



Skilled Trades in the Construction Sector



May 2017

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The material contained in this report has been prepared by Tricia Flatley from the Local Employment Planning Council for Elgin, Middlesex, and Oxford and is drawn from a variety of sources considered to be reliable.

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Introduction







Skilled trades' people are in high demand when taking a look at the construction sector in the London Economic Region (LER) (which includes Elgin County, Middlesex County, Oxford County, and the cities of St. Thomas and London). The sector has three main subsectors: construction of buildings, heavy and civil engineering construction, and specialty trade contractors. For the purpose of this report, there will be a focus on specialty trade contractors as there were over 13,000 people employed in the industry (Emsi Q3 2016 Data Set). This means there are exciting opportunities for someone looking to master a skilled trade and depending on the trade, you may or may not be required to register as an apprentice. With increased government regulations, to ensure job sites are safe, there is a need for project managers and inspectors that are detail oriented and can solve a variety of problems that arise on a construction site.

The goal of this report is to provide information on the need for students and job seekers to be made aware of the emerging and changing skill requirements to be better prepared for employment in the construction industry. The report will also provide insight into the industry and what is required when looking at the skilled trades as a viable career option.

This research report is for service providers, educators and other stakeholders on changing and emerging skill requirements for skilled trade's people within the construction sector.

This is an additional report in a series that explores the evolution of skills required to be successful in key employment sectors. Each sector has been identified through discussion with local economic development offices and by examining the prominent sectors in our communities.

Within Elgin, Middlesex, Oxford and London, it is clear that these five sectors play a significant role in our economy and our workforce:

-  Agriculture
-  Health Care
-  Advanced Manufacturing
-  Transportation and logistics
-  Retail
-  Construction

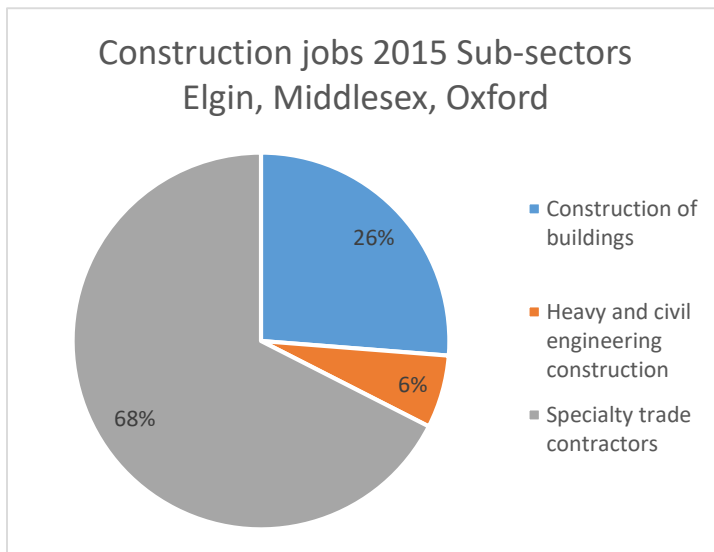


The Construction Sector

According to Statistics Canada, the construction sector is divided into three main subsectors within the LER:

1. Construction of buildings – residential and non-residential building construction
2. Heavy and civil engineering construction- highway, street, and bridge construction, land subdivision and utility system construction
3. Specialty trade contractors – foundation, structure, and building exterior, building equipment, building finishing, and other specialty trade contractors.

In Ontario alone it is estimated that between 2011 and 2019 there will be 73,000 jobs to replace due to retirement and 84,000 new jobs created through construction. Talk about a world of opportunity, Construction Sector Council.



As you can see from figure 1, 68% of the employment in the construction sector is under specialty trade contractors. As defined by Statistics Canada, “Specialty trade contractors usually work under contract to general contractors or operative builders to carry out a component of an overall project. However, they may contract directly with the owner of the property, especially in renovation and repair construction.”

Figure 1 : Emsi Q3 2016 Data Set



If we dive deeper into the data, there are four main industry groups that help classify the specialized activities in this sub-sector. These activities range from the initial site preparation for new construction, the construction of building foundations and structures, installing building equipment and systems, and the finishing of buildings and other structures.

As you can see from figure 2, there are over 5,500 people employed within the building equipment contractors' sub-sector. This means there are many skilled trades people found within the construction industry.

