VOCATIONAL

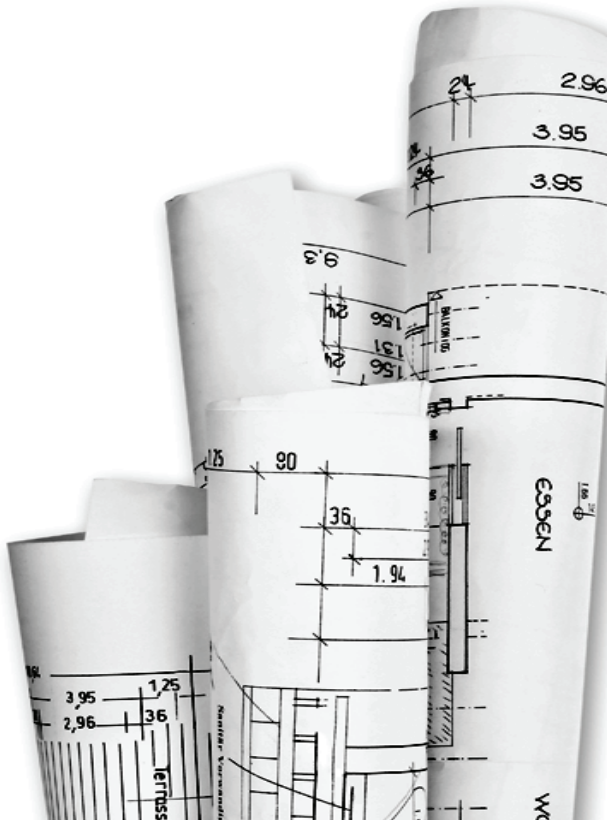
wjec cbac

WJEC LEVEL 1 / 2 AWARD in

DESIGNING THE BUILT ENVIRONMENT

SPECIFICATION

Teaching from 2014
For award from 2015



WJEC LEVEL 1/2 VOCATIONAL AWARD IN DESIGNING THE BUILT ENVIRONMENT

SPECIFICATION

For first teaching from September 2014

SUMMARY OF AMENDMENTS

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2	For internal assessment please consult WJEC's 'instructions for conducting controlled assessment'.	8
	From 2020 candidates **must** achieve a **minimum of a level 1 pass for each unit** in order to be awarded a grade for the qualification.	14
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Contents

1 INTRODUCTION

1.1 Qualification Titles and Codes

WJEC Level 1/2 Vocational Award in Designing the Built Environment.

Qualification Number listed on The Register: 601/0426/0.

Qualifications Wales Designation Number listed on QiW: C00/0573/1.

1.2 Rationale

The WJEC Level 1/2 Vocational Award in Designing the Built Environment offers a learning experience that focuses learning for 14 -19 year olds through applied learning, i.e. acquiring and applying knowledge, skills and understanding through purposeful tasks set in sector or subject contexts that have many of the characteristics of real work.

The qualification is built from discrete units, but allows for both synoptic learning and assessment. Every unit has an applied purpose which acts as a focus for the learning in the unit. The applied purpose is the vehicle through which the learning contained in the unit is made relevant and purposeful. It is also the means by which learners are enthused, engaged and motivated to study the design of the built environment. The applied purpose provides the opportunity for authentic work related learning, but more than this, it will require learners to consider how the use and application of their learning impacts on individuals, employers, society and the environment. The applied purpose will also enable learners to learn in such a way that they develop:

- skills required for independent learning and development;
- a range of generic and transferable skills;
- the ability to solve problems;
- the skills of project based research, development and presentation;
- the fundamental ability to work alongside other professionals, in a professional environment;
- the ability to apply learning in vocational contexts.

Each qualification has been devised around the concept of a ‘plan, do, review’ approach to learning where learners are introduced to a context for learning, review previous learning to plan activities, carry out activities and review outcomes and learning. This approach mirrors many work related activities in architecture and the design of the built environment and also provides for learning in a range of contexts thus enabling learners to apply and extend their learning. As such, the qualification provides learners with a broad appreciation of work in architecture and the design of the built environment and wider opportunities for progression into further education, employment or training.

1.3 Prior learning and Progression

There is no specific requirement for prior learning with this specification. The qualification has been designed to build on the skills, knowledge and understanding acquired at Key Stage 3, particularly skills related to literacy, numeracy, problem solving and enterprise.

The WJEC Level 1/2 Vocational Award in Designing the Built Environment has been designed to develop in learners the skills needed for progression from Key Stage 4 and GCSE learning to further education, employment and training.

The successful completion of this qualification, together with other equivalent qualifications, such as maths and sciences, could provide the learner with opportunities to access a range of qualifications including GCE, apprenticeships, vocationally related and occupational qualifications. These include:

- GCEs in Physics and Environmental Studies;
- Diplomas in Sustainable Construction and Built Environment Design;
- Apprenticeships in surveying and civil engineering

Equally, the skills and understanding developed, including literacy, numeracy, critical thinking and problem solving and creativity and innovation are relevant to any qualification at Level 3, whether 'General' or 'Vocational'.

2. QUALIFICATION STRUCTURE

2.1 WJEC Level 1/2 Vocational Award in Designing the Built Environment Unit Titles

WJEC Level 1/2 Vocational Award in Designing the Built Environment			
Unit Number	**Unit Title**	**Assessment**	**GLH**
9821	Planning potential of construction projects	External	30
9822	Drawing construction plans	Internal	60
9823	Building structures and materials	Internal	30

NB For qualifications awarded <u>from 2020 onwards learners must pass each unit</u> in order to achieve the qualification

2.2 Guided Learning Hours (GLH) and Total Qualification Time (TQT)

Each unit in this qualification has been allocated a number of Guided Learning Hours (GLH). This is the number of guided learning hours that WJEC expects centre to provide to support learners to achieve a unit. Guided learning means activities such as classroom-based learning, tutorials and online learning, which is directly supervised by a teacher, tutor or invigilator. It also includes all forms of assessment which take place under the immediate guidance or supervision of a teacher, supervisor or invigilator.

The total number of GLH assigned to this qualification is 120 hours.

In addition to the GLH, WJEC also specifies a total number of hours that it is expected learners will be required to undertake in order to complete the qualification: this is referred to as the Total Qualification Time (TQT). Activities which can contribute to a qualification's TQT include independent and unsupervised research, unsupervised coursework, unsupervised e-learning and e-assessment and all guided learning.

The total number of TQT assigned to this qualification is 160 hours.

3 UNIT STRUCTURE

Unit title

The unit title summarises in a concise manner the content of the unit.

Guided learning hours (GLH)

Guided learning time represents only those hours in which a tutor is present and contributing to the learning process. In some organisations this is known as 'contact time'. This time includes lecturers, supervised practical periods and supervised study time.

Aim and purpose

The aim and purpose provides a brief and clear summary of the unit. It also indicates the applied purpose for the unit.

Unit introduction

This is written to the learner and gives a summary of the unit content. It sets the vocational context of the unit and highlights the purpose of the learning in the unit.

Learning outcomes

Learning outcomes state what the learner should know, understand or be able to do as a result of completing the learning in the unit.

Assessment criteria

The assessment criteria specify the standard a learner is expected to meet to demonstrate that the learning outcomes of that unit have been achieved.

