



Standard of Knowledge, Skill and
Competence for Practice as an
Architectural Technologist

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Foreword

In 2006 RIAI Council made a decision that the requirements for practice as an architectural technician in Ireland should be laid out clearly in a single document. To carry out this exercise Council convened the RIAI Architectural Technology Task Group.

In carrying out its work the Task Group received very welcome advice and comment from experts in the fields of academia, architectural and architectural technology practice and education, and in November 2008 submitted to Council a thoroughly researched document setting out the range of knowledge, skills and competences that might be expected of the architectural technician / technologist at successive stages of qualification and experience.

This document formed the basis of an RIAI decision in January 2009 to replace the membership category of 'Architectural Technician' with that of 'Architectural Technologist' and to develop a single *RIAI Standard of Knowledge, Skill and Competence for Practice as an Architectural Technologist*.

This standard, developed following further consideration by the Architectural Technology Sub-Committee and a period of consultation, will be the benchmark for admission to RIAI Architectural Technologist membership, regardless of how a candidate's knowledge, skill and competence has been attained. It will provide those seeking RIAI Architectural Technologist membership with a clear statement of what is required at the professional level. It is also intended to provide a framework for Continuing Professional Development, keeping Architectural Technologists aware of the key areas of knowledge skill and competence which must be maintained for effective practice.

Its publication now sets in place a firm foundation for the *RIAI Action Plan 2010 – 2013* objective of promoting, developing and supporting the role of the RIAI Architectural Technologist.

I would like to take this opportunity to thank all of those who gave freely of their time and expertise to contribute to the development of this document. I would especially like to thank the members of the RIAI Architectural Technology Task Group and the Architectural Technology Sub-Committee who invested very considerable time and effort in this exercise.



John Graby
Registrar

Background

The RIAI is the leading professional body in Ireland for architects, architectural technologists, and of graduates in both fields. Since its foundation in 1839, the RIAI has committed itself to the development of knowledge required for practice in the field of architecture and latterly of architectural technology. Of equal importance is the role of the RIAI in protecting the interests of clients, consumers, building users, the public interest and the quality of the built environment. This demands that RIAI members, including both its architect and architectural technologist members, are equipped with the necessary skills to deliver the services they offer.

In 1974 the RIAI created a new category of membership to provide for Architectural Technicians, and has been accrediting courses in architectural technology since 1975. In the years since then the profession of architectural technician has developed significantly in terms of professional practice and in the provision of education at both undergraduate and postgraduate level. In recognition of this RIAI Council agreed in 2009 to alter the technician membership title from 'architectural technician' to 'architectural technologist'. (Though not protected, use of either title is prescribed under the Building Control Act 2007).

The RIAI regards the professional Architectural Technologist as a technical designer, skilled in the application and integration of construction technologies in the building design process.

The RIAI architectural technologist membership category is established to recognise architectural technologists working in both private and public sectors, in architectural practices, in multi-disciplinary practices or in architectural technology practices, and architectural technologists working at various levels in industry.

The RIAI policy on the education of the 'architectural technician' at undergraduate level was outlined in 13 points in Section 3.5.1 of the RIAI Statement of Policy on Architectural Education, 2001. However, recent years have seen the opening of several new courses in architectural technology and an increase in the numbers of technologists coming from countries where laws, climate, building processes, and education differ from those in Ireland.

In this context the RIAI identified the need to establish a clearly expressed Standard for entry to the Architectural Technology profession in Ireland. The Standard would provide a basis for clear understanding of the requirements and thereby support consistent and equitable assessment of the skills required for recognition as an Architectural Technologist. This increased clarity would benefit clients, consumers, employers, students, schools of architectural technology, architectural technologists and candidates for RIAI Architectural Technologist membership.

The new Standard of Knowledge, Skill and Competence for Practice as an Architectural Technologist establishes the skill set required for practice in architectural technology in Ireland. It will form a single standard for assessment and will apply to all entry routes for Architectural Technologist membership of the RIAI.

Development of the Standard

In 2006 the RIAI Council appointed an Architectural Technology Task Group (ATTG) to review standards of knowledge, skill and competence required for practice in architectural technology. The ATTG was representative of architectural technicians, architects and architectural technology educators. The ATTG considered the levels of skill to be expected at each stage of the education and training of the Architectural Technician. Preparatory work included review and research of core reference documents published by various bodies including the RIAI, the: Higher Education Training and Awards Council (HETAC) Ireland; National Qualifications Authority of Ireland (NQAI) and the UK Quality Assurance Agency, amongst others. The draft standards produced by the Task Group, together with other work carried out by the Architectural Technician Committee and RIAI Education Division, contributed to a fundamental re-consideration of the role of the architectural technician.

In January 2009, following Council's decision to adopt the title 'Architectural Technologist', a new sub-committee was appointed by Council to develop the single standard for Architectural Technologist membership of the RIAI. The sub-committee membership included representatives from the ATT, architectural technician representatives from the ATC and representatives from the architect membership. Those consulted on the document as it evolved included: experts in the field, RIAI Council, RIAI Board of Architectural Education, RIAI Committees and Examination Boards, and the Institutes of Technology.

