



**Report on Research and Consultations**

**COMPETENCY BASED ASSESSMENT FRAMEWORK  
FOR THE RESIDENTIAL CONSTRUCTION SECTOR**

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# Table of Contents

<b>1.0</b>	<b>Introduction.....</b>	<b>2</b>
1.1	Strategic Priorities.....	2
1.2	Strategic Approach.....	5
1.2.1	Professionalization.....	5
1.2.2	Prior Learning Assessment and Recognition (PLAR).....	5
1.2.3	Competency Based Assessment.....	6
1.3	Objectives.....	8
1.4	Methodology.....	8
<b>2.0</b>	<b>Experience in Other Jurisdictions.....</b>	<b>9</b>
2.1	Competency Based Assessment in the UK.....	9
2.2	Developments in Other Jurisdictions.....	15
2.3	Concluding Comments.....	21
<b>3.0</b>	<b>Industry Consultations in Nova Scotia.....</b>	<b>22</b>
3.1	Province-Wide Focus Groups.....	22
3.2	Consultations on the Competency Based Assessment Grid.....	24
3.3	Consultations with Industry Specialists.....	26
<b>4.0</b>	<b>Conclusions.....</b>	<b>27</b>
4.1	Challenges Facing the HB&R Sector.....	27
4.2	Next Steps.....	28
	<b>Appendix I: Examples of Licensing Models in Other Jurisdictions.....</b>	<b>29</b>
	<b>Appendix II: Competencies and Certification Levels for Home Building and Renovations.....</b>	<b>54</b>



## 1.0 Introduction

### 1.1 Strategic Priorities

Since becoming a sector council in 2000, the Atlantic Home Building & Renovation Sector Council (AHBRSC) has consulted extensively with employers and other stakeholders in the home building and renovation industry in Nova Scotia on issues related to training and professional certification. The Council has also carried out, or has underway, new research in the following areas of concern:

- ▲ The scope and economic impact of the sector;
- ▲ The major human resources trends and challenges;
- ▲ The skills and training needs of the sector;
- ▲ The seasonal workforce;
- ▲ The renovations sector;
- ▲ The apprenticeship system;
- ▲ The building inspection system;
- ▲ Impacts of the underground economy on the sector;
- ▲ Skills Shortages in the sector; and
- ▲ An appropriate model for prior learning assessment and recognition (PLAR) in the sector.

The following *five core priorities for human resource development* have emerged from the research and consultations to date:

#### 1. *Recognition of the Home Building and Renovation (HB&R) Sector:*

The HB&R sector has specific and unique characteristics that are not adequately recognized and addressed in institutional policies and programs and in occupational standards. The sector is made up predominantly of small and medium-sized businesses with limited unionization. Many firms are owned and operated by qualified tradespersons with specialized knowledge and skills to manage their



businesses, communicate with clients and deal with regulatory systems. Some firms are set up to do all aspects of residential construction project “in house”, while many others operate as sub-contractors for specialized services such as drywall, framing, roofing, etc.

Despite these distinctive elements, HB&R industry leaders have continuing concerns that governments and training institutions still see the HB&R sector as the same as, or simply as a sub-sector of, the industrial, commercial and institutional (ICI) construction industry.

### *2. Training and Certification for Trades Specializations:*

Current education, training and apprenticeship programs are often not suited to the diverse and changing labour force conditions that are typical of residential construction. Employers (particularly those engaged in sub-contracting work) are often looking for people with advanced knowledge and skills in particular trades specializations, and find that graduates of full programs lack these specific competencies. By the same token, trades students and apprentices who return to industry jobs before completing their full programs receive no formal recognition for the knowledge and skills they have acquired. Employers, and many students and apprentices, are interested in shorter-term, modularized training to provide advanced competencies as framers, drywallers, finish carpenters, roofing specialists, etc.

### *3. Support for Training the Employed Labour Force:*

Managers and owner-operators in HB&R businesses recognize the need for ongoing training to keep up with changes in building methods, materials and tools, and to meet new regulatory requirements for health and safety, consumer protection and environmental stewardship. Many small and medium-sized businesses have difficulty supporting such training on their own, and most of the available financial support is targeted on pre-employment training and programs for unemployed workers. Efforts to upgrade the current workforce are also impeded by essential skills deficits. The resulting “training gap” represents a significant constraint on efforts to maintain productivity and competitiveness in the sector.

### *4. Effective Regulation of the Underground Economy:*

Underground economic activity is widely seen by legitimate HB&R employers as the single biggest constraint on human resource development in the industry. Wages and profit margins are held down



throughout the sector by competition from underground operators who generate roughly 25% of total business activity. In an environment of increased competition for skilled workers, underground activity impacts negatively on the image of the industry and on its capacity to maintain a qualified and committed workforce. Industry leaders place the highest priority on policy and program changes to strengthen the enforcement of building codes, labour standards, taxation requirements and Employment Insurance rules.

*5. Licensing and Compulsory Certification:*

There is strong support among HB&R industry leaders for the development of mandatory licensing of contractors in the sector. The future stability of the industry demands higher and more uniform skills standards to support improved productivity and competitiveness. Licensing is also widely seen as an effective way to control underground economy activity in residential construction. Compulsory certification for the carpentry trade would also contribute significantly to consumer protection and to improving the image of the industry by limiting “fly by night” operators.



## 1.2 Strategic Approach

### 1.2.1 Professionalization

The term “professionalization” has been adopted by industry leaders in Nova Scotia to describe a comprehensive approach to dealing with the five core issues described above. Professionalization involves the following changes:

1. Development of industry supported occupational standards for certification and licensing<sup>1</sup> for the HB&R sector, including the recognition of trades specializations;
2. Establishment of a formal governance body to carry out certification and licensing based on the new standards;
3. Implementation of a prior learning and assessment process to certify or license contractors and tradespersons who are already established professionals but have not had formal training;
4. Building effective partnerships between industry and the deliverers of training and apprenticeship to harmonize curricula and program designs with new industry standards and occupational categories; and
5. Development of new approaches for regulating and inspecting residential construction activities to provide greater scope for “self-policing” by licensed professionals.

### 1.2.2 Prior Learning Assessment and Recognition (PLAR)

Consultations with industry and the review of the salient research and policy literature make clear that industry acceptance of new certification methods and standards associated with broader professionalization initiatives is dependent upon the integration of people already established in the industry within the new system, at a minimum of financial cost and time away from their businesses.

One limited form of PLAR is to “grandfather” people already in the industry into the new certification

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<sup>1</sup> See *Certification Program Development Guide*, prepared by Assessment Strategies Inc. for Human Resources Development Canada, 1999. The document proposes that the term “certification” be used to denote training and experience standards that are not mandatory for trades occupations, while “licensing” be taken to mean certification that is mandatory. Currently in Nova Scotia every new home construction project requires a “licensed” plumber and a “licensed” electrician, but the carpenter who erects the structure and does the finishing work does not have to be certified.



standard, essentially saying that the new rules and requirements do not apply to anyone who meets a minimum standard for having an established professional status at the time when the new system comes into effect. This approach has been used with other industries in Canada undergoing professionalization, most notably the fishing industry. Leaders in that sector make clear that professionalization would never have been accepted without the grandfathering mechanism.

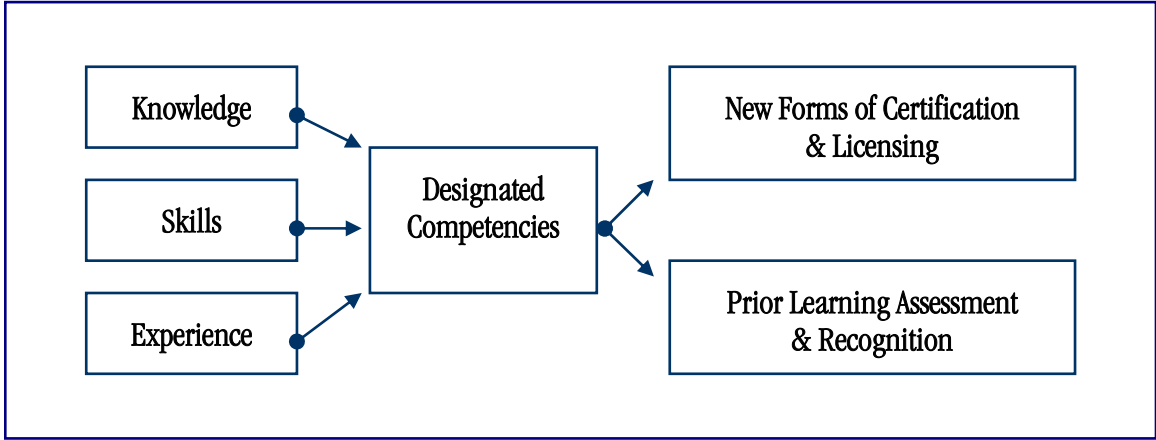
Leaders in the home building and renovation sector in Nova Scotia have indicated through the consultations that they do not favour a simple grandfathering approach because of the lack of effective standards. They would prefer a system that recognizes the knowledge and skills of established professionals based on identified competencies and experience in the industry.

There is agreement, however, that an effective and relevant PLAR program is necessary if the sector is to move forward towards professionalization and avoid undue negative reaction from industry members who lack formal credentials.

### **1.2.3 Competency Based Assessment**

Industry leaders and other stakeholders in the residential construction sector recognize that the foundation for professionalization, including the PLAR component, is an occupational analysis that accurately reflects current production methods and work processes in the sector. Given the nature of the sector and the regulatory environment, it must also include general knowledge and skills specific to the home construction field, such as small business management, workplace and customer communications, house as a system, building codes, fire prevention, moisture control, insulation systems, and workplace safety.

Use of the term “competency” is increasingly accepted as a means to describe the blend of knowledge, practical skill and experience needed to master a discrete workplace task or responsibility. “Competency based assessment” is an alternative approach to certification that focuses on the actual ability to carry out workplace tasks and responsibilities rather than on the traditional training “credentials”. It does not matter how the individual acquired the competency – the challenge is simply to determine whether s/he has it.



As the diagram suggests, competencies are assessed on the basis of pre-defined units of knowledge, skills and experience required for the successful and safe performance of discrete workplace tasks. Once these competencies are defined, and methods of assessing whether an individual has them or not are identified, it becomes possible to reorient certification procedures to actual work competencies, and to integrate prior learning assessment and recognition with regular human resource management processes in the workplace.

In its consultations with industry the AHB&RSC received direction to proceed with the development of a competency based assessment model as a foundation for new training and certification approaches. The process would be to take the existing occupational analysis framework, adapt it to home building and renovation in Nova Scotia and add to it the more general knowledge and skill requirements specific to the sector.





### **1.3 Objectives**

Based on the background and the strategic approach outlined above, the objectives of this project are therefore:

1. To elaborate an up-to-date, competency based assessment framework for HB&R contractors and for carpentry trades workers (including trades specializations) within the HB&R sector in Nova Scotia; and
2. To promote buy-in among employers and the education, training and apprenticeship systems for the continued development and testing of the new framework as a basis for professional licensing and certification in the HB&R sector.

### **1.4 Methodology**

The activities of this project are to:

1. Develop a prototype competency based assessment framework for HB&R contractors, supervisors and carpentry workers with appropriate levels of competency.
2. Conduct workshops and other consultations with leaders from different industry sub-sectors to improve and validate the framework. The sub-sectors include:
  - a. Small owner-operator renovations firms doing multi-skilled generalist work;
  - b. Small owner-operator home construction firms doing multi-skilled generalist work, with or without sub-contractors;
  - c. Larger employers producing large numbers of units on housing developments;
  - d. Sub-contractor employers offering specialized services in dry-walling, framing, foundations, finish carpentry, etc.; and
  - e. Employers in firms producing pre-fabricated or semi-pre-fabricated housing units.
3. A workshop with employer representatives from industry sub-sectors and decision-makers from the training and apprenticeship systems to develop strategic perspectives on next steps for development and implementation.



## 2.0 Experience in Other Jurisdictions

The work of this project included a review of the salient literature to identify models for professionalization and relevant institutional arrangements and regulatory approaches that have been adopted in other jurisdictions.

A grid describing different models for professionalization in the residential construction sector and related fields is attached in Appendix I.

