



GCSE

APPROVAL CRITERIA

Built Environment

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This is a **Regulatory Document** under **Condition B7** of the *Standard Conditions of Recognition: Compliance with Regulatory Documents*¹.

¹ <https://qualificationswales.org/english/publications/standard-conditions-of-recognition/>

Introduction

This document sets out the approval criteria for GCSE Built Environment. The criteria have been developed by Qualifications Wales with the support of many stakeholders. They set out the requirements that an awarding body must address when developing the specification and assessment materials for GCSEs in this subject.

The approval criteria in this document will come into effect from August 2019.

Qualifications Wales will only approve a qualification that meets all of the requirements set out in this document together with those set out in the *Approval Criteria for GCSE Qualifications*², our *Standard Conditions of Recognition*³ and our *Additional Standard Conditions of Recognition for GCSE/GCE Qualifications*⁴. In developing qualifications to meet these requirements awarding bodies must have regard to *Fair Access by Design*⁵.

Where the requirements set out in this document differ from those prescribed in the *Approval Criteria for GCSE Qualifications*, the *Standards Conditions of Recognition* and the *Additional Standard Conditions of Recognition for GCSE/GCE Qualifications*, the requirements in this document will take precedence.

The rationale referenced within this document is required in addition to the rationale required in the *Approval Criteria for GCSE Qualifications*.

The qualification may be made available for first teaching from September 2021 with the first opportunity for full certification in summer 2023.

² <https://qualificationswales.org/english/publications/qualification-approval-criteria---gcse/>

³ <https://qualificationswales.org/english/publications/standard-conditions-of-recognition/>

⁴ <https://qualificationswales.org/english/publications/additional-standard-conditions-of-recognition-for-gcse-gce-qualifications/>

⁵ <https://www.qualificationswales.org/media/4739/fair-access-by-design.pdf>

Purpose

GCSE Built Environment introduces learners to, and develops their understanding of, the built environment, including the trades and roles within it, the tools, technologies and materials used in its construction and maintenance, and the processes involved in its design. The qualification allows learners to develop the practical skills involved in different stages of the building life cycle and encourages them to investigate their own built environment and understand the impact it has on the economy, society, culture and the natural environment.

The qualification may be taken by learners who wish to begin their journey towards a career in the construction and built environment sector, whether in trade-based, professional or managerial roles, or by learners who want to increase their understanding of the built environment more generally. The qualification will provide opportunities for centres with different facilities, resources and skills amongst their staff to deliver it. It is also designed to appeal to a broad range of learners with different interests and characteristics. Overall, it will allow choice over how learners will develop their knowledge, skills and understanding in the subject area. It encourages subsidiarity in schools and allows them to explore their own communities and it promotes partnership working with employers.

RR1 – Rationale requirement: *on submitting the GCSE specification the awarding body will need to provide rationale of how the specification fulfils the purpose of the qualification.*

RR2 – Rationale requirement: *on submitting the GCSE specification the awarding body will need to provide rationale of how the specification addresses the findings of Building the Future, Chapter 7: Qualifications taken primarily in schools and Chapter 13, Option A2 (p.77)⁶. Building the Future is Qualifications Wales' review of qualifications and the qualification system in the construction and built environment sector.*

⁶ <https://www.qualificationswales.org/media/3176/building-the-future.pdf>

Subject aims and objectives

1. GCSE Built Environment must enable learners to develop:
 - 1.1 Knowledge and understanding of theories, ideas and concepts related to the built environment;
 - 1.2 Knowledge and understanding of the different stages within the life-cycle of the built environment;
 - 1.3 Knowledge and understanding of how different trades and services relate to each other within the built environment;
 - 1.4 An appreciation of the built environment, including its design, creation, use and maintenance, and its role in their daily lives;
 - 1.5 Enquiry skills by exploring the built environment in the community and world in which they live;
 - 1.6 Skills in planning projects relating to the built environment, using the appropriate equipment to do so;
 - 1.7 Practical skills in designing or constructing elements of the built environment;
 - 1.8 Skills in using evidence to evaluate the use, performance and impact of the built environment, both in relation to their own work and that of others;
 - 1.9 Knowledge and understanding of the tools, materials and processes used in designing, constructing, valuing and using the built environment, including how they change over time.

Subject content

2. The subject content of GCSE Built Environment specifications must meet the subject aims and objectives and include the knowledge, understanding and skills set out for each unit in paragraph 3.
3. The subject content must be split into the following units of study:
 - 3.1 **Unit 1:** Introduction to the Built Environment
 - 3.2 **Unit 2:** Creating the Built Environment (with Designing the Built Environment *or* Constructing the Built Environment pathways)
 - 3.3 **Unit 3:** Exploring the Built Environment.

