

RAIC Centre for Architecture at Athabasca University



LABOUR MARKET ANALYSIS: ARCHITECTURE IN ALBERTA AND CANADA

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I Summary

Using statistics from the Alberta Government, Job Bank Canada and other sources; job postings from architectural association websites; and demographic projections, this labour market analysis demonstrates that there will be a steady demand for architects in Alberta and across the country. This demand will increase as more and more current architects near the age of retirement.

2 Overview

2.1 The Architecture Engineering and Construction Industry

Architects play a critical role in the Architecture Engineering and Construction Industry or AEC Industry.

The AEC industry is a critical component of Alberta's economy that accounts for:

- **10.1%** of its gross domestic product (GDP) in 2016
- Annual revenues of **\$31.2 billion**
- Exports of **\$630 million** annually
- **300,000** people directly employed in this sector
- **400,000** more dependent on this sector for employment
- **27,000** businesses in 2014 (Alberta Government, 2017)

This sector is also critical to the Canadian Economy:

- **6.9%** of Canada's gross domestic product (GDP) and is the 5th largest economic sector in the country
- With a value of **\$120 billion** annually (predicted 2017).
- The construction industry maintains and repairs more than **\$2 trillion** in assets
- More than **1 million** Canadians are employed in a wide variety of construction trades and professions
- One out of 13 workers employed in Canada earns a living in the construction industry (Statistics Canada (2016), BuildForce (2015))

2.2 Employment Opportunities

For almost all of the projects built by the AEC industry, someone with architectural training is required. This ensures that there will be a demand for architects well into the future. At the same time, architectural training is a good foundation for wide variety of careers. Graduates from architecture programs often find that the skills they have learned stand them in good stead in a variety of different but related professions. The diagram below provides a good overview of some of these opportunities.

