Qualification Specification for:

OCN NI Level 3 Award in Building Information Modelling

- Qualification No: 603/3299/2

OCN NI Level 3 Certificate in Building Information Modelling

- Qualification No: 603/3300/5

Qualification Regulation Information

OCN NI Level 3 Award in Building Information Modelling
Qualification Number: 603/3299/2

OCN NI Level 3 Certificate in Building Information Modelling
Qualification Number: 603/3300/5

Operational start date: 01 June 2018
Operational end date: 31 May 2028
Certification end date: 31 May 2031

Qualification operational start and end dates indicate the lifecycle of a regulated qualification. The operational end date is the last date by which learners can be registered on a qualification and the certification end date is the last date by which learners can claim their certificate.

All OCN NI regulated qualifications are published to the Register of Regulated Qualifications (**http://register.ofqual.gov.uk/**). This site shows the qualifications and awarding organisations regulated by CCEA Regulation and Ofqual.

OCN NI Contact Details

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Foreword

This document explains OCN NI's requirements for the delivery and assessment of the following regulated qualifications:

→ **OCN NI Level 3 Award in Building Information Modelling**
→ **OCN NI Level 3 Certificate in Building Information Modelling**

This specification sets out:

- Qualification features
- Centre requirements for delivering and assessing the qualification
- The structure and content of the qualification
- Unit details
- Assessment requirements for the qualification
- OCN NI's quality assurance arrangements for the qualification
- Administration

OCN NI will notify centres in writing of any major changes to this specification. We will also publish changes on our website at **www.ocnni.org.uk**

This specification is provided online, so the version available on our website is the most up to date publication. It is important to note that copies of the specification that have been downloaded and printed may be different from this authoritative online version.

Contents

About Regulation

OCN NI

Open College Network Northern Ireland (OCN NI) is a regulated Awarding Organisation based in Northern Ireland. OCN NI is regulated by CCEA Regulation to develop and award professional and technical (vocational) qualifications from Entry Level up to and including Level 5 across all sector areas. In addition, OCN NI is regulated by Ofqual to award similar qualification types in England.

All OCN NI regulated qualifications are published to the Register of Regulated Qualifications (http://register.ofqual.gov.uk/). This site shows the qualifications and awarding organisations regulated by CCEA Regulation and Ofqual.

The Regulated Qualifications Framework: an overview

The Regulated Qualifications Framework (RQF) was introduced on 1st October 2015: the RQF provides a single framework for all regulated qualifications.

Qualification Level
The level indicates the difficulty and complexity of the knowledge and skills associated with any qualification. There are eight levels (Levels 1-8) supported by three 'entry' levels (Entry 1-3).

Qualification Size
Size refers to the estimated total amount of time it could typically take to study and be assessed for a qualification. Size is expressed in terms of Total Qualification Time (TQT), and the part of that time typically spent being taught or supervised, rather than studying alone, is known as Guided Learning Hours (GLH).

For further information about the RQF see:
https://www.ocnni.org.uk/blog/regulated-qualifications-framework-rqf/

Qualification Features

Sector Subject Area

5.2 Building and Construction

Qualifications' Aim

The OCN NI Level 3 Award in Building Information Modelling qualification has been designed to provide the learner with a working understanding in the practice of 3D modelling for building information modelling in the construction sector.

The OCN NI Level 3 Certificate in Building Information Modelling qualification has been designed to provide the learner with a working understanding of the theory, principles and practice of building information modelling within the construction sector.

Qualifications' Objectives

The objectives of the qualifications are to enable learners to:

- develop skills and knowledge applicable across a range of architectural, engineering and construction sectors
- understand the importance of BIM standards and protocols
- upskilling learners in the area of BIM modelling and practice
- develop other skills to support career progression within the architectural, engineering and construction sector

The units for these qualifications incorporate the British Standard Institute Documentation on Building Information Modelling and the Construction Industry Council BIM Protocol
www.bsigroup.com
http://cic.org.uk/publications/

Grading

Grading for these qualifications is pass/fail.

Qualification Target Group

The qualifications are targeted at learners who have an interest in working in the architectural, engineering and construction sector.

