

Civil Engineers

A guide for newcomers to British Columbia



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1. Working as a Civil Engineer [NOC 2021: 21300 / NOC 2016: 2131]

Job Description

Civil engineers help design and build the structures all around us, including buildings, bridges, dams, highways, railways, and sewers.

You perform the following duties:

- Meet with clients and other members of the engineering team and conduct research to determine project requirements
- Plan and design major civil projects such as buildings, roads, bridges, dams, and water and waste management systems
- Create construction specifications and procedures
- Estimate quantities and cost of materials, equipment, and labour needed
- Ensure construction plans meet guidelines and specifications of building codes and other regulations
- Conduct feasibility studies, economic analyses, municipal and regional traffic studies, environmental impact studies, or other investigations
- Act as project or site supervisor for land survey or construction work
- Supervise technicians, technologists, and other engineers

Sources:

- WorkBC, Career Profiles at <https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>
- *Career Cruising database* [profile for Civil Engineer]
<http://www.vpl.ca/digital-library/career-cruising>

Available from the VPL Digital Library | Explore our Digital Library page

Industry Overview

There is strong demand for qualified and experienced civil engineers in BC. There is a large and growing need to replace retiring engineers. Upcoming major projects are also increasing the demand for these workers.

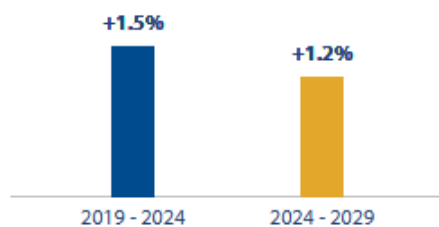
Source: Engineering Labour Market – Engineers Canada

<https://engineerscanada.ca/reports/engineering-labour-market-report>

Job Outlook in BC

Civil Engineers

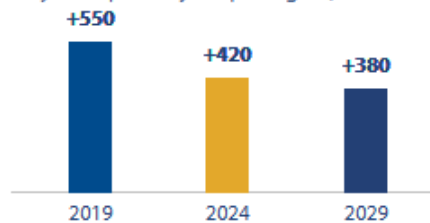
Forecasted average employment growth rate



Source: B.C. Labour Market Outlook

Job openings

10 year expected job openings: 4,190



Source: B.C. Labour Market Outlook

Composition of job openings



Source: B.C. Labour Market Outlook

Chart from WorkBC

WorkBC provides job openings in BC regions from 2019-2029:

Region	Employment in 2019	Average Annual Employment Growth	Expected Number of Job Openings
Vancouver Island	1,010	0.7%	400
Lower Mainland / Southwest	6,880	1.5%	3,300
Thompson-Okanagan	660	1.5%	330
Kootenay	170	0.0%	50
Cariboo	140	0.9%	40
Northeast	70	2.9%	40
North Coast & Nechako	100	0.9%	30

You can learn more about working as a civil engineer in BC from:

- **WorkBC, Career Profiles**

- <https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>

- **Career Cruising** database [profile for Civil Engineer]

- <http://www.vpl.ca/digital-library/career-cruising>

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Types of Employers

Civil engineers work for:

- engineering consulting companies
- private sector manufacturing and construction companies
- all levels of government
- many other industries
- may be self employed

You often work in a multidisciplinary environment. This experience helps you acquire knowledge and skills that may allow you to practice in related areas of science, engineering, urban planning, sales, marketing, or management.

Salary

The median annual salary for civil engineers in BC is \$92,246. Senior engineers or those in management positions may earn more.

Your salary is affected by your level of education. If you have a bachelor's degree in engineering you tend to earn less than if you have a master's degree or PhD. If you earn a master's degree in business administration (MBA), you also tend to earn more.

In addition to your salary, full-time civil engineers often receive benefits such as pension plans, dental coverage, sick leave, and paid vacations. You may receive regular, performance-based bonuses that can increase your annual income.

