

Subject benchmark statement

Architecture

2010

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Preface

Subject benchmark statements provide a means for the academic community to describe the nature and characteristics of programmes in a specific subject or subject area. They also represent general expectations about standards for the award of qualifications at a given level in terms of the attributes and capabilities that those possessing qualifications should have demonstrated.

This subject benchmark statement, together with others published concurrently, refers to the **bachelor's degree with honours**¹ and provides guidance for qualification at **master's degree level**.²

Subject benchmark statements are used for a variety of purposes. Primarily, they are an important external source of reference for higher education institutions (HEIs) when new programmes are being designed and developed in a subject area. They provide general guidance for articulating the learning outcomes associated with the programme, but are not a specification of a detailed curriculum in the subject.

Subject benchmark statements also provide support to HEIs in pursuit of internal quality assurance. They enable the learning outcomes specified for a particular programme to be reviewed and evaluated against agreed general expectations about standards.

Subject benchmark statements allow for flexibility and innovation in programme design and can stimulate academic discussion and debate upon the content of new and existing programmes within an agreed overall framework. Their use in supporting programme design, delivery and review within HEIs is supportive of moves towards an emphasis on institutional responsibility for standards and quality.

Subject benchmark statements may also be of interest to prospective students and employers seeking information about the nature and standards of awards in a given subject or subject area.

The relationship between the standards set out in individual subject benchmark statements and the requirements of professional, statutory or regulatory bodies will be a matter for individual HEIs to consider in detail.

This subject benchmark statement represents a revised version of the original published in 2000. The review process was overseen by the Quality Assurance Agency for Higher Education (QAA) as part of a periodic review of all subject benchmark statements published in this year. The review and subsequent revision of the subject benchmark statement was undertaken by a group of subject specialists drawn from, and acting on behalf of, the subject community. The revised subject benchmark statement went through a full consultation with the wider academic community and stakeholder groups.

QAA publishes and distributes this subject benchmark statement and other subject benchmark statements developed by similar subject-specific groups.

¹ Level 6 in *The framework for higher education qualifications in England, Wales and Northern Ireland* (2008) and level 10 in the *Scottish Credit and Qualifications Framework* (2001).

² Level 7 in *The framework for higher education qualifications in England, Wales and Northern Ireland* (2008) and level 11 in the *Scottish Credit and Qualifications Framework* (2001).

The Disability Equality Duty (DED) came into force on 4 December 2006 in England, Scotland and Wales. The DED requires public authorities, including HEIs, to act proactively on disability equality issues. The DED complements the individual rights focus of the *Disability Discrimination Act* and is aimed at improving public services and outcomes for disabled people as a whole. Responsibility for making sure that such duty is met lies with HEIs.

The Equality and Human Rights Commission has published guidance³ to help HEIs to implement the DED and provides illustrative examples on how to take the DED forward. HEIs are encouraged to read this guidance when considering their approach to engaging with components of the Academic Infrastructure,⁴ of which subject benchmark statements are a part.

Additional information that may assist HEIs when engaging with subject benchmark statements can be found in the *Code of Practice (revised) for providers of post-16 education and related services*⁵ and also through the Equality Challenge Unit,⁶ which is established to promote equality and diversity in higher education.

³ Copies of the guidance *Further and higher education institutions and the Disability Equality Duty, Guidance for Principals, Vice-Chancellors, governing boards and senior managers working in further and higher education institutions in England, Scotland and Wales*, may be obtained from www.dotheduty.org/sectoral-guidance.asp.

⁴ An explanation of the Academic Infrastructure, and the roles of subject benchmark statements within it, is available at www.qaa.ac.uk/academicinfrastructure.

⁵ Copies of the *Code of Practice (revised) for providers of post-16 education and related services*, published by the Disability Rights Commission, may be obtained from www.equalityhumanrights.com/uploaded_files/code_of_practice_revised_for_providers_of_post-16_education_and_related_services_dda_.pdf.

⁶ Equality Challenge Unit: www.ecu.ac.uk.

Foreword

This is a major revision to the subject benchmark statement for Architecture, published in 2000.⁷ The 2000 benchmark statement covered the first degree only (known as Part 1). The 2010 benchmark statement is expanded from the original to include a description of the second stage of architecture education (known as Part 2). The revised subject benchmark statement takes as the benchmark standard the jointly held criteria used by the Architects' Registration Board (ARB) (Appendix 1) and the Royal Institute of British Architects (RIBA) (Appendix 2) in qualification prescription and programme validation.⁸ Details of the third and final stage of qualification as an architect (the professional examination, known as Part 3) are included in an appendix to the statement (Appendix 3).

The *Architects Act 1997* gives the ARB responsibility for prescribing the qualifications and training required for entry onto the UK Register of Architects. The prescription of qualifications is central to the ARB's strategic aims of protecting the consumer; supporting architects through regulation; and delivering the *Architects Act 1997*. In carrying out its duty to prescribe qualifications, the ARB publishes criteria that set out the minimum levels of knowledge, understanding and ability that students of architecture must acquire at key stages in the process of qualifying as an architect. These criteria form the basis upon which the ARB makes decisions as to whether or not qualifications can be prescribed.