Progression Opportunities

The Level 3 Award will enable the learner to progress to the Level 3 Certificate. The Level 3 Certificate will provide the learner with further skills in the application of BIM principles, objects and management which will enhance employment opportunities.

Entry Requirements

There are no specific entry requirements for these qualifications, however an understanding and appreciation of the construction sector would be beneficial including construction techniques, reading construction plans/drawings, and project management and delivery. Learners must be at least 16 years of age to take these qualifications.

Delivery Languages

These qualifications are available in English only at this time. If you wish to offer the qualifications in Welsh or Irish (Gaeilge) then please contact OCN NI who will review demand and provide as appropriate.

Centre Requirements for Delivering the Qualification

Centre Recognition and Qualification Approval

New and existing OCN NI recognised centres must apply for and be granted approval to deliver the qualification prior to the commencement of delivery.

Centre Staffing

Centres are required to have the following roles in place as a minimum, although a member of staff may hold more than one role*:

- Centre contact
- Programme Co-ordinator
- Tutor
- Assessor
- Internal Verifier

*Note: A person cannot be an internal verifier for their own assessments.

Tutors

Tutors delivering the qualifications should be occupationally competent at a higher level than the qualification and have a minimum of one year's relevant experience in the areas of construction and BIM.

Assessors

The qualifications are assessed within the centre and are subject to OCN NI's quality assurance processes. Units are achieved through internally set, internally assessed, and internally verified evidence.

Assessors must:

- be occupationally competent at a higher level than the qualification
- have a minimum of one year's experience in the area they are assessing
- have direct or related relevant experience in assessment
- assess all assessment tasks and activities

Internal Verification

OCN NI qualifications must be scrutinised through the centre's internal quality assurance processes as part of the recognised centre agreement with OCN NI. The centre must appoint an experienced and trained centre internal verifier whose responsibility is to act as the internal quality monitor for the verification of the delivery and assessment of the qualifications.

The centre must agree a working model for internal verification with OCN NI prior to delivery of the qualifications.

Internal Verifiers must:

- have at least one year's occupational experience in the areas they are internally verifying
- attend OCN NI's internal verifier training

Internal verifiers are required to:

- support tutors and assessors
- sample assessments according to the centre's sampling strategy
- ensure tasks are appropriate to the level being assessed
- maintain up-to-date records supporting the verification of assessment and learner achievement

Structure and Content

OCN NI level 3 Award in Building Information Modelling

In order to achieve the Level 3 Award learners must complete one unit from the table below for a total of 12 credits.

Total Qualification Time (TQT) for this qualification: 120 hours
Guided Learning Hours (GLH) for this qualification: 72 hours

Unit Reference Number	OCN NI Unit Code	Unit Title	TQT	Credit Value	Level
H/617/0851	CBE255	3D Architectural Modelling (BIM)	120	12	Three
A/617/0855	CBE256	3D Mechanical and Electrical Modelling (BIM)	120	12	Three
J/617/0860	CBE257	3D Structural Modelling (BIM)	120	12	Three

OCN NI level 3 Certificate in Building Information Modelling

In order to achieve the Level 3 Certificate learners must complete both mandatory units – 12 credits, plus one optional unit - 12 credits for a total of 24 credits.

Total Qualification Time (TQT) for this qualification: 240 hours
Guided Learning Hours (GLH) for this qualification: 144 hours

Unit Reference Number	OCN NI Unit Code	Unit Title	TQT	Credit Value	Level
Mandatory Units					
J/617/0843	CBE253	Building Information Modelling (BIM) Principles	30	3	Three
D/617/0847	CBE254	Building Information Modelling (BIM) Objects	90	9	Three
Optional Units					
H/617/0851	CBE255	3D Architectural Modelling (BIM)	120	12	Three
A/617/0855	CBE256	3D Mechanical and Electrical Modelling (BIM)	120	12	Three
J/617/0860	CBE257	3D Structural Modelling (BIM)	120	12	Three

Unit Details

Title	Building Information Modelling (BIM) Principles
Level	Three
Credit Value	3
Guided Learning Hours (GLH)	18
OCN NI Unit Code	CBE253
Unit Reference No	J/617/0843
Unit purpose and aim(s): This unit will enable the learner to develop a fundamental understanding of Building Information Modelling (BIM) and associated workflows.	

