

### Module Details

<b>Title:</b>	BIM Management <b>DRAFT</b>		
<b>Module Title:</b>	BIM Management		
<b>Module Code:</b>	MGMT H5R26	<b>Duration:</b>	1 Semester
<b>Credits:</b>	10		
<b>NFQ Level:</b>	9		
<b>Field of Study:</b>	Engineering, Manufacturing and Construction		
<b>Valid From:</b>	Autumn 2021 ( September 2021 )		
<b>Module Delivered In</b>	7 programme(s)		
<b>Head of Department:</b>	Eoin Homan		
<b>Module Author:</b>	Eoin Homan		
<b>Teaching &amp; Learning Strategies:</b>	Lectures Projects (group & individual) Practicals/workshops Private study Research/case studies VLE resources & online interaction (Wikis, blogs etc)		
<b>Module Aim:</b>	It is the aim of this module to equip practitioners with the requisite knowledge and tools to ensure that information is organized and controlled during the construction procurement process and throughout the lifecycle of the building, in a manner that is as efficient and supportive as possible, based on the exploitation and use of BIM models and tools.		

### Learning Outcomes

*On successful completion of this module the learner should be able to:*

LO1	Evaluation of Model - Interact with, evaluate & interrogate BIM models to derive relevant 4D/5D/6D outputs using appropriate software tools.
LO2	Process/Collaboration - Understand and evaluate the interaction processes involved in designing, constructing and managing a building through use of BIM models and data sets, including the importance of collaborative working between disciplines nationally and internationally and influence/apply techniques and competencies to working collaboratively through BIM.
LO3	Management - Critically analyse and select BIM management techniques to achieve the desired deliverables/handover and performance outcomes, through project, facilities and operations management, taking into account their social and economic global impacts.
LO4	Contractual/Legal - Comprehend contractual and legal requirements and their implications within the BIM processes, realising legal relationships of all the parties involved and their impact on related insurance issues, to be able to take actions accordingly in their management activities.
LO5	Policies & Roles - Develop standard BIM work policies, procedures & processes and define roles and responsibilities of all parties (including external supply chain) involved in a BIM project. These standards and protocols include what each contributor / stakeholder aims to achieve through the use of BIM.

### Pre-requisite learning

#### Module Recommendations

*This is prior learning (or a practical skill) that is recommended before enrolment in this module.*

No recommendations listed

#### Incompatible Modules

*These are modules which have learning outcomes that are too similar to the learning outcomes of this module.*

No incompatible modules listed

#### Co-requisite Modules

No Co-requisite modules listed

#### Requirements

*This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.*

No requirements listed

## Module Content & Assessment

### Indicative Content

#### BIM Technical

• The concept of BIM • Parameters and structure of the BIM model • Interaction with & interrogation of the BIM model • Derivation of 4D/5D/6D outputs • Design and construction process for BIM • BIM tools in design • Interoperability, IFCs, parametric modelling and BIM • Building information exchange • Data sharing and design integration • BIM, energy efficiency and sustainability • Future of BIM: Beyond Level 2, Open BIM

#### BIM Implementation

• Building industry challenges and opportunities • The business value of BIM and integrated design • BIM deployment strategies • Design collaboration • Barriers to adoption • BIM for Contractors • BIM for Facilities Management • Lessons from early adoption

#### BIM Operational

• Introduction to important documents (EIR/BEP), BIM Execution Plan • BIM Maturity Models • Contractual & legal issues • Lean design and construction • Integrated project delivery • Lifecycle management and BIM • Construction as a manufacturing process • Lean, agile and flexible production systems • Generic process models • Integrating people, process and technology • Lean construction/ production • Integrating project lifecycle

Assessment Breakdown	%
Project	45.00%
Practical	15.00%
End of Module Formal Examination	40.00%

No Continuous Assessment

### Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	n/a	2,3,5	15.00	n/a
Project	Industry/real-world case study project based on BIMM IPD (Integrated Project Delivery) or BIMM organizational implementation	2,3,4,5	30.00	n/a

### Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Practical Assessment based on interrogation of BIM model and derivation of 4D/5D/6D outputs	1	15.00	n/a

### End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	n/a	3,4,5	40.00	End-of-Semester

ITCarlow reserves the right to alter the nature and timings of assessment

**Module Workload**

This module has no Full Time workload.