Unit content

The indicative content defines the breadth and depth of learning for each assessment criteria. It is expected that all the indicative content will be delivered during the programme of learning. It is not required to assess every aspect of the content when assessing the unit. Learners will be expected to apply the knowledge, understanding and skills acquired through the learning to the specifics of the assessment context. In some learning outcomes unit content is given as an example (e.g.). This is used to exemplify the content only and learners can use any examples that they are taught in their summative assessments.

Performance bands

These are provided in internally assessed units. These are used to determine the summative unit grade. Performance bands do **not** add additional requirements to the assessment criteria. Performance bands are used to determine the grade for a unit.

Assessment

WJEC Level 1/2 Vocational Award in Designing the Built Environment units are assessed through controlled internal assessment or external assessment. This section of the unit summarises assessment requirements.

Guidance for delivery

This gives the tutor some ideas on how to deliver the internally assessed units in a vocational setting consistent with the philosophy of the qualification and intent of the unit. A minimum of three sample contexts are provided for each unit. The guidance also gives ideas of vocational settings for the unit and suggests possible contacts that could be made in the delivery of the learning.

4 Assessment

The WJEC Level 1/2 Vocational Award in Designing the Built Environment is assessed using a combination of internal and external assessment.

4.1 External assessment

Unit 1: Planning potential of construction projects will be externally assessed. Details of the external assessment are as follows:

- WJEC provide a set assignment each academic year
- The assessment window takes place within three weeks of May 1st
- A 6 hour timed, supervised assessment
- The assessment may be taken in time blocks to be determined by the centre
- Candidate work should be secured between sessions
- Each session must be logged
- **All** sessions must be supervised
- Each assessment will cover all learning outcomes for the unit
- Each external assessment will involve the candidate in bringing together and making connections between the knowledge, understanding and skills learned throughout the unit and applying these by responding to one or more of the following:
  - A stimulus or issue
  - A design brief or problem
- WJEC will produce a mark scheme which will be used as the basis for marking the external assessment
- Graded Level 1 Pass, Level 2 Pass, Level 2 Merit and Level 2 Distinction. Grades will be awarded on the basis of meeting the performance descriptions given in the assessment mark scheme
- Supervision and timing of externally assessed units must be fully documented in accordance with WJEC requirements.

4.2 Internal assessment

The following units are internally assessed:

- *Unit 2: Drawing construction plans*
- *Unit 3: Building structures and materials*

For internal assessment please consult 'WJEC's Instructions for conducting controlled assessment'. This document can be accessed through the WJEC website (www.wjec.co.uk). Each centre must ensure that internal assessment is conducted in accordance with these controls.

The following principles apply to the assessment of each internally assessed unit:

- Units are assessed through summative controlled assessment;
- Controls for assessment of each internally assessed unit are provided in a model assignment;
- Each internally assessed unit must be assessed independently. Learners may produce a piece of evidence that contributes to assessment criteria for more than one unit. This is acceptable provided it can be clearly attributed to a specified assessment criterion and has been produced under the appropriate controlled conditions for each unit;
- Performance bands are provided for Level 1 Pass, Level 2 Pass, Level 2 Merit and Level 2 Distinction. Evidence must clearly show how the learner has met the standard for the higher grades.

There are three stages of assessment that will be controlled:

- Task setting
- Task taking
- Task marking

Task setting

For internal assessment, WJEC has produced model assignments for each unit. Centres are, however, allowed to modify the assignment within specified parameters. This will allow centres to tailor the assessment to local needs. The model assignment has been written to ensure the following controls are in place:

- Each unit is assessed through one assignment;
- Each assignment must have a brief that sets out an applied purpose. An applied purpose is a reason for completing the tasks that would benefit society, a community, organisation or company. Further details are in the rationale in Section 1.2;
- The assignment can specify a number of tasks but tasks must be coherent, i.e. show how the assessment requirements all contribute to the achievement of the applied purpose of the assignment;
- The assignment must provide each learner with the opportunity to address all assessment criteria and all performance band requirements;
- The assignment must indicate the acceptable forms of evidence. These must conform to those forms set out in the model assignment;
- Where a centre has adapted the model assignment, there must be evidence of quality assuring its fitness for purpose. Sample documentation for this activity is provided with each model assignment.

Task taking

There are five areas of task taking that are controlled: time, resources, supervision, collaboration and resubmission.

Time

Each model assignment will specify the total amount of time available for summative assessment. Centres have the discretion for how that time is allocated to each task.

Resources

The assessor can determine which resources should be provided to all learners to ensure fair and valid assessment takes place. Where specific resource controls must be in place, these will be stated in the model assignment.

Supervision

Learners must normally be supervised by an assessor whilst completing controlled assignment tasks. Model assignments will specify if supervision is not required. Centres must have in place systems to ensure learners cannot access evidence they have been developing outside of supervised activities.

Authentication

Supervision is in place to ensure the authenticity of evidence produced for summative assessment. Assessors are not expected to provide input or guidance to learners during the controlled assessment time. This includes providing formative feedback on the evidence being produced. Assessors can provide guidance on the requirements of the task and remind learners of the performance bands and how they can be interpreted. Assessors must intervene where there is a Health and Safety hazard observed.

Learners can review and redraft evidence independently within the time controls for the assessment.

Learners must sign a declaration to confirm that all evidence submitted for moderation is their own work and that any sources used have been acknowledged. Assessors must sign a declaration to confirm that evidence submitted for moderation was completed under the controlled conditions set out in the model assignments.

Collaboration

The model assignment will indicate whether:

- Group work must take place;
- Group work is forbidden;
- Centres can elect to complete tasks through group work.

Where group work takes place, the following principles must be applied:

- Tasks should allow each member of the group to have full access to all performance bands for all assessment criteria;
- Learners **must** provide an individual response as part of any task outcome;
- Evidence of individual response may include written evidence (e.g. notes, evaluations, mind maps, etc.) and/or audio-visual evidence (e.g. recordings, photographs, drawings, designs, etc.);
- Evidence must be clearly attributable to each individual member of the group;
- Individual contributions must be clearly identified and stated on the accompanying authentication sheet which must be signed by both the teacher and the candidate;
- Assessment of the individual must be based on the individual contribution to the evidence produced;
- Learners achievement must not be affected by the poor performance of other group members;
- Learners' achievement must not benefit from the performance of other group members.

Re-sitting

Learners may re-enter internally assessed units. The learner must submit a new assessment, completed within the same levels of control. They cannot improve previously submitted work.

Learners have one resit opportunity for each assessed unit.

Where an individual learner who has previously submitted group work for assessment wishes to resit an internally assessed unit, one of the following options **must** be taken:

- the learner must create a new piece of work within the same group;
- the learner must create a new piece of work within a new group;
- the learner must create a new piece of work with non-assessed candidates;
- the learner must create an individual piece of work.

The same levels of control for group work, as outlined above, will apply to candidates who choose to re-sit.

Task marking

All marking of evidence must be made against the assessment criteria and performance band statements given in each unit specification. Evidence marked must comply with the controlled requirements set out in the model assignment.

Written evidence must be annotated to show how it relates to the assessment criteria and performance band requirements.

Performance evidence, for example of giving a presentation, must be made on observation records. Observation records will include a description of learner performance as well as a summative statement on the quality of that performance. Where performance is observed by someone other than an assessor, the 'witness' must complete a witness statement. Assessors will need to authenticate the statement either through scrutiny of supporting evidence and/or questioning of the learner and/or witness. If the statement is authenticated, it can be allowed to contribute to the evidence for assessment. Evidence of authentication will also need to be included. Each model assignment that allows performance evidence will include a sample observation record and witness statement.