Unit 1

4. In Unit 1, GCSE Built Environment specifications must enable learners to develop knowledge, skills and understanding in:
- 4.1 identifying and describing ideas and concepts in the built environment;
 - 4.2 explaining concepts in the built environment;
 - 4.3 evaluating evidence, ideas and concepts in the built environment;
 - 4.4 comparing and contrasting ideas and concepts in, and evidence related to, the built environment;
5. The following topic areas and content must be included:

Topics	Content
Sector	The main projects in construction and the built environment, including: <ul style="list-style-type: none">• Buildings and structures• Infrastructure and civil engineering projects• Building services engineering.
Built environment life-cycle	At the stages of: <ul style="list-style-type: none">• Raw material extraction• Manufacturing• Construction• Operation and maintenance• Demolition• Disposal, reuse or recycling.
Types of building and structure	The features and characteristics of low-rise residential dwellings; low-rise commercial, industrial, agricultural, communal, religious and recreational buildings; and different forms of infrastructure construction.
Tools, technologies and materials	<ul style="list-style-type: none">• Main elements and components of low-rise buildings.• Main materials involved in constructing walls, installing building services, fitting rooves and finishing interiors.

<p>Building structures and forms</p>	<ul style="list-style-type: none"> • Renewable technologies and materials, including heat pumps, wind turbines and solar panels. <p>Cellular constructions, rectangular frame constructions, portal frame constructions, heritage and traditional methods.</p>
<p>Sustainable construction methods</p>	<ul style="list-style-type: none"> • The environmental, financial, cultural and social benefits of sustainable construction methods. • Pollution and the preservation of the natural environment and natural habitats, including through decarbonisation. • Sustainable materials used to create building frames, walls, rooves. • Waste disposal, re-use and recycling. • Planning permission, brownfield sites and greenfield sites.
<p>Trades, employment and careers</p>	<p>Careers in the following areas:</p> <ul style="list-style-type: none"> • Architecture • Civil and structural engineering • Construction site management • Surveying • Bricklaying • Plastering • Carpentry and joinery • Electrical • Gas engineering • Plumbing • Painting, decorating and finishing.
<p>Health and safety</p>	<ul style="list-style-type: none"> • Risks for employees, employers and the public during construction and the built environment projects. • Following procedures and carrying out risk assessments. • Relevant legislation, including Control of Substances Hazardous to Health (COSHH) Regulations 2002 (as amended). • Using personal protective equipment. • Safely working with gas, water and electricity. • Working at height and in enclosed spaces.

RR3 – Rationale requirement: on submission of the specification awarding bodies will be required to explain the reason(s) for including in Unit 1 any additional topics that are not listed above.

Unit 2

6. In Unit 2, specifications must require that learners develop knowledge and understanding of, and skills in, creating the built environment. Specifications must require learners to develop knowledge, understanding and skills in either **designing the built environment** or **constructing the built environment**.

7. For **designing the built environment**, specifications must include:

Designing the Built Environment	
Skills	Knowledge and understanding
Identifying and calculating the information required for construction designs.	<ul style="list-style-type: none"> • Area. • Volume. • Length. • Angles. • High-level design requirements.
Writing and setting appropriate project success criteria to meet defined parameters.	With regard to: <ul style="list-style-type: none"> • Levels of tolerance • Timescales • Quality.
Drawing different types of plans (including enlarging and reducing scale drawings).	The conventions of: <ul style="list-style-type: none"> • Block plans • Floor plans • Cross-sections • Scale drawings.
Drawing elevations.	The conventions and requirements of elevations that are: <ul style="list-style-type: none"> • Internal • External <ul style="list-style-type: none"> ○ Rear (North) ○ Front (South)

	<ul style="list-style-type: none"> ○ Left (East) ○ Right (West).
Using the language of drafting.	<ul style="list-style-type: none"> ● BS standards (BS 1992:2007 + A2:2016 and subsequent updates, Building Information Modelling). ● Conventions: <ul style="list-style-type: none"> ○ Annotations ○ Lines ○ Hatching. ● A range of symbols.
Drawing 2D plans of construction designs, by: <ul style="list-style-type: none"> ● Developing plans ● Refining concepts ● Sketching technical drawings. 	The conventions and requirements of 2D plans of construction designs.
Creating 3D virtual models and plans of construction designs and: <ul style="list-style-type: none"> ● Applying scenes, backgrounds and surroundings ● Rendering ● Enhancing proposals ● Creating 360° views ● Adding building components, details and colour. 	The conventions and requirements of 3D virtual models and plans of construction designs.
Evaluating the quality of completed design tasks.	How outcomes can be evaluated against: <ul style="list-style-type: none"> ● Requirements of the brief ● Personally-set success criteria ● Needs of end users, including their safety.

