



Management Jobs in Construction and Engineering in Sarnia Lambton

What do management jobs in Construction and Engineering look like locally?

This report summarizes occupational information related to management positions in construction; home building and renovation; and engineering. It also addresses related job data and local information.

The report is divided into three main parts:

Part 1: Senior Managers within the Construction industry; Construction Managers; and Home Building and Renovation Managers and **Part 2:** Engineering Managers.

Parts 1 & 2 will include:

- a general overview of these management occupations including local labour market information
- information for job seekers on the requirements of and pathways to these management positions
- an identification of the qualities and skills required for management positions
- resources outlining where job seekers can gain management skills and job search information

Part 3: will identify four local labour supply demand issues and corresponding actions that can be undertaken by the community to address these issues.

This report summarizes occupational information and job data from:

- *Statistics Canada: Canadian Business Counts, June 2017 and 2011 National Household Survey*
- *On line postings data from TalentNeuron Recruit*
- *National Occupational Classification System (NOC 2016) is the source primarily for occupational descriptions throughout the report*
- *Government of Ontario - www.ontario.ca; Ontario Labour Market - www.jobbank.gc.ca and <https://www.ontario.ca/page/labour-market>*
- *Consultation meetings which were held from July to November 2017 with local employers and service providers*

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www.slwdb.org

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The views expressed in this report are those of SLWDB and do not necessarily reflect those of the Province.



Most management skills are related to five basic, fundamental functions: planning, organizing, coordinating, directing, and oversight. <https://www.thebalance.com/management-skills-list-2062427>. Other skills, as they relate to each of the specific management occupations in this report will also be identified. Those who wish to pursue positions at the management level, should also be aware of and understand the work demands and additional responsibilities that may be required in management positions.

Management Jobs in Construction

For the purpose of this report, specific occupations related to **construction management** as identified in the National Occupational Classification (NOC 2016) are:

1. Senior managers within the construction industry (NOC 0016)
2. Construction Managers (NOC 0711)
3. Home building and renovation managers (NOC 0712)
(Proprietors of residential home building and renovation businesses are classified as managers)

National Occupational Classification 2016 is the nationally accepted standard that classifies and describes occupations according to their skill type and level. It is used daily by thousands of people to understand the jobs found throughout Canada's labour market.

Supervisory positions within the construction industry include: (NOC 7201-7205)

Contractors and supervisors, machining, metal forming, shaping and erecting trades

Contractors and supervisors, electrical trades and telecommunications

Contractors and supervisors, pipefitting trades

Contractors and supervisors, carpentry trades

Contractors and supervisors, other construction trades, installers, repairers and servicers

Fast Fact: There are 1,028 construction companies in Sarnia Lambton.

Resource: Statistics Canada, Canadian Business Counts, June 2017

Sarnia Lambton: Managers in Construction represent approximately 8% of all jobs in the construction industry and contractors and supervisors represent approximately 7%.

Resource: Statistics Canada, National Household Survey 2011

What is in the Title?

Management jobs in construction include many different titles, and the title, "Construction Manager" can be found in many industry categories. For example, a job seeker might search for a job as a Pipeline Construction Manager which is also classified under the National Occupational Classification as another title for Construction Manager, but the search will come up with a job title such as Project Manager/Field Engineer. Likewise, supervisory jobs are often classified in online job postings as "management" jobs, yet a supervisor would in fact, report to a manager. Someone searching for engineering management positions would also find titles such as Project Manager, Engineering. Consultations in the community supported this idea that sometimes it is very difficult to determine what a management job might actually be as it is often referred to by different job titles. It is very important to read the specific requirements for these jobs, whatever the actual job title might be. For employers, using the NOC descriptions is helpful in creating accurate job descriptions for employment opportunities. This report has listed various job titles that might be helpful in the job search for management positions in these fields.

Part 1:

Senior Managers within the Construction Industry

Senior managers in construction plan, organize, direct, control and evaluate, through middle managers, the overall operations of construction companies. They formulate policies that establish the direction to be taken by these companies, either alone or in conjunction with other members of a board of directors. In addition to working in construction companies, they may own and operate their own business. In searching for jobs related to senior managers, job seekers will encounter a number of different management titles such as: chief executive officer (CEO) – construction; construction general manager; vice-president – construction; human resources vice-president – construction; information systems vice-president – construction and residential construction company president.

Education and training for employment

A university degree or college diploma in engineering, business administration, commerce or other discipline related to the company's product and several years of experience as a middle manager in construction is usually required.

Skills required

Along with business and technical skills required to do the job, other skills that are essential to this occupation include: planning, decision making, organizing, critical thinking, problem solving, communication both written and verbal, professional judgement, negotiation skills, and leadership skills. The importance of “soft skills” or another term also used in the community, “people skills” was emphasized.

Source: National Occupational Classification System (NOC 2016)

Construction Managers

Construction managers plan, organize, direct, control and evaluate the activities of a construction company or a construction department within a company, under the direction of a general manager or other senior manager. They are employed by residential, commercial and industrial construction companies and by construction departments of companies outside the construction industry.

Job seekers will also encounter the following job titles in searching for this occupation: commercial construction manager; construction project manager; construction superintendent; housing construction manager; industrial construction manager; pipeline construction manager; and residential construction manager.

