Design + Make
Wood Chip Barn under construction in the Big Shed [2015]
The Architectural Association’s satellite campus located in Hooke Park, Dorset is a laboratory for Architectural Research through 1:1 fabrication. Students inhabit an environment that combines forest, studio, workshop and building site while participating in hands-on research in design and fabrication through prototyping. The large-scale fabrication facilities act as a testing ground where students devote time to advanced speculative research.

The MArch and MSc Design + Make programmes are sixteen and twelve-month residential programmes respectively. Students design and build Architecture in the forest, within an ecosystem that is both a materials library and site, and which forms the inspiration for architectural experimentation. By combining traditional craft with advanced technologies such as 3D scanning and robotic fabrication, Design + Make operates as an agency of architectural innovation and presents a unique and alternative vision for architectural education.

designandmake.aaschool.ac.uk
hookepark.aaschool.ac.uk
aaschool.ac.uk
[1] INTRODUCTION + PROGRAMME OVERVIEW

Introduction

Design + Make operates as a critical practice, investigating and generating new protocols, operations and attitudes within the realm of experimental architectural constructs. Unapologetically side-stepping mundane architectural practices, our research explores design at the point of physical production and demonstrates an alternative vision for architectural education where making is central to the act of design.

Headquartered at the AA’s satellite Hooke Park campus, students of Design + Make inhabit a unique environment for experimental fabrication that combines, forest, studio, workshop and building site. Hooke Park is Design + Make’s laboratory for architectural research – the large-scale fabrication facilities providing a testing ground for students in which to devote time to advanced speculative research through design and fabrication of experimental buildings and large-scale components. Embedded within an idyllic forest ecosystem, our architectural investigations establish a symbiotic relationship with our forest site.

The programme’s core agenda is to advance the materialisation of architecture through the synthesis of rigorous design strategies with advanced technologies, craft techniques, and deep understanding of material behaviours.

Contemporary design and fabrication technologies enable traditional and established making techniques to be reinvented as innovative and appropriate processes for architectural constructs. Our toolbox is an expansive kit, containing diverse tools to facilitate the design and fabrication of surreptitious but precise constructs within the fabric of Hooke Park.

Technologies and methods such as the 3D scanning, generative modelling, analogue photography and film making, iterative physical modelling, tool making, hand drawing and robotic fabrication combine to optimise, distort and provoke unconventional strategies and provide new opportunities for replicating the feedback between natural geometry, material properties and designed form that had previously connected designer, maker and the artefact.

The programme’s hands-on approach is guided by an in-depth understanding of materials understanding. Combining traditional craft with cutting edge technologies we develop and fabricate our own unique and innovative tools and operational systems. Placing an emphasis on the design and fabrication of exciting and unpredictable architectures, the programme explicitly aims to maximise the learning opportunities presented by the realisation of design intent and reconnects with the true nature of architecture; designing + making. Not compromised by the second-hand abstraction of conventional architectural education - confined to the desktop - the physical world is the medium of our activities.

Architecture students should make architecture. In doing so, we provide the development of alternative modes of architectural practice.

Programme Overview

Two courses are offered: a 16-month MArch; and a 12-month MSc. Both are structured around a series of hands-on design-make studio projects of increasing scale and sophistication leading to a student construction which contributes to a campus building (MArch) or full-scale timber prototype (MSc). These studios are complemented by seminar courses and workshops in forestry, woodworking and both traditional and contemporary building crafts, and by lectures and events at Hooke Park and Bedford Square – providing a foundation in the cultural and technological landscape within which a designer must operate.

The MArch/MSc share taught components in the first two terms. After the second term, the programme bifurcates, with the MSc students completing their project and dissertation for submission in September, whilst the MArch students continue with project construction and thesis completion for submission the following January.

The first term focuses mainly on skill development, with the key objective of equipping the students with the necessary abilities to engage confidently with the diverse set of fabrication technologies and software available at Hooke Park. Term 1 also sets out different strategies and formats for the ‘documentation of making’ through the Fabrication Chronicles - an individual design dossier documenting the development stages, processes and outcomes of the project including technical notes, on-site observations, remarks on trials and failures - and a short film exploring the recording and presentation of process-based research.

MArch students use full scale building constructs at Hooke Park as a vehicle for design research. Formulating individual research interests within a group project each student investigates and develops a critical understanding of the work in their thesis.
MSc students have a more explicit technological focus on the innovative application of timber in architecture, which is developed and tested through full-scale system prototypes using diverse fabrication technologies and strategies.

The teaching and technical team consists of designers, makers, architects, engineers and construction experts, who work side by side with students to develop knowledge and expertise collaboratively resulting in experimental architectural constructs.
[2] TEACHING STAFF AND TECHNICAL STAFF LIST

For staff bio's and CV please visit [http://designandmake.aaschool.ac.uk/team](http://designandmake.aaschool.ac.uk/team)

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Kitchen Manager  
Permaculture Tutor
Programme Specifications

Programme Award & Title: MArch Design + Make // MSc Design + Make (Timber Technologies)
Teaching Institution: Architectural Association School of Architecture
Awarding Institution: OU Open University*
Date of Last Revalidation: May 2015
Programme start date: September 2010
Credit Points: 180
Criteria for admission: MArch: Five-year professional architecture degree.
MSc: Three-year degree in architecture, engineering or related subject
Mode/Duration of study: Full time, 16 months (MArch) 12 months (MSc)

*The AA is a Partner Institution and Affiliated Research Centre of The Open University (OU), UK. All taught graduate degrees at the AA are validated by the OU. The OU is the awarding body for research degrees at the AA.

Overview

Students are given one credit for each 10 hours spent on the programme: this includes the time spent on lectures, seminars, workshops and tutorials; non-contact activities such as design projects, course reading, essays and thesis; and 'make' activities such as fabrication and construction. A total of 180 credits (1800 hours) are required for completion of both the MArch and MSc programme.

Over the programme as a whole, the proportion of contact hours (teaching and tutorial time) and individual work is approximately 25% and 75% respectively. The contact activities and hours are consistent for the MArch and MSc for the first three terms. At the end of term 2 the programme bifurcates and the contact periods differ for the fourth term for each programme:

- For the MSc students, term 4 occurs during the summer (July, August, September) and academic contact continues through this period with tutorials to support the Dissertation.
- For the MArch students this period (July, August, September) is the summer academic break, however construction work continues on the building site through this period and MArch students are expected to participate in this. For the MArch students, term 4 occurs during the autumn (October, November, December) and academic contact continues through this period with tutorials to support the Thesis and Project Documentation. The final submission is made at the end of January.

The MArch and MSc share the taught components of the first two terms, with the MSc students completing their dissertations for submission in September, whilst the MArch students continue with project construction through the summer and then thesis completion (term 4) for submission the following January. The thesis follows an informative model, providing fundamental research to inform and develop the design and fabrication strategies for the project.

Programme Aims

Design Modules

Induction Studio and Core Studio in the first term provide an intensive introduction to the programme’s key design methodologies and fabrication practices, and aim to install an essential skill-set and a level of competence and confidence in applying these technologies.

The Main Project Studio is in second term, in which the prototype/building to be constructed is designed, documented and the fabrication methodology is researched. Design approaches and skills developed in the first term are applied in subsequent terms in the collective design and research of the Main Projects (MArch) and the individual design of a Prototype in timber (MSc).