The criteria used by the ARB in prescription of qualifications have been agreed by the RIBA and are used through the work of its Validation Committee in enhancing the quality of architectural education and encouraging experimentation and innovation in programme content, delivery, and methods of learning and teaching. RIBA uses the validation process to stimulate critical self-analysis in schools of architecture in achieving their objectives.

The revised subject benchmark statement takes as its starting point the standards set out in the European Directive 2005/36/EC on the Mutual Recognition of Professional Qualifications.⁹ Explanatory text to accompany each of the 11 standards specified by the Directive and used in prescription and validation is included in order to articulate the minimum levels of knowledge, understanding and ability that students of architecture must acquire at key stages in the process of qualifying as an architect (see above). In this way, the requirements for qualification prescription and programme validation have been embedded into the subject benchmark statement.

HEIs may offer solely Part 1 of architecture education (also referred to in this subject benchmark statement as the 'Interim Award') or may offer Part 2 (referred to here also as the 'Final Award').

⁷ Originally published as the subject benchmark statement for Architecture, Architectural Technology and Landscape Architecture (2000).

⁸ At the time of writing, the subject community for architecture was awaiting agreement on a revised version of the jointly held criteria that were the subject of recent consultation closing on 11 May 2009 (see www.arb.org.uk/consultations/prescription_of_qualifications).

⁹ Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications (http://ec.europa.eu/internal_market/qualifications/future_en.htm).

The revised subject benchmark statement for Architecture has been developed by a review group drawn from and acting on behalf of the subject community (for membership see Appendix 4). Representatives from QAA, the ARB and RIBA were in attendance at meetings and commented upon all previous drafts. A previous version of the revised statement was subject to consultation over the course of May to July 2007, during which time a number of comments were received from schools. Consultation on a further draft took place between November 2009 and January 2010, during which time additional comments were made and considered in preparing this final version.

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1 Introduction

1.1 This subject benchmark statement describes the broad subject of architecture as both academic and vocational. The revision to the original statement, published in 2000, responds to the need for flexibility in the delivery of academic programmes driven by changes in the national and world economies and, in the interests of broadening access to higher education (HE) and professional qualification, the need to promote diversity in both modes of study and the ability of students to transfer between institutions, EU member states and other countries.

1.2 The benchmark statement published in 2000 described only the undergraduate award for architecture. This is the first stage of the typical education of an architect: a three-year undergraduate honours degree (BSc or BA) known as Part 1. Part 1 of architecture education is typically followed by 12 months of logged and monitored professional experience, known as the 'year out'. The year out is typically followed by a two-year qualification comprising a mixture of undergraduate and postgraduate learning, known as Part 2. Part 2 is typically followed by a further 12 months of logged and monitored professional experience and finally a professional examination (known as Part 3). The professional examination is not covered by the subject benchmark statement but a description is provided for reference in Appendix 3.

1.3 The subject benchmark statement describes Part 2 qualification as a level of attainment at master's level.¹⁰ It notes that qualifications in architecture must maintain a balance between the theoretical and practical aspects of architectural training as expressed in the 11 succinct clauses contained in the EU Professional Qualifications Directive 2005 (Directive 2005/36/EC of the European Parliament and of the Council on the recognition of professional qualifications, article 46 1a-k). Architecture education culminating in the Part 2 qualification typically attracts a total of 600 credits.¹¹ While this may equate to five years of 120 credits each, HEIs may construct alternatives to enable flexibility in student learning, it is anticipated that this would be designated as an MArch.¹²

1.4 All qualifications and programmes providing Parts 1, 2 and 3 are prescribed and validated by the regulatory and professional bodies. In order to be eligible for registration with the ARB and for membership of RIBA, candidates are required to demonstrate that they have been successful in both the academic parts (Parts 1 and 2) and the work experience with professional examination (Part 3).

1.5 The subject benchmark statement seeks to encapsulate the nature of a rich and diverse academic discipline. The statement is not intended to prescribe a curriculum, but rather describes the broad intellectual territory within which individual higher education institutions (HEIs) will locate their programmes of study in architecture.

¹⁰ For guidance on academic levels, see *The framework for higher education qualifications in England, Wales and Northern Ireland* (FHEQ) (QAA, 2008) and in Scotland, *The framework for Qualifications of Higher Education Institutions in Scotland* (QAA, 2001).

¹¹ For guidance on the use of credit, see the *Higher education credit framework for England: guidance on academic credit arrangements in higher education in England* (2008), the *Credit and Qualifications Framework for Wales* (2004) and the *Scottish Credit and Qualifications Framework* (2001).

¹² The award includes undergraduate and postgraduate level work akin to other integrated master's degrees.