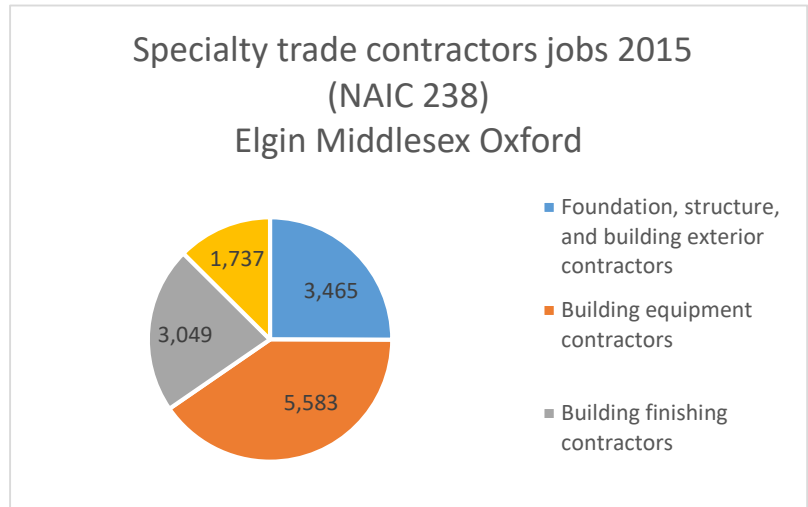


Figure 2: Emsi Q3 2016 Data Set

Taking a look at figure 3, the industry that saw the largest increase from 2011 to 2015 was “building finishing contractors” (NAIC 2383), with a 38% increase in jobs.

NAICS	Description	2011 Jobs	2015 Jobs	2011 - 2015 Change	2011 - 2015 % Change
2361	Residential building construction	4,315	4,324	9	0%
2362	Non-residential building construction	1,092	1,054	(38)	(3%)
2371	Utility system construction	716	779	63	9%
2372	Land subdivision	233	88	(145)	(62%)
2373	Highway, street and bridge construction	504	371	(133)	(26%)
2379	Other heavy and civil engineering construction	43	44	1	2%
2381	Foundation, structure, and building exterior contractors	3,206	3,465	259	8%
2382	Building equipment contractors	5,266	5,583	317	6%
2383	Building finishing contractors	2,215	3,049	834	38%
2389	Other specialty trade contractors	1,520	1,737	217	14%

Figure 3: Emsi Q3 2016 Data Set

Construction Sector Outlook

According to BuildForce Canada's 2017 Construction and Maintenance Looking Forward Highlights Report, **"Construction demands in Southwest Ontario (including the economic regions of London, Windsor-Sarnia, and Stratford-Bruce Peninsula) are expected to rise in 2017 and 2018, driven by peaks in major project demands and strong gains in commercial and institutional building activity.... Diverging trends between residential and non-residential demands, may present opportunities for some residential workers, depending on skills and experience, to transition to non-residential construction."**

Taking a step back, the 2016 Ontario Economic Update: London Economic Region suggests that the gain in construction employment is supported by an increase in residential and non-residential investments, for example London CMA (census metropolitan area) housing starts were up 11 percent through to October 2016. According to the report, non-residential building construction investment spending was up more than 20% from the beginning of 2016 to the third quarter in the London CMA. For reference, the London CMA includes the municipalities of London, St. Thomas, as well as Thames Centre, Middlesex Centre, Strathroy-Caradoc, Adelaide Metcalfe, Central Elgin and Southwold.

The following residential and non-residential highlights have been taken from BuildForce Canada's 2017 Construction and Maintenance Looking Forward Highlights Report.

Southwestern Ontario Residential highlights

- Housing starts follow a modest upward trend, reaching an anticipated peak of 5,500 units in 2021 and then cycle down following slower population growth.
- The pace of renovation activity slows, but contributes to employment opportunities.
- Overall residential employment rises by 700 jobs to a peak level in 2021 and then recedes. Employment is 1,200 jobs lower than current levels by the end of the scenario period in 2026.

Southwestern Ontario Non-Residential highlights

- Major project requirements are expected to add 3,500 jobs, increasing engineering employment by 30 percent to peak levels in 2020.
- Starting in 2020, planned nuclear refurbishment work and other utility projects raise long-term requirements for key trades.
- Total employment rises to a peak level in 2020, adding 4,900 jobs. Labour requirements recede as some major projects are completed, but employment remains 13 percent higher at the end of the scenario period in 2026.

