Think Design:

Toronto's Design Sector

Kevin Stolarick, PhD

2022

TWIG TORONTO WORKFORCE INNOVATION GROUP

Thirty years of building Toronto's workforce development system by tackling the tough questions, providing timely labour market data, and mobilizing communities.

We know that a high functioning employment and training system gives people access to a better life and ensures more of Toronto's businesses see sustained growth. In order to achieve this, we are committed to:

- **Convening** stakeholders and talking about the employment and skills development issues that matter.
- **Ensuring** that all Torontonians have access to the right labour market information at the right time.
- **Fighting** for inclusive skill development approaches that can contribute to addressing the needs of some of Toronto's most important communities who have long suffered inequities.
- **Prioritizing the needs of the** small business community. They are the backbone of Toronto's economy and will drive future growth.
- **Rejecting** policy approaches that occur in silos or do not understand the lived experience of Toronto's people and businesses.

Our board is comprised of passionate leaders from Toronto's business, industry, and non-profit communities. Our staff is committed to action-based research and data analysis that can be used by the workforce development system to support Toronto's vibrant and diverse economy.

Services we Provide

At its core — TWIG is a non-profit and independent research organization devoted to finding and promoting solutions to employment-related problems in the Toronto Region. To that end we:

- Produce timely, usable, accurate, and accessible labour market information (LMI).
- Design tools and approaches towards facilitating career, education and workplace decision-making for Toronto industry, workers, and job-seekers.
- Support programs and policy makers to determine what works for whom in workforce development — whether it is youth struggling to enter the workforce, midcareer workers who have lost their jobs because of closings or layoffs, and older workers who must adapt to changing employment circumstances.
- Conduct rigorous but inexpensive evaluations of workforce development initiatives. Our evaluations are collaborative and understand that the best evaluation approaches do not make judgements, but are instead geared toward program improvement.

To inquire about how TWIG could provide any of these services to your organization, email john@workforceinnovation.ca.

We are also available make LMI presentations to industry groups, students, and employment and career counsellors. To book a presentation, email john@workforceinnovation.ca.

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Acknowledgements

A big “thank you” to everyone who participated in this study by giving up time for an interview (listed in the appendix), reviewing information and findings, or taking part in any of the numerous virtual, in person or via email informal conversations. Every effort has been made to reflect your shared wisdom and knowledge. Any mistakes or inconsistencies are solely the fault of the author and are not a reflection of your excellent insights. Also, a special “thank you” to Arlene Gould of DIAC, Laurie Belzak of Economic Development and Culture at the City of Toronto, and John MacLaughlin of TWIG who all helped with herding the cats and making sure I was making sense and not just presenting data. Design of this report, its information graphics, and accompanying website by Michelle Hopgood.

— KMS

A Message from DIAC

The Design Industry Advisory Committee (DIAC), was pleased to act as Subject Matter Experts for this significant study by Kevin Stolarick for the Toronto Workforce Innovation Group. We are excited to see that this research demonstrates the importance of the Toronto design sector workforce as a critical resource for economic and social advantage in Toronto and in our region. The statistical data reveals the size and growth of Toronto's Design Sector, and the significant number of Designers working across other sectors to enable innovation and prosperity. These findings build on the results of research commissioned and published by DIAC in 2004, "Designing the Economy: A Profile of Ontario's Design Workforce", by Meric S. Gertler and Tara Vinodrai. The release of *Think Design: Toronto's Design Sector* is timely, as we rethink how we live and work in the post-peak pandemic period. We expect this report will be of great interest to the Design Sector's many stakeholders, in particular industry and policymakers.

Arlene Gould
Strategic Director
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A Message from TWIG

The Toronto Workforce Innovation Group is pleased to release the report Think Design: Toronto's Design Sector researched and written by Kevin Stolarick. Over the last several years, I've had the fortune to work with Kevin on several labour market initiatives. I was not only impressed with his ability to work with our data sets but more importantly, his ability to ask the right questions of the data and understand the data's answers.

However, when Kevin first approached me about writing a report on the *"design sector"*—I must admit I was initially befuddled. Was *design* an industry, an occupation or a skill? The more time I spent reading and discussing the project, the more I understood. Design is a critical element of healthy economies, it spurs innovation, and is also a distinguishing feature of occupations that require critical faculty, higher order technical skills and creativity. Or, as noted by Ralph Caplan, author of *By Design*; "Thinking about design is hard, but not thinking about it can be disastrous." The concept of design is now seen as so important, that advanced economies such as Singapore have identified the design sector as a key driver of innovation and value creation for businesses and the economy, while also being an effective approach for solving societal problems.

This report indicates that over 51,000 Torontonians are working in a design occupation with an additional 12,000 people working in a design firm. These employees and firms are playing important roles whether it is in computing, financial services, manufacturing, the arts or construction. The more we think about design, the more we realize that it is always around us—from housing to the transportation we rely on and to the digital devices we use. Indeed, the phrase "this was well designed" is a term that is often used to describe a product or service we value. Because of this report, I now better understand why *design* is so important, irrespective of its definition.

Whether it is in our education system or in our business community, if we can emphasize and nurture design, then Toronto will continue to thrive and be at the forefront of innovation and maintain our international reputation of being a livable city.

Finally, on behalf of TWIG, I would like to thank the Ministry of Labour, Training and Skills Development for their ongoing support of Local Training Boards so we can publish critically important reports such as this.

John MacLaughlin
Interim Executive Director
Toronto Workforce Innovation Group
www.workforceinnovation.ca

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Executive Summary

Key Takeaways

01. **The Design Sector is a critical component of Toronto's economy,** both in its own right and in the synergistic way that Design enables, promotes and supports other sectors across the City including Finance, Tech/Information, Construction and Manufacturing.

02. **Over 61,000 people in the Toronto metro area work in either a Design Occupation or at a Design Firm or both.** Five in six Designers work in other industries. Total employment in the Design Sector is roughly the same as total employment in the Real Estate or Information and Cultural Industries and larger than Public Administration, Education, and Arts & Entertainment.

03. **Toronto's Design Sector is a major portion of Design across Canada with roughly 30% of the country's Design firms/employees and over 20% of Canadians employed in a Design job.** Between 2016 and 2020, Toronto accounted for 56% of all Canada-wide employment growth in the Design Industry.

04. **Toronto is home to several large Design firms that are part of multi-national organizations but serve as Canadian and even global hubs and aren't just branch offices of US firms.** These larger firms provide a multidisciplinary range of Design services and create opportunities for the numerous, smaller Design Consultancy firms in the city.

05. **Working in the Design Sector in Toronto presents many career opportunities and pathways.** The region's thick labour market across diverse industries and the large number of firms that employ Designers generates numerous and varied opportunities that can be pursued within the region.

Report Highlights

Design is recognized around the world as a key to economic and social prosperity[1]. Toronto is well positioned to take advantage of the economic opportunity inherent in this current Design focus with a critical mass of designers working in the Design disciplines of architecture, landscape architecture, industrial, interior, graphic, fashion, planning and urban design. This cluster includes both firms specific to these disciplines and the trained and skilled individuals working in various capacities and levels of formal education across a variety of related occupations and across numerous industries. Design has an enabling synergistic impact on industries across the Toronto economy from Financial Services to Construction and Infrastructure from Entertainment to Manufacturing. The positive impact of Design is not restricted to a few firms in a small industry but is widespread.

In 2016, 51,065 people were working in a Design occupation, and 12,257 people were working (in 2020) in a Design firm[2]. While many people working in a Design occupation work in a different industry[3] and not everyone working at a Design firm is doing Design work, some overlap exists. The 2016 Census provides the ability to estimate this overlap. 5.4% of 27,610 individuals in Professional Services in Toronto work in **both** a Design Occupation and at a Design firm. The result is 1,491 workers. Given the above estimates for occupation and industry totals, the result is an estimate for the Toronto Design Sector of **61,831 people who either work in a Design occupation or at a Design firm or both**.

1 See for example, The Design Council's "The Design Economy: The value of design to the UK" at https://www.designcouncil.org.uk/our-work/championing-the-value-of-design/design-economy/

2 As of production of this report, the 2021 Census data with updated details on occupation and industry for Toronto's workers has not been released. An update to this report with those numbers and updated job posting numbers will be released at the end of 2022.

3 "Occupation" and "Industry" are defined here according to Statistics Canada and the data made available. An occupation is based on the job that someone is doing while industry is determined by the firm in which they are working. "Design Sector" is used to identify those in a Design occupation or working at a firm in the Design industry.

Figure 1. Toronto's Design Sector

61,831 people work in Toronto's Design Sector in a Design occupation, at a Design firm, or both.

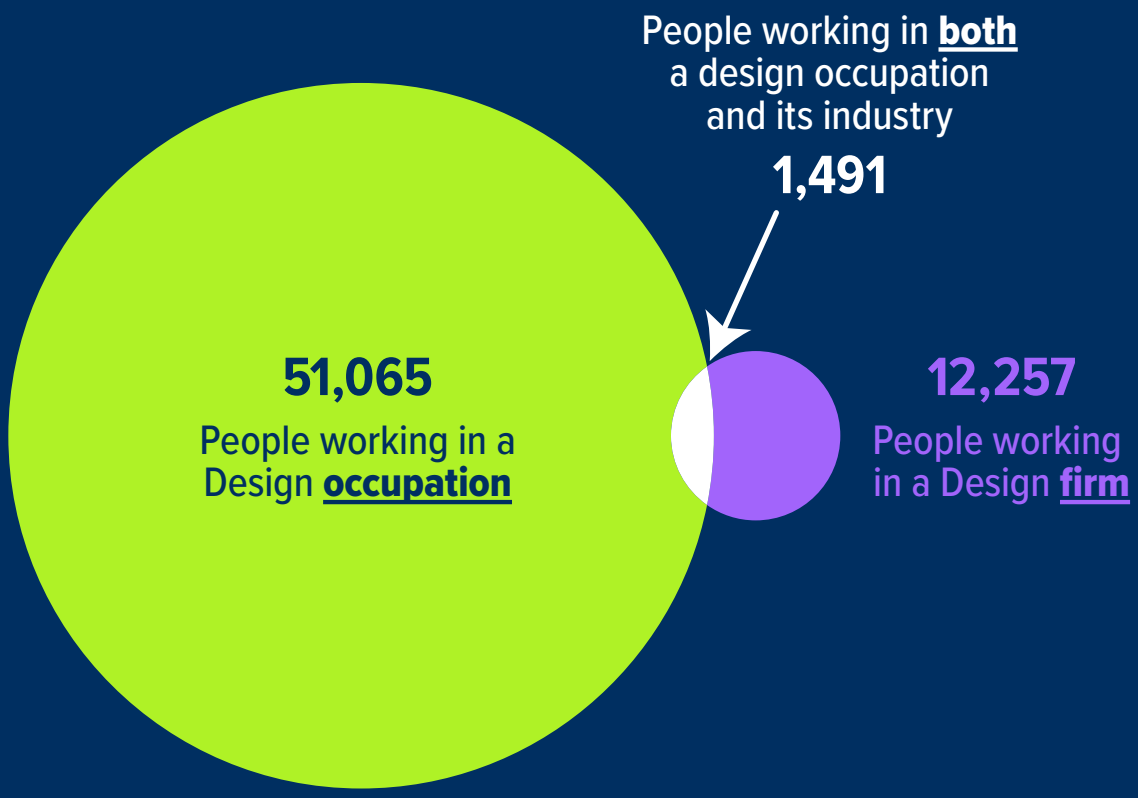


Table 1 shows where the Design Sector would rank among Toronto's industries by total employment size. (All numbers are from 2016 for comparability.) The Design Sector is roughly one-quarter the size of the region's largest industries (Retail and Manufacturing). It is roughly the same size as the Real Estate, Information, and Public Administration industries. It is larger than Education and Arts/Entertainment. Because Design is cross-sectoral, some Designers work in all these industries. By understanding how the total Design Sector includes more than just a few companies in some specific industries, a more complete picture is revealed.

Table 1. Toronto's Industries by Total Employment Size

Industry Title	NAICS Code	Estimated Total Employment
Total		2,247,979
Retail trade	44–45	250,920
Manufacturing	31–33	227,928
Professional, scientific and technical services	54	189,682
Accommodation and food services	72	180,733
Health care and social assistance	62	177,366
Finance and insurance	52	176,554
Administrative and support, waste management and remediation services	56	171,387
Wholesale trade	41	171,221
Construction	23	139,611
Other services (except public administration)	81	95,590
Transportation and warehousing	48–49	88,032
Management of companies and enterprises	55	80,715
Real estate and rental and leasing	53	67,744
Design Sector		**61,831**
Information and cultural industries	51	61,358
Public administration	91	59,505
Educational services	61	46,526
Arts, entertainment and recreation	71	44,517
Utilities	22	6,387

(Canadian Business Counts, 2016)

Specific Takeaways

This report presents a complex quantitative and qualitative view of Toronto's Design Sector, its current state, trends, challenges and potential. Below are summarized some of the key takeaways from this report for specific audiences — the "so what does this have to tell *me*?"

Policymakers

- To leverage the appreciation and economic potential of the true business value of Design across all industries, Ontario should implement a tax credit for Design work similar to Quebec[4]. This has been considered in the past but the potential should be considered again.
- While the planned reduction of "Canadian experience" requirements includes Design professionals and should help reduce barriers to entry for those with international education, credentials and experience, it will not eliminate all barriers as things like membership fees and other financial requirements could be equally as challenging for new Canadians.

Design Professionals

- Employment prospects in fields related to construction, transportation and infrastructure are especially promising but also across all industries. Working in the Design Sector in Toronto presents many different opportunities to pursue your career. Those with at least some experience (5+ years) are especially in high demand.
- The mix of both small (more focused) and large (more international) firms and the wide variety of industries hiring Designers offers opportunities to expand flexibility and experience.
- Employment in Toronto offers a slight wage premium over the rest of Canada but not sufficient to offset the higher cost of living.

