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## Quantity Surveying Professional Apprenticeships: a Paragon for the Supply of Talent in the Irish Construction Industry

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## QUANTITY SURVEYING PROFESSIONAL APPRENTICESHIPS: A PARAGON FOR THE SUPPLY OF TALENT IN THE IRISH CONSTRUCTION INDUSTRY

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### ABSTRACT

The construction industry in Ireland has undergone considerable change in the last decade, the effect of which has resulted in a legacy malfunction in the construction labour market. The recent construction downturn led to high levels of construction unemployment, resulting in the mass emigration of construction professionals. Additionally, perceptions of job uncertainty in construction deterred new entrants into construction-related training and education programmes such as Quantity Surveying. If a skills gap is allowed to prevail, then there is a tangible threat to the industry's cost competitiveness. As such, value for money becomes merely theoretical, and the cost to the economy could be the loss of its much-valued foreign direct investment as the construction industry becomes unable to deliver for its clients. Although traditionally reserved for vocational skills, apprenticeship could provide an alternative method of training construction professionals, such as Quantity Surveyors, in a more expeditious manner. Consequently, this may serve as a possible mechanism to address the current disequilibrium in the construction labour market. Accordingly, the future Irish construction industry, by embracing diversity, may benefit from an improved delivery of personnel which is more resilient to the cyclical elasticity of the construction economy and thereby improve the talent pipeline.

Keywords: apprenticeship, construction, Ireland, professional, training.

### INTRODUCTION

#### *Overview*

Following a period of economic boom which peaked in the mid-2000's, the Irish economy suffered its worst recorded recession. Consequently, the Irish construction industry, which is symbiotically linked to the national economy, suffered a six-year contraction resulting in mass unemployment and emigration. Over the period 2008 to 2014 alone, 23 percent of construction firms became insolvent (DKM, 2016).

Though the recovery of the Irish economy has seen steady growth in construction output in the last four years, a significant skills shortfall has emerged. In fact, the recovery of the construction industry is at risk of being hampered by a lack of suitably qualified personnel.

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This paper examines the significant shortage of professionals and analyses the options available to the sector in response to the problem. Moreover, consideration is given to the implications to the industry and the drivers and barriers to recruitment. Given the nature of the situation which the industry finds itself in, this paper pursues a possible solution aimed at satisfying all stakeholders while preserving quality and confidence in the industry.

### ***Research Methodology***

The review forms part of an ongoing research project, the initial phase of which (reported here) provides an analysis of secondary research.

It is not suggested that the definitive solution to skills shortfalls within the industry has been found, but rather that a viable avenue of exploration has been uncovered. Thus, this paper and its proposition may serve as a foundation for continued consideration and future research.

Though professional apprenticeships are not a new phenomenon in other countries, in Ireland they are in their infancy. Consequently, there exists no data from which to draw comparisons.

## **CONSTRUCTION INDUSTRY IN IRELAND**

### **Economic Background**

In 2008, following a decade of unprecedented growth, Ireland suffered its most devastating economic downturn in living memory. Much of this economic collapse was due to an over-reliance upon construction by the Irish economy. At its peak, in 2007, construction industry output in Ireland accounted for almost one-quarter of the country's GNP while construction employment accounted for approximately 18 percent of total national employment (DKM, 2016). Construction output had overshoot sustainable levels for an economy the size of Ireland's and was twice that of the accepted norm of 10-12 percent of GNP (Forfás, 2013).



Figure 1: Correlation between changes in construction employment and construction output (SCSI, 2014) (DKM, 2016)

### ***Recessionary Period***

Accompanying the contraction of the Irish economy was an inevitable decline in construction activity. However, the rate of retrenchment of the industry was alarming. Six consecutive years of contraction of construction output followed, which saw the

industry decline in value to just six percent of GNP in 2013 (Society of Chartered Surveyors Ireland, 2014). In terms of labour force, the contraction reduced direct construction employment from a peak of 276,000 in 2007 (c. 12% of national employment) to a low of just 97,400 in 2013 (DKM, 2016).

Consequently, emigration rose in response to the increase in unemployment. In the period 2005 to 2012 alone, emigration increased almost threefold from circa 29,000 to 83,000 per annum (Central Statistics Office, 2017).