Local Investments

There have been several announcements that help support the idea that there will be a demand for people to work within the construction industry. Below are several highlights that have made the news recently. Local and regional labour market events and announcements are available on the Statistics Canada Job Bank website by searching job trends and news.

- Loblaw Companies Limited plans to open 30 new stores and renovate more than 500 existing stores. The \$1.3B investment will create about 10,000 retail, trade and construction jobs across Canada;
- The Government of Canada is investing \$37M for 54 transit projects in London;
- The BMO Centre/London Optimist Sports Centre in London will start a \$8M expansion in March, adding two indoor soccer fields;
- Construction of the first phase of the On Track elevated park project in St. Thomas will begin in April;
- Construction of the new 3,000 sq. ft. Elgin County Museum is expected to start in early spring and be completed by October.



London Mayor Mel Brann, Deputy Premier Deb Matthews, and London MP Kate Young and Peter Fugère stand on a TTC bus, following public transit funding announcement, March 31, 2017. (Photo by Miranda Chant, Blackburn News)

Ottawa Chips In \$37M For Transit, Including BRT

BY MIRANDA CHANT MARCH 31, 2017 12:40PM

Federal funding for London's bus rapid transit (BRT) system has slowly begun to flow. Roughly \$8-million for design and engineering work on the city's rapid transit plan, Shift, was announced on Friday at the London Transit Commission headquarters on Highbury Ave.

"The support is very preliminary," said London North Centre MP Peter Fragiskatos. "It is for the support of design and it is for the support of studies undertaken to look at BRT and how it might best function in the city, how it can best provide a more efficient, effective service for transit users."

The flow of money comes as downtown merchants continue to voice concern over the effect the routes and construction would have on their businesses. A city committee voted on Monday to consider alternative routes for the \$300-million plan. Final routes are expected to be finalized in the coming months.

"What route is going to be the final route is still to be decided and people are talking and that's great. But we want to underscore how important it is that transit improves in the city of London. We are all in favour of that," said London West MP Kate Young.


The money for BRT is part of a bigger announcement of \$50.5-million in federal funding for 114 public transit infrastructure projects throughout southwestern Ontario.

London will receive a total of \$37-million for 54 projects in the city, including \$8-million for the overhaul of Dundas St. to a pedestrian-first space known as Dundas Place.

Other highlights of the investment include \$1.8-million to replace all 810 bus stoppies in the city, \$1.8-million to install clock-face



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Loblaw plans to open 30 new stores, upgrade others

BRAMPTON, Ont. — The Canadian Press
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Loblaw said Thursday that it plans to open 30 new stores and renovate more than 500 existing stores as it continues to adapt to changes in the food retail sector.

Construction of first phase of the St. Thomas project will begin in April

By Jonathan Juha, Postmedia News
Thursday, March 2, 2017 4:46:22 EST PM



Serge Lavie, president of On Track St. Thomas, stands on top of the Michigan Central Railway Bridge where he and his group are working to create Canada's first elevated Park. (JONATHAN JUHA/Postmedia Network)

Canada's first elevated park at the former Michigan Central Railway Bridge will appeal to local residents and tourists, the head of the project says.

"It's not going to be a place where you just go and walk your dog and back again. It can be so much more, so we are building this park so people can do many things," said Serge Lavie, president of On Track, a local community group spearheading the project.

[Reactions and 108](#)

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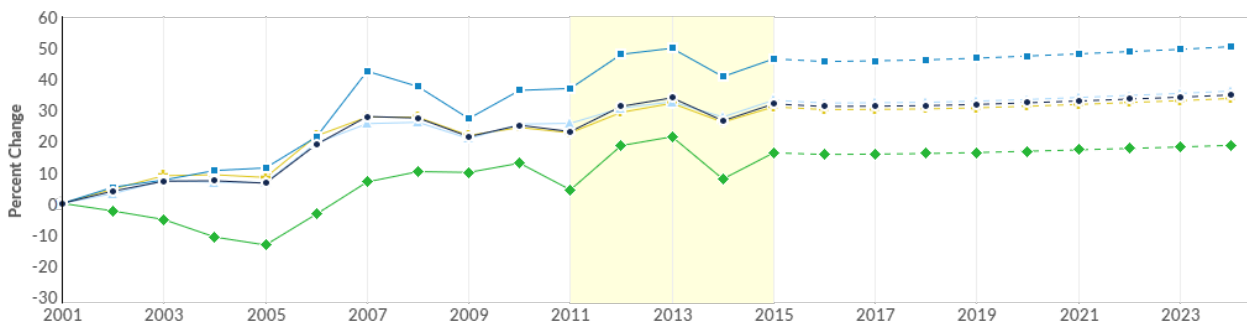
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Trends in the Construction Sector

Employment trends

There are over 20,000 people employed within the Construction sector (NAIC 23) in the LER. As you can see in the chart below, most of the employment can be found in London-Middlesex. Elgin County saw the largest increase in construction related employment from 2011 to 2015, increasing 11.4%.