Use of the Standard

The RIAI Standard of Knowledge, Skill and Competence for Practice as an Architectural Technologist describes the areas and levels of knowledge, skill and competence required of an architectural technologist at the professional level. To be an Architectural Technologist member of the RIAI - RIAI ArchTech - an individual must have demonstrated that he or she has achieved this Standard. The Standard is applied in all RIAI examinations and assessment mechanisms and is integrated into all of the RIAI's Admission routes to Architectural Technologist membership. In RIAI CPDEngage, the Institute's online CPD planning, provision and monitoring tool, the Standard provides the framework for Continuing Professional Development.

Reading and interpreting the Standard

The Standard is divided into seven Sets - Context, Technology, Regulation, Procurement, Communication, Management and Professionalism - each of which contains a list of relevant competences that are recognizably related to the realities of practice.

In many cases the Competence is accompanied by a 'Guidance Note' which clarifies the scope or meaning of the criterion. In others, where the scope and meaning are self-evident, there is no Guidance Note.

Each Competence is set at one of four Levels in terms of the level of achievement to be demonstrated:

Awareness: a person should be aware that specific regulations, issues, concepts, procedures, etc. exist and where they are relevant or might apply. A thorough knowledge is not required. This is about knowing that something exists and may have an impact.

Knowledge: a person, in addition to being aware that a concept, regulation, issue, procedure, etc. exists must also have some degree of knowledge of how it applies, and be able to apply it independently at a basic level. Knowledge means knowing enough about something to be able to work with it without necessarily having to bring in someone with more expertise.

Understanding: means that the person has a comprehensive knowledge of a concept, regulation, issue, procedure, etc., including how it applies, and is able to apply it at a complex level. The Applicant should be capable of guiding and advising others in this area and of applying this knowledge in new and unforeseen circumstances.

Ability: means that the person can bring all of his/her knowledge and skills to bear in the successful delivery of that particular element of a professional architectural service.

RIAI Standard of Knowledge, Skill and Competence for Practice as an Architectural Technologist

	Competence	Guidance Note
1	Context	
1	Knowledge of current societal concerns, their changing nature and their integration into architectural technology practice.	Current examples include climate change, sustainable development, energy conservation, health & safety, and universal inclusive design. These will evolve, and new topics emerge, over time. Candidates may be more knowledgeable in some areas than others.
2	Knowledge of the range of organisations with a responsibility for, or interest, in the built environment.	These include national government, consultative, advisory and voluntary bodies and interest groups which play a part in the development of policy, directives, laws, guidelines and regulations, and an awareness of how they interact with each other.

2	Technology	
1	Ability to develop performance-based solutions to technical design problems.	Includes being able to innovate and think creatively in the technical design process, and to use drawing as a means of exploring and resolving technical problems. Includes being able to undertake research and investigation as part of the technical design process.
2	Understanding of theory, principles and science in the technical design process	
3	Ability to use measurement and calculation accurately and consistently in the technical design process	Includes an understanding of the importance of dimensional accuracy in the preparation of drawings Includes measurement and calculation of building and environmental performance.
4	Understanding of traditional and innovative building materials and technology	Includes knowledge of the sourcing and processing of materials and technology, their responsible and sustainable use, their potential environmental impact, and the ethical dimension of their mode of production
5	Knowledge of the theory and principles of environmental design	Includes the relationship between a building and its immediate and wider environments Includes thermal behaviour, energy performance, climate protection and conditions of comfort factors in the building design process Includes issues such as ecological sustainability, physical and climatic environment, conservation, natural disaster risks.
6	Ability to produce technical drawings, specifications, compliance reports, and other written technical documentation	Includes integration of the requirements of relevant construction legislation, regulations, codes and standards at the various stages in the building design process
7	Ability to undertake measured building and site surveys and translate data into legible digital and graphical format	Includes awareness of the application and limitations of current survey techniques.
8	Knowledge of the history and evolution of construction technology	Includes the ability to date buildings on the basis of the technologies used in their construction.
9	Ability to collaborate effectively in the architectural design process	Includes awareness of the history of architecture Includes being able to respond to and develop the architectural design intent, collaborating within the design team to produce technical solutions that address technical, functional and visual criteria.

	Competence	Guidance Note
2	Technology (continued)	
10	Ability to coordinate and integrate structural and building services design inputs	Requires knowledge of the theory and principles of structural and building services engineering. Requires an intuitive sense of what is appropriate as a engineering solution, and the impact of this on the 'buildability' of a design. Includes being able to co-ordinate and monitor structural and building services engineering design drawings and related information.
11	Ability to coordinate and integrate other specialist design inputs	Includes various areas of specialist design expertise such as materials science, energy design, environmental design, fire engineering, acoustic engineering, conservation etc
12	Ability to coordinate and integrate design subcontractor inputs	Requires an understanding of the design responsibilities of the contractor and design subcontractor in the building design process. Includes being able to co-ordinate and monitor design sub-contractors manufacturing and workshop drawings and related design information.
13	Ability to assess and integrate cost control factors	Requires knowledge of the economics of development. Requires knowledge of the potential cost implications arising from decision making in the technical design process. Requires knowledge of budgets, costs and cost control and their implementation and general effect on projects.

