external works allowance. You must show all your workings.</i></p> <p>Award 1 mark for the correct calculation and 1 mark for the correct answer:</p> <p>£3,836,800 + £250,000 (1) (M) (FT) = £4,086,800 (1) (CAO)</p>	2	1.1.3

Q	Answer	Marks	SC
1d	<p><i>Look at the resource document. Use your answer to question 1b. Calculate the additional costs of the community centre. You must show all your workings.</i></p> <p>Award 1 mark for the correct calculation and 1 mark for the correct answer:</p> <p>12% + 6% + 10% = 28% (1) (M) £3,836,800 x 0.28 (1) (M) (FT) = £1,074,304 (1) (CAO)</p>	3	1.1.3

Q	Answer	Marks	SC
2	<p>State four pieces of legislation relevant to a construction project.</p> <p>Award 1 mark for any correct aspect identified, up to a maximum of 4 marks. For example:</p> <ul style="list-style-type: none"> • UK Building Regulations 2010 (1) • The Town and Country Planning Act 1990 (1) • The Planning and Compulsory Purchase Act 2004 (1) • The Listed Buildings and Conservation Areas Act 1990 (1) • The Party Wall etc. Act 1996 (1) • Environmental Protection Act 1990 (1) • The Environmental Act 1995 (1) • The Waste Regulations 2011 (1) • The Control of Pollution Act 1974 (1) • The Wildlife and Countryside Act 1981 (1) • The Clean Air Act 1993 (1) • The Regulatory Reform (Fire Safety) Order 2005 (1) • Building Safety Act 2022 (1) • Flood and Water Management Act 2010 (1) • The Energy Performance of Buildings (England and Wales) Regulations 2012 (1) • HASAWA Health & Safety at Work Act. (1) <p>Accept any other suitable response, linked to legislation in the Country where the exam is being undertaken.</p>	4	3.2.3

Q	Answer	Marks	SC
3	<p>Identify four ways a 3D model can be used to test a building design.</p> <p>Award 1 mark for each correct answer, up to a maximum of 4 marks. Assume physical, digital or BIM model as non-specified. For example:</p> <ul style="list-style-type: none"> • structural analysis (1): simulate loads (1) and stresses on materials (1) to identify potential weaknesses (1) or areas needing reinforcement (1) • lighting analysis (1): evaluate natural and artificial lighting by simulating different times of day (1) and seasons to optimise energy efficiency and occupant comfort (1) • thermal performance (1): analyse heat distribution (1) and insulation effectiveness (1) to improve energy efficiency and occupant comfort (1) • acoustic testing: assess sound propagation within the space (1) to optimise acoustics for residential, commercial, or performance spaces (1) • spatial visualization (1): help stakeholders visualise the design in 3D (1), making it easier to understand spatial relationships and flow (1) • regulatory compliance (1): ensure designs meet local building codes (1) and zoning regulations by testing compliance within the 3D model (1) • site analysis (1): integrate the model with geographical data to assess environmental impact, view corridors, and site suitability (1) • construction sequencing (1): plan construction logistics (1) and phasing by visualising the build process in a 3D environment (1) • safety assessments (1): evaluate evacuation routes (1) and safety measures to ensure compliance with safety standards (1) • virtual reality (VR) simulations: create immersive experiences for stakeholders to walk through the design and provide feedback before construction (1) • material selection (1): test different materials visually (1) and functionally to see how they perform in the proposed design context (1) • cost estimation (1): use 3D models to gather data for more accurate material and labour cost estimates. (1) <p>Accept any other suitable responses.</p>	4	3.2.1

Q	Answer	Marks	SC
4a	<p><i>It is important for a construction project proposal to be compatible with existing infrastructure. Identify two reasons why this is important.</i></p> <p>Award 1 mark for each correct answer, up to a maximum of 2 marks. For example:</p> <ul style="list-style-type: none"> • ensures the project is feasible (1) • ensures the project is cost-effective (1) • ensures safety (1) • ensures the construction is environmentally responsible (1) • ensures it is well-received by the community (1) • prevents costly delays (1) • ensures regulatory compliance (1) • ensures a foundation for sustainable, long-term development. (1) <p>Accept any other suitable responses.</p>	2	2.3.1

