RESEARCH PROJECT

on behalf of

THE REGISTER OF HERITAGE CONTRACTORS

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1.0 INTRODUCTION

This project seeks to review established practices as adopted by the heritage contracting industry in Ireland, together with an evaluation of the knowledge, skill and competence criteria necessary to ensure the purposeful growth of the heritage contracting management sector.

The text below presents conclusions and evaluations of findings, and uses this as the basis for recommendations for short-, medium- and long-term actions.

1.1 Preamble

The Heritage Contractors' Registration Board (RHCB) has commissioned this report as part of its review of the criteria for assessing contracting firms seeking admission onto the register, and those seeking to maintain their position on the register.

To this end, the Board submitted a brief which would;

- determine by reference to international best practice, what the CPD[1] requirements ought to be for management personnel in firms on the Register of Heritage Contractors to meet industry best practice,
- establish the expectations of clients, local authorities and professional teams
- determine whether the standards required of a Registered Heritage Contractor in respect of CPD should be amended to reflect the above

The objectives of the research included;

- the establishment of learning and development criteria appropriate for the registration of heritage contractors
- the identification of requirements / expectations of clients, local authority conservation officers and professional teams
- the identification of registered contractors' needs and the challenges they face in achieving them
- the identification of best practice in Ireland, Northern Ireland, UK and Europe for the learning and development requirements of heritage contractors
- researching of appropriate delivery methods for training content, either face to face, through case studies, or on-line, via video, blogs, mentoring, etc.
- researching, with assistance of awarding bodies and training institutions, suitable methods to record learning and practical implementation, to meet requirements for evidence of competence
- recommendations to the Heritage Registration Board

[1] Continuous Professional Development

The requirement of the brief to deploy qualitative and quantitative research methods was achieved in the issuing of questionnaires to heritage industry individuals identified by the author as having the greatest potential to inform the study. Questionnaires were thus designed for four distinct groups: public sector clients, private sector clients, architects/specifiers and heritage contractors. As participants in each group were interviewed on a one-to-one basis, it allowed the author to extract responses for specific questions more thoroughly. On advice from the Board, participation in the two consultation workshops held, on July 12th and September 6th 2012 respectively, was confined to Board members only, with members of the wider heritage construction community not included.

The brief also required conclusive investigations into a range of alternative training delivery methods from video, blogs and social text to simulations. Whilst the Board also requested that the various methods be 'tested', it was not possible to achieve this due to the time limitations of the research project.

A further requirement of the Board was that recommended methods for recording training meet the typical requirements of awarding bodies regarding evidence of competence together with their feasibility for implementation.

As the research progressed it became evident that the Board's expectations to a large extent could be met in rationalising the existing educational framework for heritage studies in Ireland. As no national driver for heritage learning opportunities exists, no corresponding learning and development network for those seeking to initiate or advance their participation in the industry exists. The report's findings recommend means to overcome this failing, on a short and long-term basis.

1.2 Present context

Registration

Presently, if a contracting firm, either main or specialist, wishes to become registered it must satisfy general requirements set out by the Board to include the following;

1. *The applicant is a bona fide firm, carrying out construction activities under a given business name.*
2. *The applicant has not suspended its business activities, is not the subject of insolvency proceedings, is not bankrupt or in an analogous situation, arising from insolvency proceedings.*
3. *The applicant has fulfilled its obligations relating to the payment of taxes and PRSI (or equivalent Social Security contributions).*
4. *The applicant has appropriate insurances.*
5. *The applicant is registered in an appropriate Operatives Pension Scheme.*
6. *The applicant complies with the terms of the Registered Agreement.*

7. *The legal representative(s) of the applicant shall not, during the last five years, have been convicted of an offence concerning professional conduct.*
8. *The legal representative(s) of the applicant shall not be guilty of serious misrepresentation in supplying the information and/or documentation required for registration.*

A main contracting firm must demonstrate that one or more of its senior management have knowledge of conservation theory together with having sufficient practical experience in the following categories of works; masonry & stone works, roofing, timberwork & joinery, plastering and painting & decorative wall finishes.

In preparing for admission, the contractor must present three case study/reference projects for at least 3 of the 5 categories above and at least one reference project for the remaining 2 categories.

A specialist contractor must have similar theoretical knowledge at senior managerial level together with three reference projects demonstrating practical experience in their specific field.

Each case study must be signed off by an assessor comprising either a Grade 1 or 2 conservation architect, and whilst the Registration Board reserves the right to decide on the acceptability of the qualification of the assessor, it has been noted that this is a right that is rarely imposed.

A recently introduced requirement of the initial registration and renewal process is the preparation by each firm of an Assessment of Built Heritage Management and Skills needs and a corresponding Action Plan. Options presented by the Board include attendance at formally arranged education and skills development courses [2]; research and development relating to traditional skills, materials and conservation works, training or profile development[3]; or participation in non-profit projects or committees[4]. A minimum of 16 hours commitment to the Action Plan is required of main contractors and 8 hours of specialist contractors.

It is evident, however, that the educational opportunities suggested by the Board in Option A, Education and Skills Development do not match present admission requirements in practice, as will be outlined in more detail in the subject study.

General comment

The Board has acknowledged that the present registration assessment system is insufficient, as it cannot evaluate beyond doubt whether the applicant possesses the ethical characteristics inherently required of a skilled, knowledgeable and competent contractor. Under the present system of admission it is not possible to examine how the contractor exercises cautious judgement in practice in

[2] Evidence of which required by means of submission of certificates of attendance
[3] Evidence of which required by means of documentation
[4] As above

respect of everyday works, how he engages with and supervises specialist sub-contractors, how he acquires and uses materials, or his general approach to the works. The findings of the report draw further attention to the shortcomings of this system and suggest ways in which a rigorous educational requirement may respond to present deficiencies.

Market demand

The heritage contracting industry has undergone significant change in recent years in light of greater legislative protection of the historic built environment. In spite of this, there is marked decline in the traditionally skilled workforce to carry out works to this stock, attributed largely to limited training opportunities for prospective and existing contractors together with a lack of incentives for contractors to up-skill. Similarly, there is little evidence of advancement in research and development opportunities to enhance the heritage contracting industry in terms of supply of traditional materials to the industry.

The notable demand for quality in heritage works persists, contrary to the dearth of a correspondingly skilled indigenous workforce. Regrettably, it is found that at present demand is met with irregular consistency, with a skill base that is not standardised, supplemented by imported skills and materials; this situation runs contrary to best conservation practice. The capacity of the heritage market to support a viable workforce has accordingly and to a greater degree been overlooked at state and operative level.

The subject study observes the profound anomalies in the heritage workforce sector that serve to inhibit its purposeful growth whilst highlighting the real opportunities presented to the Register of Heritage Contractors to significantly overcome such shortcomings. The study also identifies where the Board, in establishing a main and specialist contractor register under one organisation, is unique internationally in this respect. Whilst at present deficiencies may be apparent at competency levels, the Register has the prospect of becoming the market leader internationally in respect of registration and establishment of a standardised skill base.

The outcome of the study will be to reinforce the Board's responsibility to take advantage of its exceptional position for the establishment of best conservation practice, to the ultimate benefit of clients who will have a greater degree of assurance of competence, and their members whose commitment to the field will be rewarded by improved procurement possibilities. It is hoped that the recommendations below represents a credible set of proposals leading to enhanced works practices in the heritage sector, that can be achieved in the short term and will serve the interests of the consumer, the government, the industry and the built environment.

1.3 Scope of findings informing research

The project duration of just over four months coincided with the summer holiday period, with the following unfortunate results:

- poor or slow response from sources and repositories nationally and internationally due to holiday period during summer months
- difficulty in sourcing key information
- no/ unconstructive information on areas of study that were intended to inform later elements

It was found, however, that research could progress to a satisfactory extent with a reasonably plausible basis for the formulation of conclusive recommendations.

The Board's original intention was that the scope of the research would identify the learning and development requirements of heritage contractors and suggest appropriate delivery methods to ensure equity of educational opportunities for all contactors seeking to become registered, or to maintain their position on the register. It follows, in developing their knowledge and engagement with educational programmes, that contractors' skills and competencies will be enhanced to the immeasurable benefit of achieving quality conservation work and hence meeting expectations of their clients and the wider heritage protection industry.

Whilst the brief demanded a principal focus on the learning and development requirements for managers of heritage contracting firms, the Board's aim that the subject research assist in establishing best practice on site inevitably necessitated the expansion of the brief to include a review of corresponding requirements for heritage site managers. Though outside the formal remit of the study, the detailed examination of skill sets typically possessed by site managers led to a cursory review of learning and development opportunities of site operatives seeking to ascend the promotional ladder to site manager level.

This also led to a study of apprenticeships in traditional craft skills and parallel opportunities for primary training in craft skills for established operatives as a basis for competent co-ordination and supervision of skilled trades on a heritage site by existing or prospective registered heritage contractors. The scarcity of such opportunities has been acknowledged in previous studies such as the 2006 inter-departmental '*Strengthening the Protection of the Architectural Heritage',* the contemporaneous Department of Arts, Culture and the Gaeltacht publication; '*Developing a Government Policy on Architecture; a proposed framework and discussion of issues',* the subsequent skills needs analysis of the built heritage sector in Ireland of 2009, '*Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge',* by the (British) National Heritage Training Group (NHTG); and an ICOMOS review of the same period, '*Sustaining our Built Environment- Review of the state of conservation education and training in Ireland*.' In spite of the existence of such analysis and

recommendations within the realm of the industry, the present research found that little has changed in terms of learning and development opportunities.

To establish informed opinion pertaining to the research in respect of the education of heritage contractors, consultations further to those cited in section 1.1 above was established with individuals in various institutes of technology, universities, the CIF, Department of Arts, Heritage and the Gaeltacht, Department of Environment, Community and Local Government, the OPW and local authorities. In discussions with educators, the potential for the establishment of training opportunities specific to the needs of heritage contractors was recognised. It was further recognised that progress could be made swiftly in this regard, meeting even short-term demand.

Efforts were made to establish communications with a broad range of international contacts in the UK and Europe, USA, Canada and Australia with a view to determining the effectiveness of their respective heritage contractor registers, if existing, together with educational opportunities offered to their respective skilled workforces. Given the time of year of the research, the lack of acquaintance in many cases of individuals with specific expertise in the field, together with the inevitable language barriers it was found that solid research on an international level in respect of learning and development of heritage contractors could not be achieved. Consequentially, Section 3.0 and its associated chart of Appendix A, whilst attempting to rationalise the findings received to date, is somewhat inconclusive. However, it was still possible to determine the broad international context, and the advantageous position of Ireland relative to that context.

The research was further expanded to encompass an outline review of the business opportunities for skilled participants in the heritage contracting sector.

Whilst statistics have not been gathered for the proportionate contribution of heritage contracting works to the wider construction industry, as cited in Section 6.0 below, the repair, maintenance and improvement sector which incorporates heritage works, approximates a quarter of the construction industry's output. As this phenomenon has evolved without specific co-ordination or support at government level, it follows that investment in this sector will result in a consolidated indigenous workforce with the capacity to compete internationally. The subject research found that good educational opportunities for heritage contractors are central to achieving this objective.

2.0 THE HERITAGE CONTRACTOR'S DUTIES, RESPONSIBILITIES AND DEMONSTRATION OF COMPETENCE

As a first exercise in defining heritage contractors' training and development requirements, a review of the range of duties and responsibilities typically expected of a competent heritage contractor was carried out.

2.1 Knowledge of statutory parameters

2.1.1. Draft Building Control (Amendment) Regulations 2012

It is clear that existing arrangements for managing building control compliance in accordance with the Building Control Act 2007 (No. 21 of 2007); require improvement to ensure that risks of poor construction practices that can occur under the existing system are eliminated. Whilst it has been suggested within the construction industry that the draft regulations will be significantly modified to take account of opinion generated from the consultation period, there is no doubt that the essence of the State's efforts to regularise contracting services, which is at the core of the proposed changes, is to continue to strive for greater consumer protection in ensuring the compliance and durability of building works.

The present draft demands that notification and certification processes will be formalised to a greater degree than at present. Further, should defects arise subsequent to completion of works; records of the relevant local building control authority can assist the building owner in defining a clear chain of responsibility. The *Aim and purpose of draft Regulations*[5] as cited below summarise the aspirations of the draft Building Control (Amendment) Regulations to provide for;

> (a) the introduction of certificates of compliance (as referred to under Section 6 of the Building Control Act 1990) to be signed prior to, and on completion of building works;
> (b) the lodgement, at the commencement and on completion of works, of documentation demonstrating how compliance with all relevant requirements of the Second Schedule of the Building Regulations has been achieved; and
> (c) ancillary amendments to existing regulations and prescribed forms necessitated by the introduction of the provisions at (a) and (b) above.

Applicability to heritage works

The proposed amendments will apply to heritage buildings/works for which a Fire Safety Certificate (FSC) is required in accordance with Part III of the Building Control Regulations. For lesser,

[5] Strengthening the Building Control System; A Document to inform public consultation on Draft Building Control (Amendment) Regulations 2012, Department of the Environment, Community and Local Government, April, 2012

applicable, heritage works a Commencement Notice form will be required. Whilst responsibilities for building owners and certifiers have been widely commented on by others, the impact of the proposed amendments for heritage works has not been debated. Where repair, renewal and renovation work or extensions to existing buildings is proposed, unless a FSC is required, it is unlikely that the works will come within the scope of the proposed Building Control (Amendment) Regulations. However, where the works invoke the amended regulations, the submission of compliance drawings at commencement and on completion of building works together with the assignment of a person to inspect and certify works will be required.

Anomalies in respect of heritage works

Whereas improvements to the building control system will serve to significantly enhance the quality of buildings and ensure the durability of works; it has yet to be discussed how modifications inevitably arising during the course of heritage works will be addressed where information pertaining to commencement and compliance notices differ. The forthcoming Code of Practice may yet bear reference to such core questions for the heritage industry.

Secondly, an arrangement of relaxations exists in respect of building control pertaining to works to heritage fabric, where the applicant must demonstrate alternative means to achieve compliance where the protection of historic character is paramount. Imposing a rigid compliance structure onto this favourable practice must take account of the nuances associated with heritage and existing buildings.