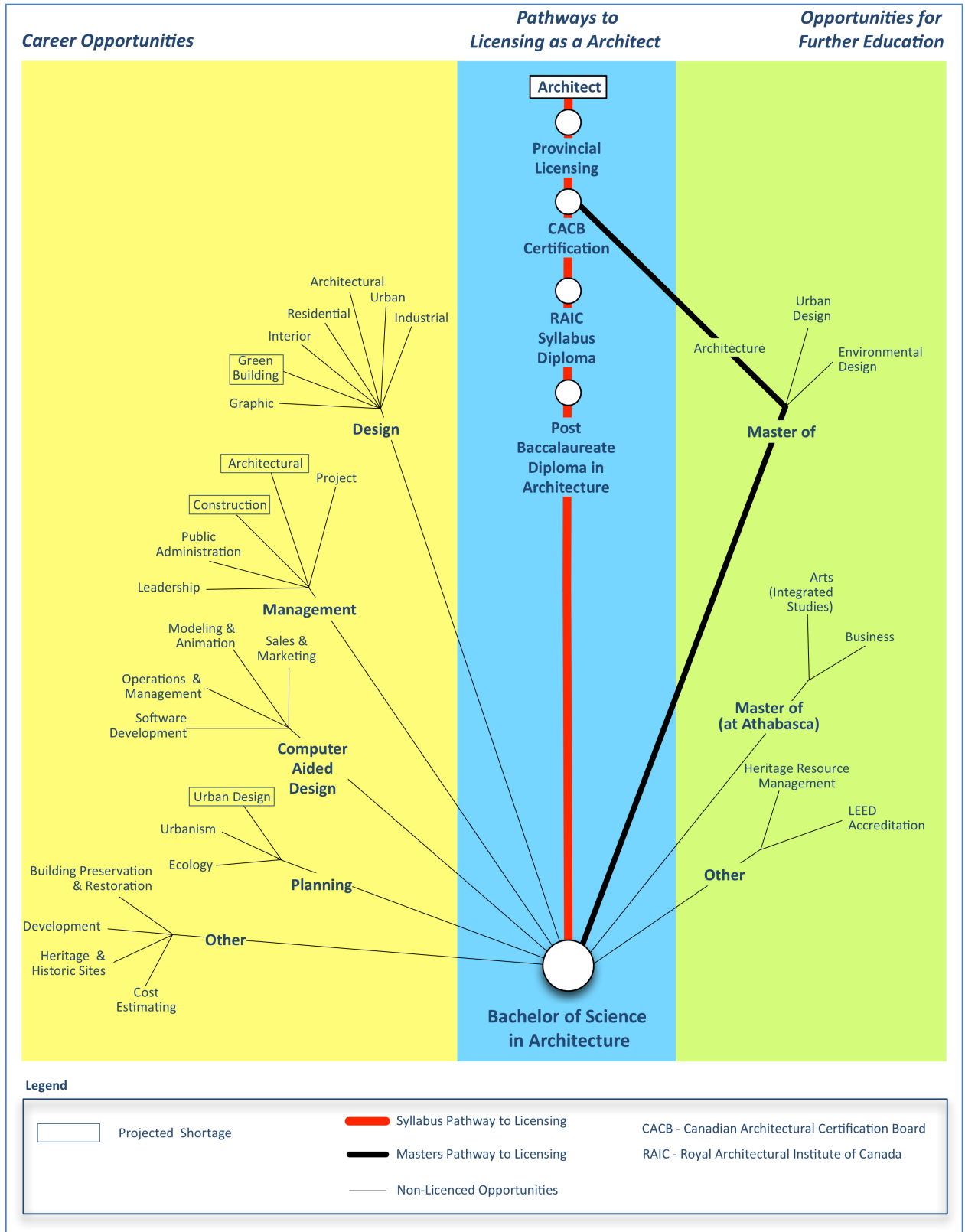


Figure 1: Employment and Educational Opportunities for those with Architectural Training

3 The Alberta Context

3.1 Alberta's Occupational Demand and Supply Outlook: 2015-2025

In this recent report the Government of Alberta noted the following shortages in areas related to architecture:

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
C051 - Architects												
	Demand forecast	1,903	1,905	1,939	1,983	2,026	2,063	2,093	2,116	2,136	2,159	2,182
	Labour Supply forecast	1,900	1,905	1,911	1,923	1,938	1,953	1,964	1,976	1,988	1,995	2,002
	Cumulative Shortage*		-3	24	57	85	107	125	137	145	160	176
C05 - Architects, urban planners and land surveyors												
	Demand Projection	6604	6606	6680	6800	6914	7013	7093	7173	7230	7308	7389
	Labour Supply Projection	7096	7113	7138	7181	7237	7292	7336	7378	7424	7451	7478
	Cumulative Shortage*		-15	34	111	168	213	249	286	298	348	402
A12 - Managers in engineering, architecture, science and information systems												
	Demand Projection	14,657	14,744	15,003	15,292	15,567	15,820	16,028	16,214	16,401	16,574	16,771
	Labour Supply Projection	14,830	14,977	15,156	15,369	15,607	15,838	16,040	16,228	16,422	16,574	16,721
	Cumulative Shortage*		-61	20	95	132	155	161	159	151	173	222
C15 - Technical occupations in architecture, drafting and surveying												
	Demand Projection	13531	13530	13755	14036	14310	14540	14713	14862	14991	15127	15279
	Labour Supply Projection	14102	14200	14307	14448	14614	14781	14926	15064	15213	15325	15437
	Cumulative Shortage*		-100	19	160	267	331	357	368	349	373	413
Totals**												
	Demand Projection	34,792	34,880	35,438	36,128	36,791	37,373	37,834	38,249	38,622	39,009	39,439
	Labour Supply Projection	36,028	36,290	36,601	36,998	37,458	37,911	38,302	38,670	39,059	39,350	39,636
	Cumulative Shortage*		-176	73	366	567	699	767	813	798	894	1,037

Table 1: Alberta Occupational Demand and Supply Outlook, 2011-2021: Architectural Occupations (Alberta Government, 2016, p. 8, 11, 12 and 28)

Notes on this table:

* A positive number for the Cumulative Shortage indicates a shortage a negative number indicates a surplus of positions

** In calculating the Totals, it is noted that the Architects in Category C051 are included with the Architects, urban planners and land surveyors in Category C05, to avoid counting these architects twice, C051 is not included in the totals.

