1.	**Programme Title**	MArch
2.	**Unit Title**	STUDIO: Comprehensive Design Thesis
3.	**HE Level**	PG - FHEQ Level 7
4.	**Unit Code**	MAR17706
5.	**Credit Value of Unit**	90
6.	**Unit Type**	Mandatory
7.	**Unit Tutor**	TBC

8. Indicative Notional Learning Hours			
Staff – Student Contact		**Independent Study Hours**	
Classes (e.g. lectures, seminars and supervised group activity)	120	**Independent Study** (e.g. project development, reading, research and work on online forums)	300
Supervised Access to Resources	60	**Preparation for Assessment**	270
		Unsupervised Access to Resources	150
Total	180		720

9. Unit Introduction

This unit is the final design project for the Part 2 Architecture programme. In it students demonstrate the ability to integrate the broad range of knowledge and skills required in the design of a complex building.

The object is to educate students in real-world design, including the timing of the various prioritizations required during of the process of designing a complex building. It also encourages informed speculative explorations of new near-future ‘what if?’ conditions.

The CDT is a five-part integrated design project in which students comprehensively research* and design a building. They propose a brief and site and show evidence of their research* that led them to the building type and location by undertaking an in-depth study of site, planning context, social context, climate, new technologies etc, and of precedents related to programme and site.

The design process follows the RIBA Plan of Work, with submissions including a full planning application and attendant information, partial detailed structural, environmental and constructional design, and final high-level presentation of the completed project, accompanied by a reflective report on the process in which evidence of research* study around the subject area for each of the previous four stages is shown.

Together, the design proposal, which explores innovative methods of designing and constructing a building type and the contribution it makes to its contexts, and the reflective report, form the thesis. Contemporary and innovative practices are therefore encouraged.

It includes representation from industry with lectures and tutorials on strategic planning, means of escape, structures, environment and construction, by visiting consultants, so that students learn how to manipulate these standard relationships in the profession. Students are also encouraged to interview professional 'clients' as to the contemporary relevance of their projects.

In this way, at the end of their architectural academic careers, students demonstrate their ability to apply the methods and techniques that they have learned, to review, consolidate, extend and apply their knowledge and understanding, to initiate and carry out projects, and their suitability as designers for the architectural profession.

**'research' as in GA2.4 of the ARB/RIBA Criteria for Part 2 and "research or advanced scholarship" in FHEQ Level 7*

10. Aims of the Unit

The unit aims for students to develop the ability to:

- prepare and present a comprehensive building design project of medium complexity, in relation to its context, using a range of media, and in response to a brief
- understand the constructional and structural systems, the environmental strategies and the regulatory requirements that apply to the design and construction of a comprehensive design project
- research and develop a conceptual and critical approach to a comprehensive architectural design project that integrates and satisfies the aesthetic aspects of a building, the technical requirements of its construction, the needs of the user and the future functionality of the building in its contexts

And thereby have satisfied the ARB/RIBA Criteria for Part 2 at FHEQ Level 7 as outlined in the Learning Outcomes

11. Indicative Content

- Element 1: Selection and research of programme and site for a complex building LO 1, 2 & 3

- Element 2: Outline design of a complex building to planning permission equivalent stage LO 4, 5 & 6

- Element 3: Selective technical detailed design for a complex building LO 7, 8, 9 & 10

- Element 4: Final design and presentation of a complex building LO 11, 12 & 13

- Element 5: Reflective Report LO 14

12. Unit Learning Outcomes

In order to successfully satisfy the learning outcomes students are required to engage with the process of learning. The learning outcomes refer to developing the following **RIBA/ARB Graduate Attributes for Part 2** and **FHEQ Level 7 standards** and must be read in conjunction with these. With regard to meeting the eleven RIBA/ARB General Criteria at Parts 1 and 2, successful completion of this unit will contribute to the award of the Part 2 to students who have:

GA2.1 ability to generate complex design proposals showing understanding of current architectural issues, originality in the application of subject knowledge and, where appropriate, to test new hypotheses and speculations;