Furthermore, consideration could be given at this time of change for addressing the scope for building control in respect of site assessment of traditional construction methods in respect of quality and durability, which has been largely overlooked in respect of the Building Control Act and its regulations to date. At present, the conservation officer may request that samples of elements of work be approved prior to commencement for planning compliance purposes, but this practice is a rare occurrence in the greater context of heritage works and has yet to be acknowledged by the building control system. Given the inherently inconsistent nature of traditional materials, it may prove a difficult task for the 'designer' to guarantee adherence with the forthcoming stringent compliance process. The 'Is it safe? Is it strong enough? Will it last?' debate regarding European Standards for Heritage and Conservation[6] must be considered with regard to a contractor's competence to select not just materials of quality for use in heritage works but also the appropriateness of materials applied in a heritage context.

Also, whilst small works are generally not considered to fall under the remit of proposed building control amendments, small works in a heritage sense may have a very significant impact on

[6] Article entitled 'British and European Standards for Heritage and Conservation', Tim Yates, 2002

character. As is mentioned below, a 'designer' is not likely to be engaged to specify small works, leaving the consumer vulnerable should subsequent defects arise. It is worth noting that whilst the planning process governs this pattern to a degree, consumer protection in the case of potential damage to property together with quality and durability, which should be governed by building control mechanisms, is not at present.

The heritage contractor must take subtle, but noticeable anomalies into account in their carrying out of works under the auspices of the register.

The Register of Heritage Contractors in the context of a suggested National Contractor Register

A further building control reform measure currently under consideration is the establishment by CIF of registration processes for contractors; which will serve to assess competencies, maintain competition and ultimately assure greater consumer protection. This recommendation will have the most impact on the review of the RHCB of the effectiveness of its own register, as it may become a model for a national mainstream contractor register.

Either way, a probable result of the range of impending changes is that all contractors will be required in the short term to obtain qualifications and demonstrate competence in respect of experience, knowledge and skill. A contractor will have no choice but to become acquainted with all aspects of building control legislation and must be provided with the opportunity to become educated in this respect.

It is therefore not just timely that the register of heritage contractors advances the educational prospects of its members and prospective members, but especially appropriate in light of greater public expectation of quality and competence.

2.1.2. Planning and Development Acts

The contractor's duty of care under a standard RIAI contract is to construct the works as advised by the supervising architect. The contractor does not typically engage in either the planning process or with the Department of Arts, Heritage and the Gaeltacht in respect of heritage works, assuming that all such concerns have been addressed by others in advance of commencement of works. This ideal is reflected in Part IV, Architectural Heritage, Chapters I and II, where the client is held to be responsible for compliance, however he may be advised by his agents.

- *s.57 Works affecting the character of protected structures*;
  Works which are normally exempt from the requirement of planning permission are not exempted development where they would materially affect the character of a protected structure or any element of it which contributes to its special interest. This section allows the

owner or occupier of a protected structure to make a written request to the planning authority for a declaration as to the type of works the authority considers would or would not materially affect the character of the protected structure. Significantly, there is no requirement, unless specifically requested by the planning authority, for detailed submissions to accompany the written request, leaving scope for a wide interpretation for how the works may materialise on site.

- *s.58 Duty of owners and occupiers to protect structures from endangerment*
  Owners/occupiers must ensure that the structure, or any element of it which contributes to its special interest, is not endangered. The term 'endangerment' has a wide interpretation for the purpose of the Act (S.2).

- *s.63 Offence relating to endangerment of protected structures*
  By notice only and to building owners/occupiers, not engaged parties

Contractor competence and compliance with Planning and Development controls

In enhancing the function of the Register of Heritage Contractors, the Board must consider the consequences that definition of competence will bring. Statistics are unavailable for heritage works, exempted or otherwise, that are either unintentionally or intentionally not brought to the attention of local authorities.

There is nonetheless, empirical evidence for a widespread tradition of execution of heritage works without formal consent and without professional instruction. With regard to a contractor's duty of care in such an instance, unauthorised development procedures (Part VIII of the Act) are relevant. In the case where a building owner having no prior experience of works and unaware of statutory responsibilities seeks to employ a registered heritage contractor to carry out work under a s.57 declaration, it may arise where he does so consciously in lieu of engaging a professional consultant as they understandably believe that contractor to be competent in all aspects of works governed by heritage protection legislation. It is not unreasonable to anticipate that onus in respect of s.58. could for that reason shift onto the contractor to make a judgement on how the works may potentially affect the character of the structure. In straying from what is set down in a declaration (if it is detailed) the unauthorised works could give rise to a notice under s. 59; *'Notice to require works to be carried out in relation to endangerment of protected structures',* thereby inherently extending the contractor's duty of care to his client.

In addition to having ethical and practical competence, the heritage contractor's competence must extend to knowledge of planning and development legislation, even if to inform the client to seek advice elsewhere, as responsibility for mitigating against endangerment could in reality transfer to the 'competent' contractor who is expected to have specific knowledge.

As such instances may arise in contracts of low monetary value – e.g. where the loss of original windows may have a disproportionate impact on the character of the property relative to the contract sum - the register should make it incumbent on its members to check all statutory compliances in respect of works to protected structures prior to commencement.

Furthermore, registered contractors should be advised to ensure that verbal instructions are formalised and the liabilities of the contractor duly limited to quality of works rather than compliance with planning and development legislation.

2.2 Contractor competence

> '*Conservation works should only be entrusted to persons competent in these specialist activities.*'[7]

Assessment of competence

It has been observed by the Board that the present system for illustration of competence is open to abuse and/or misinterpretation. Competence for registered heritage contractors is at present demonstrated in a written submission with practical experience verified by an architect, whose own professional judgement could waver.

The process of intervention is similarly inadequately tested. The submission of photographic records of the start and end of a project cannot provide evidence of the very judicious process that best demonstrates a contractor's ethical competence in respect of conservation. This system cannot hope to determine genuine conservation practices in the identification and recording of original defects or indeed satisfactorily completed work.

The present assessment structure is effectively found to confer responsibility from the RHCB onto the contractor and his supervising architect, incurring a potential conflict of interest for the architect in addition to fostering inconsistencies in confirming the breadth of a contractor's competence. UK and Canadian registration bodies all vet their members independently of third party opinion. Such registers also find that interventions, ethical judgement and manner of execution of heritage competence are best assessed in person either by interview or site visits.

The better registers of heritage contractors internationally all have a Code of Ethics mandatorily observed by their members. Whilst such practice cannot enforce competence, it can provide a datum by which to gauge competence where complaints are made. Where ethical codes are established, contractors can be disciplined when found to adopt practices that are contrary to these codes, providing both an incentive to meet its aspirations and an effective deterrent, where required.

[7] Para 5, Guidelines for education and training in the conservation of monuments, ensembles and sites ICOMOS, Colombo, 1993

Over-reliance on the competence of a heritage contractor

Guidance provided by heritage bodies, however appropriate and informative, is not obligatory. A building owner cannot be prosecuted[8] for carrying out non-recommended methods of heritage work, unless it has an adverse impact on the special character of the building. As highlighted in Section 2.1.1., paragraph 6 above, it is therefore critical that the client is aware of planning constraints pertaining to heritage works, so as to curb unreasonably held client expectations of the registered contractor and thus limiting the contractor's liability. Where necessary, the contractor must be advised to recommend that the client seek professional advice.

The benefit of a competent heritage contractor

A principal benefit to engaging a registered contractor will be greater consumer confidence in his skills, abilities and general competence.

Further to the previous note above, the converse is also possible, where an instructing professional with little knowledge of heritage buildings is engaged. In this regard, the contractor's competency; skill, knowledge and experience can be of considerable benefit to achieving best conservation practice. A system whereby the contractor has an informal, non-binding role of 'special advisor' is common practice and plays a vital role in collaborative decision-making on site. It is important however, that associated contractor liabilities pertaining will continue to be limited, as liability for design competence will still be maintained by the instructing professional as he can either choose to accept or ignore advice.

Policing of all heritage works to ensure appropriateness of methodologies is impossible. If best practice is to be genuinely established, conservation officers at planning stage (for those projects that are submitted) could be encouraged to condition that heritage works are not only supervised by a competent professional but executed by a competent contractor, demonstrated either by registration or otherwise. If a practice of seeking registered or similarly qualified contractors is demanded at planning consent stage, it will both allow the best opportunity for sustainable continuance of the built heritage and generate greater work opportunities for genuine conservators.

3.0 INDUSTRY EXPECTATIONS AND REQUIREMENTS

The experience of public and private sector clients, professionals and heritage contractors of the RHC, together with their expectations of the Register was researched be way of specifically arranged questionnaires and interviews. Findings from this process were interesting, as they challenged the

[8] Two procedures are offered within Part IV: prosecution under s.59, limited to works that have resulted in endangerment, or a non-binding notice under s.60 served to restore character. However, under Part VIII where works are found to have had an adverse effect on the special character of a protected structure, an owner can be served with a notice of unauthorised development .

very function of the register, its relevance and effectiveness. Overall, the findings are considered to present a positive opportunity to the Board to review the registration process, in addition to addressing variances in its scope.

3.1 Public sector clients

In submitting questionnaires and meeting with five public sector client stakeholders, the following was noted:

3.1.1. Experience of the RHC

Public sector clients generally were of the opinion that the Heritage Contractor Register could not be used effectively on the following grounds;

- Difficulty finding the register; in accessing the CIF website no link is provided from the drop down menu for general contractors
- They find that it is randomly arranged, in alphabetical order rather than by trade. The specialist categories listed are inadequately represented, if included at all
- Critical mass is not achieved in respect of either general or individual skill categories
- Despite efforts to provide a comprehensive assessment process, the register is not found to be the mark of quality that it should be. Public sector clients have had mixed experience with some contractors on the register and would have concerns at the evaluation of competence generally. One client's experience of a registered contractor included removal of interventions found to be defective within a few years of construction, at considerable cost to the integrity of the heritage site and to the exchequer. The reputational damage of inclusion of inadequately competent contractors is inestimable.
- Traditionally contractors were selected from the OPW 'maintenance list' which has been discontinued more recently, with public sector architects selecting contractors who are known to them to be reliable and competent. Not all such contractors are included on the RHC
- Statutory compliance in respect of heritage protection legislation is not considered to be adequately assessed in the registration process

3.1.2. Expectations/requirements of the RHC

Consultations in respect of public sector client's expectations and requirements were similarly interesting, as follows;

General expectations

- Heritage protection is the defining expectation and requirement of the RHC. In selecting a contractor from the RHC, the client must be assured insofar as possible of the skill, knowledge, ethical approach and general competence of the contractor to conserve, repair

and maintain historic fabric in accordance with best practice. It follows that highly trained and qualified operatives are expected as a minimum

- Consumer comfort in the durability/ life cycle of works is an essential consideration
- A co-ordinated, well managed, standardised skill base is critical. Each level of competence (whether novice or master craftsman) should be acknowledged by the Board in its assessment of contractors.
- The registration assessment process cannot be confined to a firm's owner. For the register to work effectively in practice, site/project managers must also demonstrate competence as a means to ensure the day to day presence of a competent person on site.

Skill categorisation

- Simply presented specialist categories are required. It is critical that defined specialist categories are scheduled and a very minimum of 6 contractors per trade (ranging from general to specialist) included in acknowledgement of the industry standard of same number for procurement purposes
- A speciality should be excluded from register if a critical mass is not achieved as the register's function will be compromised if equitable procurement cannot be realised. To this end, and to ensure that each category is filled, the Board must consider approaching contractors known to be competent for inclusion
- Section 3 of RHC building tasks for registration schedule should be expanded to include skills in temporary works, investigative works[9] and client supervision (clerk of works) as specialist categories
- RECI/other services installation bodies should be approached to up skill their members in respect of heritage installations

Procurement

- A comprehensive, functioning register could immediately qualify for state 'selective tendering' categories (works with value of over €50k)
- In terms of its use as a procurement source in its present capacity however, state bodies cannot demand that contractors be registered as it may be seen as a cartel if a critical threshold for tendering is not achieved. Conversely, if a critical mass is achieved (i.e. 6 or more contractors per skill registered) the register could be successfully used for competitive tendering in citing the datum of registration or an equivalent demonstration of competence as a tendering criterion.

[9] e.g. competence required in removal of the five types of floorboards for condition assessment purposes

3.2 Private sector clients

In submitting questionnaires and meeting with two private sector clients[10], the following was noted:

3.2.1. Experience of the RHC

Neither client was aware of its existence. The project architect held the responsibility for the selection of contractors for tendering purposes, and did not discuss the merits of the register in advance of selection

3.2.2. Expectations/requirements of the RHC

- A general awareness of statutory responsibilities is not ordinarily possessed by the client. There is no vehicle for information at client level, nor, in their transfer of responsibility for compliance to an agent, can they reasonably be expected to have same.
- In transferring responsibility, they are relying on the competence of contractor/ architect to achieve best practice
- Whilst quality is a factor, client interest in heritage procurement is predominantly weighted in favour of value for money. In tendering, if a registered contractor proves more expensive than his non-registered counterpart, the lowest tenderer will be appointed unless the price difference is negligible. However, one client would be prepared to pay more for a registered, highly qualified, site foreman and operatives provided that they could be assured of quality.
- It is reasonably held that if more contractors were to join the register, pricing of work would become more competitive.
- Client would like to see a penalty / complaint system in place for contractors they find to have compromised competence

3.3 Professionals

In submitting questionnaires and meeting with five conservation architects, the following was noted:

3.3.1. Experience of the RHC

- Two architects were unaware of its existence
- When made aware and they had an opportunity to review its website, they were disappointed with its relevance to the industry on the grounds that it did not have critical mass in various trade groups, precluding use of specialist trades for smaller works packages which would typically represent much of the present work profile
- One architect was aware, but does not use it as a reference tool as it is found to be inadequate for procurement requirements on account of same critical mass issue cited above

[10] The author's own contacts - no list of beneficiaries of heritage funding is available and the author was reluctant to approach clients of other architects

- Three of the architects questioned will continue to source contractors from their own lists rather than test the register, as they cannot risk engaging a contractor whose competence they have not had prior experience of. If assured of improved entry criteria, they will engage with it.