Marking should only be undertaken by a designated assessor. An assessor should have appropriate expertise in the subject and level for a specified unit. The assessor is responsible for ensuring that:

- Assessment is conducted under specified controlled conditions;
- They are clear about the requirements of the learning outcomes, assessment criteria and performance band statements prior to commencing controlled assessment;
- Evidence presented for assessment is authentic;
- Assessment decisions are accurately recorded;
- Evidence is appropriately annotated;
- Observation records contain sufficient detail for objective corroboration of decisions;
- Judgements are only made against the performance band statements.

4.3 Synoptic assessment

Synoptic assessment is
'a form of assessment which requires a candidate to demonstrate that s/he can identify and use effectively in an integrated way an appropriate selection of techniques, concepts, theories and knowledge from across the whole vocational area, which are relevant to a key task'
'Qualifications for 14 -16 year olds and Performance Tables: Technical guidance for awarding organisations' DfE p7

All units in WJEC Level 1/2 Vocational Award in Designing the Built Environment have been designed to require learners to develop their learning by working towards work related purposeful tasks. Learners will select and apply their learning in completion of these tasks.
In addition, *Unit 3: Building Structures and materials* allows learners to reinforce their learning from units 1 and 2 in different contexts in order to propose solutions to review options for structures and materials in construction projects.

4.4 Standardisation

Centres are expected to standardise internal assessment decisions. This is the process by which centres ensure that all learners are judged to the same standard across different assessors, teaching groups and from year to year. Evidence of standardisation should be submitted with learner evidence.

Where more than one assessor is involved, the centre must appoint a Lead Assessor. The role of the Lead Assessor is to:

- Document all activities;
- Ensure that the assignment presented to learners is fit for purpose and complies with all controls;
- Ensure all assessors have appropriate documentation in place to support fair and valid assessment decisions;
- Ensure all assessment activities are in accordance with the task taking controls for the unit;
- Sample assessment judgements at appropriate times to ensure the performance bands are correctly and consistently applied;
- Provide feedback to assessors;
- Provide support to assessors on interpretation of performance band requirements.

4.5 Training Lead Assessors

WJEC will provide training for Lead Assessors and assessors each academic year. Assessor support material, including sample documentation, will also be made available to assessors and Lead Assessors.

5 GRADING

Unit achievement is based on a learner's ability to meet the assessment criteria. Units can be awarded a summative grade of Level 1 Pass, Level 2 Pass, Level 2 Merit or Level 2 Distinction.

Awarding a summative unit grade

Internally Assessed Units

Performance bands have been written to enable learners to demonstrate their ability against the assessment criteria. There are no additional requirements to achieve higher grades.

To be awarded a **Level 1 Pass** grade for a unit, a learner must meet all of the minimum requirements of all assessment criteria for the unit, as set out in the Level 1 Pass performance band.

To be awarded a **Level 2 Pass** grade for a unit, a learner must additionally meet all of the Level 2 pass minimum requirements, as set out in the Level 2 Pass performance band.

To be awarded a **Level 2 Merit** grade for a unit, a learner must additionally meet all of the Merit minimum requirements, as set out in the Merit performance band.

To be awarded a **Level 2 Distinction** grade for a unit, a learner must additionally meet all of the minimum requirements, set out in the Distinction performance bands.

Externally Assessed Units

All Learning Outcomes will be assessed at every assessment opportunity. Assessment Criteria will be sampled in each series. Performance descriptions will be written for each sampled assessment criteria. Externally assessed units will be graded on the same basis as internally assessed units (see above).

Grading the qualification

Each WJEC Level 1/2 Vocational Award in Designing the Built Environment will be graded Level 1 Pass, Level 2 Pass, Level 2 Merit, Level 2 Distinction or Level 2 Distinction*. The qualification grade is awarded on the basis of the aggregation of unit grades achieved. Each unit grade achieved by learners will be translated to a Unit Mark for the purpose of awarding the qualification.

From 2020 candidates **must** achieve a **minimum of a level 1 pass for each unit** in order to be awarded a grade for the qualification.

Points available are shown in the following table:

Unit	**Points per unit**			
	Level 1	**Level 2 Pass**	**Level 2 Merit**	**Level 2 Distinction**
Unit 9821	1	2	3	4
Unit 9822	2	4	6	8
Unit 9823	1	2	3	4

The qualification grade is then calculated by comparing the learner's point score to the qualification grade table below.

Qualification	**Overall grading points**	
WJEC Level 1 Vocational Award in Designing the Built Environment	Pass	4 - 6
WJEC Level 2 Vocational Award in Designing the Built Environment	Pass	7-10
	Merit	11-13
	Distinction	14 -15
	Distinction*	16

6 UNITS

Unit 1 Planning potential of construction projects

WJEC unit entry code 9821

Guided learning hours: 30

Aim and purpose

The purpose of this unit is for learners to develop the skills needed to report on the potential of a proposed construction project.

Unit Introduction

Can you build anything anywhere? Why does it seem like more places are getting flooded? How long does it take to get planning permission? Who puts the electric and gas into new housing developments? Why do they build shopping centres so far from the town? Why don't they build shops and schools when they build new houses?

If someone wants to add an extension to their home, add new office buildings on their land or turn a field into a sports centre, they need to make sure they meet planning requirements. Some developments don't need planning permission, but most planned developments will affect someone in some way. Planning officers work for local authorities making decisions about what construction projects can go ahead. Building inspectors ensure that those construction projects meet regulations. Often, even before the local authority receives planning requests, there have been surveyors, architects and builders involved in advising clients about whether their ideas for development will meet requirements.

Through this unit you will learn about the planning process. You will learn about how land and buildings have different levels of protection that can affect any development plans. You will also learn about the important things that need to be considered to get planning permission for a development project. You will learn about the infrastructure of an area and gain understanding of both the limitations and opportunities that this can have on planned developments. Through the development of communication skills, you will learn how to use your knowledge and understanding to report on the feasibility of a proposed construction development project.

Learning outcomes	**Assessment criteria**	**Content**
The learner will:	*The learner can:*	

LO1 understand planning requirements for construction projects	**AC1.1** outline protection given to **designated areas**	**Designated areas**
		• Listed buildings
		• Protected areas
		  ○ Green belt
		  ○ National Parks
		  ○ Areas of Outstanding Natural Beauty (AONB)
		  ○ Sites of Special Scientific Interest (SSSI)
		  ○ Heritage Coast
		  ○ World Heritage Sites
		  ○ Environmentally Sensitive Area (ESA)

	AC1.2 describe the **planning process** for construction projects	**Planning process** • Agencies and individuals involved • Stages in the process • Timescale • Costs • Information required
	AC1.3 explain **planning consent considerations** for construction projects	**Planning consent considerations** • Ownership • Protection orders • Utility restrictions • Neighbours • Proposed size and scale of development • Proposed use of development • Materials • General access
LO2 understand how infrastructure influences design	**AC2.1 interpret maps**	**Maps** For the purpose of this unit, maps are a representation of the features of an area in the following formats: • Ordnance survey maps • Sketch maps • Web based maps e.g. satellite

Learning outcomes	**Assessment criteria**	**Content**
The learner will:	*The learner can:*	
		Interpret • Services • Contours • Symbols • Surface features
	AC2.2 describe how **utilities** are distributed to the built environment	**Utilities** • Electricity • Gas • Water • Waste • Communications
	AC2.3 explain how **infrastructure** affects design	**Infrastructure** • Utilities • Services • Terrain
LO3 be able to report on potential of built environment projects	**AC3.1** use **language** appropriate to purpose and audience	**Language** • Grammar, spelling, punctuation, syntax • For providing information • Formal tone • Formal style • For sustaining audience interest • Technical language
	AC3.2 structure reports	**Structure** By use of the following techniques • Use of headings • Use of introduction • Synthesising content • Sequencing information • Maintaining focus in content
	AC3.3 present **supporting information**	**Supporting information** • Images • Drawings • Maps

Assessment

This unit is externally assessed.

