

Architectural Design 3

The first semester of third year is devoted to the design of a contemporary urban mixed-use proposal in context (Master Plan 1:500 & focused design studies in various scales and explorations using a diverse set of architectural research techniques). This project gets introduced through a group research with final presentation (duration ca. two weeks).

The scale is of moderate complexity and addresses multi-storey framed building types in particular.

In the second semester, a choice of projects is offered, reflecting the interests of the design tutors through a variety of programmes and sites.

The focus is to design a moderately complex building in the cultural context of urbanism its setting and wider environment. This undertaking is explored on various scales by employing low impact strategies, technical strategies (the making and its tectonic) and the use of an appropriate architectonic language also in regard to social, economic and wellbeing context.

These are the key elements within the project development.

The third year study visit serves as a preparatory stage to introduce the aim of the second semester project (study trip abroad).

Third year students who are suffering financial hardship are asked to inform the chair early enough to arrange financial support to enable them to take part in the study visit. We will try to find an appropriate solution for these special cases as far the system allows it.

School	ARCHI
Module Code	AR3001
External Subject Code	K100
Number of Credits	80
Level	
Module Leader	Jacob Hotz
Module offered on a free-standing basis?	No
Any restrictions to free-standing basis?	N/A
Maximum Number on Module	N/A
Language of module delivery	English

On completion of the module a student will be able to:

For students to have acquired an understanding of, and be able to demonstrate skills in, the following aspects of architectural design:

- site planning in sensitive urban location (with or without rural components in regard to site and brief) for multi-storey and moderately complex buildings.
- integrating appropriate building structure, construction, environment and services (sustainability issues included) and spatial ordering into holistic design solutions
- applying a vocabulary of precedent and architectural ideas
- advanced architectural drawing and digital design approaches
- visual and oral presentation
- disciplined essay writing and brief development

How the module will be delivered

The teaching method is a guided system of 'learning-by-doing'. Design, following specific project briefs, is taught through iterative individual and group tutorials and support lectures when needed, concluding in key stage reviews with written feedback. The activity of design involves the development of skills and understanding through an integration of the learning outcomes.

Skills that will be practised and developed

- research skills based on open sources, literature and publications
- team working skills and social skills
- self reflective assessment
- employing appropriate tactics in order to resolve design problems (like composition)
- employing methods of critical thinking
- time management (including setting up a Mile Stone System)
- manual skills (working with different materials and model building skills)
- documentary skills

How the module will be assessed

Successful design project work, well presented, will demonstrate clearly integrated resolution of the learning outcomes

Type of assessment	% Contribution	Title	Duration (if applicable)	Approx. date of Assessment
Coursework	100%	Architectural Design AR3001		End of Academic Year

The potential for reassessment in this module

The Architectural Design AR3001 Module counts for 80 credits out of 120 in the academic year. Failing this module at the end of the year will result in repeating the whole module.

Syllabus content

Urban planning, contextual fit, massing of public buildings, landscaping and use of external spaces.

Structural and environmental considerations.

Spatial enclosure and subdivision, suspended floors and ceilings

Formulation and development of a building brief.

Moderately complex public cultural building types, precedent and current issues.

Analysis of site character

Planning clarity and user requirements.

Route, entry and domain both public and private.

Integration of technical and aesthetic strategies.

Indicative Reading and Resource List:

Note:

This is the general reading list. This list will be updated within the briefs at the beginning of each semester (because of the nature of changing briefs and this is especially the case in second semester):

Reading

Recommended

Alexander, Christopher, The City is not a tree, The Architecture Forum, no.122, May 1965
Holl, Steven, Urbanism (Working with Doubt), Princeton Architectural Press, New York, 2009
Jacobs, Jane, The death and life of great American cities, London: Jonathan Cape, 1962.
Krier, Rob, Urban Space (Stadtraum), Academy Editions, London, 1979
Lang, John, Urban Design (Typology, Procedures and Products), Architectural Press, 2005
Marshall, Stephen, Cities, Design & Evolution, Routledge, Oxon, 2009
Rogers, Richard and Power, Anne, Cities for a small country, London 2000.
Rowe, Collin & Koetter, Fred: "Collage City"/ Cambridge, Mass., London: MIT
Rossi, Aldo: "The architecture Of the City"/ Cambridge, Mass., London: MIT Press 1982
Uytenhaak, Rudy, Cities full of space (qualities of density), 010 Publishers, Rotterdam, 2008