Q	Answer	Marks	SC
4b	<p><i>Identify two impacts on biodiversity when completing an eco-build project.</i></p> <p>Award 1 mark for each correct answer, up to a maximum of 2 marks. For example:</p> <ul style="list-style-type: none"> • habitat destruction (1) • habitat preservation (1) • impact on endangered and / or sensitive species (1) • ecosystem fragmentation (1) • maintains ecosystem connectivity (1) • disruption of natural cycles (1) • supports natural ecosystems (1) • introduction of invasive species (1) • risk of invasive species (1) • opportunities for biodiversity enhancement. (1) <p>Accept any other suitable responses.</p>	2	2.3.2

Q	Answer	Marks	SC
5a	<p><i>Explain the term 'user experience'.</i></p> <p>Award 1 mark for a correct answer. For example:</p> <ul style="list-style-type: none"> • interaction people have with a building (1) • people's satisfaction with a building (1) • how they navigate a space. (1) <p>Accept any other suitable responses.</p>	1	4.2.2

Q	Answer	Marks	SC
5b	<p><i>Look at the resource document. The aesthetic and / or sensory features of the community centre building project would impact the user's experience. Give four examples how.</i></p> <p>Award 1 mark for each correct answer. up to a maximum of 4 marks. For example:</p> <ul style="list-style-type: none"> • visual aesthetics (1) <ul style="list-style-type: none"> ○ design and architecture (1) ○ colour schemes and materials (1) ○ daylighting and views (1) • spatial experiences (1) <ul style="list-style-type: none"> ○ spatial layout (1) ○ proportions and scale (1) • sensory comforts (1) <ul style="list-style-type: none"> ○ acoustic quality (1) ○ thermal comfort (1) • tactile experiences (1) <ul style="list-style-type: none"> ○ material textures (1) ○ ergonomic design (1) • olfactory experiences (1) <ul style="list-style-type: none"> ○ indoor air quality (1) ○ scent design (1) • lighting design (1) <ul style="list-style-type: none"> ○ ambient lighting (1) ○ accent and task lighting (1) • connection to nature (1) <ul style="list-style-type: none"> ○ biophilic design (1) ○ natural material (1) • community and social interactions (1) <ul style="list-style-type: none"> ○ public and private spaces (1) ○ accessibility and inclusivity (1) • cultural and contextual sensitivities (1) <ul style="list-style-type: none"> ○ cultural relevance (1) ○ community input. (1) <p>Accept any other suitable responses.</p>	4	4.2.3

Q	Answer	Marks	SC
5c	<p><i>It is important to consider the energy efficiency of the lighting during the design stage. Identify three eco-build lighting features that can be included in the design of the community centre.</i></p> <p>Award 1 mark for each correct answer, up to a maximum of 3 marks. For example:</p> <ul style="list-style-type: none"> • natural daylight (1) <ul style="list-style-type: none"> ○ skylights (1) ○ clerestory windows (1) ○ light shelves (1) ○ reflective surfaces (1) and light-coloured interiors (1) • energy-efficient lighting systems (1) <ul style="list-style-type: none"> ○ LED lighting (1) ○ task lighting (1) • lighting controls and automation (1) <ul style="list-style-type: none"> ○ occupancy sensors (1) ○ daylight harvesting sensors (1) ○ dimmable lighting systems (1) • advanced lighting technologies (1) <ul style="list-style-type: none"> ○ smart lighting systems (1) ○ tuneable white lighting (1) • efficient building envelope design (1) <ul style="list-style-type: none"> ○ high-performance glazing (1) ○ window shading solutions (1) • solar / solar (1) <ul style="list-style-type: none"> ○ solar tubes (1) ○ solar powered lighting. (1) <p>Accept any other suitable responses.</p>	3	4.2.2

Q	Answer	Marks	SC
6a	<p>Give two accessibility and / or inclusivity features that can be used in the design of the community centre.</p> <p>Award 1 mark for each correct answer, up to a maximum of 2 marks. For example:</p> <ul style="list-style-type: none"> • universal design accessible to all users including those with disabilities <ul style="list-style-type: none"> ○ ramps (1) ○ lifts (1) ○ wide doorways (1) ○ accessible toilets (1) ○ signage in braille (1) ○ hearing loops. (1) ○ clear signage (1) and wayfinding (1) ○ directional signs (1) ○ room names (1) ○ easy-to-read signage (1) to help users navigate the building (1). ○ emergency exits. (1) <p>Accept any other suitable responses.</p>	2	1.2.1