Contractors and professional service firms have already noted their concerns of impending skills shortages, predicting a “*supply bottle neck*” (Society of Chartered Surveyors Ireland, 2014). The *National Skills Bulletin, 2015* also specifically identified “*construction and quantity surveyors*” among the existing skills shortages in the Irish workforce (Expert Group on Future Skills Needs, 2015).

### ***Current Economic Climate***

The Irish economy is currently in a period of recovery, recording growth in output of 18% in 2017 with potential growth in output of 14% forecast for 2018 (AECOM, 2018). In terms of GNP, the construction industry accounted for approximately 7% in 2017. However, the potential success of the industry’s return to stability could be hindered by the lack of skilled construction employees. Notwithstanding the implications of global issues, the most significant challenge facing the industry is in recruiting suitable staff (Society of Chartered Surveyors Ireland & PwC, 2017).

This is not merely an issue for the Irish construction industry. As can be read in its report on global megatrends within the construction industry, the World Economic Forum highlights the “*shortage of young talent*” as an internal challenge for the industry. It states that “*50 % of general contractors are concerned about finding experienced crafts workers for their workforce*” (World Economic Forum, 2016).

Farmer (2016) notes that the capacity of the UK construction industry to deliver for its clients is in serious decline and that the industry is “*in danger of becoming unfit for purpose*”. Since the Irish and UK construction industries are analogous in terms of their fragmented natures and siloed structures, the warnings of the *Farmer Review* are equally applicable to construction in Ireland. Considering the existing shortage of skills and the lack of new entrants to supplement skills levels, the Irish construction industry needs to embrace the “*change or die*” ethos.

Given the time lag associated with producing a new cohort of professionals and in stabilising the pipeline of graduates, it is appropriate to consider a radical shift in how the next generation of surveyors are trained and made ready to join the workforce.

### **Construction Education and Value for Money**

The construction industry is cyclical in nature and with those cycles comes severe fluctuations in the level of employment. Martins and Meyer (2012) rightly confirm that a recession results in the downsizing of many organisations and therefore organisational knowledge is lost, in part as a consequence of emigration, as previously outlined. Forfás (2013) note that emigration “points to a significant skills drain as expertise is lost to the sector and skills are not being maintained”.

This skills shortage has already been recorded in the Irish construction labour market. Murphy and Walsh (2014) confirmed a shortfall in the quantity surveying profession and that this may be exacerbated by the expected growth in construction output being higher than forecast at that time. Moreover, it is presented that “*the market imbalance*” concerning the supply of quantity surveyors is adversely affecting market equilibrium and that stakeholders must act to negate this adverse effect (Murphy, 2016).

An impending skills gap has severe negative implications for the construction sector in general. Not least of which is the potential incapacity to respond to the requirements of investors. In a country, such as Ireland, where the construction industry relies heavily upon foreign direct investment (FDI), an inability to meet the needs of investors could prove disastrous (Department of Public Expenditure and Reform, 2011).

To deliver value, it is important to be cognisant of the factors determining value, i.e. time, cost and quality. These three elements together represent value for money (VFM), a principle which is directly influenced by the presence of adequate construction skills or lack thereof. Where a skills gap is present, project costs are inflated due to a lack of available skilled personnel (DKM, 2016). Consequently, a skills shortage results in challenges to cost competitiveness, all of which have a direct impact upon quality, which is subject to compromise (Forfás, 2013).

*Within construction professions, including Quantity Surveying, there is a time lag between meeting the demand for the profession and the supply of an appropriately qualified workforce. The average duration of a full-time honours QS degree programme is four years. In the Irish case, this presents a difficulty in meeting industry requirements via the traditional tertiary education system. An alternative mechanism to address the shortage to meet the skills requirements of industry is urgently required.*

### **Apprenticeship Education**

One form of educational instruction, which allows individuals to be both a learner and an employee simultaneously, is apprenticeship. There is no single, authoritative definition of apprenticeship (Steedman, 2012). However, in a modern framework, it may be taken to mean “*a formal, structured programme...sponsored by an employer that juxtaposes part-time off-the-job instruction with on-the-job training*” (Ryan, 2000).