Sources: WorkBC & Career Cruising

In BC regions, you can expect to make:

Community/Area	Wages (\$/hour)		
	Low	Median	High
British Columbia	30.77	41.83	68.68
Kootenay Region	30.77	41.83	68.68
Lower Mainland–Southwest Region	30.77	43.00	78.97
Thompson–Okanagan Region	30.77	41.83	68.68
Vancouver Island and Coast Region	29.81	39.23	56.41

Source: Job Bank, Wage Report <https://www.jobbank.gc.ca/trend-analysis/search-wages>

Working Hours

You generally work between 8 and 10 hours a day, 40 to 50 hours a week. You may have to work nights and weekends if an important deadline is approaching or if an urgent construction problem arises.

Source: *Career Cruising* database

2. Skills, Education and Experience

Skills

- Critical thinking and problem solving
- Oral communication and public speaking
- Planning and organizing
- Team project work
- Project management
- Proposal writing and financial management
- Committee work- industry ethics

Education and Experience

- Bachelor's degree in civil engineering or in a related engineering is required
- Master's degree or doctorate in a related engineering discipline **may be** required

Qualifications

This occupation is regulated in British Columbia

This means that if you are working as an engineer you must either:

- be registered as a Professional Engineer in BC

OR

- work under the direct supervision of someone who is registered as a Professional Engineer in BC

Licensing Requirements for Civil Engineers

You must be licensed by **Engineers & Geoscientists British Columbia** to use the title "Engineer." This allows you to approve engineering drawings and reports and to practise as a **professional engineer (P.Eng.)**.

Registration requires:

- graduation from an accredited educational program
- four years of supervised work experience in engineering
- successfully passing the professional practice examination
- completion of the law and ethics seminar

If you have academic qualifications other than a recognized university engineering degree, have gained several years of experience in a defined area of engineering practice and wish to take professional responsibility for that work, you may apply to register as a **Professional Licensee (P.L.Eng)**.

For more information:

- **Engineers & Geoscientists British Columbia – Professional Membership & Licence**
<https://www.egbc.ca/Registration/Individual-Registrants/How-to-Apply/Professional-Membership-and-Licence>
 - **Mentoring Programs:**
<https://www.egbc.ca/Registration/Programs-Resources/Mentoring-Program>
 - **Bridging Pilot Program:** Program to assist Professional Licensee Engineers (P.L.Eng) apply to bridge to Professional Engineer (P.Eng)
<https://www.egbc.ca/Registration/Individual-Registrants/How-to-Apply/Bridging-Pilot-Program>
- **Engineers & Geoscientists British Columbia Self-Assessment Tool**
Online self-assessment tool to assist internationally trained professionals enter the profession of engineering in BC.
<https://www.egbc.ca/Registration/Programs-Resources/Self-Assessment-Tool>
- **Engineer Here – Becoming a Licensed Engineer in Canada**
<https://engineerhere.ca/>
- **International agreements** between professional engineering associations
<https://engineerscanada.ca/become-an-engineer/agreements-on-international-mobility>

3. Finding Jobs

You will find job advertisements in local newspapers, trade journals, and electronic sources, as well as through professional associations' publications.

Local Newspapers

You can look at the *Vancouver Sun* and *The Province* at Vancouver Public Library for free. Check the job postings daily, the careers section in the *Vancouver Sun* on Wednesdays and Saturdays and in *The Province* on Sundays.

Online Job Postings

- **TechJobs.ca**
<https://www.techjobs.ca/en>
- **Engineering Central Canada**
<https://engcen.com/>
- **Engineer Jobs.com**
<https://www.engineerjobs.com/jobs/canada/british-columbia/>
- **Neuvoo.ca**
<http://neuvoo.ca>
- **Indeed.com**
http://ca.indeed.com/advanced_search
Find jobs posted on a multitude of company career sites and job boards

Professional Associations' Career Resources

- **Association of Consulting Engineering Companies British Columbia (ACEC-BC)**
<https://acec-bc.ca/resources/>
- **Engineers & Geoscientists British Columbia Employment Centre**
<https://www.egbc.ca/Careers/Career-Listings>
- **Engineering Institute of Canada**
<http://www.engineeringcareers.ca/>

- **Engineering Central Canada**
<https://engcen.com/career-resources>

Identifying the Right Position

When you browse job advertisements, you'll find a range of different job titles that are relevant.