Independent Design Professionals (Freelancers)

- Design firms are very busy. Many are catching up on work that was delayed during the pandemic, but many companies are not making permanent employment commitments. As a result, demand for freelancers has increased.
- At the same time and after experiencing two years of almost completely remote work, companies are recognizing the challenge of fully incorporating freelancers and their contributions into their projects.
- In addition to demonstrating exceptional Design skills, freelance Designers should use their portfolio to demonstrate the "softer" relational/client skills, project management skills, and more complete understanding of the full product lifecycle and value chain — don't just be an outstanding Designer, be an outstanding Designer that demonstrably knows how to get things done.

4 https://www.revenuquebec.ca/en/online-services/forms-and-publications/current-details/co-1029-8-36-7-t/

New Canadian Design Professionals

- Ontario is looking to change the “Canadian experience” requirements[5]. Those changes will be helpful but are not yet implemented.
- Mentorship, internship and other work-related opportunities are helpful but can be difficult to find. Be persistent and keep looking and asking. More is being done “in principle” than actuality, so you will find many people talking about this and how important it is without creating new opportunities. However, some progress is being made.
- Language (English) both written and spoken was frequently identified as a challenge in hiring new Canadian Design professionals. Improving this can be especially difficult when working remotely and not in the same office as others. Look for opportunities to strengthen English skills and to demonstrate those skills to potential employers who can draw unfortunate conclusions after just a few spoken sentences.
- The local Colleges provide a variety of different credentials that can be obtained in a short period of time and for minimal cost that can facilitate Design employment opportunities. While a more technically focused certificate may not result in full employment in your trained profession, the skills are in high demand and can help to get your “foot in the door”.

Small Design Companies

- You know what you do. You do it well. You know what you can bring to clients and to larger firms in need of your specific expertise. Keep it up.
- Think about succession planning. What happens when all your principals retire? What about just one of them? Many small firms have been acquired by larger firms to “save” the failing smaller firm and gain access to the skilled employees. Is that what happens to your firm?
- Realize the opportunity inherent in the flexibility being a small firm offers as you struggle to attract employees, and partner with larger firms to gain international opportunities and traction.
- Leverage the diversity inherent in the Toronto region and your existing employees to strengthen inclusion within your firm and realize the benefits inclusion creates.
- Start “farming” instead of “head-hunting” to improve the skills, skill base and diversity of your team. Learn how to attract employees you can grow into the positions you will need them for in the next 3–5 years. There likely won’t be enough to steal them from other firms.

5 https://www.immigration.ca/ontario-ready-to-end-canadian-work-experience-requirement-for-several-regulated-professions

Large Design Companies

- Continue being the Canadian and international hub for your organization and not just an office in Toronto. Part of the attractiveness of Canadian firms that are acquired by US companies, is the “Canadian-ness” which creates diversity, inclusion and international opportunities. Recognize, maintain and leverage that.
- Believe in the growth of your business and opportunities being presented and hire more permanent staff.
- Hire more students. While you might be able to steal experienced employees from other firms, it’s a “zero sum” game that won’t create winners in the long run. Without providing greater opportunities for students and ways for them to gain experience and work-integrated-learning, interest in Design professions will wane in high school students as they hear current graduates talk about not being able to find employment. Large firms are much better positioned to hire, on-board and train recent graduates.
- Press Design educators and Design post-secondary programs to educate students with the mix of Design, technical and product skills that you are desperately looking for. Provide more internship opportunities so the students develop a greater appreciation for this mix of skills and take it back to their campus and classrooms.
- Hire more new Canadians. International companies care about international not Canadian experience. Capitalize on the opportunity of being located in the preferred landing city in one of the preferred countries in the world for international Design professionals. Some are also picking Canada as a stepping-stone to the US. Large international firms can use that to their advantage. Provide ways to lower barriers for professional registration and credentialing of international Design professionals.
- Start “farming” instead of “head-hunting” to improve the skills, skill base and diversity of your firm. Learn how to attract employees you can grow into the positions you will need them in in the next 3–5 years. There likely won’t be enough to steal them from other firms.

Design Educators

(This advice is based on what Design professionals reported as gaps in the interviews. Toronto’s colleges and universities offer a wide variety of different programs and approaches to Design education and may already be meeting some or all these recommendations.)

- Create a first year foundational Design curriculum that is required of students across all Design disciplines to create a solid, unified base knowledge of Design principles and thinking.
- Intensify training in product lifecycle, technical and production skills to better meet the requirements of employers.

- Find industry partners across all industries employing Designers in your disciplines to strengthen understanding of industry needs and hiring opportunities.
- Formally partner with large employers and find ways to informally connect with small employers and the Design professional organizations to increase internship and work-integrated-learning (WIL) opportunities for students.
- Continue emphasis on increasing Indigenous, gender, racial, origin, and sexual orientation diversity and intersectionality across students to facilitate that diversity across Design professions.
- Improve and increase inclusion of equity and diversity issues within the taught practice of the Design disciplines.

Design Students

- Take courses to improve your technical, product lifecycle and production skills no matter what your Design discipline.
- Find ways to improve your “soft skills” and client/team relationship skills.
- Build a portfolio that isn’t just beautiful but also demonstrates your ability to get things done.
- Build a portfolio that tells your story.
- Find internship and other work-integrated-learning (WIL) opportunities. Work hard at doing this. Don’t give up too quickly and keep looking and pushing.
- Research the job market and industries that are hiring for your Design profession. Not all jobs are described the same way in different industries. Jobs can be posted in different ways and in different places. The better you understand the nuance of your specific desires, skills and Design profession and the hiring industries, the more likely you will be to find the right job.

Students Interested in Design

- Learn about the Design professions and occupations.
- Learn about the Design Industry.
- Learn about the different industries that hire Design professionals.
- All Design professions include some post-secondary education, but it ranges from micro-credentials to certificates to degrees to diplomas (undergraduate and graduate). Consider the tradeoffs among desire, ability, time available, money (needed and to be made), and other factors important to you. Opportunities exist and are growing across the entire Design Sector.

Why the Design Sector?

Design is recognized around the world as a key to economic and social prosperity. Toronto is well positioned to take advantage of this current Design focus with a critical mass of designers working in the Design disciplines of architecture, landscape architecture, industrial, interior, graphic, fashion, planning and urban design (https://www.diac.on.ca/quick-facts). This cluster includes both firms specific to these disciplines and the trained and skilled individuals working in various capacities and levels of formal education across a variety of related occupations and across numerous industries. Research from over 15 years ago (https://www.diac.on.ca/design-matters-study) found over 25,000 individuals working in Design across the GTA.

Of the 500 occupations identified by Statistics Canada, 10 have either the word *architect* or *design* in their title, and 42 have either or both in their description. The 2016 Census shows that the Toronto Metro has over 62,700 people working in one of those ten occupations with almost 24% being self-employed. (The average for self-employment in Toronto is 12.7%.) Making up 1.9% of the workforce, designers earn 2.0% of regional income, ranging in average from $38,500 per year for Theatre, fashion, exhibit and other creative designers to $120,000 per year for Architecture and science managers. 62% of these individuals have a University degree (the average is 40%), and 90% have some post-secondary education (Toronto average 67.5%).

The Design Industry has eight specific industry codes with *design* or *architect* in their titles and 34 industries with them in their description. As of 2020, those eight industries employed 82,800 people across 17,200 firms in the Toronto Metro and comprise 3.5% of regional employment by industry and 7.6% of all firms. Most of these firms are in the SME (small and medium enterprise) category with an average firm size of 4.8 employees versus the regional average of 10.4. 85% of firms in the Design Industry have 1–4 employees (vs. 62% overall), and 99.0% have under 100 employees (vs. 97.7% overall).

Given the prevalence of self-employment and smaller firms, the Design Sector is of special interest. With limited labour market information on this sector, both skill and labour market gaps are poorly understood, and with many working as freelancers, traditional job posting data does not capture the nuance of the situation. The Toronto Design sector needs to be profiled to better realize its potential and the potential of its practitioners to address innovation and social needs emerging in today's complex economic and social environment.

What is the Design Sector?

Design Sector Definition — Industries

Table 2. Design Sector Definition: Industries

NAICS Code	Industry Title
541310	Architectural services
541320	Landscape architectural services
541410	Interior design services
541420	Industrial design services
541430	Graphic design services
541490	Other specialized design services

2020 Design Industry

Using firm data for these industries, the Design Industry has nearly 38,000 people employed across 8,600 firms across Canada and 12,250 people employed in about 2,400 firms in Toronto (metro area). Toronto accounts for 27.5% of firms in the Canadian Design Industry and 32.4% of total employment. The higher employment share results from a higher average firm size for Toronto Design firms (5.15 employees per firm in Toronto and 4.38 per firm across Canada).

Table 3. Canada's Design Industry

Location	Firm Count	Estimated Total Employment
Canada	8,642	37,874
Ontario	3,715	16,881
Toronto	2,379	12,257
Toronto % of Canada	27.5%	32.4%

"Design is a growing component of what is being done in Canada."

Design Sector Definition — Occupations

Table 4. Design Sector Definition: Occupations

NOCS Code	Occupation Title
0212	Architecture and science managers
2151	Architects
2152	Landscape architects
2153	Urban land use planners
2154	Land surveyors
2225	Landscape and horticulture technicians and specialists
2251	Architectural technologists and technicians
2252	Industrial designers
2253	Drafting technologists and technicians
2254	Land survey technologists and technicians
5223	Graphic arts technicians
5241	Graphic designers and illustrators
5242	Interior designers and interior decorators
5243	Theatre, fashion, exhibit and other creative designers
5245	Patternmakers — textile, leather and fur products
9217	Supervisors, textile, fabric, fur and leather products processing and manufacturing

"Everybody wears multiple hats in our firm and that's one of the things I love about it. We have this wonderful mix…wonderful sort of quilt of people and their experiences that we can pull from on projects very easily, move very fluidly."

2016 Design Occupations

Using the occupations listed as the means of identifying Design workers, the 2016 (most recent Census data available) numbers show over 236,000 people working in Design across Canada with just over 51,000 in Toronto (metro area). While Toronto accounted for nearly 30% of Canadian Design firms, 21.6% of Canadian Design workers call Toronto home. This is still over one-in-five of the country's Design workers. Design workers in Toronto earn a slight wage premium (6%) when compared to the country overall, but this is insufficient to offset the cost of living differential.

Table 5. Design Occupations (2016)

Location	Total Workers	Average Income
Canada	236,090	50,288
Ontario	89,285	51,113
Toronto	51,065	53,340
Toronto % of Canada	21.6%	106.1%

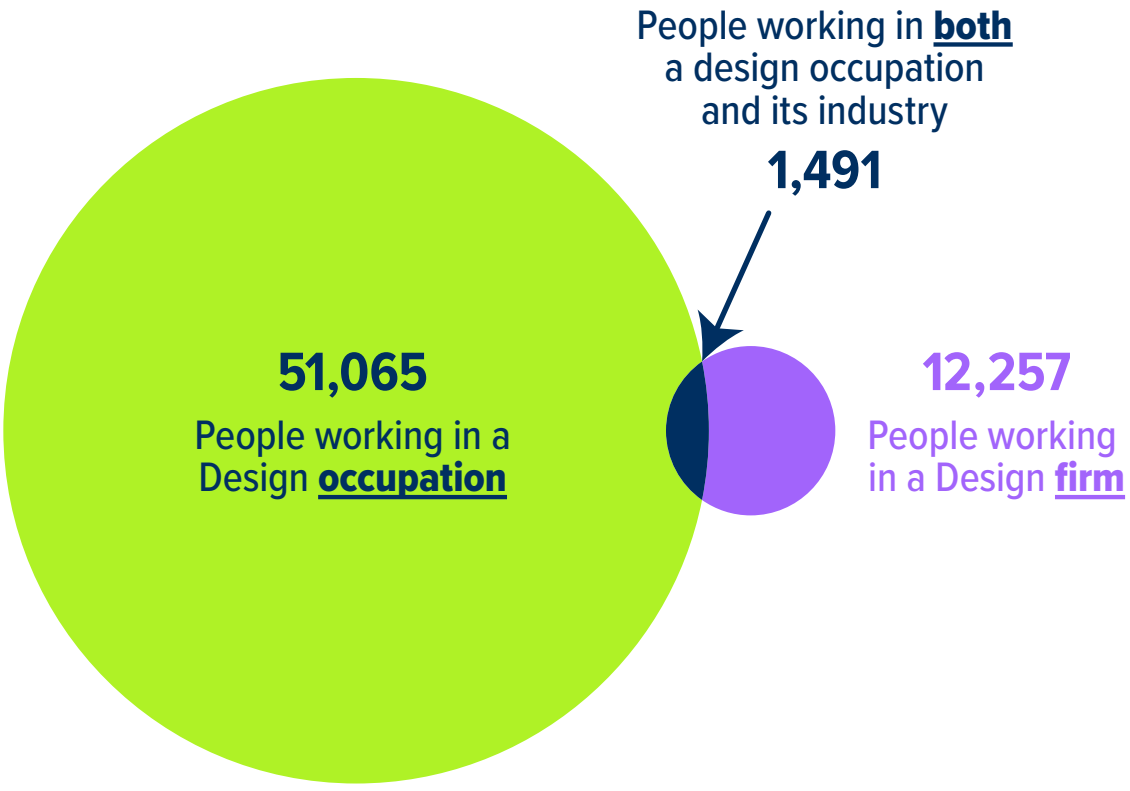
"It [Design in Canada] has changed dramatically from more sleepy 22 years ago when I started. Canada has become more mature with hubs like Vancouver, Montreal, Toronto."

The Complete Design Sector

In 2016, 51,065 people were working in a Design occupation, and 12,257 people were working (in 2020) in a Design firm. While many people working in a Design occupation work in a different industry and not everyone working at a Design firm is doing Design work, some overlap exists. The 2016 Census provides the ability to estimate this overlap. 5.4% of 27,610 individuals in Professional Services in Toronto work in **both** a Design Occupation and at a Design firm. The result is 1,491 workers. Given the above estimates for occupation and industry totals, the result is an estimate for the Toronto Design Sector of **61,831 people who either work in a Design occupation or at a Design firm or both**.

