



Energy Training for Construction Workers for Low Energy Buildings

BUILD Up Skills QualiBuild



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Abbreviations

BUSI – Build Up Skills Ireland

CPD – Continuous Professional Development

CVET – Continuing Vocational Education and Training

DES – Department of Education and Skills

DSP – Department of Social Protection

EGFSN – Expert Group on Future Skills Needs

ETB – Education and Training Board

ETBI – Education and Training Boards Ireland

FÁS – Training and Employment Authority

FET – Further Education and Training

FETAC – Further Education and Training Awards Council

HEA – Higher Education Authority

HEI – Higher Education Institution

HETAC – Higher Education and Training Awards Council

IoT – Institute of Technology

ITAC – Institutes of Technology Apprenticeship Committee

IUQB – Irish University Quality Board

IVEA – Irish Vocational Education Association

IVET – Initial Vocational Education and Training

NARC – National Apprenticeship Review Committee

NFQ – National Framework of Qualifications

NQAI – National Qualifications Authority of Ireland

NTF – National Training Fund

NZEB – Near Zero Energy Building

OECD – Organisation for Economic Co-operation and Development

PLC – Post Leaving Certificate Course

QQI – Quality and Qualifications Ireland

RPL – Recognition of Prior Learning

SLMRU – Skills and Labour Market Research Unit

SEC – State Examinations Commission

SBS - Standards Based Apprenticeship

VEC – Vocational Education Committee

VET – Vocational Education and Training

1 Executive Summary

Continuing Professional Development (CPD) is the updating of professional skills through lifelong learning or continuing education. It is considered to be increasingly important in light of changes in technology and legislation, globalisation and the emergent need for interdisciplinary skills in professions. It is now seen as essential for organisations who wish to remain competitive and for individuals who wish to maintain employment and enhance advancement opportunity. In the context of education, it is equally important for teachers and trainers to maintain appropriate professional knowledge and skills.

Since 2002, Irish Building Regulations have been subject to a series of revisions to align them with the European Performance of Buildings Directive (EPBD, 2002) and its recast in 2010. The amendments have had a significant impact on the standards for building energy performance, with the 2011 regulations for dwellings effectively resulting in the mainstreaming of low energy buildings. Building standards will continue to evolve towards Near Zero Energy Buildings (NZEB) in line with government policy¹. These changes necessitate a new approach to construction and renovation, one which combines a working knowledge of the underpinning principles of low energy building with a collaborative effort from all involved in the process towards the achievements of the new standards.

The pace of change in building standards has proved challenging for all involved in the construction industry, including designers and specifiers, but particularly for the construction workers tasked with their implementation onsite. As highlighted in the EU funded Build UP Skills Ireland (BUSI) status quo report of 2012, the new emphasis on energy performance of buildings has not been adequately reflected in the training provision for construction workers, both at apprenticeship level and in continuing education and training. The report also specifically identified that trainers involved in construction education were largely unaware of changes to building regulations and their impact on the skills and knowledge needs in the industry. It was noted that there was a lack of a formal CPD system for trainers of construction skills and that this, when combined with lack of experience of onsite implementation of new building methods, has inevitably led to knowledge gaps.

In recent times, the delivery of apprenticeship programmes and further education offerings in construction related subjects has been shared between FÁS and the Institutes of Technology (IoTs). This would have complicated the implementation of any potential common CPD system for trainers as these organisations operate different staff development protocols. FÁS, the national training authority with responsibility for Further Education and Training (FET) provision including craft apprenticeship, was dissolved following the enactment of the Further Education and Training Act 2013. This led to the formation of SOLAS, the organisation now responsible for policy making in FET, with regional groupings of Education and Training Boards (ETBs) presiding over delivery of training. This adds a further layer to the governance and implementation of curricula for construction related programmes and the management of staff involved in their delivery.

SOLAS, in their *Further Education and Training Strategy 2014 – 2019* report, have acknowledged the importance of establishing high standards of qualifications and professional development for staff

¹ [Department of Environment, Community & Local Government. \(2012\)](#)

involved in FET². However, it is also cognisant of the significant challenge faced in qualifying and up-skilling FET tutors, i.e. the need for a combination of up to date pedagogical and vocational (subject specific) competence in order to effectively equip learners for working life in their discipline.

With regard to the IoT sector, the government appointed National Forum for the Enhancement of Teaching and Learning in Higher Education has recently embarked on a consultation process with the intention of establishing a national framework for professional recognition of teachers in higher education³. While the objective is to provide guidance to individuals, staff and managers on professional development, it is not intended to be prescriptive on the nature or type of activities to be undertaken.

All of this change in the FET sector is occurring in the context of an unprecedented downturn in the construction sector. From 2008, employment in the sector has reduced from peak figures circa 300,000 to approximately 70,000 directly involved in building construction. This has been reflected in a collapse in registration for construction related apprenticeship programmes, which has only very recently experienced a very modest upturn as the industry begins to recover. Many ETB training centres (formerly FÁS) and IoTs have dropped some or all of their apprenticeship provision for construction trades, often decommissioning workshop facilities in the process. This has also, in many cases, led to trainers retiring or being redeployed to other duties within these organisations.

CPD systems for teachers in first and second level education are well established in Ireland. The Teaching Council of Ireland, established in 2006 as the professional standards body for teachers at primary and post-primary levels, has been active in developing national policies for initial teacher education, induction and CPD⁴. However, there is currently no similar structure in place for further education and training (FET) to provide a cohesive approach to CPD for teaching staff in the sector. This lack of formal and consistent standards has been exacerbated by the significant period of change in FET structures mentioned previously.

Alongside this, CPD frameworks for architects (RIAI), engineers (Engineers Ireland) and surveyors (SCSI) working in the construction industry are well established. Construction related CPD programmes are set to be further enhanced by the establishment of the Construction Industry Register Ireland (CIRI), which will require companies in the sector to engage with formal and informal CPD in order to maintain registration.

The BUSI Roadmap highlighted a number of training interventions and supporting actions to address skills and knowledge gaps in the construction industry. These included the development of an up-skilling programme for trainers of construction skills in the area of low energy buildings and a proposal for a formal framework of CPD to keep knowledge up to date. With the follow-on QualiBuild project, it has been possible to develop the proposed Train the Trainer programme and up-skill circa 80 trainers. In light of the level and pace of changes to building regulations, it has required a relatively

² [SOLAS. \(2014\).](#)

³ [National Forum for the Enhancement of Teaching and Learning in Higher Education. \(2016\)](#)

⁴ [The Teaching Council. \(2007\)](#)

intensive and comprehensive training intervention. This has been challenging for participants in terms of workload and securing release from their current teaching/lecturing workload.

A formal system of CPD for trainers of construction skills could reasonably reduce the risk of such significant knowledge gaps arising in the future. As training provision in the sector is fragmented, residing across FET, higher education and private training providers, a single body or committee would be desirable to oversee a robust CPD system for trainers.

It is reasonable to conclude that the provision of suitable CPD opportunities in construction topics could be adequately provided for through existing RIAI, Engineers Ireland, SCSi and CIRI offerings. This would limit the responsibility of any new CPD body for construction trainers to identification of learning goals for CPD and monitoring and management of a registration system. Alternatively, it may be possible for an organisation such as SOLAS, with responsibility for apprenticeship training at a policy level, to direct some form of consistent approach to CPD for trainers from all of the providers involved.