Further readings

Boyer, Christine: Cybercities, Princeton Architectural Press 1996
Broadbent, Geoffrey: "Emerging Concepts in Urban Space Design"/ London: Van Nostrand Reinhold (International), 1989
Calvino, Italo, Invisible Cities, Harcourt and Brace, San Diego, 1989
Cullen, Gordon: Townscape, The Architectural Press (first published) 1961
Donald, James, Imagining the Modern City, Athlone Press, London 1999.
Gehl, Jan, Life Between Buildings: using public space, (Copenhagen: Arkitektens Forlag,1996.)
Harris, Steven and Berke, Deborah [eds.], Architecture of the everyday, New York, Princeton Architectural Press: Yale Publications on Architecture, 1997.
Hillier, B., Hanson, J.,The Social Logic of Space, Cambridge University Press, 1996
Koolhaas, Rem, Delirious New York: a retroactive manifesto for Manhattan, New York, Monacelli Press, 1994
Loos, Adolf, Spoken into the Void, reprint 1987: ISBN0-262-62057/ ISBN-13:978-0-262-62057-4
Martin, Roland: Living architecture: Greek, London: Oldburne, 1967

Neal, Peter (ed.), Urban Villages and the making of communities, Spoon, London, 2003.

Shoenfield Katherine, At home with strangers: public space and the new urbanity, London : Comedia in association with Demos, 1998

Tafuri, M., Architecture and Utopia, Mit Press, 1976

Vesely, Dalibor and Mostafavi, Mosen, Architecture and Continuity, Architectural Association, London 1982

Architectural Technology 3

The module is intended to provide students with principles and information on various aspects of Technology relevant to their learning of Architectural Design at Year 3 level.

The course is designed where possible to test the ability to apply this information through providing a series of exercises intended to test application of the knowledge to a given problem, and therefore develop skill in applying this knowledge to their actual designs.

School	ARCHI
Module Code	AR3002
External Subject Code	K100
Number of Credits	20
Level	
Module Leader	Clarice Bleil de Souza
Module offered on a free-standing basis?	No
Any restrictions to free-standing basis?	N/A
Maximum Number on Module	N/A
Language of module delivery	English

On completion of the module a student will be able to:

- Understand the importance of dimensional coordination systems and how it affects design, manufacturing, assemblage and usage.
- Connect students to reality when thinking and proposing dimensional coordination systems so that they are able to clearly assess and criticise their design proposals.
- Understand how comprehensive coordination systems are as well as what are their implications from construction to comfort.
- Understand how dimensional coordination systems affect and are affected by internal space layout planning.
- Understand how to work with layout planning within modular coordination systems;
- Structure the design information appropriately to be managed in a digital environment;
- Test the understanding of fire safety in complex buildings and the implications of it in modular coordination systems;
- Understand how the material influence and affect the design of a structural system in terms of its design possibilities, manufacturing, construction and maintenance.
- Understand the different roles of all the agents involved in designing, manufacturing, assembling and maintaining framed structural systems.
- Connect students to reality when thinking and proposing framed structural systems (develop a realistic approach to problem-solving).
- Understand how comprehensive the design of a structural system is and how to 'move' within the complexities involved in it.
- Understand how the thermal environment is shaped by design decisions.

- Understand interactions between building envelope and building usage.
- Understand implications of design decisions in building comfort and building energy consumption.
- Connect students to the reality of how a building performs and enable them to work out the implications of their design in the resultant building performance.
- Understand how design for thermal performance cannot be separated from architecture design but needs to be addressed since the conceptual levels.
- Connect students to the reality of building performance for comfort with energy efficiency so that they are able to clearly assess and criticize their design proposals.
- Enable students to properly communicate with building physicists, building simulation consultants and mechanical engineers.
- Develop transferable skills to be used in design studio projects.
- Understand there is no right or wrong in technology but good or bad design decisions

How the module will be delivered

The module material will be delivered and reinforced through a series of techniques:

- Formal lectures
- Seminars to discuss assigned readings
- Group and individual project works to apply the concepts and skills learnt throughout the course

Each of the delivery methods has been tailored specifically for each part of the course to maximise student learning within the resources available.