In reviewing these numbers it is important to understand that during their career an architect may begin in a more technical aspect of the profession (such as Computer Aided Design) then become a fully licensed architect and later take on management duties. Someone originally trained as an architect may also transition to other related disciplines such as urban planning. In fact, these variations on a career as an architect reflect just some of the opportunities to those trained in that profession. See Figure 1 (above) for a more comprehensive catalogue of those possibilities.

As Table 1 demonstrates, according to the Alberta Government's projections there is now, and will be, an ongoing and growing shortage of qualified employees in architecture and fields directly related to architecture.

3.2 Professional, Scientific and Technical Services Industry

Architects are also considered to part of the Professional, Scientific and Technical Services Industry in Alberta. In 2017, the Alberta Government published the following information regarding the growth of this sector:

- The Professional, Scientific and Technical Services industry accounted for 7.8% of total employment in Alberta in 2017.
 - Employment in this industry is expected to grow at an average rate of 1.8% from 2017 to 2021.
 - The industry is expected to account for 8.0% of total employment in Alberta in 2018.
- (Alberta Government, 2017, p. 2)

3.3 Architectural, Engineering and R&D Services

The Alberta Government has also classified architects under Architectural Engineering and R&D Services and has developed the following projections:

	2016	2017	2018	2019	2020	2021
Architectural, Engineering, and R&D Services	64,688	65,581	66,679	67,232	68,677	69,985
% Change		1.40%	1.70%	0.80%	2.20%	1.90%
% Share of total employment		2.90%	2.90%	2.90%	2.90%	2.90%

Table 2: Employment Projections 2016-2021, Alberta: Architectural Engineering and R&D Services (COPS, 2017)

What these projections suggest is that across the board there will be modest but steadily increasing demand for architects in the province well into the 2020's.

3.4 Other Indicators

As of June 15, 2018, there were more than 40 job opportunities posted in the Careers Section of the Alberta Association of Architects (AAA, 2018). These ranged across the full spectrum of architectural jobs from intern architects to senior designers. This is a significant number of openings and may point to an even higher demand for architects than the projections suggest.

4 Canada

In 2014, Global News listed Architects, urban and land use planners, land surveyors as one of the “5 occupations in high demand amid Canada’s surprising job losses.” And noted,

This occupational field saw more rapid employment growth than in other occupations over the 2008-2010 period, maintaining its low unemployment rate. While the hourly wage was lower than other jobs in natural and applied sciences, the average hourly wage increased quickly.

“Nearly all job openings will arise from retirements, despite a retirement rate similar to the average for all occupations,” said the COPS data, noting this occupation recently experienced a labour shortage (Tucker 2014).

5 Job outlook in Canada over the next 10 years (2015-2024)

Points 5.1 to 5.6 below have been provided by Job Bank Canada (Job Bank Canada, 2018):

5.1 Occupational outlook

- **BALANCE:** Labour demand and labour supply are expected to be broadly in line for this occupation group over the 2015-2024 period at the national level. The section below contains more detailed information regarding the outlook for this occupational group.
- Employment in 2014: 17,200
- Median age of workers in 2014: 43
- Average retirement age in 2014: 62

5.2 Occupation projection for Canada

- The analysis of key labour market indicators such as employment and wage growth as well as the unemployment rate suggests that the number of job seekers was sufficient to fill the job openings in this occupational group over the 2012-2014 period.
- For **Architects**, over the period 2015-2024, new job openings (arising from expansion demand and replacement demand) are expected to total **7,500**, while **7,200** new job seekers (arising from school leavers, immigration and mobility) are expected to be available to fill them.
- As job openings and job seekers are projected to be at relatively similar levels over the 2015-2024 period, it is expected that the balance between labour supply and demand seen in recent years will continue over the projection period. A more detailed analysis of the outlook of this occupation will be released in the coming weeks.