Q	Answer	Marks	SC
6b	<p>Provide one example of a feature the community centre could use to conserve water.</p> <p>Award 1 mark for a correct answer. For example:</p> <ul style="list-style-type: none"> • low-flow toilets (1) • low-flow faucets (1) and aerators (1) • dual-flush toilets (1) • rainwater harvesting systems (1) • greywater recycling systems (1) • smart irrigation systems (1) • smart leak detectors (1) • on-demand water heaters (1) • water-efficient appliances (1) • water meters (1) • automated monitoring systems. (1) <p>Accept any other suitable response.</p>	1	1.2.1

Q	Answer	Marks	SC
6c	<p><i>The community centre should meet all fire safety regulations, including having fire exits. Identify two other fire safety methods that should be included in the building design.</i></p> <p>Award 1 mark for each correct answer, up to a maximum of 2 marks. For example:</p> <ul style="list-style-type: none"> • fire blankets (1) (in the catering areas) • audible alarms (1) • visual alarms (1) • (appropriately placed) extinguishers (1) • clear evacuation routes (1) • sprinkler systems • fire extinguisher(s) (1) • fire safety door(s) (1) <p>Accept any other suitable response.</p>	2	1.3.3

Q	Answer	Marks	SC
7a (i)	<p><i>Explain what 'qualitative data' means.</i></p> <p>Award 1 mark for a correct answer. For example:</p> <ul style="list-style-type: none"> • descriptive and conceptual. (1) • captures non-numerical information (1) • often used to understand concepts, thoughts, / experiences. (1) • answers questions like "why," / "how," / "in what way." (1) <p>Accept any other suitable responses.</p>	1	2.2.3

Q	Answer	Marks	SC
7a (ii)	<p><i>Explain what 'quantitative data' means.</i></p> <p>Award 1 mark for the correct answer, up to a maximum of 1 mark. For example:</p> <ul style="list-style-type: none"> • numerical (1) • can be measured and counted. (1) • represents quantities (1) • can be used to quantify variables (1) • determine patterns / correlations / statistics (1) • answers questions like "how much," / "how many" / "how often," / "to what extent." (1) <p>Accept any other suitable responses.</p>	1	2.2.3

Q	Answer	Marks	SC
7b.	<p>Identify the two requirements needed to calculate the required lighting levels for a specific room or area.</p> <p>Award 1 mark for each correct answer, up to a maximum of 2 marks. For example:</p> <ul style="list-style-type: none"> • room area in square metres / m² (1) • lux level. (1) <p>Do not accept any other responses.</p>	2	2.2.3

Q	Answer	Marks	SC
7c	<p>When procuring the lighting system for a building project, state two benefits of using smart light-emitting diodes (LEDs).</p> <p>Award 1 mark for each correct answer, up to a maximum of 2 marks. For example:</p> <ul style="list-style-type: none"> • lower energy consumption (1) • dimming capabilities (1) • reduced utility bills (1) • longer lifespan (1) • maintenance savings (1) • remote controlled (1) • scheduling (1) • adjustable colour temperature (1) • reduced carbon footprint (1) • no hazardous materials (1) • recyclability (1) • customisable lighting scenes (1) • voice control (1) • daylight harvesting (1) • scalability (1) • firmware updates (1) • meeting green building standards (1) • regulatory compliance (1) • sleek, modern designs (1) • discreet installation. (1) <p>Accept any other suitable response.</p>	2	2.1.4

Q	Answer	Marks	SC
7d	<p>Refer to the resource document and the qualitative data below.</p> <ul style="list-style-type: none"> 10w (watt) LED lamps (100 lumens per watt), average 4 hours use per day. number of fixtures = lumens required \div lumens per fixture (round up to nearest whole number) total power consumptions = number of fixtures \times watt per bulb daily energy consumption (kWh) = total power consumption \times hours. <p>Calculate the average daily energy requirements to light the activity studio.</p> <p>You must show all your workings.</p> <p>Accept responses for one or both studios.</p> <p>Lumens = Area \times Lux = 168 \times 300 (Calculation (1))(M) = 50,400 lumens (Answer (1))</p> <p>Lumens per fixture = lumens per watt \times 10 watt = 100 \times 10 (Calculation (1) (M) = 1000 lumens (Answer (1))</p> <p>Number of fixtures = lumens required \div lumens per fixture = 50,400 \div 1000 (M) (1) = 50.4 \approx 51 (Answer (1))</p> <p>Total power consumption = number of fixtures \times watt per bulb = 51 \times 10 (M) (1) [Accept 50.4 \times 10] = 510 watts (Answer (1) [Accept 504]</p> <p>Daily energy consumption (kWh) = total power consumption \times hours = 510 \times 4 (M) (1) [Accept 504 \times 4] = 2040 kWh (Answer (1) [Accept 2016 kWh / 2.04 kWh]</p>	10	2.2.3