Education and training for employment

- A university degree in civil engineering or a college diploma in construction technology is usually required.
- A master's degree in project management may be required.
- Several years of experience in the construction industry, including experience as a construction supervisor or field superintendent are usually required.
- Extensive experience in the construction industry may substitute for postsecondary education requirements.
- Some employers may require professional engineering status or construction trade certification.
- Gold Seal Certification may be required.

Management skills that employers are looking for in a potential job seeker as a construction manager

- Solid understanding of the construction industry.
- Effectively function within multidisciplinary teams of owners/developers, project managers, architects, engineers, planners, government authorities, contractors and trade contractors.
- Have a comprehensive knowledge of construction safety and quality management systems and sustainable construction practices.
- Have a broad technical (such as computer skills, software knowledge) and business management background in order to coordinate multi-disciplinary teams.
- The ability to liaise with various stakeholders.
- Good communication skills.
- Analytical and organized.

Source: *National Occupational Classification System (NOC 2016)*

What do local employers say?

- All of the above skills were identified as being relevant. The importance of “soft skills” such as good communication skills, teamwork, and problem solving were further emphasized due to the interaction and communication with ownership, those working in the field and clients.
- A civil engineering degree, and a Professional Engineer status (P.Eng.) was highly recommended.
- A college diploma as a Civil Engineer and (C.Tech designation-Certified Technician) combined with several years of experience would also be considered in obtaining management positions.
- The Gold Seal Certification is a national standard; therefore, it is recognized across Canada, is valuable to have and may be required by some companies.
- Experience “*in the field*” is key to pursuing a management position.
- Leadership qualities that will motivate a team involved in any project are necessary.
- It was consistently emphasized that anyone involved in the construction field regardless of position, know and understand the training, certifications and qualifications required to work in this field both as it relates to health and safety in general, and health and safety as it pertains to an area of specialization within the construction field. It was also noted that the Sarnia Lambton Industrial Education Cooperative (IEC) and the construction community work very closely in determining health and safety requirements and training required for this sector. Managers in the field should be aware of all health and safety issues.

Further information on this occupation can be found at:

<http://noc.esdc.gc.ca/English/noc/ProfileQuickSearch.aspx?val=0&val1=0711&ver=16&val65=construction%20manager>

Careers in Construction: <http://www.careersinconstruction.ca/en>

Home Building and Renovation Managers

Home building managers or builders own, operate and manage companies engaged in the construction of new residential homes.

Home renovation managers or renovators own, operate and manage companies engaged in the renovation of existing residential homes.

A job seeker will also come across the following job titles in searching for information on this career: home builder; home renovation contractor; home renovator; renovation contractor; residential homes contractor.

Employment and/or education requirements

- Extensive experience in the home construction industry, including experience as a general supervisor is usually required for self-employment as a home builder or a home renovator. Experience as a skilled tradesperson is also considered an asset.
- Leading in Energy and Environmental Design (LEED) certification may be an asset in bidding on and obtaining building and renovation projects.
http://www.cagbc.org/CAGBC/Education/LEEDCred/LEED_Credentials.aspx
- Progression to senior management positions is possible with extensive experience and training in management.

Ontario specific requirements

Registration with the Tarion Warranty Corporation is required for residential new home builders.

<https://www.tarion.com/builders/what-is-a-new-home-builder/who-needs-to-get-registered>

In many cases, home building and renovation managers undertake the performance of all the work and supply of all the material necessary in the home build or renovation; therefore, the following skills are necessary to this occupation.

- Solid understanding and experience in residential home building or renovations.
- Communication skills and the ability to work with others.
- Planning and organizing skills for preparing work schedules, hiring and coordinating trade subcontractors.
- Technical skills to read blue prints, troubleshoot building problems, calculate dimensions and estimate material needs.
- Business skills to develop and implement marketing and advertising strategies to promote company's products and services.

Source: National Occupational Classification System (NOC 2016)

What do local employers say?

- Experience directly related to this occupation as identified above, is required before becoming a homebuilder or home renovation manager.
- Important to stay current in the “trends” of home building and renovating.
- Communication skills also include “negotiation” skills as you are dealing with customers, tradespeople, and businesses. Customer service is extremely important.
- Must ensure that all workers on site have the necessary health and safety training.
- Knowledge and understanding of regulations, bylaws, policies, and codes related to the industry.
- Recognize the financial considerations related to owning your own business; for example, paying yourself a wage, “saving for a rainy day” in the event of an economic downturn, seasonality of work, financing projects, payroll, WSIB, etc.

Fast Fact: The Sarnia Lambton Home Builders’ Association is comprised of professional builders, renovators, developers, suppliers, subcontractors and supporting financial institutions and professionals in the building industry. www.slhba.ca

Local Labour Market Information

The Ontario and Local Labour Market information is useful in helping individuals and organizations make decisions about careers, education, training and employment.

If you are a student or a job-seeker, labour market information can help you:

- identify career paths that suit your skills and interests
- see which jobs have the best outlooks
- find where the jobs are: the sectors, occupations and locations
- find out what skills are in demand and the employment requirements for a particular type of job

If you represent an organization, you can find labour market information like regional and demographic trends, industry statistics, and information on workplace innovation. This can help you make decisions about recruiting new staff and training your current workforce.