3.3.2. Expectations/requirements of the RHC

Expectations (prompted by questionnaire) were similar to those cited above for public sector clients

3.4 Contractors

In submitting questionnaires and meeting with three competent heritage contractors, two of whom are on the register, the following was noted:

3.4.1. Experience of the RHC

- For those registered, registration has not greatly improved their appointment prospects. Appointments are still largely made through clients/architects who are either unaware of the register's existence or do not avail of it
- The market is uncompetitive at present. Three critical deficiencies identified;
- an inadequate skill base nationally
- an unregulated sector
- a lack of value placed on quality
- The challenge faced by contractors generally means that they typically must compete against less competent contractors for work. Genuine conservators know how to price heritage jobs often at the risk of being underpriced by others who anticipate variations as a means to improve profit margins. To obtain work competitively, they often have to cut their costs considerably which inevitably leads to reduced quality. If they seek to maintain their position in respect of the actual cost of achieving quality, they may not succeed in getting appointed for contracts.

3.4.2. Expectations/requirements of the RHC

Standardising the skill base

- Value for money is difficult to determine in heritage jobs at present due to persistent competence inequalities between tendering contractors, but it is achievable if comparably qualified contractors are invited to tender. In this respect skill base inconsistencies must be addressed - a standardised skill base will ensure an equal standing in procurement and eradication of the dilemma of competent heritage contractors/master craftsmen competing with less skilled contractors, often to their loss
- Increased knowledge of traditional building crafts and skills is essential - few courses are available for specialist heritage training

- On completion of a structured learning programme, the contractors require an introduction of a compulsory 'card' scheme for all competent heritage workers similar to the CSCS heritage card obtained by skilled operatives in the UK. The primary purpose of this is to possess physical evidence of their efforts to acquire qualifications and to preclude unregistered / unqualified operatives from presenting themselves as registered or qualified.
- Addressing scarcity of skilled workforce by means of improved training and development is required, as contractors find it difficult to recruit specialists, a direct consequence of poor educational opportunities.
- Requirement to positively engage with heritage master craftsmen; incentivising with title, status, mentoring/teaching opportunities etc. as a means to ensure traditional skills and material provision are not lost

Knowledge of heritage protection constraints

- Three contractors stated that they are aware of statutory compliance but do not offer any advice in this regard. When asked if they would carry out client instruction at any cost, they said in general that they are not legally responsible for heritage protection in advising client alternatively. Establishment of a Code of Ethics may overcome this deficiency.

Improving the registration process

- Registration should represent quality in distinguishing between genuine conservators and 'alleged' conservators.
- Retention of the integrity of registration - ensuring that only those meeting criteria of competency are accepted onto register (or grades of the register)
- An effective, operational and nationally respected register will eliminate the tradition of imported skills thereby creating more opportunities for indigenous trades
- The register must maintain fairness in its review of contractors. Members must without exception demonstrate competence and be required to up-skill annually to convey that competence is maintained
- Realistic timeframe for implementation of changes is required.

Improving procurement prospects

- A full schedule of registered trades should be included in the register. The RHCB should actively seek/encourage skilled operatives to sign up, in order to meet the critical mass (i.e. minimum of 6) for procurement purposes
- Clients/architects must be educated to ensure that value for money does not incentivise appointment at the risk of quality - a tradition that cannot be addressed whilst contractor inequalities exist

- Capitalising on the marketing advantages of a skilled workforce that achieves critical mass in respective trades, in turn achieving competitive procurement - presenting opportunities for competent trades people to compete fairly
- Contractors incentive to gain qualifications will be their inclusion on the register and greater work opportunities
- RHCB should recognise the future potential for the heritage industry and to make efforts to secure future labour demands, which will inevitably expand as the Record of Protected Structures is added to over time. In this regard, as paying members of a register, contractors would expect the RHCB to lobby state developers on their behalf to ensure that competent contractors are selected for state work, with the view that the private sector will ultimately follow suit.
- Contractors would expect the RHCB to lobby for the reinstatement of conservation grants as a means to increase work opportunities in heritage construction

4.0 INTERNATIONAL BEST PRACTICE FOR HERITAGE CONTRACTOR REGISTRATION

4.1 Introduction

Of all areas of research encompassed by the subject study, research into international practices was most affected by the research limitations cited in Section 1.0 above. As a consequence, general findings are not concluded with specific research collated for the *International comparisons- heritage contractor registers* chart, appended, largely incomplete.[11] Notwithstanding these challenges, it has been possible to assemble a reasonable sense of the heritage contracting registration context internationally in review of findings to date on the whole.

Jurisdictions studied included UK, Northern Ireland, Europe, USA, Canada and Victoria and New South Wales in Australia. What was found is that whilst comparative heritage main contracting registers exist in Canada and Victoria, no comprehensive main heritage contractor register exists in the USA or any European country. In many countries, reasonably comprehensive directories of specialist conservators are available, but the provision of skilled sub-contractor registers is inconsistent.

A review of specialist trade schedules found on international registers is listed below, showing that despite relative deficiencies of the subject Irish Register of Heritage Contractors noted in the previous section, it is ahead of its UK, Australian and Canadian peers in categorisation of skills;

[11] Please refer to Appendix A, to rear of this document

Comparative trades internationally[12]

RHC	NHTG[13]	New South Wales (Australia)	Canada
Masonry and Stone Stone Work / Carving Sculptor Stone Wall Building (Rubble Stone) Stone Installation (Cut Stone) Stone Cleaning / Restoration Brickwork Lime mortars - pointing Lime mortars - mixing Lime mortars - repair Stone repair	Stone Masonry Craft Masonry Bricklaying	Stonemasonry Bricklaying	Stone Masons Bricklayers
Roofing Thatching Copper Work Slate Work Roof tiling Lead work	Roof Slating and Tiling Lead working Steeple jacking Thatching	Roofing and Roof	Roofers/Sheet Metal
Timberwork and Joinery Wood panelling Joinery Wood Carving Wood Cutting Carpentry Repair	Carpentry and Joinery	Carpentry and Joinery	Finish/Trim Workers Carpenters
Plastering Decorative work Lime Based Gypsum Lath & plaster Wet dash / harling Stucco	Plastering	Plastering	Plasterers
Painting and decorative wall finishes Gilding Fresco painting Lime Based painting Oil based painting Distempers painting Decorative paint finishes Sign Painting	Painting and Decorating	Painting and Decorating	Decorative Painters

[12] Partially retrieved from document 'Human Resources in Canada's Built Heritage Sector : Mapping the Work Force and Setting Strategic Priorities'(2004) and from Colm Murray's RHC Building Trades for Registration schedule

[13] National Heritage Training Group- UK

Specialist Crafts Ironmongery and Metalwork Glass and Glazing Remedial Works Services		Plumbing	Ironworkers (decorative) Plumbers Electricians

4.2 England

Present context

Heritage groups have considerable prominence in England and across the UK. England's foremost statutory heritage organisation, English Heritage, operates in parallel with its sister organisations in Scotland and Wales; Historic Scotland and Cadw respectively, to ensure a well-protected historic environment nationwide.

Whilst registers of specialist heritage contractors do exist in England, they do not represent the full spectrum of skills required for heritage work. Furthermore, they vary considerably in how they are administered, with most having no requirement for demonstration of competence. Those having superior frameworks for assessment and maintenance of proficient and master craft members' competencies were few, contrasting with relatively poor equivalent systems adopted by other registers, in turn leading to irregular skill bases for associated works.

Members of registers that were found to be comprehensive had achieved as a minimum the Construction Skills Certification (CSCS) card having followed a formal training scheme, subsequently awarded a further heritage card (NVQ level 3) for completion of training in specialist heritage trades. The card scheme for trades working in the heritage sector is successful and gaining momentum as a procurement requirement, albeit with varying degrees of impact nationally due to geographical deficiencies. The national driver of heritage skills, the NHTG (National Heritage Training Group) is actively lobbying English Heritage to recognise heritage skills card holders, as at present they don't. English Heritage's argument against recognition is that critical mass in each trade sector is not achieved, for example, in 2012; only 325 heritage specialist lead contractors were registered, rendering geographical coverage inadequate.

Specialist contractor registers

The ranges of established specialist heritage contractor registers appearing to operate most effectively are listed in the attached Appendix A. Of these, the following were found to have good procedures, with the Lead Contractors Association (LCA) considered to provide the best framework for assessment and maintenance of proficient and master craft members' competencies.;

- The Institute of Conservation (ICON)- conservation register
- The Institute of Historic Building Conservation (IHBC) -register for affiliate members
- Lead Contractors Association (LCA)- 'contractor locator '

- National Society of Master Thatchers- 'find a thatcher'
- National Heritage Roofing Contractors- register
- Federation of Master Builders- directory

No specialist registers have been established for stonemasonry, carpentry, roof slating and tiling presenting a challenge for procurement of competent operatives for associated work elements. Leading heritage registers are making progress in respect of their encouragement of public sector clients to avail of the skilled indigenous workforce. A proactive Memorandum of Understanding has been adopted between English Heritage and the LCA, a first for the traditional craft skills industry. Under the memorandum, English Heritage has agreed to employ skilled lead work card holders for work above £20k - but this in itself is inadequate as most lead contracts are of a significantly lower value than this figure. In response, the LCA is actively working to reduce this threshold.

Main contractor register

Despite the great efforts to provide solid training in traditional skills, there is no main contractor requirement to possess heritage skills across the UK. At present the Trustmark scheme, the national co-ordinator of construction skills, endorses the CSCS heritage card scheme, but the system is vulnerable to abuse with corresponding opportunities for competent heritage contractors under this avenue limited. Under the scheme's directory, any main contractors may present themselves as generally competent for heritage works without any prior vetting, if contacted in good faith by prospective clients who assume that listing on the website implies competence.

Specific heritage procurement for state projects presents an even greater anomaly, as main contractors simply provide evidence at pre-selection stage of outsourced domestic specialist trades whose operatives have acquired heritage skills cards. If the tender is non-specific, as it often is due to revised contract procedures, no formal requirement is imposed post-appointment to honour this arrangement on the basis of geographical availability and inevitable escalation of project cost in sourcing trades remote from the site. As a consequence, the cheapest 'specialist' local contractor is often selected on commencement of works, arising in limited opportunity for best conservation practice to be achieved on site.

In recognition of this deficiency, the NHTG is in the process of providing the framework for the foundation of a principal, unified national heritage contractor register of competent main contractors and a sector by sector, trade by trade sub-register to overcome the confusion arising from existence of multiple heritage skill sub-registers with irregular competency assessment procedures.

A broad overview of learning & development requirements/ opportunities

Supplementing the provisions of universities and specialist conservation facilities[14], a number of prescribed heritage organisations in England and across the UK provide a wide range of excellent educational and training opportunities for those wishing to develop specialist craft skills, managerial skills of theoretical knowledge in the heritage contracting industry. Among these are NHTG, the Society for Protection of Ancient Buildings (SPAB) , Conference in Training in Architectural Conservation (COTAC), European Confederation of Conservator-restorers' Organisations (ECCO); Institute of Historic Building Conservation (IHBC) and The Institute of Conservation (ICON). Whilst research has encompassed an overview of the great variety and availability of courses across the UK, it is beyond the remit of this study to document these. It is worth noting however, that a superior, well established system for training and development in all aspects of heritage awareness has been invested in, with high attendance rates at courses which in turn reflects market demand.

Whilst craft skill training is available at NVQ levels 2 and 3, City &Guilds and Master craft Diploma level in many training centres, in recognition of the scarcity of NVQ level 3 courses aimed at site managers, a limited number of heritage management courses has been established in advance of the foundation of the national register proposed by the NHTG cited above. A heritage awareness course commenced in 2010, aimed at site managers who must manage individual trades on their sites. Other pilot programmes are allegedly running[15], but are not fully operational.

Whilst many higher level (levels 4, 5) conservation management courses are available nationwide, only one is accredited by the national awarding body, the Chartered Institute of Builders, CIOB. It comprises the Building Conservation (Technology and Management) at Heriot-Watt University, Edinburgh and offers MSc, diploma and certificate options of the course. The programme is offered through distance learning in efforts to broaden its uptake nationally.

Review of a specialist craft skill register- the Lead Contractor's Association

At present, national and regional independent training groups, each complying with NOS standards (predominantly NVQ level 3 training) are used as training centres in efforts to disperse skills nationwide. Educational methods include classroom and bursars (award system) apprenticeships and mentoring. 'Circle of Learning' schemes are becoming established to compliment established systems to encourage master craftsman to mentor apprentices or interested experienced contractors, all in efforts to ensure that traditional knowledge and skills are not lost. Mentoring schemes however, are slow to become established, but the LCA has three experienced, retired members committed to the craft who have volunteered to respond to younger members queries on an informal basis.

[14] e.g. West Dean College, West Sussex

[15] As revealed in conversation with the NHTG, but as of yet, no information on the pilot programme syllabus is either available online or has been sent to the author for information purposes, as requested

LCA members without prior formal qualifications pursue alternative educational routes in training though the Lead Sheet Association,. Training is primarily workshop-based complimented by an OSAT (online/site training) system. The member is exposed to a combination of theoretical and practical training, with emphasis on practical skills and design awareness. The benefit of workshop training is that ruinettes, or advanced roof set-ups (e.g. convex/concave domes that may not arise in general practice) can be provided. To gain membership of the LCA, the candidate must complete their training as arranged, with qualified assessors then engaged to examine their work in practice, either on site or in the workshop depending on the availability of work. All training is funded by the Construction Skills Training Board, funded by a levy deducted from other contractor members' application fees.

The wider conservation community has mixed views on the efforts of the LCA. Whilst some find it commendable, one conservation professional was of the opinion that the LCA defined lead detailing to the extent that their detailing proved over-complicated and often resulted in an unnecessarily higher cost of work.

4.3 Scotland

As the specialist registers cited in Section 4.2 above also operate in Scotland, a review of practices adopted specifically by Historic Scotland in respect of heritage main contractor registration was carried out.

Main contractor register

In discussions, it was found that Historic Scotland held an informal contractor register for many years, but discontinued it recently on the basis that there was no statutory obligation, remit or state support to do so. They did not have the resources to administer a credible register, to police it, discipline it or ensure that it operated efficiently. Contractors that were found to be incompetent could not be removed from register without embarrassment. Furthermore, they found that the geographical inconsistencies throughout Scotland rendered the register inadequate as a national tool for conservation procurement.