Q	Answer	Marks	SC
8a	<p><i>Identify and explain how a comprehensive design brief helps prevent mistakes from happening during the construction of a building.</i></p> <p>Award 1 mark for identifying the purpose of a comprehensive design brief. For example:</p> <ul style="list-style-type: none"> • outlines the project scope (1) • outlines the functional requirements (1) • details the aesthetic goals (1) • sets a clear budget (1) • sets a clear schedule. (1) <p>Award 1 mark for explaining how a brief helps to avoid mistakes. For example:</p> <ul style="list-style-type: none"> • helps prevent misunderstandings (1) • helps reduce the risk of scope creep (1) • helps reduce budget overruns (1) • helps reduce timing overruns (1) • provides a framework to a well-coordinated building project (1) • supports quality assurances. (1) <p>Accept any other suitable response.</p>	2	3.1.1

Q	Answer	Marks	SC
8b	<p>Identify one type of specialist that would need to be contracted from outside the construction team.</p> <p>Award 1 mark for a correct answer. For example:</p> <ul style="list-style-type: none"> • architect (1) • cost consultant (1) • services engineer (1) • structural engineer (1) • access consultant (1) • acoustic consultant (1) • approved inspector (for building regulations approvals) (1) • archaeologist (1) • business management consultant (1) • chartered environmentalist (1) • client design adviser (1) • client's representative (1) • civil engineer (1) • construction manager (1) • consulting engineer (1) • contract administrator (1) • ecologist (1) • employer's agent (1) • employer's BIM adviser (1) • environmental consultant (1) • facilities manager (1) • fire engineering consultant (1) • furniture, fixtures and equipment (FF&E) consultant (1) • health and safety consultant (1) • information and communications technology (ICT) consultant (1) • interior designer (1) • landscape architect (1) • local consultants with specialist knowledge of local procedures (1) • lighting designer (1) • management contractor (1) • masterplanner (1) • party wall surveyor (1) • planning consultant (1) • programme consultant (1) • public health consultant (1) • rights of light surveyor (1) • security consultant (1) • site inspector (clerk of works) (1) • specialist contractor (1) • structural waterproofing consultant (1) • surveyor (1) • transport / traffic engineer (1) • vertical transportation (VT) consultant (also called a lift and escalator consultant) • land surveyor (1). <p>Accept any other suitable response.</p>	1	3.1.3

Q	Answer	Marks	SC
8c	<p><i>Describe nine tasks that need to be completed before construction begins to ensure the building design meets the requirements of the design brief.</i></p> <p>Award 1 mark for each task described, up to a maximum of 9 marks. For example: Land Surveys, Planning Permission (apply & gain)</p> <ol style="list-style-type: none"> 1. review the design brief (1) <ul style="list-style-type: none"> • understand requirements: thoroughly review the design brief to understand all requirements, including functional, aesthetic, performance, regulatory, and budgetary aspects (1) • identify key metrics: extract key metrics and criteria from the brief that will be used for comparison during the validation process (1) 2. conduct design analysis (1) <ul style="list-style-type: none"> • compare design to requirements: assess how the design aligns with the requirements specified in the brief. This involves checking if all functional and aesthetic needs are met (1) • evaluate compliance: ensure that the design complies with all relevant regulations, codes, and standards mentioned in the brief (1) 3. perform technical investigations (1) <ul style="list-style-type: none"> • structural analysis <ul style="list-style-type: none"> ○ load analysis: verify that the design can handle all expected loads (dead loads, live loads, wind loads, seismic loads, etc.) using structural analysis methods and software (1) ○ material strength: check that the materials used meet the strength and durability requirements specified in the design brief (1) ○ structural integrity: ensure that structural elements are properly designed to maintain stability and safety throughout the building's lifecycle (1) • building systems analysis <ul style="list-style-type: none"> ○ HVAC Systems: validate that the heating, ventilation, and air conditioning systems are designed to meet the thermal comfort, energy efficiency, and ventilation requirements (1) ○ plumbing systems: check that the plumbing design meets the specified water supply and drainage requirements, including efficiency and compliance with standards (1) ○ electrical systems: verify that the electrical design aligns with the lighting, power distribution, and safety requirements specified in the brief (1) • energy performance analysis <ul style="list-style-type: none"> ○ energy modelling: use energy modelling software to simulate the building's energy performance, comparing it against the energy efficiency targets set in the brief (1) ○ thermal insulation: assess the effectiveness of insulation and building envelope design in maintaining thermal performance and reducing energy consumption (1) • environmental and sustainability assessment <ul style="list-style-type: none"> ○ sustainability criteria: evaluate the design against sustainability goals, such as those for water conservation, waste management, and use of renewable resources (1) ○ environmental impact: perform an environmental impact assessment to ensure the design minimises adverse effects on the environment and aligns with sustainability objectives (1) 	9	3.2.2