The Make Studio consists of the fabrication and construction work of the architectural construct (MArch)/ prototype (MSc). Its processes and built output are determined by the specific brief for the Main Project, and are assessed on completion of the prototype/architectural construct project. Learning is acquired experientially through collaboration with the project’s tutors, engineers, contractors and trades-people.

Seminar Modules

The Seminar Courses complement the Design Studios with their focus on the cultural theory of making as design; timber properties and technologies; and visiting lectures and workshops introduce contemporary critical discourse surrounding
landscape, cultural geography, ecology and technology. Together they provide the theoretical foundation of the programme, and introduce the various fields of knowledge relevant to the design of experimental prototype buildings.

The Making as Design essay functions as an early exploration of thesis/dissertation content and intellectual position. The Thesis (MArch)/Dissertation (MSc) is started in the second term with a series of classes in thesis production.

These components are supplemented by non-assessed workshops in forestry, woodworking and traditional building crafts, and by lectures and events at Hooke Park and London.

The table below summarises this structure and the assessment distribution for the two programmes.

**Learning Outcomes**

**A: Knowledge and Understanding**

On completion, students should be able to:

[A1] Demonstrate knowledge of the application of innovative technologies and methodologies in the production of architectural constructs.

[A2] Demonstrate critical awareness of advanced digital design techniques, the realms of their application, and their relative merits when integrating design and production.

[A3] Demonstrate knowledge of timber properties and production with respect to its use as a construction material.

[A4] Understand innovative application of timber in architecture, including through advanced design and fabrication techniques.

[A5] Demonstrate systematic knowledge of the historical and theoretical bases of design-build approaches to architecture.

[A6] Understand the current thinking within contemporary critical discourse surrounding landscape, cultural geography, ecology and technology.

**B: Subject Specific Skills/Attributes**

On completion, students should be able to:

[B1] Conceive, produce, represent and articulate a comprehensive architectural design proposal.

[B2] Research contemporary and traditional construction technologies, and be able to identify and characterise relevant architectural typologies and built precedents.

[B3] Synthesise these technologies to develop and communicate advanced approaches to design and construction.


[B5] Demonstrate practical skill competency in the processes of fabrication and the ability to make informed pragmatic judgments concerning methods of construction.

[B6] [MArch] Conduct research that positions the physical production of architectural components as the focal point of its evidence.

[B6] [MSc] Conduct independent research that incorporates physical prototyping as the focal point of its evidence.

**C: Transferable skills attributes**

On completion of MArch/MSc Design + Make, students should be able to:

[C1] Carry out critical and technical analyses of design and construction proposals.

[C2] Communicate effectively with a wide range of individuals visually, orally and in writing, including within interdisciplinary professional teams.

[C3] Formulate clear and appropriate hypotheses and arguments, and apply these within a research agenda.

[C4] Continue expanding knowledge using the skills acquired.
# Curriculum Map

The Curriculum Map below shows how outcomes are deployed across the study programme. It indicates which units of the course are responsible for delivering (shaded) and assessing (X) the particular programme learning outcomes.

<table>
<thead>
<tr>
<th>A: Knowledge and Understanding</th>
<th>B: Subject Specific Skills/Attributes</th>
<th>C: Transferable skills attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 Methodologies of architectural construction</td>
<td>B1 Architectural design proposal</td>
<td>C1 Critical and Technical analysis</td>
</tr>
<tr>
<td>A2 Advanced design techniques</td>
<td>B2 Research construction technologies</td>
<td>C2 Communicate effectively</td>
</tr>
<tr>
<td>A3 Knowledge of timber properties and production</td>
<td>B3 Synthesise to provide innovative design approaches</td>
<td>C3 Formulation of hypotheses and arguments</td>
</tr>
<tr>
<td>A4 Innovative uses of timber in construction</td>
<td>B4 Document design for fabrication and construction</td>
<td>C4 Continue expanding knowledge</td>
</tr>
<tr>
<td>A5 Historical and theoretical bases of design-build</td>
<td>B5 Skill competency in fabrication and construction</td>
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</tr>
<tr>
<td>A6 Critical understanding of landscape and cultural geography</td>
<td>B6A [MSC] Conduct research incorporating physical prototyping</td>
<td></td>
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<tr>
<td></td>
<td>B6B [MArch] Conduct research evidenced by architectural construct</td>
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Making as Design

Thesis Development

Induction Studio

Core Studio

Main Project

Dissertation

Architectural Construct

Project Documentation

Thesis

Architectural Construct

= Components in which outcomes are delivered

= Components in which outcomes are assessed
### MArch Credit Allocation

<table>
<thead>
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<th>Assignment</th>
<th>% of Award</th>
<th>Credits</th>
<th>Assessment Mechanism</th>
<th>Group/Individual</th>
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<td>9</td>
<td>Design dossier</td>
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<td>Studio 2: Core Studio</td>
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<td>Grp</td>
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<td>9</td>
<td>Workshop log</td>
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<td>18</td>
<td>Architectural Construct/Prototyping</td>
<td>Grp</td>
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<tr>
<td>Documentation</td>
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<td>Making</td>
<td>35</td>
<td>63</td>
<td>Architectural Construct</td>
<td>Ind + Grp</td>
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<tr>
<td>Documentation</td>
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<tr>
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### MSc Credit Allocation

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<th>Assessment Mechanism</th>
<th>Group/Individual</th>
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<td><strong>Term 1</strong></td>
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<tr>
<td>Studio 1: Induction Studio</td>
<td>5</td>
<td>9</td>
<td>Design dossier</td>
<td>Ind</td>
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<tr>
<td>Studio 2: Core Studio</td>
<td>5</td>
<td>9</td>
<td>Design dossier</td>
<td>Grp</td>
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<tr>
<td>Skill Development</td>
<td>5</td>
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<td>Workshop log</td>
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<tr>
<td>Seminar 1: Making as Design</td>
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<td>Essay (2,000 words)</td>
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<td><strong>Term 2</strong></td>
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<tr>
<td>Studio 3A: Main Project</td>
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<tr>
<td>Making: Fabrication Research</td>
<td>10</td>
<td>18</td>
<td>Architectural Construct/Prototyping</td>
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<tr>
<td>Documentation</td>
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**[4A] MODULE SPECIFICATIONS: SEMINARS**

**Seminar Course 1: Making as Design**

**Tutors:** Martin Self, Emmanuel Vercruysse, Zachary Mollica, Christopher Sadd, Kate Davies and visiting speakers

**Credits:** 9 credits (5% of award; 90 notional learning hours)

**Format:** Weekly seminar sessions

**Submission:** 2,000 word essay

**Calendar:** Term 1, weeks 2-10

**Description and Aims**

The Term 1 Seminar course consists of weekly seminar sessions supported by assigned readings and case studies. The course provides the theoretical and technical foundations for the programme. Three key strands are developed:

[1] The histories, theories, and cultures of architectural design philosophies that prioritise making, to equip students with an understanding of the discourse that argues that interaction with the real-world artefact is fundamental to design. Underlying this strand is the recognition that, conventionally, architects are disengaged from actual building whereas design relies on intuitive understandings of the physical world which can only be developed through tactile engagement. The course explores various mechanisms of this development, achieved in making by the situated and concrete material engagement of the designer, and through emerging technologies that allow new forms of interaction with the physical realm.