Skills that will be practised and developed

One of the primary aims of the module is to enable the students to apply the knowledge, skills and understanding gained in their Architectural designs. Therefore the overall ability of the students to synthesise the course into usable design information is tested and demonstrated in 3 different stages on a spinal project that runs throughout the Architectural Technology Course. The 3 different stages are the following:

- Stage 1 – A piece of design that shows applied knowledge of modular coordination systems and steel or concrete frame structures. This piece of work is undertaken in groups to also develop team work skills.
- Stage 2 – A piece of design that shows applied knowledge of modular coordination systems in the ‘fit-out’ of internal spaces. In this piece of work groups swap projects and have to compare and contrast the proposal they have developed with the one they have received by proposing the internal fit-out for an office building designed by another group. This piece of work is also undertaken in groups and should improve team work skills by fomenting deeper discussions together with group self criticism.
- Stage 3 – A piece of design that shows the process and thermal performance results of experimenting with different construction strategies to design the building envelope. This piece of work is undertaken individually but students are still supposed to be able to carry on group discussions while undertaking it. It intends to foment discussions that are useful to the set up and evaluation of individual pieces of work.

Apart from the specific practice skills described above, the module will also focus on developing the following skills:

Intellectual Skills:

- have acquired a knowledge and understanding of appropriate design solutions for complex buildings which integrates the knowledge, understanding and skills they have developed over the 3 Building Technology modules.

Transferable Skills:

- an ability to solve design problems involving a number of sometimes conflicting variables
- an ability to integrate arts and science techniques to solve problems
- ability to present information using a variety of visual methods
- ability to verbally present an argument in support of their designs
- ability to use library and other information sources to ascertain required information

How the module will be assessed

The technology module will be assessed separately from the design studio module. The assessment will consist of a single spinal project running throughout the year which will be marked in three different stages along with a final 3 hour Class Test to ensure full coverage of all aspects of the course. The project will require two group work presentations plus two individual presentations (an interim and a final one) which will consist of all exercises set during the course work plus a 'wrap-up' presentation of the overall project. The marks will be 10% for the two pieces of group work, 50% for the individual piece of work and 40% for the Class Test.

Type of assessment	% Contribution	Title	Duration (if applicable)	Approx. date of Assessment
Course work	5%	Task 1	6 weeks	11 Nov
Course work	5%	Task 2	4 weeks	02 Dec
Course work	50%	Task 3	15 weeks	08 Apr
Exam	40%	-	3 hours	April

The potential for reassessment in this module

The module is composed of 60% of course work for which the students are given feedback throughout the course. Apart from that, Task 3 has an interim crit that intends to give individual feedback to each student about their performance in this module. As a result, the students have plenty of time and opportunity to improve their performance during the course and the class test is designed to simply confirm this performance as it does not test any new content, simply the

application of what has been taught in a shorter time span.

There is no reassessment in case of fail as there is enough opportunity during the course to prevent it to happen. Special circumstances are accommodated throughout the course and vary case-by-case.

Syllabus content

Content 1 – Dimensional coordination systems

Content to be covered:

- Importance of dimensional coordination systems;
- Grids and modules (types);
- Structural grids (types, dimensions and tolerances);
- Constructional grids (types, dimensions and tolerances);
- Planning and servicing grids (types, dimensions and tolerances);
- Vertical grids (types, dimensions and tolerances);
- Coordination of grids

Abilities and skills to be developed:

- Understand the importance of dimensional coordination systems and how it affects design, manufacturing, assemblage and usage.
- Connect students to reality when thinking and proposing dimensional coordination systems so that they are able to clearly assess and criticise their design proposals.
- Understand how comprehensive coordination systems are as well as what are their implications from construction to comfort.
- Understand how dimensional coordination systems affect and are affected by internal space layout planning;
- Understand how to work with layout planning within modular coordination systems;
- Structure the design information appropriately to be managed in a digital environment;
- Test the understanding of fire safety in complex buildings and the implications of it in modular coordination systems;
- Develop transferable skills to be used in design studio projects.