It is clear from this review that there is a general trend in the home building and renovation industry towards professionalization in terms of greater self regulation of occupational standards and the introduction of various forms of licensing of contractors and/or trades workers. This trend takes different forms in different settings, with more or less emphasis on specialized training and reform of certification systems. As shall be seen, however, there are some important elements that are common to all of the settings.

### 2.1 Competency Based Assessment in the UK

The concept of competency-based assessment evolved in Europe after the formation of the European Community in 1967. Movement towards a common market raised a major challenge in the area of labour mobility. Each of the original 6 member states had their own occupational standards and training and certification systems. Rather than try to harmonize training systems and curricula, the preferred approach was to develop new certification systems based on actual workplace competencies and then test whether individual workers had these competencies regardless of how or where they had learned them. A key strategic step was to establish new certification bodies outside the traditional training system through partnerships between government and industry.

In this consideration we will focus on the National Vocational Qualifications (NVQ) system as it has been developing in the construction industry in the UK. The system first took shape in the 1970s when the UK government established the Qualifications and Curriculum Authority (QCA) to develop a National Qualifications Framework covering all major industry sectors. It in turn facilitated the development of industry-based organizations to operate as National Training Organizations (NTOs).



Over 70 NTOs have been recognized by the QCA to represent both individual industries and occupations that cross many sectors (e.g., information technology, management). They bring together employers, government and the education and training institutions to plan and implement comprehensive skills development strategies. Their mandates include:

- ▲ Development and implementation of national and regional policies on learning and skills;
- ▲ Assessing skills needs and shortages in their sectors;
- ▲ Development and ongoing renewal of training and certification standards; and
- ▲ Development and delivery of training programs within their sectors.<sup>2</sup>

There is one NTO for the construction industry, the Construction Industry Training Board (CITB). Its mandate is described as follows:

*CITB is a statutory body governed by the 1982 Industrial Training Act, as amended. Its primary purpose is to initiate, improve and facilitate training and to develop training standards for use throughout the construction industry, with particular emphasis on helping it to achieve an adequately trained workforce. CITB has statutory powers to collect a levy to support training from all employers and firms registered with it whose main business lies in the building, specialist building and civil engineering sectors of the industry, except small firms with an annual payroll of less than £61,000. These are excluded from levy liability but remain eligible to benefit from CITB training grants and other services.<sup>3</sup>*

In all sectors there are 5 levels of NVQs:<sup>4</sup>

- ▲ Level 1 – introductory awards for those new to the sector, covering routine tasks or basic knowledge and understanding;
- ▲ Level 2 – Skilled tradesperson qualifications for those with some knowledge of, and ability in, the area and carrying substantial individual responsibility;

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<sup>2</sup> [www.nto-nc.org/newsite99/who&what/ntos.htm](http://www.nto-nc.org/newsite99/who&what/ntos.htm)

<sup>3</sup> From "Skills Shortages in Housing", First draft of a CITB discussion paper, May 24, 2001,

<sup>4</sup> [www.city-and-guilds.co.uk](http://www.city-and-guilds.co.uk)



- ▲ Level 3 – skilled craftsperson qualification recognizing complex work involving supervisory ability;
- ▲ Levels 4 – Managerial and professional qualification demanding specialist or technical expertise;
- ▲ Levels 4 & 5 – Managerial and professional qualification demanding the application of complex principles and techniques involving responsibility for human and material resources.

The CITB is responsible for setting standards and offering certificates for levels 1 to 3 in the construction industry. All standards are developed with industry partners and must be approved by the QCA. As in Canada with the NOC classifications and the existing national sector council for the construction industry, the NVQ system does not differentiate residential construction from ICI trades. There are currently 49 NVQs in the construction field, including 13 at level 1, 16 at level 2, 18 at level 2 and 3, and 2 at level 3 only.

*NVQs... are designed to meet the standards set by industry in particular occupation areas. They are designed to cover various aspects of a job or area of work, assessing the skills actually used in the workplace. They can be completed unit by unit, enabling an individual to build up a qualification as conveniently as possible. A mix of mandatory and optional units can allow a candidate to tailor the qualification to their particular role [in the workplace].<sup>5</sup>*

Each NVQ is made up of a number of individual “units of competence” or required standards for the performance of a particular task. Each unit can be assessed separately. The units themselves are made up of clearly defined “elements of competence” comprised of:

- ▲ A “range statement” that sets out the range of tasks for which competence must be proved;
- ▲ Performance criteria;
- ▲ Performance evidence in term of practical work that must be mastered; and
- ▲ Knowledge evidence that must be demonstrated or proven.<sup>6</sup>

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<sup>5</sup> [www.city-and-guilds.co.uk](http://www.city-and-guilds.co.uk)

<sup>6</sup> *How to Get a Construction NVQ*, a pamphlet produced by the CITB, March 2001; p. 6.



To acquire an NVQ a candidate goes to a local organization that has been approved by the CITB to assess competencies. They might be colleges, training centres or private construction companies. The main requirement is the presence of individuals who have been certified by the NTO as qualified assessors. The assessment process takes account of the following evidence:

- ▲ Evidence of previous achievements including training certificates and employer endorsements or letters of recommendation;
- ▲ Evidence of required knowledge through oral or written tests; and
- ▲ Evidence from a qualified “work based recorder” who documents the work activities undertaken by the individual on work sites.

Candidates are encouraged to develop portfolios of evidence including:

- ▲ Record books and diaries of work experience;
- ▲ Time sheets;
- ▲ Bonus sheets;
- ▲ Incident reports;
- ▲ Videos;
- ▲ Assignments and projects;
- ▲ Case studies; and
- ▲ Testimony of co-workers and supervisors.



Each NVQ is designed to address a substantial worksite task, and in principle an individual becomes employable on the basis of just one NVQ. Examples of NVQs that would be relevant to the residential construction area include:

NVQ	Level
Building craft occupations	1
Floor coverings	1,2 & 3
Form working	2 & 3
Roofing occupations	1
Roof sheeting and cladding	2
Roof slating & tiling	2 & 3
Scaffolding	2 & 3
Wood machining	2 & 3
Wood occupations	1, 2 & 3

NVQs have a number of advantages from both the employer's and the employee's point of view:

- ▲ NVQs certify that an individual can do a job in contrast to traditional certification systems that only show that he or she has passed a course;
- ▲ NVQs are open to everyone with no time limits, age limits and entry requirements;
- ▲ Individuals can get credit for learning from experience and informal learning;
- ▲ Individuals can qualify with units and sub-units and do not have to complete the whole NVQ at one time; and
- ▲ Most importantly, an NVQ establishes that a potential employee can do a particular job.<sup>7</sup>

NVQs provide a career path in an industrial environment where the labour market has traditionally operated on an informal basis. NVQs document the skills employees acquire from the first day at work so

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<sup>7</sup> *Introduction to Construction NVQs – a Guide for Employers*, a pamphlet produced by the CITB, 1999; p. 9.



that when an individual changes employers they have a way to demonstrate their status as qualified trades workers.

In the context of evolving European labour market policy, governments and industry in the UK have invested heavily in the development of the bureaucratic and program infrastructure to build and operate the NVQ system. Because it covers all industry sectors it potentially creates a much more fluid and dynamic human resources environment. The system is still evolving and problems are being worked out.<sup>8</sup>

In a 2003 interview with Mr. Patrick Bowen, a senior manager in the CITB, the following points emerged:

- ▲ The CITB currently generates revenues of £80million from levies on employers and is able to leverage another £40million from industry for services it provides.
- ▲ There is active consideration in the UK government of replacing all NTOs by “Sector Skills Councils” (SSCs) based on the Canadian model that they have studied very carefully. Government is currently encouraging NTOs to restructure into a smaller number of SSCs. The target is to have as few as 18 SSCs, but the CITB is expected to survive intact because of its size and its independent revenue sources.
- ▲ There are very severe shortages of skilled workers in the construction industry in the UK. They estimate a need for 350,000 new workers over the next 5 years just for replacement of retiring workers. It is a struggle to get people into construction because young people are not oriented to it. They are trying to attract women and visible minorities.
- ▲ Over the past 5 years there has been a 60% drop in applications to degree programs in all technical skills and professional programs including construction management and design. UK universities are closing these courses because of no students. The current CITB strategy is to focus on upgrading people in the industry, and on recruiting people from other backgrounds.

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<sup>8</sup> See [www.rethinkingconstruction.com](http://www.rethinkingconstruction.com)



- ▲ NVQs are not mandatory, and there is no licensing system for home builders. There is a very serious problem with “cowboy builders”, i.e., the underground economy. There is some push to introduce mandatory training standards now that the NVQ system is in place.
- ▲ Government is responsible for 40% of construction output in UK. By 2010, everyone on government construction sites will have to have certification of competence. As a result, there is a big drive for people to get qualified.
- ▲ NVQs are being revised to reduce the overall number and to consolidate trades areas. There currently are 9 NVQs for different types of roofing work. Government is pushing for them to be integrated into one general qualification. With NVQs the pendulum swung from single occupations to multiple areas of trades competence and is now moving back towards larger categories (e.g., “carpenters”). The priority is to have workers who have solid and demonstrable competencies in specific areas.
- ▲ The CITB spends £3million a year on Curriculum Center initiatives to go into schools to promote awareness of construction careers. In 2003 they spent £1million on a “positive images” advertising program, and industry is willing to invest more in it.

## **2.2 Developments in Other Jurisdictions**

On an international level, Victoria State in Australia provides the most comprehensive model for regulatory reform in the residential construction sector (See Appendix I). Root and branch changes were introduced in the early-1990s to address the need for improved consumer protection and to reduce underground activity. The key elements of the reform program included compulsory insurance for building practitioners for product liability, and compulsory registration of building practitioners linked to ability to obtain insurance coverage.

In Ontario, the Building Regulatory Reform Advisory Group (BRRAG) Report, mandated by the Minister of Housing in 2000, provided a full blueprint for the reform of the building regulatory framework. Again this reform initiative stemmed from concerns about inadequate consumer protection, underground activity, lack of professionalism among building practitioners and the complexities of the regulatory system among three levels of government.





Many of the BRRAG recommendations had to do with the building inspection system and liability issues, but the report did address licensing of builders. The following is a summary of the BRRAG recommendations in this regard:

*For builders (including new home builders, renovators and non-residential contractors), BRRAG recommended that firms be licensed, and that a 'key criterion for the firm obtaining a license be that the firm employs qualified (certified) persons, namely site supervisors, who have passed a provincially-administered examination for Building Code competency'.<sup>9</sup>*

In the Ontario system, new home builders must be registered with the Ontario New Home Warranty Program. Registration involves a somewhat complex process to review the firm's capacity to meet its financial obligations and the requirements of the Building Code. The BRRAG recommendation for compulsory licensing of building inspectors has been implemented, but licensing of the builders themselves is still under active review by the provincial government.

The construction industry in Québec went through a period of reform in the 1970s resulting in compulsory builder registration and mandatory warranty coverage that have been in effect in the province since then. All builders in new home construction and residential renovation have to be licensed based on formal examinations to establish technical, administrative and safety competencies.

In British Columbia, the reform process has been driven by public demands stemming from the "leaky condo" problems in the late 1990s. The situation is summarized as follows:

*Since July 1999, new home builders are required to be licensed by the HPO [Homeowner Protection Office – a provincial crown corporation]. The primary requirement for a license is that builders have third-party home warranty insurance – which is required by law for new home construction. . . . The HPO is working with the home building industry and others to establish technical and business training and competency testing.<sup>10</sup>*

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<sup>9</sup> Lampert, G & Denhez, M., "What does Occupational Licensing for Builders Actually Mean?" a policy paper prepared for the Canadian Home Builders' Association, May 2001; p.A-4.

<sup>10</sup> Ibid, p A-1.



Residential renovation contractors are required to be licensed as well if they undertake projects that affect the “building envelope”.

The Carma Centre for Excellence in Land Development and Home Construction in Calgary Alberta is currently working with the residential construction industry to develop skills profiles for some 60 occupations, with plans to offer pre-employment training and certification for each occupational category. The training will be available at the high school level to prepare young people for productive entry-level jobs.