[2] The essential knowledge required to operate as a specialist in timber design. It aims to give students a detailed technical introduction to timber that will inform their Design + Make projects. It covers wood’s biological, material and mechanical properties, methodologies of its design and application, and emerging digital techniques that are enabling new approaches to the use of timber in architecture.

[3] An understanding of the landscape context of Hooke Park and the dynamic complexity of the material and cultural systems at play when operating within this ecological context. It introduces a contemporary critical discourse surrounding landscape, within a cross-disciplinary framework which spans the diverse fields of landscape, art, cultural geography, ecology and technology. The ambition is to foster a more complex and nuanced attitude towards the Hooke Park site.

At each seminar session, in addition to seminar readings, a series of assigned case-studies are presented and discussed, which are used to illustrate design-make modes of practice the history of experimental making. The seminar is assessed through a 2000-word essay, which is required to develop an original argument in response to the content of the seminar course. MSc students are expected to focus their essay on a topic related to timber technologies.

**Learning Outcomes**

On completion students are expected to:

[A2] Demonstrate critical awareness of advanced digital design techniques, the realms of their application, and their relative merits when integrating design and production.

[A3] Demonstrate knowledge of timber properties and production with respect to its use as a construction material.

[A4] Understand innovative application of timber in architecture, including through digital design and fabrication techniques.

[A5] Demonstrate systematic knowledge of the historical and theoretical bases of design-build approaches to architecture.

[A6] Understand the current thinking within contemporary critical discourse surrounding landscape, cultural geography, ecology and technology.

[C2] Communicate effectively with a wide range of individuals visually, orally and in writing

[C3] Formulate clear and appropriate hypotheses and arguments

**Indicative Content**

[1] Introduction: Craft and Embodiment (EV, MS)

This session examines the craft approach and tradition as an exemplar for design by making. Its mechanisms are defined, and the potential for integration of those mechanisms within contemporary practices explored. We'll look at the role of the Arts & Craft movement in the sources of architectural modernism, test Pallasmaa’s phenomenological “thinking hand”, and consider David Pye’s arguments about craftsmanship.
The advancement of design and engineering technologies is continuously challenging and reinventing the core principles of architectural production. This evolution contests outdated notions of the segregation of design, fabrication and construction. This session investigates the origins, principles and development of a newly forged hybrid mode where designers are reconnected with the physical nature of architecture and building processes through new technologies and methods.

[3] Evolutionary Making and Computation (MS)
This session examines the principles of an evolutionary architecture tested through making – i.e. in which fitness is determined by real-world performance. These principles are explored through Viollet-Le-Duc’s analysis of the Gothic master-builders, Christopher Alexander’s ‘unsselfconscious designers’ and the mechanisms of John Frazer’s Evolutionary Architecture. We look for opportunities to integrate these principles into a design-make approach.

[4] Making in (This) Place (ZM)
Combining forest, studio, workshop and building site, Hooke Park is a laboratory for Architectural Research. Design + Make considers the exciting potential of architectural forms generated by a unique interaction of advanced technologies, natural materials and traditional craftsmanship. Nonstandard technologies such as 3D scanning and robotic fabrication allow a nimble exploitation of organic building materials – interacting with their irregularities to allow both form and design to adapt to the variability of nature. Readings: Mario Carpo and recent writing Design + Make faculty.

[5] Performative Construction
We’ll examine the “super-architectural” nature of the construction site, testing the idea that the incomplete building – in various forms – presents extremes of spatiality, bodily engagement and choreography that can amplify design interaction. Extrapolating from analyses of the ruin and theories of the production of space, it is proposed that the construction process presents a fertile and underexploited realm for design.

An introduction to growing timber and the influence of site, soils, genetics and environment on final timber quality. Using Hooke Park as a microcosm of UK forestry we will consider the relationship of the forest to the final use of timber as well as historical, sociological & environmental factors that determine the timber available for construction. We will draw on Hooke’s tradition of using lower-grade material to discuss the need, or not, of growing quality timber and the decision-making process of planting now for a product that comes to maturity in eighty years.

An investigation into the complexity, strengths and weaknesses in this anisotropic organic building material. Staring from whole trees through sawn boards and down to cellular structure we will compare the macro & micro structures of different species to fully understand their applications in the built environment. The transformation of this raw material to usable product through sawing, drying and re-engineering has become a large industry that is changing as digital technologies allow more efficient uses of timber based on its unreconstructed form.

[7] (TBC)

[8] (TBC)

[9] (TBC)

[10] Land, Art and Architecture– interventions in landscape (Kate Davies)
Hooke Park’s site is a dynamic context for architectural intervention and this session will take place out in its forest. We delve into the history of direct artistic engagement with landscape, in order to understand this kind of situated creative practice as fieldwork. We will contextualise a set of key case studies within an evolving critical landscape discourse – a cross-disciplinary framework which spans the diverse fields of landscape, art, cultural geography, ecology and technology. *This seminar is followed by session in which each student presents their essay arguments.

Submission
2,000 word illustrated essay on a subject relevant to the issues covered in the course.

Assessment Criteria

- Evidence of research and reading of appropriate sources
- Clear and definite formulation of question and structure of argument relevant to the seminar topic
- Clarity of formal presentation including graphic material
- Appropriate acknowledgment and referencing of sources of information
- Recognition of wider context and issues raised by the argument
- Attempts to bring innovation or creativity to the work
Seminar Course 2: Thesis Development

Tutors: Simon Withers, Visiting speakers
Credits: 0 credits - Credited as part of Thesis/Dissertation submission
Format: Study trip, visiting lectures and thesis tutorials
Submission: 2,000-word essay
Calendar: Term 2, weeks 1-8

Learning Outcomes

By the end of the seminar course, students are expected to be able to:

[A6] Understand the current thinking within contemporary critical discourse surrounding landscape, cultural geography, ecology and technology.
[C2] Communicate effectively with a wide range of individuals visually, orally and in writing.
[C3] Formulate clear and appropriate hypotheses and arguments, and apply these within a research agenda.

Indicative Content

[1] What is a dissertation; What is a thesis?
This seminar presents the history and forms that student dissertations and theses have taken at the AA. Drawing on past examples, it discusses the importance of the written component in the D+M programme and the methodologies for conducting the initial research necessary to formulate the dissertation/thesis proposal. The fundamental distinctions between the MSc Dissertation (which presents technical research) and the MArch Thesis (which presents a critical argument) are discussed. During this session students are expected to present their initial thoughts regarding their topic.

[2] Structure
This seminar examines how to structure the document and how to approach the writing of this work. It discusses time management; working to word counts; understanding writing habits and the necessity of setting a programme.

[3] Research
Expanding on the previous seminars this session discusses how to develop and extend the initial research to formulate and produce the dissertation/thesis. It discusses various methods of research and organization and archiving of material. At this session students will be expected to submit a draft abstract of their dissertation/thesis topic for discussion.

[4] References, Layout and Illustrations
This session presents good practice for referencing and footnoting the thesis. Drawing on a series of examples, it will also discuss the importance of layout and the use of illustrations to effectively complement the written work.

At the final session students will be expected to give a formal presentation of their dissertation/thesis proposal. This presentation will include the abstract, topic, principal research/argument, salient examples and work plan for completion.