With indications of an upturn in the Irish construction industry, and apprenticeship training currently under review, establishment of a formal CPD framework for trainers in the sector would be timely. Any potential national roll-out of a Foundation Energy Skills programme, as proposed in the BUSI Roadmap, will require a significant number of qualified trainers to implement. Regardless of this, the mainstreaming of low energy building will require the integration of similar foundation knowledge across existing apprenticeship programmes and continuing education and training in construction.

Finally, any CPD system in this space will have to be developed to ensure synergies with other on-going discussions in relation to CPD in Higher Education.

2 Introduction

Energy use in buildings accounts for over 31% of total final energy consumption in Ireland⁵. At a national policy level, Ireland has committed to reducing its total energy consumption by 20% by the year 2020⁶. As a pathway to meeting this target, Building Regulations and standards have been amended significantly since 2002, establishing a new approach to construction and renovation to prescribed energy performance standards⁷. These revisions will continue as Irish government pursues policies towards Nearly Zero Energy Buildings (NZEB) for 2020 and beyond.

In 2011, the EU funded project Build UP Skills Ireland (BUSI) was tasked with establishing the extent of skills gaps in the building sector for achieving 2020 energy saving targets and producing a National Roadmap of actions to address the issue. It was concluded that the pace of change in building construction and renovation standard has not been matched by availability of compatible training provision for the construction workforce. As a consequence, a gap has developed in the requisite skills and knowledge for onsite implementation of energy efficiency measures and the integration of renewable energy systems.

Generally, the gap identified is one of knowledge rather than skills. However, this knowledge is fundamental for the successful implementation of low energy buildings. It is important to understand the mind set of workers who, based on their years of experience, believe that they already *know* the 'right way' to do their job.

The BUSI research also found that the majority of trainers of construction related crafts lacked the experience and knowledge on the implementation of low energy building. This conclusion also highlighted a lack of formal structures for the continuous professional development (CPD) of trainers involved in the delivery of construction related craft apprenticeship and associated programmes for construction skills.

The objective of this report is to propose a framework of formal CPD for those involved in the delivery of training for construction workers. It is not the intention to speculate on how this system would be incentivised for participants or to propose imposition of mandatory/legislative requirements on organisations or their staff.

The report begins with an overview of Irish education and training systems and the structures currently in place for the professional development of teachers and trainers. Reflections on CPD provision in VET across Europe are also included. Existing models of CPD for construction related professions such as architects, engineers and surveyors are then considered in light of their relevance to best practice in the field of construction. The report ends by offering a series of conclusions and recommendations which endeavour to propose a future framework for the continuing professional development of trainers of construction related skills.

⁵ [SEAI. \(2013\).](#)

⁶ [Government White Paper on Energy. \(2007\)](#)

⁷ [Department of Environment, Community & Local Government \(DECLG\), Building Standards](#)

3 FET in Ireland

Vocational education and training (VET) in Ireland traditionally resides in the space between second level and higher education. This has expanded in more recent years with the introduction of further education institutions which provide a number of post Leaving Certificate (PLC) courses to prepare learners for the transition between school and vocational training, higher education or the workplace. This has led to the use of the broader term of Further Education and Training (FET) to encompass all training and education that occurs after second level that is outside of higher education, i.e. post leaving certificate, vocational education (including apprenticeship) and adult education.

The following sections provide an overview of the FET sector in the context of the overall Irish education system. There is a particular focus on apprenticeship training for the construction family of trades and the implications of recent significant structural changes in the sector and an ongoing review of apprenticeship.

3.1 Overview of the Irish Education System

The vast majority of primary school children in Ireland progress to second level schools, usually at age 12 – 13. Second level is comprised of secondary, community, vocational and comprehensive schools. The range of second level schools may have different ownership and management structures. However, they are predominantly state funded and all follow the curriculum and examinations prescribed by the state.

Second level schooling follows a 5 or 6-year cycle divided between a ‘Junior Cycle’ of 3 years and a ‘Senior Cycle’ of 2-3 years (a transition year is optional at most schools at the beginning of the Senior Cycle). The cycles lead to the two main state examinations, the Junior Certificate (at age 15-16) and the Leaving Certificate (age 17-18).

Third level education is provided by universities, colleges and institutes of technology (IoTs) along with some specialist educational institutions specific to professions such as medicine and law. The third level system is also predominantly state funded.

As an alternative to entry to third level, there is an option for school-leavers to pursue further education and training (FET). This includes a number of programmes ranging from Post Leaving Certificate (PLC) courses, apprenticeship training and adult/second-chance education. The FET sector is also one of the main providers of re-skilling and up-skilling programmes for people in the labour market who have become unemployed.

PLC courses are provided by a number of colleges of further education and community schools. The courses are full-time programmes which are offered to both young people who have completed Leaving Certificate and adults returning to education. The courses are usually 1 -2 years in duration and are predominantly practical based programmes, often with opportunity for work placement. While there is a focus on preparing people for work, PLC courses also offer an alternative route into many third level programmes.

The progression pathways in the Irish education system are illustrated in Figure 3.1. Also included in the diagram is a mapping of the qualification levels for the Irish National Framework of Qualifications

(NFQ), the European Qualifications Framework (EQF) and the International Standard Classification of Education (ISCED). This shows that the qualifications in the further education sector are awarded at NFQ levels 5 and 6.