It is worth reviewing recent developments in Saskatchewan at some length because of the similarities with Nova Scotia. The Saskatchewan Home Builders’ Association (SHBA) defines the situation in the province as follows:

*The fundamental challenge facing the residential construction industry in Saskatchewan is current and future capacity. The current construction occupational descriptions do not break down the residential components of each occupation. The existing apprenticeship program and provincial training programs for construction trades and workers are very comprehensive with significant portions devoted to non-residential construction.*<sup>11</sup>

Based on the results of a survey of residential construction industry in Saskatchewan [in 2003], the major issues identified were:

- ▲ Shortage of skilled workers (particularly in the carpentry trades);
- ▲ Low wages;
- ▲ Young people not entering the trades;
- ▲ Poor image of the industry; and
- ▲ Underground economy.

The SHBA strategy to meet these challenges is centred on a joint effort with the Apprenticeship and Trade Certification Commission to develop a new training and certification system based on clearly defined

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<sup>11</sup> [www.saskhomebuilders.ca](http://www.saskhomebuilders.ca)



residential construction occupations. Descriptions of each new occupational category will be developed and validated in terms of the following elements:

- ▲ Primary tasks carried out by the occupation;
- ▲ Working conditions;
- ▲ Abilities, skills and knowledge associated with the primary tasks;
- ▲ Education and training requirements; and
- ▲ Employment and advancement potential.

The new “residential construction occupations” correspond to the “trades specializations” that the Nova Scotia industry has proposed; i.e., they are based on specific residential construction fields of work such as foundations, framing, interior and exterior finishing. The SHBA will be working with its government and training sector partners on implementation of the new approach over the next year.

The residential construction industry in Newfoundland and Labrador undertook a comprehensive sector study initiative in 2003.<sup>12</sup> The results were reviewed at a planning workshop where industry and government representatives identified two key challenges with respect to training and apprenticeship: attracting suitable young people to the industry for life-long careers; and increasing support for current industry workers and trades people to move to more highly skilled trades positions. There was agreement on key areas for change in the education, training and apprenticeship systems:

- ▲ More extensive marketing of careers in the industry through the public school system;
- ▲ Development of training modules to qualify new entrants for specific competency areas (such as framing, roofing, drywall, etc.);
- ▲ More affordable and accessible training modules for employed workers; and

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<sup>12</sup> Atlantic Home Building & Renovation Sector Council, “Finding The People To Do The Job: Employer Perspectives on Human Resource Challenges in the Home Building and Renovation Industry in Newfoundland & Labrador”, Planning Workshop Report, January 2004.



- ▲ Better sharing of information on available programs between the training system and industry.

A majority of the employers surveyed by the Newfoundland and Labrador study favoured licensing of both carpenters and residential contractors to raise overall standards for residential construction and renovation, and to reduce underground activity.

The construction industry in Prince Edward Island has recently completed a skills shortages analysis and a human resource development strategic planning process. Industry leaders in both the residential and the industrial, commercial and institutional (ICI) sectors participated in the process, together with government and training sector partners. As with Saskatchewan and Nova Scotia, the major strategic priorities emerging from the process were skills shortages, low recruitment, inadequacy of training systems and the underground economy. The major priorities for future action centred on establishment of a sector council and implementation of a comprehensive professionalization program. Specific action priorities for the new sector council included:<sup>13</sup>

- ▲ Industry and government partners should develop mandatory licensing of contractors to control underground activity;
- ▲ Industry and government partners should develop compulsory certification for carpenters (parallel to current rules for electricians, plumbers); and
- ▲ The sector council(s) should work with [the training system] to introduce recognition of trades specializations (e.g., foundations, framing, interior and exterior finishing), and modularization of training and certification.

It must be noted that the approach favoured by industry groups in Alberta, Saskatchewan, Newfoundland and Labrador, Prince Edward Island and Nova Scotia is not without controversy. A substantial study of the human resource analysis of the carpentry and allied trades in the Maritime Provinces in 2000 found substantial evidence to support concerns about looming skill shortages. It focused its recommendations on ways to recruit more new entrants to training and apprenticeship

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<sup>13</sup> Atlantic Home Building & Renovation Sector Council, Report on the Sectoral Planning Committee Strategic Planning Session, Human Resources Sector Study: Construction Industry on Prince Edward Island, 29-30.



programs and to expand training opportunities for the employed labour force. With regard to trades specialization, it articulated a view that is often advocated by unions in the ICI sector.

*Both employers and workers have been moving towards more specialized work in specific areas of carpentry. This encourages a narrower range of skills and might contribute to the modularization of the trade. Modularization must be discouraged as it reduces the mobility of workers and limits the supply of well-rounded carpenters who are needed for repair/renovation/restoration work. Carpenters with a broad base of work experience are also likely to move on to become supervisors, forepersons and contractors.<sup>14</sup>*

However, the report does recommend the development of specialist certification or endorsements after completion of a standard apprenticeship program to recognize advanced skills in specific areas such as:

- ▲ Renovation;
- ▲ Scaffolding;
- ▲ Formwork; and
- ▲ Interior and finish carpentry.

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<sup>14</sup> Prism Economics and Analysis, “Carpentry and Allied Trades Human Resources Analysis, Maritime Provinces”, December 2000; p.28.



## 2.3 Concluding Comments

Recent developments in Nova Scotia, led by the residential construction industry through the agency of its sector council, are consistent with trends in other jurisdictions in Canada and in other countries. Key areas of change are:

1. Introduction of mandatory home warranty to improve consumer protection in the new home construction field.
  - ▲ Warranty programs have standards for contractor competencies that usually require successful completion of specialized training programs.
  - ▲ Nova Scotia has a voluntary new home warranty program, with supporting training and certification programs offered by the Atlantic Home Builders Training Board.
2. Consideration of mandatory licensing of contractors (independent of warranty or of insurance considerations) with or without training requirements.
3. Consideration of mandatory certification of the carpentry trade parallel with current requirements for use of licensed electricians and plumbers on residential construction projects.
4. Development of training and certification for trades specializations within the carpentry field.



### 3.0 Industry Consultations in Nova Scotia

#### 3.1 Province-Wide Focus Groups

In the winter and spring of 2002, the AHB&RSC carried out consultations with industry groups around Nova Scotia to assess the level of interest in occupational licensing and professionalization. A total of 66 individuals participated in seven sessions with a representative cross-section of managers of larger home building companies, owner-operators and managers in smaller companies, employees, and community college students and faculty members.

The following is a summary of the major points of consensus or substantial agreement that emerged from the consultation sessions.<sup>15</sup>

1. There was strong agreement that the home building and renovations industry in Nova Scotia will have great difficulty meeting current and future human resources needs because of two factors – the prevalence of underground activity in the sector, and the unattractiveness of jobs in the sector compared to other industries.
2. The issue of “underground” or “informal” economic activity in the home building and renovations sector was discussed in all the sessions. If this activity could be limited, the business margins for the industry overall would improve and it would be easier to develop more attractive career options for current and future employees. The professional builders believe that they are the first victims of this underground activity, and their motivation to invest further in worker training and productivity improvements as individual firms is undermined by such inappropriate competition. It is clear that the desire to counter the underground economy is the greatest source of motivation to move forward with mandatory licensing and professional standards.
3. A strong message came from the sessions that jobs in the home building and renovations sector are widely perceived in the community as unstable and low-paid with very limited prospects in terms of security and career advancement. The overall message was that the HB&R sector needs to offer full and attractive careers to prospective employees if it is to meet its human resources needs. As an industry made up in large part of small and medium sized enterprises, this goal can only be accomplished through concerted, industry-wide action to develop professional standards and certification systems.

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<sup>15</sup> This summary of findings is adapted from the AHB&RSC report on these consultations in 2002.



4. The consultations sessions provided solid evidence of the industry's interest in a program of professionalization with five components: specialized training; occupational standards; mandatory licensing of builders and renovators; effective enforcement and prior learning assessment.
  - ▲ The strong preference among the industry participants was to have shorter modular training units that immediately qualify individuals to be productive on work sites. There is interest in specific training and certification in discrete skill areas such as foundations, framing, drywall, painting, siding/cladding, finish cabinetry, roof systems, etc.
  - ▲ There was agreement that industry would support a new system of professional standards specific to the HB&R sector if it was marketed effectively with full consultations and employers and employees understood its meaning and potential benefits.
  - ▲ There was clear interest in the concept of competency-based assessment to insure that professional standards reflect actual workplace competencies rather than credentials defined by training institutions.
  - ▲ Participants in the sessions expressed strong support for the mandatory licensing of builders and renovators enforced through the building permit system, perhaps with the support of insurers and financial institutions. This is seen as the most effective way to reduce the negative influences of the underground economy.
  - ▲ There was consensus that expanded and more effective inspection services are essential if the underground economy issue is to be controlled.
  - ▲ There was interest among the participants in developing prior learning assessment and recognition as part of any new system of mandatory standards and professionalization. Workers should receive formal recognition for learning achieved through work-site training and experience, and should not have to take courses for skills and knowledge they have already acquired on the job. They should also be able to challenge for certification.
5. There was general support for the development of an apprenticeship system geared to the specific needs of the home building and renovation sector. Participants wanted to link the apprenticeship model to a modular approach to training and certifying people for specific workplace skill areas and competencies.





### **3.2 Consultations on the Competency Based Assessment Grid**

Following from the consultations described above, the AHB&RSC produced a discussion paper entitled “Occupational Analyses Review for the Residential Construction Sector in Nova Scotia” in March 2001.

The paper put forward a draft framework for a competency based assessment model as a tool for developing new certification systems and prior learning assessment processes. The framework would provide a basis for certification of home builder owner operators, residential construction supervisors, and residential carpentry trades workers. It would also facilitate designation of trades specializations within the carpentry field. The listing of tasks and sub-tasks in the occupational framework was adapted from the National Occupational Code (NOC) system for carpenters, residential construction supervisors, and for new home builders and residential renovation contractors. Changes were made to the existing NOCs to more accurately reflect competencies specifically relevant to residential construction, and to add in elements having to do with “soft skills”.

The grid consists of a vertical list of specific competencies associated with the three occupational categories. Horizontally, there are five levels of competency ranging from entry level worker to advanced tradespersons and business owner-operator or manager.

The grid is a framework of competencies: it would be left to a licensing certification board to determine the professional categories (including trades specializations) to be utilized, and the specific knowledge, skill and experience standards for each competency.

In March of 2003 a workshop was held to review and refine the draft framework with five industry experts representing:

- ▲ A large residential construction firm that relies heavily on sub-contractors;
- ▲ Smaller firms that offer full service in residential new home construction;
- ▲ A residential renovations specialist; and
- ▲ A sub-contractor firm (framing).



The workshop participants reviewed and revised the framework with a specific focus on the five competency levels. They reached agreement on the following definitions of the five levels:

1. Entrant Helper
  - a. Not yet committed to a career in the sector
  - b. Completed safety training
  - c. One or more entry level skill sets to justify employment
  - d. Can remain at this level for a fixed period (e.g., 6 months), then “up or out”
2. Apprentice
  - a. Potentially a career person in the sector
  - b. Basic knowledge of house as a system
  - c. Basic competencies in one or more skill sets
  - d. A safe person on the job site
3. Journeyperson
  - a. Capable of supervising and training apprentices
  - b. Knowledge and skills to work independently with minimal supervision
  - c. Advanced competencies in one or more skill sets
  - d. Working knowledge of house as a system
  - e. Working knowledge of Building Code, other regulations
  - f. A leader in ensuring worksite health and safety
4. Master
  - a. Mastery of one or more skill sets
  - b. Working knowledge of other skill sets
  - c. Advanced knowledge of house as a system
  - d. Advanced knowledge of Building Code
  - e. Advanced knowledge of safety regulations
  - f. Able to supervise, train and certify apprentices and journeypersons
  - g. Working knowledge of project management
  - h. Basic knowledge of business management
5. General Manager/Owner Operator
  - a. Mastery of relevant business management knowledge and skills
  - b. Human resources management skills



- c. Working knowledge of one or more building skills sets
- d. Comprehensive knowledge of house as a system
- e. Knowledge and skills to manage multi-phase projects and sub-contractors
- f. Able to work with architects, engineers and other professionals
- g. Advanced communications skills

The workshop also identified specific soft skills to be added to the competency grid. The participants agreed on follow-up steps, including more intensive consultations with industry specialists on the specific elements of the list of competencies, and seeking endorsement from the wider industry on the overall approach.