Submission

2,000 word illustrated essay to form a short first draft of the MArch Thesis/MSc Dissertation. The essay must explore the topic, thesis question (March)/research question (MSc) and core argument.

Assessment Criteria

[1] Evidence of research and reading of appropriate sources
[2] Clear and definite formulation of question and structure of argument relevant to the seminar topic
[3] Clarity of formal presentation including graphic material
[4] Appropriate acknowledgment and referencing of sources of information
[5] Recognition of wider context and issues raised by the argument
[6] Attempts to bring innovation or creativity to the work.
[4B] MODULE SPECIFICATIONS: STUDIOS

Studio 1: Induction Studio

Tutors: Martin Self, Emmanuel Vercruysse, Zachary Mollica
Credits: 9 credits (5% of award; 90 notional learning hours)
Format: Twice-weekly taught sessions
Submission: Individual design dossier and short film
Calendar: Term 1 (weeks 1-4)
Location: London (weeks 1-2); Hooke Park (weeks 3-4)

Rationale and Aims

The Induction Studio introduces students to the tools, design software and digital fabrication techniques that are used throughout the programme and aims to establish the workflow pattern of the D+M course. Through a series of taught workshops, a familiarisation with analogue and digital tools is established and an essential skill-set developed. The focus lies upon providing students with an initiation into these technologies and install an understanding of their applicability and a confidence in their usage.

A sequence of prescribed operations will test fabrication and design logics enabled by the marriage of analogue making techniques and digital technologies. After a systematic and forensic analysis of these fundamental principles, the derived observations and key parameters will be interrogated, structured, systemised, documented and reinvented through 6 techniques and methods which form the essential toolkit of the Design + Make course:

1. Analogue Fabrication Techniques
2. Digital Drawing Development Tools
3. CAM; Machine and Software Familiarisation
4. Robotic Fabrication Procedures
5. Scanning Technologies and Techniques
6. Presentation Techniques

Alongside these skill-based exercises, essential presentation techniques are introduced to establish the practice of project documentation, leading to the first version of the Fabrication Chronicles - an accumulative personal dossier that includes shop notes, on-site observations and records of trials and failures.

Learning Outcomes

On completion students are expected to:

[A2] Demonstrate an understanding of design and fabrication tools and techniques, the realms of their application, and their relative merits when integrating design and production.
[B1] Apply these tools and techniques to produce an architectural construct.
[B2] Research contemporary and traditional construction technologies, and be able to identify and characterise relevant typologies and built precedents.
[B3] Synthesise these technologies to develop and communicate advanced approaches to design and construction.
[B4] Document and record the different stages of design for fabrication.
[C2] Communicate effectively with a wide range of individuals visually, orally and in writing

Submission

An individual design dossier [Fabrication Chronicles V1 – 20 pages] and a short film, documenting the development stages, processes and outcomes of the project. This writing and recording aims to explore different strategies and formats for the ‘documentation of making’ and includes technical notes, on-site observations, remarks on trials and failures.

Assessment Criteria

- Demonstration, through the Constructed Objects and the Dossier, of skill in developing a design through the 6 key techniques and methods
- Demonstration of a critical understanding of the position of computational design and fabrication tools within design practice
- Demonstration of developing a familiarity with the different processes of making
- Demonstration of skill in presenting physical work in Dossier/Log book [Fabrication Chronicles V1] and filmic media context, recording the ‘documentation of making’ [covering key components such as technical annotations of processes, trials and failures, prototypes, assemblies and on-site observations]
Studio 2: Core Studio

Tutors: Martin Self, Emmanuel Vercruysse, Zachary Mollica, Jack Draper
Credits: 9 credits (5% of award; 90 notional learning hours)
Format: Twice-weekly design tutorials
Submission: Individual design dossier + short film
Calendar: Term 1, weeks 5-10
Location: Hooke Park

Rationale and Aims

The Core Studio consists of the design and fabrication of large-scale prototypes in Hooke Park by teams of students. The studio aims to introduce the material processes of full-scale experimental construction at Hooke Park and to enable the students to develop design-make approaches driven by considerations of site and material. The studio aims for a built outcome that is deeply embedded in Hooke Park’s physical and material context. The core educational aims are the development of integrated design and making skills through the realisation of large-scale components, and to establish a critical position with respect to strategies of design through making within the specific Hooke Park context.

During the studio, students develop their skill-set gained in the Induction Studio; advancing from a basic level to become experienced with the workshop, its tools, practice and working methods. The exploration of material behaviour and its understanding adds an additional ingredient to successfully operate within the advanced and bespoke manufacturing system set up at Hooke Park.

The Core Studio acts as a vehicle to test and provoke ideas that could be developed further in proposals for the Main Project. The studio positions itself in direct relationship with the Building Project for the MArch students and allows MSc students to identify research components for further exploration. The brief for the prototype construction is issued at the start of the Core Studio and defines the technical, architectural and research aims of the full-scale component.

Alongside skill-development, the practice of project documentation is advanced through the appropriation of the presentation techniques. The individual Design Dossier [Fabrication Chronicles V2] and a short film, cultivates strategies and formats for the ‘documentation of making’ and includes workshop logs, technical notes, on-site observations, remarks on trials and failures.

The studio also serves to establish the mechanisms of group working, the processes of safe construction, planning, and effective communication of design argument and critical reflection. MArch and MSc students are mixed within the project teams so that there are complementary interests within each group.

Learning Outcomes

On completion of the Core Studio students are expected to:

[A4] Understand innovative application of timber in architecture through digital design and fabrication techniques
[B1] Conceive, produce, represent and articulate a comprehensive design proposal.
[B2] Research contemporary and traditional construction technologies, and be able to identify and characterise relevant typologies and built precedents.
[B3] Synthesise these technologies to develop and communicate advanced approaches to design and construction.
[B5] Demonstrate practical skill competency in the processes of fabrication and the ability to make informed pragmatic judgements concerning methods of construction.
[C2] Communicate effectively with a wide range of individuals visually, orally and in writing

Submission

An individually produced Design Dossier [Fabrication Chronicles V2] (30–50 pages) and a Short Film document the development, outcomes and analyses of the project. Both in-progress and as-built drawings are to form part of the submission and should be used critically as a mechanism to analyse the project.

The dossier should include a short (maximum 1,000 words) written analysis of the project’s intentions, processes and architectural attributes. This writing and recording aims to establish and consolidate the strategies and formats for the ‘documentation of making’ and includes technical notes, on-site observations, remarks on trials and failures.

Students are to take a considered, inventive and critical approach to representing and documenting their project. The altered, reciprocal, role of representation when working in a design-make mode should be captured by collating and documenting the project as it goes along.
Assessment Criteria

- Demonstration of having developed and tested a relevant design-make methodology in relation to the project brief and key fabrication technologies
- Demonstration of a developing familiarity of the processes of making.
- Demonstration of skill in presenting physical work in the Dossier/Log book [Fabrication Chronicles V2] and filmic media context, recording the 'documentation of making' [covering key components such as technical annotations of processes, trials and failures, prototypes, assemblies and on-site observations]

Studio 3: Main Project

Tutors: Martin Self, Emmanuel Vercruysse, Zachary Mollica, Jack Draper
Credits: 135 credits (75% of award; 1,350 notional learning hours)
Submission: MArch: Individual Design Dossier (18 credits), Fabrication Research (18 credits);
Architectural Construct (63 credits); Individual Thesis (18 credits); Project Documentation (18 credits)
MSc: Individual Design Dossier (18 credits); Fabrication Research (18 credits);
Architectural Construct (63 credits); Individual Dissertation (36 credits)
Calendar: Terms 2-4
Location: Hooke Park

Rationale and Aims

The Main Project consists of the design, making and analysis of full-scale architectural constructs at Hooke Park which form the primary evidence for the subsequent dissertation (MSc) or thesis (MArch).