GA2.2 ability to evaluate and apply a comprehensive range of visual, oral and written media to test, analyse, critically appraise and explain design proposals;

GA2.3 ability to evaluate materials, processes and techniques that apply to complex architectural designs and building construction, and to integrate these into practicable design proposals;

GA2.4 critical understanding of how knowledge is advanced through research to produce clear, logically argued and written work relating to architectural culture, theory and design;

GA2.5 understanding the context of the architect and the construction industry, including the architect's role in the processes of procurement and building production, and under legislation;

GA2.6 problem solving skills, professional judgment, and ability to take the initiative and make appropriate decisions in complex and unpredictable circumstances;

GA2.7 ability to identify individual learning needs and understand the personal responsibility required to prepare for qualification as an architect

FHEQ Level 7:

- a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study or area of professional practice.

- a comprehensive understanding of techniques applicable to their own research or advanced scholarship

- originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline

- conceptual understanding that enables the student

    - to evaluate critically current research and advanced scholarship in the discipline

- to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses.

- Typically, holders of the qualification will be able to:

- deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences

- demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level

- continue to advance their knowledge and understanding, and to develop new skills to a high level.

- And holders will have:

- the qualities and transferable skills necessary for employment requiring:

- the exercise of initiative and personal responsibility

- decision-making in complex and unpredictable situations

- the independent learning ability required for continuing professional development.

and upon completion of this unit will be able to demonstrate for each element, in relation to:

Element 1: Selection and research of a programme and site for a complex building

ARB/RIBA General Criteria for Parts 1 and 2:

GC4 - Adequate knowledge of urban design, planning and the skills involved in the planning process

The graduate will have knowledge of:

4.1 theories of urban design and the planning of communities.

4.3 current planning policy and development control legislation, including social, environmental and economic aspects, and the relevance of these to design development.

And

GC7 - Understanding of the methods of investigation and preparation of the brief for a design project.

The graduate will have an understanding of:

7.1 the need to critically review precedents relevant to the function, organization and technological strategy of design proposals;

7.2 the need to appraise and prepare building briefs of diverse scales and types, to define client and user requirements and their appropriateness to site and context;

7.3 the contributions of architects and co-professionals to the formulation of the brief, and methods of investigation used in its preparation

the following:

Learning Outcome	Marking Criteria	
1 research and present precedents which illustrate functional and technical systems appropriate for the specification of a medium-sized complex building.	☒ Research	☐ Technical Competence
	☒ Analysis	☒ Communication & Presentation
	☒ Subject Knowledge	☒ Personal & Professional Development
	☐ Experimentation	☒ Collaborative and / or Independent Professional working
2 carry out a site analysis in order to generate contextual data appropriate to the design of a medium-sized complex building considering human needs and scale.	☒ Research	☒ Technical Competence
	☒ Analysis	☐ Communication & Presentation
	☒ Subject Knowledge	☒ Personal & Professional Development
	☐ Experimentation	☒ Collaborative and / or Independent Professional working
3 appraise and prepare a building brief, to define client and user requirements and their appropriateness to site and context in consultation with co-professionals using specific methods of investigation	☒ Research	☒ Technical Competence
	☒ Analysis	☒ Communication & Presentation
	☒ Subject Knowledge	☒ Personal & Professional Development
	☐ Experimentation	☒ Collaborative and / or Independent Professional working

and, in relation to:

Element 2: Outline design of a complex building to planning permission equivalent stage

GC5 - Understanding of the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale.

The graduate will have an understanding of:

5.1 the needs and aspiration of building users.

5.2 the impact of buildings on the environment, and the precepts of sustainable design.

5.3 the way in which buildings fit into their local context.

And

GC6 - <u>Understanding</u> of the profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors.

The graduate will have an <u>understanding</u> of:

6.3 the potential impact of building projects on existing and proposed communities.

And

GC11 - <u>Adequate knowledge</u> of the industries, organizations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning.