	<ul style="list-style-type: none"> compliance verification <ul style="list-style-type: none"> code compliance: check that the design complies with building codes, zoning laws, and other regulatory requirements outlined in the brief (1) safety standards: ensure that the design meets all safety standards, including fire safety, accessibility, and emergency egress requirements (1) <p>4. review design documentation (1)</p> <ul style="list-style-type: none"> detailed drawings and specifications: examine detailed drawings and specifications to ensure accuracy and alignment with the design brief (1) design revisions: review any design revisions or changes to confirm that they continue to meet the original brief and objectives (1) <p>5. conduct design reviews and peer reviews (1)</p> <ul style="list-style-type: none"> internal reviews: organise internal design review meetings with the project team to discuss findings and confirm that the design meets the brief (1) peer reviews: engage external experts or consultants to conduct peer reviews, providing an independent assessment of the design's compliance with the brief (1) <p>6. test prototypes and mock-ups (1)</p> <ul style="list-style-type: none"> build mock-ups: for complex or critical elements, construct physical mock-ups or prototypes to test and validate design concepts and performance (1) conduct testing: perform tests on prototypes to ensure they meet performance criteria and requirements outlined in the brief (1) <p>7. document findings and recommendations (1)</p> <ul style="list-style-type: none"> report findings: prepare a comprehensive report detailing the results of the technical investigation, including any discrepancies or issues identified (1) recommend corrections: provide recommendations for any necessary design adjustments or corrections to align with the brief (1) <p>8. finalise and approve design (1)</p> <ul style="list-style-type: none"> implement changes: incorporate any recommended changes into the design and verify that they address the issues identified during the investigation (1) obtain approval: seek final approval from stakeholders and clients to confirm that the revised design meets the brief and is ready for implementation (1) <p>9. monitor implementation (1)</p> <ul style="list-style-type: none"> ongoing validation: during construction, continue to monitor the design implementation to ensure it adheres to the validated design and brief requirements (1) quality assurance: implement quality assurance procedures to ensure that the construction process reflects the validated design and meets the brief's specifications. (1) <p>Accept any other suitable response.</p>		
Q	Answer	Marks	SC
9a	<p><i>Who is responsible for a project time planning in a building project?</i></p> <p>Award 1 mark for a correct answer. For example:</p>	1	1.4.2

	<ul style="list-style-type: none"> • Project Manager in general (1) • Construction Scheduler - larger projects (1) • Planning Engineer - larger projects. (1) <p>Do not accept any other responses.</p>		
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Past paper

Q	Answer	Marks	SC
9b	<p>Identify six features that could be used in a design to help minimise energy use for the end user.</p> <p>Award 1 mark for each feature, up to a maximum of 6 marks. For example:</p> <ul style="list-style-type: none"> • optimising building orientation and layout <ul style="list-style-type: none"> ○ solar-gain management (1) ○ daylighting (1) • high-performance insulation and building envelope <ul style="list-style-type: none"> ○ thermal insulation (1) ○ air-tightness (1) ○ energy-efficient windows (1) • efficient heating, ventilation, and air conditioning (HVAC) systems <ul style="list-style-type: none"> ○ high-efficiency HVAC systems (1) ○ zoned heating and/or cooling (1) ○ smart thermostats (1) • renewable energy integration <ul style="list-style-type: none"> ○ solar panels (1) ○ solar thermal systems (1) ○ wind turbines (1) • energy-efficient lighting <ul style="list-style-type: none"> ○ LED lighting (1) ○ lighting controls (1) ○ daylight harvesting (1) • efficient water use (one mark only available) <ul style="list-style-type: none"> ○ low-flow fixtures (1) / rainwater harvesting (1) • sustainable building materials <ul style="list-style-type: none"> ○ thermal mass (1) ○ recycled and low-impact materials (1) • building management systems (BMS) <ul style="list-style-type: none"> ○ centralised control (1) ○ real-time monitoring (1) • design for energy efficiency <ul style="list-style-type: none"> ○ compact building shape (1) ○ green roofs and walls (1) • smart building technologies <ul style="list-style-type: none"> ○ automated systems (1) ○ energy monitoring and analytics. (1) <p>Accept any other suitable response.</p>	6	1.3.6