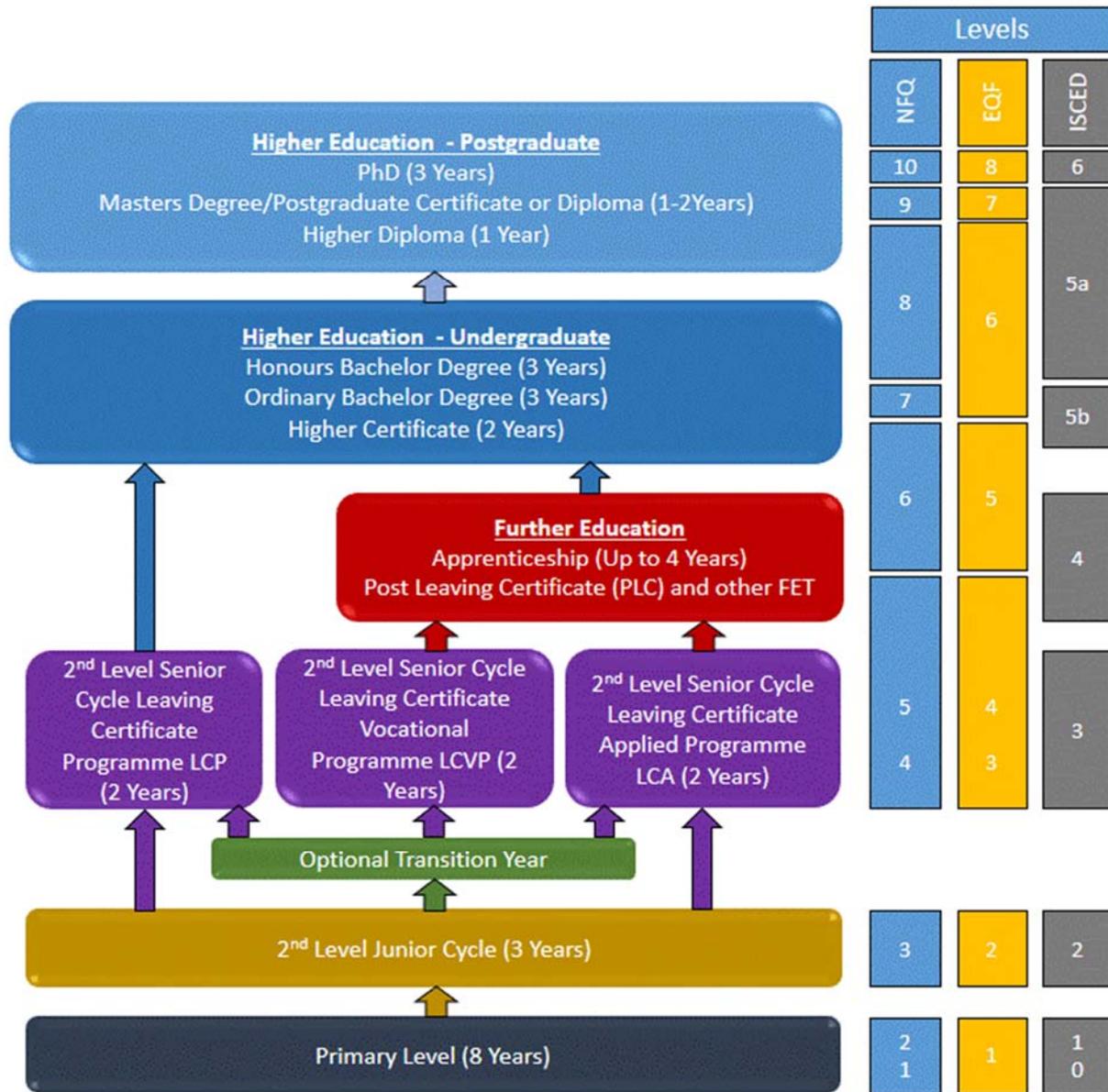


Figure 3.1: Pathways within education and training in Ireland

National Framework of Qualifications

The National Framework of Qualifications (NFQ) is a system which denotes the educational (academic or vocational) value of qualifications on a scale of 1 to 10 (see Figure 3.2). Each level is based on a nationally agreed standard of what learners are deemed to know and be able to do on successful completion. The framework ensures an internationally recognised level of quality assurance and allows for comparison with awards in other countries (see Figure 3.1 for mapping with EQF and ISCED). The system also provides a basis for determining eligibility for progression and transfer in education.

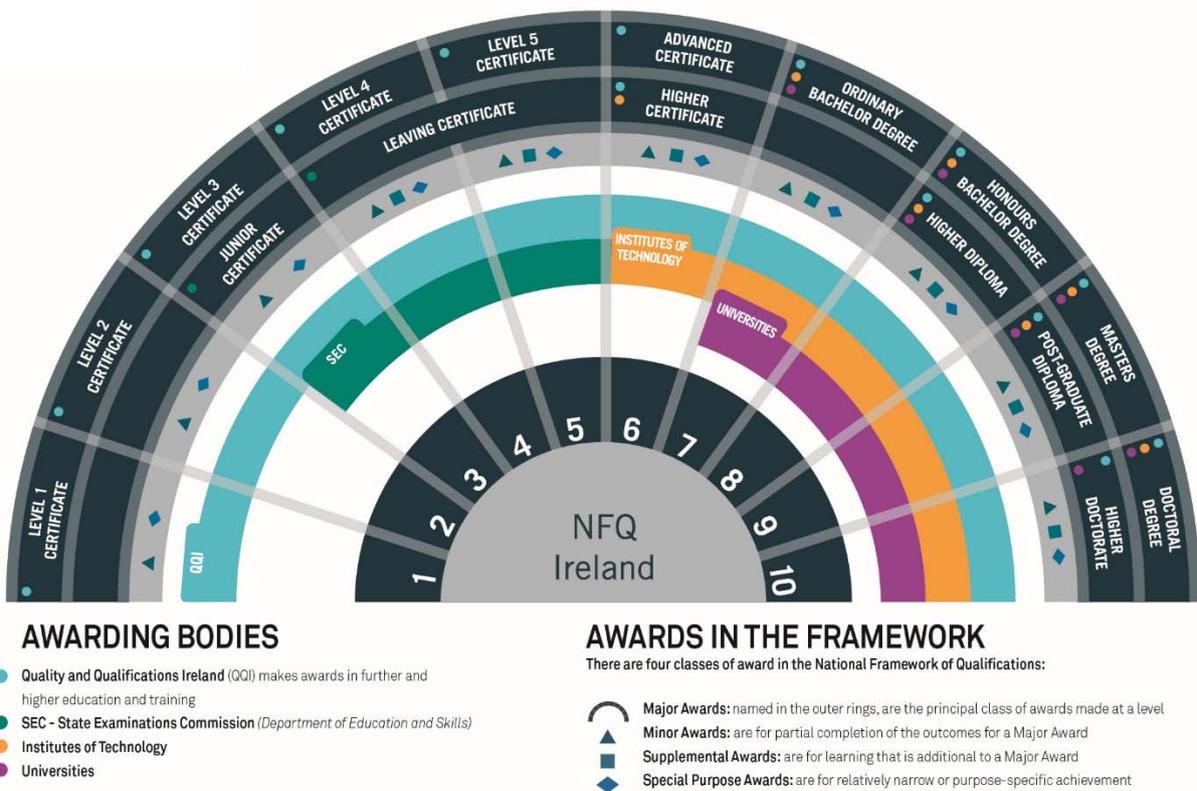


Figure 3.2: National Framework of Qualifications Ireland (Source: www.qgi.ie)

3.2 A Period of Change in FET

Up until 2013, further education and training was jointly managed through FÁS and 33 Vocational Education Committees (VECs) dispersed around Ireland. The VECs operated a number of second level schools as well as colleges of further and continuing education, responsible for initial vocational education and training (IVET), while FÁS managed the continuing education and training (CVET) sector. It should be noted that no legal definition exists in Ireland for IVET. It is taken that “IVET focuses primarily on the education and training of young persons, aged 15-20, who have generally completed compulsory second level education and who have not yet significantly engaged with the labour market, excluding apprenticeship”⁸.

FÁS was the national training and employment authority, founded in 1988. SOLAS, its successor, was established in October 2013 following the signing into law of the Further Education and Training Act 2013 and the dissolution of FÁS. SOLAS is responsible for the management of the further education

⁸ [Barry, 2007](#)

sector at a strategic level, with the former function of FÁS for employment services moving under the remit of the Department of Social Protection (DSP).

In parallel, the enactment of the Education and Training Boards Act 2013 led to the establishment of 16 Education and Training Boards (ETBs), a process involving the merging of the 33 existing VECs⁹. The ETBs have responsibility for managing and operating second level schools, further education colleges and a number of adult education and training centres, i.e. both IVET and CVET. This includes a number of industrial training centres, where educational phases of construction related apprenticeship is delivered, which were formerly operated by FÁS.

