

Title:	Technical Design Development APPROVED
Long Title:	Technical Design Development
Module Code:	ARCH9002
Credits:	20
NFQ Level:	Expert
Field of Study:	Architecture & Urban Environment
Valid From:	Semester 1 - 2013/14 (September 2013)
Module Delivered in	1 programme(s)
Module Coordinator:	KATHERINE KEANE
Module Author:	KATHERINE KEANE
Module Description:	Technical Design Studio to facilitate the development of expertise in individually directed specialism related to Architectural Technical Design.
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Innovatively plan a complex technical design project.
LO2	Integrate advanced architectural technology with regulation requirements in a fully implemented technical design project.
LO3	Integrate strategy for structural design, construction and engineering into the technical design project.
LO4	Integrate strategy for responding to environmental conditions and issues of human comfort into the technical design project.
LO5	Synthesise strategies for culture, history, arts, and science into the technical design project.
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.</i>	
No requirements listed	
Co-requisites	
No Co Requisites listed	

Module Content & Assessment

Indicative Content

Preliminary Technical Design

Develop the technical design concept, prepared to satisfy project requirements, and other relevant information, develop sketch documents to enable further discussion and development of the technical design. Conceptual Technical Design: Create high-level technical design description; Identify major components; Feedback any derived requirements that result from the process; Resolve any omissions or errors; Test features that are necessary to meet performance and quality requirements; Identify constraints.

Technical Design Development

Develop the technical design concept, fine-tune the design, making any changes required, through to the point where the Concept Design drawings meet the requirements of the technical design brief.

Complete Technical Design

The complete technical design process that satisfies and integrates all aspects of the technical design brief.

Structural, Engineering and Construction Design

Integration of all engineering requirements into final technical design to develop high-performance/ sustainable project.

Environmental Response and Human Comfort

Integration of requirements for environmental response and issues of human comfort into final technical design to develop high-performance/ sustainable project.

Social, Economic, Planning and urban Conditions

Integration of requirements for social, economic, planning and urban conditions into final technical design to develop high-performance/ sustainable project.

Assessment Breakdown

%

Course Work

100.00%

Course Work

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Fully implemented and integrated technical design project.	1,2,3,4,5	100.0	Every Second Week

No End of Module Formal Examination

Reassessment Requirement

Coursework Only

This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.

The institute reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Tutorial	Studio critique	1.0	Every Week	1.00
Independent & Directed Learning (Non-contact)	Studio development	18.0	Every Week	18.00
Directed Learning	Studio learning	9.0	Every Week	9.00
Total Hours				28.00
Total Weekly Learner Workload				28.00
Total Weekly Contact Hours				1.00

Workload: Part Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Tutorial	Studio Critique	1.0	Every Week	1.00
Independent & Directed Learning (Non-contact)	Studio development	18.0	Every Week	18.00
Directed Learning	Studio learning	9.0	Every Week	9.00
Total Hours				28.00
Total Weekly Learner Workload				28.00
Total Weekly Contact Hours				1.00

Module Resources

Recommended Book Resources

- Gerhard Hausladen 2012, *Building to Suit the Climate: A Handbook*, Birkhauser [ISBN: 978-3034607285]
- Julie Torres Moskovitz 2013, *The Greenest Home: Superinsulated and Passive House Design*, Princeton Architectural Press [ISBN: 9781616891244]
- Ian Ellingham and William Fawcett 2013, *Whole Life Sustainability*, RIBA [ISBN: 9781859464502]
- William Gething and Katie Puckett 2013, *Design for Climate Change*, RIBA [ISBN: 9781859464489]
- Alisdair McGregor, Cole Roberts and Fiona Cousins 2012, *Two Degrees: The Built Environment and Our Changing Climate*, Routledge [ISBN: 9780415693004]
- Thomas Hootman 2012, *Net Zero Energy Design*, Wiley - Blackwell [ISBN: 9781118018545]
- Shahin Vassigh 2012, *Best Practices in Sustainable Building Design*, J Ross Publishing [ISBN: 9781604270686]
- Dimitris Kottas 2011, *The Latest in Construction Materials*, Links International [ISBN: 9788492796779]
- Sascha Peters 2013, *Material Revolution 2: New Sustainable and Multi-purpose Materials for Design and Architecture*, Birkhauser [ISBN: 9783038214762]
- Sascha Peters, 2011, *Material Revolution*, Birkhauser [ISBN: 9783034606639]
- Lara Menzel, 2012, *Façades: Design, Construction & Technology*, BRAUN [ISBN: 978-3037681107]
- Ajla Aksamija 2013, *Sustainable Facades: Design Methods for High-performance Building Envelopes*, John Wiley and Sons Ltd [ISBN: 978-1118458600]
- Traci Rose Rider 2011, *Understanding Green Building Materials*, Norton [ISBN: 9780393733174]