Figure 2. Toronto's Design Sector

61,831 people work in Toronto's Design Sector in a Design occupation, at a Design firm, or both.



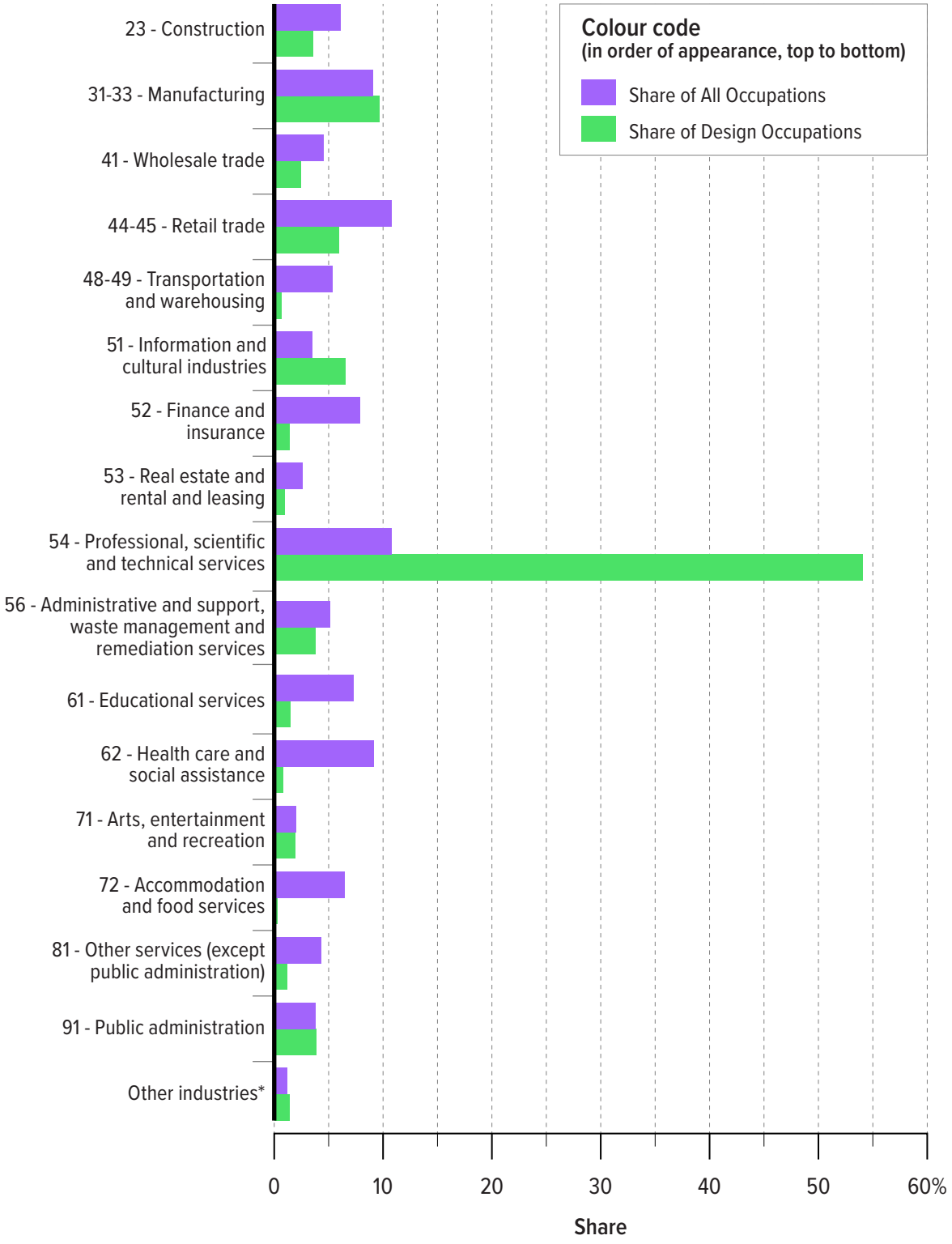
Workers in Toronto

The breakdown of occupation by industry using the 2016 Census allows for a comparison of the industries for those working in a Design Occupation. The chart below shows the distribution of all workers across Toronto and the distribution of Design workers across the region's industries. While Toronto's overall industry employment mix is higher in a few areas, between 100,000 and 200,000 people work in most industries.

Design employment is heavily concentrated in Professional Services, followed by much lower shares in Manufacturing, Information/Culture, and Retail.

"Our problem is that the designers that are working today don't fully embrace you know the industry they're in."

Figure 3. Share of All Occupations and Design Occupations by Industry



*Other industries contains the following: 11 - Agriculture, forestry, fishing and hunting; 21 - Mining, quarrying, and oil and gas extraction; 22 - Utilities; and, 55 - Management of companies and enterprises

Design in Toronto

Design Industry

Industry Size

While Toronto accounts for roughly one-third of all employment at Design firms, the table below shows that Toronto has a lower share of smaller firms (under 50 employees) and a much larger share of firms with 50 or more employees. Toronto is a Design hub for Canada, accounting for over half of all Design firms with 100 or more employees.

Table 6. Industry Size by Number of Firms and Employee Count

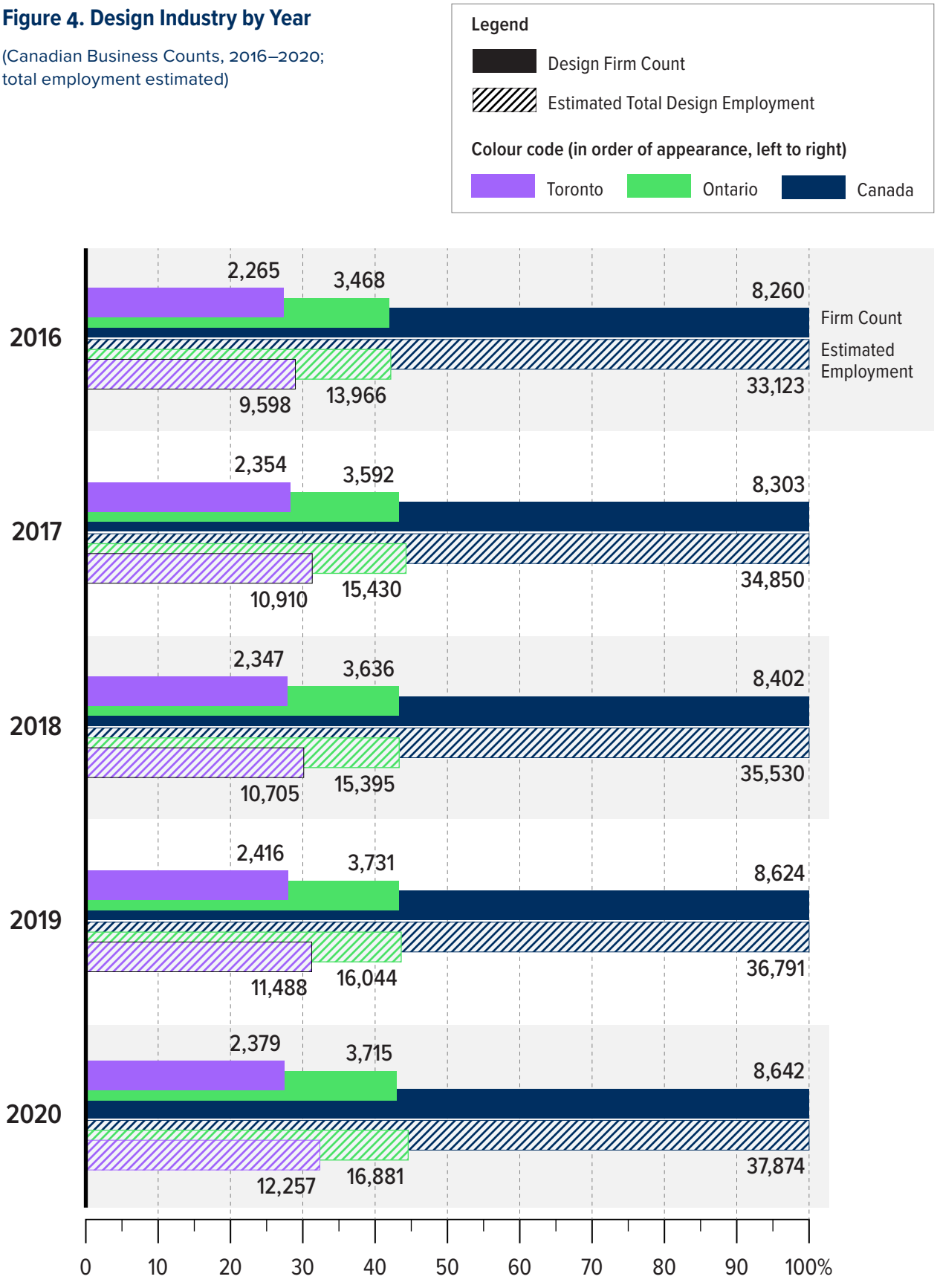
(Canadian Business Counts, 2020; total employment estimated)

	Canada	Ontario	Toronto	Toronto % of Canada
Estimated Total Design Employment	37,874	16,881	12,257	32.4%
By Number of Firms				
Without Employees	22,783	9,929	6,384	28.0%
With Employess	8,642	3,715	2,379	27.5%
By Employee Count				
1–4	6,151	2,711	1,738	28.3%
5–9	1,394	549	333	23.9%
10–19	676	281	187	27.7%
20–49	320	124	76	23.8%
50–99	69	32	27	39.1%
100–199	23	12	12	52.2%
200–499	7	4	4	57.1%
500+	2	2	2	100.0%

Figure 4 shows the number of Design firms (solid) and total employment (lines) over time for Canada (blue), Ontario (green) and Toronto (purple). The length of each bar is the percentage of the Canadian total. While the number of firms has remained generally stable, employment has grown over time with Toronto comprising an increasing larger share of the total.

Figure 4. Design Industry by Year

(Canadian Business Counts, 2016–2020; total employment estimated)



Design Industry Employment Growth

Between 2016 and 2020, Toronto accounted for 56% of all Canada-wide employment growth in the Design Industry.

Figure 5. Design Industry Employment Growth Across Canada

Total growth from 2016–2020 across Canada was 4,751 people.

Design Companies

While most firms are categorized as Architectural Services, many are multi-disciplinary and provide a wider range of Design services. The appendix lists the top firms by number of employees by primary industry.

Table 7. Top 20 Design Companies by Revenue

(City of Toronto only; D&B Hoovers)

Company Name (Total = 2,080)	Employees (All Sites)	Employees (Single Site)	Revenue (USD)	NAICS 2017 Description
Total (Top 250) — 248 firms	**7,401**	**5,264**	**1,562M**	
Ingenium Group Inc	1000	1	190M	Architectural Services
The Interpublic Group of Companies Canada, Inc	300	5	65M	Graphic Design Services
HOK Architects Corporation	227	102	39M	Architectural Services
NORR Limited	220	192	41M	Architectural Services
Daniels LR Corporation	200	200	34M	Architectural Services
Adamson Associates	200	0	34M	Architectural Services
Event Rental Group GP Inc	180	180	116M	Interior Design Services
Zeidler Partnership Architects	180	95	34M	Architectural Services
Diamond and Schmitt Architects Incorporated	135	135	23M	Architectural Services
CORE Architects Inc	115	115	19M	Architectural Services
Allied Technical Sales Inc	115	115	21M	Architectural Services
KPMB Architects	101	101	17M	Architectural Services
Quadrangle Architects Limited	100	100	17M	Architectural Services
WZMH Architects	80	70	13M	Architectural Services
Pigeon Brands Inc	80	60	15M	Graphic Design Services
HDR Architecture Associates, Inc	77	77	13M	Architectural Services
Gensler Architecture & Design Canada, Inc	70	70	12M	Architectural Services
Planning Alliance Inc	60	60	10M	Architectural Services
Hariri Pontarini Architects LLP	60	60	10M	Architectural Services
Moriyama & Teshima Architects	60	6	10M	Architectural Services

Design Occupations

Total Workforce (2016)

While nearly three-quarters of those working in a Design Occupation are employed by a firm, just over one-quarter of Toronto's Design workers are self-employed. The rate for self-employment is higher for Design workers than workers in general and is higher in Toronto than across the rest of Canada. Across all workers 12.7% in Toronto are self-employed while it's 12.0% across Canada.

Table 8. Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Design Workers	236,090	89,285	51,065	21.6%
Employee	179,785	66,575	37,665	21.0%
Self-Employed	56,305	22,715	13,415	23.8%
% Self-Employed	23.8%	25.4%	26.3%	
Average Income	50,288	51,113	53,340	106.1%
Median Income	44,209	44,891	46,054	104.2%

The rate of self-employment among Design Occupations varies across the occupations (below). While not quite half of all Interior Designers are self-employed, close to one-third of Graphic Designers, roughly one-quarter of Architects, and less than 10% of Urban Planners are self-employed.

"There's this kind of tech and innovation that is happening that I believe will become more prominent where people will see more opportunities to be running their businesses from the entrepreneurial perspective, as opposed to a mass company."

"We understand what it's like to have a small family and working, and we don't want to run a sweatshop. We want to keep and maintain a balance—it's part of our philosophy in terms of health and wellness and keeping people at their best and inspired."

Self-Employed (2016)

Table 9. Share of Self-Employed by Occupation (2016)

Occupation	Share Self-Employed
Interior designers and interior decorators	44.0%
Theatre, fashion, exhibit and other creative designers	36.7%
Graphic designers and illustrators	29.4%
Architects	26.7%
Landscape and horticulture technicians and specialists	24.9%
Landscape architects	23.4%
Graphic arts technicians	22.6%
Patternmakers — textile, leather and fur products	21.9%
Industrial designers	21.4%
Architectural technologists and technicians	19.1%
Land surveyors	9.9%
Urban and land use planners	8.8%
Drafting technologists and technicians	8.3%
Supervisors, textile, fabric, fur and leather products processing and manufacturing	7.4%
Architecture and science managers	4.7%
Land survey technologists and technicians	3.9%

Design Workforce by Age (2016)

Toronto's Design workers are slightly more likely to be younger (25–34) or older (75+) and a little less likely to be 35–44 or 55–64.