The graduate will have <u>knowledge</u> of:

11.1 the fundamental legal, professional and statutory responsibilities of the architect, and the organizations, regulations and procedures involved in the negotiation and approval of architectural designs, including land law, development control, building regulations and health and safety legislation;

11.2 the professional inter-relationships of individuals and organizations involved in procuring and delivering architectural projects, and how these are defined through contractual and organizational structures;

the following:

4 critically evaluate a brief for a medium-sized complex building in order to establish priorities in design objectives in response to site, context and other pertinent issues such as sustainability, budget, climate control and human well-being	☐ Research ☒ Analysis ☒ Subject Knowledge ☐ Experimentation	☒ Technical Competence ☒ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working
5 demonstrate critical engagement with the historical/cultural context by means of the application of explicit design criteria within a design solution.	☒ Research ☒ Analysis ☒ Subject Knowledge ☐ Experimentation	☒ Technical Competence ☒ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working
6 generate a design proposal which illustrates understanding of	☐ Research ☐ Analysis	☒ Technical Competence ☒ Communication & Presentation

statutory regulations, health and safety requirements, the needs of the disabled and energy consumption.	☒ Subject Knowledge ☐ Experimentation	☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working

and, in relation to:

Element 3: Selective technical detailed design for a complex building

GC8 - Understanding of the structural design, constructional and engineering problems associated with building design.

The graduate will have an understanding of:

8.1 the investigation, critical appraisal and selection of alternative structural constructional and material systems relevant to architectural design;

8.2 strategies for building construction, and ability to integrate knowledge of structural principles and construction techniques;

8.3 the physical properties and characteristics of building materials, components and systems, and the environmental impact of specification choices.

And

GC9 - Adequate knowledge of physical problems and technologies and the function of buildings so as to provide them with internal conditions of comfort and protection against the climate.

The graduate will have knowledge of:

9.1 principles associated with designing optimum visual, thermal and acoustic environments;

9.2 systems for environmental comfort realized within relevant precepts of sustainable design;

9.3 strategies for building services, and ability to integrate these in a design project.

And

GC10 - The necessary design skills to meet the building users' requirements within the constraints imposed by cost factors and building regulations.

The graduate will have the skills to:

10.3 prepare designs that will meet building users' requirements and comply with UK legislation, appropriate performance standards and health and safety requirements.

the following:

7 assess the value of advice given and collaborative design development with structural, environmental, and constructional consultants and professionals.	☐ Research ☒ Analysis ☒ Subject Knowledge ☐ Experimentation	☒ Technical Competence ☐ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working
8 select and justify construction methods and materials according to specified criteria.	☒ Research ☒ Analysis ☒ Subject Knowledge ☒ Experimentation	☒ Technical Competence ☒ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working
9 demonstrate through a design solution the understanding of the choice of appropriate building materials, technologies and systems in relation to human well-being and larger global issues such as sustainability.	☒ Research ☒ Analysis ☒ Subject Knowledge ☒ Experimentation	☒ Technical Competence ☒ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working
10 demonstrate through a building design solution knowledge of structural systems, building services, construction techniques and the environmental impact of such decisions.	☒ Research ☒ Analysis ☒ Subject Knowledge ☒ Experimentation	☒ Technical Competence ☒ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working

and, in relation to:

Element 4: Final design and presentation of a complex building

GC1 - Ability to create architectural designs that satisfy both aesthetic and technical requirements.