### **3.3 Consultations with Industry Specialists**

Following the workshop described above, intensive analyses of the grid were undertaken with eight individuals representing key sectors of the homebuilding and renovations industry. These included:

- ▲ A senior manager of a large home construction firm in an urban area, employing sub-contractors;
- ▲ Two small firms operating in rural areas and involved in both new home construction and renovations;
- ▲ Two small firms operating in urban areas and specializing in renovations;
- ▲ Two smaller firms operating in rural areas specializing in new home construction; and
- ▲ One medium sized firm in an urban areas offering sub-contractor services.

Each of the participants took the time to review the draft competency framework in detail, and met with the consultant to present their views on changes and additions. A number of specific proposals have been incorporated into the revised competency framework (see Appendix II). Their general concerns were to focus specifically on residential carpentry competencies and to take out tasks such as metal sheathing or concrete forming that should be part of other occupational categories or specializations.



## 4.0 Conclusions

### 4.1 Challenges Facing the HB&R Sector

The challenges facing the HB&R sector in Nova Scotia are well documented. There is a clear consensus among industry leaders about their nature and the preferred strategies to address them. Both the problems and the strategic priorities are consistent with approaches underway in other jurisdictions across Canada and in the US, Australia and the UK.

Industry interest and support is evident. The Nova Scotia Home Builders Association has been advocating a program of mandatory licensing of contractors since the early 1990s. However, Nova Scotia lags behind some other provinces in mobilizing political and institutional support for reform of building regulations and human resources policy frameworks and regulations for the residential construction sector. The industry in this province has been cautioned that there is an increasing urgency to galvanize public endorsement for these changes if Nova Scotia is to avoid an otherwise likely “leaky condos” situation, or similar housing construction crisis, in the near future.

It is not a small factor in this situation that the underground economy represents upwards of 25% of the GDP generated in the home building sector, and policymakers and industry leaders might anticipate a backlash from those operators in response to a move towards professionalization and licensing.

In summary, the key challenges facing the HB&R sector in Nova Scotia are summarized as follows:

1. Recognition of the sector in terms of its distinct labour force needs and challenges.
2. Development of governmental and institutional support for regulatory reform based on an integrated approach to licensing of contractors, mandatory warranty coverage, improved building inspection systems and improved certification standards specific to the sector.
3. Implementation, through industry participation, of a comprehensive model for competency based certification as a basis for professional licensing and certification, incorporating trades specializations and making use of an effective prior learning assessment and recognition (PLAR) delivery system.



The AHB&RSC has accomplished two major steps in this process:

1. A clear mandate from industry to proceed *poste haste* to establish the necessary institutional partnerships to implement a professionalization system based centrally on mandatory licensing of contractors.
2. An industry-defined and vetted competency based assessment framework to serve as a basis for redefining professional standards, setting up certification for trades specializations and implementing PLAR.

In addition, substantial work is underway aimed at the development of an appropriate PLAR model.

This is a foundation on which to build the policy infrastructure, the institutional arrangements, and the industry leadership and participation to implement professionalization on a comprehensive basis.

## 4.2 Next Steps

The research and consultations leading to this report indicate the following priority areas for follow-up:

1. Additional work is required to finalize the assessment measures and standards for the competencies presented in the grid. Some of this may be underway in other Canadian jurisdictions where development of new standards specific to home builders and renovators is moving forward (e.g., Alberta, British Columbia and Saskatchewan). An obvious action priority will be to initiate a consultation and workshop process with industry groups and government agencies across Canada to identify ways to learn from each other's experiences, combine strengths and resources, reduce duplication of effort where possible, and promote reasonable levels of harmony for standards across jurisdictions. In particular, industry groups and government partners in three of the four Atlantic Provinces are actively exploring these options and much could be gained from pooling resources and expertise.
2. There is also a need to access specialized technical expertise in competency based assessment and PLAR to move the system design to a more advanced stage of elaboration now that it has substantial industry support.
3. A specific research and consultation priority is to reach out into the smaller communities and less organized sectors of the HB&R sector in Nova Scotia to inform industry people about the evolving professionalization approach and to seek their input on ways to promote full industry buy-in and to reduce the danger of backlash based on misinformation or misunderstanding.



## Appendix I: Examples of Licensing Models in Other Jurisdictions

This table has been prepared to offer insight into licensing systems that have been, or are being, developed in other jurisdictions and from which lessons might be learned for the Nova Scotia home and building and renovation sector.

Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
<p>A. Licensing Model:</p> <ul style="list-style-type: none"> <li>• Self-Managed (Industry administers although standards are set by government).</li> <li>• Self-Regulated (industry association administers and sets standards).</li> <li>• Diluted Self-Regulation (Industry organization administers but a new non-profit body is incorporated), considered mixed.</li> </ul>	<p>Mixed Self-Regulation but the membership of the Commission includes industry and government.</p>	<p>While almost every state in Australia has introduced private building certification to some degree, there is no established national system. The states vary on the extent of involvement of the Private Building Certifier in the overall approval process and the choices (private or public or either) available to the applicant/owner.</p> <p>The Australian Building Codes Board has proposed a national system of accreditation for building certifiers. In Victoria, the licensing system is run by the Building Practitioners Board (BPB) – an arm of the state-run Building Control Commission. The BPB was established administratively under the Commission and is the registration body.</p>	<p>National Vocational Qualifications (NVQs) are statement of competence to carry the work, irrespective of the employee's age and formal training. Any employee wishing to obtain an NVQ must register with an awarding body. NVQs are awarded on the basis of competence in performing a certain task rather than simply training completed. Performance is measured against national standards. Each NVQ is located within a framework that spans and links all occupations at 5 different levels.</p> <p>These 5 levels in general terms are:</p> <ul style="list-style-type: none"> <li>• Level 1-Basic Foundation: these are introductory awards for those new to the area and cover routine tasks or basic knowledge and</li> </ul>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
			<p>understanding. 13 Level 1 NVQs in total (e.g. Floor covering operations, plastering, trowel occupations, wood occupations).</p> <ul style="list-style-type: none"> <li>• Level 2 (Skilled Tradesperson) qualifications are for those with some knowledge of and ability in the area and acknowledge individual responsibility. 16 Level 2 NVQs include applied waterproof membranes, chimney engineering, fitted interiors, piling operations, steel-fixing, etc.</li> <li>• Level 3 (Skilled Craftsperson) qualifications recognize complex work involving supervisory ability. 18 Level 2&amp;3 NVQs (e.g. Decorative occupations, floor covering, plastering, roof slating and tiling, trowel occupations, wood occupations. There are only 2 Level 3 only NVQs: Maintenance operations and specialist operations.</li> </ul>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
			<ul style="list-style-type: none"> <li>• Level 4 (Managerial &amp; Professional) demands specialist or technical expertise.</li> <li>• Level 5 (Managerial &amp; Professional) requires the application of complex principles and techniques involving responsibility for human and material resources.</li> </ul> <p>The framework shows how qualifications relate to each other to allow horizontal progression as well as vertically through the system in the development of their careers. Each NVQ is made up of units or mini-qualifications and credits are offered for each unit completed. A unit is composed of elements of competence and each element has an associated set of performance standards used to measure whether the element has been achieved. They express what is expected of a person in a job or work role. Standards are based on the outcome of the activity</p>





Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
			<p>rather than how the outcome is achieved.</p> <p>In developing standards, the process avoids narrow specifications in terms of jobs, tasks, activities or skills. It is instead considered in terms of wider functions.</p> <p>NVQs are made up of National Occupational Standards (NOS). The CITB (a National Training Organization or NTO) is commissioned by Government to develop the NOS for construction crafts. Once the NOS are developed they become Crown copyright (for use in the UK). NTOs can charge for their use in other countries.</p> <p>NOS are developed by NTOs in conjunction with their industry sectors and awarded by Awarding Bodies. An Awarding Body gains approval of the NVQ by Government via the QCA, approves Assessment centres and Assessors, records achievement issues certificates and maintains quality.</p>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
			<p>Very few parts of the construction industry are governed by legislation regarding occupational competence. The majority of sectors are self-managed.</p>
<p>B. Is Licensing Mandatory?</p>	<p>Legally compulsory occupational licensing. Any real estate professional must be licensed to practice, but membership in the association is voluntary.</p>	<p>Termed as “Registration” in Victoria. Persons who undertake the design, construction or approval of buildings must be licensed by the BPB. Part of the reform also included allowing builders to choose among competitive building inspection agencies.</p>	<p>Very few parts of the construction industry are governed by legislation regarding occupational competence. Legislation and regulation apply really to the process of building rather than the personnel. The majority of sectors are self-managed. There is, however, one exception - gas fitters must be registered with the Council for the Registered Gas Installers. In general licensing is not mandatory to practise as a builder in the UK. NVQs are recognition of a skill set in a discipline but do not provide, nor indicate, licensing. The government has recently set up two pilot registration schemes (called the Quality Mark), one on Birmingham and one in Somerset, where building firms that meet certain criteria can</p>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
			<p>register. This hasn't been quite the success the government hoped as the scheme was expensive to operate. However, it was only launched in July 2000, so its effectiveness with the general public has yet to be seen. There is a move by industry and clients to force everybody to have NVQs within a four year period. There is a drive for a voluntary licensing scheme, known as the CSCS, or Construction Skills Certification Scheme. It aims to extend certification across the industry as a whole where previously only registration schemes existed for only certain occupations. The CSCS takes into account grandfathering rights and is particularly concerned with health and safety. Young new entrants leave school and attend periods of off-the-job training at a college or training centre interspersed with work experience with an employer. On average it takes 2 years to gain NVQ 2 and 3</p>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
			years to gain level 3. New entrant adults are trained in a similar way although their training period is normally around 80% of that of young new entrants.
<p>C. Level of Licensing:</p> <ul style="list-style-type: none"> <li>• Fees only</li> <li>• Proof of Financial Solidity</li> <li>• Proof of Skills, Competency</li> </ul>	Fees and Proof of Skills	<p>The key issues for obtaining registration in Victoria are proof of appropriate skills and competency in the field; as well as business skills, and possession of required building defect insurance.</p> <p>There is no test of financial solidity for the building practitioner. Building practitioners' financial solidity is assumed to be the province of the insurance companies.</p>	<p>NVQs require fees and proof of skills. The industry is currently discussing requirements to demonstrate financial solidity.</p>
D. Rationale for Choice of Licensing Model	<p>Government regulated but the industry association was already responsible for many aspects such as exams, insurance and education. Government's role was essentially to collect fees and issue licenses. As well, the NS real estate industry was only one of 19 Statutes under government's jurisdiction. There were also no mandatory education</p>	<p>The BPB has industry representation but is not industry-run.</p>	<p>The proposals are being driven for the same reasons. The British Government is also bringing pressure.</p>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
	requirements of licensees previous to the establishment of the Nova Scotia Real Estate Commission (NSREC).		
E. Year Started	1997, by virtue of the Real Estate Trading Act. The NS Real Estate Commission (NSREC) was also established in 1997 as a corporate (not agent of the Crown) regulatory body to replace government's role in the industry.	The new Building Act was passed in 1993 and the BCC was established in 1994. The reforms introduced in the Act were based on the Model Building Act formulated (by the forerunner of the ABCB, following a national consultation process. Victoria was the first state to adopt the new regulations. Residential builders commenced being covered by the new system in Victoria in 1996. Note that Private Building Certification in the ACT replaced government certification in January 1999, through changes to the Building Act 1972 and the introduction of the Construction Practitioners Registration Act 1998, together with associated Regulations.	In 1986, the National Council for Vocational Qualifications (NCVQ, a limited company) was set up to define NVQs for all occupations and industry sectors in England, Wales and Northern Ireland. Following a government review, the QCA took over this responsibility. In 1992/93, 9,976 Levels 1-3 NVQs were issued by the CITB/C&G. By 2000, this had increased to 28,271 over the year (Levels 1-3 only). There were no specific changes to legislation in respect of introducing NVQs into Construction. The British Government introduced NVQs into the National Qualifications Framework across all industry sectors.
F. Approximate Time to Develop and Implement Model	7 years (began in 1990/91), due in large part to government delays such as changing Ministers and low	National Model Building Regulations were formulated over a period of roughly 4 years – followed	The NVQ system was originally started in 1986 but took another three years for it to be developed fully



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
	priority given that government officials were responsible for 18 other Statutes.	by gradual state-by-state adoption.	to meet Government criteria.
G. Main Drivers and Industry Conditions Leading to Development	<p>To develop a more professional industry through education requirements, establishment of standards of conduct for industry members, and an effective investigative and enforcement process.</p> <p>The existing governance model was considered not viable, both from a financial (insufficient fees collected to sustain the regulatory body, required subsidization) and operational perspective (government was not considered to be dealing effectively with the public as they had no direct industry expertise).</p>	<p>Costly and lengthy approval process.</p> <p>Liability concerns for all parties involved in building.</p> <p>Barriers to innovation.</p> <p>The need for consumer protection.</p> <p>Underground activity.</p> <p>The need for enhanced professionalism in the industry.</p>	Similar to the Australia situation.
H. Steps to Model Development	Formed working committee, conducted industry consultations (invited industry members who were not part of the NS Realtors Association), explored models in other Canadian jurisdictions, revised the Act and By-Laws, lobbied for	National consultations and review of best practices in other countries, followed by formulation of a comprehensive set of reforms to building regulations. Various elements of the reforms build on each other for success – they are a	A number of other models were consulted in development of the NVQ system. Industry was also consulted.