Table 10. Design Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada	Share of Design Workers	Share of All Toronto Workers
All Design Workers	236,090	89,285	51,065	21.6%	51,065	21.6%
15–24	**18,210**	**7,835**	**4,135**	**22.7%**	**8.8%**	**12.5%**
15–19	1,405	635	295	21.0%	0.7%	3.6%
20–24	16,790	7,185	3,835	22.8%	8.0%	8.9%
25–64	**209,010**	**77,715**	**45,085**	**21.6%**	**87.0%**	**83.4%**
25–34	67,605	25,450	15,680	23.2%	28.5%	22.0%
25–29	32,475	12,635	7,775	23.9%	14.2%	11.0%
30–34	35,155	12,820	7,940	22.6%	14.4%	11.1%
35–44	59,560	20,600	11,970	20.1%	23.1%	21.8%
45–54	48,805	18,905	10,695	21.9%	21.2%	23.7%
55–64	33,020	12,780	6,705	20.3%	14.3%	15.9%
65–74	**7,745**	**3,220**	**1,565**	**20.2%**	**3.6%**	**3.6%**
75+	**1,115**	**515**	**280**	**25.1%**	**0.6%**	**0.5%**

"Our interest in New Canadians is to take positions that old Canadians don't want to take."

"We could be in a golden age of education, except, we have a college system and the colleges don't talk to one another, they don't collaborate about building content and career paths and things like that so until that changes we're going to have, at least in some respects the same problem [of gaps between students and employers]."

Educational Attainment (Toronto, 2016)

Design workers are generally well-educated:

- 87.9% have at least some post-secondary education (67.5% for Toronto)
- 86.1% have a certificate, diploma or degree (63.1% for Toronto)
- 53.2% have a bachelor's degree or above (40.2% for Toronto)

Table 11. Breakdown of Educational Attainment (Toronto, 2016)

Highest Education	Design Share	Toronto Share
No certificate, diploma or degree	1.8%	8.2%
Secondary (high) school diploma or equivalency certificate	10.3%	24.2%
Apprenticeship or trades certificate or diploma	1.8%	4.4%
College, CEGEP or other non-university certificate or diploma	29.1%	20.0%
University certificate or diploma below bachelor level (less than 4 years)	3.8%	2.9%
University certificate, diploma or degree at bachelor level or above	53.2%	40.2%

Education by Occupation

Level of education varies by occupation but a bachelor's or even master's degree may be a requirement in the regulated industries.

- Nearly all Architects, Landscape Architects, Urban Planners have at least a BA
- Roughly half of Interior, Industrial and Graphic and a few technical occupations have a BA
- Less than half of some technical Design occupations have a BA

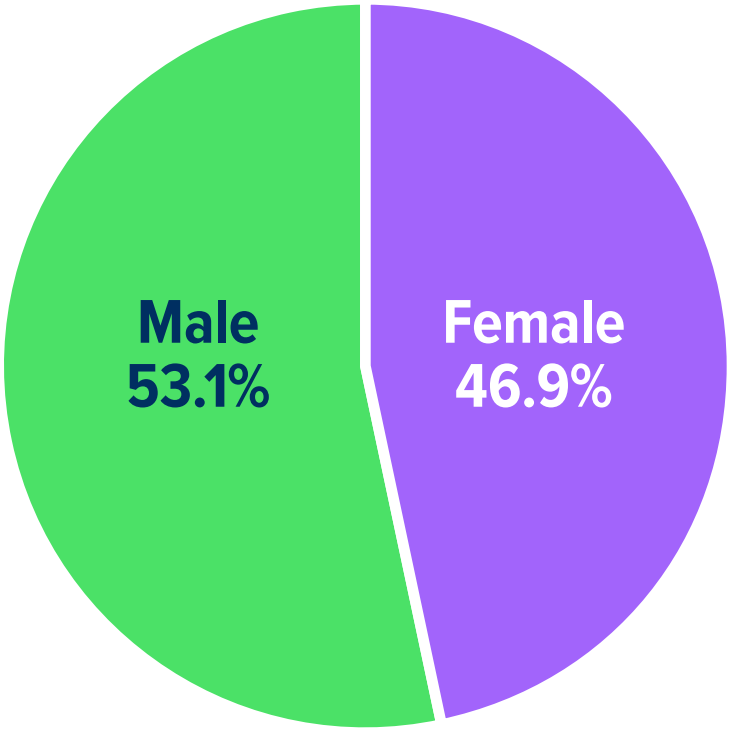
Table 12. Breakdown of Education Attainment by Occupation

Occupation	Under BA	BA or Above
Architects	7.5%	92.5%
Landscape architects	9.9%	90.1%
Urban and land use planners	12.6%	87.4%
Architecture and science managers	14.4%	85.6%
Industrial designers	41.7%	58.3%
Land surveyors	41.7%	58.3%
Architectural technologists and technicians	46.8%	53.2%
Interior designers and interior decorators	52.4%	47.6%
Drafting technologists and technicians	53.8%	46.2%
Graphic designers and illustrators	57.0%	43.0%
Theatre, fashion, exhibit and other creative designers	60.0%	40.0%
Graphic arts technicians	64.9%	35.1%
Land survey technologists and technicians	66.7%	33.3%
Landscape and horticulture technicians and specialists	70.8%	29.2%
Supervisors, textile, fabric, fur and leather products processing and manufacturing	82.6%	17.4%
Patternmakers — textile, leather and fur products	88.9%	11.1%

Gender (Toronto, 2016)

Slightly more than half all those working in Design are men.

Figure 6. Gender Breakdown (Toronto, 2016)

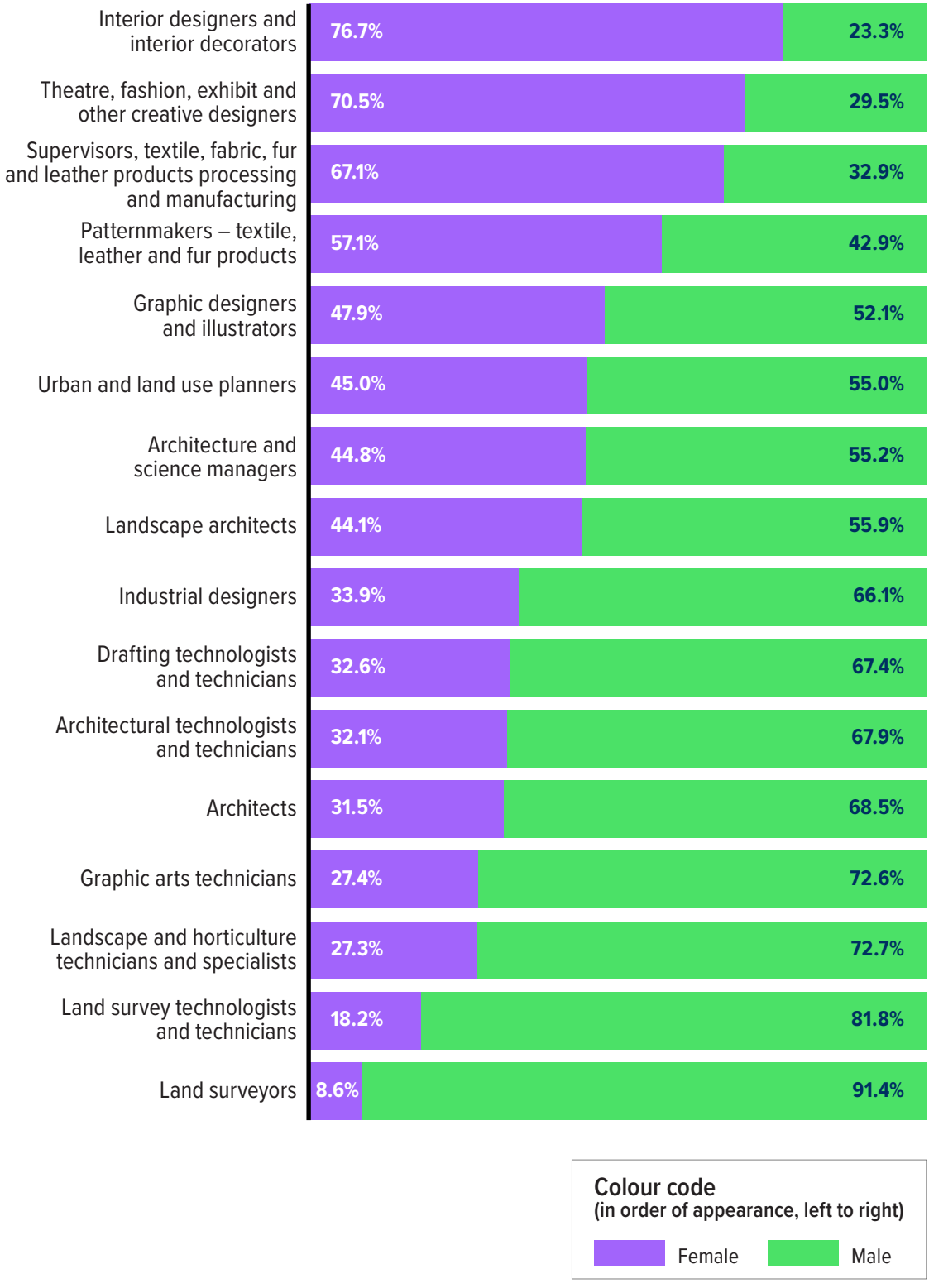


Women are the majority of those working in Interior Design, Theatre and Fashion Design, as Textile Supervisors and Patternmakers. The split is close to 50/50 for Graphic Design, Urban Design, Architectural Managers, and Landscape Architects. Men comprise over two-thirds of Industrial Designers, Drafting Technicians, Architectural Technicians and Architects; nearly three-quarters of Graphic Arts Technicians, Landscape Technicians and Land Survey Technicians; and over nine in ten Land Surveyors are male.

"In recent years I've seen many more women in Industrial Design. I've worked with ACIDO for years, and it used to be all men. Their AGM would be a room full of guys."

Gender by Occupation

Figure 7. Share of Gender by Occupation



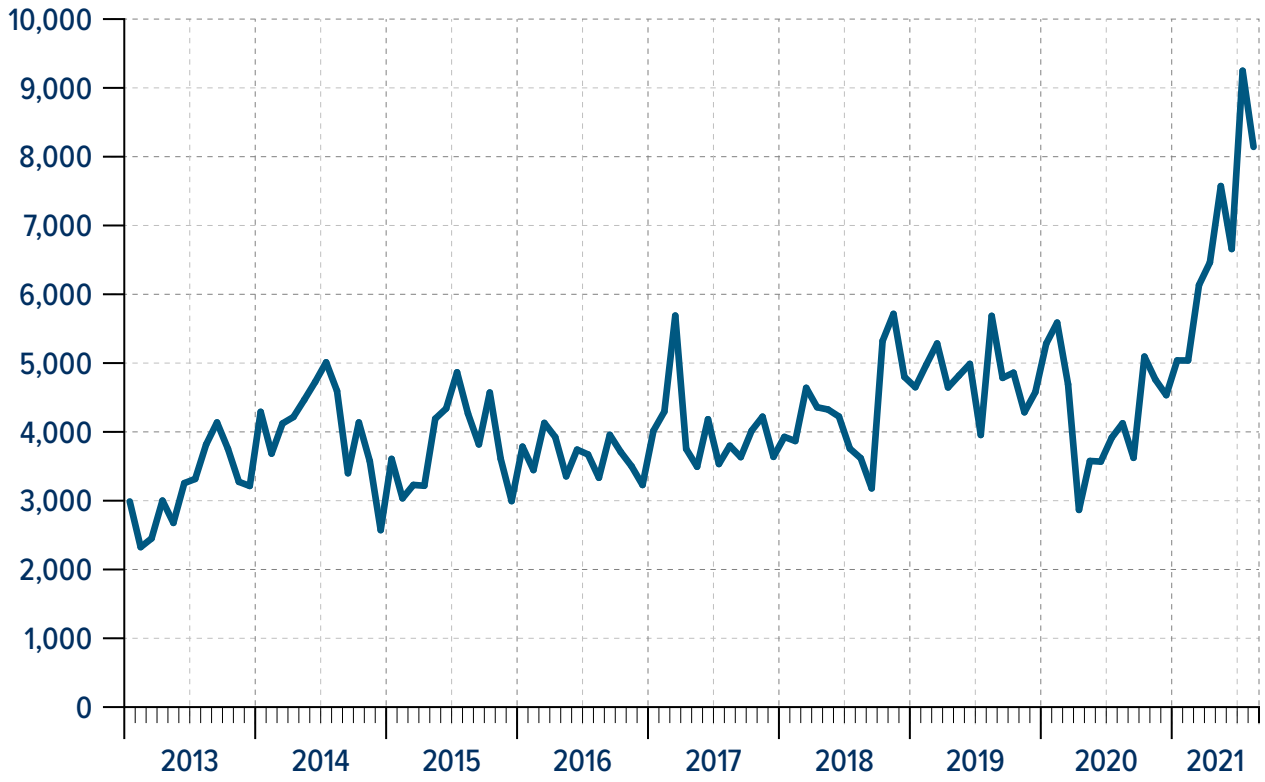
Design Job Postings

From Burning Glass, for the Toronto metro area (CMA).

Job Postings 2013–2021

- The number of postings was consistently between 3,000 and 4,000 per month through 2018.
- In 2019, it increased to around 5,000 per month.
- Dropped back down in 2020 (Covid).
- Rose steadily between May 2020 and July 2021.
- By mid-2021 was at 8,000 to 9,000 job postings per month. July 2021 was 9,249 and August 2021 was 8,142.