Learning Outcomes	Assessment Criteria
1. Understand the context and essentials of BIM.	1.1. Explain key terms and definitions within BIM. 1.2. Summarise BIM maturity levels. 1.3. Explain impact of BIM maturity Level 2 requirements for project delivery. 1.4. Illustrate the benefits of BIM to the construction sector.
2. Understand the application and standards of BIM.	2.1. Summarise applicable standards and industry guidance of BIM. 2.2. Explain BIM maturity Level 2 requirements for: a) Employers Information Requirements (EIRs) b) BIM Execution Plan (BEP) c) Project Implementation Plan (PIP) 2.3. Illustrate the use of file and layer naming conventions.
3. Understand the technological requirements for BIM implementation and security.	3.1. Summarise key technology requirements to enable BIM implementation. 3.2. Explain the use of common data environments, including arrangements for collaborative working and communication. 3.3. Summarise security-minded building information modelling, including key terms and definitions.

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Building Information Modelling (BIM) Objects
Level	Three
Credit Value	9
Guided Learning Hours (GLH)	54
OCN NI Unit Code	CBE254
Unit Reference No	D/617/0847
Unit purpose and aim(s): This unit will enable the learner to develop the fundamental skills to create Building Information Modelling (BIM) objects using industry standard software.	

Learning Outcomes	Assessment Criteria
1. Understand the importance and use of BIM Objects in the overall BIM process.	1.1. Explain the usage of BIM Objects in the overall design process and the importance of structured data within objects.
2. Be able to create templates.	2.1. Create a customised template to include the following: a) Project template b) Annotation settings c) Title block d) Graphical and discipline settings 2.2. Create a customised schedule and take-off.
3. Be able to develop and create BIM Objects.	3.1. Create object references, dimensions and parameters. 3.2. Create object geometry. 3.3. Apply object type variation. 3.4. Develop a customised discipline specific BIM object.
4. Be able to export, insert and use BIM objects.	4.1. Demonstrate export and saving of BIM objects. 4.2. Apply a BIM Object within a project.

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	3D Architectural Modelling (BIM)
Level	Three
Credit Value	12
Guided Learning Hours (GLH)	72
OCN NI Unit Code	CBE255
Unit Reference No	H/617/0851

Unit purpose and aim(s): This unit will enable the learner to develop the fundamental skills for three dimensional (3D) architectural Building Information Modelling (BIM) using industry standard software.

Learning Outcomes	Assessment Criteria
1. Understand how BIM may be used within the construction and design industry.	1.1. Summarise current Health and Safety requirements for BIM users. 1.2. Explain the requirements of BIM hardware and current software options/providers. 1.3. Summarise the requirements for information management and application within the construction and design industry.
2. Be able to create a building model using industry-standard BIM software.	2.1. Demonstrate use of creation and modification tools, including use of preloaded elements and components. 2.2. Create an industry-standard building model using customised elements and components.
3. Be able to implement and manage BIM.	3.1. Create sheets and views. 3.2. Apply custom materials and components within the model. 3.3. Produce schedules using the model. 3.4. Demonstrate information exchange file export.
4. Be able to develop and publish information using BIM.	4.1. Produce a drawing title block template. 4.2. Publish sheets, views and schedules. 4.3. Produce at least three rendered views. 4.4. Produce a walkthrough. 4.5. Extract at least two (2D) drawings from the building model.

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practice and apply skills and knowledge	Record of observation Learner notes/written work Learner log
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	3D Mechanical and Electrical Modelling (BIM)
Level	Three
Credit Value	12
Guided Learning Hours (GLH)	72
OCN NI Unit Code	CBE256
Unit Reference No	A/617/0855
Unit purpose and aim(s): This unit will enable the learner to develop the fundamental skills for three-dimensional (3D) Building Information Modelling (BIM) using industry standard software within a Building Services context.	