Historic Scotland is now more of the opinion that heritage contractors should not be isolated into a specialist field, as in theory all contractors should have comparable knowledge, skill and competence to manage heritage works. They are concerned that to have a specialist register would distort the market and over time preclude mainstream contractors from picking up the skills they once possessed. Moreover, they found heritage work alone cannot sustain contracting companies. They are aware of the disparities in the skill base of allegedly specialised contractors and mainstream volume contractors, but ideally hope that the two streams will unify over time to ensure that all work, whether heritage or existing building work, is carried out carefully.

No other Scottish heritage group has attempted to provide a similar register.

Learning & development requirements/ opportunities

Historic Scotland produces numerous guidance publications yearly, some available to download free of charge with Technical Conservation publications available for purchase. Numerous initiatives have also been established to promote learning in the heritage field and the Conservation Training and Skills Development programme is arranged into training streams as follows;

Craft Apprentices

Historic Scotland has its own craft apprentices, primarily stonemasons but also other crafts such as joiners and painters. These are directly employed and in the case of the stonemasons, trained by HS at centres in Stirling and Elgin. However, the basis of the training is the industry standard Modern Apprenticeship.

Craft Fellows

These fellows target support to minority craft areas where small numbers make a difference. A grant award of £14.5k per year is paid to six selected individuals who are placed with a host organisation. The scheme is funded solely by HS, with in-kind support from host originations. Crafts include sign writing, pattern making, lead work, joinery and heritage engineering.

HLF Funded Bursary schemes/ Masonry Bursary scheme

This scheme is a mix of year-long and short term bursary placements with stonemasonry contractors to improve standards of conservation repair and maintenance in the construction industry. The short term, usually 6 weeks, enables firms to up-skill operatives in traditional masonry skills. Each individual receives a stipend in lieu of wages and completes an SQA approved National Progression Award in Conservation of Masonry. The year-long placements enable career changers and young people to acquire a taste of heritage type work and achieve the NPA award. Over 80% have been kept on after a year and many have been offered full apprenticeships

Skills for the Future Bursary

These bursaries are available under four strands: digital surveying, placement with HS scanning unit, Heritage Engineering with National Trust for Scotland, Angus Traditional Skills, Future Skills, retrofit for traditional buildings. Comprising long-term placements, they are aimed to give operatives experience working in different parts of the sector and build up skills and expertise that may be required in the future.

4.4. Northern Ireland

Present context

No heritage building contractors' register has been established in Northern Ireland. The Northern Ireland Environmental Agency has an informal heritage register, but has no prior vetting process for

members. In contrast with the system of CSCS heritage skills card established in England, Wales and Scotland, no similar system has been provided in Northern Ireland.

In consultation with a leading heritage professional in NI, it is claimed that the market simply is not present to encourage specific training and development of heritage specialists. The lowest tenders typically are awarded, with assurance of skills and competence a secondary issue.

Learning & development requirements/ opportunities

There has been no progression in respect of site management education since publication of NHTG Craft/Skills Report 2009. Construction Skills (part of Construction Employers Federation) provides general training for contractors and against all the odds introduced a heritage category 18 months ago. A pilot course for general contractor/heritage professionals: 'Understanding Repair and Maintenance of Traditional pre-1919 Buildings' was proposed, but regrettably as there was no primary driver of course, there was little uptake and the proposal was abandoned.

In recognition that very few operatives are skilled in heritage crafts; a second pilot initiative for up-skilling specialist apprenticeships (referred to above) was established recently. Funded by the Heritage Lottery Fund, it had 9 participants in its first year of 2012 with another 10 placements approved for 2013. Trades selected for training included stonemasonry, plastering, ironmongery and joinery. Training for Northern Ireland Environmental Agency staff remains a challenge and one that is being considered by the Traditional Building Skills Working Group.

4.5 Canada

Of the international heritage main contractor registers studied, the Canadian system proved the most useable in terms of access and level of information provided for each contractor member. However, research is still outstanding in respect of solid opinion as to its effectiveness in practice. In the absence of conclusive research the following was noted:

Present context

A formal, nationally accredited register of Heritage Building Contractors (specialist and main) has been in existence for a number of years and appears to be used solely in relation to works concerning buildings and sites having statutory protection. The Cultural Human Resources Council (CHRC), supported by the Human Resources and Skills Development Canada and Parks Canada is the driving body behind the heritage contracting industry, focusing on professional recognition, professional development and succession of heritage professionals. It appears to comprise a well organised system, with the CHRC at the helm of national heritage protection governance and selected sub-departments responsible for the specific task of educational provisions for the wider heritage sector, a section of which relates to training and development of heritage contractors.

Learning & development requirements/ opportunities

Concerns at the scarcity of heritage skills among both skilled trades and main contractors led to a study in 2004[16] which in turn resulted in the establishment of specialist heritage courses provided by the Association for Preservation Technology International, the Canadian Conservation Institute (specialist crafts) and Parks Canada. The courses were accredited by the CHRC, with the Canadian Association of Heritage Professionals serving as a well-organised national network for accredited learning centres and their courses. The educational spectrum appears to cover the full remit of skills required to achieve best practice in heritage works.

Whilst research to date has not found evidence of a specific heritage site management course, a response is outstanding from the Canadian Association of Heritage Professionals.

It is regrettable that further evidence could not be documented in this respect within the time-frame for the preparation of this report.

5.0 LEARNING AND DEVELOPMENT

> *'There is a need to impart knowledge of conservation attitudes and approaches to all those who may have a direct or indirect impact on cultural property.'*[17]

5.1 Overview

The construction industry is exceptionally complex with a wide range of significant, mandatory responsibilities assumed by the main contractor. Within this industry the growing sub-sector of essential maintenance and repair of ageing building stock, much of which has a heritage value, adds further complexity to the remit of the contractor, particularly when educators have not accommodated training opportunities in the field.

Craft skills in construction were traditionally acquired either through family trades, or by time-honoured apprenticeships. From the late 1960s however, the emphasis of apprenticeships changed its focus toward contemporary materials, with inclusion of traditional skills programmes gradually abandoned over time. At present, FAS training listings concerning construction crafts includes the following, with those having a bearing on heritage works highlighted;

1. *Carpentry and Joinery*
2. *Wood Manufacturing and Finishing*
3. *Brick and Stone Laying*

[16] Human Resources in Canada's Built Heritage Sector : Mapping the Work Force and Setting Strategic Priorities (2004)

[17] Guidelines for education and training in the conservation of monuments, ensembles and sites ICOMOS, 1993, par.6

4. *Plastering*
5. *Painting and Decorating*
6. *Floor and Wall Tiling*
7. *Plumbing*
8. *Electrical*
9. *Metal Fabrication*
10. *Sheet Metalworking*
11. Construction Plant Fitting
12. Industrial Insulation

As training in a broad spectrum of industry crafts is offered[18], it is regrettable that there is no reference in that training curriculum to traditional craft skills. This is largely attributed to the fact that apprenticeships by tradition were seven or more years in duration, in contrast with the present average four-year duration of a contemporary construction apprenticeship. Consequentially, traditional skill training has been largely omitted due to time constraints.

In spite of this, as cited above, the market for traditional skills has expanded as the statutory environment regulating heritage works has become increasingly stringent.

The effect of this gap in training of traditional crafts is significant for the heritage contracting sector. For example, advanced contractors who seek to become registered may have an excellent grounding in the construction skills required of mainstream works, but it is probable that they do not have formal training in traditional skills. If their remit as registered contractors will be to manage the workmanship and co-ordinate programming of specialist trades, it follows that they must have a good knowledge of the nuances of all traditional skills and materials. In this regard, it is critical that the registration process does not assume that contractors have fundamental knowledge of traditional skills and materials. If contractors cannot demonstrate otherwise (i.e. if they cannot definitively prove they attended traditional apprenticeships, or that they have long-standing experience in the management of heritage skills), they must be required to seek general training in traditional works as an inherent part of the registration process.

Further to a solid foundation in heritage trades, it is also probable that the RHCB cannot assume that conservation ethics and philosophy, skills that are both instinctive and acquired, are inherent to the experience of prospective registered contractors. It should therefore be accepted that corresponding training be arranged by the RHCB to ensure that the wider industry expectation of heritage contracting competency is met in their appointment of a registered contractor.

Presently, a one-day course entitled ‘Conservation Theory for Heritage Contractors’, offered through the CIF SMETS scheme, is advocated by the RHCB as meeting the theoretical criteria required of the

[18] With the exception of glazing, a noted omission

registration process. Whilst it was found that the programme was interesting and relevant to contractors, its scope was limited in respect of the theory and ethics of conservation best practice. The course syllabus, unintentionally perhaps, seeks to achieve too much in the short timeframe; attempting to cover much of what should be included in a longer course.

5.2 Consumer expectation of registered heritage contractors

The primary expectation of consumers of registered heritage contractor services is assurance that their capital investment in the conservation, repair and maintenance of their property is secured in the appointment of competent contractors.

Research has found that client expectations of registered heritage contractors generally are not being met largely on account of an uncertainty as to competence. Industry expects parity of competence at each level of experience; from apprenticeship, through to proficiency level (level 6 of the National Framework of Qualifications (NFQ)) and on to master craftsman level. However, the non-standardised skill base having inconsistencies across each trade, as is found to be the case in Ireland, presents a deficiency that can be directly attributed to poor training prospects for contractors from the point of their first participation in a career in construction through to becoming site managers proficient in all other aspects of mainstream construction, in turn leading to low client confidence.

If a heritage contractor's competence, skill and knowledge is to acquire a value, client expectations will extend to widespread appointment of registered contractors, which in turn will inevitably increase the demand for purposeful educational opportunities.

5.3 Heritage training and development in general

> *'The practice of conservation is interdisciplinary; it therefore follows that courses should also be multidisciplinary. Professionals, including academics and specialized craftspersons, who have already received their normal qualification will need further training in order to become conservationists; equally those who seek to act competently in historic environment.'*[19]

Review of existing training and development opportunities

A review of formal training opportunities is central to the long-term improvement of competencies in heritage contracting. Whilst the Heritage Council is commissioning a study on the status of conservation education in Ireland, the project is very much in progress and is not available in draft form to inform the present study.

[19] Guidelines for education and training in the conservation of monuments, ensembles and sites ICOMOS, 1993, par.7

Research by the author to date has established that no specific heritage-skill course is offered to the required NFQ standards[20] to achieve an educated, skilled workforce in the full spectrum of heritage trades. At present, it would appear that the highest programme offered incorporating any heritage skill training is a certificate at HETAC level 6, offered by Limerick Institute of Technology. Dublin Institute of Technology offers an NFQ Level 7 course in general construction management, with only one lecture in one 30-week module (of 8 principal modules) devoted to heritage works.

Any higher level review of educational provisions, must systematically address deficiencies at novice through to expert skill scales, with the wider ideal that heritage site managers achieve a level of proficiency. The ideal programme, awarded by a recognised training institution, should include comprehensive classroom and workshop based coursework, followed by an internship mentored by a registered craftsman, in turn followed by submission of a thesis.

A central repository for courses in heritage crafts

As noted above, research has not identified a general conservation course for contractors offered in Ireland to date, even if it would appear that the opportunity for work in the construction industry is primarily driven by retrospective modification of existing buildings. As the value system in construction education is weighted in favour of contemporary and mainstream construction techniques, it follows that not offering education in traditional building materials and construction techniques represents a significant gap in the overall quality of educational provision. Limitations in conservation learning and development opportunities wholly undermine the industry's prospective purposeful growth and its wider measures to achieve a sustainable built environment. As is outlined in the next section, this failure to address the heritage industry's potential will essentially result in a significant loss of opportunity for the indigenous construction industry.

This unfortunate, but entirely avoidable condition is compounded by the absence of a driver promoting heritage education nationally. If a centre of excellence in conservation education were established, it could serve to endorse educational opportunities nationwide as integral to the training and education of the heritage construction workforce. The present lack of an established network of heritage-based courses/seminars/demonstrations further contributes to poor educational prospects.

Absence of a defined RHC CPD policy

The more advanced professional registers internationally all have an educational policy promoting the highest standards of competence among their members, thus protecting consumers. Continuing Professional Development policies applicable to all members, complimented by a proficient information delivery service and support system for members are further benefits common to such registers.

[20] e.g. provision of equivalent (UK) NVQ level 3/EQF level 5 and NVQ level 5/ EQF level 7 learning programmes

As identified in the section below, the RHC advocates a range of educational options that is limited in its achievability. Further, they do not clearly cite the benefits of advancement in education. Core competencies for general contractors, and the particular, additional competencies required of qualified heritage contractors are not clearly defined. Definition is required, not just for the benefit of prospective registered contractors, but to convey to the consumer the additional services they may be offered by a registered contractor.

Achievement of RHC CPD policy at present

The research for this report has established that the RHC CPD policy is not effective in that its learning objectives cannot reasonably be met by contractors nationwide. Furthermore, as cited below, the absence of a central database advertising courses effectively precludes operatives from engaging with courses offered remotely.

To achieve an ideal of competence, a comprehensive system of skill development through learning, coupled with effective maintenance of those skills through CPD must be rendered operational and accessible for those seeking to engage with it. The table below demonstrates deficiencies as highlighted, listing courses extracted from the RHC Section A- Education and Skills Development of the Continuing Built Heritage Development Requirements 2012:

Courses cited are as follows:

Course	Course provider	Availability	Delivery method	Accessibility
Theory of Conservation	CIF SMETS initiative	Annually, where demanded. Held in September 2012, previously in May 2011	Classroom based	CIF members made aware of existence
Construction Management[21] *(one 'Managing Heritage Projects' module)*	CIF SMETS initiative	Last operated in 2009	Classroom based	CIF members made aware of existence
Construction management	Various Institutes of Technology	1-2 years in duration, full and part time courses	Classroom based	Onus on individual to enquire
MUBC/	University College	1-2 years in duration,	Classroom	Onus on

[21] The same 'Managing Heritage Projects' module is earmarked to be omitted from future courses on account of the perceived greater need for inclusion of courses related to more stringent health and safety and waste management legislation

Diploma in Applied Building Repair and Conservation[22]	Dublin, Trinity College Dublin	available as post-graduate courses at NFQ level 9	based	individual to enquire
Conservation/ Built Heritage courses	**NGOs** IGS, Dublin Civic Trust, Building Limes Forum Ireland, The Industrial Heritage Association of Ireland, An Taisce, ICOMOS	Irregular and predominately based in Dublin	Classroom / demonstrations	Clearly advertised on RHC website, but wider knowledge of courses not disseminated among contractors
Informal specialist training by suppliers and manufactures	Various	Irregular	Classroom / demonstrations	Not endorsed or vetted by HCRB. No system for advertisement among heritage industry

Lack of establishment of industry partnerships

Conservation best practice is collaborative. It is wholly unachievable without execution at all levels, from the academic ideology of an architectural heritage impact assessment report at planning stage through to implementation of works on site. Site managers must have comparable competence to the supervising conservation architect to ensure continuity of best practice on site. In response, collaborative training should be considered as integral to the success of wider conservation educational opportunities for construction operatives. It is entirely realistic to consider establishing industry partnerships between architects, engineers, surveyors and contractors as a means to standardise heritage awareness across all sectors with the ultimate aim of achieving best practice unilaterally.