1.6 While the benchmark statement is primarily intended to guide lecturers and programme leaders in the design and validation of academic programmes leading to professionally recognised qualifications in architecture, it will also be useful to those developing other related programmes and those providing Part 1 (referred to as the 'Interim Award') that may, or may not, lead to Part 2 (the 'Final Award') in architecture.

2 Nature and extent of architecture

2.1 The study of architecture draws on knowledge and skills from the natural and social sciences, mathematics, humanities and the creative arts. The discipline is concerned with the accommodation of human activity in the full range of natural, historical, social and virtual environments. The creative practice of design is the defining central focus of architecture education and scholarship. The varied and complex intellectual skills of design are fundamental to the conception, elaboration and production of the spaces, buildings, cities and landscapes that make up the built environment. Architecture education is, therefore, rich, varied and, by definition, interdisciplinary, involving intellectual and practical complexity. While architecture education must be concerned with the constraints of the physical world and historical and cultural dimensions, it must also constantly adapt to a changing social, economic and environmental context, exemplified by climate change, globalisation, cultural diversity, artistic practices, information exchange and new social relationships.

2.2 The creative activity of design that lies at the core of architecture education is characterised by diversity of method, theoretical underpinning and aesthetic expression. The contested nature of design gives rise through debate to the advancement of the subject. Design is a complex process that brings together creative conception and highly pragmatic detailed development, and is closely related to other important aspects of architectural study: technology and environment; cultural context; management, practice and law; and communication. It is, therefore, the interaction of ideas, intentions and operations that gives architecture its distinctive character and allows for the variety of university programmes.

2.3 Students entering architecture programmes often have little experience of design or other subjects that contribute to architectural study at university. This has, however, many benefits. Students come to architecture education from a wide range of backgrounds, bringing with them the very diversity of disciplines and modes of inquiry that an architecture programme requires. In addition, many of those studying architecture do so with the intention of becoming a professional architect, or of pursuing a related career. However, the knowledge, understanding and skills that an architecture education imparts are broad, holistic and of value, and students often go on to work in many different fields.

3 Qualifications in architecture: validation, prescription and quality assurance

3.1 The subject of architecture is global. The knowledge and skills essential to its practice are similar across the world and practitioners are mobile. However, the practice of architecture and the function, status and title of the architect are defined nationally.

There is, however, increasing recognition of the cultural and economic benefits of the mutual recognition of academic qualifications and professional status and the removal of barriers to international mobility.

3.2 The member states that make up the European Economic Area have adopted a system of mutual recognition of professional qualifications, including architecture, which is set out in the Directive 2005/36/EC. The *Architects Act 1997* has been amended to take into account the requirements of the Directive in the UK and the ARB is the UK's Competent Authority for Architects for the purposes of implementing and administering the Directive.

3.3 The ARB is required by the *Architects Act 1997* to maintain the UK Register of Architects and to prescribe qualifications for entry to the Register. In doing so, the ARB also ensures that such qualifications meet the requirements of the Directive. The Directive specifies minimum subject knowledge and skills and specifies a minimum duration of study for qualification as an architect, requiring that 'training as an architect shall comprise a total of at least four years of full-time study or six years of study, at least three years of which on a full-time basis, at a university or comparable teaching institution' (Article 46, part 1). A more detailed account of ARB's procedures for the prescription of qualifications may be found in the document on *Procedures for the Prescription of Qualifications* (2010).¹³

3.4 The requirements of the RIBA for the validation of academic qualifications for membership are also fully consistent with the Directive. A detailed account of RIBA procedures for programme validation may be found in *RIBA Procedures for the Validation of UK Courses and Examinations in Architecture* (RIBA, 2005).¹⁴

3.5 The academic qualifications that form part of architecture education and training are designed, delivered and quality assured by HEIs working within a national framework of qualification levels that applies to all subjects, including architecture (the FHEQ, QAA 2008 and the *Scottish Credit and Qualifications Framework* (SCQF), QAA 2001). HEIs produce programme specifications that describe the content of a particular programme, specifying the intended learning outcomes and how they may be achieved and demonstrated. In working with this subject benchmark statement, HEIs may wish to map the learning outcomes of their programme onto the benchmark standard set out in section 4. QAA produces guidelines for institutions in producing programme specifications and also audits the institution.

4 Benchmark standard

4.1 Benchmark standards are identified for both the Interim Award and for the Final Award. HEIs will not necessarily offer both and should consult the appropriate section below when designing or reviewing their programmes.

4.2 For **both** the Interim Award and the Final Award, graduates are expected to be able to demonstrate that they meet the 11 points of Article 46 of Directive 2005/36/EC,

¹³ Available at: www.arb.org.uk/qualifications/prescription_of_qualifications/default.php.

¹⁴ Available at www.architecture.com/EducationAndCareers/Validation/UKvalidation.aspx.

which are embedded in the ARB/RIBA jointly held Criteria for qualification prescription and programme validation (4.4 below).

4.3 Graduates of the Interim Award should be able to demonstrate the attributes identified in 4.4, while graduates of the Final Award should be able to demonstrate the attributes identified in 4.4. A further specification for the Final Award is identified in section 4.5.