<https://www.ontario.ca/page/labour-market>

What does the local labour market look like related to Senior Managers within the Construction industry, Construction Managers and Home Building and Renovation Managers?

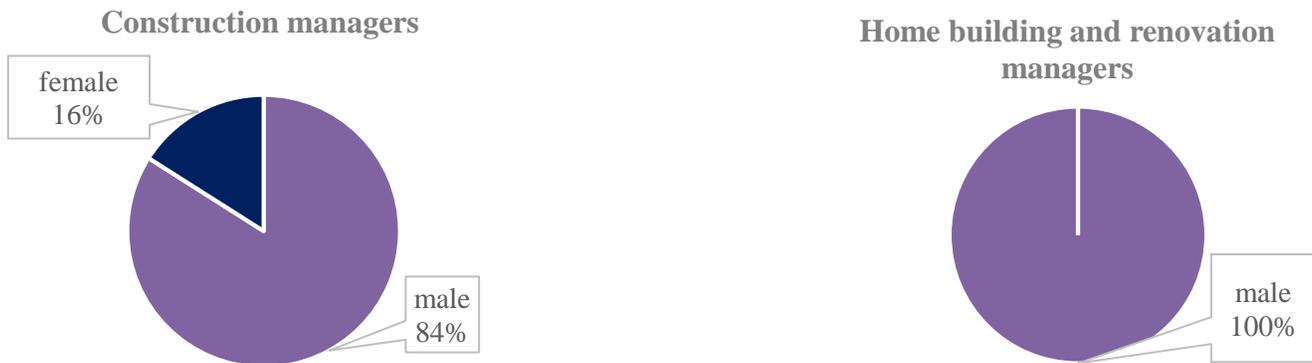
The number of local jobs and residents who hold jobs locally or outside of Sarnia Lambton

	Local jobs	Residents who hold jobs (locally or outside of Sarnia Lambton)
Senior managers within construction industry	80	65
Construction managers	120	155
Home building and renovation managers	120	210

Source: Statistics Canada, 2011 National Household Survey (NHS), custom table

The number of Sarnia Lambton residents who hold jobs as senior managers within the construction industry locally or outside of Sarnia is less than the number of local jobs available. Workers outside the community may be filling these local jobs. The number of residents who work as construction or home building and renovation managers is greater than the number of local jobs and may be commuting outside of Sarnia Lambton for work.

Females are underrepresented by a sizeable margin in construction-related management fields



The above pie chart represents females who are residents of Sarnia Lambton who hold construction-related management jobs either locally or outside of Sarnia Lambton.

Source: Statistics Canada, 2011 NHS, custom table. Note: Age and sex demographic information is not available for senior managers who work within the construction industry as Statistics Canada suppresses data for confidentiality reasons so that people cannot be personally identified in a community through the data.

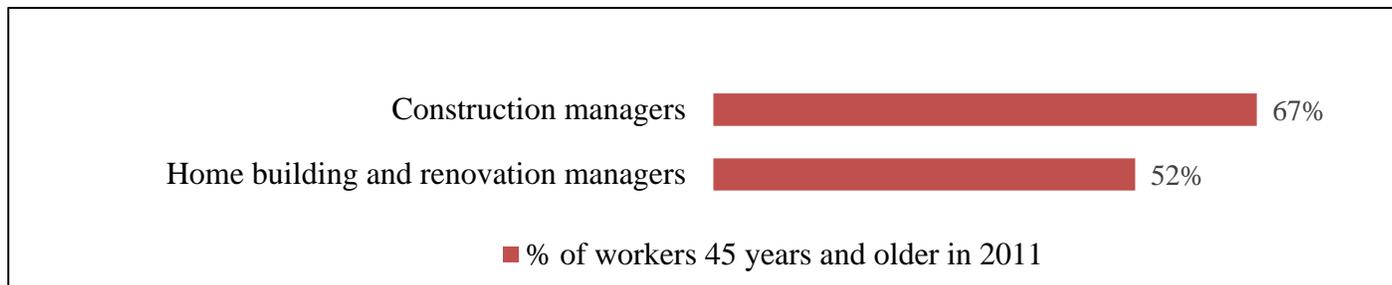
Community consultations verified that there are fewer females than males in construction management positions. This may be due, in part, to the fact there are not as many females working in the construction industry in general. It was noted, however, that women’s representation, although still minimal, has improved over time. As well, the number of females in postsecondary programs that could lead to positions in construction management, such as civil engineering programs has increased. This was also verified by, Statistics Canada, Labour Force survey, Proportion of women aged 25 to 54 in professional occupations in natural and applied sciences, Canada, 1987 to 2015. <http://www5.statcan.gc.ca/olc-olc.action?objId=89-503-X201500114694&objType=47&lang=en&limit=0>

Fast Fact: “Women make up 54 per cent of the workforce in Canada, there are only about 11 per cent in the construction workforce across Canada, with less than four per cent on the tools and less than one per cent in the boardroom making important decisions.” The Canadian Association of Women in Construction (CAWIC) unveils action plan for more women in Construction. *Angela Gismondi, May 29, 2017:* <https://canada.constructconnect.com/joc/news/Labour/2017/5/CAWIC-unveils-action-plan-for-more-women-in-construction-1024312W>