Construction Sector Employment – London Economic Region



	Region	2011 Jobs	2015 Jobs	Change	% Change
●	Region	19,109	20,493	1,384	7.2%
●	Oxford	3,508	3,752	244	7.0%
●	London	11,531	12,212	681	5.9%
●	Elgin	1,747	1,946	199	11.4%
●	Middlesex	13,855	14,796	941	6.8%
Emsi Q3 2016 Data Set					

As you can see in the chart below, there has been a 13% increase in the number of specialty trade contractors from 2011 to 2015.

NAICS	Description	2011 Jobs	2015 Jobs	2011 - 2015 Change	2011 - 2015 % Change
236	Construction of buildings	5,407	5,378	(29)	(1%)
237	Heavy and civil engineering construction	1,495	1,282	(213)	(14%)
238	Specialty trade contractors	12,208	13,834	1,626	13%
Total		19,109	20,493	1,384	7%
Emsi Q3 2016 Data Set					

Occupational trends

There are a variety of occupations that contribute to the construction industry. Below is a chart that shows which occupations have increased the most from 2011-2015 in the LER. As you can see “Trades helpers and labourers” (NOC 761) accounted for 11.9% of the jobs in the industry in 2015. “Electrical trades and electrical power line and telecommunications workers” (NOC 724) accounted for 7.8% of the jobs in the construction industry in 2015. There was also a huge jump in “other installers, repairers, and services” occupations –with an addition of 366 positions, from 2011-2015 in the LER.



NOC	Description	Employed in Industry (2011)	Employed in Industry (2015)	Employed in Industry (2015)	Change (2011 - 2015)	% Change (2011 - 2015)	% of Total Jobs in Industry (2015)
744	Other installers, repairers and servicers	265	631	631	366	138%	3.1%
730	Contractors and supervisors, maintenance trades and heavy equipment and transport operators	886	920	920	34	4%	4.5%
728	Masonry and plastering trades	1,084	1,166	1,166	82	8%	5.7%
725	Plumbers, pipefitters and gas fitters	936	1,043	1,043	107	11%	5.1%
729	Other construction trades	1,285	1,402	1,402	117	9%	6.8%
761	Trades helpers and labourers	1,933	2,442	2,442	509	26%	11.9%
752	Heavy equipment operators	447	555	555	108	24%	2.7%
723	Machining, metal forming, shaping and erecting trades	392	518	518	126	32%	2.5%
727	Carpenters and cabinetmakers	1,153	1,360	1,360	207	18%	6.6%
724	Electrical trades and electrical power line and telecommunications workers	1,405	1,589	1,589	184	13%	7.8%
Emsi Q3 2016 Data Set							

Employer Trends

Following several interviews and discussions with local industry associations and employers there were several factors they look for in a potential hire.

- Employers looking for people who have access to reliable transportation or who own a vehicle and have a licence. Most construction employers require workers to drive a company vehicle on site, therefore requiring a potential employee to obtain a drivers licence.
- Several employers noted that there is an increase in the awareness of hazardous materials and with such awareness comes a position for hazardous materials specialists to ensure that hazardous materials are handled and controlled in a safe manor and are in compliance with regulatory requirements
- There is an emphasis on more efficient and eco-friendly home building- This will mean more of a demand for inspectors, installers, and plan designers.

DID YOU KNOW...

In Canada, about 28% of your earnings is directly related to your Essential Skills. Nothing else – not even education and experience – contributes as much to your income.

– [Industry Training Authority of British Columbia, "Why Essential Skills matter in the Trades"](#)

Technology trends

According to the Construction Sector Councils report entitled The Impact of Technology on the Construction Labour Market, there are six main technology innovations impacting the construction sector. They include:

1. Pre-fabrication
2. Long-life materials
3. Machinery and equipment
4. Task elimination from new materials or new designs
5. Displacing existing materials with new materials
6. Efficiency gains from improved project management

On the next page see the chart detailing the innovation and the impact it has on the labour market. The information below has been re-created from the Construction Sector Councils report entitled The Impact of Technology on the Construction Labour Market.