This method of education is “*market driven*” and produces a benefit for the employer by virtue of the apprentices’ productivity (Muhlemann, et al., 2009). Implicit to apprenticeship is that it employs a ‘duality’ of instructional methods – employer and college. This has become known as a ‘dual based’ form of apprenticeship (Muhlemann, et al., 2009), the advantage of which is the ‘blended’ method of learning namely:

*“the production of people with a high quality and holistic competence in an occupation which is certified through a final assessment of professional knowledge and skills”* (INAP Commission, 2012).

In the UK governments’ technical paper on *Estimating economic benefits from apprenticeship*, it is posited that apprenticeship presents benefits to all involved in the process, in particular, the employer and the economy (National Audit Office, 2012). It

is further suggested in that paper that in addition to a general economic return from investment in apprenticeship, there are also “*substantial benefits to employers, from higher productivity*” and exchequer benefits from “*increased employment...[and]...higher income tax*”.

## IRISH GOVERNMENT RESPONSE

In a move, similar to the UK government, whereby the Richard Review was commissioned to examine the status of apprenticeship in relation to the needs of the economy (Richard, 2012), the Irish government initiated an official review of apprenticeships in Ireland (Department of Education and Skills, 2013).

Following this review process and taking into consideration the submissions of stakeholders, the government published its review. Among the many changes announced by them was the development of new apprenticeships by the expansion of the paradigm into a wide range of business sectors (Department of Education and Skills, 2013).

Additionally, following the review, the Irish national body responsible for maintaining awards and qualifications standards, announced the development of a new *Professional* awards framework (Quality and Qualifications Ireland, 2014). These new awards have created the opportunity to develop new apprenticeships which would no longer be constrained to the previous award standard of *Higher Certificate*. Under the new framework, professional awards may be placed anywhere on the qualifications framework up to *Master Degree* Level (Irish National Framework of Qualifications level 9).

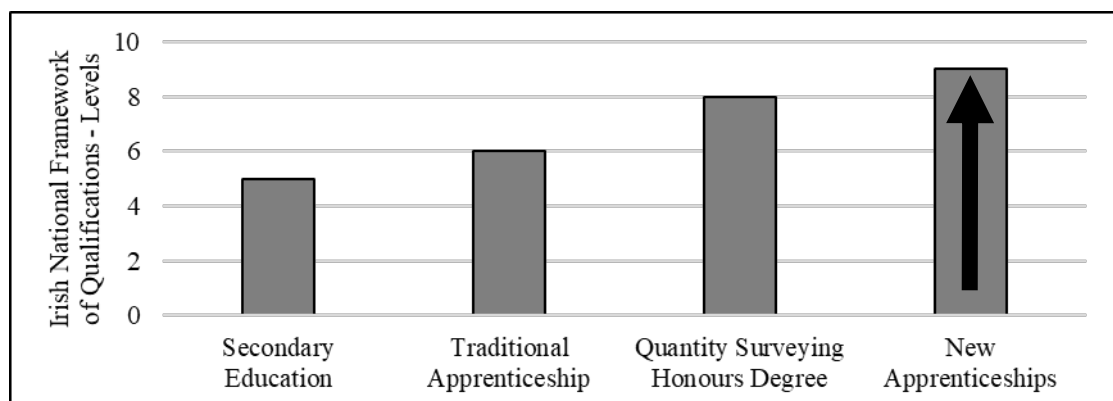


Figure 2: Relationship of *New* Apprenticeships to existing Apprenticeships and QS Degree

### ***New Apprenticeships***

Under its review, the government decided to establish a partition within the apprenticeship framework between the existing 27 craft and construction apprenticeships and subsequent new apprenticeships. One main driver for this is that all new apprenticeships must be funded by the employer only, in terms of apprentice wage payment, whereas the state funds existing apprenticeships for off-the-job pay, i.e. where the apprentice attends college (Department of Education and Skills, 2014).

Following the decision by the government to expand apprenticeships in Ireland, submissions were approved for the development of 25 new apprenticeships into

previously non-apprenticeship related areas. Given that there existed 27 craft apprenticeships, the new proposals represented an almost doubling of the number of training programmes (Apprenticeship Council, 2015).