The graduate will have the ability to:

1.1 prepare and present building design projects of diverse scale, complexity, and type in a variety of contexts, using a range of media, and in response to a brief;

1.2 understand the constructional and structural systems, the environmental strategies and the regulatory requirements that apply to the design an construction of a comprehensive design project;

1.3 develop a conceptual and critical approach to architectural design that integrates and satisfies the aesthetic aspects of a building and the technical requirements of its construction and the needs of the user

the following:

11 present the design of a complex building by appropriate graphic and written means.	☐ Research ☐ Analysis ☒ Subject Knowledge ☐ Experimentation	☒ Technical Competence ☒ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working
12 present selected design generators and concepts for a complex building by appropriate oral, graphic and written means.	☒ Research ☒ Analysis ☒ Subject Knowledge ☒ Experimentation	☒ Technical Competence ☒ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working
13 critically evaluate the theoretical basis for the design of a complex building orally to a group.	☒ Research ☒ Analysis ☒ Subject Knowledge ☒ Experimentation	☒ Technical Competence ☒ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working

and, in relation to:

Element 5: Reflective Report

GC2 - Adequate knowledge of the histories and theories of architecture and the related arts, technologies and human sciences.

The graduate will have knowledge of:

2.3 the application of appropriate theoretical concepts to studio design projects, demonstrating a reflective and critical approach.

And

GC3 - Knowledge of the fine arts as an influence on the quality of architectural design.

The graduate will have knowledge of:

3.3 the creative application of such work to studio design projects, in terms of their conceptualization and representation.

As well as the other ARB/RIBA Criteria in this unit

the following:

14 The ability to: - understand, evaluate and summarise the results of research findings in a comprehensive design project - critically appraise different arguments presented in texts - justify conclusions by structured argument demonstrating a systematic understanding of and originality in the application of knowledge in the form of a reflective report on the design of a comprehensive design project.	☒ Research ☒ Analysis ☒ Subject Knowledge ☐ Experimentation	☒ Technical Competence ☒ Communication & Presentation ☒ Personal & Professional Development ☒ Collaborative and / or Independent Professional working

13. Learning and Teaching Methods

This unit will be delivered using a combination of:

- Briefings ☒
- Lectures ☒
- Project work ☒
- Seminars ☐
- Workshops ☐
- Group work ☐
- Online activity ☒
- Individual Presentations and critiques ☒
- Group presentations and critiques ☐
- Self-directed independent study ☒
- Other (describe below) ☒
  Tutorials

14. Assessment Methods

The assessment for this unit is weighted. In element-based assessment, you must achieve at least D- in the overall unit. Failure (E, F, or F-), or non-submission in any element defaults to Fail for the unit.

This unit is assessed by weighted elements at designated deadlines during the course of the academic year, all of which must be passed at D- minimum to pass the

unit. Fails/non-submission in Elements 1, 2 & 3 only can be recovered in-academic year, before Elements 4 & 5, with a D- cap if passing.

- Element 1 Project Presentation & Portfolio - Site and Brief (10%)
- Element 2 Project Presentation & Portfolio - Outline Design (15%)
- Element 3 Project Presentation & Portfolio - Selected Detailed Technical Design (15%)
- Element 4 Project Presentation & Portfolio - Final Design & Presentation (45%)
- Element 5 Reflective Report (15%)

Assessment will be against the specified marking criteria.

All learning outcomes must be achieved at D- to pass this unit.

15. Reading and Resource List

Essential Reading

Abendroth, L. and Bell, B. (2015) *Public Interest Design Practice Guidebook: SEED Methodology, Case Studies, and Critical Issues (Public Interest Design Guidebooks)* Routledge

Alexander, C. (1978) *A Pattern Language,* OUP USA

Alexander, C. (1980) *The Timeless Way of Building,* OUP USA

Bert, Bielefeld (2013) *Basics Architectural Design,* Birkhauser

Brown, R. (2016) *Architectural Material & Detail: Glass*, Design Media Publishing Ltd

Buhler, B. (2016) *Architectural Material & Detail: Wood*, Design Media Publishing Ltd

Buxton, P. (2015) *Metric Handbook: Planning and Design Data*, Routledge

Cartlidge, D. (2013) *Estimator's Pocket Book*, Routledge

Cook, Sir Peter (2013) *Drawing: The Motive Force of Architecture*, Wiley

Crysler, C. G., Cairns, S. and Heynen, H.(eds). (2012) *The Sage Handbook of Architectural Theory*. London: Sage