RR4 – Rationale requirement: on submission of the specification awarding bodies will be required to explain the reason(s) for including any additional areas that are not listed above.

8. In **constructing the built environment**, specifications must offer learners the opportunity to develop knowledge, skills and understanding in the following:

- Textiles
- Wood
- Brick
- Plaster
- Decoration
- Tiles
- Electrical
- Plumbing
- Heritage.

Specifications must require learners to develop knowledge, skills and understanding in two of these. Of these experiences, one should be undertaken with a contemporary focus and one should be undertaken with a traditional focus (where relevant to the chosen areas)

9. Specifications must include:

Constructing the Built Environment	
Skills	Knowledge and understanding
Interpreting a range of technical sources of information.	The symbols, conventions and terminology of: <ul style="list-style-type: none"> • Specifications • Building regulations • Drawings • Design briefs.
Planning and organising work that meets specific requirements.	How work is sequenced, planned to meet deadlines and compliant with relevant health and safety practices.
Identifying the resource requirements to meet design requirements.	For the selected trade areas: <ul style="list-style-type: none"> • Tools • Equipment • Personal protective equipment • Materials based on: <ul style="list-style-type: none"> ○ Characteristics ○ Qualities ○ Sustainability ○ Limitations.

Calculating the materials and resources required to complete construction tasks that meet design requirements.	<ul style="list-style-type: none"> • Volume. • Area. • Perimeter. • Time. • Ratio.
Writing and setting appropriate project success criteria to meet the requirements of set briefs.	<p>With respect to:</p> <ul style="list-style-type: none"> • Levels of tolerance • Timescales • Quality.
<p>Preparing for construction tasks by:</p> <ul style="list-style-type: none"> • Preparing materials • Undertaking any other required preparations for each selected task. 	The properties of common materials required to complete construction tasks.
Carrying out techniques in each of the selected areas.	The processes involved in carrying out simple construction tasks.
Removing and safely disposing of materials used in carrying out two of the above techniques.	Safe and environmentally responsible means of disposing of, or recycling, materials.
Use working practices that promote learners' own health and safety and that of others.	<p>Awareness of health and safety practices related to each of the selected areas, including:</p> <ul style="list-style-type: none"> • Ensuring the cleanliness and safety of work areas • Correct personal protective equipment.
Evaluating the quality of completed construction tasks.	<p>How outcomes can be evaluated against:</p> <ul style="list-style-type: none"> • Requirements of the brief • Personally-set success criteria • Needs of end users, including their safety.

RR5 – Rationale requirement: on submission of the specification awarding bodies will be required to explain the reason(s) for including any additional areas that are not listed above.

Unit 3

10. In Unit 3, specifications must require learners to develop their knowledge, skills and understanding in:
- 10.1 Identifying and describing the factors which affect each stage of the building life cycle and the topics in section 11.6;
 - 10.2 Evaluating and analysing each stage within the building life cycle and the topics in section 11.6;
 - 10.3 Researching and understanding the stages and processes involved in the design, construction, value and use of their built environment;
 - 10.4 Presenting their findings in appropriate ways;
 - 10.5 Comparing and contrasting the processes involved in designing, constructing, valuing and using buildings from different periods.
 - 10.6 The following topic areas and content must be included:

Topic	Essential Content
Planning and design stages of buildings and structures	RIBA ⁷ Stages 0, 1, 2, 3 and 4: <ul style="list-style-type: none">• Strategic definition• Preparation and brief• Concept design• Developed design• Technical design and the ways in which their built environment has been planned and designed to meet given needs.
Construction processes	RIBA Stage 5: <ul style="list-style-type: none">• Construction and the ways in which their built environment has been constructed to meet given needs.
Well-being of communities	The impact of their built environment on the social, economic, environmental and cultural well-being of communities.

⁷ RIBA Plan of Work 2013, <https://www.ribaplanofwork.com/PlanOfWork.aspx>, or the most up to date version of this document.