The specification for the external assessment is as follows:

- Assignment available each academic year and must be opened after May 1st each year
- It is a 6 hour timed, supervised assessment
- Learners are not allowed to collaborate during times when they are working on assessment tasks
- The externally set assignment will set out the resources that must be provided for all learners
- Learners must complete the assessment within three weeks of the centre opening the assignment
- Centres must ensure that where learners complete the external assessment in more than one sitting, there are processes in place to ensure that learners cannot access their evidence between sittings
- Each session must be logged. A time sheet will be provided
- Each assessment will cover all learning outcomes for the unit. It will indicate which assessment criteria are targeted for the assessment
- Each external assessment will involve the learner in bringing together and making connections between the knowledge, understanding and skills learned throughout the unit and applying these by responding to one or more of the following:
    - A stimulus or issue
    - A design brief or problem
- WJEC will produce a mark scheme which will be used as the basis for marking the external assessment.
- Graded Level 1 Pass, Level 2 Pass, Level 2 Merit and Level 2 Distinction
- Supervision and timing of externally assessed units must be fully documented in accordance with WJEC requirements

Making teaching vocationally relevant

It is important that learners recognise the knowledge and understanding they develop are vocationally relevant. There are a number of ways in which this can be achieved:

- Organising visits to sites of planned construction projects
- arranging guest speakers such as local planning officers
- carrying out activities based around a work-based scenario

The following are examples of approaches to delivery which could be used to enhance the learners understanding of the vocational importance of health and safety in scientific investigations.

Example 1

Learners are invited by a construction company to visit a site of one of their completed development projects. During the visit, learners are shown different aspects of design that had to be incorporated into the project to meet planning requirements. Learners are later taken to another site where a development project is planned but not yet started. Learners are asked to explore the area and identify the issues that would need to be considered for planning consent. Learners work in small groups and present their conclusions to representatives of the construction company. Learners are given feedback on their content and the construction company then share with learners the factors they took into account.

Example 2

A representative of the local authority planning department, such as a planning apprentice, visits the centre and provides details of the planning process. Learners are then provided with anonymised summaries or extracts of planning applications and are asked to give their assessments on whether the proposals should be passed. Learners work in small groups to review the information given. They then present their conclusions to the local authority representative. Learners are then given feedback by the representative, including the assessments made by the local authority.

Example 3

A community group want to add an extension to their local community centre. They want to add an office and kitchen as well as a sports hall with shower and toilet facilities. They ask learners to carry out a feasibility study on their initial ideas. Learners carry out an investigation, including site visits and internet research, to form conclusions from their findings. A representative of a local surveyor gives the learners input on producing a technical report. Learners then work in small groups to prepare a written report on their conclusions to representatives of the community centre. A representative of the surveyor and the community centre provides feedback on the quality and clarity of their report.

Making Contacts

Examples of organisations that may be approached to provide help include:

- architects
- local authorities
- surveyors
- community groups

Unit 2 Drawing construction plans

WJEC unit entry code 9822

Guided learning hours: 60

Aim and purpose

The purpose of this unit is for learners to develop the skills needed to use computer software to present drawings of construction designs.

Unit Introduction

How can I make drawings look professional? Can I draw buildings on the computer? How can I show part of a building in more detail? What does a builder need to see in a drawing that is different to the client? How do I make my drawings look real?

Clients like to know what the money they are spending on a construction project will look like when it is finished. Builders need to know the detail of what they are being asked to build, including how it will be constructed. There are standards and conventions used when drawing building designs to make sure that everyone understands them. Drafting technicians and architects will use these to draw a design but planning officers, builders and clients will use them to make sure they meet building regulations and their own requirements.

Through this unit you will learn how to draw building designs. You will develop drafting skills as well as skills to use computer software. You will develop and apply mathematical techniques to ensure that your proposed building is fit for purpose. You will learn to put all of this together in a way that presents to a client what the building design will look like.

Learning outcomes	**Assessment criteria**	**Content**
The learner will:	*The learner can:*	
LO1 be able to use mathematical techniques for construction designs	**AC1.1** identify **information** requirements for construction designs	**Information** • Area • Volume • Length • Angles • Design requirements
	AC1.2 calculate **information** required for construction designs	**Information** • Area • Volume • Length • Angles

LO2 be able to draw construction designs	**AC2.1** draw **plans**	**Plans**
		• Block plans
		• Floor plans
		• Cross-sections
		• Scale drawings
		  ○ Enlarge
		  ○ Reduce

	AC2.2 draw **elevations**	**Elevations**
		• Internal
		• External
		  ○ Rear (North)
		  ○ Front (South)
		  ○ Right(East)
		  ○ Left (West)

	AC2.3 use **language** of drafting	**Language** • BS standards (BS1192:2007 and subsequent updates, Business

Learning outcomes	**Assessment criteria**	**Content**
The learner will:	*The learner can:*	

		Information Modelling)
		• Conventions
		  ○ Annotation
		  ○ Lines
		  ○ Hatching
		• Symbols

LO3 be able to use computer software for on screen 3D modelling of construction designs	**AC3.1** draw **2D** plans of construction designs	**2D Drafting and Drawing** • Develop plans • Refine concept • Sketch technical drawings
	AC3.2 draw **3D** plans of construction designs	**3D** • Apply scenes/backgrounds/surroundings • Rendering • Enhance proposals • 360^{O} views
	AC3.3 add **features** to 3D plans of construction designs	**Features** • Animation • Colour • Import images • Detail • Environment

		Performance bands			
Learning Outcome	**Assessment criteria**	**Level 1 Pass**	**Level 2 Pass**	**Level 2 Merit**	**Level 2 Distinction**
LO1 be able to use mathematical techniques for construction designs	**AC1.1** identify information requirements for construction designs	Identifies a limited range of information requirements for construction designs	Identifies information requirements for construction designs		
	AC1.2 calculate information required for construction designs	Calculates a range of information required for construction designs. Some calculations are incorrect.	Accurately calculates a range of information required for construction designs. Answers may have some minor inaccuracies and errors in use of units of measurement	Accurately calculates a range of information required for construction designs. Answers may have some errors in use of units of measurement	Accurately calculates a range of information required for construction designs. Answers are presented using appropriate units of measurement
LO2 be able to draw construction designs	**AC2.1** draw plans	A limited range of plans are drawn with limited detail and some accuracy.	A range of plans are drawn which are mainly neat. There may be some inaccuracies limited and detail	A range of plans that are mainly accurate, are neatly drawn with some detail	Accurately and neatly draws a range of plans with detail
	AC2.2 draw elevations	A limited range of elevations of construction design are drawn with some accuracy	A range of elevations of construction design are drawn which are mainly neat. There may be some inaccuracies	A range of elevations of construction designs are drawn which are mainly accurate and neat	
	AC2.3 use language of drafting	Uses a limited range of symbols, standards and conventions in a limited range of drawings. There may be some inaccuracies and omissions.	Uses mainly appropriate symbols, standards and conventions in a range of drawings. There may be inaccuracies and omissions.	Accurately uses appropriate symbols, standards and conventions in a range of drawings. There may be some minor inaccuracies and omissions.	.