Learning Outcomes	Assessment Criteria
1. Understand how BIM may be used within the construction and design industry.	1.1. Summarise current Health & Safety requirements for BIM users. 1.2. Explain the requirements of BIM hardware and current software options/providers 1.3. Summarise requirements for information management and application within the construction and design industry.
2. Be able to create a building model using industry-standard BIM software.	2.1. Demonstrate use of creation and modification tools, including grids and levels. 2.2. Create an industry-standard model using linked models, with preloaded and customised elements and components.
3. Be able to implement and manage BIM.	3.1. Create sheets and views. 3.2. Produce schedules using the model. 3.3. Demonstrate use of spaces within the model. 3.4. Produce networks such as ventilation, plumbing. 3.5. Demonstrate information exchange file export.
4. Be able to develop and publish information using BIM.	4.1. Produce a drawing title block template. 4.2. Publish sheets, views and schedules. 4.3. Extract at least two (2D) drawings from the building model. 4.4. Carry out an analysis of the model.

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	3D Structural Modelling (BIM)
Level	Three
Credit Value	12
Guided Learning Hours (GLH)	72
OCN NI Unit Code	CBE257
Unit Reference No	J/617/0860

Unit purpose and aim(s):
This unit will enable the learner to develop the fundamental skills for three-dimensional (3D) Building Information Modelling (BIM) using industry standard software within a structural context.

Learning Outcomes	Assessment Criteria
1. Understand how BIM may be used within the construction and design industry.	1.1. Summarise current Health and Safety requirements for BIM users. 1.2. Explain the requirements of BIM hardware and current software options/providers. 1.3. Summarise requirements for information management and application within the construction and design industry.
2. Be able to create a building model using industry-standard BIM software.	2.1. Demonstrate use of creation and modification tools, including grids and levels. 2.2. Create an industry-standard structural model using preloaded and customised elements and components,
3. Be able to implement and manage BIM.	3.1. Create sheets and views. 3.2. Apply customised materials, components and detailing within the model. 3.3. Produce schedules using the model. 3.4. Produce structural reinforcement detailing. 3.5. Demonstrate information exchange file export.
4. Be able to develop and publish information using BIM.	4.1. Produce a drawing title block template. 4.2. Publish sheets, views and schedules. 4.3. Extract at least two (2D) drawings from the building model. 4.4. Carry out a structural analysis of the model.

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

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Quality Assurance of Centre Performance

External Verification

All OCN NI recognised centres are subject to External Verification. External verification visits and monitoring activities will be conducted annually to confirm continued compliance with the conditions of recognition, review the centre's risk rating for the qualifications and to assure OCN NI of the maintenance of the integrity of the qualifications.

The External Verifier will review the delivery and assessment of the qualifications. This will include the review of a sample of assessment evidence and evidence of the internal verification of assessment and assessment decisions. This will form the basis of the EV report and will inform OCN NI's annual assessment of centre compliance and risk. The External Verifier is appointed by OCN NI.

Standardisation

As a process, standardisation is designed to ensure consistency and promote good practice in understanding and application of standards. Standardisation events:

- make qualified statements about the level of consistency in assessment across centres delivering a qualification
- make statements on the standard of evidence that is required to meet the assessment criteria for units in a qualification
- make recommendations on assessment practice
- produce advice and guidance for the assessment of units
- identify good practice in assessment and internal verification

Centres offering units of an OCN NI qualification must attend and contribute assessment materials and learner evidence for standardisation events if requested.

OCN NI will notify centres of the nature of sample evidence required for standardisation events (this will include assessment materials, learner evidence and relevant assessor and internal verifier documentation). OCN NI will make standardisation summary reports available and correspond directly with centres regarding event outcomes.

Administration

Registration

A centre must register learners within 20 working days of commencement of a qualification.

Certification

Certificates will be issued to centres within 20 working days of receipt of correctly completed results marksheets. It is the responsibility of the centre to ensure that certificates received from OCN NI are held securely and distributed to learners promptly and securely.

Charges

OCN NI publishes all up to date qualification fees in its Fees and Invoicing Policy document. Further information can be found on the centre login area of the OCN NI website.

Equality, Fairness and Inclusion

OCN NI has considered the requirements of equalities legislation in developing the specification for these qualifications. For further information and guidance relating to access to fair assessment and the OCN NI Reasonable Adjustments and Special Considerations policies, centres should refer to the OCN NI website.

Retention of Evidence

OCN NI has published guidance for centres on the retention of evidence. Details are provided in the OCN NI Centre Handbook and can be accessed via the OCN NI website.

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