

GCSE



**Chief Examiner's and
Principal Moderator's Report
Construction and the
Built Environment**

Summer Series 2024



Foreword

This booklet outlines the performance of candidates in all aspects of this specification for the Summer 2024 series.

CCEA hopes that the Chief Examiner's and/or Principal Moderator's report(s) will be viewed as a helpful and constructive medium to further support teachers and the learning process.

This booklet forms part of the suite of support materials for the specification. Further materials are available from the specification's microsite on our website at www.ccea.org.uk.

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GCSE CONSTRUCTION AND THE BUILT ENVIRONMENT

Chief Examiner's Report

Subject Overview

This series saw a move back to parity achieved in summer 2019 which was the last series before Covid.

It is clear that teachers and pupils have been working hard in preparation for GCSE Construction and were generally well prepared for the summer series of exams. The papers proved a good test for the candidates with an acceptable incline of difficulty which allowed nearly all candidates to make meaningful attempts at questions throughout the papers, while providing opportunities for the more able to distinguish themselves and gain the higher grades available. The standard of answering was in general good, with some outstanding performances in each paper.

The applied vocational nature of the qualification continues to be very popular with candidates. The craft project unit is particularly applicable to those who wish to progress to apprenticeship in a range of construction skills. The unit in construction drawing (CAD) is as applicable to those following a craft apprenticeship as to those candidates who wish to progress to a Level 3 qualification.

CCEA have adopted a normal approach to marking in the summer 2024 series across all units. This was a policy adopted by the Regulators across the UK. This has resulted in the data shown in the following table which is in line with the 2019 outcomes.

Outcome achieved when all four units of this GCSE are combined									
Grade achieved	A*/A	B	C*	C	D	E	F	G	U
Cum %	25.69%	48.29%	64.24%	77.02%	88.73%	95.46%	97.95%	99.24%	100

Assessment Unit 1

Introduction to the Built Environment

The examination paper was structured in a way that provided stretch and challenge opportunities for all candidates. The stronger candidates excelled and demonstrated their advanced knowledge of the subject, accompanied with a high level of spelling, punctuation and grammar. The standard of answers varied with the candidate's ability. The level of language used in papers was deemed to be appropriate by the examiners. Unfortunately, most candidates were inadequately prepared for Question 4, Part (e) and failed to complete a risk assessment appropriately. Question 2 Construction, Part (e) required an element of discussion, which was reasonably well answered with candidates gaining marks for spelling, punctuation, and grammar. The variety of questions and progression within the examination paper allowed for differentiation between pupils of different abilities. The layout of the paper was appropriate with a good range of recall, description, discussion, and evaluative questions. The mark scheme was positive and accepted alternative and innovative answers to all questions. Centres should continue to use the revised GCSE textbook which covers the majority of unit one specification, accompanied with the resources on the GCSE website.

Q1 This question was very well answered. Most candidates demonstrated a good explanation of the built environment. Marks were lost by a minority of candidates who gave inappropriate responses stating the main resources. Most candidates stated an appropriate example of each activity.

Q2 All parts of this question were well answered with most candidates achieving full marks.

Candidates demonstrated a good knowledge of portal frame structures, including materials, uses and the role of the structural engineer. Most candidates demonstrated a good analysis of steel portal framed structures. Candidates discussed the advantages and disadvantages.

Four marks were awarded for the quality of written communication.

Q3 Most candidates achieved high marks. Candidates were well prepared regarding resource considerations, with a range of other appropriate responses accepted. Some candidates did not relate cost, time and labour to construction plant and therefore marks were lost.

Q4 This question relating to Health and Safety was generally very well answered. Candidates demonstrated sound knowledge and understanding of the relevant NI legislation, groups, manual handling injuries, and the correct technique that should be adopted when lifting any safe load. Most candidates did not complete the risk assessment appropriately, particularly calculating the risk (Severity x Likelihood = Risk). Candidates should have related the hazards to working at height.

Q5 This question was answered to a good standard with most candidates achieving high marks.

Most candidates explained the construction terminology correctly with three clear points. A minority of candidates did not understand the term mortar.

Q6 This question was answered to a good standard with most candidates achieving high marks.

Most candidates demonstrated a good knowledge of commercial and community building types, stating the main characteristics.