The Canadian Association of Women in Construction: www.cawic.ca

[Hiring and Training Women in the Skilled Trades – the Business Case for Employers](#). Canadian Apprenticeship Forum

2/3rds of construction managers in Sarnia Lambton will likely retire by 2031



Source: Statistics Canada, 2011 NHS, custom table

Local Employment Outlook for 2017-2019 in Windsor-Sarnia

Senior Managers

Employment outlooks were not assessed for Senior managers-construction due to low levels of employment. (NOC 0016) in the Windsor-Sarnia region.

www.ESDC.gc.ca www.jobbank.gc.ca (Release date: 2017-12-15)

Construction Managers

Good ★★★

The employment outlook will be good for Construction managers (NOC 0711) in the Windsor-Sarnia region for the 2017-2019 period. The following factors contributed to this outlook:

- Employment growth will lead to a moderate number of new positions.
- Several positions will become available due to retirements.
- There are a moderate number of unemployed workers with recent experience in this occupation.

Over the forecast period, sizeable investments in education and public infrastructure will help support the regional construction industry. Work will also continue on an expanded natural gas pipeline from Lambton County to Chatham-Kent. These projects should sustain some demand for construction managers in the coming years. In addition, there is a fair amount of construction activity in the commercial and retail market. The residential sector is expected to be rather positive as well in the near term, which will further create work for construction managers. Towards the end of the forecast period, construction on the Gordie Howe International Bridge will begin. The project is one of the biggest infrastructure developments in the works in the province. *Note: at time of publication the Nova expansion had just been announced and was not included in the employment outlook as published on the job bank.*

Here are some key facts about Construction managers in the Windsor - Sarnia region:

- Approximately 490 people work in this occupation.
- Construction managers mainly work in the following sectors:
 - Construction (NAICS 23): 88%

www.ESDC.gc.ca www.jobbank.gc.ca (Release date: 2017-12-15)

From Sept. 1, 2016 – Sept. 1, 2017 there were thirteen online job postings for construction managers in Lambton. Job titles related to the search of “Construction Manager” included Project Manager and Construction Project Coordinator.

Source: TalentNeuron Recruit, Nov. 8, 2017

Currently, many job seekers use online resources for their job search. Information about available work is often circulated through managers, employees and business associates, industry connections as well as

through family, friends and acquaintances. Networking is one of the best ways to search for jobs. Other job search methods can be found at www.jobbank.gc.ca. Through community consultations, it was further noted that management positions are also filled from within the company.

Home Building and Renovation Managers

Good ★★★

The employment outlook will be good for Home building and renovation managers (NOC 0712) in the Windsor - Sarnia region for the 2017-2019 period.

The following factors contributed to this outlook:

- Employment growth will lead to several new positions.
- Several positions will become available due to retirements.
- There are a small number of unemployed workers with recent experience in this occupation.
- Due to the seasonal nature of this occupation, employment opportunities tend to be more favourable during the summer months.

Here are some key facts about Home building and renovation managers in the Windsor - Sarnia region:

- Approximately 2,250 people work in this occupation.
- Home building and renovation managers mainly work in the following sectors:
 - Construction (NAICS 23): 95%

www.ESDC.gc.ca www.jobbank.gc.ca (Release date: 2017-12-15)

Fast Fact: The numbers below show total dwellings – **single family home building permits and multiple units** (townhouses, apartment buildings) for each of the years starting in 2010 in Sarnia.

2010	2011	2012	2013	2014	2015	2016	2017
241	115	101	111	149	138	189	128*

*estimate for year

City of Sarnia, Planning and Building Department, November 2017

Note: the 10 year average for number of dwellings created is 171.5.

The total value of **construction permits** issued by city hall by the end of November, 2017 totalled \$104.4 million.

Wage outlook in Windsor-Sarnia

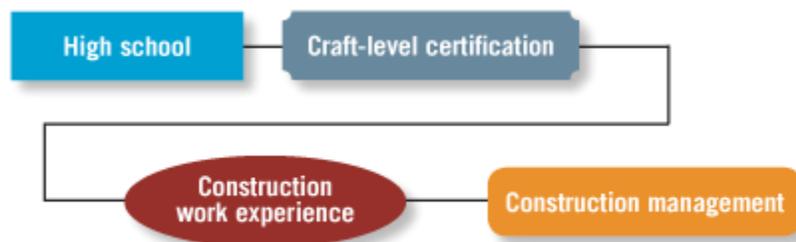
	Wage Range	Median
Sr. Managers within the Construction Industry	\$24.68 - \$84.13 per hour	\$52.88
Construction Manager	\$24.04 - \$57.69 per hour	\$36.06
Home Building and Renovation Managers	Due to data limitations, the wage for this occupation cannot be published for the local region. <i>Provincial data available for this occupation reports the average provincial wage as \$12.66 - \$26.00</i>	\$16.78

In online job searches, wages and salaries varied. Wages depend on job requirements and work conditions. They also vary between regions, for reasons such as location, labour agreements, and the availability of workers. www.jobbank.gc.ca