		Performance bands			
Learning Outcome	**Assessment criteria**	**Level 1 Pass**	**Level 2 Pass**	**Level 2 Merit**	**Level 2 Distinction**
LO3 be able to use computer software for on screen 3D modelling of construction designs	**AC3.1** draw 2D plans of construction designs	Computer software is used to draw 2D plans of construction designs. There may be some inaccuracies	Computer software is used to draw 2D plans of construction designs. Drawings are mainly accurate		
	AC3.2 draw 3D plans of construction designs	Computer software is used to generate 3D visualisation of construction designs. There may be significant inaccuracies	Computer software used to model 3D visualisation of construction designs. Modelling is mainly accurate	Computer software used efficiently to accurately model 3D visualisation of construction designs	
	AC3.3 add features to 3D plans of construction designs	A limited range of features are added to 3D construction designs	A range of features are added to 3D construction designs that are mainly appropriate	A range of appropriate features are added to 3D plans of construction designs which enhance their presentation	A wide range of appropriate features are added to 3D plans of construction designs to enhance their presentation

Assessment

Requirements for centres

This unit is internally assessed and externally moderated. All assessment must be conducted under controlled assessment conditions and controls have been determined for each stage of the assessment process: task setting, task taking and task marking.

Task setting:

To assist centres in the assessment of this unit, WJEC has provided a model assignment along with guidance and criteria related to using it. The model assignment consists of tasks that are applied and holistic in their approach. Model assignments are designed so that they can be used as they are or adapted by centres to fit with the local sector needs and allow the usage of local resources available to the centre. The model assignment includes information on which aspects of the assignment can be adapted.

Task taking:

Under the process of task taking, controls are set for the key aspects of time, resources, supervision and collaboration.

- The time taken will be specified within the model assignment.
- Resources must be provided that give learners fair and full access to the marking criteria and are appropriate for the assessment and requirements of the unit. Details of specific controls will be given within the model assessment.
- Information on where direct supervision is required is provided in the model assignment.
- Guidance on collaboration, and where it is permitted, will be given with the model assignment.

Task marking:

The centre must mark learner's assessment evidence against the performance bands for each assessment criteria. The performance bands describe the expected depth and/or breadth at which the assessment criterion has been achieved by the learner.

Making teaching vocationally relevant

It is important that learners recognise the knowledge and understanding they develop are vocationally relevant. There are a number of ways in which this can be achieved:

- providing work experience within a workplace, such as an architect's office
- arranging master classes by drafting technicians
- carrying out activities based around a work-based scenario

The following are examples of approaches to delivery which could be used to enhance the learners understanding of the vocational importance of health and safety in scientific investigations.

Example 1

Learners are provided with a master class from an apprentice CAD technician or undergraduate from a local university on a particular aspect of drafting, such as cross sections. The apprentice then gives learners an example of a client brief or sketch that the learners develop through hand drawings and then using computer software to draw a design that meets the client brief. The apprentice then gives the learner feedback on how well it met the brief as well as on technical aspects of the drawing.

Example 2

A construction company provides the centre with examples of construction projects they have developed. Learners work on these in small groups, in order to develop hand drawings of designs. The construction company provide one of their apprentices to provide feedback on their drawings and share with them the drawings that were developed and used for the construction projects. Learners also see images of the actual buildings once constructed.

Example 3

A local allotment group want to have a small building that can be used to sell their produce. It needs a small storage area that can be secured and a small area where customers can pay for goods. Learners visit the allotment to visualise the location and appreciate the scale of the building they are asked to design. Learners work in small groups to take measurements. Learners then design the building and draw a floor plan. They then develop a 3D model of their design and present this to members of the allotment group. They are given feedback on their design and their presentation.

Making Contacts

Examples of organisations that may be approached to provide help include:

- universities
- architects
- local authorities
- housing associations
- community groups
- construction companies

Unit 3 Building structures and materials

WJEC unit entry code 9823

Guided learning hours: 30

Aim and purpose

The purpose of this synoptic unit is for learners to draw on their learning related to planning potential and design of construction projects and new learning from this unit, to review options for the structures and materials need to realise construction projects.

Unit Introduction

Why aren't all buildings made of stone? Can you use any wood in a building? How come buildings don't collapse under heavy snow? How do you make wood stronger? Do all buildings have to be constructed sustainably? Are solar panels worthwhile?

Whether planning an extension, a renovation or a new build the types of materials and structures that are used must ensure they deliver a safe and efficient building and one that meets planning requirements and financial constraints. One of the important considerations for many clients today is making a property sustainable. This could be through using sustainable materials, materials that are sourced sustainably or having a building that uses sustainable energy sources. Increasingly, use of heritage materials, structures and processes is important in the architectural design of buildings. Architects, planning officers and building contractors will be involved in advising and presenting options to clients on which materials and structures are appropriate.

Through this unit you will learn about different types of materials and structures that are used in buildings. You will learn about the factors that need to be considered to make the right choices. You will also learn about sustainable materials and processes used in construction and the effect they have on the operation of a building. Together with your learning from planning potential and design of construction projects, you will be able to review options and select the best one to take for a specific construction project.

Learning outcomes	**Assessment criteria**	**Content**
The learner will:	The learner can:	
LO1 understand structures of buildings	**AC1.1** describe functions of **building elements**	**Building elements** • Foundations • Ground floors • Walls • Upper floors • Roofs • Doors and windows • Services

	AC1.2 explain how **external factors** affect structures	**External factors**
		• Forces
		  ○ Compression
		  ○ Tension
		• Weather
		• Cost
		• Aesthetics
		• Environment

	AC1.3 assess suitability of **structural forms** of buildings	**Structural forms** • Cavity wall • Timber frames • Steel frames • Solid walls • Prefabricated

LO2 understand how properties of materials affect their use in buildings	**AC2.1** describe properties of **materials**	**Materials**
		• Natural
		  ○ Stone
		  ○ Slate
		• Processed

	AC2.2 explain how properties of **materials** can be changed	

Learning outcomes	**Assessment criteria**	**Content**
The learner will:	The learner can:	
		○ Timber ○ Processed ○ Concrete ○ Bricks ○ Metals • Manufactured ○ Plastic ○ Cement
	AC2.3 explain how materials affect **economics** of buildings	**Economics** • Build costs • Running costs
LO3 understand how buildings can be sustainable	**AC3.1** explain how **forms of energy** impact on design	**Forms of energy** • Gas • Electricity • Photovoltaic
	AC3.2 describe **sustainable materials** used in constructing buildings	**Sustainable materials** • Ecological concrete • Cotton/wool/paper fibre insulation • Flooring • Roofing • Glass • Low VOC paints • Non toxic /renewable/recycled products
	AC3.3 describe how materials used in constructing buildings can be **sourced** sustainably	**Sourced** • Certificated suppliers • Recycle/reuse • Locally produced materials

Learning outcomes	**Assessment criteria**	**Content**
The learner will:	The learner can:	
		• Transportation used • Green Deal
	AC3.4 explain how **use** of buildings can be made sustainable	**Use** • Waste reduction • Capture and use of natural resources e.g. water • Energy efficiency • Maintenance of building and environment • Minimise pollution e.g. air, noise • Minimise environmental degradation