Figure 8. "Design" or "Architect" Job Postings (2013–2021)

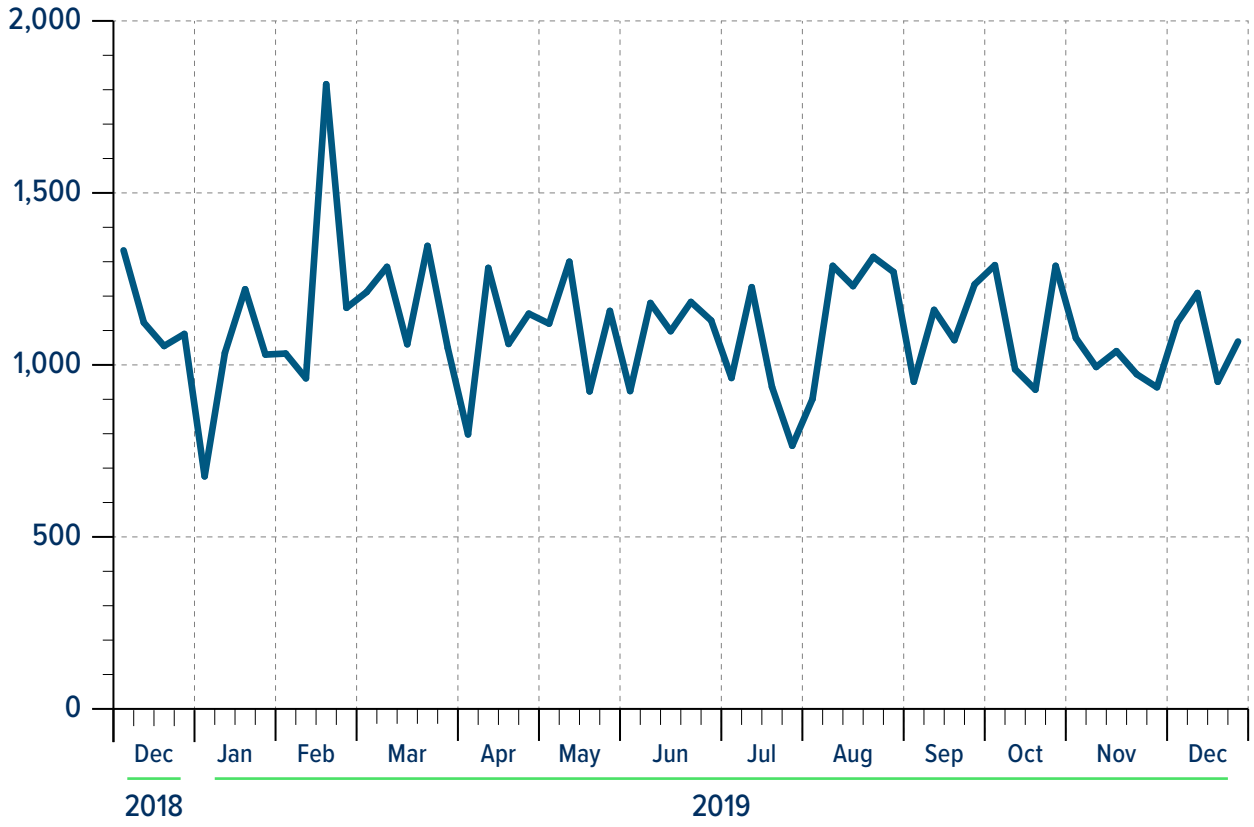


"I don't think there's a good awareness of the jobs in the industry."

Job Postings (2019)

- Average number per week 1,107
- Highest number 1,816 (February 16)
- Lowest 676 (January 5)
- Overall, generally between 1,000 and 1,200
- Steady but trending level throughout the year

Figure 9. "Design" or "Architect" Job Postings (2019)

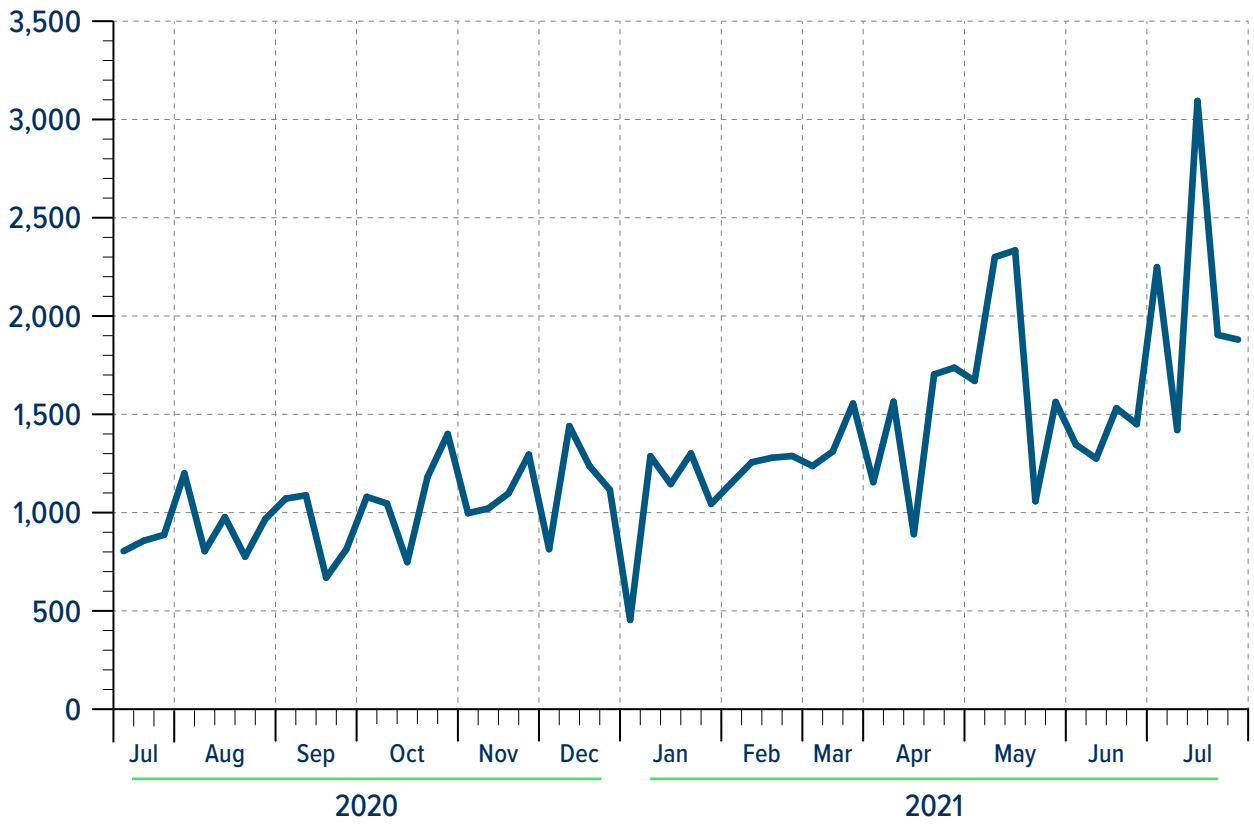


"We are still hiring, yes; we are still expanding and, yeah, so we are still continuing to hire."

Job Postings (July 2020 to July 2021)

- Average number per week 1,282
- Highest number 3,094 (July 17, 2021)
- Lowest 454 (January 2, 2021)
- Increased by about 20 jobs per week on average
- Increased nearly 1,000 jobs from about 750 in July 2020 to 1,750 in July 2021

Figure 10. "Design" or "Architect" Job Postings (July 2020 to July 2021)



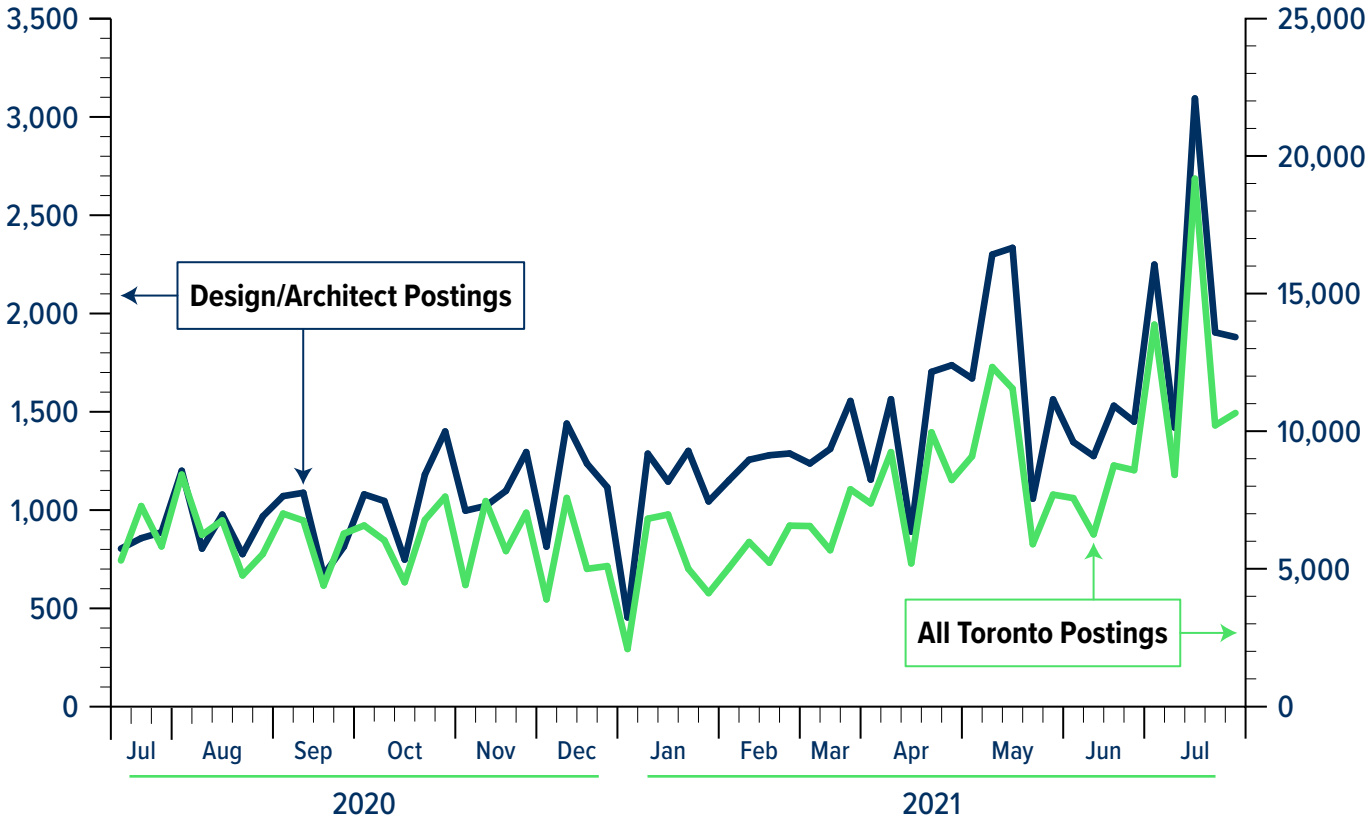
"We want generally for people to live within a commute of the Office whether we're working remotely or not, because we hope not to always be working remotely so you know we're hiring now."

Figure 11. All Toronto Job Postings (July 2020 to July 2021)

Growth in postings is not limited to Design jobs.

"Those [transit infrastructure projects] are a great opportunity that that will be long, long term growth for both employment from design right down to construction."

Figure 12. Trend comparison of All Toronto Job Postings and "Design" or "Architect" Job Postings



Looking the 12 month period, you can see how Design/Architecture was tracking with all postings but then jumps higher and stays above (relatively speaking since the number of postings is always higher for all). The interviews indicated that this higher level is partly influenced by the significant investments in infrastructure that have recently occurred. Although at a slightly higher level, Design/Architecture job posting activity still tracks to overall number of postings. So, the growth in the number of job postings most likely reflects the overall job market rather than something specific to the Design Sector.

"Coming out of the pandemic, a lot of firms [were] nervous [about] acquiring [new employees], or even getting a job because [no one knew] what the market [was] like and how much work [would or wouldn't] be [available]."

Job Postings by Industry (NAICS)

Design-related job postings by industry have mostly been in Finance and Insurance (mostly Banks). While Finance and Insurance account for 23% of all Toronto job postings, the industry was the source of over 36% of Design jobs. Design also accounts for a larger share of job postings in the Professional Services and Information industries and Retail. While the share of Design job posts in Manufacturing is slightly lower than for the Toronto region overall, nearly 11% of Design jobs posted were in the Manufacturing industry. Manufacturing includes specific industries for semiconductors, pharmaceuticals, motor vehicles and navigational instruments.

Table 13. Job Postings by Industry (NAICS)

NAICS Code	Industry Sector	Total Postings	Share of Design	Share of All Postings
52	**Finance and Insurance**	**9,392**	**36.38%**	**23.0%**
	Banks	6,138		
	Insurance	1,813		
54	**Professional, Scientific, and Technical Services**	**7,485**	**29.00%**	**23.3%**
	Architecture, Engineering	1,989		
	Management Consulting	1,770		
51	**Information**	**3,659**	**14.18%**	**8.5%**
31–33	**Manufacturing**	**2,790**	**10.81%**	**11.6%**
	Includes semiconductors, pharmaceuticals, motor vehicles, navigational instruments			
44–45	**Retail Trade**	**2,487**	**9.63%**	**6.8%**

"I feel like it's pretty rare that people are going into a mainstream industry kind of position—like most of the people in those jobs have been there for a couple of decades."

Job Postings by Occupation

In looking at the high-level occupational categories for Design-related job posts, the share of jobs in each category is generally the same for Design jobs as for all jobs posted. Natural and Applied Sciences jobs make up a slightly larger share as do Business and Finance occupations. Trades and Transport, Manufacturing and Health occupations are slightly less.

Table 14. Job Postings by Occupation

NOC Family	Family Description	Total Postings	Share of Design	Share of All Postings
2	Natural and applied sciences and related occupations	28,967	45.51%	44.40%
0	Management occupations	12,992	20.41%	21.00%
1	Business, finance and administration occupations	8,222	12.92%	12.60%
6	Sales and service occupations	4,127	6.48%	6.70%
4	Occupations in education, law and social, community and government services	4,115	6.47%	6.30%
5	Occupations in art, culture, recreation and sport	2,374	3.73%	3.80%
7	Trades, transport and equipment operators and related occupations	1,528	2.40%	2.60%
9	Occupations in manufacturing and utilities	731	1.15%	1.40%
3	Health occupations	295	0.46%	0.70%
8	Natural resources, agriculture and related production occupations	293	0.46%	0.50%

"[If] you have a leadership potential you are eligible for additional jobs that may not be with your skill set."