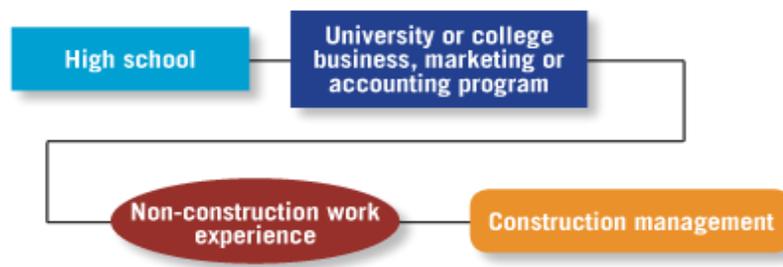
Careers in Construction Pathways

careersinconstruction.ca/en

Management careers may begin with certification as a construction worker or with on-the-job experience, but in most cases some post-secondary study is essential.

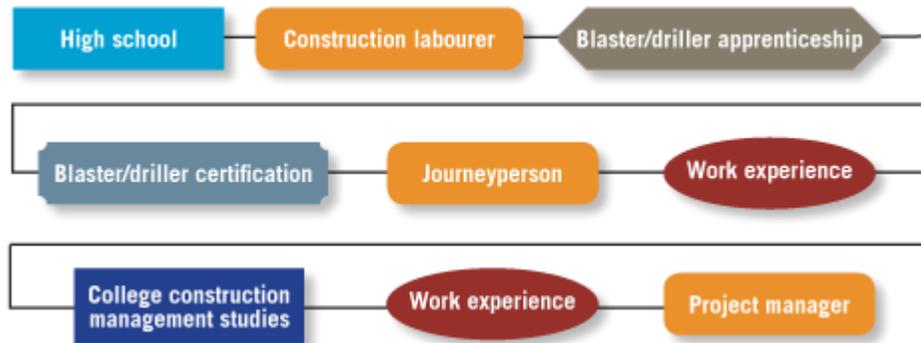


Many managers start in unrelated fields such as business, marketing or accounting. Sometimes they work in other industries before discovering construction.

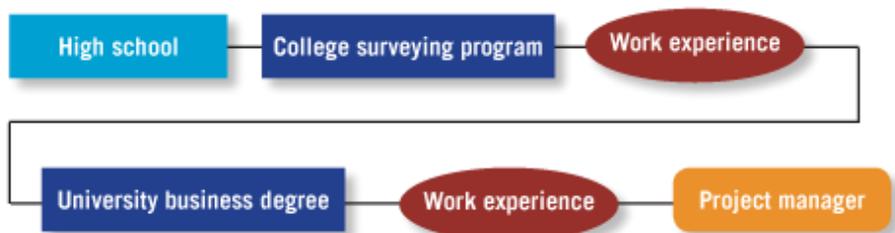


Some may start in an apprenticeship, take construction management courses, gain further work and supervisor experiences which could lead to project manager.

For example: Consider this example of an uncertified labourer that went on to an apprenticeship as a [driller/blaster](#). Already experienced on site, she decides to take construction management courses. After proving her abilities in a series of jobs with greater responsibility, she is offered the [project manager](#) position.



In this alternate example, she enters a technical college after high school and studies [surveying](#). After gaining some work experience, she decides to expand her opportunities by taking a business degree at university. After working as a scheduler and assistant project manager, she is offered the job of [project manager](#).



Education and Additional Resources

For a listing of college programs related to construction and home building and renovation and civil engineering view <http://www.ontariocolleges.ca>. The following example is a description of an available program.

Construction and Renovation Engineering / Technology Programs. Generally offered as three-year advanced diploma programs, these programs focus on [business](#) principles in construction, preparing students for careers as project managers, contractors, field coordinators and other advanced roles. Skills learned include budgeting, materials estimating, scheduling and contract law, as well as general knowledge on construction projects and equipment operation.

These postsecondary institutions offer programs related to construction manager:

- George Brown College-The Angelo DelZotto (ADZ) School of Construction Management delivers Ontario's *only four-year degree program* specializing in construction management.

- Algonquin College - Canada's first Bachelor of Building Science program, a four-year Bachelor of Science degree
- Centennial College
- British Columbia Institute of Technology in Vancouver
- Northern Alberta Institute of Technology in Edmonton
- Southern Alberta Institute of Technology in Calgary
- Red River College in Winnipeg

Note: George Brown College and Red River College programs provide points toward professional certification for the Gold Seal program.

College Construction Project Management programs can be found at:

- Conestoga
- Centennial
- Fanshawe
- Algonquin (online)

Source: Jan. 2016 McLean's article

- Lambton College:
 - Offers a 2 year Diploma program – Co-op in Renovation Construction Technician
 - For those interested in Home Construction, a good place to start is the Construction Carpentry Techniques Program
 - [Lambton College in Toronto](http://www.lambtoncollege.ca/custom/LambtonApps/Programs/International.aspx?id=2147512663) offers a two-year Construction Project Management, Ontario College Graduate Certificate
<https://www.lambtoncollege.ca/custom/LambtonApps/Programs/International.aspx?id=2147512663>
 - Online learning and continuing education: Project Management course
<https://www.lambtoncollege.ca/custom/LambtonApps/PartTime/Courses/Course.aspx?id=lds1082>

Further information on Lambton College programs can be found at: info@lambtoncollege.ca

- Professional development opportunities and career development through professional organizations or associations such as: OACETT (Ontario Association for Certified Engineering Technicians and Technologists); PMAC-AMPC (Project Management Association of Canada); Project Management Institute: <https://www.pmi.org/>
- BuildForce Canada – E-Learning Centre website, <http://www.buildforce.ca/en/products/e-learning-centre-website> offers training on business, management, supervision.
- Part time and on line learning options such as Construction Project Management – Certificate, Conestoga College. This one-year graduate certificate program will provide specialized and practical training in construction project management for graduates of diploma and degree programs in construction-related fields.