Content 2 – Concrete and Steel Frame Structures

Content to be covered:

- How frame systems work;
- Representation of 2D and 3D systems for construction;
- Rough sizing based on material properties;

- Spans, grids, flooring and foundations;
- Repetition of geometry and element sizes
- Connections / Accuracy / Deflection
- Adaptability / Flexibility
- Finishing / Corrosion / Fire protection
- Different technologies (ex; propping, etc)

Abilities and skills to be developed:

- Understand how the material influence and affect the design of a structural system in terms of its design possibilities, manufacturing, construction and maintenance.
- Understand the different roles of all the agents involved in designing, manufacturing, assembling and maintaining framed structural systems.
- Connect students to reality when thinking and proposing framed structural systems (develop a realistic approach to problem-solving).
- Understand how comprehensive the design of a structural system is and how to 'move' within the complexities involved in it.
- Develop transferable skills to be used in design studio projects.

Content 3 – Building Physics and building construction – Thermal building Performance

Content to be covered:

- The physics of heat;
- Thermal comfort;
- Thermal behaviour of buildings;
- Thermal design: Passive controls;
- Active controls;
- Energy (with a little bit of renewable energy);
- Computer simulation.
- Façade cladding construction
- Emphasis in insulating materials and resolution of thermal bridges
- Construction detailing in general

Abilities and skills to be developed:

- Understand how the thermal environment is shaped by design decisions.
- Understand interactions between building envelope and building usage.
- Understand implications of design and construction decisions in building comfort and building energy consumption.
- Connect students to the reality of how a building performs and enable them to work out the implications of their design and construction decisions in the resultant building performance.

- Understand how design for thermal performance cannot be separated from architecture design but needs to be addressed since the conceptual levels.
- Connect students to the reality of building performance for comfort with energy efficiency so that they are able to clearly assess and criticize their design proposals.
- Enable students to properly communicate with building physicists, building simulation consultants and mechanical engineers.
- Develop transferable skills to be used in design studio projects.

Indicative Reading and Resource List:

Compulsory Reading for Building Physics:

Szokolay, S. - Introduction to Architectural Science: The basis of sustainable design. 2nd Edition. Architectural Press London 2008.

Reference Reading – Office Buildings and modular coordination:

Duffy, F, Cave, C, Worthington, J. – Planning office space. Architectural Press, London, 1976.

Duffy, F. – New Office. Conran Octopus, London, 1997.

Meel, J. V. - The European office: Office design and national context. 010 Publishers, Rotterdam, 2000.

Harris, D. A. – Planning and designing the office environment. Van Nostrand Reinhold, New York, 1981.

Neufert P. -Neufert Architects' Data- Third Edition by Blackwell Science Ltd. Oxford 2000

Adler D. - Metric Handbook- Second Edition by Oxford Architectural Press 1999

Littlefield, D. – Metric handbook: Planning and design data. Elsevier, Amsterdam, 2008

Reference Reading – Structures and Cladding:

Glass Construction Manual – Birkhauser, Edition Detail > Lib.721.04496 G

Steel Construction Manual – Birkhauser, Edition Detail > Lib.693.71 S

Concrete Construction Manual – Birkhauser, Edition Detail > Lib.691.3C

Timber Construction Manual – Birkhauser, Edition Detail > Lib.691.1 H

Brookes A – The Building Envelope, Butterworths, London 1992

Grech C, Brookes A – Cladding of Buildings, Construction Press

Sassi, P. – Strategies for sustainable architecture. Taylor and Francis 2006

Dean Y and Rich P - Principles of Element Design, 3rd Edition. Architectural Press, London 1999

Watt, A. – Modern construction facades. Springer, London, 2005

Gauld, B. J. B. – Structures for architects. Longman Scientific and Technical, Harlow, 1995

Milliais, M. – Building structures: from concepts to design. Spon Press, London, 2005.

Vandenberg, M, Edler, A. J. – AJ handbook of building enclosure, Architectural Press, London, 1975.