Design Saved Our Company

Copernicus Educational Products (https://www.copernicused.com/), a Certified B Corporation[6] in Arthur Ontario, designs and manufactures educational classroom teaching aids and furniture. They have manufacturing facilities in Ontario and a dedicated factory partner in China and sell their products around the world.

When Covid-19 hit, they found themselves selling products that were no longer needed as students in their major markets shifted from the classroom to the kitchen table.

As Kaylyn Belcourt, President of Copernicus Educational Products, put it "when the pandemic hit, it impacted everybody in the whole company. It was, 'everybody's a designer now, and we need to figure this out'." Kaylyn started at Copernicus as an Industrial Designer in 2007.

With schools closed and transportation shut down, the company was worried that sales and revenue would drop to literally zero overnight. The company called a (virtual) "all hands" team meeting where everyone focused on what schools would need to be able to reopen safely.

Because they had access to their own production facilities and available sourcing, Copernicus quickly transitioned to newly (or soon to be) needed products. They completed smaller runs of new products focused on school specific needs so they could see what would sell while keeping the production staff employed.

"We launched like 40 new product skus in six months." And had enough in sales of new sanitizing and related products over the next eight months to end up only 10% under what the company had originally planned in sales for the year, far better than they thought it might be when Covid hit.

Through its dealer network, Copernicus heard over and over how they were the only company with needed products available right now. Competitors could only promise products for the next year. By understanding the impact of the situation, leveraging the opportunity of design, and making everyone a designer, Copernicus thrived in an extremely challenging situation.

"We had the in-house [design] capability to immediately start to focus on those [new Covid-related products] and act."

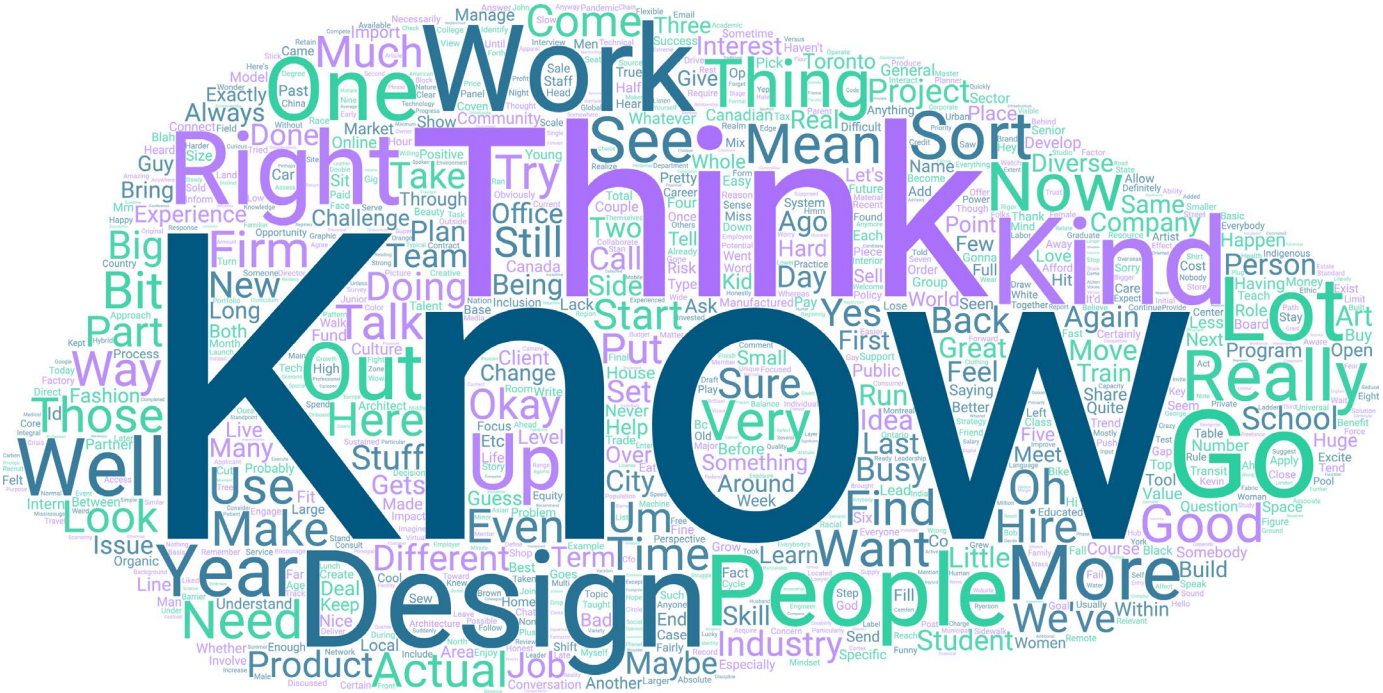
"Design saved us."

6 "Certified B Corporations are leaders in the global movement for an inclusive, equitable, and regenerative economy." https://www.bcorporation.net/en-us/certification

Trends and Foresight

Thirteen hours of interviews and numerous other informal conversations generated nearly 700 pages of transcript and 180,000 words. The word cloud below summarizes the frequency of individual words from those interviews. The larger the word; the more often it was used by the interviewees.

Figure 13. Interview Words



> *"I had somebody call me who'd been in the industry for a long, long time, and he said it's not enough to have diversity on the table, we need to be sitting at the table."*

The three sections of the interview (the full protocol is in the appendix) resulted in comments that could be grouped in the following ways. The emergent topics were identified by considering comments made during the interview independent of the questions, and grouping related comments together thematically.

Table 15. Emergent Topics

Interview Section	Emergent Topics
Design Sector Trends	• Positive Trends • Challenges • Changing Nature of Work (Impact of Covid) • Small/Large Firms
Labour Market (Supply and Demand)	• Labour Market – Job Searching/Hiring • Students • Gaps • Hiring • On-Boarding • Mobility
Inclusion and Design	• "Checkbox" Diversity • Inclusion is an Action • Educational Institutions • Diverse Hiring • Women in Leadership • New Canadians

The sections below highlight comments by topic within each of the sections. A particular comment could have been made once or thirteen times. The validity of a thought or idea is not determined by the number of times it was said — it is the unique contribution that thought provides to further the overall understanding of the current state of the Design Sector in Toronto.

Additionally, threads of thought wove throughout the topics or were important enough to warrant special mention.

- The Design Sector in Toronto is on a good trajectory. Have been doing the right things for a long time. For some, thinking across all industries has transitioned from 'design is nice to have' to 'design is a need to have'. Many companies have a better understanding of the long shadow design casts on cost and profit.
- Toronto is a global Design hub — especially (but not only) around infrastructure, which is fueled by infrastructure investment. Toronto

"We have an Australian project run out of the Toronto office with a British designer."

has a 'thick' labour market for designers — lots of opportunities to work lots of different places which makes it both attractive as a place to work and efficient from a job market perspective. And, Toronto's multi-culturalism and diverse residents automatically creates diverse teams.

- Companies are very busy but are mostly building temporary instead of permanent capacity. This means more opportunities for gig-based work, but available consultants or freelancers with specific, desired skills are harder to find. As a result, some companies are shifting away from freelancers because of lack of meaningful results, problems with integration and freelancers lacking integration skills.
- Shortages are reported in available workers by the interviewees, but companies are only looking for experienced hires (5+ years) due to on-boarding problems (especially for remote and hybrid work). Recent graduates are available but are not of interest to employers. Some employers are taking the long view and hiring recent graduates to grow into needed role in 5+ years because they do not expect the situation to improve any time soon. Companies generally find it even more difficult to on-board new hires remotely. Bigger firms have more resources and capabilities for on-boarding new hires and so are doing more hiring (proportionally). Many firms have shifted much of the on-boarding training to colleges and universities to reduce new hire costs, but it's not entirely clear how aware the educational institutions are about this.
- Interviewees that were hiring reported that students are lacking WIL (work-integrated-learning) experience and opportunities and have little awareness of job or internship opportunities. Employers find students need a better balance among art vs. design vs. production knowledge and skills. The current focus is too heavy on the art and not heavy enough on production knowledge — beautiful portfolios without any real understanding of how the things shown in the portfolio are actually made.
- Employers expressed a desire that students demonstrated understanding the full product lifecycle, what goes into creating an industry — the whole value chain. Separate firms have been created to provide specific design and design-manufacturing technology skills that designers don't have. While employers would like for designers to have more technical know-ledge skills, designers that become too technically skilled get pigeon-holed and find it hard to advance as technical and trade knowledge can be seen as a stigma and weakness since someone is not focused solely on design.

- Inclusion creates real benefits and is not just about meeting minimum requirements. Inclusion generates innovation. Diversity lends perspectives. Inclusion generates inclusion. Not being fully inclusive is an impediment to forming, growing, sustaining a business.
- People reported finding it difficult to understand who is doing what with regard to equity, intersectionality, diversity. Most companies do 'head hunting' rather than 'farming' for diversity. Need greater diversity in the classroom to get greater diversity in the profession. Interviewees reported that public, non-profit, professional and educational institutions care a lot but don't make any progress on diversity and inclusion.
- Hiring new Canadians is the best investment but is hard to do. Credential changes are upcoming on Canadian experience requirements — actual changes to be determined, but very high membership fees and other financial barriers to new Canadians will still exist in many of the Design professions.

"If you want to work with Indigenous designers there are different sets of values that means you're going to have to change the way you work and it's not easy, I know. "

Design Sector Trends

Positive Trends

- Growth is exciting
- Designing for impact
- On a good trajectory. Have been doing the right things for a long time.
- Design saved the company (Copernicus sidebar)
- Better understanding of the long shadow design casts on cost and profit
- Transition from 'design is nice to have' to 'design is a need to have'
- Toronto is a global Design hub — especially around infrastructure — and this is fueled by infrastructure investment
- Optimistic outlook especially from infrastructure and transit investments
- Understanding that design does not have an absolute right answer but can identify many absolutely wrong ones
- Design including carbon cost calculations
- CSR signoff on design for sustainability

Challenges

- Overcoming the Canadian mindset of 'not as bad as...' instead of 'better than...'
- Succession planning for the next leadership generation — keeping the firm viable
- Environmental sustainability and health impacts (forgotten temporarily but not gone)
- Social responsibility beyond environmental
- Leveraging the value of design and implementing a design tax credit (like Quebec)
- Creating equity by building back better
- Salaries, cost of living, cost of Toronto (GTHA)
- Affordable housing
- Digital divide — somewhat within Toronto but also outside of urban southern Ontario
- Covid to result in conversion of office space to residential space
- Covid has created greater interest in and dependence on the public realm — more walking

Changing Nature of Work (Covid)

- Projects are becoming faster and more numerous
- More work is being done but it is more focused and specific
- Can design here but make anywhere
- Separate firms to provide specific design and design-manufacturing technology skills
- Online provides incredible reach
- Online allows for selling directly to consumers (products — industrial, fashion)
- Have to balance office and home office
- Lots of gig-based work but consultants or freelancers with specific, desired skills are harder to find

"There's an element of being in person with design that is hard to completely accept an entirely remote kind of position."

- Shifting away from freelancers because of lack of meaningful results, problems with integration and freelancers lacking integration skills
- Better equipment, technology and programs make it easier and more efficient to work from home
- More training on new software is needed

Small/Large Firms

- Businesses are bigger, larger
- We have an Australian project run out of the Toronto office with a British designer
- Advantages and disadvantages for both small and large firms when large, global firms acquire small, local ones
- Acquisitions can save failing firms while still maintaining their 'Canadian culture'
- A large firm can respond to an RFP/RFQ while a small firm can do the work
- Many large firms still have 'that 70's mindset' (especially as regards women and visible minorities) while small firms can be flexible, responsive and inclusive
- Being small is both a help and a hindrance—you must partner with a large firm to have any international standing or capacity
- Staying small allows you to focus on your design work and being excellent with that rather than having to focus on running a company

"A lot of the firms that were around 10 years ago 15 years ago are still around now. Most of them are growing, but I haven't seen a lot of merging happening in Toronto, at least."

Labour Market (Supply and Demand)

Labour Market

- Toronto has a 'thick' labour market for designers — lots of opportunities to work lots of different places
- Need people with a broad spectrum of knowledge — 'T-shaped'
- Need more boundary pushing/risk accepting clients
- Need to understand what goes into creating an industry — the whole value chain
- But, trade knowledge can be seen as a stigma and weakness — not focused on design

"On the design side, the challenge is we graduate a lot of design students, a lot of design students and there are not a lot of design shops [hiring recent graduates]."