5.4 Specialist education

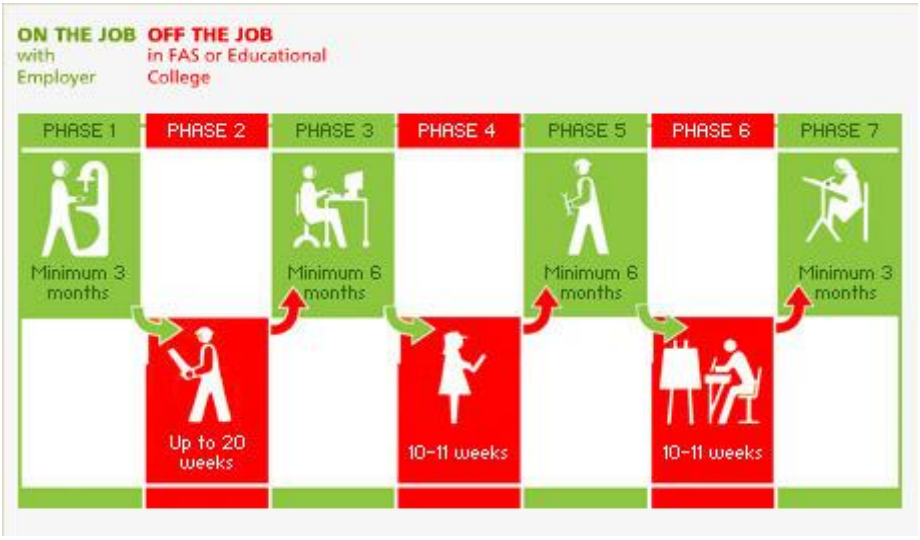
> '*Traditional crafts are a valuable cultural resource. Craftspersons, already with high level manual skills, should be further trained for conservation work with*

[22] Very low contractor attendance at either on account of course eligibility (UCD) and/or lack of awareness pertaining to acknowledgement of RPL by TCD

instruction in the history of their craft, historic details and practices, and the theory of conservation with the need for documentation. Many historic skills will have to be recorded and revived.'[23]

Apprenticeships and primary training

The apprenticeship system is a modular standards-based system generally comprising of 7 alternating phases of 4 on-the-job and 3 off-the-job training and development phases, with the latter not normally exceeding 40 weeks. The system is delivered either at a FÁS Training Centre, an Institute of Technology or another approved training provider.



Extract from FAS website

At present, apprentices who successfully complete approved FAS (forthcoming Solas) programmes are awarded FETAC Certification. On achievement of Level 6 Advanced Certificate (National Craft Certificate) qualifications, they can progress on to higher educational programmes, awarded by HETAC.

The National Skills Competition for apprentices has been established and does encourage use of traditional skills where relevant in a competitive environment, but consistency in such training is not evident. Operative skills in heritage works however are not offered as an integral module in any craft skill training programme accredited either by FETAC or HETAC. In discussion with both bodies, they acknowledge the lack of accredited programmes including traditional skills modules, but stated that no third level institution has approached them proposing such programme amendments, implying that the void in the provision traditional skill training will continue into the near future.

'Courses for continuing professional development can enlarge on the initial

[23] Guidelines for education and training in the conservation of monuments, ensembles and sites ICOMOS, 1993, par.10

education and training of professionals. Long-term, part-time courses are a valuable method for advanced teaching, and useful in major population centres. Short courses can enlarge attitudes, but cannot teach skills or impart profound understanding of conservation. They can help introduce concepts and techniques of conservation in the management of the built and natural environment and the objects within it.'[24]

The executive summary of '*A Review of the Employment and Skills Needs of the Construction Industry in Ireland- A Study by the Skills and Labour Market Research Unit (SLMRU) in FÁS for the Expert Group on Future Skills Needs'* of 2008 made the following recommendations in respect of the apprenticeship system in light of the wider acceptance that new house building was the driver of the construction industry from 1998-2006, but now the focus must be directed toward the repair and maintenance and other sectors;

- *To ensure that the apprenticeship system is maintained at a level sufficient to meet longer-term industry needs*
- *To ensure that the curricula of education and training courses are appropriately adapted to meet the changing requirements of the industry*
- *To ensure that there are no difficulties in respect of skills and qualifications that would hinder the capacity of Irish contractors to exploit business opportunities in overseas markets*
- *To adapt provision in the higher education system to the anticipated quantitative and qualitative changes in the construction industry*

Discussion with training co-ordinators in various institutes of technology suggests that traditional skill training could be incorporated without difficulty. The primary reluctance is sourcing master craftsmen to deliver the courses, but discussions with one institution revealed that it employs a masonry master craftsman who has since been diverted to another course due to the discontinuance of a masonry course in that school. This shortage of master craftsmen is a potential challenge, and in parallel with a scarcity of contractors who have had the opportunity of a pre-1960 traditional apprenticeship; time is effectively running out for the potential for those precious traditional skills to be passed on.

In efforts to advance specialist skill training it is advisable to avoid the situation that has arisen in the UK, where concentration of courses/seminars/demonstrations in geographical terms results in poor distribution of skills nationally. In areas where there is no 'local' critical mass, or conversely where an area has an over-abundance of trained operative, poor procurement opportunities will arise for all.

It is worth noting that when the national Qualifications and Quality Assurance Authority of Ireland is established in accordance with the Qualifications and Quality Assurance (education and training) Act

[24] Guidelines for education and training in the conservation of monuments, ensembles and sites ICOMOS, 1993, par.13

2012 it will adopt the functions of existing awarding bodies of HETAC, FETAC, CIOB/and the NQAI. This will have a considerable impact on the way awards in the construction sector are administered.

Retrospective training for advanced contractors

With few contractors having a formal training in heritage skills, it follows that the majority of contractors seeking to become registered, unless fortunate enough to have had exposure to a traditional apprenticeship, are largely made up of graduates of contemporary apprenticeship schemes. The balance probably comprises graduates of levels 6-8 academic programmes aimed at school leavers. Either way, in light of poor formal apprenticeship opportunities in craft skills since the 1960s, it is assumed that neither latter category of contractors can have acquired adequate grounding in same skills. Critically however, it is imperative that the registered heritage contractor has general knowledge of all craft skills deployed on sites to ensure competent management of skilled sub-contractors and observance of the quality of their work.

However, few opportunities are presented for the advanced contractor to learn, albeit retrospectively, the fundamentals of traditional crafts and materials. Informal specialist training given by suppliers and manufactures serve as primary specialist educational opportunities. Whilst this practice is not specifically endorsed by the RHC, it does offer the opportunity for skilled craftsmen to pass on their skills, as no other vehicle is presently on offer outside the formal education system whereby skilled operatives can engage informally with willing participants.

Whilst some other courses are offered intermittently, they tend to be organised repeatedly by the same master craftspeople, with a dearth of course availability in other major crafts. It is imperative that training is provided for the full spectrum of traditional construction skills. The training for advanced contractors does not have to meet standards of apprenticeship training, but provide the contractor with a minimum introduction to that craft to better equip him in his duty to observe the workmanship of specialist sub-contractors and to fulfil his duty as a competent registered heritage contractor.

6.0 ECONOMIC ADVANTAGES OF A CONSOLIDATED HERITAGE CONTRACTING INDUSTRY[25]

> *'While it is the case that construction by its nature is a cyclical industry, aligned with economic performance generally, it is imperative that we return to a more sustainable sector in Ireland – helped by an increased level of internationalisation and further developing world class competencies and specialist expertise to meet domestic and international demands for a sustainable, functional and attractive built environment.'*[26]

[25] A number of contributions on this topic offered by Brendan Molloy, Economist
[26] FORFÁS terms of reference – construction strategy - June 2012

6.1 Present context

Whilst the level of residential repair, maintenance and improvements in Ireland has been relatively low by European standards[27], the RMI construction sector, which includes heritage works, is estimated as comprising almost a quarter (approximately 24%) of Ireland's total construction output[28.] Unfortunately, statistics for the proportion of heritage works contributing to this definition are unavailable.

Output of the RMI sub-sector increased by 125% from €2 billion in 1998 to €4.5 billion in 2006. Around the peak of the boom, in 2007, the sector made an unprecedented contribution of almost 24% to GNP and accounted for over 12% of employment[29.] Currently it employs over 107,000 people directly, accounting for almost 6% of total employment and in terms of output in 2012 accounted for at least 6% of GNP overall[30]. Note 3, Page 60 of the International Monetary Fund's September 2012 publication of 'Ireland: Selected Issues' states;

> '*At the height of the boom, construction sector employed almost 13 percent of workers. During the crisis, this share shrank by more than half. If the share of construction in total employment increased to the EU average of 8 percent, and employment grew by 10 percent in the next medium-term, around 55,000 new construction jobs would be created.'*

It follows, if public works programmes are adopted and can generate growth in the industry, even if we revert to the EU average, a considerable number of new jobs could be created. If this were the case, the indigenous heritage industry, as a significant sub-sector, would benefit.

Despite its indisputable significance economically, this niche sector has effectively been overlooked in campaigns to promote indigenous industries. Its existence is scarcely acknowledged in reviews of the construction industry and it would appear that no corresponding efforts have been made to promote the sector domestically. It is not regulated, nor does it maintain a standardised skill base from which to draw quality workmanship. This anomaly is further compounded by a condition where formal learning and development opportunities are denied to interested operatives seeking to develop a career in heritage work.

In spite of this, the quiet survival of the indigenous heritage sector, without specific industry support to foster its growth, is indicative of its very success and advancement potential. If efforts were made to capitalise on present trends together with an acknowledgement of future growth as the nation's building stock inevitably ages, they would augment the sector's long-term viability.

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[27] Accounting for 19% of total residential output in 2006. In the same year, the share of output from new construction and repairs and improvements on existing buildings in the residential sub-sector was roughly evenly split across European countries

[28] Table A2.2 B Output (2009), Ecorys Economic Value of Ireland's Historic Environment, 2011

[29] DKM estimate in Construction Industry Review and Outlook (CIRO) (output); CSO QNHS Q4 2007 (employment)

[30] DKM estimate in The Irish Construction Industry in 2012, SCSI, 2012

A further advantage of a tradition in heritage crafts is the undoubted benefit to the tourism industry. Incentives are present to develop tourist venues with a view to enhancing tourism. Properly executed conservation work realised through authentic conservation practice with the result of appropriate presentation of the historic built environment is a certain attraction for visitors.

6.2 Present indigenous workforce context

As outlined above, no formally governed, nationally respected, indigenous heritage contracting workforce exists despite the obvious potential presented by the industry.

At present, whilst specialists in various trades can be found notwithstanding the scarcity, there are many construction managers responsible for heritage sites that do not have any training, formal or acquired, in a heritage craft. This presents a disturbing scenario if they purport to have the competence to adequately supervise and control the quality of specialist sub-contractors' work. If efforts are made to consolidate the heritage workforce, they must take account of this stark anomaly presented within the upper management skill base of heritage contractors.

Assuming that such efforts are realised and a reputable main contracting workforce is established, focusing on the development of a domestic model for the indigenous heritage contracting workforce alone will render it vulnerable to any weakness in the domestic economy. Whilst to a degree this condition exists at present, it can be attributed largely to the poor differentiation between the ongoing requirement to maintain and repair historic fabric thus representing a sustainable industry independent of wider market trends, as distinct from intermittent, voluntary building improvements which primarily are prosperity-driven.

Labour market inflexibilities adversely impact on investment and performance conditions in labour-intensive indigenous industries (as evidenced by the characteristics in the Portuguese economy, which has retained its labour-intensive indigenous industry). To reinforce this argument, Mr. Frank Barry in general terms describes in his report of 2003[31] *'the continuing structural weakness of the indigenous sector'* which is frequently masked by the strength of the economy's foreign sector. The same report is still considered relevant, almost a decade later as it presents a comprehensive economic analysis of the Irish economy from 1950-1990s with lessons that are more relevant today in light of events emerging from 2008 to the present day. FORFÁS in their '*Terms of reference - construction strategy'* of June 2012 further emphasis this point;

> *'There remain some rigidities within the operating environment for construction, for example, labour and other input costs, levies and the review of wage setting mechanisms'.*

[31] Irish Economic Development over Three Decades of EU Membership, Frank Barry, University College Dublin, 2003

A successful workforce, to be internationally marketable and tradable, must therefore be aimed at export. Moreover, it must have a focus beyond the UK, as indigenous businesses that are generally dependent on the UK market are exposed to sterling fluctuations.

6.3 Present international workforce context

As outlined in previous sections, whilst training and development of indigenous craft skills is promoted by our nearest neighbour and greatest competitor, the UK, their efforts to consolidate the role of the heritage main contractor has had little success to date. Furthermore, whilst some UK-based craft skill organisations (roofing, lead and thatching in particular) have gained prominence for registering and promoting qualified members, other significant trades (specialist masonry, carpentry and plastering among others) do not have corresponding registers, nor have they capitalised on the heritage market for their members. A similar condition exists in mainland Europe.

The regulatory environment governing heritage works has grown considerably throughout Europe and so too, in parallel, has the protection of capital investment by public consumers of any product, including heritage works. Despite this crucial context, no consolidated register of heritage contractors, to include craft skills and site managers, exists in any European country. In this regard, a significant gap in the international heritage market exists, with corresponding opportunities for skilled Irish members of a reputable register of contractors.