4.4 Graduates of both the Interim Award and the Final Award should be able to demonstrate that they address the ARB/RIBA General Criteria as follows in GC1 to GC11 and that they are met at the required level of attainment, set out in the Graduate Attributes for Part 1 and Part 2 in GA1¹⁵ and GA2:¹⁶

Interpretation of requirements at Parts 1 and 2

The Criteria comprises three sections as follows:

- the General Criteria at Parts 1 and 2
- the Graduate Attributes for Part 1 and
- the Graduate Attributes for Part 2.

For Part 1 courses and assessments, the General Criteria at Parts 1 and 2 as a whole, including the numbered subsections, should be read along with the Graduate Attributes for Part 1. For Part 2, the General Criteria, including the numbered subsections, should be read along with the Graduate Attributes for Part 2. No weightings are given to the areas within the General Criteria with the exception of Design, which is to constitute at least half of assessed work at Part 1 and Part 2 levels.

The terms 'knowledge', 'understanding', 'ability' and 'skills' are used in the General and Professional Criteria to indicate the nature of achievement required as the student progresses through qualifications at Parts 1 and 2.

The General Criteria at Part 1 and Part 2

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

GC1 The graduate will have the ability to:

- 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
- 2 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
- 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.

¹⁵ The qualification descriptor at level 6 in *The framework for higher education qualifications in England, Wales and Northern Ireland* (2008) or level 10 in the *Scottish Credit and Qualifications Framework* (2001) is relevant.

¹⁶ The qualification descriptor at level 7 in *The framework for higher education qualifications in England, Wales and Northern Ireland* (2008) or level 11 in the *Scottish Credit and Qualifications Framework* (2001) is relevant.

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

GC2 The graduate will have knowledge of:

- 1 the cultural, social and intellectual histories, theories and technologies that influence the design of buildings
- 2 the influence of history and theory on the spatial, social, and technological aspects of architecture
- 3 the application of appropriate theoretical concepts to studio design projects, demonstrating a reflective and critical approach.

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

GC3 The graduate will have knowledge of:

- 1 how the theories, practices and technologies of the arts influence architectural design
- 2 the creative application of the fine arts and their relevance and impact on architecture
- 3 the creative application of such work to studio design projects, in terms of their conceptualisation and representation.

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

GC4 The graduate will have knowledge of:

- 1 theories of urban design and the planning of communities
- 2 the influence of the design and development of cities, past and present, on the contemporary built environment
- 3 current planning policy and development control legislation, including social, environmental and economic aspects, and the relevance of these to design development.

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

GC5 The graduate will have an understanding of:

- 1 the needs and aspirations of building users
- 2 the impact of buildings on the environment, and the precepts of sustainable design
- 3 the way in which buildings fit into their local context.

GC6 Understanding of the profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors

GC6 The graduate will have an understanding of:

- 1 the nature of professionalism and the duties and responsibilities of architects to clients, building users, constructors, co-professionals and the wider society
- 2 the role of the architect within the design team and construction industry, recognising the importance of current methods and trends in the construction of the built environment
- 3 the potential impact of building projects on existing and proposed communities.

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

GC7 The graduate will have an understanding of:

- 1 the need to critically review precedents relevant to the function, organisation and technological strategy of design proposals
- 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
- 3 the contributions of architects and co-professionals to the formulation of the brief, and the methods of investigation used in its preparation.

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

GC8 The graduate will have an understanding of:

- 1 the investigation, critical appraisal and selection of alternative structural, constructional and material systems relevant to architectural design
- 2 strategies for building construction, and ability to integrate knowledge of structural principles and construction techniques
- 3 the physical properties and characteristics of building materials, components and systems, and the environmental impact of specification choices.

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

GC9 The graduate will have knowledge of:

- 1 principles associated with designing optimum visual, thermal and acoustic environments
- 2 systems for environmental comfort realised within relevant precepts of sustainable design
- 3 strategies for building services, and ability to integrate these in a design project.

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

GC10 The graduate will have the skills to:

- 1 critically examine the financial factors implied in varying building types, constructional systems, and specification choices, and the impact of these on architectural design
- 2 understand the cost control mechanisms which operate during the development of a project
- 3 prepare designs that will meet building users' requirements and comply with UK legislation, appropriate performance standards and health and safety requirements.

GC11 Adequate knowledge of the industries, organisations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning

GC11 The graduate will have knowledge of:

- 1 the fundamental legal, professional and statutory responsibilities of the architect, and the organisations, regulations and procedures involved in the negotiation and approval of architectural designs, including land law, development control, building regulations and health and safety legislation
- 2 the professional inter-relationships of individuals and organisations involved in procuring and delivering architectural projects, and how these are defined through contractual and organisational structures
- 3 the basic management theories and business principles related to running both an architects' practice and architectural projects, recognising current and emerging trends in the construction industry.