The readability of the question paper was satisfactory, and the language used deemed appropriate.

Assessment Unit 2 Sustainable Construction

The examination paper was structured in a way that provided stretch and challenge opportunities for all candidates. The stronger candidates excelled and demonstrated their advanced knowledge of the subject, accompanied with a high level of spelling, punctuation and grammar. The standard of answers varied with the candidate's ability. The level of language used in papers was deemed to be appropriate by the examiners. Unfortunately, many candidates were inadequately prepared for Question 3 Part (d) and failed to label the eaves detail correctly. Question 8 Part (d) which asked for an evaluation on Design, Scale and Massing was not well answered by many candidates.

The variety of questions and progression within the examination paper allowed for differentiation between candidates of different abilities. The layout of the paper was appropriate with a good range of recall, description, discussion, and evaluative questions. The mark scheme was positive and accepted alternative and innovative answers to all questions. Centres should continue to use the revised GCSE Construction textbook which covers the majority of the specification, accompanied with the online resources on the CCEA website.

- Q1** This question was generally answered well with many candidates getting full marks for the first two parts. Part (c) was not as well answered with many candidates stating that the alternative energy source was solar. This is the source that is actually used in the house shown in the pre-release material.
- Q2** This was well answered with candidates scaling the drawings correctly. A few candidates did not answer the question using the correct units (mm) as stipulated in the question. Calculating the floor area of bedroom 1 proved difficult for many candidates. In future please make sure calculators are available if stipulated on the front of the script. Two marks were awarded for process of Part (b) although the final overall answer may not have been correct. Please ensure candidates know how to change mm to metres.
- Q3** Part (a) of this question was generally well answered. Parts (b) and (c) proved more difficult for many with candidates showing limited understanding of how to excavate and make a concrete foundation.
- Unfortunately, many candidates were inadequately prepared for Part (d) and Part (e) demonstrating little or no understanding of how to use reinforcement within a foundation or a credible understanding of what pile foundations are.
- Q4** This question was generally very well answered, with many candidates getting full marks. This is an improvement in candidates' performance from previous years.
- Q5** Part (a) was well answered by most candidates completing the drawing in Fig. 4. The hatch patterns in Part (b) were not completed by many candidates.
- Part (c) was generally well answered although a few candidates mixed up the outside with the inside of the sectional structure provided by CCEA.
- Q6** A small number of candidates answered this question well but many showed little or no understanding of facts relating to recycling in terms of stone or concrete. Candidates wrote answers that related to the environment in general rather than the adverse impact of quarry operations on the environment.
- Q7** This was a short 4 mark question. Most candidates answered two of the four questions correctly.

Q8 Question 8 related to a new sports stadium and was generally quite well answered, with well thought out solutions as to the impact of such a project on the local community and how it may help to regenerate an area. The carbon footprint was also considered as having major implications of such a project.

Written Communication skills including spelling also proved difficult for many candidates.

Q9 Question 9 related to a surveyor's report and was not well answered. Only a few candidates identified four different ways of improving energy efficiency. The higher order skill of analysing the Building Conditions Survey was not evident in most responses. Communication skills including spelling also proved difficult.

Supervising Again written Examiner Comments

Note

It would be to the candidate's advantage if they used pencil to complete sketches, rather than pen. Many candidates decided to change a sketch part way through with an untidy scribble which is less than professional.

The readability of the question paper was satisfactory and the language used appropriate.

Principal Moderator's Report

Assessment Unit 3

The Construction Craft Project

Over the course of this year's moderation process, the moderators reported a high level of work completed by the candidates. This indicated the level of skills that the candidates are obtaining during this section of the GCSE Construction course. In this series, centres informed moderators of the highly motivational impact of the controlled assessment tasks on candidates. It was considerably evident that the practical tasks are having an encouraging effect on developing many skills for the candidates, which will benefit them in future construction careers.

Internal standardisation was carried out in most centres. The standard of evaluation work alongside the manufactured piece was high in most centres.

Centres should record in detail on the e-Candidates Record Sheets (CRS) where marks are awarded and deducted. This will speed up the moderation process and clearly identify marks awarded for each section.