5.3 What percentage of people in this occupation are self-employed?

- According to the Labour Force Survey (2015), in Canada, 38% of workers in this occupation were self-employed, while the average for all occupations was 14%.
- [Source [Labour Force Survey - Statistics Canada](#)]

5.4 What proportion of people in this occupation work full-time?

- According to the Labour Force Survey (2015), in Canada, 97% of workers in this occupation worked full-time, compared to the average of 81% for all occupations.
- [Source [Labour Force Survey - Statistics Canada](#)]

5.5 What is the proportion of women working in this occupation?

- According to the National Household Survey (2011), in Canada, women represented 29% of workers in this occupation compared to the average of 48% for all occupations.
- [Source [Labour Force Survey - Statistics Canada](#)]

5.6 What percentage of people in this occupation are members of a union?

- This occupation (**Architects**) is part of a larger group called **Architects, urban planners and land surveyors (NOC 215)**. According to the Labour Force Survey (2015), in Canada, the unionization rate for this group was 25%, while the unionization rate for all occupations was 31%.
- [Source [Labour Force Survey - Statistics Canada](#)]

5.7 Other Factors: Retirement

An ageing population will create shortages in many occupations but its effects will be felt sooner in architecture. The median age of workers in Canada is 40 and, on average these workers are retiring at age 62. In architecture, however, as noted above, the median age is 43 while the retirement age is also 62. This means that occupational shortages in architecture due to retirement will impact the profession sooner than in the rest of the population.

6 Wages

Job Bank Canada also provides information on wages across Canada and in particular provinces were available. This is summarized in the following table.

Community/Area	Wages (\$/hour)		
	Low	Median	High
Canada	\$ 23.00	\$ 31.79	\$ 48.08
British Columbia	\$ 22.66	\$ 30.77	\$ 40.00
Ontario	\$ 23.08	\$ 32.31	\$ 60.51
Quebec	\$ 23.00	\$ 30.77	\$ 38.50

Table 3: Wages for Architects across Canada (Job Bank Canada, 2018)

7 Job Outlook

Job Bank Canada has also provided a Job outlook by province and territory which rates employment opportunities as follows:

Fair: Alberta, Nova Scotia

Good: British Columbia, Manitoba, Ontario, Quebec

(Data unavailable for other provinces) (Job Bank Canada, 2018).

In general, all sources suggest that the employment opportunities for architects will be fair to good across Canada for much of the next decade.

These analyses, however, do not include key developments in the AEC industry which could dramatically increase the demand for architects. The two key developments are sustainability and Building Information Modeling or BIM. The impact of these developments is described below.

7.1 Sustainability

The Council of Canada Academies estimates that some 25% of Canada's GHG emissions come from the construction and operation of buildings (Council of Canadian Academies, 2015, p. 81). Applying this proportion to Alberta suggests that some 65.7 megatonnes of carbon dioxide equivalent come from the AEC Industry. These figures suggest that in the transition to a lower carbon economy, energy efficient buildings will play a critical role. As such architects trained in sustainability will be in ever increasing demand.

7.2 Building Information Modeling

BIM is a radically different approach to designing, building and maintaining buildings. It represents the project as a database which can be used for a wide variety of purposes from facility management to cost estimation to energy modeling. The AEC industry has only begun to explore the possibilities of this new approach. Moreover, BIM could also provide the conceptual basis for the Internet of Things (IoT) since it provides a structure the huge amounts of data that will be generated by IoT. Here too, architects trained in BIM will be in ever increasing demand.

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