For the MSc students the Main Project is a full-scale experimental timber prototype. The prototype is designed with the explicit intent to test innovative architectural applications of timber, and radically exploit the woodland and fabrication resources at Hooke Park. Research topics are agreed with tutors during Term 1, and are dedicated to the innovative technical application of timber within architecture. The core aim is for the student to develop advanced knowledge and critical understanding of the emerging fabrication and timber technologies.

For the MArch students the Main Project is an architectural construct for the Hooke Park campus. The range of research topics within these projects is broader than for the MSc, and can encompass individual interests in environmental and construction technologies, alternative forms of design practice, or issues relating to Hooke Park’s topographic and cultural landscape. The core aim is for the student to developed advanced knowledge and critical understanding of architectural production and to reflect on this in a focused individual thesis.

Learning Outcomes

On completion students are expected to:

[A1] Demonstrate knowledge of the application of innovative technologies and methodologies in the production of architectural constructs.
[A2] Demonstrate critical awareness of advanced digital design techniques, the realms of their application, and their relative merits when integrating design and production.
[A3] Demonstrate knowledge of timber properties and production with respect to its use as a construction material.
[A4] Understand innovative application of timber in architecture, including through digital design and fabrication techniques.
[A5] Understand systematic knowledge of the historical and theoretical bases of design-build approaches to architecture.
[A6] Understand the current thinking within contemporary critical discourse surrounding landscape, cultural geography, ecology and technology.
[B1] Conceive, produce, represent and articulate a comprehensive architectural design proposal.
[B2] Research contemporary and traditional construction technologies, and be able to identify and characterise relevant architectural typologies and built precedents.
[B3] Synthesise these technologies to develop and communicate advanced approaches to design and construction.
[B5] Demonstrate practical skill competency in the processes of fabrication and the ability to make informed pragmatic judgements concerning methods of construction.
[B6] (MSc) Conduct independent research that incorporates physical prototyping as part of its evidence.
[B6] (MArch) Develop propositional arguments through documentation and analysis of a built project.
[C1] Carry out critical and technical analyses of design and construction proposals.
[C2] Communicate effectively with a wide range of individuals visually, orally and in writing, including within interdisciplinary professional teams.
[C3] Formulate clear and appropriate hypotheses and arguments, and apply these within a research agenda.
[C4] Continue expanding knowledge using the skills acquired.
Indicative Content

For MArch students, Terms 2 + 3 consists of the team-based design and fabrication development of the architectural construct. This is an iterative process of design work, mock-ups, prototypes, testing, documentation and re-prototyping leading into the full construction of the project. The calendar for this phase is determined with the tutors, according to the specific brief of the project. Because of the greater complexity of the fuller architectural construct this phase extends through the summer academic break.

For MSc students, the initial proposals explored earlier in the year are further researched and developed into a statement of research intent. The full formulation and development of the prototype takes place through an iterative cycle of digital modelling and fabrication, full-scale mock-ups, model making and documentation leading to the final construct and is the focus for the Dissertation. All tooling, fabrication and assembly processes must be rigorously documented and discussed in the Dissertation. Several presentations of the research proposal and preliminary prototypes are held for feedback and critique.

Prefabrication activities start early to inform design strategies and the MArch students engage with a phase of continuous fabrication. Advanced production needs to negotiate the relevant CDM (Construction Design Management) and other health & safety regulations observed. Depending on the nature of the project, professional contractors and trades-people are engaged where necessary to supplement the skills of the students. The AA SummerBuild programme enables other volunteers to be involved in the construction phase. MArch students are required to contribute to the making of the building they have designed during the summer period.

Assessment

For both MArch and MSc students the Design Studio is documented in an individual Design Dossier submission and an assessment of the prototype or architectural construct.

Submissions

Individual Design Dossier (MArch and MSc)
This document is individually produced by all students during the design formulation stage for the project. It is to present the design and prototype development from concept to full proposition. The role of making during this design phase must be made explicit in the submission.

- For MArch students the Dossier documents the individual’s design contribution made to the collective group project.
- For MSc students the Dossier documents the design and fabrication evolution of their Prototype.

Assessment Criteria:

- Clear documentation of the individual’s design contribution to the project
- Evidence of design speculation including unrealised proposals
- Evidence of critical appraisal of design propositions
- Clarity of formal presentation including quality of graphic material
- Attempts to bring innovation or creativity to the work

Group Project Report (MArch)
Each MArch team is to submit a group-produced Project Report. This is to present the processes of the design and making of the building, highlighting the experimentation carried out.

Assessment Criteria:

- Clear documentation of the process of the collective design for the project
- Clear documentation of the making of the project including experimentation
- Evidence of group development of an integrated design-make methodology
- Evidence of critical appraisal of design propositions and the as-built project
- Clarity of formal presentation including quality of graphic material
- Attempts to bring innovation or creativity to the work

Dissertation (MSc)
MSc students produce their 4,000-word individual Dissertation for submission at the end of the 12-month programme. The Dissertation should:

- Document the formulation of the research proposal including statement of research intentions and methodology
- Form a critical and technical appraisal of the literature and precedent search
- Record and critically appraise the design, development and making of the Prototype
- Describe the methodology and criteria through which the Prototype was tested
- Document the results of the testing and technical interpretation of those results
- Present the potential applications of the prototype system, including design representations of architectural applications
- Form a critical appraisal of the future potential application of the Prototype system

Assessment Criteria:

- Evidence of research and reading of appropriate sources
- Clear rationale for area of study and research methodology adopted
- Evidence of appropriate investigative procedures, data collation and analysis
- Strength and originality of the technical proposition evidenced through the research
- Clarity of formal presentation including graphic material and use of illustrations
- Appropriate acknowledgment and referencing of sources of information
- Recognition of wider context and issues raised by the research
- Attempts to bring innovation or creativity to the work

Thesis (MArch)

MArch students produce their 4,000-word individual Thesis for submission at the end of the 16-month programme. The thesis should:

- Form an analysis and critique of the processes and outcome of the design and production of the Main Project building
- Concern design methodology itself, or the ecological, societal, material or other aspects of architecture. Specifically, however, it must be an argument that is evidenced by making
- Formulate a specific question and develop a novel argument on the theory or practice of architectural design within a design-build context
- Be propositional, in the sense of proposing and testing alternatives to conventional design practice
- Test and address counter-arguments to the proposition
- Draw a clear and novel conclusion.

Assessment Criteria:

- Evidence of research and reading of appropriate sources
- Clear and definite formulation of question and structure of thesis argument
- Strength and originality of the proposition made through the argument
- Clarity of formal presentation including graphic material and use of illustrations
- Appropriate acknowledgment and referencing of sources of information
- Recognition of wider context and issues raised by the argument
- Attempts to bring innovation or creativity to the work
## Indicative Academic Calendar

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[5] TEACHING AND LEARNING STRATEGIES

Seminar Courses

The Seminar Courses consist of weekly sessions, each typically consisting of student presentations of set readings/case studies, a presentation by the Seminar Tutor or invited Lecturer, followed by discussions. Active participation by students in the seminars is a requirement of the courses. Students are given a reading list at the beginning of each course, which defines the specific set readings and provides a more general bibliography of background and further reading. Students are required to read this set preparatory or follow-up material, and to make group or individual presentations at the seminars.