Students

- Education takes at least three years to change, and it needs to
- Design students are taught to be artists and are not taught enough (if any) about production and need a better balance among art vs. design vs. production knowledge and skills
- Students leave school with different expectations about what it means to be a Design professional than what employers can offer
- Fewer students pursuing/completing industrial design education
- Lots of graduates and hard to get noticed or established
- Students have little awareness of job opportunities
- Students are lacking WIL (work-integrated-learning) experience and opportunities
- Difficult to get work experience and internships
- More mentors and mentorship opportunities are needed
- Students need to learn how to 'tell their story', not just build a portfolio
- Telling their story is especially challenging for racialized students

Gaps Between Job Seekers and Job Providers

- Developing a design mindset
- Understanding the world
- Understanding the full product lifecycle
- Design management
- Client management
- Relationship management
- Autonomy, independence — project/client management
- Real world constraints
- Risk taking
- Foundational knowledge (manufacturing, construction, sustainability)
- Technical knowledge skills
- Technical — computer program skills
- Building a 'portfolio' of (experiences) not just plans and drawings
- Experience, Canadian experience
- "Middle" skills/experiences
- 4+ years of experience
- Entrepreneurial skills
- Writing skills (especially English for diversity hires)
- Interpersonal skills, expressiveness, ability to do/handle critique
- Written and oral communications
- How to listen

Hiring

- Recruitment is hard; can't find a good fit
- Junior — intermediate positions hard to fill
- Needed skills (especially technical ones) not available in the market
- Can't find people with 4+ years of experience
- Shortage in available workers but only looking for experienced due to on-boarding problems (especially for remote work)
- Recent graduates available but not of interest to employers
- Some are hiring to grow into needed role in 5+ years
- Companies report needing capacity but are very slow to hire due to uncertainty
- Building temporary instead of permanent capacity
- Taking steps on improving retention: benefits, perks, focus, mission
- Location can be a recruitment challenge or draw

On-Boarding

- Firms reported difficulty in hiring new employees
- Much of the difficulty is with on-boarding new hires
- Even more difficult to on-board new hires remotely
- Firms have shifted much of the on-boarding training to colleges and universities as a way to reduce new hire costs — not entirely clear how aware the educational institutions are about this
- Bigger firms have more resources and capabilities for on-boarding new hires and so are doing more hiring (proportionally)

Mobility

- Everybody is moving
- Trained designers don't last in their professional field — many end up in other jobs
- More public ⟷ private pathways are needed (urban design and planning)
- Designers that become too technically skilled get pigeon-holed and find it hard to advance

"If you hire a senior person who knows the drill and so on it's easier to integrate but new people it's so difficult because as a young person, you need that personal connection and interaction and showing the ropes."

Inclusion and Design

"Checkbox" Diversity

- Diversity policies become just a label. Need to move beyond and identify ways to truly improve
- Have an inclusion policy, but it's still 'a work in progress'
- 'We have an internal Diversity and Inclusion Group'
- Working on US projects forces the creation of EDI (Equity, Diversity, Inclusion) paperwork 'proof'
- Don't understand who is doing what with regard to equity, intersectionality, diversity
- Need more tools to deal with EDI, especially around technology
- Customers (especially public/government) force inclusion
- Smaller firms report that they are more independent and more diverse
- Indigenous issues in hiring, promotion, representation, procurement processes, market reach are widespread across many facets of the Design Sector, but most are not unique to the Design Sector

"Our mandate is to prioritize Indigenous women and hiring Indigenous women so I'm sure that also adds an extra layer of making it challenging to fill the positions."

Inclusion is an Action

- Inclusion creates real benefits and is not just about meeting minimum requirements
- Not being fully inclusive is an impediment to forming, growing, sustaining a business
- Diversity lends perspectives
- Inclusion generates innovation
- The beauty of the design sector is that it already recognizes that there are so many voices that need to be heard
- Understanding that you are not the best opens you to inclusion
- 'It's not being done for me, so I'll do it' creates inclusion
- Meeting AODA and senior service disability requirements creates inclusion

- They might be invisible disabilities, but they still create inclusion
- Toronto multi-culturalism automatically creates diverse teams
- The diversity of Toronto can be leveraged to create greater innovation
- Inclusion generates inclusion
- “The industry [fashion] is already a rainbow of diversity”
- What’s needed now is a post-inclusion mindset
- You need post-EDI thinking

Educational Institutions

- Greater student diversity leads to greater industry diversity
- Need greater diversity in the classroom to get greater diversity in the profession
- Less Black talent is available, but less in the pipeline
- Need more international students to get more international hires
- Toronto Metropolitan University and others are great at attracting international students
- “All my classes [in graphic design] have more female students”
- Public, non-profit and educational institutions care a lot but don’t make any progress on diversity and inclusion
- A disconnect exists between the academic environment and industry
- Planning schools need a focus on equity/inclusion and not just on increasing land values

Diverse Hiring

- Diversity is important, but diverse candidates are hard to find
- Most companies do ‘head hunting’ rather than ‘farming’ for diversity.
- More need to be growing and farming qualified diverse employees.
- Qualified doesn’t mean employed
- Community volunteer work [especially for racialized people] becomes a disadvantage for being hired as the for-profit company assumes the hire only wants to work in the non-profit sector
- Some reverse discrimination was noted

Women in Leadership

- Have women in leadership/partnership roles already
- Developed succession planning and leadership opportunities for women and others through a leadership conference

- Overall challenges with developing leadership, but women in leadership is really challenging
- More discussion than action on women in leadership and succession planning

"Why did my success [as a woman] require a cheerleader that's a guy?"

New Canadians

- Hiring new Canadians is the best investment but is hard to do
- Sometimes easier to make foreign hires while they are still overseas
- Need to subsidize job market entry for new Canadians
- Specific outreach to new Canadians for job opportunities
- Help new Canadians get their 'foot in the door'
- Career Edge as a bridge for new Canadians
- Mentorship programs specifically for new Canadians
- Mentorship and internship opportunities for Canadian experience
- Multiple languages are a real Toronto advantage, but language challenges are an issue with diverse hiring
- New Canadians can be impaired by English proficiency
- Help new Canadians improve their English and be patient
- A local design credential can be a way to get recognition for international training
- Drop the 'Canadian experience' requirements — international companies don't care about Canadian experience
- Credential changes are upcoming on Canadian experience requirements — actual changes to be determined
- Very high membership fees and other barriers to new Canadians will still exist
- Recent immigrants generally find it more difficult to adapt to company and Canadian culture if they aren't working in an office around other people

Key Informants Interviewed

Greg Parsons, Perkins+Will
Sharon Mittmann, City of Mississauga (Urban Planning)
Udo Schliemann, Entro Communications
Laurie Belzak, City of Toronto (Economic Development and Culture)
Gelare Danaie, dexd (architecture and design)
Denise Santini, RED Studio Inc. Architects
Bob Kirke, Canadian Apparel Federation
Sage Paul, Indigenous Fashion Arts and Indigenous Fashion Week
Dylan Horvath, Cortex Design
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Lisa Fulford-Roy, Interior Designers of Canada
Scott Grant, Association of Chartered Industrial Designers of Ontario
Anna Kao, Ontario Association of Architects, Toronto Society of Architects
Sharon Mittmann, Ontario Professional Planners Institute
Greg Parsons, Interior Designers of Canada
Jimmy Rogers, Association of Chartered Industrial Designers of Ontario
Udo Schliemann, Association of Registered Graphic Designers
Eldon Theodore, Ontario Professional Planners Institute
Barbora Vokac Taylor, Ontario Association of Architects, Toronto Society of Architects
Arlene Gould, Strategic Director

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- Barbora Vokac Taylor, Ontario Association of Architects, Toronto Society of Architects
- Arlene Gould, Strategic Director

Interview Guide (open-ended conversation)

Design Practitioners

- Complete with 6-10 people
- Representation across the Design Disciplines
- Design Firms and “in-house” designers
- Focus on Management, those overseeing Designers and company strategy
    - Also, some mid-career

- Large (US-owned) and small firms
    - Some could be independent consultants
- Attempt diversity – maybe some specifically targeted
    - Black Planning Project, Black Architects and Interior Designers Association, others

Scheduling Invitation

- Brief overview of project; TWIG background; role of DIAC
    - TWIG – Toronto (but GTA)
    - Industry Sector Report as part of MLTSD funding
- Use of interview findings; value as expert key-informant
- Key Topics: Long-Term Trends, Employees & Recruitment, Inclusion in the Design Sector
- Final deliverable and timing
- Semi-structured 45 minutes; open-ended 15 minutes
- Via Zoom & Recorded
- Chatham House Rules; Approval for Quotes

Before Interview Start

- Thank the participant(s) for setting time aside.
- Tell participant the interview will take 60 minutes
- Introduce self and role
- Three topics at 15 minutes each
- Additional “anything else?” at the end
- “Chatham House Rules”
- But, could attribute a quote after separate confirmation and permission
- Open-Ended Conversation
- Topics presented ahead of time in invitation
- Basic information on project in invitation; any questions about the project?
- Recording; Chatham House; Approval for Quotes
- Confidentiality and Security recording and notes (all only local storage)
- Point out that the interviewee does not have to answer any questions or provide information that he/she does not feel comfortable sharing

A. **Basic Information**
    1. Name / Role
    2. Company/Organization
    3. Location
    4. Design Discipline
    5. Firm Size (# Employees; local/global)

B. **Long-Term Trends**
    1. What is the current state of the Design Sector/Design Industry (focused on your discipline) in the GTA? What is changing? What concerns you? What excites you?

    a. What specific advantages do you find with working in Toronto?
    b. How has regulation impacted the Design Sector or your discipline?
2. The acquisition of small and mid-sized local firms by international organizations has been noted.
    a. What do you see as concerning? For example, is there hollowing out?
    b. What do you see as beneficial? For example, is it increasing market access or providing opportunities for collaboration abroad?
    c. Do you see it as an overall positive or negative?
3. Covid-19 has had wide-ranging impacts. What do you see as being the lasting impacts on your business and industry?
    a. How has the designer/client relationship changed?
    b. How have client retention and new business development changed?

C. **Employees & Recruitment**
1. What are your greatest challenges with recruiting new employees and/or retaining existing ones?
    a. Which is currently more challenging?
    b. Do you think that will change? If yes, when and why?
    c. How do you recruit and from where?
2. What gaps in students/interns/recruits/new hires do you see for specific skills or other desirable employee characteristics?
    a. Which gaps are the greatest challenge?
3. How do designers in your industry transition between employers, industries, roles within a company?
    a. Which transitions are easiest and why?
    b. Which are the most difficult and why?

D. **Inclusion in Design**
1. How is your firm/organization increasing equity, diversity and inclusion? How are you increasing equity, diversity and inclusion in leadership?
    a. How are you personally increasing equity, diversity and inclusion?
2. If not addressed already, what are you doing to increase women in leadership and upper management positions?
    a. Do you have succession planning in place?
    b. If yes, what challenges are you encountering with succession planning?
3. What are you doing to engage the potential of New Canadians?

E. **Anything Else You Would Like to Add?**

Notes on Design Engineers

Across Ontario over the past 12 months (from Burning Glass as of July 28, 2021)
For jobs with design and engineer (but as separate words)
15,073 postings
9,404 postings just in Toronto CMA

Top occupations: Software engineers, computer engineers, electrical engineers, etc.

83 Architect postings show up at about #25 on the list

Top industries: Automobile, Architectural, Banks, Semiconductors & Electronics, Software

Top employers: General Motors, Advanced Micro Devices, Scotiabank, Amazon, Stantec, Hatch, SNC-Lavalin

For jobs with “design engineer” (the phrase)

940 postings

573 postings just in Toronto CMA

Top occupations: Electrical engineers, mechanical engineers, computer engineers, software engineers, etc.

12 Graphic Designer and Illustrator postings are #9 on the list

Top industries: Semiconductors & Electronics, Architectural, Automobile

Top employers: Advanced Micro Devices, General Motors, Celestica, Synopsys, Intel, Government of Canada

For our analysis we want to exclude software and IT and any of the engineering occupations/industries but recognize they have a significant element of design within the work that they do but typically do not have formal design training. For “design engineers”, Burning Glass will list Skills derived from the job postings. For Toronto for the top skills listed, Design doesn’t show up until #25 (52 of 573 postings) with “Digital design”. “Graphic and Visual Design of Software” is #48 (24 postings) and “Industrial Design” is #51 (23 postings). Graphic, UX/UI, and Presentation Design make the list but with only a small number of postings. Even when looking to hire a “design engineer” or a job that includes that in the description, employers aren’t expecting a lot of design skills.

Data Sources

Statistics Canada: 2016 Census of Population; Canadian Business Counts, 2016-2020

Burning Glass: job postings 2013-2021

What is the Design Sector?

This section documents the initial conception and research on the definitions of the design sector. This includes alternate definitions and alternative considerations.

Occupations

The occupations with blue shading are ones that are “technical support” occupations. Generally, they are jobs that support the other more skilled positions. I think we should include them. They allow for discussion outside of jobs requiring at least a university degree.

Here is the Statistics Canada NOC (National Occupation Classification) definition for 5244:

> Artisans and craftspersons use manual and artistic skills to design and make ornamental objects, pottery, stained glass, jewellery, rugs, blankets, other handicrafts and artistic floral arrangements. Makers of musical instruments are also included in this unit group. Most craftspersons are self-employed. Artistic floral arrangers are usually employed in florist shops and floral departments of retail establishments, or may be self-employed. Craft instructors are also included in this unit group and are employed by artisan guilds, colleges, private studios and recreational organizations.

Their notes on Employment Requirements:

- Skills are often learned through apprenticeship with a master craftsperson.
- Training programs are offered by artisan guilds, colleges and private studios.
- Creative ability and talent, as demonstrated by a portfolio of work, and knowledge of safe handling of material, tools and equipment are required.
- A college diploma in fine craft techniques may be required.

And “Illustrative Example” Job Titles:

artistic floral arranger	potter
carver	screen printing artisan
craft instructor (except education)	silversmith
craftsperson	stained glass artist
glass blower	stringed instrument maker
lace weaver - arts and crafts	totem pole carver
leather worker	weaver - arts and crafts
metal arts worker	

This isn’t something to include for the numbers. As of the last Census (2016), the Toronto Region had 1,990 people working in this occupation (975 were self-employed). But, they seem like a cross between a full design job (like Fashion Designer) and the technical support jobs (like Patternmaker).