Such has been the success of the government's expansion with regard to stakeholder 'buy-in' (Department of Education and Skills, 2016), that a second call for new apprenticeship proposals was issued in 2017.

### ***PROFESSIONAL APPRENTICESHIP***

The concept of apprenticeships for professional occupations is not new. In Germany and Switzerland for instance, vocational pathways to professional roles are well established with approximately two-thirds of all school leavers pursuing an apprenticeship (Steedman, 2010).

Similarly, in the UK, professional apprenticeships are now offered by a variety of providers in a diverse range of occupations. As of February 2018, the UK government currently approves (or is in the process of approving) in excess of 500 apprenticeships across 15 'routes', with almost 90 apprenticeships listed via the *Construction* route alone (Institute for Apprenticeships, 2018). Developed in line with the *Trailblazers* initiative, these programmes are categorised from levels 2 to 7 on the UK National Qualifications Framework (NQF). This is commensurate with the recommendations made in the UK review of apprenticeships which opines that "*apprenticeships can and should offer an effective pathway for highly skilled work, including professional and senior job roles*" (Richard, 2012).

The Irish governments' call for the development of new apprenticeships has been readily embraced by new stakeholders to apprenticeship with 33 percent of the 25 new apprenticeships having awards higher than the existing traditional apprenticeships, i.e. Bachelor degree to Masters levels (Apprenticeship Council, 2015). Some new stakeholders have partnered with established colleges to deliver a 'suite' of apprenticeships in their field. These allow progression of learners through different levels of apprenticeship, such as those which *Financial Services Ireland* has developed whereby an apprentice can progress from *Associate* to *Specialist* (National College of Ireland, 2018).

Therefore, it may be argued that Ireland is simply promoting an established practice that is already on offer in other European countries. The upper level for UK apprenticeships (level 7 – NQF) is broadly in line with the new placement of professional awards in Ireland (level 9 – NFQ).

### ***Knowledge Management***

As professional service firms, Quantity Surveying firms are highly knowledge-intensive, and thus it can be concluded that the performance and competitiveness of such firms depend largely upon the knowledge of its employees (Lu & Sexton, 2006). Given the plight of the existing professional workforce in the construction industry due to the skills gap (Murphy & Walsh, 2014) it is even more imperative that the vacant roles within the industry be filled by educated and capable individuals as quickly as possible.

In the seminal work on organisation and performance, Handy (1994) explains that performance is slow to begin with before increasing over time. It is posited that when an employee is new to a firm, there is an extended period during which the individual's productivity is outweighed by his/her learning (Arthur & Huntley, 2005). Therefore, during this phase, the employee is, in fact, a potential cost to the firm. Consequently, it is important to minimise the cost to the employer and generate employee productivity as early as possible.

Figure 3 below, represents typical apprenticeship performance (productivity) over the course of a four-year apprenticeship. This graphic is adapted from the work of Spear (2014), who carried out detailed return on investment studies within the UK motor industry.

As can be seen from the s-curve displayed, an apprentice stops being a cost to the employer after approximately the first year with employer investment breaking even by the end of the second year. From this point on, the apprentice's productivity is entirely to the benefit of the firm.