		Performance bands			
Learning Outcome	**Assessment criteria**	**Level 1 Pass**	**Level 2 Pass**	**Level 2 Merit**	**Level 2 Distinction**
LO1 understand structures of buildings	**AC1.1** describe functions of building elements	Outlines in general terms functions of building elements	Describes functions of a range of building elements for a specified construction project		
	AC1.2 explain how external factors affect structures	Explains in general terms how external factors affect structures	Explains how a range of external factors affect structures of a specified construction project. Some factors may be generalised. Evidence may be descriptive with some reasoning	Explains with some detail how a range of appropriate external factors affect structures of a specified construction project. Most evidence is related to the construction project	
	AC1.3 assess suitability of structural forms of buildings	Explains in general terms the suitability of structural forms for buildings. Evidence is mainly descriptive.	Explains the suitability of structural forms for a specified construction project. Some considerations are appropriate although some are general. Evidence may be descriptive with some reasoning	Explains with some detail the suitability of structural forms for a specific construction project. Most evidence is related to the construction project	Assesses with clear and detailed reasoning the suitability of structural forms for a specified construction project
LO2 understand how	**AC2.1** describe properties of materials	Outlines in general terms properties of materials used in	Describes relevant properties of a range of materials used in a		

		Performance bands			
Learning Outcome	**Assessment criteria**	**Level 1 Pass**	**Level 2 Pass**	**Level 2 Merit**	**Level 2 Distinction**
properties of materials affect their use in buildings		construction	specified construction project		
	AC2.2 explain how properties of materials can be changed	Explains in general terms how properties of materials can be changed. Evidence is mainly descriptive	Explains how properties of a range of materials can be changed to meet requirements of a specified construction project. Some evidence may be generalised. Evidence may be descriptive with some reasoning	Explains with some detail how properties of a range of materials can be changed to meet requirements of a specified construction project	
	AC2.3 explain how materials affect economics of buildings	Explains in general terms how choice of materials affects the economics of buildings. Evidence is mainly descriptive	Explains how the choice of materials affects the economics of a specified construction project. Some evidence is relevant to the specified project although some is general. Evidence may be skewed towards either construction or running of the building. Evidence	Explains with some detail how the choice of materials affects the economics of a specified construction project. Most evidence is relevant to the specified project.	Explains with clear and detailed reasoning how the choice of materials affect the economics of a specified construction project

		Performance bands			
Learning Outcome	**Assessment criteria**	**Level 1 Pass**	**Level 2 Pass**	**Level 2 Merit**	**Level 2 Distinction**
			may be descriptive with some reasoning		
LO3 understand how buildings can be sustainable	**AC3.1** explain how forms of energy impact on design	Explains in general terms how forms of energy impact on design. Evidence is mainly descriptive	Explains how forms of energy impact on design of specified construction project. Some evidence is relevant to the specific project although some is general. Evidence may be descriptive with some reasoning	Explains with some detail how forms of energy impact on design of specified construction project	
	AC3.2 describe sustainable materials used in constructing buildings	Outlines in general terms sustainable materials used in constructing buildings	Describes a range of relevant sustainable materials for a specified construction project		
	AC3.3 describe how materials used in constructing buildings can be sourced sustainably	Outlines in general terms how materials used in constructing buildings can be sourced sustainably	Describes how materials used in constructing buildings for a specified construction project can be sourced sustainably. Some evidence may be generalised	Describes in some detail how materials used in constructing buildings for a specified construction project can be sourced sustainably	
	AC3.4 explain how use of	Explains in general terms how use of	Explains how use of specified buildings	Explains with some detail how use of	Explains with clear and detailed

		Performance bands			
Learning Outcome	**Assessment criteria**	**Level 1 Pass**	**Level 2 Pass**	**Level 2 Merit**	**Level 2 Distinction**
	buildings can be made sustainable	buildings can be made sustainable. Evidence is mainly descriptive	can be made sustainable. Some evidence is relevant to the specified project although some is general. Evidence may be descriptive with some reasoning	specified buildings can be made sustainable. Most evidence is relevant	reasoning how use of specified buildings can be made sustainable

Assessment

Requirements for centres

This unit is internally assessed and externally moderated. All assessment must be conducted under controlled assessment conditions and controls have been determined for each stage of the assessment process: task setting, task taking and task marking.

Task setting:

To assist centres in the assessment of this unit, WJEC has provided a model assignment along with guidance and criteria related to using it. The model assignment consists of tasks that are applied and holistic in their approach. Model assignments are designed so that they can be used as they are or adapted by centres to fit with the local sector needs and allow the usage of local resources available to the centre. The model assignment includes information on which aspects of the assignment can be adapted.

Task taking:

Under the process of task taking, controls are set for the key aspects of time, resources, supervision and collaboration.

- The time taken will be specified within the model assignment.
- Resources must be provided that give learners fair and full access to the marking criteria and are appropriate for the assessment and requirements of the unit. Details of specific controls will be given within the model assessment.
- Information on where direct supervision is required is provided in the model assignment.
- Guidance on collaboration, and where it is permitted, will be given with the model assignment.

Within WJEC model assignments, timing may be suggested for some individual tasks within the overall assessment time. The purpose is to give consortia additional guidance to help to manage the assessment task.

Task marking:

The centre must mark learner's assessment evidence against the performance bands for each assessment criteria. The performance bands describe the depth which the assessment criterion has been achieved by the learner.

Making teaching vocationally relevant

It is important that learners recognise the knowledge and understanding they develop are vocationally relevant. There are a number of ways in which this can be achieved:

- organising visits to sites of planned construction projects
- arranging guest speakers such as local planning officers
- carrying out activities based around a work-based scenario

The following are examples of approaches to delivery which could be used to enhance the learners understanding of the vocational importance of health and safety in scientific investigations.

Example 1

Learners are invited by a construction company to visit a site of one of their heritage development projects. During the visit, learners are shown different aspects of design that had to be incorporated into the project to ensure they are using sustainable materials and practices. Learners are later taken to another site where a development project is planned but not yet started. Learners are given a range of options that are being considered for sustainable development. Learners work in small groups and present their conclusions to representatives of the construction company. Learners are given feedback on their content and the construction company then share with learners the proposals they are following.

Example 2

Undergraduates from a local university give learners a master class on properties of materials, including practical experiments to test the materials, suing equipment available in the university. Learners are then provided with details of a series of case studies and possible materials that can be used. Learners work in small groups to review the information given. They then present their conclusions to undergraduates, who provide feedback on their choices.

Example 3

A water activities club are seeking funding to build a sustainable clubhouse. This will be based on the coast and will be used to store their equipment and provide changing and social facilities. They have had outline plans developed and have some ideas for how it should be built, based on information from different contractors. They provide some information that they have been given about the different options and ask learners to suggest which they should follow. Learners work in groups and prepare a presentation to club members. Club members provide feedback on their recommendations as do representatives of local planning department.

Making Contacts

Examples of organisations that may be approached to provide help include:

- architects
- local authorities
- building suppliers
- contractors
- surveyors
- community groups

7 ENTRY PROCEDURES

WJEC Level 1/2 Vocational Award in Designing the Built Environment will be available for certification from June 2015.

Thereafter, each qualification will be available for certification each June.

Entries for the June series must be submitted no later than 21 February.

Candidates may resit internally assessed and externally assessed units **once only,** the best grade will be used for aggregation. Should candidates wish to enter any unit for a third time, **no results** from units taken previously may be used in aggregating the new grade, and all units in the qualification must be taken again.