The Graduate Attributes for Part 1

GA1 With regard to meeting the 11 General Criteria at Parts 1 and 2 above, the Part 1 will be awarded to students who have:

- 1 ability to generate design proposals using understanding of a body of knowledge, some at the current boundaries of professional practice and the academic discipline of architecture
- 2 ability to apply a range of communication methods and media to present design proposals clearly and effectively
- 3 understanding of the alternative materials, processes and techniques that apply to architectural design and building construction
- 4 ability to evaluate evidence, arguments and assumptions in order to make and present sound judgments within a structured discourse relating to architectural culture, theory and design

- 5 knowledge of the context of the architect and the construction industry, and the professional qualities needed for decision making in complex and unpredictable circumstances
- 6 ability to identify individual learning needs and understand the personal responsibility required for further professional education.

The Graduate Attributes for Part 2

GA2 With regard to meeting the 11 General Criteria at Parts 1 and 2 above, the Part 2 will be awarded to students who have:

- 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
- 2 ability to evaluate and apply a comprehensive range of visual, oral and written media to test, analyse, critically appraise and explain design proposals
- 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
- 4 critical understanding of how knowledge is advanced through research to produce clear, logically argued and original written work relating to architectural culture, theory and design
- 5 understanding of 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
- 6 problem solving skills, professional judgement, and ability to take the initiative and make appropriate decisions in complex and unpredictable circumstances
- 7 ability to identify individual learning needs and understand the personal responsibility required to prepare for qualification as an architect.

4.5 Programmes leading to the **Final Award** should progressively build subject knowledge and enable the student to develop the necessary skills for entry to the architectural profession. Within the 600 credits leading to a Final Award, it is expected that:

- a sequence of design projects will be at the heart of the programme, making up at least half of the assessed work
- the programme will provide opportunities to pursue related specialised studies.

5 Teaching, learning and assessment

Programme design and operation

5.1 Architects have a unique conceptual and integrative role in the making of buildings and places, working in cooperation with communities, clients and other professionals. The defining skill of the architect is design - the ability to conceive of, and elaborate on, physical artefacts that meet human needs and evoke aesthetic response. The extensive body of technical and cultural knowledge that is required to enable the

architect to meet the pragmatic requirements of practice and to give designs cultural resonance complements this core skill.

5.2 Just as the practice of designing and making buildings revolves around the idea of the project, architecture education is typically based upon a sequence of design projects in which students integrate knowledge of the natural and social sciences, mathematics, humanities and the creative arts to satisfy particular requirements in a particular place. It is an established requirement that at least half of a programme leading to professional qualification should be devoted to design project work (see paragraph 4.5). While many aspects of the body of theoretical, historical, technical and professional knowledge required for effective practice may be effectively learned in the context of the design project, most programmes include a variety of subject-based courses that enable students to gain an understanding of the coherent nature of particular bodies of knowledge. Such courses may beneficially be shared by students of other professional and associated disciplines.

5.3 The early stages of an architecture education are concerned with the development of new intellectual frameworks, abilities, conceptions and values. Project work at this stage is commonly divided into small elements with regular assessment and feedback. As the student progresses, the level of complexity of each element of study increases.

5.4 Engagement with practice is essential to the education of the architect. Many teachers of architecture are also active in practice, and the contribution of visiting tutors and critics is invaluable. As previously discussed, monitored workplace experience is a prerequisite for ARB registration and RIBA membership. It offers students the opportunity to apply their skills and knowledge and to develop their understanding of practice, and the roles and responsibilities of architects and other professionals. A period of workplace experience may be a compulsory element of the academic programme or it may be a requirement for progression to the Final Award.

5.5 In addition to the professional requirements for students to engage in personal development planning during periods of workplace experience, architecture education promotes reflective practice through studio, tutorial and assessment processes. Students are encouraged to produce sketchbooks, learning journals or reflective diaries related to their work. The progressive assembly of an academic portfolio (comprising design project work, written and other assignments) represents an important aspect of personal development planning.

Teaching and learning

Design projects

5.6 Through a process of learning-by-doing, students develop the skills required to produce architectural designs, gain an understanding of the application of technical knowledge to design situations, and explore how theory and action inform each other.

5.7 The scale and subject matter of design projects is varied, but the general pattern is constant. Students respond (usually individually but sometimes in groups) to a brief or proposition. Ideas are developed using a variety of graphic and computer-based methods supported by discussion with tutors, fellow students and others. Proposals are

presented using drawings, sketchbooks, physical models, computer models and digital images, often accompanied by explanatory text.

5.8 An important element of this method of learning and teaching is the verbal presentation and critique of work in a variety of settings ranging from individual tutorial to formal public review. Part-time tutors, visiting lecturers and critics play a key role in these settings, and the contribution of student peers to this educative process is also important.

5.9 While academic studio projects share some general characteristics with professional project work, they vary widely in length, focus and subject matter. Each project is designed to fit into a coherent sequence that runs throughout a validated programme of study. Sometimes a project seeks comprehensive and detailed responses, at other times a project may address broad conceptual issues or focus on matters of detail.