During this period, the qualifications systems for further education programmes were also subject to significant change. Up to this point, the majority of further education awards had been accredited by the Further Education and Training Awards Council (FETAC), with the Higher Education and Training Awards Council (HETAC) catering for the IoT sector. The Quality Assurance and Qualifications (Education and Training) Act 2012 established Quality and Qualifications Ireland (QQI), integrating HETAC, FETAC, Irish Universities Quality Board (IUQB) and the National Qualifications Authority of Ireland (NQAI) under one umbrella organisation. QQI are responsible for the maintenance of the National Framework of Qualifications (NFQ). This includes a function as an awarding body, setting standards for and validating programmes under the NFQ.

3.3 Overview of Apprenticeship Training

The following sections have largely been extracted from the BUSI status quo report of 2012 and updated to reflect the dissolution of FÁS, with updated figures for apprenticeship training registration provided where available.

3.3.1 Overview of Apprenticeship Training Structures

Craft apprenticeship training in Ireland has experienced a period of significant reform in the last forty years. In 1973, AnCo, the then newly formed national training authority, implemented reforms that included reducing the length of the traditional time served apprenticeship to four years and the introduction of a recording system¹⁰. The time served model further evolved in the 1980's with attendance at AnCo training centres and day /block release at Regional Technical Colleges (RTC's, later to become Institutes of Technology) becoming mandatory. This led to written and practical examinations for the Junior and Senior Trades Certificates, the recognised qualifications for the crafts.

The standards based system (SBS) of apprenticeship training was officially introduced in 1994 by FÁS (the then national training and employment authority, taking over from AnCo) to replace the existing time served model¹¹. The main motive cited for change was a need to establish a system which provided firm evidence of competence achieved in an apprenticeship training cycle. The system is currently managed by SOLAS (formerly FÁS) in co-operation with the Department of Education and

⁹ See: <http://www.education.ie/en/The-Department/Bodies-and-Committees/Education-and-Training-Boards-ETBs-.html>

¹⁰ [Field and O' Dubhchair, 2001](#)

¹¹ O' Connor and Harvey, 2001

Skills (DES), employers and unions. There are 26 designated trades within the SBS system as of end 2014.

The SBS introduced seven alternating on-the-job and off-the-job phases of training. Phase 2, consisting of 22 weeks block release in an ETB (formerly FÁS) training centre, and Phases 4 and 6 of two 10 or 11-week block placements in an Institute of Technology (IoT), comprised the off-the-job craft education elements of the system (see Figure 3.3)

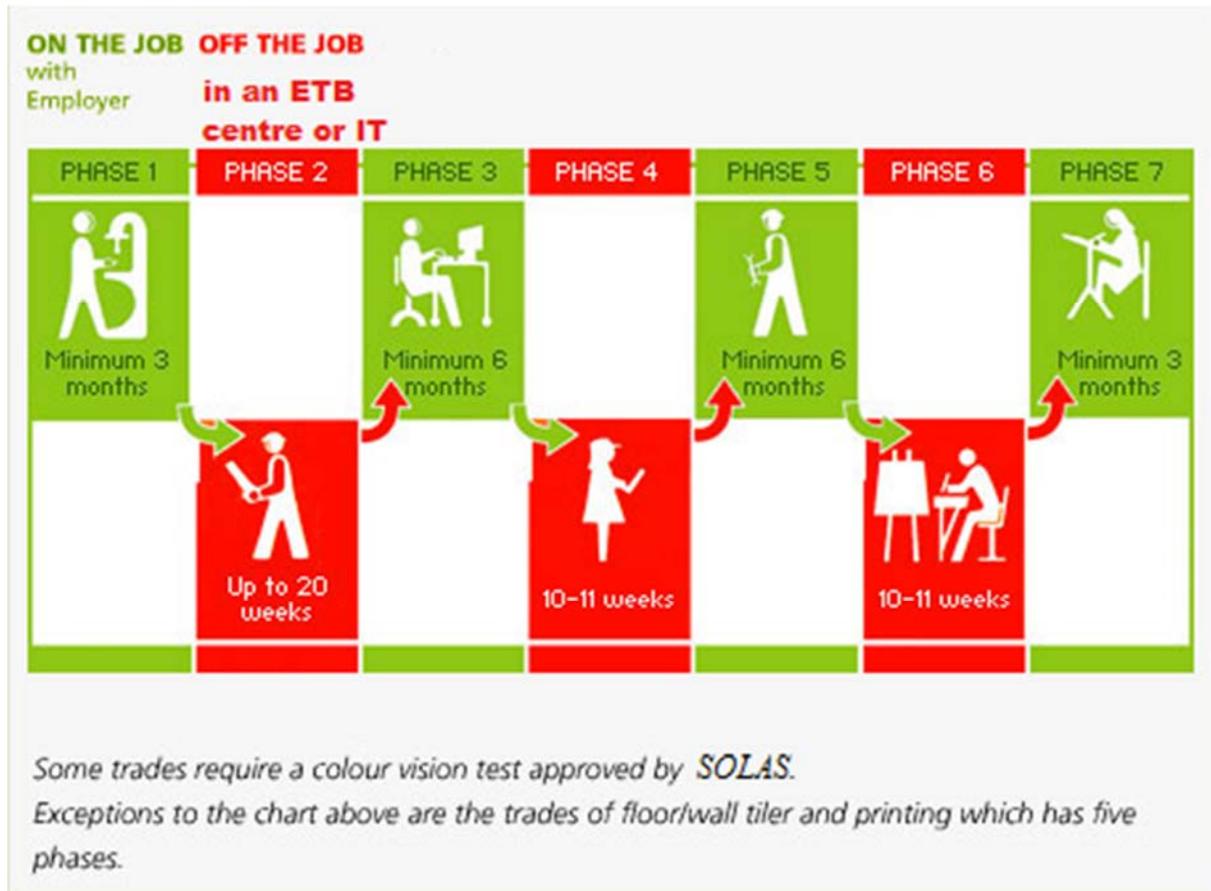


Figure 3.3. 7 Phases of Apprenticeship in Standards Based System (SBS) – Source: SOLAS

The apprenticeship Programme is deemed to be completed when an apprentice has reached the minimum qualifying standard in all modular and competency based assessments and has completed the minimum duration of 4 years in employment as an apprentice in the specified trade (exception Print Media 3 years). On successful completion of an apprenticeship programme, candidates are awarded an Advanced Certificate in a named craft at Level 6 on the NFQ. Such certificates may, in some instances, serve as an entry qualification for progression into appropriate degree level programmes in construction disciplines.

Off-the-Job training generally takes place in an ETB Training Centre during Phase 2 and Institutes of Technology or other approved training centres for Phase 4 and Phase 6. During the designated off-the-job phases of training, the apprentice is paid a training allowance which is funded from the National Training Fund (NTF). The allowance is equivalent to the net pay normally received by the apprentice from his employer at the active industrial rates of pay plus a contribution towards travel/accommodation costs.

3.3.2 Overview of Apprenticeships for Construction Related Trades

Construction related trades include Carpentry and Joinery, Brick and Stone Laying, Electrical, Plumbing, and Plastering. Figure 3.4 illustrates the unprecedented decline in apprentice intake for the main construction related trades from the peak outputs in the construction boom in 2006/2007. Current apprentice registrations for 2014 indicate a modest increase in numbers for the Electrical, Plumbing and Carpentry & Joinery trades, in line with a recent recovery in the Irish economy.