Unit entry

Entry for individual units must be made by submitting the relevant unit codes as indicated on each unit of the specification.

Qualification entry

Learners will be entered for the qualification when entering for aggregation (cash-in). Aggregation does not take place automatically: it is necessary to enter the relevant code for aggregation to take place.

8 EXTERNAL MODERATION

The consistency of assessment practices and decisions across centres will be assured through the external moderation of a sample of work.

Each centre will have access to a consultative moderator. The consultative moderator will be available to discuss assessment requirements with centres.

For each series where learners are entered, centres will submit a sample, according to the formula below.

Total number of candidates	***Work to be submitted***
1-10	All
11-99	10 to cover a representative sample of Level 1 Pass, Level 2 Pass, Level 2 Merit and Level 2 Distinction candidates
100-199	15 to cover a representative sample of Level 1 Pass, Level 2 Pass, Level 2 Merit and Level 2 Distinction candidates
200+	25 to cover a representative sample of Level 1 Pass, Level 2 Pass, Level 2 Merit and Level 2 Distinction candidates

** The score is based upon the total points the learners obtain for their units before converting to a qualification grade.*

Centres should ensure they keep all learner portfolios not sent to the moderator in their possession for two months after the closing date for sending samples for moderation. WJEC may require all portfolios for moderation and centres must be able to comply immediately with such a request.

Centres should submit a sample for **each unit** that includes:

- The controlled assignment brief used to set the assessment activity;
- A controlled assessment activities sheet completed and signed by the assessor to confirm that the controls for the unit, including authenticity of evidence, have been applied;
- Completed mark record sheets outlining which performance bands are met by the evidence;
- All evidence produced by learners in completion of the controlled assessment, annotated appropriately by the assessor.

Moderators will review all evidence presented to ensure standards are aligned. Evidence will be judged against the following criteria:

- Task setting – were tasks set within the controls set by WJEC in the model assignment?
- Task taking – is there evidence that tasks were completed under the controlled conditions set out in the model assignment?
- Performance bands – does the evidence support assessor's judgement of a learner against national standards?
- Annotation – is the evidence produced by learners appropriately annotated?
- Authentication- is it clear that the evidence submitted was authentically produced by the learner?
- Standardisation – is there evidence of effective standardisation/internal quality assurance within the centre?

Timetable

Samples of work must be submitted for external moderation, and related mark sheets returned to WJEC by 5 May for the June series. Centres will need to ensure that internal submission dates are set sufficiently in advance of this to allow for authentication, assessment and standardisation.

Feedback

The outcome of moderation will be to either accept or amend a centre's assessment decisions. Guidance on actions needed before re-sitting of specified units at a subsequent moderation series will be also be provided.

Feedback will be provided through a centre moderator's report for each certification title, covering the units entered by the centre and will be accessible through WJEC secure website. The report will address the criteria referred to above.

A Principal Moderator's report will be provided for each series.

9 AWARDING AND REPORTING

Awarding and reporting of results in WJEC Level 1/2 Vocational Award in Designing the Built Environment will take place in August of each year.

A **Qualification Certificate,** issued at a later date, will confirm the

- Title
- Level
- Grade of qualification (Level 1 Pass, Level 2 Pass, Level 2 Merit, Level 2 Distinction, Level 2 Distinction*)
- Unit titles contributing to the qualification

10 ACCESS and SPECIAL CONSIDERATION

Qualifications at this level often require assessment of a broad range of competencies. This is because they are general qualifications and, as such, prepare candidates for a wide range of occupations and higher level courses.

This specification has been designed to offer fair access for all and to minimise the need to make reasonable adjustments for learners who have particular requirements. It has been reviewed to identify whether any of the competences required by the subject pose a potential barrier to any of the nine protected characteristics covered by the Equality Act 2010. None were identified.
It is expected that normally, individual learners' abilities, interests and needs will be appropriately catered for by centres through:

(a) the choice of units and qualifications available, and
(b) the potential for personalisation of controlled assessment.

If there are any queries about the use of this flexibility inherent in the specification to meet learners' needs, or about the use of reasonable adjustments, centres should contact WJEC.

Reasonable adjustments are made for disabled candidates in order to enable them to access the assessments e.g. candidates are allowed access to a Sign Language Interpreter, using British Sign Language or Irish Sign Language. For this reason, very few candidates will have a complete barrier to any part of the assessment. Information on reasonable adjustments is found in the Joint Council for Qualifications document *Regulations and Guidance Relating to Candidates who are eligible for Adjustments in Examinations.* This document is available on the JCQ website (www.jcq.org.uk).

11 POST RESULTS SERVICES

If a centre wishes to query the outcome of the moderation and/or examination process this must be done formally by the head of the centre, notifying WJEC within 21 days of the publication of results.

The sample of work submitted for moderation will be reviewed by a moderator/examiner not involved in the original process, and the centre informed of the outcome.

Should the centre not be satisfied with the outcome of the review, there is provision for an appeal to WJEC.

12 CLASSIFICATION CODES

Every specification is assigned a national classification code indicating the subject area to which it belongs. The classification code for this specification is XA31. Centres should be aware that candidates who enter for more than one qualification with the same classification code will have only one grade (the highest) counted for the purpose of the School and College Performance Tables.

Centres may wish to advise candidates that, if they take two specifications with the same classification code, schools and colleges are very likely to take the view that they have achieved only one of the two qualifications. The same view may be taken if candidates take two specifications that have different classification codes but have significant overlap of content. Candidates who have any doubts about their subject combinations should check with the institution to which they wish to progress before embarking on their programmes.

13 THE WIDER CURRICULUM

Opportunities for use of technology

Learners are expected to make effective use of ICT in ways that are appropriate to these qualifications. Opportunities will arise during normal classroom activities as follows:

- using computer software to present designs of buildings;
- use the Internet as sources of secondary evidence;
- using spreadsheets to calculate resource requirements for construction projects;
- using multi-media software to present information.

Spiritual, Moral, Ethical, Social and Cultural Issues

Developing outcomes that have applications to individuals, societies and businesses require learners to consider the points of view of others, including employers, employees, communities and customer, in both written and spoken forms, presented in a variety of ways.

Learners will have opportunities to develop critical and analytical skills in their study of planning considerations of construction projects and reviewing options for structures and materials for construction projects. They will also have opportunities to reflect on their reading, their own wider experience, and the experience of others, in both written and oral form. In classroom discussion and writing, they will be required to reflect on a range of spiritual, moral, ethical, social, and cultural issues when discussing planning considerations of construction projects.

Citizenship

The applications and implications of Designing the Built Environment in society, which are inherent in this specification, encourage the development of a responsible attitude to citizenship. An understanding that individuals have a collective responsibility is fostered in relation to various ethical issues included in the specification.

The specification gives learners opportunities to develop the skills of critical and analytical reading and listening. It also allows them to both express and develop their point of view in writing and speaking, whilst encouraging them to consider critically and constructively the views of others. This ability to make informed and considered judgements is a skill vital in the development of individual citizenship. This specification also underpins the development of a range of skills which are of vital importance to individuals in the wider world.

Environmental Issues

This specification affords candidates the opportunity to read about, write about, and discuss environmental issues associated with designing the built environment and associated processes and resources. Whether considering local environments, communities and wildlife, waste disposal or sustainability there are opportunities to develop an awareness of environmental issues and controversies.