5.10 There is never a single correct answer in design. Students' responses are likely to be unique and individualistic, owing as much to interpretation and intuition as to a logical process or established practice. In many cases, the initial response is the generation of a further set of questions.

5.11 In formulating their proposals, students will be engaged in a process of research, interpretation, proposition, reflection, critical analysis and synthesis, and will take into account site and cultural context, user needs, philosophical values, economics and technical resolution. The inherent complexity and open-ended nature of design requires students to make a considerable investment in the time devoted to project work.

Other methods

5.12 While the design project is central to architectural learning (as in other creative disciplines), other pedagogical methods are essential to the development of the knowledge and skills required in the practice of architecture.

5.13 Some aspects of architectural knowledge, including history, theory, legislation, the regulatory system and principles of structure, environmental science and construction, may best be learned through coherent linear or block courses based on structured reading, lectures and seminars.

5.14 Research and writing skills are essential to professional practice, and courses throughout include elements aimed at developing students' abilities in these areas, including essay and report-writing assignments. It is a requirement that all students undertake a specialist research study or other analytical and structured piece of writing, which may be called dissertation.

5.15 Interactive computer-based study is increasingly available to support the development of skills and knowledge. Group work is an important means of developing team-working skills that are essential in practice. Live project work that gives students experience of working closely with clients and users and develops team-working skills is also an important aspect of some architectural programmes.

5.16 Study visits in the UK, elsewhere in Europe and further afield offer students an invaluable opportunity to experience a wide range of architecture and contrasting cultural contexts. Visits to construction sites complement more formal teaching.

Environment and resources

5.17 Design project work is generally considered by teachers and practitioners to be the most effective means of learning the essential skills of architectural design. Closely associated with the recognition of the design project as the core learning experience is the idea of the design studio. Artists and architects have often chosen to work in large well-lit rooms with large tables for drawings and models, and this prototype was consequently adopted as the preferred learning and teaching environment.

5.18 The word 'studio' means much more in architecture education than a convenient workroom. It evokes an image of creative cooperative working in which the outcome: the architectural design and the educational benefit in terms of skill development, is greatly superior to that which could be achieved by the individual student working alone.

5.19 Implicit in this view of studio teaching is the very direct relationship between student and tutor, involving frequent one-to-one and small group tutorials. It is resource-intensive in terms of physical space as well as staff time. Ideally, studios should be purpose-designed with good natural lighting, extensive pin-up surface and large floor areas to accommodate appropriate furniture. To be fully effective, studio space should be dedicated to architectural teaching and students who should have access to it for long periods of intense cooperative activity and peer learning. There is a strong correlation between consistent participation in the life of the studio and the quality of designs produced by students and, consequently, the acquisition of design skills.

5.20 The studio is the setting for the creation, display and discussion of design work in individual and group tutorials as well as in more public reviews. In addition, the studio is increasingly used as a setting for the learning and teaching of theoretical, historical, professional and technological aspects of architecture. It is generally recognised that the existence of convenient and accessible studio space makes a decisive contribution to the specific and intensive qualities of architecture education and professional culture, and that the studio is essential to the maintenance of the integrity and strength of the discipline of architecture.

5.21 Although traditional drawing skills remain important in the development of design abilities, computer-aided design (CAD) techniques are essential in the development and presentation of design work. The rapid development of information and computer technology in architectural and construction practice presents a challenge to HEIs, which need to be able to offer facilities comparable to those that students will work with in practice. They need access to up to date software, to the high specification hardware needed to run complex graphic and analytical programmes, and to high quality, large format printers, plotters and 3-D output devices.

5.22 Well-equipped workshops that allow the construction of physical models and full size mock-ups are a critical resource for architecture education. The availability of well-qualified technical support staff is essential for the efficient and productive use of computer facilities and workshops.

5.23 Architecture students require a comprehensive on-site collection of technical literature, statutory instruments and standards as well as an up to date library of books and journals.

Assessment

Assessment of design work

5.24 The regular formative review of students' design project work is an important part of the learning process. At the end of a project, and sometimes at intermediate stages, each student presents his or her work to an audience of fellow students, tutors and visiting critics. Feedback may be given to students in a variety of forms.

5.25 In many cases, all students present actively participate in the discussion and feedback. The regular review of student work in a public arena is important in the development of self-reflection, a key skill in the acquisition and application of all architectural knowledge.

5.26 The summative assessment of design work is carried out by multiple assessors at project reviews and/or at a separate portfolio review. While summative assessment should be based on clear and explicit criteria, the marking process relies heavily on the expert judgments of discerning markers and examiners.

Assessment of other work

5.27 Other elements of the programme are assessed using methods of formative and summative assessment appropriate to HE. Programmes are expected to include substantial requirements for written texts at all levels, ranging from notation on drawings to report writing and scholarly dissertations.

5.28 Besides a range of practical and academic skills, architecture graduates are expected to display commitment, artistry, personal expression, imagination and creativity.