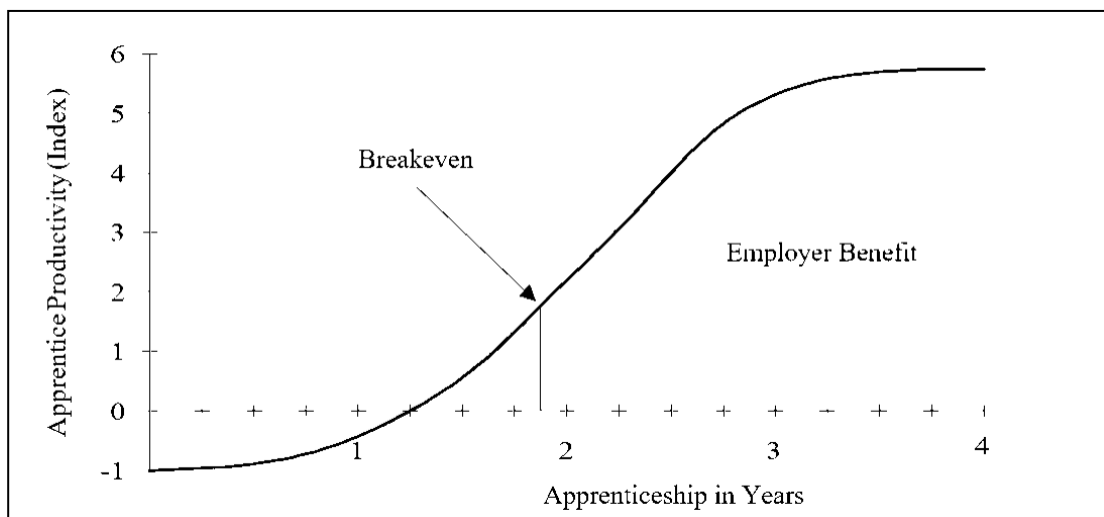


Figure 3: 'S - Curve' of apprenticeship productivity over time [adapted from Spear (2014)]

Therefore, when comparing an *Apprentice QS* to a *Graduate QS*, an employer would not be at a disadvantage employing the *Apprentice* as the *Graduate* is indicative of all new employees, who as Handy (1994) explains is negatively productive at the start of their employment.

Given the lack of available professionals which currently prevails (Murphy & Walsh, 2014), it would seem preferable for an employer to engage an *Apprentice QS* sooner, rather than wait for an increase in the supply of *Graduate QSs*.

### ***Apprenticeship Structure***

As stated in the *Richard Review*, it is essential to recognise that which determines an apprenticeship; “not all instances of training on a job are ‘apprenticeships’” (Richard, 2012). The Irish Government has acknowledged this in its own review of apprenticeship (Department of Education and Skills, 2013).

Therefore, it is vital that any proposed Quantity Surveying Apprenticeship be based on the accepted norms of experts and the legislative requirements of government. The International Network on Innovative Apprenticeship (INAP), has previously recommended that 'dual based' forms of training require 25 – 50 percent of the programme to be delivered in college (Rauner, et al., 2012). Somewhat in keeping with this recommendation, the Irish government has stipulated that all *new* apprenticeships “*have a minimum of 50% on the job training*” (Department of Education and Skills, 2014).

Accordingly, any proposed Quantity Surveying apprenticeship would need to be cognisant of the above when designing a programme.

### ***Barriers to adoption***

With regard to employer engagement in a proposed QS apprenticeship, cost is a potential issue as employers are to “*recruit and meet the relevant costs associated with apprenticeships*” (Department of Education and Skills, 2014).

Moreover, to provide a training programme in line with INAP recommendations, apprentices would be required to attend college for three days per week during the academic year. This would deliver approximately 30 percent of the programme in college. However, it is unlikely that many employers would be eager to engage with a system where their employee is ‘missing’ for such an extended period each week.

Furthermore, in an industry prone to cyclical elasticity, it is dangerous to base the supply of professionals on an employer-led model. In the recent economic downturn, traditional apprenticeships suffered extreme losses in terms of employment and new registrations due to an over-reliance on employer engagement (Ó Murchadha & Murphy, 2016). The alignment of a new QS apprenticeship to such a model could result in the same eventual collapse of training.

## **CONCLUSIONS**

There is currently a shortage of construction professionals, particularly quantity surveyors, within the Irish construction industry. If left unchecked the shortage of qualified construction professions may cause a considerable downside risk to meeting increasing demand for construction output and consequently potentially dampen economic growth.

There are several possible mechanisms by which the disequilibrium within the construction labour market (specifically QS professionals) may be addressed. The first option is to continue the traditional tertiary education programme or secondly, develop a new model of QS apprenticeship training and education.

As both programmes have a four-year duration, it may initially appear that there is no gain from either model with regard to timescale. However, there is a distinct advantage to hiring an *Apprentice QS* who is employed straight away thus gaining practical experience over the duration of the programme.

Given the cyclical nature of construction, it is reasonable to expect that at some future point, the industry will return to negative growth. In such an eventuality, the manner of delivery of training and education will not prevent market failure, regardless of the

model used. However, in a recession, a QS apprenticeship model may help provide future surveyors continue some form of construction employment based upon their experience as part of their blended learning rather than being exposed to unemployment and emigration due to no industry experience.

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