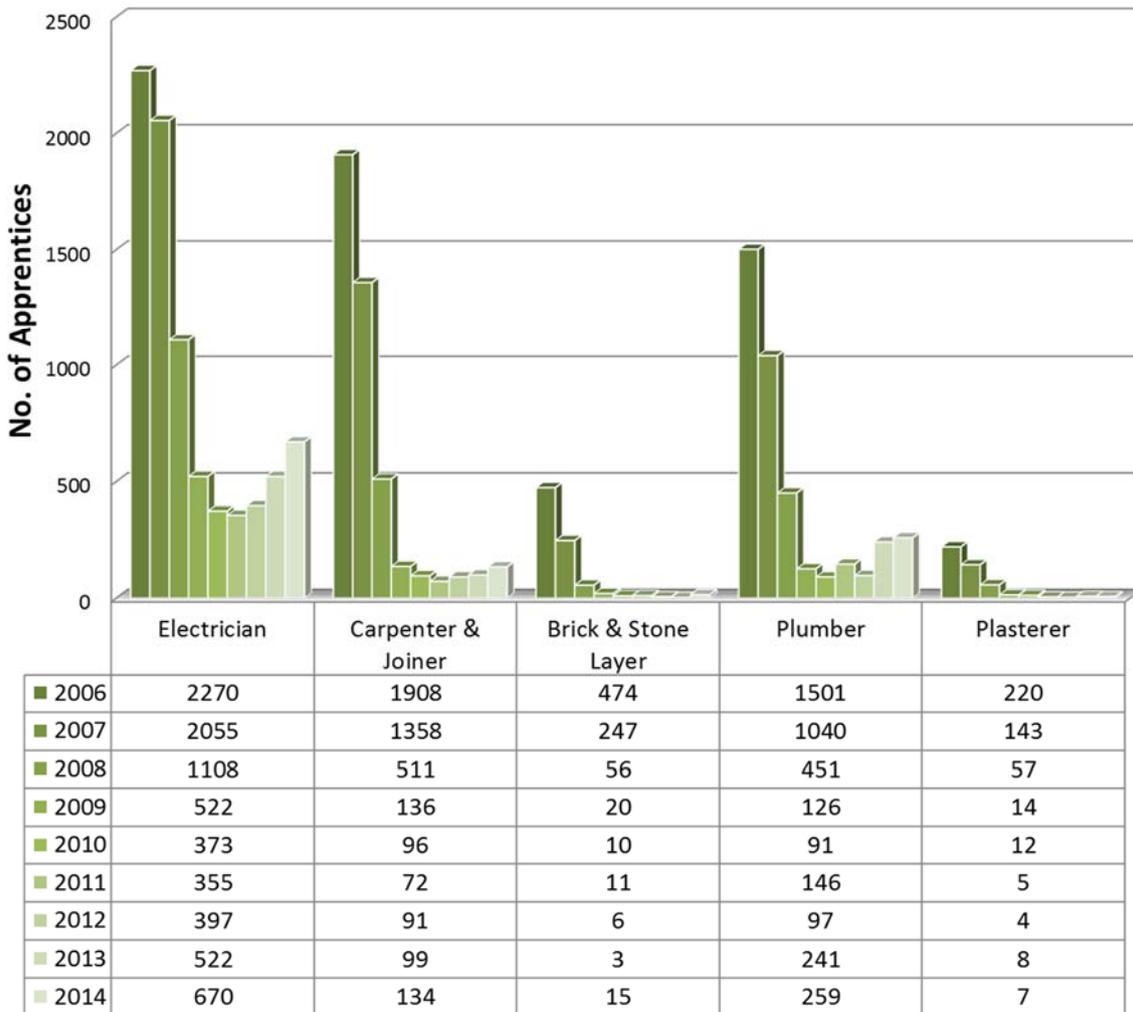


Figure 3.4: Apprentice Intake for Construction Related Trades 2006 – 2014 (Source: SLMRU)

Trainers of Construction Related Craft Apprenticeship

The trainers of craft apprenticeship at Phase 2 are classified as instructors. Instructors are required to be qualified in the craft in which they will provide training and a minimum of two years' industrial experience post qualification, including one year in a supervisory/management position in their discipline. There is no requirement for pedagogical qualifications or evidence of teaching experience. However, in the early 2000's, FÁS were involved in setting up a series of programmes in cooperation with the National University of Ireland (NUI) for formal training qualifications ranging from foundation to Masters level. These were designed initially for FÁS instructors and existing staff were encouraged to take the courses as part of their professional development.

In the IoT sector, the trainers involved in the delivery of Phase 4 and 6 of apprenticeship are designated as lecturers, consistent with the main body of academic staff in the organisations. The entry criteria are somewhat similar to the instructors in the ETB sector, requiring craft qualifications in addition to a minimum of three years' industry experience. A degree or equivalent professional qualification in a relevant subject discipline is an additional criterion. Teaching qualification or experience is desirable but not compulsory.

Existing apprenticeship delivery for the construction trades involves both ETB and IoT providers. SOLAS have some jurisdiction at policy level over the ETB's but do not have any authority to direct CPD activity for staff of IoTs. However, SOLAS do have a memorandum of understanding with the training organisations which includes a stipulation that trainers have their skills and knowledge updated appropriately.

Curricula and Updating

The Expert Group on Future Skills Needs (EGFSN) is the organisation providing guidance and advice to the Irish government on anticipated skills needs in the labour market. It works in conjunction with Forfás, the policy advisory board for enterprise and trade, and the Skills and Labour Market Research Unit (SLMRU) to research the skills needs of the economy. The EGFSN report annually, with recommendations forwarded to the QQI and the further and higher education sectors. SOLAS has a board and a number of advisory committees representing different sectors of the economy which review skills needs on an ongoing basis.

The National Apprenticeship Advisory Committee (NAAC) oversees the development of the standards based apprenticeship and advises the Board of SOLAS. The committee includes representatives of employers, unions, education and SOLAS. Apprenticeship curricula for each craft are reviewed and updated on an ongoing basis.

It is noteworthy that, while subject contents are prescribed in the curricula, the onus for keeping up to date with changes in the building industry and in building regulations lies with individual instructors/lecturers. In relation to new technology introduced at Phase 2 it is normal practice to arrange for the appropriate updating of instructors through national training programmes, as was undertaken with the last curriculum review for certain trades i.e. Motor and F-gas technology. However, there is no formal continuing professional development structure in place for the teaching staffs responsible for Phases 4 and 6.

For example, while some plumbing lecturers may have completed gas installation and renewable heating training, there is currently no coordinated response to the general need for up-skilling of trainers to reflect the evolution of the building standards to a near zero energy framework (NZE) in 2020 and beyond. Despite recommendations to Government in the Forfás 2013 report on the construction sector¹² to implement the BUSI Roadmap of 2012, no coordinated effort has been apparent in the FET sector to address the updating of trainer skills to accommodate this.

The pace of changes to building regulations for energy performance and the fact that the vast majority of currently employed trainers have not had experience of on-site implementation of new standards has exacerbated this issue.