Product Accuracy of Tolerances

Most of the candidates were able to gain top marks for this section by achieving 5 tolerances. The tolerances were executed to a very high standard by many candidates, as a result they were rewarded in the top mark band.

On a few occasions, candidates did not fully complete the product, and this affected the mark they could achieve in this section.

A small number of candidates were unable to manufacture the product in its entirety and many tolerances were not achieved. As a result, the candidates lost a considerable number of marks.

Product Suitability and Standard of Joints, Fixings, Components, and Processes

This section of the controlled assessment tasks was completed to a very high standard by many candidates. Therefore, they gained marks in the top section of the marking scheme.

On several occasions, centres awarded candidates full marks when it was evident that there were gaps in the fitting of the step section to the main frame or the tabletop to the main frame. In the marking detail there are 4 marks awarded for this and it was clear that centres were not using this to determine the mark.

On a small number of occasions, the candidates were unable to attach the top section to the table project or the steps. They lost marks as a result.

Most of the tops of the table project were symmetrical and therefore candidates were rewarded as a result.

The 4 through-bridle joints were completed to an acceptable standard by the majority of candidates. A proportion of candidates lost marks due to visible spaces in the joints that were evident on inspection of them. Several centres were not removing marks for gaps in the through-bridle joints. The remaining joints completed by the candidates, which were at the centre and candidates' discretion, also showed gaps. These gaps need to be taken into consideration when applying a mark to this section of the controlled assessment task.

Most of the projects seen by the moderators were square or within the 2mm tolerance.

It was evident the processes completed by the candidates from using e.g., hand saws, chisels, CNC technology, clamping and gluing, making out, were mostly executed to a significantly high standard.

Centres should note that a project that is not fully assembled may lose up to 14 marks.

There were some nice variations in the fitting of the bottom rails of the table, and the majority of cases were spaced perfectly.

Quality of Product Finish

To receive marks in the top mark band the moderators would be expecting to see excellent preparation and an excellent finish applied and this was evident in many craft projects examined. Occasionally candidates had completed excellent preparation and applied a finish of a very high standard, and at times to a professional standard. It is expected this will be achieved by sanding several times and applying several coats of finish to the product. Quite a few times candidates were gaining marks in the top mark band when it was clear that a finish had not been applied properly to the product. Marks were lost as a result.

Many candidates were receiving full marks by the centre when however, it was clear that there were pencil marks, sanding scratches and varnish runs.

Product Evaluation

The overwhelming majority of evaluations completed by the candidates were very detailed and of a high standard. Many of the candidates were able to clearly identify 4 problem areas they encountered during the manufacturing process. They visibly evaluated how they dealt with these problems by using photographs, sketches, and text in a logical and coherent way. On a few occasions candidates did not produce an evaluation and lost marks as a result.

Spelling, grammar and punctuation were very good by the vast majority of candidates.

Unfortunately, a number of centres were awarding full marks for evaluations that did not contain 4 evaluated manufacturing issues they experienced. As a result these centres were adjusted.

Assessment Unit 4

Computer Aided Design

General

The majority of candidates' work was printed to an excellent standard.

The majority of the candidate's evidence was in the correct order and speeded up the moderation process. Drawings need to be numbered 1-10 for moderation.

Drawing 1

Annotated and sectioned parapet detail.

(20 marks)

The majority of parapet drawings were executed to an extremely high standard, and this reflected the skills being acquired by the candidates. Most of the candidates added the required annotation, the title block, and the border. Many of the candidates were able to complete the correct drawing to include the details such as the position of the roof lead covering, the complete roof structure, the 150mm wall installation and the 125mm roof insulation, the weep hole, the position of the DPC, the cavity tray and the external brickwork. On a few occasions candidates completed a similar parapet design to an excellent standard. On many of the drawings candidates were able to successfully hatch the required areas to the appropriate standard. Almost all candidates printed the drawings to scale and presented them in the correct order.

Drawing 2

Four building components scaled 1:50.

(10 marks awarded in Drawings 4 and 6)

In most occasions the moderators reported that the components were drawn to an extremely high standard and inserted in the plan and elevation drawings successfully.

The components inserted into the plans and front elevation must match the components drawn for this section to achieve full marks.

It is important to note that the components need to be drawn; two from the plan and two from the elevation as inserted into the plan and front elevation.