	Competence	Guidance Note
3	Regulation	
1	Understanding of core construction legislation, regulations and related codes and standards	Includes Building, Planning & Development and Health & Safety legislation and regulations. Includes Irish, British, EU and other codes and standards for core technical areas such as fire safety, universal design, health and safety etc. Includes the understanding for the need for and type of testing required in establishing conformity with specifications and the ability to interpret the test results
2	Knowledge of other relevant codes and standards	Includes Irish, British, EU and other codes and standards for various other technical areas
3	Awareness of other relevant legislation and regulations	Includes environment, waste management, disability, equality, national monuments and heritage, property, EU Directives etc.
4	Understanding of the changing nature and increasing complexity of the legal and regulatory environment, and the necessity to seek advice or update knowledge from accredited sources, as appropriate	

4	Procurement	
1	Understanding of the stages in the building design process from inception to completion.	
2	Knowledge of commonly used procurement systems and contract types and their appropriate application.	Includes understanding of the general building contracts, contract administration. Includes implications of sensitivity and confidentiality of negotiation in tendering processes.
3	Understanding of the structure, operation and general activities of the design team and their interaction within the design process.	Includes design development and the input of the architectural technologist at the various stages including planning, fire safety cert, building regulations, tender documentation etc
4	Understanding of the structure, operation and general activities of the construction team and their interaction within the construction process.	Includes the construction process and the input of the architectural technologist in contract administration activities such as chairing and taking minutes of site meetings, responding to RFIs, engaging in ongoing design development with subcontractors, monitoring builders work and workshop drawings etc Includes understanding of site practice and procedures, site organisation and setup, compound, storage, sanitation etc. Includes monitoring, assessing and reporting on the execution of quality/workmanship during Operations On-Site and Completion Stages Includes engagement in critical appraisal of quality/workmanship with contractors and sub-contractors.
5	Ability to prepare and co-ordinate tender documentation	
6	Ability to prepare and coordinate post-tender and handover documentation	

	Competence	Guidance Note
5	Communication	
1	Ability to impart / present and receive / understand information clearly and effectively in graphical, written and verbal formats.	Includes clear written and verbal communication, report writing and scheduling, ability to communicate effectively in the local language of commerce.
2	Ability to use information technologies commonly required to support the building design process.	Relates to the broad range of IT applications in the work of the architectural technologist, including Computer Aided Design (CAD), Building Information Modelling (BIM) and related analytical calculation software, multimedia packages, web based document control etc.
3	Knowledge of the need to negotiate from an informed position through the relevant phases of the design and construction processes.	Includes being able to engage with others in negotiation, to assert a position where necessary and address issues in a professional non-confrontational way.

6	Management	
1	Understanding of the principles of project management in construction projects.	Includes project programming. Includes time management and its relationship to project costs and quality. Includes change management
2	Ability to lead, motivate and/or work within a team as appropriate	Involves a basic appreciation of: motivation; group dynamics; staff appraisal and reward structures; communication; goal setting; coaching; coping; delegation and the vision to see beyond the immediate in the context of project and practice objectives.
3	Understanding of Quality Management processes in the building design and construction process.	Includes management of project documents and technical information, both internal and external and including information storage, retrieval and archiving Includes the management of the technical design inputs to the architectural design process Includes knowledge of quality assurance and ISO processes.
4	Knowledge of the application of general health and safety regulations, in particular those relating to construction, to the design and procurement processes.	

	Competence	Guidance Note
7	Professionalism	
1	Ability to identify and evaluate information, apply critical judgment and formulate objective, competent advice and/or strategies for action	Ability to provide objective competent advice to the client and/or the users and exercise due care and attention when acting on behalf of the client, having due regard to the interests of society as a whole. This may, on occasion, involve addressing conflict between the client's interests and those of society at large.
2	Understanding of the need to regularly review personal performance against good practice, carry out critical self-appraisal, recognise limitations of knowledge, expertise and performance and take necessary steps to seek advice, update knowledge and make good any deficiencies	This may involve undertaking CPD or recommending that the client engage additional expertise as appropriate.
3	Understanding of the obligation to act with honesty, integrity and impartiality in all matters arising from the practice of architectural technology, including associated or related activities such as teaching and research.	This includes all relevant, including fiduciary, duties and responsibilities.
4	Awareness that 'good practice' may extend beyond legal/minimum requirements	This involves appreciation of the spirit and the letter of the law and related societal and environmental concerns.
5	Awareness of resolution mechanisms for disputes	Includes: Conciliation; Mediation; Adjudication, Arbitration; Litigation.
6	Understanding of the requirement for personal safety in the practice of architectural technology	This includes personal safety in relation to construction sites, fabrications works, site surveys, building condition surveys and potentially dangerous environments
7	Understanding of the duty to honourably discharge responsibilities to the client or employer.	