6.4 Capital investment in the development of an indigenous workforce

> *'The greatest advances of civilization, whether in architecture or painting, in science and literature, in industry or agriculture, have never come from centralized government.'*[32]

Whilst the creation of our built inheritance may be attributed to the genius of individuals, central government does have a specific role to play in its protection and enhancement for posterity. The State's capital investment in education corresponds with an investment in infrastructure to the benefit of public interest. An investment in the regularisation of an industry sub-sector is considered from an economic point of view as in investment in a public infrastructure for the good of the state. The recent construction downturn has positively impacted labour market flexibilities in the construction sector. Conditions are now perfect to develop an alternative, sustainable, competitive and exportable heritage construction industry.

The emergence of a credible, internationally reputable heritage construction sector is entirely dependent on investment in education and more specifically in research and development. Typically however, labour-intensive indigenous businesses located in primarily low-tech sectors engage in very

[32] Milton Friedman

little R&D, presenting an endemic vulnerability to its standardisation, as highlighted by FORFÁS in their 'Terms of reference - construction strategy' of June 2012;

> '*While there are emerging strengths, the construction sector has traditionally underinvested in research, development and innovation, which inhibits its ability to carve out niche market opportunities, particularly in the overseas context'.*

The report further recommends that;

> *'Given the changed economic circumstances, and radically altered operating environment for construction related enterprise, it is timely that we map out a route to a competitive, innovative and sustainable growth path.... and to set in motion necessary actions to achieve this aim'.*

In deference to this point, specific training appropriate to advancement of heritage skills, from individual crafts through to site management is not provided in any of the state's technical institutions. As the heritage industry generally is not administered by a central institution, there is no one driver for the creation of R&D opportunities. In the absence of a cohesive educational strategy to render it sustainable, systems adopted by professional bodies such as RIAI comprising a step-up from traditional narrow educational systems could be observed.

Formal training in respected institutions, where they seek to exceed the European standard for conservation education in striving to build an internationally marketable heritage industry, can only benefit the industry as a whole. In this regard, consideration could be given to the creation of educational research units and/or craft incubation units, whereby contemporary sources can be tested to achieve modern standards in conservation technologies. This is perhaps where an awarding body could assist in providing an incubation unit or insist on inclusion of a research module/option in their qualification.

When questioned about the stark void in the provision of educational programmes for traditional skills, some learning centres respond that there is no demand to support a provision. It is possible that if careers in the heritage sector are marketed as being worthwhile together with a provision of training that is of highest quality, an apprentice will realise the opportunity to build his career in the sector and contribute to the enrichment of the overall heritage industry.

Awarding bodies should aim to significantly exceed the European regulations and have as its USP[33] that Ireland has become the market leader in heritage construction training and development. As intangible as this aspiration may seem at this point in time, it is in reality considerably more realistic to achieve than that hoped to be realised by our UK counterparts. The Irish context of a poorly serviced starting point will serve to its benefit in the rigorous, but feasible, changes that are required to provide a credible, unified heritage workforce. In the UK, as the industry has developed in a sporadic,

[33] unique selling point

somewhat fragmented manner, it will prove a significantly more challenging task to draw errant strands together.

The FORFÁS report cited above summarises three key considerations in respect of this ambition in '*Section III: Identifying and prioritising key barriers and enablers'*;

- *Financing (including project/financial bonds) – from various stakeholders' perspectives: development/developer, building/professional contractors, business development, R&D etc.;*
- *Skills - current/potential gaps in relation to formal training, up-skilling to meet future demand, management development;*
- *Driving innovation (process and product) and R&D within the sector to support future market opportunities and secure competitiveness in an international context*

A genuine, viable and timely opportunity is presented to the RHCB to strengthen the quality of the indigenous traditional skill workforce through effective co-ordination of its education. It is imperative that it acts promptly to succeed in this endeavour.

6.5 Investment in employment opportunities

If efforts are made to consolidate a skilled heritage workforce from craft to managerial level, corresponding efforts should be made to adjust the market to ensure that the state, as the principal purchaser of heritage construction, recognises and accords due weight to registered indigenous contracting firms, where registration in itself stands up to scrutiny.

It is imperative that the nascent heritage construction industry is nurtured while ensuring that procurement practices still comply with EU regulations on public sector tendering.

In this regard, consideration could be given to increase the qualifications and standards required by the OPW and other public bodies in terms of tendering for any heritage, remedial and other work whilst working with awarding bodies to ensure that heritage construction professionals are competitively priced at a European level.

7.0 RECOMMENDATIONS

> *'To conform to...professional characteristics and specifications, the conservator-restorer must receive artistic, technical and scientific training based upon a well rounded general education... Training should involve the development of sensitivity and manual skill, the acquisition of theoretical knowledge about materials and techniques, and rigorous grounding in scientific methodology to foster the capacity to solve conservation problems by following a systematic approach, using precise research and critically interpreting the results'.*[34]

In efforts to suggest recommendations that are viable, those considered achievable in the short term together with more ambitious ventures for long-term consideration are scheduled as follows;

7.1 Short term recommendations

Review of the function of the RHC

The existence of the Register of Heritage Contractors is lauded, as it is unique in Europe in its attempt to unite all heritage skills under the one register, from specialist craft through to site management. It is also unique in that it seeks to define the particular characteristics required of a heritage contractor in its necessity for prospective and existing members to demonstrate their skills, knowledge and competence by means of practical experience, deploying either formally or informally acquired judgements, together with evidence of maintenance of competencies by means of CPD.

However, it is clear in the commissioning of this report, that the RHCB has concerns at the effectiveness of this system. Those concerns were found to be validated, arising in an informed belief that the fundamental aspirations of the RHCB are not being achieved.

As cited previously, whilst it may at first appear that the heritage contracting industry in the UK is consolidated, on closer examination the workforce is fragmented into separate skill groups, each lobbying their respective heritage state bodies with varying degrees of influence, resulting in an imbalance of skill standards across the sector. Critically, the main contractor holds no place in this lobby. The irregular presentation of a unified workforce as identified and regretted by leading conservation institutions, undermines the very solid achievements in the provision of good training and development opportunities for willing participants. As a consequence, despite the commendable investment in education and R&D, best conservation practice in the UK heritage contracting industry cannot be achieved in the absence of an equal representation of registered skills.

[34] The Conservator-Restorer: a Definition of the Profession, ICOM, 2010

With reference to the Irish condition, equal standing for procurement opportunities domestically and internationally must be either acquired, or surpassed. Irish operatives who are willing must have equal opportunities to their UK counterparts to up-skill, learn and develop their respective crafts.

Further, if best practice is to be truly achieved, it is imperative that registration be expanded beyond the realm of firm directors to that of site managers, as the bearers of a firm's ethical approach to heritage contracting on a day-to-day basis.

If a future condition arises whereupon a co-ordinated, credible and reputable unification of the Irish heritage contracting skill base is established, a condition that is wholly achievable in a short time frame, it follows that an Irish register offering achievement of best conservation practice will have a certain place in the international procurement market.

Code of Ethics for heritage contractors

The introduction of a Code of Ethics for heritage contractors is essential, to be established as a datum for all members of the register with members found to be in breach of that code disciplined. This measure will assure genuine conservators of acknowledgement of their high standards.

Establishment of a clear complaints procedure

Whilst very much outside the scope of this brief, it is worth mentioning that the establishment of a complaints procedure must accompany the introduction of a Code of Ethics in respect of the professional conduct expected of a registered contractor.

Review of competencies required of contractors

In tandem with the introduction of a Code of Ethics, the Board will need to clearly define the competencies demanded of a heritage contractor, main or specialised. A table[35] suggesting proposed criteria for registration based on Conference on Training in Architectural Conservation, 1993 (COTAC) could form the basis for defining competency and associated acceptance onto the register, with building contractor, specialist contractor and master craft worker competencies each separately defined.

Furthermore, the Board must activate its core function in providing the framework for achieving contractor competency in respect of demanding a standardised skill base within the heritage contracting industry, irrespective of whether contractors are presently registered or not. The study has shown that the register is not the mark of quality it should be. The simplest means to render this feasible is to demand, unilaterally, that all contractors follow a standardised programme of learning (suggested below).

[35] Colm Murray report 2011

Review of assessment of heritage contractor competencies

Academic qualification alone is an inadequate tool to assess competence. Proof of competence is best achieved in demonstration of performance and knowledge. Assessment of ethics/standards is also decisively difficult to carry out. It can however be achieved to some degree through site visits and review of experience, skill and empathy in practice. Whilst assessment of an applicant's practical skills will prove challenging from an administrative viewpoint, it may be possible with establishment of an elite group of assessors (possibly retired industry professionals) to carry out spot checks on contractors whose written submissions demonstrating alleged competence falls into question. An alternative is the interviewing of such candidates and advising the candidate to demonstrate competence by means of photographic record, sketches and discussion supplementary to the original submission. A further measure could comprise examination of coursework, where contractors attend the suggested Sections B and C structured learning options outlined in Section 7.2.2. below.

The register could also accommodate alternative means of illustration of competence[36] using forms of recording and dissemination by means of YouTube or similar, all in demonstration of how specific jobs or aspects of a project have been approached. The method could be used to convey craft skills to other disciplines achieving distance learning objectives. A multitude of media courses are accommodated within Institutes of Technology also offering craft apprenticeships. Students required to make videos for course projects could liaise with contractors wishing to promote their own skills with a view to recording works in practice, perhaps for a small fee. Such videos, appended to the details of the registered contractor, could give comfort to the Register and specifiers with reference to the previous experience of these contractors in addition to contributing to the wider archive of skills for distance learning purposes.

Attracting contractors to the register

As cited in previous sections, the primary complaint of contractors presently included on the register is their claim that the register is not recognised in the industry as an effective procurement tool, indirectly undermining the great efforts made to achieve competency at all.

Industry consultations identified a failure to achieve critical mass and incomplete skill categories as the register's primary disadvantage in procurement. In order to achieve a critical mass which will assist in the register's function, the register must attract suitable contractors. It is possible, with CIF advances in respect of a national contractor register, that all contractors will inevitably become registered. However, given the established position of the RHC, they are better placed to progress their own status in advance of such statutory requirements.

[36] As suggested by Dr. Nessa Roche of the Department of Arts, Heritage and the Gaeltacht

In the short term, promotion of the positive impact of registration for the industry as a whole must be publicised. The RHCB must protect the integrity of specialist's skills and improve client value systems. They must place a positive emphasis on the advantages of CPD by maintaining simply that there are no disadvantages to continuance and enhancement of skills, networking opportunities and wider dialogue within the heritage sector. They must actively advocate the inestimable work opportunities for a reputable conservation industry internationally.

Sustaining a client base

In parallel with contractor recruitment, it is critical that the RHCB also actively endorses the quality of the register and its members to the wider industry. At present, it would appear that the advantage of the register is both not widely known by potential clients / specifiers and not widely used by those who are aware of its existence. The Board must campaign to address this shortcoming as a means to publicly represent the contractors whose faith is invested in their power to manage, co-ordinate and advance the register's position in the industry. In promoting employment opportunities for registered contractors, the Board can also encourage that state projects refer to register in procurement. They can also encourage local authorities to impose conditions in planning permissions requiring the engagement of registered or suitably competent contractors for heritage works.

Provision of a defined RHC CPD policy

As identified in the previous section, the RHC advocates a range of educational options that is limited in its achievability. Further, they do not clearly cite the benefits of advancement in education. Core competencies for general contractors, and the particular, additional competencies required of qualified heritage contractors should be clearly defined as a way to convey to the consumer the additional services they may be offered by a registered contractor.

Contractors require clarity on how they can become registered if they pursue a defined suite of learning and development courses, or how their already acquired qualifications are recognised through recognition of prior learning. In this respect, information is required as a prerequisite to the scheduling of courses as to cost, duration and availability. Contractors need clarity as to how, in retaining their position on the register through CPD, they will be promoted within the industry.

Establishment of a central repository for heritage courses

Qualifax comprises Ireland's National Learners' Database, but is not well placed to advertise the more informal courses that are commonly provided within the heritage sector. As the breadth of courses under the title of conservation is considerable, and further, given that in the short term at the very least, more structured and accredited courses are offered in the UK, the establishment of a central conservation education repository may benefit the immediate demand for training.

The establishment of a dedicated conservation institute, as suggested in Section 7.3 below, is a desirable, but remote long-term prospect for the heritage industry in Ireland. In the immediate term however, it is possible, with little resources, to administer a web-based network for the wide variety of educational opportunity in Ireland, Northern Ireland and neighbouring UK for use by Irish participants wishing to develop skills in the field.

The administration of the website could comprise part-time employment for a candidate ideally sourced from the heritage construction industry, whose task may include categorisation of courses in respect of resultant qualification (in accordance with NFQ), time, cost and accessibility, information about events, publications and links to bodies operating in the sector.

As the website will be of most benefit to registered members and prospective members of the Register of Heritage Contractors, it may initially be part-funded by admission fees to the register or public funds. However, in time, it is likely to become a repository accessed by other disciplines in the sector. The Board may take the view it would host the website for a period of two years until a principal driver within the Departments of Education or Environment assigns responsibility to an accredited resource.

7.2 Medium-term recommendations

7.2.1 Expanding learning and development opportunities

Establishment of training partnerships

In consultation with relevant educators in various Institutes of Technology, it is apparent that whilst they may not at present incorporate traditional skill awareness in their training programmes, there was willingness on the part of some to accommodate such training. Various educators stated that they were not aware that such demand existed for traditional skill training, and complained that heritage industry leaders should consult with educators to ensure that this void is filled in the provision of comprehensive learning and development opportunities for willing participants. It was the view of more progressive educators, that adopting such changes would not incur significant cost or disruption to their programmes as staffing expertise and spatial resources are already available.

In conversation particularly with one leading Dublin-based educational director, it was suggested that its Construction Technology module (incorporating conservation and maintenance of the built heritage) already offered as part of a level 7 Construction Management BSc. programme could seamlessly expand as a CPD programme for experienced construction professionals. They would be willing to offer such courses as early as this autumn, holding classes at times convenient for working professionals.

Similarly, Trinity College Dublin offers a Diploma in Applied Building Repair and Conservation and University College Dublin offers a Master's in Urban and Building Conservation. It has been noted that in this academic year, only four students are attending the UCD MUBC programme. If the course providers were willing for example, the high cost of the programme's delivery could be shared by contractors seeking to follow individual modules for CPD purposes relating to specialist skills, theory and conservation methodologies. The system of shared learning would retain the integrity of the MUBC qualification as voluntary contactor attendance would not be subject to examination.