The Seminar Tutors give tutorials to aid students in choosing their essay topics and focusing and developing their research and essay submissions. An abstract of the proposed essay will be required from each student before the end of each seminar series, to ensure that an essay argument has been identified. The content, learning outcomes and assessment requirements of the Seminar Courses is defined in section 5. Assessment of each course is of a written illustrated essay submitted at the beginning of the following term.

Studios

The Design + Make Studios run throughout the length of the course and consists of the Induction, Core, and Main Projects. Whilst each Studio has different mechanisms and objectives, the general teaching strategies are common. Each Design Studio is set out by a tailored brief and support is provided by the project director, studio tutor, consultants and other invited lecturers, critics and jurors. These regular staff and invited lecturers give formal design tuition through lectures, workshops, individual tutorial contact and group design sessions. Typically, this formal teaching occurs during weekly or twice-weekly studio sessions at Hooke Park. In addition to this, further contact with diverse members of staff takes place daily, ranging from conversations with the Workshop Technician/Manager, Make or Design Tutor, Project Manager, Forester or Robotic Developer.

Student studio work is centred in the Design + Make studio space at Hooke Park, with physical workshop making, full-scale prototyping and site-based construction to be carried out as per the Project brief. Each Project introduces a range of concepts and techniques, and students document their own work and make regular presentations. Design reviews and juries, at which students present work-in-progress for critique, are held at defined points through each Project in Hooke Park or in London. Generally, each project will end with a Final Jury presentation. Assessment for each project is through submission of a Design Dossier, which is a bound portfolio-based document of the design-work, with a written and illustrated description and critique of its processes and output, as well as a short film. The specific submission requirements are given in the Course Syllabi.

The Main Project covers the fabrication research and construction phase of the prototype (MSc)/architectural construct (MArch). MSc students work individually on the fabrication and construction of their prototype piece, whereas MArch students work in teams. Students, depending on the nature of the brief, engage in the processes of specification, procurement, testing and prototyping, developing of strategies for fabrication, assembly and erection, enveloping/facade, fit-out, and finishing. Roles within the team are defined to divide the workshop and site-based work, and the responsibilities of project management, cost-control, procurement, building regulations etc. Workshop activity is coordinated by the Workshop Manager Charlie Corry Wright, and guided by the programme staff and specialized consultants. Site activity for the MArch students begins with the mobilisation of the project’s site as a managed and regulated building site, with the relevant CDM and other health & safety regulations observed. Depending on the nature of the building project, professional contractors and trades-people are engaged where necessary to supplement the skills and capabilities of the students.

The key aims of the Main Project activities are:

- To maximise the opportunities for full-scale on-site making to inform architectural design. By testing design propositions through structured Fabrication Research and the actual constructions of large-scale components, students develop design and manufacturing methodologies in which architectural form is generated in response to the conditions and phenomena presented by real world physical testing.
- To develop an advanced understanding of the physical behaviour of the systems of architecture, in terms of material, structural and environmental (thermal, light, acoustic) performance, through the direct experience of actual behaviour.
- To develop advanced knowledge and skills in the processes of fabrication and construction that can be used to inform design practice.
Dissertation/Thesis

The individual Dissertation/Thesis is supported by series of seminar classes is held in Term 2 to assist students in the development and production of the Dissertation/Thesis (see section 5.4).

MArch students produce their 4000-word individual Thesis for submission at the end of the 16-month programme. The document aims to provide fundamental research to inform, guide and develop the design and fabrication strategies for the architectural construct, and develops a propositional argument concerning the theory or practice of architectural design within a design-build context. Each MArch student identifies an individual field of research by the end of Term 1 through the Making as Design essay. This is then used to help inform and frame the choice of design and hands-on activities in the subsequent terms within the team-based work. Thesis Presentations are held in the fourth term. At this event, each student presents their thesis argument to an invited jury who advise on its subsequent completion for hand-in in late January.

MSc students produce their 4000-word Dissertation during the summer (MSc Term 4) for submission at the end of the 12-month programme. The purpose of the Dissertation is to present original research in the application of timber design and fabrication technologies in structural, envelope or other architectural applications. The Dissertation documents the student’s literature and case-study research of precedents; critical analysis of the design, development, making and testing of their Prototype; and assessment of the future applicability within the architecture and the building industry.

Non-Assessed Workshops

In additional to the assessed seminars and studios, various non-assessed workshops, talks, evening lectures, visits and other events are held during the programme orientate students in relevant activities and practices. These vary annually and normally consist of:

1. Forestry Orientation by Christopher Sadd, Hooke Park Head Forester
2. Boat Building Introduction, hosted by the Lyme Regis Boat Building Academy that introduces the principles and processes of boat design and building.
3. Critical Engagement with the Landscape Context by Kate Davies
   Fostering an active engagement with the landscape directly through on-site exploratory work to investigate the dynamic complexity of the material and cultural systems at play. These focused events aim is to situate the D+M programme within a contemporary critical discourse surrounding landscape, within a cross-disciplinary framework which spans the diverse fields of landscape, art, cultural geography, ecology and technology.
[6] ASSESSMENT STRATEGIES

Assessment Mechanisms

Students are assessed on the submitted essay, design dossiers, the final dissertation/thesis and an assessment of the constructed prototype/building. Submissions are made to the Hooke Park Academic Coordinator on the stated submission date consisting of:

- Two copies of the physical document (these form the basis of the assessment)
- A PDF (max size 10MB) emailed to hookeadmin@aaschool.ac.uk

Late submissions are penalised in line with AA Graduate School policy, with a cap to the awarded grade of 70%. Mitigating circumstances for late submissions are considered as detailed in the AA Student Handbook.

All assessments are double marked, with written commentary and grades, and each student receives both written feedback and discussion on their assessment in individual tutorials.

External Examiners will have access to all Design + Make Theses, a representative sample of the design dossiers and seminar course essays, and will visit the built projects prior to the formal meeting of the Examination Board. The Examination Board will be composed of the Programme Director, staff, and the External Examiners, assisted by the Administrative Coordinators of Hooke Park and the Graduate School. The Examination Board has the responsibility for the final marking of all submitted work, and makes decisions on distinctions and resubmission. The Board and its External Examiners report to the AA Graduate Management Committee, which in turn reports to the Open University, the validating institution for the AA Graduate School’s Master Programme. Notification of results is given to students by the Registrar’s Office through the Graduate School Coordinator.

Assessment Criteria and Grading

The assessment of submitted work is based on the following overall assessment benchmarks based on the Level 7 Descriptor of the QAA’s Master’s Degree Characteristics, in addition to specific ones given for each module:

- A mastery of a complex and specialised area of knowledge, and a critical awareness of issues at the forefront of the study of architecture, its professional practice and technical systems.
- 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, advanced scholarship and professional practice in the discipline of architecture and its technologies
- To evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses.