Technological Innovation	Effects
Pre-fabrication	<ul style="list-style-type: none"> • A reduction of labour requirements • Specialized installers usually don't require a full range of traditional trade skills- which could slow down the support for apprenticeship • Contractors may specialize in the installation of a particular product line, increasing the demand for specialised skills therefore; increasing the importance of supplier-based training • Reduces overall cost of completed construction- raising materials share and reducing labour share of total costs. • May reduce the demand for unskilled helpers while increasing the demand for specialized installers
Long-life materials	<ul style="list-style-type: none"> • Reduction of the demand for repair and restoration work • Could modify or get rid of existing materials • Most trades are defined by the materials they work with, therefore; substituting one material for another may alter skill requirements in a trade
Machinery and equipment	<ul style="list-style-type: none"> • Reduction in the need for helpers or crews • Reduction of time it takes to complete, reducing overall hours of employment • Increases skill requirements for operators • Robotic technologies eliminate standardized, repetitive labour ie: robotic brick-laying equipment (more common in Europe and Japan).
Task elimination from new materials or new designs	<ul style="list-style-type: none"> • Different from labour elimination arising from mechanization, ie: in concrete forming, stay-in-place forms eliminate the need to dismantle traditional forms.
Displacing existing materials with new materials	<ul style="list-style-type: none"> • Substituting materials may alter the trade composition for the demand for labour, ie: paving replacing asphalt paving
Efficiency gains from improved project management	<ul style="list-style-type: none"> • Using information technology to achieve significant scheduling and co-ordination efficiencies • Project management efficiencies reduce non-productive time and thereby reduce the overall amount of labour time required for a project.
<p>For more details on this chart download the report: http://www.buildforce.ca/en/products/impact-technology-construction-labour-market</p>	

The report goes one step further to highlight the trades in which new skills will be required. Below is a highlight of the implications that technology will have on some of the trades in demand:

Trade	Possible changes due to technology
Labourers	Greater need for general construction skills and regulation of trade
Mechanical trades	Residential mechanical systems have increased in sophistication requiring installer skills to keep pace
Heavy equipment operators	Increased importance of instrumentation skills
Plumbers/ pipefitters	Increased importance of instrumentation skills for high pressure hydraulic systems
All trades	Increase in computer literacy requirements for foremen

Regulatory trends

If you want to work within the construction sector there are several training courses you must take to stay safe on a construction site. Training may depend on which skilled trade a person is looking to master.

- Starting April 1st, 2015, all employers in Ontario were legislated to ensure that workers on construction sites completed Ontario Ministry of Labour-approved working at heights training. The deadline for compliance was April 1st, 2017.