For civil engineers, look for these related job titles (from NOC)

- construction engineer
- environmental engineer
- geomatics engineer
- hydraulics engineer
- municipal engineer
- public works engineer
- structural engineer
- surveying engineer
- traffic or transportation engineer
- water management engineer

Creating a List of Potential Employers

You can use directories to produce lists of employers in Vancouver or the Lower Mainland. Contact them directly to find out if they're hiring.

- **Association of Consulting Engineering Companies British (ACEC-BC),**
Directory of Member Firms
https://www.acec.ca/business_search.html
- **Engineers & Geoscientists British Columbia – Directory of Firms**
<https://www.egbc.ca/Registrant-Directory>
- **Business in Vancouver. Book of Lists.**
Biggest Engineering Firms in BC
Available at the Central Library 338.9711 B97b and online at
<http://www.biv.com/lists>

- **BC Construction Association – Regional Associations’ Membership Directories**

<https://bccassn.com/about-bcca/regional-associations/>

- **Reference Canada**

<http://www.vpl.ca/digital-library/reference-canada>

Click on “Start Search” beside Canadian Businesses, then select the “Advanced Search” button. Select both “Keyword/SIC/NAICS” under Business Type and “City” under Geography. In the top search box enter “civil engineer” and click LOOKUP. Select the appropriate headings. Lower down, select the Province, choose the cities, and click the “View Results” button.

Available from the VPL Digital Library | Explore our Digital Library page

NOTE: *You can access this database from a Library computer. If you are using a computer from outside the Library, you will need a Vancouver Public Library card to login to this database. After clicking on the database name, you will be asked to enter your library card number and PIN (usually last four digits of your telephone number).*

4. Applying for a Job

In Canada, employers usually expect to receive a resume or curriculum vitae and a cover letter that identifies the position you are applying for and summarizes your relevant experience.

Use the library catalogue, <http://vpl.bibliocommons.com/> to find books on writing resumes and cover letters specific to your industry.

To learn about applying for jobs in Canada, use the following guides which are available in print at the Central Library or online at <http://skilledimmigrants.vpl.ca/>.

- **Writing Resumes and Cover Letters**

Go to <http://skilledimmigrants.vpl.ca>

[Search Writing Resumes and Cover Letters]

- **Getting Canadian Work Experience**
Go to <http://skilledimmigrants.vpl.ca>
[Search Getting Canadian Work Experience]
- **Networking for Employment**
Go to <http://skilledimmigrants.vpl.ca>
[Search Networking for Employment]
- **Learn More About Working in BC and Canada**
Go to <http://skilledimmigrants.vpl.ca>
[Search Learn More About Working in BC and Canada]

5. Getting Help from Industry Sources

Industry Associations

Associations for professional and civil engineers in BC and Canada provide information & assistance. Registration and fees are required for membership.

- **Engineers & Geoscientists British Columbia**
<https://www.egbc.ca/>
- **Canadian Society for Civil Engineering**
<https://csce.ca/en/>
- **Engineering Institute of Canada (EIC)**
<https://eic-ici.ca/>
- **Engineers Canada, Canadian Council of Professional Engineers (CCPE)**
<https://engineerscanada.ca/>
- **Association of Chinese Canadian Engineering Professionals and Technologists (ACCEPT) BC**
<https://www.acceptbc.ca/>
- **Society of Punjabi Engineers and Technologists of British Columbia**
<http://www.speatbc.org/>

Industry Journals

Search the Vancouver Public Library catalogue for journals related to your profession: www.vpl.ca

Examples at the Central Library include:

- **Canadian Consulting Engineer** / Association of Consulting Engineers of Canada
Available at VPL Central Library, 620.5 C212 and online at:
<https://www.canadianconsultingengineer.com/>
- **Innovation** / Journal of Engineers & Geoscientists British Columbia
Available at VPL Central Library, 620.5 B86 and online at:
<https://www.egbc.ca/Resources/News-and-Publications/Innovation-Magazine/Innovation-Past-Issues>
- **Journal of Commerce**
Available at VPL Central Library, 338.47 J86 and online at:
<https://canada.constructconnect.com/joc>

**Questions? Please ask the Information Staff in the Central Library,
Vancouver Public Library or telephone 604-331-3603.**

Please note that the information in this guide is also available online through the Skilled Immigrant InfoCentre website at <http://skilledimmigrants.vpl.ca/>.