Fast Fact: The Sarnia Lambton Industrial Educational Cooperative (IEC) was formed in 1993, and has gained widespread recognition provincially and internationally for helping organizations achieve excellent safety performance through safety and leadership development programs. It facilitates a unique partnership of experts from Education, Labour, Contractors and Industry to improve safety performance in our community. For a listing of Safety and Leadership courses see:

<http://www.iecpartnership.com/courses/course-list/>

Gold Seal Certification

The Gold Seal Certification is a nationally recognized certification in the management of construction that is a reflection of skill, competence and experience, not only to an employer and peers, but also to government agencies, contractors, and construction owners. To qualify for the exam, an individual must have a minimum of 5 years industry experience as a Project Manager, Superintendent, Estimator, Owner's Construction Manager, Construction Safety Coordinator or Foreman. The Certificate signifies that the individual has attained a nationally recognized level of experience and competence in the above job titles. Every applicant for the Gold Seal Certification must have a minimum of 100 credits.

- 25 of which must come from formal education and/or training (ie. A technologist/technician diploma or a related university degree would be the minimum) and
- 50 (10 credits per year) for experience. e.g. five years of industry experience as a project manager, superintendent, estimator, owner's construction manager, or construction safety coordinator or foreman. Foreign experience can only qualify for three of the five years (two of the five years can be in an assistant role e.g. project coordinator).
- The balance of the credits could be obtained with additional education or experience.
- Letter of recommendation from employer.
- All candidates will require the mandatory **Construction Industry Ethics** course (or equivalent).
- Successfully pass the Gold Seal exam.

For more information visit: www.goldsealcertification.com/certification-gsc/

Fast Fact: According to SLWDB [EmployerOne Survey, 2017](#), employers say one barrier to providing training is cost. [Canada-Ontario Job Grant](#) may be able to help.

Part 2

Management Jobs in Engineering

Engineers and those in related technical positions are a critical component of the labour force in Sarnia Lambton. They are employed in a number of local industries including: professional, scientific and technical services, construction, manufacturing, utilities and others.

[SLWDB February, 2016 report on Engineering in Sarnia Lambton](#)

Engineering Managers

Engineering Managers play an important role in the engineering field. They plan, organize, direct, control and evaluate the activities of an engineering department, service or firm. They are employed by a wide range of private sector and government establishments and by consulting engineering and scientific research companies.

Source: *National Occupational Classification System (NOC 2016)*

In addition to the title of, “Engineering Manager”, job seekers may also see related job titles such as: civil engineering division manager; engineering department manager; engineering research and development director; engineering service project manager; and production engineering manager. Through community consultations, other job titles might include plant engineering manager, asset integrity manager and project engineer or project manager/engineer.

Employment and/or education requirements

- A bachelor's degree in engineering is usually required. Degrees common to this discipline in the Sarnia Lambton area include: Bachelor of Engineering (Chemical, Mechanical, Civil, Electrical); Master of Engineering (Science); in some cases a PhD.
- Extensive experience in an engineering discipline, including supervisory experience is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is usually required.
- Mobility to other technical managerial positions or to research or senior management positions is possible with experience.

Main duties

Engineering managers perform some or all of the following duties:

- Plan, organize, direct, control and evaluate the activities and operations of an engineering department, service or firm.
- Develop and implement policies, standards and procedures for the engineering and technical work performed in the department, service, laboratory or firm.
- Consult and negotiate with clients to prepare specifications, explain proposals and present engineering reports and findings.
- Assign, co-ordinate and review the technical work of the department or project teams.
- Recruit personnel and oversee development and maintenance of staff competence in required areas.
- May participate directly in the design, development and inspection of technical projects or in the engineering work of the department.

Source: National Occupational Classification System (NOC 2016)

There are several different branches of engineering, each with very distinct technical skill sets. In addition, there are several key skills that have been identified as being important for engineering managers to have in order to perform the main duties outlined above. These are:

- organization and ability to coordinate many complex processes
- problem solving and decision making
- planning, delegation, and time management

Soft skills such as critical thinking, communication and teamwork, are very important:

<https://www.thebalance.com/list-of-engineering-skills-2063751>, Alison Doyle, Feb.9, 2017

According to an article appearing on Engineers Canada website, Aug. 24, 2017, written by Stephanie Price, *P.Eng., CAE, Interim CEO, Engineers Canada*, the engineering profession is in agreement that soft skills or “human skills” must be “*married with technical skills, if today’s young Canadians are to be successful in the workforce of tomorrow.* <https://engineerscanada.ca/news-and-events/news/the-importance-of-human-skills-in-todays-engineering-graduates>

What do local engineering managers say?