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
	change to legislation and established the Commission.	package and are not as effective if particular elements are 'cherry-picked' while others are not adopted.	
I. Industry Consultation Advantages or Disadvantages	Industry considered a fairly homogenous and identifiable group. Previous to 1997, approximately 11-1,200 of 1,300 individuals were part of the Nova Scotia Real Estate Association and numbers were, and continue to be, relatively stable over time.	Industry consultation considered essential, but need for a broader perspective to ensure the reforms meet appropriate society goals. Currently, 10,300 building practitioners are registered.	CITB as the National Training Organization for the construction industry has a formal mechanism for consultation with industry via federations, Associations, trade unions, educationalists and individual employers. This is reflected in a very complex committee structure that oversees' all development work.
J. Licensing/Registration Body	NSREC.	Building Practitioners Board	The Quality & Curriculum Authority (QCA) is the government regulatory body that governs NVQs and oversees standards and the awarding of qualifications. They took over from the NCVQ following a government review. Awarding bodies award the qualifications. The Construction Industry Training Board (CITB) and City and Guilds of London (C&G) is



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
			<p>a Joint Awarding Body. CITB is also a National Training Organization (NTO). NTO's are responsible for developing the National Occupational Standards (NOS) that make up NVQs.</p>
<p>K. Who is Licensed? Is it the individual or the firm that are licensed (on conditions that persons who meet certain criteria hold appropriate positions within the firm)?</p>	<p>Individual-based licensing.</p>	<p>Individuals, rather than companies, are licensed by the BPB – any person who undertakes the design, construction or approval of buildings must be licensed (surveyors, inspectors, engineers, draftspersons, builders, demolishers and supervisors of temporary structures). In terms of residential building, any one contracted to undertake building work (new or renovations) for an owner valued in excess of \$5K must be registered. Practitioners have to register annually with the BPB and provide evidence of paid up insurance policy and pay an annual fee. They then receive a Building Practitioners Certificate. Sub-contractors to a builder or</p>	<p>There is very little licensing at present.</p>





Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
		<p>general contractor are not required to be registered except in specific trades such as electricians or plumbers.</p> <p>Companies must have at least one registered building practitioner (of the appropriate type) as a partner or director.</p>	
L. Occupational Categories	<p>Broker Property Manager Salesperson</p>	<p>All building practitioners must be registered with the BPB. These include:</p> <ul style="list-style-type: none"> <li>Building certifiers and inspectors</li> <li>Design professionals (engineers &amp; architects)</li> <li>Commercial builders</li> <li>Residential builders</li> </ul> <p>There are three classes of residential (domestic) builders of which there are currently about 10,300 registered:</p> <ul style="list-style-type: none"> <li>Domestic Builder-Unlimited (highest class-approx. 9,500 registered)</li> <li>Domestic Builder-Manager (permitted only to manage and arrange work and must engage</li> </ul>	<p>There are approximately 70 construction-related Levels and as of September 2000 over 243 thousand out of about 2 million people working in the industry have NVQs. The first Level 5 NVQs in construction contracts management were awarded in November 2000, enabling the holders full membership in the Chartered Institute of Building (CIOB) and are known as full-chartered builders. In all, there are about 100 NVQ titles related to construction. Only 5 of these are Level 5 only. Note that each title may have multiple levels and therefore the actual number of NVQs</p>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
		<p>registered building practitioners who possess the appropriate class of domestic builder registration to carry out the components of the work).            Approx. 230 registered.            Domestic Builder-Limited (permitted to only undertake work specified in their certificate of registration such as carpentry work or kitchen renovations). Approx. 560 registered.</p> <p>Plumbers and electricians are issued registration by other registration bodies.</p> <p>Owner-builders are not required to be registered unless they are in the business of building. They are, however, governed by a set of restrictions such as a barrier to selling more than one dwelling every five years. Owner-builders who sell their homes within the statutory warranty period must provide warranty coverage to the purchaser (from a bona fide insurance company) for the remainder of the</p>	<p>is much higher (nearly 150 in total).            Examples of NVQs that are most relevant to the home building and renovation industry include:</p> <ul style="list-style-type: none"> <li>• Construction contracting</li> <li>• Decorative occupations</li> <li>• Floor covering</li> <li>• Form working</li> <li>• Glazing installation</li> <li>• Insulation installing</li> <li>• Interior systems</li> <li>• Plastering</li> <li>• Thatching</li> <li>• Trowel Occupations</li> <li>• Wall and Floor Tiling</li> <li>• Wood Occupations</li> </ul>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
		<p>period, as well as a report on the condition of the home which must be prepared by a qualified person. Some other states require owner-builders to pass a 12-hour course on building.</p> <p>Note that there initially was limitation on the number of houses an owner-builder could build within a 5-year period but this was withdrawn temporarily due to concerns about its legality. It is intended to reintroduce these limitations in the near future.</p>	
M. Use of Grandfather Clause (Recognizing skills in existing industry)	No. Licensing existed previous to 1997.	Residential builders were grandfathered into registration when the reforms were extended to include residential builders. The intent was to retest these grandfathered builders over time; however, this did not happen. The grandfathered builders account for a disproportionate share of the problem builders in Victoria.	No grandfathering clause was designed. Many people hold qualifications (pre-NVQ) and there is currently no requirement to convert these to NVQ. However, individuals can gain credit for experience they already have once registered for NVQs. The new CSCS voluntary licensing scheme is expected to take into account grandfathering rights.
N. Licensing Criteria and Standards	Applicants must complete a 5-day	New registrants must complete a	N/A



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
	<p>licensing course, write and pass the exam, attend a post-licensing course within 6 months and successfully complete mandatory annual continuing education. Inactive licensees must either pay a re-instatement fee of \$50 or, for longer periods of inactivity, redo all mandatory coursework and testing. As of July 1, 2001: Licenses must complete 9 Continuing Education Units (CEUs) by June 30, 2002. Each license is required to complete a minimum of a six-hour course and a three-hour elective course. Three versions of the mandatory course correspond to the three classes of licenses. Various elective courses are offered.</p>	<p>series of self-assessment forms related to a variety of administrative and technical processes related to building (i.e., business management, operational building work management, building work management-supervision, building technology and legislative requirements). These provide applicants with an indication of the types of information they are to know to obtain registration. These forms are then reviewed by a qualified competency assessor who then conducts an interview with the applicant to assess the competence of the applicant.</p> <p>To be registered, building practitioners must also have building defect insurance. The type of insurance required depends on the specific profession. New homebuilders must have job-specific warranty coverage.</p> <p>The following qualifications are required to become a residential</p>	



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
		<p>builder in Victoria:            Domestic Builder-Unlimited:            requires formal qualifications (degree, diploma or successful completion of courses offered by an industry association) and 3 years of relevant experience, or            A trade qualification and 5 years of experience (post qualification), or 10 years experience.            Domestic Builder-Manager: Three years experience.            Domestic Builder-Limited: Three years experience.            Even with these qualifications and experience, builders must undergo examinations by the BPB prior to being registered.</p>	
O. Aspects of Regulatory Body	<p>The Minister of Service Nova Scotia and Municipal Relations legislates the Act and monitors the Commission but has no direct involvement in its operation.  <i>Composition:</i> 10 members consisting of three elected and licensed industry members, three</p>	<p>A key component is the Building Control Commission (BCC). It is a separate entity from government set up under an Act of Parliament-the Building Act 1993. The BCC reports to and advises the Victoria Minister for Planning and Local Government on building control matters. The</p>	<p>The QCA is the government regulatory body. The CITB is accountable to both government and industry.  <i>Funding:</i> The Government funds the QCA. The CITB.C&amp;GIL Awarding Body is self-financing through the charges they make for accreditation</p>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
	<p>members appointed from the NS Association of Realtors, three provincially-appointed members, and a registrar appointed by the NSREC.</p> <p><i>Function of Commission:</i> Licensing and educational standards (set educational and continuing education requirements, license fees, and admission exams). Set By-Laws and administer the Act. Investigate complaints and hold disciplinary hearings. Establish standards of conduct and business practices. Administer the Real Estate Recovery Fund (industry members pay into the fund) which is used to compensate consumers who suffer financial loss as a result of fraud or breach of trust by industry members.</p>	<p>Minister issues guidelines on various matters through the Building Act, in particular, guidelines on application and permit fees.</p> <p><i>Funding:</i> It is funded through a user-pay mechanism which is a fixed levy on building permits of 0.064% of the cost of building work in excess of AUS\$10K. They also charge fees in respect of functions carried by the BAB, BPB and the BRAC. Excess monies are returned to industry through financial support for relevant research projects. The BCC manages a fund consisting of both a general account and a permit levy account to pay for running costs of the Commission and Boards. All monies received by the BCC must be paid into this fund.</p> <p><i>Composition:</i> Approximately 75 people are paid by the Commission. The Board comprises of nine members presently of which one is the Chair. The chair is independently nominated. The</p>	<p>and registrations.</p> <ol style="list-style-type: none"> <li>1. QCA: Government regulatory body.</li> <li>2. CITB: Develop standards for construction crafts and from these are derived NVQS. When a new qualification is developed, they make two separate submissions to the QCA-first to get the standard approved and second for the CITB and C&amp;GLI to award the NVQ. Also has a separate awarding partnership with C&amp;G of London Institution.</li> <li>3. C&amp;GLI:</li> <li>4. NTO:</li> <li>5. Training Centres:</li> <li>6. Assessment Centres: The CITB and C&amp;G approve organizations to assess those who apply for NVQs. They may be colleges, training centres or companies working on construction sites. By</li> </ol>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
		<p>Board s each category of registered building practitioner and are nominated by who in the Minister's opinion are a professional association. The categories represented are:</p> <ul style="list-style-type: none"> <li>Quantity Surveyor</li> <li>Building Surveyor</li> <li>Building Inspector</li> <li>Engineer</li> <li>Draftsperson</li> <li>Builder x2</li> <li>Builder Temporary Structures.</li> </ul> <p>Whilst being nominated by industry associations they do not represent a particular association, sitting on the Board instead to represent a particular discipline within the building industry.</p> <p><i>Function of Commission:</i>            Provide and oversee a building regulatory system.            Provide and manage building regulatory reform in accordance with government priorities.            Set minimum standards for the</p>	<p>year end 2000, there were 676 assessment centres.</p> <p>7. Assessors: Construction specialists employed by assessment centres to carry out the assessment. They both continuously observe the person and limited simulation exercises. By year end 2000, there were 5,769 assessors.</p> <p>8. Internal and External Verifiers: Internal verifiers are employed by assessment centres to ensure assessors are doing their job correctly. Specially trained external verifiers are employed by CITB and C&amp;G check the assessment centres and assessors to ensure correctness.</p> <p>9. Work-Based Recorders: Link between NVQ Assessor and the employee. They liaise with the NVQ assessor about the units the employee is working towards, and their progress in the workplace. They vouch for the work carried</p>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
		<p>design, construction and maintenance of buildings. Provide and deliver services and products which inform, educate are relevant to the needs of clients. Ensure that Victoria effectively contributes to the program of national building regulatory reform. Implement building reforms contained in the Building Act 1993 including the establishment and maintenance of cost-effective operations for Building Advisory Council (BAC, which is the senior industry based advisory group that advises the Minister) Building Regulations Advisory Committee (BRAC, industry reps who advise the Minister on draft regulations and accredits building products, construction methods or designs, components or systems connected with building work), the Building Appeals Board (BAB, an independent body empowered to determine any matters related to the Building</p>	<p>out by signing their Work Evidence Assessment and Recording Pack (WEARP). The NVQ assessor then signs to say the employee is competent.</p>





Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
		<p>Regulations 1994, the Building Code of Australia and specified provisions of the Building Act 1993, including the hearing of disputes placed before the BPB and the Building Practitioners Board (BPB). Advise the Minister on changes to the Building Act and building regulations.</p> <p>Investigate complaints against building practitioners.</p> <p>Research and dissemination of information.</p>	
P. Training:	Industry association provides administrative aspects of training such as designing and hosting courses and hiring instructors.	Training is undertaken in academic institutions as well as industry organizations, etc. The Housing Industry Association, and Master Builders Australia, both sponsor courses for builders to obtain the appropriate qualifications for registration.	Colleges and training centres. Many of the assessment centres also provide training. Trainees can set their own pace and choose where and how to complete each unit. There are no age or time limits, entry qualifications or other discriminatory barriers. Individuals can also gain credit for experience they already have. Training courses are available in each trade and apprenticeships are available or one can take a



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
			<p>professional qualification through the Chartered Institute of Building (<a href="http://www.ciob.org.uk">www.ciob.org.uk</a>)</p> <p>NVQs can be completed by unit, enabling an individual to build up to qualifications as conveniently as possible. A mix of mandatory and optional units enables a candidate to tailor the qualifications to a particular role.</p>
Q. Benefits/Successes of New Model	<ul style="list-style-type: none"> <li>• <i>Competency</i>: Increased capability of licensees through mandatory annual course work.</li> <li>• <i>Process</i>: Streamlined process such as shortened license approval process (several weeks previously, now same day) and a smoother claims process.</li> <li>• <i>Financial</i>: Financially sustainable regulation (fees are now approx. \$115K/yr of total \$382 revenues, expenses of \$315K). In fact, following the increase in the first year, fees have remained stable for five years.</li> </ul>	<p>Note that these benefits have resulted from a complete reform of the Victoria building registration system, including but not limited to the licensing of builders. Overall, both industry and government see the reform as a success.</p> <p>Faster approval process (reduced from several weeks to several days)</p> <p>Placed restrictions on bogus owner-builders.</p> <p>Enhanced professionalism.</p> <p>Fostered innovation. Because they have established a working relationship with their certifiers, many builders feel they have more</p>	



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
	<ul style="list-style-type: none"> <li><i>Industry Consultation:</i> Concerns arrested that the NSREC would be a dictatorial body-in practice, it consults with industry on issues.</li> </ul>	<p>flexibility to utilize innovations and/or cost saving measures and feel they are part of the team as opposed to an adversary.</p> <p>BCC officials are of the view that building quality has increased as builders are more accountable for their work.</p> <p>Builders no longer have to tailor their plans to suit the varying requirements or preferences of municipal building officials in different municipalities.</p> <p>Mandatory technical competency requirements made building contractors more “professional” in the eyes of insurance firms and therefore, more insurable.</p> <p>Most builders agree with the stricter registration procedures and many would like to see them stricter, especially for builders grandfathered into registration at the outset of reforms. Some builders believe there should be a requirement for refresher and up-grade courses to</p>	



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
		<p>maintain registration for all practitioners. Consumer protection has been enhanced. Compulsory insurance for all building practitioners ensures there are resources available to rectify defects and proportionate liability enables consumers to target the liable party.</p>	
R. Fee Structure	<ul style="list-style-type: none"> <li>• New entrants fees range from \$100-\$200 (salespersons, managers and brokers) for members, the same for non-members.</li> <li>• Renewal fees for 2-5 years of Experience range from \$50-\$85 for members, \$75-\$125 for non-members.</li> <li>• Renewal fees for more than 5 years experience range from \$10-25 for members, \$75-\$125 for non-members</li> <li>• Licensing course fees range from \$360-\$720 per course with a mix of classroom and correspondence courses offered.</li> </ul>	<p>\$AUS680 Fee, \$250 refund: For a person applying to register under section 169 in the category of builder, class of domestic builder (unlimited), or class of domestic builder (manager) \$620, \$190 Refund: For a person applying to register under section 169 in the category of builder, class of domestic builder (unlimited) or class of domestic builder (manger), who is already registered with the Building Practitioners Board in another category or class. \$390, \$100 Refund: For a person already registered as a domestic builder (manager) or domestic</p>	<p>To gain an NVQ requires an individual to Pat on average £85.00 certification costs. The assessment cost will vary depending on the individual's competencies.</p>



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
		<p>builder (limited) applying for an additional registration in a limited category or applying for an upgrade to the category of either manager or unlimited and who has been assessed by a competency assessor for their current registration.            \$530, \$100 Refund: For a person already registered as a domestic builder (manager) or domestic builder (limited) applying for an additional registration in a limited category or applying for an upgrade to the category of either manager or unlimited and who was NOT assessed by a competency assessor for their current registration.            \$540, \$250 Refund: For a person applying to register under section 169 in the category of builder, class domestic builder (limited).            \$200, No Refund: Additional assessment fee, where the Building Practitioners Board agrees that a second assessment may be carried out by another assessor prior to</p>	



Characteristics	Nova Scotia Real Estate Industry	Victoria, Australia	United Kingdom
S. Cross-Jurisdictional Movement/Labour Mobility	NS, ON, MB, SK and AB signed an agreement on labour mobility in the Spring of 2001. Signatories have agreed that a professional from another participating jurisdiction will in the future only be tested on province-unique conditions and legislation before being licensed for practice.	determining an application. Building practitioners registered in one state are eligible to perform similar functions in other states.	Once an NVQ is attained, an individual is eligible to work anywhere in the UK.

Sources:

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3. Draft Background Report for BRRAG: Comparing Building Regulatory Systems in Ontario, New Jersey, Alberta, British Columbia and Victoria, Australia, Ministry of Municipal Affairs and Housing, February 3, 2000.
4. Australian Building Regulation and Liability Reform: An Update, prepared for the Canadian Home Builders' Association by Greg Lampert, September 2000.
5. Greg Lampert, Economic Consultant, Scarborough, Ontario.
6. Lyndon Tennant, Administrative Assistant, Building Practitioners Board, Melbourne, State of Victoria, Australia
7. Nick Gooderson
8. David Elvidge



**Appendix II: Competencies and Certification Levels for Home Building and Renovations**

					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
<b>1. New Home Builder and Residential Renovator Contractor Competencies</b>									
<i>1.1 Business Planning</i>									
<i>1.1.1 Definition of business goals</i>									
			1.1.1.1	Establish personal goals					
			1.1.1.2	Establish business goals & develop mission statement					
			1.1.1.3	Determine scope of services					
			1.1.1.4	Determine business approach					
<i>1.1.2 Development of marketing and sales plans</i>									
			1.1.2.1	Determine the general market environment					
			1.1.2.2	Determine the target market					
			1.1.2.3	Determine where the business should be positioned					
			1.1.2.4	Develop a pricing strategy					
			1.1.2.5	Develop an original strategy for the marketing activities					
			1.1.2.6	Develop a sales strategy for the business					
			1.1.2.7	Develop a public relations plan					
			1.1.2.8	Determine the marketing tools to be uses					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner
				1.1.2.9 Develop an advertising plan					
				1.1.2.10 Develop a client referral plan					
				<i>1.1.3 Development of a financial plan</i>					
				1.1.3.1 Develop a long-term financial plan					
				1.1.3.2 Prepare pro forma income statements					
				1.1.3.3 Develop pro forma balance sheet					
				1.1.3.4 Prepare cash flow estimates					
				1.1.3.5 Identify overhead costs and borrowing requirements					
				1.1.3.6 Determine required mark-ups					
				<i>1.1.4 Development of an operating plan</i>					
				1.1.4.1 Develop a code of ethics to cover all business operations					
				1.1.4.2 Develop a land / property acquisition plan					
				1.1.4.3 Develop a design and drafting plan					
				1.1.4.4 Develop an estimating plan					
				1.1.4.5 Develop a contract administration plan					
				1.1.4.6 Develop a quality control plan					
				1.1.4.7 Develop a customer service program					
				1.1.4.8 Develop a waste management plan					
				1.1.4.9 Develop a materials purchasing plan					
				<i>1.1.5 Development of a human resource plan</i>					





					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner Operator
				1.1.5.1 Determine human resource needs					
				1.1.5.2 Prepare job descriptions for all employees					
				1.1.5.3 Prepare plans to ensure sufficient skilled human resources					
				<b>1.2 Implementation of the Business Plan</b>					
				<i>1.2.1 Business management</i>					
				1.2.1.1 Organize and equip the business office					
				1.2.1.2 Identify information required to manage business					
				1.2.1.3 Use effective communication skills & identify information needs					
				1.2.1.4 Solicit employee input on business operations					
				1.2.1.5 Demonstrate leadership					
				1.2.1.6 Outline and communicate goal achievement measures					
				1.2.1.7 Ensure that staff is updated and informed about the operations of the business					
				1.2.1.8 Obtain appropriate business insurance, licenses and permits					
				1.2.1.9 Protect the interests of the business					
				1.2.1.10 Develop compensation, rewards & incentives system					
				<i>1.2.2 Marketing and sales management</i>					
				1.2.2.1 Manage the marketing strategy					
				1.2.2.2 Manage the advertising plan					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				1.2.2.3 Manage the public relations plan					
				1.2.2.4 Manage the sales program					
				1.2.2.5 Manage the client referral plan					
				1.2.2.6 Develop sales and / or exit strategies					
				1.2.2.7 Obtain client commitment / contract					
				<i>1.2.3 Financial management</i>					
				1.2.3.1 Establish and maintain an appropriate accounting system					
				1.2.3.2 Interpret financial statements and reports					
				1.2.3.3 Establish required financing					
				1.2.3.4 Negotiate payment terms - suppliers, subcontractors & developers					
				1.2.3.5 Set up and uses a system to control costs at all levels					
				1.2.3.6 Set up system to control cash flow					
				1.2.3.7 Establish and maintains a system for project cost control					
				1.2.3.8 Establish effective purchasing practices					
				<i>1.2.4 Human resource management</i>					
				1.2.4.1 Determine salary, benefits and incentive packages					
				1.2.4.2 Adopt effective recruiting practices					
				1.2.4.3 Develop clear instructions re job functions and tasks being delegated					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner Operator
<i>1.2.5 Project management</i>	1.2.4.4	Provide clear instructions when assigning tasks							
	1.2.4.5	Prepare evaluation criteria for employee performance							
	1.2.4.6	Provide skills development and educational upgrading for all employees							
	1.2.5.1	Ensure construction conforms to current codes and standards							
	1.2.5.2	Keep up-to-date with new products and building processes							
	1.2.5.3	Demonstrate how building components work together as a system							
	1.2.5.4	Develop solutions to problems which result from building activities							
	1.2.5.5	Perform site investigation, check zoning and ensure permits are in place							
	1.2.5.6	Perform house inspections							
	1.2.5.7	Prepare designs, plans and specifications							
	1.2.5.8	Estimate all costs of the project							
	1.2.5.9	Prepare documents for bids and estimates							
1.2.5.10	Comply with contractual requirements								
1.2.5.11	Prepare bidding/tendering documents for subcontractors								