Workload: Part Time					
Workload Type	Workload Description	Learning Outcomes	Hours	Frequency	Average Weekly Learner Workload
Lecture	No Description	2,3,4,5	2.5	Every Week	2.50
Practicals	No Description	1,2,3	1	Every Week	1.00
Independent Learning Time	No Description	1,2,3,4,5	13	Every Week	13.00
Total Hours					16.50
Total Weekly Learner Workload					16.50
Total Weekly Contact Hours					3.50

## Module Resources

### Recommended Book Resources

Construction Specifications Institute, *The CSI Project Delivery Practice Guide*, Wiley [ISBN: 9780470635193]

Fallon, K., and Palmer, M. 2007, *General Buildings Information Handover Guide: Principles, Methodology, and Case Studies*, National Institute of Standards and Technology. Washington, D.C

Lincoln H. Forbes, Syed M. Ahmed, *Modern Construction: Lean Project Delivery and Integrated Practices*, CRC Press [ISBN: 9781420063127]

Ovidiu Cretu, Robert Stewart, Terry Berends., *Risk management for design and construction*, New York; Wiley [ISBN: 9780470635384]

Bibby, L 2003, *Improving Design Management Techniques in Construction*, Loughborough University  
<http://hdl.handle.net/2134/793>

RIBA 2013, *RIBA Plan of Work*, [www.ribaplanofwork.com](http://www.ribaplanofwork.com)

Finith E. Jernigan AIA, *BIG BIM little bim Second Edition*, 4Site Press [ISBN: 9780979569920]

K. P. Reddy, *BIM for Building Owners and Developers*, Wiley [ISBN: 9780470905982]

Ray Crotty, *The Impact of Building Information Modelling*, Routledge [ISBN: 9780415601672]

Chuck Eastman, Paul Teicholz, Rafael Sacks, Kathleen Liston, *BIM Handbook*, Wiley [ISBN: 9780470541371]

Brad Hardin 2009, *BIM and construction management*, Sybex San Francisco, Calif. [ISBN: 9780470402351]

Dana K. Smith, Michael Tardif 2009, *Building information modeling*, John Wiley & Sons Hoboken, N.J. [ISBN: 9780470250037]

Larson, D.A., K.A. Golden 2008, *Entering the Brave New World: An Introduction to Contracting for BIM*, Volume 34, William Mitchell Law Review

IFMA Editor: Paul Teicholz 2013, *BIM for Facility Managers*

HM Government Department for Business, Innovation and Skills 2011, *BIM - A report for the Government Construction Client Group*, : [www.bimtaskgroup.org/wp-content/uploads/2012/03/BIS-BIM-strategy-Report.pdf](http://www.bimtaskgroup.org/wp-content/uploads/2012/03/BIS-BIM-strategy-Report.pdf)

National Building Specification 2013, *National BIM report 2013*, [www.thenbs.com/pdfs/NBS-NationalBIMReport2013-single.pdf](http://www.thenbs.com/pdfs/NBS-NationalBIMReport2013-single.pdf)

*This module does not have any article/paper resources*

### Other Resources

n/a: US Army Corps of Engineers (November 2012); *The US Army Corps of Engineers Roadmap for Life-Cycle Building Information Modeling (BIM)*; Directorate of Civil Works, Engineering and Construction Branch, Washington, DC 20314-1000 ERDC SR-1

n/a: National Institute of Building Sciences (May 2012); *National BIM Standard – United States™ Version 2*  
[http://www.nationalbimstandard.org/nbims-us-v2/pdf/pdf\\_index.php](http://www.nationalbimstandard.org/nbims-us-v2/pdf/pdf_index.php)

n/a: American Institute of Architects (2008) E202-2008: *BIM Protocol Document*  
<http://www.aia.org/contractdocs/training/bim/aia078742>

n/a: HM Government 2013, *Industrial Strategy: government and industry in partnership - Construction 2025*  
[http://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf)

n/a: British Standards Institution 2013, *PAS 1192-2: 2013: Specification for information management for the capital/ delivery phase of construction projects using building information modelling*.  
<http://shop.bsigroup.com/forms/PASs/PAS-1192-2/>

n/a: Construction Industry Council 2013, *Building Information Model (BIM) Protocol*  
<http://www.bimtaskgroup.org/wp-content/uploads/2013/02/The-BIM-Protocol.pdf>

n/a: Building and Construction Authority 2013, *Singapore BIM Guide Version 2*  
[http://www.corenet.gov.sg/integrated\\_submission/bim/BIM/Singapore%20BIM%20Guide\\_V2.pdf](http://www.corenet.gov.sg/integrated_submission/bim/BIM/Singapore%20BIM%20Guide_V2.pdf)

n/a: HM Government, Dept. for Business Innovation and Skills 2013, *BIM Task Group*  
<http://www.bimtaskgroup.org>

n/a: 2014 *buildingSMART*  
<http://www.buildingsmart.org>

n/a: BIM Technologies Alliance 2013, *National BIM Library*  
<http://www.nationalbimlibrary.com>

**Module Delivered In**

Programme Code	Programme Title
CW_CRLSA_A	Certificate in BIM & Construction Project Management (Draft)
	Certificate in BIM Management (Draft)
	Certificate in Energy and Buildings (Draft)
	Certificate in Leadership and Strategy (Draft)
CW_CRBUI_M	Certificate in Public Procurement of Construction (Draft)
	Master of Science in Management in the Built Environment (Draft)
CW_CRBUI_E	Post Graduate Diploma in Science in Management in the Built Environment (Draft)

Module Teachers	
Module Teachers	
Staff Member	Staff Email
No Teacher Staff Assigned	