3.3.3 Current Review of Apprenticeship in Ireland 2014

The frameworks for apprenticeship training in Ireland are currently under review and, at the time of writing, are not fully clarified in the context of the dissolution of FAS and the formation of QQI. A report “Review of Apprenticeship Training in Ireland” was published in December 2013¹³. This outlines the economic and policy context of apprenticeship and provides an overview of the strengths and weaknesses of existing systems. A number of recommendations are put forward including suggestions for improving existing models, introducing new apprenticeship occupations and alignment of curricula.

There is a focus on improving the progression opportunities for apprentices and greater alignment with appropriate levels on the NFQ. The importance of teaching transversal skills such as literacy, maths, science and ICT are also highlighted. Some of the conclusions are noteworthy for their consistency with the conclusions of the BUSI project. There is repeated mention of a need to consider common learning outcomes for “families of trades” and that “core common modules are provided to the extent feasible”. Areas that are specifically identified are the “green economy, heritage protection, retro-fitting, sustainable energy, languages and cross disciplinary skills are all areas where progression options could be developed”. This is compatible with the approach adopted in the QualiBuild FES training programme of teaching a common module to groups of mixed trades where learning outcomes are relevant to all.

For the construction ‘family’ of trades, the recent recession has had a profound impact on the recruitment and delivery of apprenticeship. Many of the IoTs that had been involved in delivery of Phases 4 and 6 have withdrawn from the provision, often decommissioning purpose built workshop facilities essential for the training of the practical aspects of construction trades. Some ETB centres, traditionally providing Phase 2 apprenticeship training, are trialling delivery of Phases 4 and 6¹⁴.

Many of the IoT apprenticeship lecturing staff have been redeployed to other mainstream higher education programmes within their institutions. This may make it increasingly difficult to identify common CPD framework for lecturing staff as some may look to return to construction skills training as demand improves while others may remain in new areas. This issue was a feature of the recruitment

¹² [Forfás. \(2013\).](#)

¹³ [Department of Education and Skills. \(2013\).](#)

¹⁴ ETB training centre in Baldoyle, Dublin is currently piloting Phases 4 and 6 Electrical apprenticeship delivery

process for the QualiBuild Train the Trainer programme where many in the target cohort were reluctant or uninterested in engaging with up-skilling in the construction field.

4 Teachers and Trainers in FET

The following section references the 2007 FÁS report, *Vocational Education and Training In Ireland 2008 – Thematic Overview*¹⁵, and has been updated to reflect the recent restructuring in the VET sector.

Before considering existing models for CPD, it is important to note the differences between teachers and trainers. Teachers are generally involved with the education of young people at first and second level and more recently includes those teaching PLC programmes at further education colleges. Teachers are regulated by the Department of Education and Skills (DES). On the other hand, vocational training is traditionally the responsibility of labour market authorities and, therefore, trainers involved in the sector are not regulated in a similar fashion to teachers.

4.1 Types of Teachers and Trainers in FET

There are generally three categories of persons involved in delivery of further education and training:

1. Teachers – those employed in secondary schools and non-tertiary colleges of further or continuing education (IVET)
2. Trainers/Instructors – employed at ETB training centres for specific industry sectors, e.g. construction, agriculture, tourism (CVET)
3. Lecturers – employed at Institutes of Technology, colleges and universities (CVET)

The formation of the Teaching Council in 2006 provided for a representative body with oversight of the teaching profession, including standards for the training and continuing professional development of teachers. However, no such formal organisation exists to represent vocational trainers and instructors, or for lecturers.

The difficulty that exists in vocational training is that the persons most suited to teach specific technical skills are often not qualified teachers, rather they are industry experts¹⁶. However, if trainers are employed on the basis of their industry skills and their subsequent professional development focusses on their pedagogical competences, there is a risk that their technical skills will become outdated.

4.2 Existing Models of CPD for Teachers

The Teaching Council Act of 2001 led to the establishment of a Teaching Council in Ireland in 2006 as the professional standards body for teachers at primary and post-primary levels. The Teaching Council operates a register for teachers which, since 2014, is a mandatory requirement for any teacher to be paid by the state.

The Teaching Council has been active in developing national policies for initial teacher education, induction and CPD. In 2014, the Council initiated a consultation process for the development of a new

¹⁵ [Barry, 2007](#)

¹⁶ [O' Mahony. \(2013\)](#)

framework for teacher education under the title 'Cosán'. This has established a number of principles relating to teachers' learning and proposes criteria for standards and accreditation. The following is a summary of the key principles of Cosán:

- Teachers' learning is encouraged and promoted, including public recognition of it
- Formal and informal learning is recognised alongside personal and professional learning. This is deemed to include a range of learning such as collaborative projects, formal events and school-based learning
- Teachers are recognised as autonomous and responsible learning professionals. Reflective practice is encouraged as an aspect of personal responsibility for career development
- The need for availability of varied and appropriate learning opportunities is acknowledged
- The Cosán development process is scheduled to continue until 2020 and engage teachers, schools and other stakeholders. It is intended that this will establish ways in which engagement with learning will be linked with registration

Relevant to lecturers involved in apprenticeship training in the IoT sector, there is also progress being made towards establishing a formal framework of professional development (PD) for teachers in higher education. The National Forum for the Enhancement of Teaching and Learning in Higher Education has been established by the Minister for Education and Skills to focus on the quality of third level student experience. The body has recently embarked on a process of establishing a national framework for professional recognition of teachers in higher education¹⁷. This involves a 3-stage process of which Stage 1 and 2 are complete:

1. Consultation and Development Phase: mapping professional development and a conceptual framework for PD of teachers in higher education
2. Professional Development – Sectoral Enhancement: 3 guidance documents on PD for institutions and staff
3. Professional Recognition: a final document providing a national framework for professional recognition of teachers in higher education

While the objective is to provide guidance and frameworks, it is not intended to be prescriptive on the nature or type of PD activities to be undertaken.

4.3 Existing European Models of CPD

The European Centre for the Development of Vocational Education (CEDEFOP) published *Guiding principles on professional development of trainers in vocational education and training* in May 2014¹⁸. This acknowledges the importance of the professional development of VET trainers who are the "key agents between the worlds of education and work". A number of examples from member states are explored to consider the impact of interventions, or lack of, on the performance of trainers.

¹⁷ <http://www.teachingandlearning.ie/priority-themes/benchmarking-professional-development/professional-development-consultation/>

¹⁸ [CEDEFOP, 2014](#)

The report proposes five guiding principles for professional development of in-company trainers:

1. It is important to recognise the status of trainers as lifelong learners and support them accordingly
2. Company support for trainers CPD is crucial
3. Trainers CPD should follow a systematic approach to:
 - Identify what trainers need
 - Provide training and learning opportunities
 - Recognise competences
4. Cooperation and coordination in-company is required to effectively support trainers
5. Acknowledge the importance of trainers and maximise funding available for programmes

While the report focusses on in-company trainers, it includes an outline of a systematic approach to development of trainer's competence which is relevant to all VET trainers:

- *Qualification or competence standards (profiles) are sound reference points for trainers' CPD systems* – existing qualifications and prior learning/work experience should provide a clear reference point for professional development. Add-on training should be available for more advanced qualifications, recognised on the national framework of qualifications
- *Trainers should benefit from varied and flexible training provision* – opportunities should be available to develop competences and update existing ones. This should cover all areas of competence
- *Validation of trainers' competences should be an integral part of any support system* – There should be a formal mechanism for validating the competences of trainers, including prior learning. This will provide recognition of learning achieved with external organisations and on projects that would not readily be achievable through training

4.4 Experiences from the QualiBuild Train the Trainer programme

Recruiting participants for the QualiBuild Train the Trainer programme has proven to be less straightforward than anticipated. The project had an initial target of up-skilling 100 trainers of construction skills. However, it became apparent at an early stage that the widespread reduction in apprenticeship training provision for construction related trades in recent years has led to a significant redeployment, and in some cases retirement, of trainers in both the ETBs and the IoT sectors. Prior to the downturn in construction, there were also a number of trainers employed on temporary contracts during peak demand for apprenticeship training who have since not received contract renewals.