- Listening and providing feedback to employees is important. One should also have the ability to adapt to the skills employees bring to the organization and use these skills towards the achievement of goals set for the organization.
- Recognize the leadership and management qualities in current employees. These qualities would include not only having the technical and business skills, but equally important, the “soft skills” or “people skills” necessary to do the job. Employees could then be “groomed” for management positions within the organization.
- Employers could offer professional development opportunities, in-house corporate training or external training in management and leadership. It could also mean mentoring employees in “real workplace situations”. Likewise, any person interested in engineering management positions should participate in these opportunities if offered, research any professional development opportunities offered by associations related to their industry and by reading current industry publications.
- Important to promote the benefits of living in the Sarnia Lambton region to attract new engineers to the area.

Fast Fact: According to the Canadian Society for Engineering Management, <http://csem-scgi.org/about.html>, “Almost half of all engineers enter a management position within ten years of graduation, and fully half of all registered professional engineers primarily utilize management skills rather than technical skills”.

Local Labour Market Information

The number of local jobs and the residents who hold these locally or outside of Sarnia Lambton

	Local jobs	Residents who hold jobs (locally or outside of Sarnia Lambton)
Engineering managers	95	95

Source: Statistics Canada. 2011 National Household Survey, custom table

Due to suppression of data, there are no reported females as working in these management positions.

Note: *Statistics Canada suppresses data for confidentiality reasons so that people cannot be personally identified in a community through the data. Usually if the number is less than 20 counts, Statistics Canada will state zero. Community consultations did verify that there are females in engineering management positions in the local area.*

Provincially, the gender distribution of people in this occupation is:

- Men: 89% compared to 52% for all occupations
- Women: 11% compared to 48% for all occupations

www.jobbank.gc.ca (Release date: 2016-12-23)

Fast Fact: WinSETT Centre (Canadian Centre for Women in Science, Engineering, Technology, Trades) delivers workshops to advance the retention and leadership of women in SETT (Science, Engineering, Trades and Technology) fields and to create a positive culture for women in the workplace.

Ontario Network of Women in Engineering supports current female engineers, students, and encourages the next generation of women to pursue careers in engineering.

In Sarnia Lambton almost 2 in 3 engineering managers will likely retire by 2031



Source: Statistics Canada. 2011 NHS, custom table.

Local Employment Outlook for 2016-2018 in Windsor-Sarnia

Engineering Managers

Fair ★★☆☆

The employment outlook will be fair for engineering managers (NOC 0211) in the Windsor - Sarnia region for the 2017-2019 period.

The following factors contributed to this outlook:

- Employment growth will lead to several new positions
- Not many positions will become available due to retirements
- There are a small number of unemployed workers with recent experience in this occupation

Here are some key facts about engineering managers in the Windsor - Sarnia region:

- Approximately 480 people work in this occupation
- Engineering managers mainly work in the following sectors:
 - Motor vehicle, body, trailer and parts manufacturing (NAICS 3361-3363): 38%
 - Machinery manufacturing (NAICS 333): 11%
 - Construction (NAICS 23): 10%
 - Professional, scientific and technical services (NAICS 54): 9%
 - Utilities (NAICS 22): 8%

www.jobbank.gc.ca (Release date: 2017-12-15)

An online job search of “Engineering Manager” listed six job postings in Lambton County from Sept. 1, 2016 to Sept. 1, 2017. Other job titles included Project Manager/Engineering and Project Manager/Field Engineer. The salary range of jobs posted was \$98,000-\$118,000.

Source: *TalentNeuron Recruit, Nov.8, 2017*

Currently, many job seekers use online resources for the job search. Job opportunities are often circulated through managers, employees and business associates, industry connections as well as through family, friends and acquaintances. Networking is one of the best ways to search for jobs. Other job search methods can be found at www.jobbank.gc.ca.

Employers also noted that social media profiles, placement recruiter services and online job boards related specifically to engineering are other possible methods of job searching.

Wage Outlook in Windsor-Sarnia:

	Wage Range	Median
Engineering Managers	\$35.00-\$81.73	\$52.88

www.jobbank.gc.ca

A wage range takes into account the industry, size of company, the skill level and the experience required to do the job. As a job seeker, you can learn more about salary ranges by previewing job listings for specific management occupations.

Educational and other resources related to engineering management positions

The following link outlines the Engineering Management degree programs in Ontario:

http://www.canadian-universities.net/Universities/Programs/Engineering_Management-Ontario.html

To build on the required postsecondary education for this occupation, the following resources are available:

Professional Engineers Ontario: <http://www.peo.on.ca/> and Lambton Professional Engineers.

A resource for professional development for engineers in Ontario, is the Ontario Society for Professional Engineers (OSPE) <https://www.ospe.on.ca/professional-development>. It has a wide variety of training and resources related to leadership and management.

Project Management Institute: <https://www.pmi.org/>

Associations such as *Engineering Institute of Canada (EIC)*, *Engineers Canada* are organizations that provide news to its members about networking events, professional development and other common issues for people working in the same industry.