In the case of all third level institutions, the use of web-cam recording of lectures and seminars that have relevance to heritage contractors could also be made available for distance learning CPD.

Section 7.12.5 of *Government's Action Plan for Jobs 2012* recommends that the Department of Education and Skills;

> '*Review the apprenticeship model including costs, duration and demand with a view to providing an updated model of training that delivers the necessary skilled workforce to service the needs of a rapidly changing economy and ensures appropriate balance between supply and demand.'*

In this regard, it is recommended that the Board liaises with the Department of Arts, Heritage and the Gaeltacht; the Department of Environment, Community and Local Government; the Department of Education and Skills; and the Department of Jobs, Enterprise and Innovation with a view to purposefully tailoring a genuine educational provision to meet market demand. Communications with FÁS and the proposed new further education and training authority SOLAS, as the public bodies most concerned with early practical learning should be initiated. It is inevitable, when the national Qualifications and Quality Assurance Authority of Ireland is established, that it too will take an interest in the Board's efforts to improve educational prospects for its members and become an industry partner.

Establishment of industry partnerships

As a potentially more immediate measure, established conservation courses are also on offer by professional institutions. The RIAI Conservation Accreditation five-day course (followed by assessment), offering a good grounding for architects in constraints governing heritage works, has a defined curriculum, much of which, or individual modules of which, could benefit the education of advanced contractors. It would be possible to provide a similar five-day programme in line with the institute's curriculum, as lecturers are all sourced from industry, or in liaison with the RIAI seek contractor attendance at the next holding of the course.

Other present course providers that could be willing to engage in partnerships could comprise the following; Irish Georgian Society, Dublin Civic Trust, Building Limes Forum Ireland, The Industrial

Heritage Association of Ireland, An Taisce, the Institute of Archaeologists of Ireland, ICOMOS, the Institute for the Conservation of Historic and Artistic Works in Ireland and potentially the State Laboratory, which has material science expertise.

Delivery of training and development

The RHCB's brief to consider structured vs. un-structured learning and development delivery methods, providing equality of access for all participants has been investigated. It is critical that courses are accessible to all willing participants irrespective of geography, if parity of opportunity and consistency in training is to be maintained nationwide.

In discussion with contractors, industry professionals and course providers, classroom and workshop-based training coupled with practical site assessment is considered the best means to deliver knowledge and ensure qualification in a construction skill. However, in reality, given the capacity of an Irish educational market, it is likely that higher participation could be achieved if the same course is offered by alternative means.

As outlined in previous sub-sections it would be possible, deploying live or pre-recorded techniques for example, to hold a course attended by local participants in a Dublin-based learning centre and deliver it to participants based remotely. A network of courses/demonstrations could be expanded in this manner rendering courses available in one centre accessible to students in other centres. If classroom- based courses can be duplicated as distant learning courses, the accessibility of a range of courses, seminars and demonstrations in geographical terms could be distributed, mitigating against the UK situation, with geographical skill pockets adjacent to specific skill learning centres.

Distant learning courses typically require participants to attend mandatory seminars or workshops at intervals throughout the course. Personal attendance is necessary to truly acquire appreciation of practical skills and foster a peer network. Such infrequent attendance should not present great difficulty to participants if demanded.

Following establishment of realistic education programmes, awarding bodies could be lobbied to introduce a type of CSCS heritage card for suitably competent operatives, rewarding the operative for his endeavours and assuring clients of competence if shown the card.

Practical training

As noted above, it is entirely plausible that prospective registered contractors, whilst perhaps in possession of a higher level construction management qualification, may never have had the opportunity of traditional skill training. In this respect, it is essential, even if short-term courses are considered by the RHCB as appropriate to up-skill, that practical demonstrations are included in those programmes, offering the advanced contractor an opportunity to refer to real scenarios found on site.

International heritage training bodies have tested the 'ruinette', i.e. purpose built 'traditional' building elements, as a training tool, with considerable success. Other countries have acquired buildings for use as live training workshops, inherently having the very defects that would be found on a typical heritage construction site. The latter can be problematic in terms of insurance, though not to the extent that such administrative challenges could not be overcome. The former technique is expensive, and has limited potential – but is found to provide excellent training opportunities as they can be constructed indoors and be used year round.

A third, viable possibility for the Irish context could be establishment of a practical training partnership with state developers of heritage projects. The OPW has stated that unique site situations in particular areas of work habitually arise in their projects, having the potential to provide a wealth of practical training matter for small groups. It could be found that the same opportunities may be willingly provided by local authorities and other state developers.

7.2.2 Enhancing the scope of learning and development

The suggested programme below attempts to co-ordinate training programmes and courses already either formally or informally provided in Ireland with a view that at least in the short term, that the RHCB can enter into partnerships with established educators to ensure that the educational requirements of their members are met. Whilst in the short-term, learning opportunities for contractors are possible in attendance at established courses provided by other course providers, the setting up of a course tailored to the specific needs of heritage contractors is a more advantageous, yet achievable goal. To service partnerships, the RHCB will be required to serve as a central network for course availability and assist members (and prospective members) with management of their own educational prospects.

The following programme is suggested in response to this goal, aspiring to ensure that prospective registered contractors achieve the very minimum in heritage skills education.

Section A comprises some modules offered in a range of 1, 2 or 3 year construction management courses available in Institutes of Technology throughout Ireland, but comprises notionally enhanced modules to compliment the growing RMI and heritage work sector. It is worth noting that although Section A is already largely provided for within the educational framework, albeit in longer term courses, it would be possible to provide a shorter course with similar modules for experienced contractors who may not have the opportunity to avail of such programmes.

Section B devises a specific learning programme for construction management of heritage sites. The result will be that on completion of the four-day course, the contractor will have general knowledge in the ethical and practical management a heritage site. This suggested programme should also be

followed by specialist craftsmen seeking registration in the event that they are employed to carry out a specific works contact with no supervising general contractor.

Section C, which suggests a minimum craft skills awareness programme for contractors of all experiences, is offered as a way to address the deficiencies in traditional craft training in recent years. An assumption has been made that many contractors will not have a grounding in these skills. A competent registered contractor must have general knowledge of all craft skills deployed on sites to ensure competent management of skilled sub-contractors. Mandatory attendance of all modules in Sections B and C must be achieved to ensure a standardised approach to management of heritage works. As outlined elsewhere, modules could be offered either in a training centre or by long-distance learning, but must incorporate workshop or site based learning in practice.

In recognition of prior learning, a defined list of existing courses that would convey exemption from the suggested structured learning programme can be included in the registration criteria. The Board may also carefully consider entry equivalent to the 'grandfather clauses' defined by other professional registers. If a contactor can demonstrate alternative qualifications, they can be exempt from the formal RHCB learning process.

At this time however, mandatory attendance of all modules in Sections B and C is essential if a standardised register is to be achieved. Modules could be offered either in a training centre or by long-distance learning, but must incorporate workshop or site-based learning in practice.
Ideally completion of each section would be followed by an on-line assessment exercise, with a minimum pass mark to be achieved if the associated qualification is to be awarded. As suggested further below, a more stringent examination process should apply to contractors not having sufficient practical experience to adequately submit case studies of previous work.

If, at some point in the future, the FAS/ SOLAS apprenticeship construction craft systems were to avail of the suggested course structure it could be either added into the current classroom based Phase 6, or be provided as a supplementary phase (Phase 8).

Whilst the RHCB may not intend to become the leader in provision of traditional skills training and development, it is possible that in its efforts to improve educational prospects for their members that such courses may also attract practitioners from the wider industry. Inevitably, this position will persist until such a time as a central provider of conservation education is established.

Sections A and B **Heritage Site Management**

Management skill	Discipline / module	Training method	Time (hrs)	Potential partners in education	Potential partners in industry
Section A **General site management skills**	• Duties and responsibilities of a construction manager • Contract administration, and management of sub-contracts • Legal studies for construction managers • Planning and heritage protection controls governing excavations and building works; *archaeology and built heritage* • Other statutory controls governing building works *(building control regulations; fire safety, health and safety, energy performance, inclusive access)* • Construction finance*; measurement estimating and tendering* • Profile of construction trades *managing quality on site* • Introduction to project management; *effective planning and trade co-ordination* • Building performance technology; *building systems, structures, materials and sustainable construction technologies* • Services technologies • Building defects and pathology • Maintenance and conservation technologies • Building and site surveying and dimensional control • Fire, safety and security on site	Available to varying degrees in other institutions	-	**n/a**	**n/a**
Section B **General heritage site management skills**	Duties and responsibilities of a construction manager of a heritage site	C/ O/ DL	**1**	IT	CIF
	Construction and building conservation policy and legislation *All aspects of statutory heritage protection context. Building control regulations updates, health and safety, fire safety, access, energy*	C/ O/ DL	**2**	IT, RIAI, DCT, IGS, UCD, TCD	RIAI, EI, IPI, CIF, SCSI

	efficiency, wildlife and environmental				
	The science and economics of historic buildings	C/ O/ DL	**1**	IT, TCD, UCD	RIAI, EI, IPI, CIF, SCSI
	Architectural conservation and restoration philosophy, its relevance and significance	C/ O/ DL	**1**	UCD	RIAI, EI, IPI, CIF, SCSI
	Vernacular buildings in Ireland	C/ O/ DL	**2**	DCT, IGS, ICOMOS	RIAI, EI, IPI, CIF, SCSI
	Surveying, measuring and recording processes for heritage structures ; *research on and off site*	C	**2**	IT, TCD, UCD, industry providers	RIAI, EI, IPI, CIF, SCSI , IPCRA
	Heritage building performance technologies; *construction and conservation materials; maintenance of historic buildings, emerging technologies etc.*	C/ O/ DL	**3**	IT, TCD, UCD	ACA, RIAI, EI, CIF, SCSI
	Energy efficiency in heritage buildings	C/ O/ DL	**1**	IT, TCD, UCD	ACA, RIAI, EI, CIF, SCSI
	Temporary works design and site investigations *Introduction to sensitive techniques applicable to appropriate investigating and access (health and safety to be covered by other CPD avenues):* - *appropriate protection techniques* - *appropriate erection of scaffolds* - *appropriate shoring/ propping techniques* - *appropriate removal techniques (i.e. floorboard types, patch removal of lime work etc.)* - *appropriate inspection of voids; floor, attic and flues* - *appropriate management of protected species, other environmental constraints* - *appropriate hazardous substance removal* - *reinstatement*	C/ O/ DL C/ W	**5**	not provided at present	ACA, RIAI, EI, CIF, SCSI
	Heritage site fire safety, general safety and security	C/ O/ DL	**1**	not provided at present	ACA, RIAI, EI,CIF, SCSI
	Managing heritage construction projects *effective planning, supervision and trade co-ordination*	C/ O/ DL	**3**	IT	CIF, RIAI, EI
	The business of heritage	C/ O/ DL	**3**	IT	RIAI, CIF,

	contracting; *Measurement, estimating and tendering for procurement of heritage projects*				SCSI, RECI, ECSSA, IPCRA
	Profile of heritage sub-contractor craft skills and trades and quality assessment	C/ O/ DL	**2**	IT, industry providers	RIAI, CIF

Section C Craft skills awareness

Craft	Disciplines/ modules	Teaching method	Time (hrs)	Potential partners in education	Potential partners in industry
Timber	Introduction to timber types, origins and techniques found in historic Irish buildings	C/ O/ DL W	1	IT, UCD, TCD	ACA, RIAI, EI, CIF, SCSI , IPCRA
	Timber decay and its conservation, repair, treatment and maintenance - identification of biological decay mechanisms - repair techniques - treatments	C/ O/ DL W	2	IT, UCD, TCD	
	Processing , treatment, selection of timber	C/ O/ DL W	2	IT, UCD, TCD, industry providers	
	Structural carpentry	C/ O/ DL W	2	IT, UCD, TCD, industry providers	
	Architectural joinery - Traditional craftwork; *panelling, fenestration (and putty), door, stair joinery, fixed joinery etc.* - conservation, repair, treatment and maintenance	C/ O/ DL W	3	IT, industry providers	
	Woodcarving	C/ O/ DL W	1	IT, industry providers	
Masonry	**Stone** - Introduction to stone types and origins found in historic Irish buildings - Stone decay, weathering and its conservation and maintenance - Quarrying, hewing, machining - Stone carving - Stone building - Bedding materials and techniques - Stone repair	C/ O/ DL W	3	IT, industry providers	ACA, RIAI, EI, CIF, SCSI, IPCRA
	Brick - Introduction to brick making, types and origins found in	C/ O/ DL W	3	IT, industry providers	

	historic Irish buildings - Brick decay, weathering and its conservation, repair and maintenance - Building techniques - Bedding materials and techniques				
	Concrete - Conservation, repair and maintenance	C/ O/ DL	1	IT,TCD, UCD	
	Cleaning methodologies and techniques	C/ O/ DL W/ S	2	IT, industry providers	
	Specials - Traditional ceramic/clay/ terracotta conservation, repair and maintenance - Traditional external paving, cobble, brick, internal stone flooring- conservation, repair and maintenance	C/ O/ DL W	1	IT,TCD, UCD, industry providers	
Mortars, renders and plaster	**Lime introduction** - background knowledge- lime production - lime uses - Lime product types and mixing	C/ O/ DL W	2	IT,TCD, UCD, industry providers	ACA, RIAI, EI, CIF, SCSI , IPCRA
	Internal lime work - Conservation, repair and maintenance of flat, decorative plasterwork and associated lathed fixings - Flat- general - Stucco, gesso, papier mâché and other decorative techniques	C/ O/ DL W/ S	3	IT,TCD, UCD, industry providers	
	External - Conservation, repair and maintenance of lime mortar and renders - Bedding materials - Finishes generally - Flat render (lining and ruling) - External stucco - Harling and wet dash - Pointing types, techniques	C/ O/ DL W/ S	3	IT,TCD, UCD, industry providers	
	Specials - Terrazzo and mosaic conservation, repair and maintenance	C/ O/ DL/ S	.5	IT,TCD, UCD, industry providers	
Roofing	Introduction to traditional methodologies	C/ O/ DL	1	IT,TCD, UCD, industry providers	ACA, RIAI, EI, CIF, SCSI
	Slates and Slating- Conservation, repair, maintenance, replacement	C/ O/ DL/ S	2	IT, industry providers	
	Tiles and tiling - Conservation, repair, maintenance	C/ O/ DL/ S	2	IT, industry providers	