Health and Safety Consideration

At all times both teachers and candidates should be aware of Health and Safety issues arising from work both within and outside the centre. Risk assessments are required for all practical work whether it takes place in a workshop or IT room. The specifications require candidates to develop the relevant skills and awareness of Health and Safety issues, particularly as applied to designing the built environment.

The European Dimension

The approach used in constructing the specification lends itself to the establishment of links with other areas of study. It may also be used to illustrate the European dimension and requires consideration of the issues posed by different perspectives.

Appendix 1 Skills Mapping

Personal, Learning and Thinking Skills (PLTS)

PLTS	*Unit 1*	*Unit 2*	*Unit 3*
Independent enquirers	✓	✓	✓
Creative thinkers		✓	✓
Reflective learners	✓	✓	✓
Team workers	✓	✓	✓
Self managers	✓	✓	
Effective Participators	✓	✓	✓

KEY SKILLS AND ESSENTIAL SKILLS (WALES)

Application of Number

	Unit 1	*Unit 2*	*Unit 3*
Understand numerical data		✓	
Carry out calculations		✓	
Interpret results and present findings		✓	

Communication

	Unit 1	*Unit 2*	*Unit 3*
Speaking and listening	✓	✓	✓
Reading	✓	✓	✓
Writing	✓	✓	✓

ICT

	Unit 1	***Unit 2***	***Unit 3***
Use ICT systems	✓	✓	✓
Find, select and exchange information, using ICT	✓	✓	✓
Develop and present information, using ICT	✓	✓	✓

Improving own Learning and Performance

	Unit 1	***Unit 2***	***Unit 3***
Set targets using information from appropriate people and plan how these will be met	✓	✓	✓
Take responsibility for your learning, using your plan to help meet targets and improve your performance	✓	✓	✓
Review progress and establish evidence of your achievements	✓	✓	✓

Problem Solving

	Unit 1	***Unit 2***	***Unit 3***
Explore a problem and identify ways of tackling it	✓	✓	✓
Plan and implement at least one way of solving the problem	✓	✓	✓
Check if the problem has been solved and review your approach to problem solving	✓	✓	✓

Working with Others

	Unit 1	***Unit 2***	***Unit 3***
Plan work with others	✓	✓	✓
Seek to develop co-operation and check progress towards your agreed objectives	✓	✓	✓
Review work with others and agree ways of improving collaborative work in the future	✓	✓	✓

Appendix 2
Mapping to Construction and Built

Environment Curriculum Content[1]

Learning outcomes	**Drawing construction plans**	**Planning potential of construction projects**	**Building structures and materials**
Theme: Design the built environment			
2.1 Identify and explore the factors influencing the design process			
2.2 Identify planning requirements and their impact on design			
2.3 Examine the nature and use of utilities in the design of the built environment			
2.4 Investigate the use and properties of materials used in construction of the built environment			
2.5 Identify how the use of sustainable materials can influence the design process			
2.6 Identify and make use of a range of technical information available to design the built environment			
2.7 Analyse a range of common structural forms and building elements used in the design process			
2.8 Apply design principles through the design and evaluation of a complex structure			

[1] Construction and Built Environment Curriculum Content taken from Construction and the Built Environment: How University Technical Colleges can deliver best practice. Published by The Baker Dearing Trust and supported by University Technical Colleges, CITB Construction Skills and the Edge Foundation.

Appendix 3 Glossary

3.1 Knowledge learning outcomes

Knowledge learning outcomes are effectively assessed through the learner giving the 'facts' of a situation.

Differentiators

Differentiators in performance are often given using the following terms:

Accuracy
Is what they are claiming as fact actually correct?

Breadth/range
Is there an expectation of breadth rather than depth i.e. they should have superficial knowledge of a lot of facts rather than in-depth knowledge of a few.

Clarity
This is often related to communication skills, but you can anticipate that someone who really knows something knows how to organise what they are saying and doesn't mix with information that is incorrect or irrelevant. People who waffle tend to be less certain of their knowledge than those who can be succinct and to the point.

Depth/detail
Have they given sufficient detail to confirm that they really do know something?

Relevance/application
Do the facts have to be relevant to the situation? Is it simply pure theory or do you want them to show knowledge through their discarding of what they consider is not relevant.

Command Verbs

A consideration of the command verbs used in the AC, can help determine which differentiators could be used. Below are definitions of knowledge related command verbs.

Describe – paint a picture in words, provide information with detail. Using this analogy, you would expect there to be some detail in what they know. Describe could be extended to merit and/or distinction, but could also be pass only. If it is to be extended to distinction, then there will probably need to be a number of qualifiers.

Define – state the meaning of a term. It is unlikely this could be extended to merit or distinction level.

Identify – recognise, distinguish and establish what something is. It is unlikely that this could be extended to distinction level. Differentiation is likely to be about relevance and accuracy.

Illustrate – exemplify, describe with reference to examples. This could be extended to merit and distinction level.

Outline – a general, preliminary, or rough plan or account of something that concentrates on the main features and ignores detail, e.g. a list of the main points covered or to be covered in a speech. This is unlikely to be extended to merit and distinction level. A good outline becomes a description!

State – make an assertion. This would not extend beyond pass.

Summarise- to give a shortened version of something that has been said or written, stating its main points.

3.2 Understand learning outcomes

Understanding learning outcomes are effectively assessed through the learner showing how they have applied their knowledge through effective reasoning.

Differentiators

Clarity
Is the reasoning explicit or implicit. Where reasoning is implicit the level of understanding has to be interpreted. Explicit reasoning shows the understanding clearly exists.

Depth
How detailed is the reasoning?

Justification
Are you persuaded of their argument and reasoning?

Substantiation
Has the learner drawn on evidence to support any conclusions made.

Validity
Is the reasoning valid? Is it accurate? Is it based on the context of the situation? Is it based on theory?

Command Verbs

Below are definitions of understanding related command verbs.

Analyse – examine in detail, break into component parts, and examine relationships.

Assess – make a judgement about the quality or value of something

Compare – explain similarities and differences

Evaluate – make judgements against criteria, usually based on analysis and data

Explain – give reasons

Justify – persuade someone of the validity of an argument, to validate a proposal

3.3 Be able to learning outcomes

'Be able to' learning outcomes focus on learner's development of skills. They involve practical, hands on activities. Related AC's are often assessed through the production of ephemeral evidence, such as witness testimonies and observation records.

Differentiators

Accuracy
Were they able to elicit accurate information by using the skills?

Adaptation
Can they use the skill in different contexts?

Appropriate
Was the skill used appropriately, taking account of the situation/location?

Confidence
Very difficult to assess as it is an intrinsic feeling so assessors will find this challenging to determine. It is sometimes used, however. Consider hesitance as a sign of a lack of confidence, so fluidity and consistency can be aspects of confidence.

Effectiveness
Did the use of the skill produce the expected outcomes?

Independence
Were the learners able to demonstrate the skill without support or guidance from others?

Command Verbs

Below are definitions of 'be able to' related command verbs.

Collaborate – make a contribution to the work of a team, supporting team members as required

Communicate – ensure information is received effectively

Display – organise and present information diagrammatically

Handle – manipulate a tool/equipment to a desired effect

Monitor – observe and record activity, could also include ensuring expected progress is maintained

Maintain - to keep in an appropriate condition

Plan – organise a range of components into a logical sequence. This could also include timings. It could also include how this organisation is presented.

Present – organise and communicate in a way that can be clearly followed and understood. Often refers to oral communication skills and may include use of supporting information.

Process – use a series of actions to elicit results

Record – obtain and store data and information

Use – employ something for a purpose