Reference Reading – Building Physics:

Goulding J, Owen Lewis J, Steemers T, eds - Energy Conscious Design, a primer for architects. Batsford, London 1992

Goulding J, Owen Lewis J, Steemers T, eds - Energy in Architecture. Batsford, London 1993

Burberry P – Environment and Services, Mitchells Buildings Series. Longman Harlow 1992

Hegger, M., Fuchs, M., Stark, T., Zeumer, M. – Energy Manual: Sustainable architecture. Birkhauser, 2008.

Szokolay, S. V. – Environmental science handbook for architects and builders. The Construction Press. Lancaster 1980.

Daniels, K. - Advanced building systems. Birkhauser, Basel, 2002

Owen Lewis J. and Goulding J. – European directory of energy efficient building: components, services, materials. James & James Science Publishers, London, 1993.

Issues in Contemporary Architecture

This course is an introduction to critical thinking in architectural theory. The scope covers 'contemporary' issues – issues which are currently under debate in architectural theory, research and practice. As such, the course may vary from year to year, depending upon current debates, and upon the research and practice interests of staff, students and visiting lecturers, and the content of other year three modules.

The course aims to introduce students to critical debate, to explore the relationship between words and building, to encourage students to set out their own critical viewpoint, and to prepare students to communicate clearly and write critically. The course consists of weekly lectures, each focused on one theme: themes have included nature, making, new and old, transparency, gender, etc. Lectures will typically survey different philosophical or intellectual perspectives on the theme and present related architectural examples. Practitioners are invited to lecture on their work in relation to the respective themes.

Each week students, in groups, present case studies of relevant buildings, and individually submit short 'manifestoes' conveying their position on the week's theme. Their main submission is a 4000-word essay relating architecture to ideas. This is seen as preparation for the MArch dissertation, which students begin in year 4.

On completion of the module a student will be able to:

- Communicate a considered point of view on a series of issues in contemporary architectural theory and practice
- analyse different relationships between verbally formulated ideas/theories and architectural practice
- contextualise their own design ideas in relation to theories of architecture and approaches to architectural practice.

School	ARCHI
Module Code	AR3003
External Subject Code	K100
Number of Credits	10
Level	
Module Leader	Adam Hardy
Module offered on a free-standing basis?	No
Any restrictions to free-standing basis?	N/A
Maximum Number on Module	N/A
Language of Module Delivery	English

How the module will be delivered

Lectures, essay seminars and directed private study.

Skills that will be practised and developed

Research skills, Information literacy, Writing skills.

How the module will be assessed

Guided and self-selected 'long essay' + presentation and weekly assignments

Type of assessment	% Contribution	Title	Duration (if applicable)	Approx. date of Assessment
Essay	75	Long Essay		January
Short polemical statements	15	Manifestoes		January
Group presentation	10	Case Study Presentation		Term 1

The potential for reassessment in this module

Resubmission during the summer for reassessment in September.

Syllabus content

Each session will involve: a lecture concerning a theoretical issue; student presentations of particular architectural case-studies related to that issue; a further presentation, either an exploration of further case studies or a significant contemporary practitioner speaking about their own work; and a discussion. Recent themes have been: Nature and Technology, New and Old, Gender, The Everyday, Transparency, Tradition, Making, Digital Making, Social Aspects, and Sustainability.

Indicative Reading and Resource List:

Nesbitt K. (ed.), *Theorizing A New Agenda for Architecture* (New York: Princeton Architectural Press, 1996).

Hale J., *Building Ideas: An Introduction to Architectural Theory* (Chichester: Wiley, 2000).

Kruft, H-W, *A History of Architectural Theory from Vitruvius to the Present* (New York: Princeton Architectural Press/Zwemmer, 1997).

Forty A., *Words and Buildings* (London: Thames and Hudson, 2000).

Jencks C., *Theories and Manifestoes of Contemporary Architecture* (Chichester: Academy, 1997).

Ballantyne A. (ed.), *What is Architecture?* (London: Routledge, 2002).

Rattenbury K. (ed.), *This is not Architecture?* (London: Routledge, 2002).

Ockman J. (ed.), *Architecture Culture 1943-1968: A Documentary Anthology* (New York: Rizzoli, 1993).

Hayes, K.M (ed.), *Architectural Theory Since 1968* (Cambridge MA: MIT Press, 1998).