Appendix 1: The Architects' Registration Board (ARB)

The Architects' Registration Board (ARB) was established by an Act of Parliament, the *Architects Act*, in 1997. The ARB is the independent statutory regulator of all registered architects within the UK.

The ARB's duties and responsibilities for regulating architects are set out in the Act.

The key duties and responsibilities are to:

- keep an up to date register of architects
- decide what qualifications are needed to become an architect
- set standards for education and professional practice
- investigate complaints about an architect's conduct or competence, and
- make sure that only people on the register use the name 'architect'.

The ARB website is regularly updated and contains all current information for architects, members of the public and students of architecture. The website contains the current list of all Schools of Architecture that offer ARB-prescribed qualifications as well as the up to date Register of Architects.

The ARB's Criteria for qualification prescription at Part 1 and Part 2 are embedded within the subject benchmark statement, but the ARB Procedures for Prescription are available from the ARB's website at www.arb.org.uk.

Appendix 2: The Royal Institute of British Architects (RIBA)

The Royal Institute of British Architects is the UK membership body for architecture and the architectural profession. It provides support for over 40,000 members worldwide in the form of training, research and technical services; publications and events; and, through its validation programme, sets academic standards for the education of architects both in the UK and overseas. The RIBA hosts many exhibitions and lectures and is home to the British Architectural Library. Annual schemes recognise outstanding architecture, including the work of students, and culminate in the President's Medals and Stirling Prize, among many other prestigious awards, prizes, scholarships and bursaries.

The RIBA Validation Criteria are embedded in the subject benchmark statement, but the RIBA Procedures for UK Validation and International Validation are available through their website at www.architecture.com.

Appendix 3: The Professional Examination (Part 3)

Interpretation of Requirements at Part 3

For Part 3 courses and assessments, the Graduate Attributes of the successful candidate are reflected within the introductory paragraphs. The Professional Criteria at Part 3 exist within the paragraphs titled and numbered 1-5. The numbered subsections are for explanation and guidance only and do not form part of the Professional Criteria at Part 3.

The terms 'knowledge', 'understanding', 'ability' and 'skills' are used in the Professional Criteria to indicate the nature of achievement required.

The Professional Criteria at Part 3

Candidates wishing to sit the Professional Practice Examination in Architecture (Part 3) are normally required to have successfully completed a recognised qualification at Part 1 and Part 2 level, or their equivalent recognised examinations. In addition, candidates are required to have completed the relevant professional practice experience before undertaking the Examination.

Each candidate's experience of learning and development in professional practice will differ, depending upon the type of project, type and location of practice, and management processes undertaken, and the preparation for the examination must, therefore, be approached in a structured way.

The candidate should manage the relationship between professional experience and academic study to provide coverage of the Professional Criteria, presenting a critically reflective body of work that complies with the requirements of the professional studies adviser or course provider. To meet the Professional Criteria, the candidate's experience should include evidence of commercial awareness, self management, professional competence and integrity. A successful candidate should also be able to demonstrate authorship, knowledge, effective communications skills, and reasoning and understanding in relation to all issues within the Professional Criteria outlined below.

PC1 Professionalism

A successful candidate will demonstrate overall competence and the ability to behave with integrity, in the ethical and professional manner appropriate to the role of architect. The candidate will have the skills necessary to undertake effective communication and presentation, organisation, self-management and autonomous working.

The candidate will have a clear understanding of the architect's obligation to society and the profession, and a sufficient awareness of the limits of their competence and professional experience to ensure they are unlikely to bring the profession into disrepute.

Demonstration of an understanding of the following will contribute to this criterion being met:

- 1.1 professional ethics
- 1.2 the architect's obligation to society and the protection of the environment
- 1.3 professional regulation, conduct and discipline

- 1.4 institutional membership, benefits, obligations and codes of conduct
- 1.5 attributes of integrity, impartiality, reliability and courtesy
- 1.6 time management, recording, planning and review
- 1.7 effective communication, presentation, confirmation and recording
- 1.8 flexibility, adaptability and the principles of negotiation
- 1.9 autonomous working and taking responsibility within a practice context
- 1.10 continuing professional development.

PC2 Clients, users and delivery of services

A successful candidate will be able to demonstrate understanding of the range of services offered by architects and delivering those services in a manner prioritising the interests of the client and other stakeholders. The candidate will have the skills necessary to provide a competent service, both singly and as part of a team, including understanding of client needs, appropriate communication, programming, coordination and competent delivery. This will be supported by knowledge of the briefing process, forms and terms of appointment, the means of professional remuneration, relevant legislation, and the execution of appropriate programmed and coordinated project tasks.

Demonstration of an understanding of the following will contribute to this criterion being met:

- 2.1 types of clients, their priorities and the management of the relationship
- 2.2 briefing, organising and the programming of services appropriate to appointment
- 2.3 architects' contracts, terms of engagement, scope of services and relevant legislation
- 2.4 obligations to stakeholders, warranties and third party rights
- 2.5 communication, progress reporting and the provision of appropriate and timely advice
- 2.6 budget and financial awareness and cost monitoring or control
- 2.7 responsibility for coordination and integration of design team input
- 2.8 invoicing, payment of fees and financial management
- 2.9 intellectual property rights and copyright law
- 2.10 duty of care, professional liability, negligence and professional indemnity including insurance.