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner Operator
				and suppliers					
				1.2.5.12 Prepare contracts to hire subcontractors and suppliers					
				1.2.5.13 Prepare construction sequences					
				1.2.5.14 Prepare construction schedules					
				1.2.5.15 Plan & implement materials purchasing					
				1.2.5.16 Address client concerns					
				1.2.5.17 Establish effective working relationship with client(s)					
				1.2.5.18 Address client problems and concerns					
				1.2.5.19 Provide after-sales service					
				<i>1.2.6 Project supervision</i>					
				1.2.6.1 Checks plans for errors and omissions					
				1.2.6.2 Communicate plans and schedule to project personnel					
				1.2.6.3 Arrange for materials and labour					
				1.2.6.4 Monitor job progress and compliance with plans and specifications					
				1.2.6.5 Supervise activities on the site to meet business standards					
				1.2.6.6 Implement procedures for controlling site activity					
				1.2.6.7 Enforce safe working conditions					
				1.2.6.8 Implement cost control					
				<i>1.3 Monitoring and Evaluation of the Business Plan</i>					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
<i>1.3.1 Monitoring and evaluation of objectives</i>									
				1.3.1.1 Evaluate whether personal goals are being achieved					
				1.3.1.2 Assess whether business objectives are being met					
				1.3.1.3 Determine if services being offered are appropriate					
				1.3.1.4 Evaluate business strategy					
<i>1.3.2 Monitoring and evaluation of marketing and sales plans</i>									
				1.3.2.1 Determine why prospects came to the business					
				1.3.2.2 Determine why prospects purchased or did not purchase the product					
				1.3.2.3 Review market situations / realities					
				1.3.2.4 Compare monthly & projected sales volume and explain variances					
				1.3.2.5 Determine sales coming from target market					
				1.3.2.6 Determine sales resulting from client referral plan					
				1.3.2.7 Determine whether business is positioned as planned					
<i>1.3.3 Monitoring and evaluation of the financial plan</i>									
				1.3.3.1 Review financial reports					
				1.3.3.2 Compare financial reports against budget expectations					
				1.3.3.3 Prepare final report on each project					
				1.3.3.4 Compare actual margins with expected margins					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner Operator
				1.3.3.5 Evaluate requirements for cash flow and capital					
				<i>1.3.4 Monitoring and evaluation of the operating plan</i>					
				1.3.4.1 Monitor operating performance indicators					
				1.3.4.2 Monitor type and frequency of customer complaints					
				1.3.4.3 Monitor the effectiveness of problem solving					
				1.3.4.4 Develop options for improving business operations					
				1.3.4.5 Assess options and modify plans					
				1.3.4.6 Revise procedures					
				<i>1.3.5 Monitoring and evaluation of human resources</i>					
				1.3.5.1 Assess performance of employees					
				1.3.5.2 Compare staff salaries with industry / market standards					
				1.3.5.3 Determine effectiveness of training initiatives					
				<b>2. New Home Builder and Residential Renovator Supervisor Competencies</b>					
				<i>2.1 Professional Knowledge and Competencies</i>					
				<i>2.1.1 Industry Knowledge</i>					
				2.1.1.1 Building systems and structures - house as a system					
				2.1.1.2 Essential environmental protection rules and practices					
				2.1.1.3 Understanding of basic business goals and practices					
				<i>2.1.2 Communications Competencies</i>					
				2.1.2.1 Read general information for safety and job performance					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				2.1.2.2 Read technical plans/specifications/regulations					
				2.1.2.3 Perform writing tasks essential to job responsibilities					
				2.1.2.4 Perform mathematical tasks essential to job responsibilities					
				2.1.2.5 Use computers to perform tasks essential to job responsibilities					
				2.1.2.6 Communicate effectively with employees & sub-contractors					
				2.1.2.7 Communicate effectively with non-job site personnel					
				2.1.2.8 Communicate effectively with clients and public					
				<b>2.2 Supervision of Construction and Renovation Activities</b>					
				<i>2.2.1 Project supervision</i>					
				2.2.1.1 Supervise, coordinate and schedule work activities on site					
				2.2.1.2 Establish methods to meet work schedules					
				2.2.1.3 Arrange for and acquire all required materials and labour					
				2.2.1.4 Coordinate work schedules of other contractors and trades					
				2.2.1.5 Requisition materials and supplies					
				2.2.1.6 Resolve work problems					
				2.2.1.7 Recommend work actions to improve productivity					
				2.2.1.8 Prepare schedules and other reports					
				<i>2.2.2 Health &amp; Safety Supervision</i>					
				2.2.2.1 Know health and safety legislation, regulations and					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				practices					
				2.2.2.2 Supervise compliance with Occupational Health and Safety & WCB regulations					
				2.2.2.3 Know and use first aid					
				2.2.2.4 Supervise the use and control hazardous materials					
				2.2.2.5 Prepare a safe and labour efficient job site					
				2.2.2.6 Ensure standards for safe working conditions are observed on site					
				2.2.2.7 Supervise the use personal protective equipment					
				2.2.2.8 Supervise prevention of personal injury (lifting, eyes, etc.)					
				<i>2.2.3 Personnel Supervision</i>					
				2.2.3.1 Supervise, coordinate and schedule apprentices, helpers & labourers					
				2.2.3.2 Recommend personnel actions such as hirings and promotions					
				2.2.3.3 Train or arrange for training of workers					
				<b>3. New Home Builder and Residential Renovator Carpentry Competencies</b>					
				<i>3.1 Foundation Knowledge &amp; Competencies</i>					
				<i>3.1.1 Health &amp; Safety Knowledge and Competencies</i>					





					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner Operator
				3.1.1.1 Health and safety legislation, regulations and practices					
				3.1.1.2 First aid					
				3.1.1.3 Control of hazardous materials					
				3.1.1.4 Personal injury prevention (lifting, eyes, etc.)					
				3.1.1.5 Fall protection, safety harnesses, etc.					
				3.1.1.6 Use of personal protective equipment					
				3.1.1.7 Preparation of a safe and labour efficient job site					
				3.1.1.8 Install safety and warning barriers					
				3.1.1.9 Compliance with Occupational Health and Safety & WCB regulations					
				<i>3.1.2 Worksite Operations Competencies</i>					
				3.1.2.1 Use contract documents					
				3.1.2.2 Interpret drawings					
				3.1.2.3 Use code, regulations and standards					
				3.1.2.4 Selection of proper materials					
				3.1.2.5 Manage and maintain inventory					
				3.1.2.6 Acquire tools and equipment					
				3.1.2.7 Practice theft prevention					
				3.1.2.8 Manage work site conditions					
				3.1.2.9 Manage, supervise workers on-site					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.1.2.10 Train workers on-site					
<b>3.2 Generic Trade Competencies</b>									
<i>3.2.1 Use of tools and equipment</i>									
				3.2.1.1 Uses hand tools					
				3.2.1.2 Uses portable power tools (electric, pneumatic, fuel)					
				3.2.1.3 Uses stationary power tools					
				3.2.1.4 Uses air tools					
				3.2.1.5 Uses material handling equipment					
<i>3.2.2 Installation of building materials</i>									
				3.2.2.1 Knowledge of structural materials (concrete, wood, steel, masonry)					
				3.2.2.2 Knowledge of non-structural materials (insulation, roofing, siding, etc.)					
				3.2.2.3 Knowledge of fasteners, adhesives, and hardware					
				3.2.2.4 Knowledge of membranes (air, vapour & moisture barriers) & sealants					
				3.2.2.5 Knowledge of mechanical ventilation					
				3.2.2.6 Knowledge of water & moisture flows					
				3.2.2.7 Knowledge of air & vapour flows					
				3.2.2.8 Knowledge of window and door materials & installation					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.2.2.9 Knowledge of building science principles					
				3.2.2.10 Knowledge of concrete additives					
				3.2.2.11 Handle, store and organize materials on site					
				3.2.2.12 Damp-proof foundation with insulation & drains					
				3.2.2.13 Install membranes					
			<i>3.2.3 Interpretation of drawings</i>						
				3.2.3.1 Knowledge of contract documents					
				3.2.3.2 Interpret site, architectural & structural drawings, soil logs					
				3.2.3.3 Interpret electrical, mechanical & other trade drawings					
			<i>3.2.4 Use of Codes, Regulations &amp; Standards</i>						
				3.2.4.1 Knowledge of National Building Code					
				3.2.4.2 Familiarity with electrical and plumbing codes/standards					
				3.2.4.3 Knowledge of CSA Standards					
				3.2.4.4 Knowledge of health & safety acts and regulations					
				3.2.4.5 Comply with other national, provincial & municipal codes & regulations					
			<i>3.2.5 Communications on the Job</i>						
				3.2.5.1 Verbal communications of ideas and methods of construction					
				3.2.5.2 Communications in writing					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.2.5.3 Development of sketches from drawings					
				3.2.5.4 Demonstration of skills & knowledge to others (training)					
				3.2.5.5 Use of International hand Signals for equipment					
				3.2.5.6 Use of radio and telecommunications equipment					
				3.2.5.7 Use of computers					
				<i>3.2.6 Site Preparation</i>					
				3.2.6.1 Knowledge of excavation techniques					
				3.2.6.2 Determination of site conditions & problems					
				3.2.6.3 Install temporary utilities, services & site access					
				3.2.6.4 Install shoring, sheet piling and underpinning to prevent collapses					
				3.2.6.5 Build & install temporary safety protection					
				3.2.6.6 Install environmental or safety hoardings					
				3.2.6.7 Construct temporary shelters & furniture					
				3.2.6.8 Construct batter boards					
				3.2.6.9 Plan storage & access of materials & equipment					
				<i>3.2.7 Performance of Quantity Take-offs</i>					
				3.2.7.1 Knowledge of manufacturing specifications					
				3.2.7.2 Knowledge of procedures for quantity take-offs					
				3.2.7.3 Use of scale rules & calculators					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.2.7.4 Scheduling of materials to meet project requirements					
			<i>3.2.8 Use of Access Equipment</i>	3.2.8.1 Knowledge of applicable standards, regulations & specifications					
				3.2.8.2 Knowledge of access equipment					
				3.2.8.3 Safe use of ladders					
				3.2.8.4 Safe use of stationary scaffolding					
				3.2.8.5 Safe use of rolling scaffolding					
				3.2.8.6 Safe use of stages & bleachers					
				3.2.8.7 Safe use of machine scaffolding (scissor lifts & zooms)					
			<b>3.3 Build footing, wall &amp; column forms</b>						
			<i>3.3.1 Build footing forms</i>	3.3.1.1 Establish centre line of footings					
				3.3.1.2 Build footing forms from schedules and drawings					
				3.3.1.3 Align & brace footing forms					
				3.3.1.4 Install blockouts, keyways, anchor bolts & templates for dowels					
			<i>3.3.2 Build wall forms</i>	3.3.2.1 Assemble forms using multiple materials					
				3.3.2.2 Install & erect concrete forms of multiple materials					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.3.2.3 Lay out location of walls					
				3.3.2.4 Establish elevation of concrete placement					
				3.3.2.5 Install miscellaneous inserts, blockouts, rustications, frames, etc.					
				3.3.2.6 Brace & align wall forms					
			<i>3.3.3 Build column and pier forms</i>	3.3.3.1 Assemble column & pier forms					
				3.3.3.2 Install column & pier forms					
				3.3.3.3 Lay out piers & columns					
				3.3.3.4 Align & brace column forms					
				3.3.3.5 Establish elevation for pouring					
				3.3.3.6 Install miscellaneous inserts & anchor bolts					
			<i>3.4 Building forms and placing concrete</i>						
			<i>3.4.1 Install slab/beam forms</i>						
				3.4.1.1 Take dimensions from blueprints					
				3.4.1.2 Assemble & install suspended slab/beam & fly forms					
				3.4.1.3 Lay out & install forms for sidewalks, driveways & curbs					
				3.4.1.4 Establish elevation of concrete					
				3.4.1.5 Install miscellaneous inserts					
				3.4.1.6 Install anchor bolts					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.4.1.7 Install wire mesh					
			<i>3.4.2 Install shoring systems</i>	3.4.2.1 Install jacks or shoring					
				3.4.2.2 Determine location & dimensions from drawings					
				3.4.2.3 Install built-in-place or patented falsework to support floor forms					
			<i>3.4.3 Build forms for concrete stairs</i>	3.4.3.1 Lay out concrete stair forms					
				3.4.3.2 Locate & install miscellaneous inserts in stairs					
				3.4.3.3 Install anchor bolts per specifications					
			<i>3.4.4 Construct concrete joints</i>	3.4.4.1 Knowledge of different concrete joints					
				3.4.4.2 Make construction joints (keyway & bulkheads)					
				3.4.4.3 Install water stops					
				3.4.4.4 Construct control joints					
				3.4.4.5 Construct expansion joints					
				3.4.4.6 Construct isolation joints					
			<i>3.4.5 Place concrete</i>	3.4.5.1 Knowledge of sampling concrete for laboratory testing					
				3.4.5.2 Plan & schedule concreting operations					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.4.5.3 Place & consolidate concrete					
				3.4.5.4 Trowel & finish concrete surfaces					
				3.4.5.5 Select & install reinforcing bars					
				3.4.5.6 Prepare & install keyways					
				3.4.5.7 Install or instruct details for special designs & finishes					
				3.4.5.8 Dismantle & prepare forms for reuse					
				3.4.5.9 Cure concrete					
				<b>3.5 Install framing systems</b>					
				<i>3.5.1 Frame floor and ceiling systems</i>					
				3.5.1.1 Knowledge of types of floor & ceiling framing					
				3.5.1.2 Knowledge of notching & drilling framing members					
				3.5.1.3 Select materials					
				3.5.1.4 Construct floors & ceilings					
				3.5.1.5 Prepare & install sills & gaskets					
				3.5.1.6 Lay out & frame openings					
				3.5.1.7 Install blocking, strapping, shimming, bridging, ribbon strip & sleepers					
				3.5.1.8 Lay out & frame floor framing features					
				3.5.1.9 Square & level floor framing					
				<i>3.5.2 Frame wall systems</i>					