	Rainwater goods- Conservation, repair, maintenance and replication	C/ O/ DL/ S	1	IT, industry providers	
	Sheet metals; Lead and lead work (copper and copper work) (flashings, soakers- correct installation techniques); coverings; hot/ folded cold work, decorative	C/ O/ DL/ S	2	IT, industry providers	
	Structural joinery; internal and external- conservation, repair, maintenance	C/ O/ DL/ S	2	IT, industry providers	
	Traditional parapet and chimney types, treatments, weathering - conservation, repair, maintenance	C/ O/ DL/ S	1	IT, industry providers	
	Thatch and thatching - conservation, repair, maintenance	C/ O/ DL/ S	1	IT, industry providers	
Metalwork	Sheet metal introduction; lead, copper, zinc, corrugated iron and their conservation, repair, maintenance	C/ O/ DL	1	IT, industry providers	ACA, RIAI, EI, CIF, SCSI, IPCRA
	Decorative elements; blacksmithing, wrought/cast work and their conservation, repair, maintenance	C/ O/ DL			
	Traditional ironmongery and their conservation, repair, maintenance	C/ O/ DL			
Glass	Traditional glazing introduction	C/ O/ DL	1	IT, industry providers	ACA, RIAI, EI, CIF, SCSI, IPCRA
	Glazing types- plain leaded, stained (and glazing putty)	C/ O/ DL			
	Fanlight repair	C/ O/ DL			
Services	Introduction to traditional services installations	C/ O/ DL	2	IT	RECI, ECSSA, ACA, RIAI, EI, CIF, SCSI
	Traditional plumbing installations- and importance of conservation, repair and maintenance of traditional materials (traditional terracotta/ metal drains/ pipe work/ radiators/ venting/ stoves and exposed flues)	C/ O/ DL			
	Traditional electrical installations- conservation, repair, maintenance	C/ O/ DL			
	sensitive replacement/ replication methodologies	C/ O/ DL			
Decorative finishes	Introduction to traditional decorative finishes	C/ O/ DL	1.5	IT, industry providers	IPCRA, ACA, RIAI, EI, CIF, SCSI
	Internal and external painting - methodologies appropriate for historic surfaces - paint selection (distemper, lime, oil, etc.)	C/ O/ DL			
	Specials - fresco - Gilding - Marbling and graining - Sign writing - Paper hanging	C/ O/ DL/ S			

Abbreviations

C	classroom
O	online
DL	distance learning
W	workshop (practical demonstrations)
S	unique conditions- best demonstrated on site
CIF	Construction Industry Federation
EI	Engineers Ireland
RIAI	Royal Institute of Architects in Ireland
IPI	Irish Planning Institute
SCSI	Society of Chartered Surveyors in the Republic of Ireland
RECI	Register of Electrical Contractors of Ireland
ECSSA	Electrical Contractors Safety and Standards Association Ltd.
ACA	Architectural Conservation Officers
IPCRA	Irish Professional Conservators' and Restorers' Association
UCD	University College Dublin
TCD	Trinity College Dublin
IT	Institutes of Technology
ICOMOS	International Council on Monuments and Sites
IGS	Irish Georgian Society
DCT	Dublin Civic Trust,

Examination[37]

A second brief requirement was to evaluate alternative means to demonstrate competency where a firm experiences problems in providing evidence of their work on recent conservation projects. This aspect of the brief must be considered in the context of the entirely plausible assumption that fundamental skills training are not possessed by many contractors at managerial site level. If this is the case, full attendance at a course such as that suggested above could suffice to give the contractor the general awareness required to lead heritage site work. In seeking admission onto the register, an examination module on coursework could prove a reliable substitute for case study demonstrating practical experience, whereby part of the examination could focus on drawing out past relevant experience.

CPD programme

Acquiring competence should be a mainstay of contractors seeking to become registered, however maintenance of those competencies should be demanded of contractors seeking to continue their position on the register. The temptation to satisfy a minimum requirement is common to all professional registers, but an ethical approach to learning as a means to enhance competence should be encouraged, with surplus CPD attendance rewarded (reduced fees, publication, advertisement etc.)

Once-off attendance will be required at Sections B and C courses for the majority of contractors, amounting to a possible exemption from participation in a CPD programme for a period of two years post completion. After this time, participation in a CPD programme should be required to ensure they keep up to date with changing legislation, practices etc. Where a contractor has demonstrated prior

[37] To be read in conjunction with Section 7.1, Review of Assessment of heritage contractor competencies above

learning achievements to the satisfaction of the Board, and is found to be exempt from the suggested structured learning process, he should similarly be required to attend annual rolling CPD thereafter.

In respect of CPD, the Board should ensure that a minimum of 18 hours structured, and 18 hours unstructured[38] CPD (the construction industry average) be imposed. As specialist contractors may be engaged as main contractors in their own right, it should follow that they have similar CPD requirements to main contractors.

Verification of attendance at CPD should follow the present system.

7.3 Long-term recommendation

Establishment of a dedicated Conservation Institute

As cited above, best practice in heritage contracting can only be achieved in the establishment of appropriate skills, competence, knowledge and ethics common to all participants in the heritage industry. Training and development opportunities for contractors must effectively achieve these objectives, but correspondingly, so too must the educational opportunities for the contractor's peers; the professional colleagues he must work with, to realise best practice from commencement of education though to site management. Collaborative training for all professionals engaged in heritage works must be seriously considered as a means to standardise heritage awareness across all sectors.

Ideally, the establishment of a dedicated Conservation Institute is required to co-ordinate education and ensure consistent application of ethics. Introduction of a national competence standard and ethical code common to all participants in the heritage industry could form part of the institute's remit in view that universal accreditation will raise standards nationwide and improve Ireland's reputation internationally for achievement of good conservation practice standards. A second function of the institute could be the amalgamation of sporadic, insufficiently vetted heritage training provisions under the one training organisation with responsibility for delivery of conservation education to all participants in the industry and to provide a network for all such courses offered nationwide.

Comprehensive and effective educational opportunities would underpin purposeful development of the heritage contracting sector. As noted previously, whilst short term measures can be taken to overcome the absence of a driver for heritage education, the best long-term solution to the dearth of educational opportunities for all participants in the heritage construction industry is the establishment of a centre for excellence in conservation. The centre will serve as a primary source of educational opportunities with a referral to a network of external (endorsed) course availability.

[38] At present the RHCB Assessment of Needs and Action Plan provision is for 16 hours for main contractors, and 8 hours for specialists- which is not in line with other professions in the industry

It is not possible to sustain heritage training and education to a high and consistent standard long-term without such a driver. The RHCB must seek to campaign the provision of a Conservation Institute as a means to protect the credible endurance of best-practice standards in the heritage contracting industry.

8.0 CONCLUSIONS

Best practice in heritage contracting can only be achieved in the establishment of appropriate skills, competence, knowledge and ethics common to all participants in the heritage industry. Collaborative training for all professionals engaged in heritage works is a core recommendation of this study, and should be advocated by the Board as a means to standardise heritage awareness across all sectors. In this regard, introduction of a national competence standard/ ethical code common to all participants in the heritage industry should form part of this lobby, accompanied by universal accreditation across all trades and professions to raise standards nationwide and improve Ireland's reputation internationally for achievement of good conservation practice standards.

In respect of the brief and ensuing findings, a review of educational prospects for heritage contactors is entirely feasible, and will have immeasurably positive consequences for the actual realisation of best practice in heritage works. If the register achieves an international reputation, as it should, it will expand employment opportunities for members internationally. As specialist registers in the UK presently have some Irish members in the absence of reputable domestic registers, it corresponds that an Irish register will also attract membership from abroad, further consolidating its existence.

Whilst the Board's aspirations for the register represents common aspirations for augmenting heritage industries internationally, its establishment of a register is unique internationally. A particularly positive and timely opportunity that is both achievable and realistic is now presented to the Board to enhance the register's status. It is hoped that the Board will embrace this responsibility and administer it to the benefit of the protection of heritage works in Ireland and beyond.

To conclude, the compilation of 10 key recommendations in response to the original brief are proposed for consideration by the Board and are summarised below. Some require greater investment than others, but all are considered realistic and wholly achievable.

Summation 10 key recommendations

1. *Review of the function of the RHC*

- Build on the established registration framework to provide an enhanced, co-ordinated, credible and reputable register that contributes to achievement of best conservation practice on site and having a place in the indigenous and international procurement market
- Building contractor, specialist contractor and master craft worker competencies each to be separately defined as the basis for a standardised skill base within the heritage contracting industry
- Registration to be expanded beyond the realm of firm directors to that of site managers
- Equal opportunities to UK counterparts to up-skill, learn and develop craft and management skills
- Review the manner in which heritage contractor competencies are assessed
- Actively endorse the quality of the register and its members to the wider industry
- Publicly represent the contractors whose faith is invested in their power to manage, co-ordinate and advance the register's position in the industry

2. *Defined Code of Ethics*

- Establish a best practice Code of Ethics as a datum for all members of the register
- Members found to be in breach of Code of Ethics to be disciplined

3. *Attracting contractors to the register*

- Register to become an effective procurement tool
- Register to achieve critical mass in all skill categories
- Register to attract suitable contractors in promotion of the positive impact of registration for the industry as a whole
- Progress in education to be acknowledged, by means of awarding qualifications, reduced fees etc.
- Actively advocate the inestimable work opportunities for a reputable conservation industry internationally
- Communicate the basis for change and manage resistance if recommended changes are implemented

4. *Sustaining a client base*

- Assurance that registered contractors produce work that is a mark of quality
- Assurance that the register is easy to use and provides choice in finding a contractor
- Core competencies of qualified heritage contractors to be clearly defined as a way to convey to the consumer the additional services they may be offered by a registered contractor

- Encourage that state projects refer to the register in procurement
- Encourage Local Authorities to condition in planning consents the engagement of registered or suitably competence contractors for heritage works as a means to achieve best conservation practice on site

5. Defined RHC CPD policy

- The RHCB to clearly cite the benefits of advancement in education and presenting an inherently positive emphasis on the advantages of CPD by maintaining that there are no disadvantages to continuance and enhancement of skills, networking opportunities and wider dialogue within the heritage sector
- Clarity required on how contractors having little heritage background can become registered if they pursue a defined suite of learning and development course
- Clarity required on how contractors having qualifications are recognised through recognition of prior learning
- Information required as a prerequisite to the scheduling of courses as to cost, duration and availability
- Clarity as to how, in retaining their position on the register through CPD, contractors will be promoted within the industry

6. Establishment of a central repository for heritage courses

- Establishment of a central conservation education repository required to co-ordinate education and ensure consistent application of ethics for the purpose of meeting the immediate demand for heritage education in the construction sector
- Administer a web-based network for the wide variety of educational opportunities in Ireland, Northern Ireland and neighbouring UK for use by Irish participants wishing to develop skills in the field
- Longer term recommendation for lobbying of the establishment of a Heritage Skills Centre for Excellence/ dedicated Conservation Institute

7. Establishment of partnerships

- Relations to be established with Institutes of Technologies in respect of demand for traditional skill training. Potential to accommodate shorter CPD opportunities within their longer term construction management academic programmes to be investigated
- Relations to be established with universities offering long-term conservation courses with a view to supplementing low attendances with short-term contractor CPD
- Relations to be established with professional institutions offering conservation courses to their members to seek contractor attendance at individual modules of their courses

- Relations to be established with NGOs offering conservation courses to highlight areas of study pertinent to contractor education that may be considered in future curricula
- Relations to be established with OPW, Local Authorities and the State Laboratory who may have opportunities for learning on state projects
- Purposeful liaison with the Department of Arts, Heritage and the Gaeltacht; the Department of Environment, Community and Local Government; the Department of Education and Skills; and the Department of Jobs, Enterprise and Innovation with a view to tailoring a genuine educational provision to meet market demand
- Communications with FAS and SOLAS with regard to alignment of heritage training with early practical learning programmes

8. Introduction of RHC intensive educational programmes

- Formulation of a suite of educational programmes achieving the very minimum in heritage skills education, from general site management through to craft skills supervision, tailored to the particular learning and development needs of heritage contractors
- Consideration of purpose built 'traditional' building elements/ acquired buildings as training tools complimented by establishment of practical training partnerships with OPW and Local Authorities
- Liaison with Institutes of Technology to incorporate existing building /heritage site management learning in their construction management programmes, in line with the augmented Section A syllabus above, to better reflect the growing market for RMI and heritage works in the industry
- Introduction of a specific structured learning programme for construction management of heritage sites; Section B above
- Introduction of a specific structured learning programme to achieve a minimum in craft skills awareness for contractors of all experience to ensure competent management of skilled sub-contractors; Section C above
- Compulsory attendance of all Sections B and C modules must be achieved to ensure a standardised approach to management of heritage works
- In recognition of prior learning, a defined list of existing courses by-passing attendance at the structured learning programme to be included in the registration criteria
- The Board to consider entry equivalent to the 'grandfather clauses' defined by other professional registers
- FAS/ SOLAS apprenticeship construction craft systems could avail of suggested structured learning programme structure in incorporating same into the current classroom based Phase 6 or be provided as a supplementary phase (Phase 8)
- Introduction of an NFQ Diploma in Building Conservation Management qualification to reward investment in education and incentivise attendance

9. *Defined RHC CPD programme*

- An ethical approach to learning as a means to enhance competence should be encouraged, with surplus CPD attendance rewarded (reduced fees, publication, advertisement etc.)
- A minimum of 18 hours structured, and 18 hours unstructured CPD to be imposed for main and specialist contractors
- Once-off attendance at educational programmes above arising in an exemption from participation in a CPD programme for a period of two years post completion
- After this time, participation in a rolling CPD programme will be required
- Rolling CPD to comprise either further (selected) attendance at full programme or attendance at course available in wider industry

10. *Improved delivery of training and development*

- Consistency in scope and quality of learning programmes contributes to standardised skill base
- Alternative means of delivery of courses by recording/ links to reach wider audience
- Personal course attendance at infrequent intervals required to consolidate appreciation of practical skills and foster a peer network
- Introduction of a CSCS Heritage card for suitably competent operatives