Where these drawings were completed successfully, the components were inserted into the working drawing correctly and candidates were rewarded accordingly.

Drawing 3

Completed ground or first floor plan with accurate openings for insertion of components at 1:50 scale.

(6 marks)

The ground or first floor plan option was completed very well by the candidates. The majority of candidates completed the correct drawing and were able to add a border and title block.

Drawing 4

Completed ground floor plan showing the components inserted correctly at 1:50 scale and

Drawing 5

Completed first floor plan showing the components inserted correctly at 1:50 scale.

(19 marks)

The ground or first floor plan option was completed very well by the candidates. The majority of candidates completed the correct drawing and were able to add a border and title block. On a number of occasions, no measurements or annotation was completed by candidates, and they lost marks as a result. No obvious issues with scale were recorded by the moderators.

A small number of candidates provided drawings with trimming issues, and lost marks as a result.

Drawing 6

Completed front elevation of the specified building supplied by CCEA at 1:50 scale.

(25 marks)

As with previous years the majority of candidates achieved high marks for this specified drawing due to the high standard of drawings they completed. Almost all candidates were able to complete the correct drawing supplied by CCEA.

All candidates were able to present the drawing with a border and title block, the correct components inserted, including the solar panels, chimneys scaled correctly, and lead flashing added and guttering, and downpipes mostly completed in the correct position and completed with no trimming issues. The vast majority also inserted the components they had drawn very successfully into the elevation.

Most candidates were successful in adding the required annotation and levels, however a few candidates did not complete these and lost marks as a result.

On nearly all occasions it was reported that the hatching completed by the candidates was appropriate.

Most of the windows and the front door were inserted correctly and matched what they had drawn previously (Drawing 2).

Drawing 7

Completed working drawing without the client's amendments at 1:100 scale.

(5 marks)

The working drawings that were completed were of an extremely high standard. The majority were positioned and aligned correctly. All completed working drawings had a border and title block. On nearly all occasions there were no concerns with the scale of the engineering drawing and candidates gained full marks as a result.

The drawing contained the correct ground and first floor plans. As it is a working drawing, dimensions are expected with annotation to satisfy marks under "correct drawing". The majority of candidates achieved this to an exceptionally high standard. Only a small number of candidates were unable to complete this drawing.

Drawing 8

A completed rear elevation showing the clients' amendments at 1:50 scale.

(10 marks)

It was a delight to see how the candidates interpreted the client's brief. The standard of output achieved was on the most part excellent. The clients' amendments were clearly defined on the majority of drawings completed. Nearly all drawings completed by candidates had the mandatory annotation with levels present. The drawings were aligned to the plan except on a very few drawings. The interpretation of the clients' amendments was on the most part aesthetically pleasing.

Drawing 9

A completed ground floor plan showing the clients' amendments at 1:50 scale.

(10 marks)

This drawing was completed to an extremely high standard by the majority of candidates. On a small number of occasions room names were missing or wall junctions were inappropriate. On the amended plan the measurements were successfully completed by many candidates.

The plan drawings completed by candidates were aligned to the elevation they completed.

Drawing 10

A working drawing showing the clients' amendments at 1:100 scale.

(5 marks)

The standard of working drawings was excellent by most candidates. The associated views were mostly aligned in the majority of candidates' drawings. The candidates were able to print this drawing to the required scale of 1:100 on an A3 page. All the drawings that were completed had a border and a title block included as detailed in the marking scheme. To fulfil the marking for the correct drawing section, there must be dimensions and annotation present in the drawing, and this was completed to a high standard by the majority of candidates.

In general, the standard of the work completed by the candidates in the majority of instances was excellent and it was clear throughout moderation that the candidates are gaining excellent computer-aided design skills as a result.

It is strongly recommended that centres regularly log-on to the CCEA Construction site to receive up-to-date information, support material and Agreement Trial information.

Contact details

The following information provides contact details for key staff members:

- **Specification Support Officer: Nuala Tierney**
(telephone: 028 9590 6689, email: ntierney@ccea.org.uk)
- **Officer with Subject Responsibility: Crea McCormick**
(telephone: 028 9026 1227, email: cmccormick@ccea.org.uk)



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