Q	Answer	Marks	SC
10a	<p><i>One benefit of improving a building's energy performance is to reduce energy costs. Identify one other benefit to improving the building's energy performance.</i></p> <p>Award 1 mark for a correct answer. For example:</p> <ul style="list-style-type: none"> • environmental impact (1) • enhanced comfort and well-being (1) • increased property value (1) • regulatory compliance (1) • improved safety (1) • long-term sustainability (1) • reduce carbon footprint (1). <p>Accept any other suitable response.</p>	1	4.1.1

Q	Answer	Marks	SC
10b	<p>State three ways the end user of a construction project can improve the building's energy performance.</p> <p>Award 1 mark for each way, up to a maximum of 3 marks. For example:</p> <ul style="list-style-type: none"> • understand building systems (1) <ul style="list-style-type: none"> ○ familiarity with systems (1) ○ utilise operational manuals (1) • implement efficient usage practices (1) <ul style="list-style-type: none"> ○ adjust thermostats wisely (1) ○ use zoning (1) ○ maximise natural light (1) ○ utilise energy-efficient lighting (1) ○ conserve water (1) ○ report leaks (1) • maintain building systems (1) <ul style="list-style-type: none"> ○ regular maintenance (1) ○ cleaning and upkeep (1) • monitor and manage energy usage (1) <ul style="list-style-type: none"> ○ energy monitoring (1) ○ behavioural adjustments (1) • follow building guidelines and procedures (1) <ul style="list-style-type: none"> ○ adherence to guidelines (1) ○ safety procedures (1) • provide feedback (1) <ul style="list-style-type: none"> ○ report issues (1) ○ suggest improvements (1) • participate in training and education (1) • optimise space utilisation (1) <ul style="list-style-type: none"> ○ efficient use of space (1) ○ flexible work environments (1) • implement sustainable practices (1) <ul style="list-style-type: none"> ○ waste management. (1) ○ sustainable choices (1) • engage in building performance initiatives (1) <ul style="list-style-type: none"> ○ participation in programmes (1) ○ track performance metrics. (1) <p>Reward candidates for responses that include material and building improvements, for example ground source heat pumps.</p> <p>Accept any other suitable response.</p>	3	4.1.1

Q	Answer	Marks	SC
10c (i)	<p>Identify four benefits of evaluating stakeholder feedback on a sustainable construction project.</p> <p>Award 1 mark for each example of the benefit in evaluating stakeholder feedback, up to a maximum of 4 marks. For example:</p> <ul style="list-style-type: none"> ensures project alignment with goals (1) and expectations (1) <ul style="list-style-type: none"> meeting expectations (1) clarifies objectives (1) enhances sustainability performance (1) <ul style="list-style-type: none"> identifies improvements (1) refines strategies (1) promotes user satisfaction (1) and engagement (1) <ul style="list-style-type: none"> user experience (1) community impact (1) improves project execution (1) and management (1) <ul style="list-style-type: none"> identifies issues early (1) enhances communication (1) supports compliance (1) and regulation (1) <ul style="list-style-type: none"> regulatory adherence (1) certification and reporting (1) <p>Accept any other suitable response.</p>	4	4.2.1

Q	Answer	Marks	SC
10c (ii)	<p>Explain how each benefit identified in question 10c(i) can help inform future build projects.</p> <p>Award 1 mark for each example of how feedback can inform future projects, up to a maximum of 4 marks. For example:</p> <ul style="list-style-type: none"> refines design and planning (1) <ul style="list-style-type: none"> design improvements (1) planning adjustments (1) enhances sustainability practices (1) <ul style="list-style-type: none"> best practices (1) avoiding pitfalls (1) strengthens stakeholder relationships (1) <ul style="list-style-type: none"> building trust (1) future collaboration (1) informs policy and guidelines (1) <ul style="list-style-type: none"> policy development (1) standardisation (1) enhances project evaluation (1) and reporting (1) <ul style="list-style-type: none"> performance metrics (1) benchmarking. (1) <p>The response MUST show a coherent link with 10c(i).</p> <p>Accept any other suitable response.</p>	4	4.2.1

End of Mark Scheme