In many cases, this made it difficult to promote the availability of places on the programme. Traditionally, each IoT involved with delivery of apprenticeship training would have a Head of Trades or similar member of management that would be the obvious contact point for dissemination of course information. With many trade departments now significantly reduced or withdrawn, there was a difficulty in promoting the programme out to the relevant parties.

Similarly, when FÁS was in existence, the channels of communication between management and trainers of construction skills would have been well established. However, with the new structure of SOLAS and the ETBs, it has become more complicated to identify the appropriate person at each centre or regional division to feed information through to the relevant staff.

Even in instances when heads of department were enthusiastic about having staff trained on the programme, there was sometimes a lack of interest from individuals who did not see a correlation between the training and their own development. One notable exception to this was the response at IT Sligo. Their Head of Department responsible for construction trades and associated programmes saw the course as an ideal opportunity for staff development. In this case, the department had already identified the field of low energy buildings as a growth area for training and had developed a fulltime degree programme in Advanced Wood and Sustainable Building Technology. Staff were actively encouraged to participate and applied in numbers that justified hosting a group at the college.

With numbers lower than anticipated, it was agreed by the QualiBuild partners that the programme would also be offered out to trainers from private companies involved in construction related training. This included individuals employed by manufacturers or suppliers of low energy building products who have been active in developing training facilities on the application of their systems and materials.

For Phase 1, 55 participants initially registered on the programme. However, a number withdrew before attending any workshops citing inability to get cover for their teaching duties to allow them attend. Some others dropped out at a later stage, as the realities of the course workload became apparent. There was a similar experience on Phase 2 of the programme, with 32 registered and 10 withdrawing or not completing the full cycle of modules and assessments.

5 Existing Models of CPD for Construction Professionals

There are a number of established systems of CPD operated by representative bodies of construction professionals such as architects, engineers and building surveyors. These organisations are recognising the impact of globalisation, emerging technologies and legislative changes on the learning needs of their members. Formal CPD frameworks are seen as an essential aspect of a robust registration system, ensuring that a member's skills and competencies remain up to date.

The systems commonly follow a model which sets an annual target of CPD points or days to be met by members. Some of the organisations provide CPD directly or accredit external providers to offer relevant courses/events appropriate to their member's needs. The newly established Construction Industry Register Ireland (CIRI) also proposes to adopt a formal CPD system for the regulation of competences of building contractors and tradespeople.

The following is an outline of the CPD systems of the main representative bodies relevant to professional competencies in the construction industry.

5.1 Royal Institute of Architects of Ireland

The Royal Institute of Architects of Ireland (RIAI) is the regulatory and support body for Architects and Architectural Technologists. The organisation is the officially recognised representative body for architecture, as designated under EU Directive 2005/36/EC on the Recognition of Professional Qualifications and the Irish Building Control Act 2007. Although it fulfils a statutory role as the registration body for architects, it is not in receipt of state funding and operates on a self-funding basis.

The RIAI's main roles are governance, promoting architecture and supporting and regulating practicing architects. In recognition of the pace of developments in architecture and building standards, it has operated a formal CPD framework since 1998 in order to ensure that member's competences are kept up to date. The policy was updated in 2008, in line with the RIAI *Standards of Knowledge, Skill and Competence*¹⁹ which sets out the minimum level of professional skills for practicing Architects and Architectural Technologists. Oversight of the system is provided by the RIAI CPD Advisory Committee, identifying and accrediting appropriate courses and events.

The mandatory requirement set out under the policy is that each member/registrant must achieve a minimum involvement of 40 hours per annum in CPD, divided as 20 hours of structured and 20 hours of unstructured. Structured CPD is defined as "a learning activity for which learning outcomes are determined in advance"²⁰, e.g. conferences, lectures, workshops, events and formal training courses. Events which count as Structured CPD hours must be designated by RIAI and supported by records of attendance. Any Structured CPD hours over the required 20 hours can be offset against the unstructured hours quota. However, a maximum of 20 hours (50%) of the total annual CPD can be spent on one topic or activity.

¹⁹ [RIAI. \(2009\)](#)

²⁰ [RIAI. \(2010\)](#)

Unstructured CPD is any form of relevant learning that does not involve contact with other parties in a formal context, e.g. reading journal articles, technical publications, online resources. For each type of CPD the participant must provide a reflection on the activity establishing the relevance to their own practice. Structured CPD must be supported by evidence of participation, e.g. attendance records or test results. An online tool, RIAI CPD Engage, is provided for members to record their CPD activity. This enables the RIAI to monitor compliance.

In acknowledgement of the diversity of services offered by architects and architectural technologists, the RIAI place the onus on individual registrants to choose appropriate CPD topics relevant to their practice. They recommend a cycle of Self-Assessment – Planning – Learning – Reflection – Self-Assessment to provide a focus on educational aims and outcomes for each personal CPD strategy. The RIAI CPD Engage system is structured to support this planning and recording of activities.

The CPD Advisory Committee is responsible for supporting the system with relevant training courses and events. They effectively manage the quality control of the CPD system, identifying learning opportunities relevant to their members and accrediting CPD events. This is achieved by offering CPD through the following mechanisms:

- Events organised directly by the RIAI
- Activities provided through the RIAI CPD Network. This allows manufacturers and suppliers in the construction industry to provide information and instruction on new products and systems through guidance literature or seminars
- CPD designation of learning outcomes and credit hours to relevant events and activities

This approach means that the system can remain responsive to changes in legislation and individual needs of members. The obligations under the RIAI system are enforced with sanctions for non-compliance that can ultimately lead to removal from the register.

5.2 Engineers Ireland

Engineers Ireland has operated a CPD system for its members over a number of years. Similar to the RIAI, it identifies and accredits appropriate CPD activities for its members and disseminates a calendar of events. This includes a core programme, provided directly by Engineers Ireland, while also maintaining a Register of Training Providers who may offer relevant CPD opportunities.

They also offer a voluntary “CPD Accredited Employer Standard” which provides a framework of learning and development at organisational level for company members. The employer benefits from the provision of a framework which human resources can benchmark against the personal development plans of employees. A registered and compliant company can also use the CPD accredited employer logo in promotional materials to enhance their professional status.

As of January 1st 2017, CPD will become a mandatory requirement for all non-student members of Engineers Ireland. A minimum of 5 days / 35 hours CPD (1 day = 7 hours) will be required per annum, involving a cycle of planning, recording and reflection, of which at least 1 day must be verified by attendance certificates, test results etc. An online facility will be provided to record members CPD plans, including reflections on learning.

