

## Component Specification

### Building Technology and Design

NFQ Level 6

6N4909

#### 1. Component Details

<b>Title</b>	Building Technology and Design
<b>Teideal as Gaeilge</b>	Teicneolaíocht agus Dearadh Tógála
<b>Award Class</b>	Minor
<b>Code</b>	6N4909
<b>Level</b>	6
<b>Credit Value</b>	15
<b>Purpose</b>	The purpose of this award is to equip the learner with the knowledge, skill and competence to incorporate building technologies and systems into the design process of a construction project.
<b>Learning Outcomes</b>	Learners will be able to: <ol style="list-style-type: none"><li>1 Evaluate the key characteristics and design principles of a range of construction methods to include the use of natural and manmade materials</li><li>2 Research key legislation contained in the Technical Guidance Documents and building regulations</li><li>3 Assess the limitations of materials and technologies utilised in the construction sector</li><li>4 Evaluate the use of renewable energy systems in retrofit and new builds</li><li>5 Employ standard conventions to illustrate a range of construction details to include sections, plans and elevations</li></ol>

- 6 Devise a range of innovative methods of construction aimed at reducing the carbon output of a building, during and after construction
- 7 Estimate the design requirements in relation to the structural elements of a building to include its foundation, walls, stairs, floors, and roof
- 8 Investigate the impact of the local environment on building design to include a consideration of soil type, drainage, aspect, orientation and topography
- 9 Suggest design solutions in relation to access to a building, means to escape, fire regulations, ventilation, sound and thermal insulation
- 10 Investigate the environmental impact of sewage disposal systems to include the suggestion of appropriate design solutions from a given brief
- 11 Supervise a team to create design solutions to a construction related project
- 12 Evaluate the influence of a range of factors in the creation of a safe workplace environment, including work practices, safety policies, work culture, working environment, training and human factors.

## Assessment

### General Information

Details of FET assessment requirements are set out in [Assessment Guidelines for Providers](#).

All FET assessment is criterion referenced. Successful achievement of the award is based on learners attaining the required standards of knowledge, skill or competence.

The techniques set out below are considered the optimum approach to assessment for this component. In exceptional circumstances providers may identify alternative assessment techniques through the provider's application for programme validation which are **reliable** and **valid** but which are more appropriate to their context.

Assessment of a number of components may be integrated across programmes for delivery, provided that the learning outcomes of each minor award are assessed.

Group or team work may form part of the assessment, provided each learner's achievement is separately assessed.

All providers are required to submit an assessment plan as part of their application for programme validation. Assessment Plans

will include information relating to scheduling and integration of assessment. See current FET validation guidelines at [www.qqi.ie](http://www.qqi.ie).

## Assessment Techniques

In order to demonstrate that they have reached the standards of knowledge, skill and competence identified in all the learning outcomes, learners are required to complete the assessment(s) below.

The assessor is responsible for devising assessment instruments (e.g. project and assignment briefs, examination papers), assessment criteria and mark sheets, consistent with the techniques identified below and FETAC's assessment requirements.

Programme validation will require providers to map each learning outcome to its associated assessment technique. See current FET validation guidelines at [www.qqi.ie](http://www.qqi.ie).

All learning outcomes **must** be assessed and achieved

Project	40%
Examination - Theory	30%
Portfolio / Collection of Work	30%

## Description

### Project

*A project is a response to a brief devised by the assessor. A project is usually carried out over an extended period of time. Projects may involve research, require investigation of a topic, issue or problem or may involve process such as a design task, a performance or practical activity or production of an artefact or event.*

### Examination - Theory

*An examination provides a means of assessing a learner's ability to recall and apply knowledge, skills and understanding within a set period of time and under clearly specified conditions.*

*A theory-based examination assesses the ability to recall, apply and understand specific theory and knowledge.*

### Portfolio / Collection of Work

*A portfolio or collection of work is a collection and/or selection of pieces of work produced by the learner over a period of time that demonstrates*

*achievement of a range of learning outcomes. The collection may be self-generated or may be generated in response to a particular brief or tasks/activities devised by the assessor.*