					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.5.2.1 Knowledge of types of wall framing					
				3.5.2.2 Knowledge of loads					
				3.5.2.3 Knowledge of notching & drilling framing members					
				3.5.2.4 Select materials					
				3.5.2.5 Lay out, assemble & erect walls, plumb & square					
				3.5.2.6 Frame non-bearing & load bearing walls					
				3.5.2.7 Determination location of walls					
				3.5.2.8 Install timber frame components					
				3.5.2.9 Install blocking, nailers, furring, firestops, etc.					
				3.5.2.10 Align & brace walls, lateral and diagonal braces					
				3.5.2.11 Knowledge of insulation and air and vapour barriers					
				<i>3.5.3 Frame roof systems</i>					
				3.5.3.1 Knowledge of roof styles					
				3.5.3.2 Knowledge of rafters, roof joists & trusses					
				3.5.3.3 Knowledge of roof members					
				3.5.3.4 Select materials					
				3.5.3.5 Select trusses					
				3.5.3.6 Lay out & install roof joists					
				3.5.3.7 Lay out & install trusses					
				3.5.3.8 Lay out & install rafters					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.5.3.9 Install cornice framing					
				<b>3.6 Install sheathing</b>					
				3.6.1 Install floor sheathing					
				3.6.1.1 Knowledge of types of floor sheathing					
				3.6.1.2 Knowledge of floor fasteners, adhesives & fastening requirements					
				3.6.1.3 Select floor sheathing materials					
				3.6.1.4 Lay out & install floor sheathing					
				3.6.2 Install wall sheathing					
				3.6.2.1 Knowledge of types of wall sheathing					
				3.6.2.2 Knowledge of wall fasteners, adhesives & fastening requirements					
				3.6.2.3 Select wall sheathing materials					
				3.6.2.4 Lay out & install wall sheathing					
				3.6.3 Install roof sheathing					
				3.6.3.1 Knowledge of types of roof sheathing					
				3.6.3.2 Knowledge of roof fasteners, adhesives & fastening requirements					
				3.6.3.3 Select roof sheathing materials					
				3.6.3.4 Lay out & install roof sheathing					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
<b>3.7 Install doors and windows</b>									
<i>3.7.1 Determine doors and windows required</i>									
				3.7.1.1 Knowledge of windows, doors & jambs					
				3.7.1.2 Select doors & windows					
				3.7.1.3 Read door & window schedules					
				3.7.1.4 Verify rough openings					
				3.7.1.5 Determine hand of door					
<i>3.7.2 Install and adjust frames</i>									
				3.7.2.1 Knowledge of installing backing/blocking for security purposes					
				3.7.2.2 Fasten frame					
				3.7.2.3 Insulate cavities around frames					
<i>3.7.3 Install doors</i>									
				3.7.3.1 Fit a variety of doors into frames & openings					
				3.7.3.2 Locate & install hinges					
				3.7.3.3 Test & adjust doors					
<i>3.7.4 Install windows</i>									
				3.7.4.1 Install window, flashing					
				3.7.4.2 Install sash & frame					
<i>3.7.5 Install hardware</i>									



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner
				3.7.5.1 Knowledge of types & styles of hardware					
				3.7.5.2 Read hardware schedule/list					
				3.7.5.3 Install & adjust hardware					
				<b>3.8 Install exterior trim and coverings</b>					
				<b>3.8.1 Install roofing materials and accessories</b>					
				3.8.1.1 Knowledge of roofing materials					
				3.8.1.2 Install metal or neoprene flashing					
				3.8.1.3 Install unitized roofing components					
				3.8.1.4 Check & replace roof sheathing					
				3.8.1.5 Install auxiliary roof features					
				<b>3.8.2 Install exterior wall coverings</b>					
				3.8.2.1 Install building paper & other coverings to wall sheathing					
				3.8.2.2 Install exterior wall flashing					
				3.8.2.3 Install exterior wall coverings					
				<b>3.8.3. Install exterior trim</b>					
				3.8.3.1 Install window & door moulding					
				3.8.3.2 Install fascia, soffits, & continuous vents					
				3.8.3.3 Install rain water gutters & downspouts					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner Operator
				3.8.3.4 Install hardware					
				<b>3.9 Installation of flooring</b>					
				3.9.1 Install hardwood strip and parquet flooring					
				3.9.1.1 General knowledge of materials and methods					
				3.9.1.2 Familiarity with sub-contractors, retailers, manufacturers					
				3.9.2 Install resilient tile/rolled flooring					
				3.9.2.1 General knowledge of materials and methods					
				3.9.2.2 Familiarity with sub-contractors, retailers, manufacturers					
				<b>3.10 Install wall coverings</b>					
				3.10.1 Install gypsum wallboard coverings					
				3.10.1.1 Knowledge of wallboard accessories					
				3.10.1.2 Knowledge of gypsum wallboard products					
				3.10.1.3 Knowledge of fasteners & adhesives					
				3.10.1.4 Prepare wall surfaces					
				3.10.1.5 Secure wallboard to framing					
				3.10.1.6 Fill & tape joints for specified finishes					
				3.10.1.7 Install wallboard accessories					
				3.10.2 Install non-gypsum wall coverings					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner
				3.10.2.1 Knowledge of non-gypsum wall coverings					
				3.10.2.2 Knowledge of plastering & thincoat					
				3.10.2.3 Knowledge of fasteners & adhesives					
				3.10.2.4 Prepare wall surfaces					
				3.10.2.5 Secure non-gypsum wall coverings & accessories					
				<b>3.11 Install ceilings</b>					
				<i>3.11.1 Install suspended ceilings</i>					
				3.11.1.1 Knowledge of ceiling components					
				3.11.1.2 Lay out ceiling patterns					
				3.11.1.3 Establish reference lines					
				3.11.1.4 Level ceiling to grid					
				3.11.1.5 Install anchors for attaching hangers					
				3.11.1.6 Install components of a suspended ceiling					
				3.11.1.7 Install ceiling tile					
				3.11.1.8 Install metal linear ceiling strip					
				<i>3.11.2 Install non-suspended ceilings</i>					
				3.11.2.1 Knowledge of various ceiling materials					
				3.11.2.2 Knowledge of fasteners & adhesives					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.11.2.3 Lay out ceiling patterns					
				3.11.2.4 Install strapping or furring					
				3.11.2.5 Construct non-suspended ceilings					
				<i>3.11.3 Install dropped ceiling/bulkheads</i>					
				3.11.3.1 Knowledge of fasteners					
				3.11.3.2 Knowledge of various uses for dropped ceilings					
				3.11.3.3 Prepare work surface					
				3.11.3.4 Lay out & frame dropped ceilings					
				<i>3.12 Install interior doors/windows</i>					
				<i>3.12.1 Determine doors/windows required</i>					
				3.12.1.1 Knowledge of various types of doors & windows					
				3.12.1.2 Read door & window schedules					
				3.12.1.3 Verify rough openings					
				3.12.1.4 Determine hand of door					
				<i>3.12.2 Install frames</i>					
				3.12.2.1 Knowledge of various types of frames					
				3.12.2.2 Fasten frame to rough opening					
				3.12.2.3 Plumb, square & level door & window frames					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.12.2.4 Install backing & blocking					
		<i>3.12.3 Install doors</i>		3.12.3.1 Fit door into frame					
				3.12.3.2 Locate & install hinges					
				3.12.3.3 Test & adjust doors					
				3.12.3.4 Install stops					
		<i>3.12.4 Install interior windows</i>		3.12.4.1 Install window/sash in frame					
				3.12.4.2 Install stops					
		<i>3.12.5 Install hardware</i>		3.12.5.1 Knowledge of various types of hardware					
				3.12.5.2 Read hardware schedules/lists					
				3.12.5.3 Install & adjust various hardware					
		<i>3.13 Build and install stairs</i>							
		<i>3.13.1 Build stairs</i>		3.13.1.1 Knowledge of various stair designs					
				3.13.1.2 Knowledge of stair components & materials					
				3.13.1.3 Select stairway materials					





					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master Operator	5. Manager/Owner
				3.13.1.4 Lay out & build stair landings					
				3.13.1.5 Calculate, lay out & cut stringers, treads & risers					
				3.13.1.6 Install stringers, treads & risers					
				3.13.1.7 Prepare stairs to specified finish					
				3.13.1.8 Install pre-manufactured stairs					
			<b>3.13.2 Build balustrade</b>						
				3.13.2.1 Knowledge of balustrade & railing designs					
				3.13.2.2 Knowledge of balustrade materials					
				3.13.2.3 Select balustrade materials					
				3.13.2.4 Lay out & cut newels, handrails, balusters, railings & skirt boards					
				3.13.2.5 Install handrails, balusters, railings & newels					
				3.13.2.6 Prepare balustrade to specified finish					
				<b>3.14 Build and install cabinets, countertops and shelving</b>					
				<b>3.14.1 Build cabinets/display cases</b>					
				3.14.1.1 Knowledge of cabinet construction & design					
				3.14.1.2 Knowledge of fasteners, adhesives, materials & hardware					
				3.14.1.3 Install cabinets					



					1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
				3.14.1.4 Install hardware & accessories					
			<i>3.14.2 Builds counters/shelving</i>						
				3.14.2.1 Knowledge of materials for countertops & shelves					
				3.14.2.2 Knowledge of fasteners, adhesives, materials & hardware					
				3.14.2.3 Install pre-moulded countertops					
				3.14.2.4 Install closet & shelving systems					
				3.14.2.5 Install hardware & accessories					
				3.14.2.6 Lay out & cut openings for other trades					
			<b><i>3.15 Install architectural materials</i></b>						
			<i>3.15.1 Install trim</i>						
				3.15.1.1 Knowledge of architectural materials					
				3.15.1.2 Knowledge of adhesives & fasteners					
				3.15.1.3 Read finish schedules					
				3.15.1.4 Match & select architectural materials					
				3.15.1.5 Prepare architectural materials for specified finish					
				3.15.1.6 Install architectural paneling & millwork					
			<i>3.15.2 Install fixtures</i>						
				3.15.2.1 Knowledge of architectural fixtures					



						1. Entrant Helper	2. Apprentice	3. Journeyperson	4. Master	5. Manager/Owner Operator
					3.15.2.2 Follow manufacturer's installation procedures					
					3.15.2.3 Read room finish schedules					