Potential external providers are required to make an application for Engineers Ireland CPD provider status. This includes a general organisational overview along with the specifics of proposed training/events such as course aims, learning outcomes and the qualifications of the trainers involved. This approach provides a level of quality control, giving confidence to members. The registered CPD training providers are then listed on Engineers Ireland website along with their CPD offerings.

5.3 Society of Chartered Surveyors Ireland

The Society of Chartered Surveyors of Ireland (SCSI) is the independent registration body for professionals working in the Irish construction, land and property sectors. It works in partnership with the Royal Institution of Chartered Surveyors (RICS).

The society stipulates that members should *“plan, undertake, record and evaluate 60 hours’ appropriate continuing professional development in every consecutive period of three years and, on request, provide SCSI with evidence that they have done so”*.

The Society does not formally accredit CPD. Members are responsible for keeping a record of their CPD activity. All CPD is self-certified – the Society does not sign attendance cards. Guidance is provided on suitable CPD topics along with an outline what constitutes appropriate formal and non-formal (structured and unstructured) CPD.

5.4 Construction Industry Register Ireland (CIRI)

The Construction Industry Register Ireland (CIRI) was established in 2014, supported by government, in order to provide a national register of contractors, sub-contractors and craftspeople. Its main objective is act as the primary online directory of construction companies for private and public consumers of construction services.

The register requires that companies establish and record an appropriate CPD plan, initially over a 2-year period, based on their core activities. The main focus is to be on managers and supervisors but is also deemed to include craftspeople and general operatives (although this is not yet clear). There are requirements outlined for individuals and small businesses that do not operate formal staff development or CPD plans.

The system requires registrants to focus on four established ‘pillars’ for CPD learning:

1. Building Regulations
2. Health & Safety
3. Technology & Innovation
4. Business & Management

It is indicated that the building regulations and onsite quality control should be predominant in any CPD plan. Similar to other systems for construction professionals, both structured and unstructured CPD is recognised. This is monitored through a system of structured audits, initially paper based but intended to be fully online in the medium term. The current requirement for CPD hours for both structured and unstructured is on a graded scale subject to role with the following ratios; Managers, Directors and Supervisors 20:20 hours; Craft Workers 10:10 hours; Operatives 5:5 hours.

The following table summarises the existing CPD systems in place for construction professionals and companies in Ireland.

Table 1: Comparison of existing CPD systems in the construction industry

<i>CPD System</i>	<i>Status</i>	<i>Requirement</i>	<i>Recording</i>	<i>Types/Methods</i>
RIAI	Mandatory	40 Hours per annum total; 20 Structured 20 Unstructured	RIAI CPD Engage online tool	Structured: Conference Training Seminars Site Visits Unstructured: Reading Self-study Online
Engineers Ireland	Mandatory from January 1 st 2017	5 Days/35 Hours per annum total	Engineers Ireland online CPD platform (from 2017)	Structured: Conference Training Seminars Site Visits Unstructured: Self-study Buddying
SCSI	Mandatory	60 hours in every consecutive 3 year period	Self-Certification: Evidence provided to SCSI on request	Formal: Conference Training Seminars Workshops Full-time study Informal: Self-study Meetings Online
CIRI	Mandatory	Managers, Directors, Supervisors – 20 hours structured, 20 unstructured Craft workers 10:10 Operatives 5:5	Structured audits with penalties for non-compliance. Online system of monitoring and recording planned in the medium term	Structured: Conference Training Tool box talks Online Unstructured: Self-study Buddying

6 Conclusions and Recommendations

Continuing professional development is increasingly recognised as an essential element of staff development and lifelong learning, particularly important for teachers and trainers in the context of emerging technologies and globalisation. It is established that trainers of construction skills in vocational education lack a formal framework of CPD in order to keep their skills and knowledge up to date.

If skills and knowledge gaps in the construction industry are to be addressed effectively, significant training interventions will be required, supported by the availability of suitably qualified trainers. This will require a strategic approach to the up-skilling of existing trainers and the maintenance of their professional development.

The following are a number of conclusions relating to the status of CPD for these trainers:

- With initiatives currently underway in both the FET and higher education sectors with regard to frameworks for professional development of teaching staff, it would be timely to consider incorporating provision for evolving industry specific needs.
- All of the organisations currently involved in delivery of construction related apprenticeship have some form of personal development systems in place for their teaching staff. However, this is not a formal system which links to a central body overseeing the establishment of guiding principles, learning goals and monitoring procedures. This makes it difficult to establish common standards for trainers across the different organisations involved.
- It appears that it is currently the review process for apprenticeship curricula that informs and drives any specific requirement for trainers to hold certification or carry out formal training in specific competencies. While this is potentially effective for supporting the introduction of specific certification based topics in apprenticeship training, it will not address the area of low energy buildings unless this also becomes a mandatory training requirement for construction workers.
- A number of CPD frameworks are already in place for construction professionals through membership organisations such as RIAI, Engineers Ireland and SCSI. This approach has also been adopted to support the new Construction Industry Register Ireland (CIRI). The CPD offerings supporting these systems could potentially be incorporated to provide relevant and appropriate learning opportunities for trainers.
- The existing best practice approaches to CPD appear to involve the use of a register with criteria for initial registration and a mandatory completion of both formal and informal CPD over a fixed period in order to retain this status. This would require some form of body/committee to monitor and record compliance.
- Recommendations in the recent review of apprenticeship stress the importance of common modules for 'families of trades' and clear progression opportunities for apprentices into higher education. For continuity and alignment of learning objectives, this would require a level of cooperation between the vocational education and higher education sectors. A formal CPD structure for trainers of construction skills in both the VET and higher education sectors would be an enabler for consistency in learning outcomes and the establishment of clear progression pathways for learners.

It is reasonable to conclude that it would not require significant additional resources to implement a formal system or policy of CPD for trainers. Rather, a specific directive from government or the introduction of legislation for mandatory training of energy skills for building construction workers would effectively establish it as a necessity. In the shorter term, there are a number of possible interventions which have potential in avoiding significant knowledge/skills gaps emerging in the future as follows:

- The establishment of a registration system for trainers of construction skills to manage and monitor the CPD of members. With the numbers currently involved in training of construction skills, it is unlikely that it would be viable to establish a new stand-alone body, rather it may be more feasible to adopt this system into the existing CPD frameworks of relevant stakeholders, e.g. SOLAS or ETBI.
- This CPD body should retain the oversight of a committee with representation from all of the key relevant stakeholders, e.g. SOLAS, ETBs, IoTs (ITAC), trainers and representation from employers in the construction industry. Any such committee should establish guiding principles and monitor market trends in the industry, and the existing provision of CPD for construction professionals, to identify priority learning areas for construction trainers.
- The committee should establish standards and set the learning objectives to be met by the CPD system.
- A minimum number of CPD points/days should be required of trainers. This could then provide a benchmark for the individual providers to monitor the skills and competences of their staff within their own staff development procedures.
- The committee should seek an agreement in principle from training providers for some form of provision of cover for teaching hours for trainers attending formal CPD events.

The following are a number of priority actions which could have significant first steps in progressing this proposal:

- Circulate CPD proposal to relevant agencies for consideration
- Meeting of relevant parties to review implementation strategy
- Circulation to EU partners to identify emerging CPD options in other countries

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