Supplementary Book Resources

- Huw Heywood 2013, *101 Rules of Thumb for Low Energy Architecture*, RIBA [ISBN: 9781859464816]
- Nigel Griffiths, 2012, *Eco-House Manual*, Haynes [ISBN: 9780857331212]
- Anna Marshall-Baker 2012, *Cradle-to-Cradle Home Design: Process and Experience*, Fairchild Books [ISBN: 9781609010751]
- Clemens Richarz 2013, *Energy Efficiency Refurbishments: New Strategies for Old Buildings*, Detail [ISBN: 9783920034904]
- Howard Liddell 2013, *Eco-minimalism (2nd edition): The antidote to eco-bling*, RIBA [ISBN: 9781859464953]
- Simos Yannas and Willi Weber 2013, *Lessons from Traditional Architecture: Achieving Climatic Buildings by Studying the Past* Earthscan Routledge [ISBN: STOCK CODE: 68808]
- Pippo Corra and Sara Marina 2013, *Re-cycle*, Mondadori [ISBN: 9788837088965]
- William Odell 2013, *HOK Guidebook to Sustainable Design 3rd Edition*, Wiley [ISBN: 9780470635063]
- John Elkington 2012, *The Zeronauts*, Earthscan Routledge [ISBN: 9781849713979]
- Douglas Harris 2011, *A Guide to Energy Management in Buildings*, Spon Press [ISBN: 978-0415566490]
- Stephen R.J. Sheppard, 2012, *Visualizing Climate Change*, Earthscan Routledge [ISBN: 9781844078202]
- Marta Serrats 2012, *1000 Tips by 100 Eco Architects: Guidelines on Sustainable Architecture from the World's Leading Eco-architecture Firms* Firefly [ISBN: 9781770850415]
- Aurora Fernández Per, Javier Mozas, Javier Arpa, 2012, *A+T 39-40 Reclaim - Remediate Reuse Recycle*, A+T Architecture Publishers [ISBN: 9788461560202]
- Daniel Doran and Jane Anderson 2011, *Environmental Impact of Vertical Cladding*, BRE Press [ISBN: 9781848061941]
- Enric Ruiz Geli and Jeremy Rifkin 2011, *A Green New Deal: From Geopolitics to Biosphere Politics* ACTAR [ISBN: 9788492861583]
- 2011, *Good Practice in the Selection of Construction Materials 2011 British Council for Offices*, British Council for Offices [ISBN: 9780000008930]
- Thomas Schröpfer, James Carpenter (Contributor), Sheila Kennedy (Contributor), Liat Margolis (Contributor), Toshiko Mori (Contributor), Nader Tehrani (Contributor), Peter Yeadon (Contributor) 2010, *Material Design*, Birkhauser [ISBN: 9783034600354]

- Les Archives d'Architecture 2010, *Architecture and Materials*, Les Archives d'Architecture Moderne [ISBN: 9782871432463]
- Peter Domone and John Illston 2010, *Construction Materials: Their Nature and Behaviour: 4th edition*, Spon London [ISBN: 9780415465168]
- Christiane Sauer, 2010, *Made Of: New Materials Sourcebook for Architecture and Design*, Gestalten [ISBN: 9783899552898]
- Arthur Lyons, 2010, *Materials for Architects and Builders, Fourth Edition*, Elsevier Ltd [ISBN: 9781856175197]
- Blaine Brownell (Editor) 2010, *Transmaterial 3*, Princeton Architectural Press [ISBN: 9781568988931]
- Andrea Deplazes (Editor), G. H. Söffker (Translator) 2008, *Constructing Architecture*, Birkhauser [ISBN: 9783764386313]
- Malcolm Holzman, 2008, *A Material Life: Adventures & Discoveries in Materials Research*, Images Publishing [ISBN: 9781864702118]
- Alison Kwok, Walter Grondzik 2011, *The Green Studio Handbook, Second Edition*, Elsevier Ltd [ISBN: 978-0080890524]

<i>This module does not have any article/paper resources</i>
<i>This module does not have any other resources</i>

Module Delivered in			
Programme Code	Programme	Semester	Delivery
CR_CARCT_9	Master of Science in Architectural Technical Design	2	Mandatory