Crinson M. & Lubbock J., *Architecture: Art or Profession? Three Hundred Years of Architectural Education in Britain* (Manchester: Manchester University Press, 1994).

[Other reading is recommended in relation to the lecture themes]

Practice Management and Economics

The module aims to introduce students to the professional, economic and legal determinants of built form and to prepare for Education in Practice year by introducing aspects of the structure and operation of building industry and allied professions, with particular reference to U.K. architectural practice

School	ARCHI
Module Code	AR3004
External Subject Code	K100
Number of Credits	10
Level	
Module Leader	Andy Roberts
Module offered on a free-standing basis?	No
Any restrictions to free-standing basis?	N/A
Maximum Number on Module	N/A
Language of module delivery	English

On completion of the module a student will be able to:

- Recognise the principal legal and professional frameworks within which architecture is designed, procured and constructed and practiced and explain how these impact on built form.
- Generate an architectural brief that reflects the needs of both client and building user.
- Using basic economic principles, analyse the motives of building promoters, designers, contractors and building users.
- Evaluate an architectural design in terms of its cost and value for money to the client.
- Relate an understanding of how a small business operates to small architectural practices

How the module will be delivered

The module will be delivered through a three day block course, which will consist of a series of lectures and workshops. Students will be expected to complete an independent economic evaluation of a design project that they have previously worked on.

Skills that will be practised and developed

Negotiation, Listening, Working Together, Empathy, Questioning

How the module will be assessed

The assessment will consist of a 2 hour written examination, designed to test the more theoretical aspects of the module, and a course work assignment which allows students to demonstrate the extent that they have met the learning outcome “*Evaluate* an architectural design in terms of its cost and value for money to the client” and “*Generate* an architectural brief that reflects the needs of both client and building user.”

The coursework mark will be based around performance in the costing exercise, but students would also need to achieve satisfactory pursuance of the group project work conducted during the block course.

Type of assessment	% Contribution	Title	Duration (if applicable)	Approx. date of Assessment
Examination	75%	Practice Management and Economics	2 hours	April
Coursework	25%	Costing Exercise		March

The potential for reassessment in this module

Students may resit this module during the August resit period.

Syllabus content

In order to meet the learning outcomes, the students will study the following topics during the block course. Focus will be on the implications of design on these issues.

- *Economic Consequences of Design Decisions*: Value and demand; funding and feasibility; design economics; building costs; life cycle costs; estates strategy
- *Means of Building*: Production Structure, operation and political economy of the building industry
- *Legal controls affecting Development and Design*: Land law, including boundaries, easements, property and premises; the law of tort including nuisance and negligence; building and development control legislation
- *The Architect's Responsibilities in the Design Process*: Professionalism & negligence; design liability and briefing; introduction to procurement.
- *The Client and the User*: Identification of client and user needs, negotiation and formulation of the brief.

Indicative Reading and Resource List:

Ferry, D and Brandon, P. (1999) *Cost Planning of Buildings* Oxford: Blackwell

Mann, T (1992) *Building Economics for Architects*, New York:Van Nostrand Reinhold

Powell, CG (1996) *British Building Industry Since 1800: an Economic History* , London: E&FN Spon

Spain, B,(2010) *Spon's first stage estimating handbook* London: Spon Press

Davis Langdon (2011) *Spons Architects and Builder's Price Book*: London Spon Press

Harford, T (2007) *The Undercover Economist*, Abacus, London

CABE (2006) *The Value Handbook*, CABE available from <http://www.cabe.org.uk/publications/the-value-handbook>

Lupton S (ed) (2000): *The Architects Job book* (7th Edition), London: RIBA Publications

Galbraith, A. Stockdale, M et al. (2004) *Galbraith's Building and Land Management Law for Students*. Butterworth-Heinemann

Speaight, A. and Stone, G. (eds.) (2004)*Architect's legal handbook: the law for architects*, BSP Professional Books, Oxford. (7th edition)

Cave, A (2007) *Legislation Maze: Inclusive Accessible Design*. RIBA Publishing

Charlton Smith, Nick (2007) *Legislation Maze: Noise*. RIBA Publishing

Ham, S (2007) *Legislation Maze: Fire*. RIBA Publishing