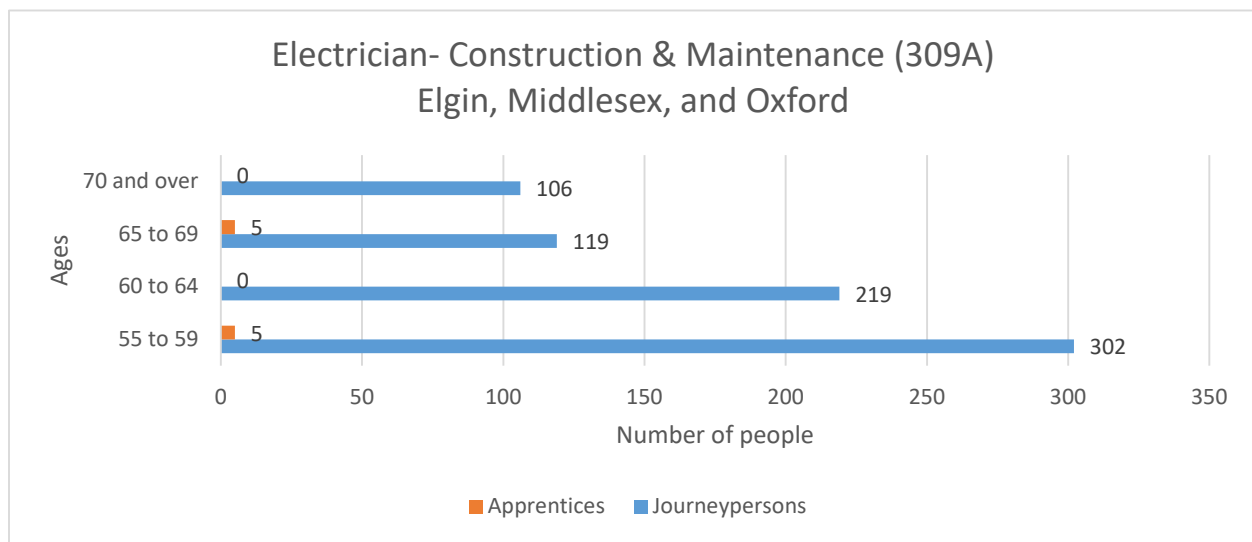
A Demand in Skilled Trades

As you can see below, electricians (trade code 309A) will be in demand in the coming years, mainly due to the fact that these workers will be retiring. Students in high school should consider a skilled trade when looking at a viable career option. Depending on the skilled trade, a student may be required to register as an apprentice under a licenced journeyperson. Just like a university education, apprenticeships can take just as long to complete as a university degree. Some students may benefit from taking part in a “specialist high skills major” while attending high school. Not all high schools have such a program and therefore it is important to research which options are best for a student.

DID YOU KNOW...

According to a study by three colleges, apprentices with the Essential Skills they need for their trade are 8 times more likely to pass their technical exams.

– [Industry Training Authority of British Columbia, "Why Essential Skills matter in the Trades"](#)



The chart above shows that there are over 700 registered electricians throughout the Counties of Elgin, Middlesex and Oxford. As you can see, most of the journeypersons are heading towards the retirement age, while there are very few apprentices to take their place.

While this is just a snap shot of one trade within the construction sector, according to several local industry associations, there is a demand for the following:

Plumbers, Framers, General Carpenters, Roofers, Construction Craft Workers, Drywallers, Brick and Stone Masons, Cement Finishers and Painters.

Below is a picture of the Apprenticeship in Ontario poster, which can be found on the Ontario Youth Apprenticeship Program website: www.OYAP.com. The poster is a useful resource for those looking to learn more about the different trades and whether or not the trade is voluntary (which means you do not need to register as an apprentice or licensed journeyperson) or compulsory (which means you must be registered apprentice or journeyperson).

According to the OYAP website:

- 40% of all occupations in 2025 will be in skilled trades;
- You must earn 70% on your Certificate of Qualification exam to earn a Red Seal designation;
- And 48% of the current workforce will be eligible to retire in the next 5 years.



Voluntary Trade

Refers to trades that do not require being a registered apprentice or licensed journeyperson.



Compulsory Trade

To work in a trade licensed under 'compulsory', one must be a registered apprentice or journeyperson.



Red Seal Trade

The Red Seal or Interprovincial Standards Program allows for greater mobility of skilled trade workers across Canada

Essential skills needed for construction careers

Following several discussions and interviews with local construction associations and employers, it became clear that most employers are looking for people with essential skills. Workplace essential skills are not technical skills, but are the core skills you need to continue learning and to complete day-to-day tasks and activities a work, for example computer skills, reading, and math. Through these discussions, it appears the people looking for work within construction are not equipped with these core skills. Ideally, these people would learn essential skills through life experience and the education system.

DID YOU KNOW...

The level of Essential Skills required for most trades is as high or higher than it is for many white-collar jobs. - [Skills Canada](http://SkillsCanada.ca)

The following chart has been taken from BuildForce Canada's Careers in Construction website. The website (www.careersinconstruction.ca) provides additional resources for those looking to build such skills.

Continuous Learning	Improving your skills and knowledge on a regular ongoing basis
Decision Making	Making a choice among options
Digital Technology	Using computer applications or technical tools to operate machinery or to input/extract information
Document Use	Reading and interpreting documents to extract information
Job Task Planning and Organizing	Working independently to plan and organize daily tasks
Numeracy	Working with numbers to perform calculations
Oral Communication	Conveying or exchanging information verbally
Problem Solving	Coming up with solutions to challenges
Reading Text	Reading various types of documents of varying complexity
Significant Use of Memory	Performing tasks that call upon greater memory use than most jobs
Thinking Skills	Finding and evaluating information to make decisions, solve problems, and plan and organize job tasks
Working with Others	Interacting with co-workers to get the job done
Writing	Conveying ideas by writing text
http://www.careersinconstruction.ca/en/careers/essential-skills	

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