Deplazes, Andrea (2013) *Constructing Architecture: Materials, Processes, Structures*, 3rd edition: Birkhauser Verlag

Dunn, Nick (2010) *Architectural Modelmaking*, Laurence King

Dunn, Nick (2012) *Digital Fabrication in Architecture*, Laurence King

Fairhead, R. (2013) *RIBA Plan of Work: Information Exchanges*, RIBA Publishing

Farrelly, Lorraine and Crowson, Nicola (2014) R*epresentational Techniques for Architecture,* London: Bloomsbury Publishing

Ferrando, J. (2016) *Architectural Material & Detail: Concrete*, Design Media Publishing Ltd

Gerber, E. (2016) *Architectural Material & Detail: Advanced Materials*, Design Media Publishing Ltd

Hall, F. and Greeno, R. (2013) *Building Services Handbook,* Routledge

Halliday, S and Atkins, R. (2013) *RIBA Plan of Work: Sustainability*, RIBA Publishing

LaGro Jr, J. (2013) *Site Analysis: Informing Context-Sensitive and Sustainable Site Planning and Design*, Wiley

Merrienboer (2016) *Architectural Material & Detail: Masonary*, Design Media Publishing Ltd

Neufert, E. and Neufert, P. (2012) *Architects' Data, 4th Edition,* Wiley-Blackwell

Ostime, Nigel (2013) *RIBA Job Book,* 9th edition: RIBA Publishing

Parry, Eric, (2015) *Context: Architecture and the Genius of Place,* Wiley

Pelsmakers, Sofie (2014) *The Environmental Design Pocketbook,* RIBA Publications

Perez, F. (2016) *Architectural Material & Detail: Metal*, Design Media Publishing Ltd

Reed, R. (2013) *RIBA Plan of Work: Town Planning*, RIBA Publishing

RIBA (2015) *Stage Guide Bundle: Briefing; Design; Construction*, RIBA Publishing

Silver, Pete and McLean, Will (2014) *Structural Engineering for Architects,* Laurence King

Sinclair, D. (2013) *RIBA Plan of Work: Design Management*, RIBA Publishing

Waterman, T. (2015) *The Fundamentals of Landscape Architecture*, Bloomsbury Academic

Watts, Andrew (2013) *Modern Construction Envelopes*, Birkhäuser

Watts, Andrew (2016) *Modern Construction Case Studies*, Birkhäuser

Watts, Andrew (2016) *Modern Construction Handbook*, Birkhäuser

URLs

Precedents: RIBA President's Silver Medal (Part 2) Submissions:
http://www.presidentsmedals.com/Entries/2015/1-2/2

Precedents: Dezeen:

http://www.dezeen.com/architecture/

Precedents: ArchDaily:

http://www.archdaily.com

RIBA Plan of Work:

http://www.ribaplanofwork.com

First in Architecture:
http://www.firstinarchitecture.co.uk

Planning Application and Design & Access Statements:

http://www.planningportal.gov.uk/planning/applications/howtoapply/whattosubmit/designaccess

http://www.designcouncil.org.uk/resources/guide/design-and-access-statements-how-write-read-and-use-them

Building Regulations:

https://www.planningportal.co.uk/info/200135/approved_documents

Steel: https://www.tatasteelconstruction.com/en_GB/

Timber: https://www.trada.co.uk

Concrete: http://www.concretecentre.com

Brick: http://www.brick.org.uk

Glass: http://www.ggf.org.uk

Stone: http://www.stonefed.org.uk

Metal cladding and roofing: http://www.guidetometalroofing.co.uk

Journals

Architects Journal

Architectural Record

Architectural Review

Architectural Theory Review: Taylor and Francis

Architecture Today

Blueprint

Building Design

Clad

Detail

El Croquis

L'Architecture d'Aujoudhui

RIBA Journal

The Japan Architect

Urban Design Journal

Further Reading and Resources

Further reading and resources will be identified in your Project Brief and in discussion with your anchor tutor in relation to your selected site and brief.