The marking of all course work is on a scale of 0–100% with a pass mark of 50% and grading as shown below. The grades are given on the basis of the general assessment criteria above and the relevant syllabus for each module.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
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<tr>
<td>70+</td>
<td>[A] Excellent Pass/Distinction</td>
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<tr>
<td>65-69</td>
<td>[B+] High Pass</td>
</tr>
<tr>
<td>60-64</td>
<td>[B] Good Pass</td>
</tr>
<tr>
<td>57-59</td>
<td>[C+] Satisfactory Pass</td>
</tr>
<tr>
<td>54-56</td>
<td>[C] Adequate Pass</td>
</tr>
<tr>
<td>50-53</td>
<td>[D] Low Pass</td>
</tr>
<tr>
<td>≤ 49</td>
<td>Fail</td>
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</tbody>
</table>

All coursework is marked by two internal assessors. Their marks are averaged to establish a moderated mark for each graded submission. Where the result of the assessment calculation creates a mark of 0.5% or greater, this will be rounded up to the next full percentage point (e.g. 69.5% is rounded to 70). Where the calculation creates a mark below 0.5% this will be rounded down to the next full percentage point (e.g. 69.4% is rounded to 69%). For the purposes of rounding up or down, only the first decimal place is used.

To qualify for the MArch/MSc degree the student must achieve 50% or higher mark on each of:

- Coursework average in Phase 1
Students must pass the assessment criteria of Phase 1 to enter Phase 2. Students who fail to achieve a pass mark on any single Seminar course work or Studio in Phase 1 must resubmit (once) and pass before being allowed to proceed to Phase 2. Students who fail to achieve a pass mark in Phase 2 may resubmit once for the Examination Board of the following academic year. The MSc/MArch will be awarded with distinction when the overall final mark is 70% or higher. All grades achieved by students will be kept on record in the AA Graduate School’s database, and are available for transcripts, but will not appear on the certificates.

Assessment Mechanisms for Skill Development

From 2018, the programme is introducing an assessed Skill Development component to equip the students with the necessary abilities that need to be in place to successfully engage with the fabrication of large-scale architectural components.

The number of tools and technologies at the disposal of the students continues to increase and develop. To be able to implement these exciting methodologies the programme aims to establish in a first instance a basic understanding of their workings and secondly to illustrate their applicability throughout design and fabrication strategies. This skill development component aims to instil confidence and ability.

Each student’s Skill Development is documented and assessed through Workshop Logs, submitted at the ends of Term 1 and Term 2, that capture the skill-developing activities associated with the studio projects and other workshops. These Logs are distinct to the Design Dossiers in that they do not document the design-make projects themselves but rather capture skill development activities through:

- Diary log entries that record, in detail, activities carried out and new skills acquired (including notes on the processes of learning those skills)
- Drawn and photographic records of those activities including the tools used, mistakes made, and physical outcomes, so that the acquisition of particular skills is illustrated
- Notes on instruction received – both formally taught and informally acquired (for example through peer students, external resources and trial-and-error)
- An on-going critical commentary in parallel with the Log entries to reflect on the individual’s own particular skill development trajectory and how this is able to influence and advance the student’s design and research work.

Because existing skill levels differ for each intake student, the premise of the Workshop Log assessment is that credit is given for relative improvement in skill level (rather that the absolute ability) and, fundamentally, the considered and critical recording of that gaining of skills.

Assessment Criteria

- Evidence of personal skills development in the use of tools and technologies
- Evidence of a critical attitude to skill acquisition and its influence on design and research
- Clarity and sophistication in the formal presentation of the Workshop Logs
- Evidence of actively seeking instruction and information to support one’s individual skill development needs
- Attempts to bring innovation or creativity to the work.

Assessment Mechanisms and Criteria for Architectural Constructs

The unique position of the course - our residence at the satellite campus at Hooke Park - and the exceptional nature of our activities - constructing permanent architecture and large-scale constructs - implies a very close working relationship with the teaching staff. This allows a constant overview in the production phases and forms a key factor in assessing the physical constructs. This assessment takes into consideration additional factors alongside the manufactured object.

Active engagement in the design for production, workshop and fabrication stages is constantly monitored in two principal forms: during technical design tutorials and during fabrication activities.

Technical Tutorial Assessment

Tutorials consist of meetings between course tutors, individual students and/or design teams (and occasionally additional consultants and engineers), where recent design and fabrication results are presented, assessed and evaluated verbally.

Importantly, the role of individual members within design teams is presented, discussed, and assessed. These weekly evaluations provide an intimate understanding of each student’s learning progress and outcomes.
Fabrication Activities Assessment
Fabrication activities are monitored through the observations of those supervising the physical work: the Make Tutor and Project Manager. During the MArch fabrication phases, the Project Manager starts the daily activities with a morning briefing in which progress is evaluated, individual tasks assigned and objectives for the day are set. These provide a complete understanding of each student's engagement and learning progress.

These two principle forms of monitoring provide a comprehensive and detailed information to support the assessment of the physical constructs. There are formative assessments twice a term in the form of individual meetings with students to discuss their progress in relation to this practical assessment, and written feedback given once a Term.

The assessment of the MArch Architectural Construct is subdivided into individual (27 credits) and group (36 credits) evaluations, as a mechanism to recognise both:

- The personal contribution of the individual student within the team, in terms of direct engagement in making and involvement in its planning, preparation and coordination.
- The collective endeavour involved in the physical production of architecture, including the shared responsibility for the project’s outcomes and the success of the student group in operating as a functioning team.

The Make Studio output is assessed through direct examiner judgment of the architectural constructs. This assessment of is made in consultation with the External Examiner(s) and is judged with respect to bench-mark projects built as the output of comparable design-build courses. The key criterion is for legible manifestation of the ambitions of the Design + Make students’ research and design agenda. This agenda is to include the integration of making within design.

Criteria for Prototype and Building Assessment
The criteria for the assessment of the construction prototype/project are listed below. As part of the assessment procedure, the D+M assessing tutors write an assessment citation that judges the project with respect to each of these items.

Criteria for MArch and MSc

- Evidence of invention and innovation
- Demonstration of the opportunities of a design approach that integrates design and making
- Evidence of solutions informed by material and structural experimentation at full-scale
- Evidence of successful, inventive, and appropriate use of building materials
- Evidence of successful, inventive, and appropriate use of the workshop facilities and the other resources of Hooke Park
- Evidence of the development and application of practical workshop and building-site skills
- Evidence of successful management of the fabrication and construction process in achieving design intent

MArch Specific Criteria

- Architectural performance with respect to the client’s brief for the project
- Evidence of a ‘sense of place’ and site-responsive formal/environmental solutions
- Evidence of successful collaboration, in terms of both design and production, between students.

MSc Specific Criteria:

- Technical performance with respect to the student’s stated research aim for the prototype
- Performance in design terms as a demonstrator of the architectural applicability of the prototype system
- Value as a prototype in testing and proving its applicability in wider UK/global context
[7] RESOURCES

General Resources

Students have access to all of the AA school’s facilities and activities, in both Hooke Park and London. Students are encouraged to aim to maximise their interaction with the AA School community, to engage in its debates and activities. The Hooke Park campus is physically separated from the main school so it is important that students fully engage with other student groups and their tutors when they visit Hooke Park, and, when in London, maximise their exposure to the lectures, workshops, juries and discussions that go on in the school. The AA’s London based Public Programme is an extensive series of public events dedicated to contemporary architectural culture: exhibitions, members' events, lectures, seminars, conferences, book launches and publications. The Evening Lectures are available online to view at Hooke Park.