<b>Recognition of Prior Learning (RPL)</b>	Learners may be assessed on the basis of their prior knowledge and experience. Providers must be specifically quality assured to assess learners by this means. To do so they must complete B10, see Provider's Quality Assurance Guidelines and be included on the Register of RPL approved providers. See RPL Guidelines at <a href="http://www.fetac.ie">www.fetac.ie</a> for further information and registration details.	
<b>Grading</b>	Pass	50% - 64%
	Merit	65% - 79%
	Distinction	80% - 100%
<b>Specific Validation Requirements</b>	There are no specific validation requirements	
<b>Supporting Documentation</b>	None	
<b>Access</b>	To access programmes leading to this award the learner should have reached the standards of knowledge, skill and competence associated with the preceding level of the National Framework of Qualifications. This may have been achieved through a formal qualification or through relevant life and work experience.	
<b>Transfer</b>	Successful completion of this component award enables the learner to transfer to programmes leading to other certificates where this component is a mandatory or an elective requirement.	

## 2. FET Award Standards

QQI award standards are determined within the National Framework of Qualifications (NFQ), <http://www.nfq-qqi.com>. QQI determines standards for the education and training awards that it makes itself and that are made by providers to whom it has delegated authority to make an award. Providers offering programmes leading to QQI awards **must** have their programme(s) validated in accordance with current validation policy (see [www.qqi.ie](http://www.qqi.ie)).

Award standards are designed to be consistent with the NFQ's award classes i.e. major, special purpose, supplemental and minor awards. They are expressed in terms of **learning outcomes** i.e. concise statements of what the learner is expected to know or be able to do in order to achieve a particular award. Learning outcomes for FET awards are contained within the associated specifications:

AWARD CLASS	STANDARDS	AWARDS
Major Award	Certificate Specification	Certificate (Levels 1 to 5) Advanced Certificate (Level 6)
Supplemental Award	Supplemental Specification	Supplemental Certificate (Level 3 to 6)
Special Purpose	Specific Purpose Specification	Specific Purpose Certificate (Levels 3 to 6)
Minor Award	Component Specification	Component Certificate (Levels 1 to 6)

Award standards are thresholds, they describe standards of knowledge, skill or competence to be acquired, and where appropriate, demonstrated, by a learner before an award may be made.

Award standards will be reviewed from time to time as necessary. Minor changes may be made by the QQI executive outside the review cycle where necessary. Changes to standards are published on QQI's website. Providers with validated programmes and providers with delegated authority to make awards are responsible for monitoring relevant standards and making necessary responses to changes.

### 3. FET Credit

Every FET certificate and component specification includes an FET credit value (Table 1). FET credit is quantified in multiples of 5 FET credits (up to 50 hours of learner effort). Learner effort is based on the time taken by typical learners at the level of the award to achieve the learning outcomes for the award. It includes all learning time involved including: guided learning hours, self-directed learning and assessment.

**Table 1: FET Credit Values**

NFQ Level	Major Awards Credit Values	Default Credit Values Minor Awards	Other Permitted Minor Award Credit Values	Special Purpose and Supplemental Award Credit Value Ranges
1	20	5	10	
2	30	5	10	
3	60	10	5,20	>5 and <60
4	90	10	5,15,20	>5 and <90
5	120	15	5,10,30	>5 and <120
6	120	15	5,10,30	>5 and <120

### Guide to Level

Learning outcomes at this level include a comprehensive range of skills which may be vocationally-specific and/or of a general supervisory nature, and require detailed theoretical understanding. The outcomes also provide for a particular focus on learning skills. The outcomes relate to working in a generally autonomous way to assume design and/or management and/or administrative responsibilities. Occupations at this level would include higher craft, junior technician and supervisor.

<b>Strand</b>	<b>Sub-strand</b>	<b>Nature of learning</b>
Knowledge	Breadth	Specialised knowledge of a broad area
	Kind	Some theoretical concepts and abstract thinking, with significant underpinning theory
Know How & Skill	Range	Demonstrate a comprehensive range of specialised skills and tools
	Selectivity	Formulate responses to well defined abstract problems
Competence	Context	Act in a range of varied and specific contexts involving creative and non-routine activities; transfer and apply theoretical concepts and/or technical or creative skills to a range of contexts
	Role	Exercise substantial personal autonomy and often take responsibility for the work of others and/or for the allocation of resources; form and function within, multiple and complex heterogeneous groups.
	Learning to Learn	Learn to evaluate own learning and identify needs within a structured learning environment; assist others in identifying learning needs
	Insight	Express an internalised, personal world view, reflecting engagement with others.

*Extract from 'Determinations for the Outline National Framework of Qualifications': NQAI*