Post-occupancy evaluations	<p>The process of evaluating a building or asset's impact on:</p> <ul style="list-style-type: none"> • Running costs • Staff and client satisfaction • Performance • Health and safety • Comfort <p>and the ways in which post-occupancy evaluations can be used to correct mistakes, inform decision-making and provide benchmarks for further evaluations.</p>
Building maintenance and repair	<p>The processes involved in identifying and carrying out maintenance and repairs of buildings and the impact on users of carrying out these repairs.</p>
Change of use	<ul style="list-style-type: none"> • The processes involved in refurbishing, recycling and re-using building stock and assets in their local environment; • The impact of these actions on individuals and/or communities; • The requirement to ensure that changes of use processes do not negatively impact pre-existing safety features.
Changing practices	<p>The changes in designing and construction processes in their built environment, including:</p> <ul style="list-style-type: none"> • Contemporary buildings • Pre-1919 buildings.

RR6 – Rationale requirement: *on submission of the specification awarding bodies will be required to explain the reason(s) for including any additional topics that are not listed above.*

Assessment objectives

11. The assessment of the knowledge, understanding and skills required in the specification must target the following assessment objectives in line with the indicated weightings:

AO1	Demonstrate knowledge and understanding of the roles, sectors, concepts and processes within the built environment using relevant terminology.	40%
AO2	Apply skills, knowledge and understanding of the built environment in a range of contexts.	40%
AO3	Analyse and evaluate evidence, make reasoned judgements and present conclusions in relation to: - learners' own products/outcomes - the built environment and its impact on people, the economy and the natural environment.	20%

Scheme of assessment

12. GCSE Built Environment specifications must include the following assessment arrangements:

Unit	Arrangements
Unit 1 Introduction to the Built Environment	<ul style="list-style-type: none"> • Must be assessed by examination; • Must be set and marked by the awarding body; • Must use on-screen assessment.
Unit 2 Creating the Built Environment: Designing the Built Environment	<ul style="list-style-type: none"> • Must be assessed through non-examination assessment; • Must require learners to undertake a practical project in which tangible outcomes are produced; • Must require learners to undertake the production of 2D technical drawings and 3D virtual models; • Must include planning, practical and evaluation stages in the project; • Must require centres to deliver a range of practical experiences over time;

	<ul style="list-style-type: none"> • The assessment must present a similar level of challenge and must have the same duration as the assessment of Creating the Built Environment: Constructing the Built Environment.
Unit 2 Creating the Built Environment: Constructing the Built Environment	<ul style="list-style-type: none"> • Must be assessed through non-examination assessment; • Must require learners to undertake a practical project in which tangible outcomes are produced; • Must require learners to produce outcomes in each of the two areas selected for study in this unit; • Must include planning, practical and evaluation stages in the project; • Must require centres to deliver a range of practical experiences over time; • The assessment must present a similar level of challenge and must have the same duration as the assessment of Creating the Built Environment: Designing the Built Environment.
Unit 3 Exploring the Built Environment	<ul style="list-style-type: none"> • Must be assessed through non-examination assessment; • Must require learners to undertake a case study within the local built environment in Wales, where possible; • Must require centres to submit accompanying explanations for candidates that investigate buildings or structures outside of these parameters; • Must encourage learners to present their findings in a variety of forms, including digital.

RR7 – Rationale requirement: *on submission of the specification awarding bodies will be required to explain the ways in which the scheme of assessment balances the considerations of manageability, engagement, reliability and validity, including how:*

- *the assessment arrangements are, overall, manageable for both centres and learners;*
- *the assessment arrangements are, overall, sufficiently engaging for learners and promote and sustain learners' interest in the subject area;*
- *the assessment arrangements will ensure the reliability of assessment outcomes, at centre and national level and over time, for example by identifying and describing:*
 - *the controls which will be applied to candidates and centres during non-examination assessment;*

- *the means of ensuring that centres carry out varied non-examination assessment tasks year on year;*
- *the forms of presentation which may be used by candidates when undertaking non-examination assessment;*
- *the way in which marking criteria will be set for use by teachers and examiners;*
- *how examination assessments will be conducted;*
- *the assessment arrangements are a valid form of assessment for the skills, knowledge and understanding being assessed.*

13. GCSE Built Environment specifications must ascribe 35% weighting to Unit 1 – Introduction to the Built Environment.

14. GCSE Built Environment specifications must ascribe 40% weighting to Unit 2 – Creating the Built Environment.

15. GCSE Built Environment specifications must ascribe 25% weighting to Unit 3 – Exploring the Built Environment.

16. GCSE Built Environment must be unitised.

17. GCSE Built Environment must not be tiered.