The Canadian Society for Engineering Management (CSEM) <http://csem-scgi.org/about.html>

Distance Learning: Visit CanLearn for a list of Canadian colleges, universities and other institutions providing thousands of courses at a distance.

Management and leadership books: Henry Mintzberg, *Simply Managing*, Canadian author of Business and Management; Jim Collins, *Good to Great*; David Cottrell, *Monday Morning Mentoring*; Michael Bungay Stanier, *The Coaching Habit: Say Less, Ask More and Change the Way You Lead Forever*.

The Canadian Education & Research Institute for Counselling (CERIC) recently funded the publication of a playbook for career management entitled Retain and Gain, which emphasizes the importance of supporting employee growth. (*Globe and Mail*, July, 2017 *Made in Canada: How to attract and retain top talent*)

Soft skills presentations. Several soft-skills related workshops are currently offered by local agencies.

SLWDB has a soft skills resources guide available online at [slwdb.org](http://www.slwdb.org)

<http://www.slwdb.org/wp-content/uploads/2015/08/soft-skills-development-resource-1.pdf>

Part 3

Supply and Demand issues and corresponding actions in management positions in construction and engineering

1. ***An aging workforce could affect the supply and demand for management positions.*** Sarnia Lambton has been identified as having an aging workforce, according to Statistics Canada. Approximately 2/3 of home building and renovation, construction and engineering managers are 45 years of age and older and by the year 2031 there could be a significant number of retirements. In order to meet the forecasted demand in these positions, it is important for all companies, regardless of size or type of ownership to have a succession plan in place. For the home building or renovation manager there are many issues to be considered in planning to transfer control of the business and a formal succession plan can make the transition easier. For other companies, one way to ensure that management positions be filled is to promote from within the company. By identifying the leadership and management potential of current employees and providing opportunities for management, leadership and soft skills development and training, a company creates a continuous and consistent flow of workers.

Even though some management positions could be filled within the organization, others will still have to be advertised. An active recruitment strategy would use all available job-posting methods outlined in this report to advertise these management positions. Job seekers, in turn, must continue to network and build contacts through community involvement and within these industries and follow current trends in job search techniques.

2. ***Female participation in management positions is low.*** As outlined in the report, according to *Statistics Canada, National Household Survey 2011*, females represented almost half the entire local workforce, yet they held only 36% of **all** management positions. In construction and engineering management positions, this percentage is much lower. This could be due, in part, to the fact that there are fewer females than males in construction and engineering positions in general. It must be noted, through consultations, that there has been an increase in female representation in management positions over the last several years, but that number remains small compared to males in these positions. What can be done to engage female participation in these management positions? There is no easy answer. Organizations must ensure that they create inclusive hiring policies and procedures. Since these are male dominated

professions, are the skills, such as the “soft skills” women often bring to the organization viewed as valuable “management and leadership” skills? Mentorship programs should be encouraged and have been viewed as highly important, especially when women in management positions can mentor other women. Currently, OSPE and PEO are partnering to create *Engineering Professional Success* – a two-year pilot mentorship program that will support women who are recent engineering graduates and in the early stages of their careers.

3. *Lack of knowledge among job seekers and students about construction and engineering occupations, the education requirements and pathways available.* Increased understanding can be accomplished by introducing career exploration opportunities in construction and engineering to students at both the elementary and secondary level. There are many pathways to management positions through university, college and apprenticeship programs. As reported above, Sarnia has an aging workforce. An aging workforce can create opportunities for young people interested in pursuing construction and engineering positions that could in turn lead them to management positions within these disciplines.

Career exploration in construction could begin with a greater understanding of the skilled trades, beginning at the elementary level by providing students with an awareness of skilled trade opportunities. At the secondary school level, students are able to explore careers in more depth by taking advantage of experiential learning programs such as: SHSM, cooperative education, OYAP and dual credits through the college. There are several career exploration activities for students related to engineering. Career presentations offered through local professional engineering chapters and participating in programs such as “Engineer-in- Residence” are very valuable for students. Unique to the local school boards is the “Adopt a Scientist” program. Universities offer a program, “Go ENG Girl”, where girls ages 7-10 can visit a local university and learn about engineering.

4. *The importance of maintaining a work-life balance.* The increased responsibilities, time commitment and demands of management positions are sometimes a deterrent for both women and men in pursuing this pathway. It is often very difficult to maintain a healthy work-life balance in management positions. Many employees are dealing with the stress of not only the increased responsibilities and demands of the job, but also personal commitments such as children and aging parents. Employers could consider putting into place programs that improve work-life balance. See the full report on SLWDB resource on: Healthy Work-Life Balance: A Guide for Employers.

<http://www.slwdb.org/wpcontent/uploads/2015/08/HealthyWorkLifeGuide.pdf>

Conclusion:

The information presented was to better inform the public on the education, pathway, skills and labour market information required for these management positions. SLWDB thanks local employers as well as service providers who provided their time and expertise in order to help inform this report.

Want to learn more about management positions in construction and engineering?

Job profiles which describe duties, skills requirements, salary ranges and local outlook for: Construction Manager, Home Building and Renovation Manager and Engineering Manager can be found at [slwdb.org](http://www.slwdb.org).

<http://www.slwdb.org/publications/job-profiles/>

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