PC3 Legal framework and processes

A successful candidate will be able to demonstrate understanding of the legal context within which an architect must operate, and the processes undertaken to ensure compliance with legal requirements or standards. The candidate will have the skills necessary to positively interact with statutory and private bodies or individuals, and competently deliver projects within diverse legislative frameworks. This will be supported by knowledge of the relevant law, legislation, guidance and controls relevant to architectural design and construction.

Demonstration of an understanding of the following will contribute to this criterion being met:

- 3.1 the relevant UK legal systems, civil liabilities and the laws of contract and tort (delict)*
- 3.2 Planning and Conservation Acts, guidance and processes
- 3.3 building regulations, approved documents and standards, guidance and processes
- 3.4 land law, property law and rights of other proprietors
- 3.5 terms within construction contracts implied by statute
- 3.6 health and safety legislation and regulations
- 3.7 statutory undertakers and authorities, their requirements and processes
- 3.8 environmental and sustainability legislation
- 3.9 historic buildings legislation
- 3.10 accessibility and inclusion legislation.

* Scotland

PC4 Practice and management

A successful candidate will be able to demonstrate understanding of the business priorities, required management processes and risks of running an architectural practice, and the relationship between the practice of architecture and the UK construction industry. The candidate will have the skills necessary to engage in business administration and ability to resource, plan, implement and record project tasks to achieve stated goals, either individually or within a team. This will be supported by knowledge of the nature of legal business entities, office systems, administration procedures and the relevant legislation.

Demonstration of an understanding of the following will contribute to this criterion being met:

- 4.1 the roles of architectural practice in the construction industry
- 4.2 external factors affecting construction and practice at national and international levels
- 4.3 practice structures, legal status and business styles
- 4.4 personnel management and employment-related legislation
- 4.5 practice finance, business planning, funding and taxation
- 4.6 marketing, fee calculation, bidding and negotiation
- 4.7 resource management and job costing
- 4.8 administration, quality management, Quality Assurance (QA) systems, recording and review
- 4.9 staff development, motivation, supervision and planning
- 4.10 team working and leadership.

PC5 Building procurement

A successful candidate will be able to demonstrate understanding of UK construction and contract law, construction procurement processes and the roles of built environment professionals. The candidate will have the skills necessary to plan project-related tasks, coordinate and engage in design team interaction, execute effective contract communication and resolve construction-related challenges and disputes. This will be supported by an understanding of contractual relationships, the obligations upon an architect acting as contract administrator, job-related administrative systems and the management of projects in the context of the candidate's professional experience.

Demonstration of an understanding of the following will contribute to this criterion being met:

- 5.1 procurement methods, including for public and larger projects and relevant legislation
- 5.2 the effect of different procurement processes on programme, cost, risk and quality
- 5.3 collaboration in construction and provisions for team working
- 5.4 tendering methods, codes, procedures and project planning
- 5.5 forms of contract and sub-contract, design responsibility and third party rights
- 5.6 application and use of contract documentation
- 5.7 roles of design/construction team members and their interaction
- 5.8 duties and powers of a lead consultant and contract administrator
- 5.9 site processes, quality monitoring, progress recording, payment and completion
- 5.10 claims, litigation and alternative dispute resolution methods.

Appendix 4: Membership of the review group for the subject benchmark statement for Architecture

Iain Borden	University College London
Caine Crawford	ARCHAOS (National Student Architectural Society)
Judi Farren-Bradley	Kingston University
Katharine Heron (Chair)	University of Westminster
Jim Low	Birmingham City University
Richard Parnaby	University of the West of England
David Porter	Glasgow School of Art
Andy Roberts	The Higher Education Academy Subject Centre for Education in the Built Environment (CEBE)
Richard Saxon	Building Design Partnership and Royal Institute of British Architects (RIBA)

In attendance:

Laura Bellingham	Quality Assurance Agency for Higher Education (QAA)
Chris Cross	Standing Conference of Heads of Schools of Architecture (SCHOSA)
Chris Ellis	Standing Conference of Heads of Schools of Architecture (SCHOSA)
Emma Matthews	Architects Registration Board (ARB)
David Gloster	RIBA
Sarah Lupton	ARB
Mike Starling	ARB

Appendix 5: Membership of the original benchmarking group for Architecture

Details below appear as published in the original subject benchmark statement for Architecture, Architectural Technology and Landscape Architecture (2000).

Ms A Boddington	University of Brighton
Mr D Clews	University of North London
Professor D Dunster (Chair)	University of Liverpool
Dr M Fraser	Oxford Brookes University
Professor J Low	University of Central England in Birmingham
Professor S Spier	University of Strathclyde

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