The facilities at Bedford Square include the Main Library, Photo Library, Computer Room, Wood- and Metalworking Workshop, Model Shop, Digital Photo Studio, Digital Prototyping Lab and Audio-Visual Department.

Living in Dorset

As the start of the programme, students are provided with a separate document which provides information on the specifics of living in Dorset.

Student Support and Guidance

The programme administration is based in London (admissions and academic coordination) with support at Hooke Park through a part time academic coordinator, Laura Kaddey, who is responsible for issues including submissions and student welfare. For issues that are urgent or require help beyond Hooke Park’s resources, the AA’s registrar, Belinda Flaherty, and graduate school coordinator, Clement Chung, are the points of contact. The AA Student Handbook and AA School Academic Regulations describe the resources, support and guidance provided to all AA students, including provision of counselling and procedures for appeal.

Design + Make students start the programme in London and join all new students for the AA’s pre-term Introduction Week and the first week of term in which each study programme is introduced. Additionally, a 2-day induction weekend is held at the beginning of the academic year to introduce students to Hooke Park, its staff and the local area.

Hooke Park

Prior to coming under the ownership of the Architectural Association, Hooke Park was developed in the 1980s by the Parnham Trust as a college for teaching and researching new ways of using wood in furniture and construction. A small campus was built in the forest, following the ethic of using low-value timber from the surrounding forest as construction material. The result was three ground-breaking prototype buildings by award-winning architects, which demonstrate the rich potential of round-wood construction. They form a provocative architectural legacy, and are an important educational tool for the AA to have inherited.

The Workshop, by Richard Burton of ABK and Frei Otto, with the engineers Buro Happold, uses spruce thinnings from the forest that form a compression barrel-vault structure. Completed in 1989, the result is a long-span enclosure built using waste materials from the surrounding forest. The dormitory, Westminster Lodge, was completed in 1999. Designed by Edward Cullinan with Buro Happold, it also uses green wood from Hooke, providing eight bedrooms around a central communal space. A timber lattice of spruce thinnings carries a planted turf roof. The Refectory, also by Richard Burton of ABK and Frei Otto with Buro Happold, was built in 1985. It was designed as a prototype house and uses an experimental structure that consists of roundwood A-frames from which a tent-like tensile timber roof is suspended. Today, the building contains the kitchen and dining space for staff and students.

Design + Make projects began with the Big Shed Assembly Workshop and Caretaker’s House which were completed in 2012; the first Student Lodge in 2013; a second Student Lodge and Timber Seasoning Shelter in 2014; the Boiler House in early 2015; the Wood Chip Barn in 2016; the Sawmill Shelter in 2017; the Dark Room and Library in 2018.

Libraries

AA Main library

New AA students are introduced to the School’s Main Library during Introduction Week. The Library holds more than 40,000 volumes on the history of architecture, architectural theory, contemporary architectural design, building types, interior design and landscape design. It also holds a full range of architectural periodicals and magazines and reference copies of MA and PhD thesis. Students at Hooke Park can access the Main Library’s search facilities and order books.
from the library for loan to Hooke Park. Books can be posted to Hooke Park, and interlibrary loans for books not in the AA collection can be arrangement. Many of the AA Library’s online resources, including online magazine subscriptions, can be accessed from Hooke Park.

Hooke Park Library
Hooke Park has a small reference library of books covering architecture, timber and other fabrication technologies, forestry, furniture making and other crafts. A sign-out system operated for borrowing books. Reference copies of programme books of the D+M Seminar Courses are held in the Hooke Park library – these are to be kept in the library.

Studio
The Hooke Park workshop building includes a studio space for Design + Make students. The Hooke Park Studio includes computing facilities, scanner-photocopier, printers and an A1 plotter. Each student has their own desk in the studio. Students receive an AA email account. When in London, students have access to the Computer Room facilities. An honesty-box system operates for paying for personal printing/copying costs.

Studio space is provided in Bedford Square for the periods when Design + Make students are required to be in London.

Internet Provision
Hooke Park has a dedicated high-speed fibre-optic connection which students have access to throughout their studies.

Workshops
Joinery Workshop
The Hooke Park fabrication workshop is fully equipped with woodworking hand-tools, and power tools as listed below:

- Works 3-axis CNC router 1220mm x 2440mm bed, tilting arbour saws, wood lathes, metal lathe, band saws, mortiser, planer thicknesser, bench grinder, bench drills, horizontal borer, bench mounting disc sander, belt planer, panel saw. Spindle moulder and four-sided planer (only operated by workshop staff).
- Portable electric tools: Jigsaws, cordless drills, palm sander, belt sander, router, grinder, heat gun, pistol drills, plaster board driver, fret saw. Electric plane, biscuit jointer, circular saw, gas nail gun.

The fabrication workshop is used throughout the year by visiting groups from the main school. At specific periods, the workshop can be reserved exclusively for the use of D+M for fabrication. At other times, access to workshop is generally possible but requires prior arrangement with the Workshop Technician. The workshop operates 9am – 5pm Monday – Friday during term time.

Big Shed Assembly Workshop
The Big Shed assembly workshop will generally be available for D+M’s use during the workshop operation hours. It is a 500sqm prototyping and assembly space with a level concrete floor, electric power supply. The building contains

*The workshop tools, machinery and equipment may only be used under supervision of the workshop manager or technicians, and only following instruction in using that equipment. It is the student’s responsibility to use equipment safely and to ask the supervisor if there is any doubt in how to work safely. Any construction-scale activity is subject to the UK’s Construction Design Management regulations, which defines obligations for students, tutors, and staff to ensure safe working practices. Relevant training in construction site awareness and practices such as working at height are provided. Students must successfully complete this training before engaging in construction site activities.*

Robotic Fabrication Facility
The KUKA KR150 robot with its bespoke end effectors has been developed to maximise support for the fabrication of experimental architectural components. Custom plug-ins/ software are developed as part of the facility to create a simple user interface for the students.

Cell Size: 7m x 6m x 5m
Reach: 2700mm
Max Payload: 150kg
Controller: KR C2
End-effectors: Spindle, Gripper, Chainsaw, Bandsaw, Circular saw
Aids: Rotary 7th Axis, Stock Rail System
Hooke Park Forest

The Hooke Park estate comprises approximately 140 hectares (350 acres) of woodland, consisting mainly of spruce and beech trees planted in the 1950s. There are also stands of western red cedar, Douglas fir and Corsican pine, and of combined oak and spruce. In addition to the densely planted forest, there is a rich variety of woodland landscape, including recently felled clearings, an ancient willow coppice and a broadleaf coppice of ash, hazel, alder and poplar. Hooke Park is designated as Ancient Woodland, and an active forestry programme maintains the woodland, with the objectives of sustainable timber production and improved biodiversity.

As Hooke Park is a working woodland, any activity that requires access to the forest or may otherwise affect the forest or the forestry activities must be coordinated with the forester, Christopher Sadd. Where Design + Make projects require timber material from the forest, the forester must be consulted well in advance so that felling and sawyer contractors can be arranged. Hooke Park has a Wood-Mizer on site for timber reduction.

Hooke Park’s Big Shed assembly workshop