Additional Occupations to be included:

Code	Title
0212	Architecture and science managers
2151	Architects
2152	Landscape architects
2153	Urban and land use planners
2154	Land surveyors
2225	Landscape and horticulture technicians and specialists
2251	Architectural technologists and technicians
2252	Industrial designers
2253	Drafting technologists and technicians
2254	Land survey technologists and technicians
5223	Graphic arts technicians
5241	Graphic designers and illustrators
5242	Interior designers and interior decorators
5243	Theatre, fashion, exhibit and other creative designers
5245	Patternmakers - textile, leather and fur products
9217	Supervisors, textile, fabric, fur and leather products processing and manufacturing

Burning Glass Occupations

Burning Glass reports 182 separate job titles from job postings that had at least 10 postings within the past 12 months that include any of the following skills

- Design Skills
  - Animation and Game Design
  - Art and Illustration
  - Creative Design
  - Digital Design
  - Graphic and Visual Design
  - Graphic and Visual Design Software
  - Industrial Design
  - Presentation Design
  - User Interface and User Experience (UI/UX) Design
- Architecture and Construction Skills
  - Architectural Design
  - Carpentry
  - Conduits
  - Construction Inspection
  - Construction Labor
  - Construction Management
  - Construction Painting
  - Drywall
  - Electrical Construction
  - Estimating

General Architecture
Green Architecture
Insulation
Masonry
Road and Bridge Construction
Roofing

Top 15 Jobs by Number of Postings (from Burning Glass as of June 30, 2021)

Occupation Title	Job Postings
Software Developer / Engineer	1,241
Project Manager	698
Business / Management Analyst	530
Marketing Specialist	486
UI / UX Designer / Developer	466
Graphic Designer / Desktop Publisher	455
Systems Analyst	401
Web Developer	377
Construction Manager	374
Marketing Manager	370
Civil Engineer	331
IT Project Manager	322
Product Manager	262
Industrial Designer	259
Public Relations / Communications Specialist	237

Industries

Photographers and artisans. They are similar to the Artists and Craftpersons occupation. If we include that occupation, we should include these industries.

Industries to be included.

Code	Industry Title
541310	Architectural services
541320	Landscape architectural services
541410	Interior design services
541420	Industrial design services
541430	Graphic design services
541490	Other specialized design services
Could also use the “industry group” (4-digit NAICS code)	
5413	Architectural, engineering and related services
5414	Specialized design services

Using the industry groups includes additional industries but often data is only reported at the 4-digit level. It brings back the discussion of “design engineer”. Firms and employment can be estimated at the 6-digit, detailed industry level. When the 4-digit must be used it can be adjusted proportionally.

541310	Architectural services
541320	Landscape architectural services
541330	Engineering services
541340	Drafting services
541350	Building inspection services
541360	Geophysical surveying and mapping services
541370	Surveying and mapping (except geophysical) services
541380	Testing laboratories
541410	Interior design services
541420	Industrial design services
541430	Graphic design services
541490	Other specialized design services

Burning Glass Industries

Burning Glass reports 194 separate industries with at least 1 job postings within the past 12 months that included any of the Design or Architecture and Construction skills (same as listed above).

Top 15 Industries by Number of Postings (from Burning Glass as of June 30, 2021)

NAICS Code	Industry	Job Postings
5221	Depository Credit Intermediation	1,003
5413	Architectural, Engineering, and Related Services	807
5241	Insurance Carriers	459
5414	Specialized Design Services	424
5416	Management, Scientific, and Technical Consulting Services	385
6113	Colleges, Universities, and Professional Schools	372
6221	General Medical and Surgical Hospitals	235
2362	Nonresidential Building Construction	232
5171	Wired Telecommunications Carriers	214
9211	Executive, Legislative, and Other General Government Support	183
5415	Computer Systems Design and Related Services	163
5112	Software Publishers	163
3344	Semiconductor and Other Electronic Component Manufacturing	154

5419	Other Professional, Scientific, and Technical Services	144
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	139

Occupation Profiles

Architecture and science managers (0212)

Architecture and science managers plan, organize, direct, control and evaluate the activities of an architecture, landscape architecture, scientific or statistical department, service or firm. They are employed by a wide range of private sector and government establishments as well as by architectural firms and scientific research companies.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Plan, organize, direct, control and evaluate the activities and operations of an architecture, landscape architecture, scientific research and development laboratory or quality control department, service or firm • Develop and implement policies, standards and procedures for the architectural, scientific and technical work performed in the department, service, laboratory or firm • 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 theoretical or applied scientific work of the department • May consult and negotiate with clients to prepare specifications, explain proposals or present architectural or scientific research reports and findings.	• Architecture managers require a degree in architecture, registration as a professional architect and several years of experience as an architect. • Landscape architecture managers require a degree in landscape architecture, licensing as a professional landscape architect and several years of experience as a landscape architect. • Science and other managers in this unit group require a master's or doctoral degree in a scientific discipline and several years of experience in a related scientific discipline.

Job Titles

Illustrative Titles	Other Titles
agricultural chemistry branch director	actuarial department manager
architectural manager	agricultural chemistry branch director
chief actuary	agricultural representatives director
director of research - forestry	agricultural representatives regional manager
director of research - manufacturing	architectural manager
director of research - mining	architectural service manager
landscape architecture manager	biological research department chief
life sciences program manager	chemical manager
petroleum geology department manager	chemical research division manager
scientific research department manager	chief actuary
statistical service manager	clinical projects manager
	director of architecture
	director of research - forestry
	director of research - manufacturing
	director of research - mining
	ecological research manager
	ecology manager
	environmental science manager
	experimental farm superintendent
	geochemical manager
	geological manager
	geophysical manager
	laboratory director
	laboratory manager
	landscape architecture manager
	life sciences program manager
	livestock development manager
	livestock production programs manager
	livestock program development manager
	manufacturing research director
	mathematical services manager
	mathematics department director
	mathematics program manager
	mining research director
	natural sciences program manager
	oceanographic research director
	petroleum geology department manager
	physical sciences program manager
	project management chief - scientific affairs
	quality assurance manager - cannabis
	quality control director - chemistry
	quality control manager - pharmaceutical products
	research and development manager
	research director - forestry

research director - manufacturing
research director - mining
rural development manager
rural development program manager
scientific research department manager
scientific research director
scientific research manager
statistical department director
statistical service manager
urban planning and development assistant director - government services
urban planning and development director - government services
urban planning and renewal director - government services
zoological garden director
zoological park director

Inclusions

- None

Exclusions

- Computer and information systems managers (See 0213 Computer and information systems managers)
- Engineering managers (See 0211 Engineering managers)
- Managers in natural resources production and fishing (See 0811 Managers in natural resources production and fishing)
- Science professionals and supervisors of science professionals (See 21 Professional occupations in natural and applied sciences)

Additional Information

- Progression to senior management positions in the respective fields is possible with experience.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	8,950	3,690	1,900	21.2%
Employee	8,430	3,540	1,805	21.4%
Self-Employed	515	155	90	17.5%
% Self-Employed	5.8%	4.2%	4.7%	
Average Income	108,383	111,667	119,916	110.6%
Median Income	93,471	98,285	101,936	109.1%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	65	35	25	38.5%
15-19	0	0	0	#N/A
20-24	65	35	25	38.5%
25-64	8,605	3,535	1,820	21.2%
25-34	1,120	420	205	18.3%
25-29	385	180	95	24.7%
30-34	745	240	110	14.8%
35-44	2,855	1,190	625	21.9%
45-54	2,995	1,245	660	22.0%
55-64	1,625	685	335	20.6%
65-74	260	125	55	21.2%
75+	15	0	0	0.0%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	0.0%
Secondary (high) school diploma or equivalency certificate	0.0%
Apprenticeship or trades certificate or diploma	0.0%
College, CEGEP or other non-university certificate or diploma	11.4%
University certificate or diploma below bachelor level	2.1%
University certificate, diploma or degree at bachelor level or above	85.6%

Gender (Toronto, 2016)

Female	44.7%
Male	55.1%

Architects (2151)

Architects conceptualize, plan and develop designs for the construction and renovation of commercial, institutional and residential buildings. They are employed by architectural firms, private corporations and governments, or they may be self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Consult with clients to determine the type, style and purpose of renovations or new building construction being considered • Conceptualize and design buildings and develop plans describing design specifications, building materials, costs and construction schedules • Prepare sketches and models for clients • Prepare or supervise the preparation of drawings, specifications and other construction documents for use by contractors and tradespersons • Prepare bidding documents, participate in contract negotiations and award construction contracts • Monitor activities on construction sites to ensure compliance with specifications • Conduct feasibility studies and financial analyses of building projects. • Architects may specialize in a particular type of construction such as residential, commercial, industrial or institutional.	• A bachelor's degree from an accredited school of architecture or Completion of the syllabus of studies from the Royal Architectural Institute of Canada (RAIC) is required. • A master's degree in architecture may be required. • Completion of a three-year internship under the supervision of a registered architect is required. • Completion of the architect registration examination is required. • Registration with a provincial regulatory body is required in all provinces and the Northwest Territories. • Leadership in Energy and Environmental Design (LEED) certification is offered by the Canada Green Building Council and may be required by some employers.

Job Titles

Illustrative Titles	Other Titles
architect	architect
architectural standards specialist	architectural standards specialist
chief architect	chief architect
consulting architect	consulting architect
	industrial and commercial buildings architect

industrial and commercial buildings architect
residential architect
residential architect
residential building architect

Inclusions

- None

Exclusions

- Architecture and science managers (See 0212 Architecture and science managers)
- Database architects (See 2172 Database analysts and data administrators)
- Landscape architects (See 2152 Landscape architects)
- Naval architects (See 2148 Other professional engineers, n.e.c.)
- Software architects (See 2173 Software engineers and designers)
- Structural engineers (See 2131 Civil engineers)
- Technical architects, hardware (See 2147 Computer engineers (except software engineers and designers))

Additional Information

- Progression to senior positions, such as chief architect, is possible with experience.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	17,205	6,855	5,110	29.7%
Employee	12,135	4,930	3,745	30.9%
Self-Employed	5,065	1,925	1,365	26.9%
% Self-Employed	29.4%	28.1%	26.7%	
Average Income	73,272	77,329	78,773	107.5%
Median Income	61,468	62,539	62,936	102.4%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	360	185	125	34.7%
15-19	0	0	0	#N/A
20-24	360	185	125	34.7%
25-64	15,350	6,110	4,625	30.1%
25-34	4,130	1,655	1,285	31.1%
25-29	1,815	720	560	30.9%
30-34	2,315	935	720	31.1%
35-44	4,405	1,715	1,330	30.2%
45-54	3,805	1,455	1,135	29.8%
55-64	3,010	1,285	875	29.1%
65-74	1,195	440	270	22.6%
75+	295	115	90	30.5%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	0.2%
Secondary (high) school diploma or equivalency certificate	1.2%
Apprenticeship or trades certificate or diploma	0.2%
College, CEGEP or other non-university certificate or diploma	4.3%
University certificate or diploma below bachelor level	1.5%
University certificate, diploma or degree at bachelor level or above	92.5%

Gender (Toronto, 2016)

Female	31.5%
Male	68.4%

Landscape architects (2152)

Landscape architects conceptualize, design, plan and manage the construction of natural, cultural and built landscape development for commercial projects, office complexes, parks, golf courses and residential development. They are employed by government environmental and development agencies, landscape consulting firms and by architectural and engineering firms, or they are self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Confer with clients to determine design needs • Survey and assess designated sites and develop designs taking into consideration landscape features, buildings, climate, future usage and other aspects • Prepare or oversee the preparation of detailed drawings for sites, including features such as trees, shrubs, gardens, lighting, walkways, patios, decks, benches, fences, retaining walls and fountains • Prepare or oversee preparation of site plans, reports, sketches, models, photographs, maps, land use studies, design plans such as landscape grading, drainage or planting, and construction details • Estimate costs, prepare specifications and evaluate tenders for landscape construction projects • Conduct environmental design studies, including environmental assessment, planning and the preservation and re-creation of historical sites • Conduct community and neighbourhood physical planning studies, participate in multidisciplinary urban design studies, prepare design guidelines, and develop master plans • May manage and supervise landscape construction work.	• A bachelor's degree in landscape architecture is required. • A master's degree in landscape architecture may be required. • Registration with a regulatory body is required in Ontario, Alberta and British Columbia. • In the remaining provinces and territories, landscape architects usually require two years of landscape design experience and an interview by their respective provincial associations to receive association certification. • Leadership in Energy and Environmental Design (LEED) certification is offered by the Canada Green Building Council and may be required by some employers.

Job Titles

Illustrative Titles	Other Titles
landscape architect senior landscape architect	landscape architect senior landscape architect

Inclusions

- None

Exclusions

- Architects (See 2151 Architects)
- Landscape and horticulture technicians and specialists (See 2225 Landscape and horticulture technicians and specialists)
- Landscape architecture managers (See 0212 Architecture and science managers)
- Landscape design contractors (See 8255 Contractors and supervisors, landscaping, grounds maintenance and horticulture services)
- Urban and land use planners (See 2153 Urban and land use planners)

Additional Information

- None

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	2,125	940	535	25.2%
Employee	1,550	680	410	26.5%
Self-Employed	575	265	125	21.7%
% Self-Employed	27.1%	28.2%	23.4%	
Average Income	61,185	62,936	72,276	118.1%
Median Income	55,526	56,245	65,803	118.5%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	95	60	25	26.3%
15-19	0	0	0	#N/A
20-24	95	60	25	26.3%
25-64	1,900	805	465	24.5%

25-34	475	205	135	28.4%
25-29	190	105	70	36.8%
30-34	285	100	70	24.6%
35-44	580	210	125	21.6%
45-54	390	180	100	25.6%
55-64	455	210	115	25.3%
65-74	110	65	25	22.7%
75+	15	10	10	66.7%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	0.0%
Secondary (high) school diploma or equivalency certificate	2.0%
Apprenticeship or trades certificate or diploma	0.0%
College, CEGEP or other non-university certificate or diploma	5.9%
University certificate or diploma below bachelor level	4.0%
University certificate, diploma or degree at bachelor level or above	90.1%

Gender (Toronto, 2016)

Female	44.6%
Male	56.4%

Urban and land use planners (2153)

Urban and land use planners develop plans and recommend policies for managing land use, physical facilities and associated services for urban and rural areas and remote regions. They are employed by all levels of government, land developers, engineering and other consulting companies, or may work as private consultants.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Compile and analyze data on demographic, economic, legal, political,	• A bachelor's degree in urban and regional planning, geography, architecture,

cultural, sociological, physical and other factors affecting land use
- Confer with municipal, provincial and federal authorities, civic leaders, social scientists, lawyers, land developers, the public and special interest groups to formulate and develop land use or community plans
- Prepare and recommend land development concepts and plans for zoning, subdivisions, transportation, public utilities, community facilities, parks, agricultural and other land uses
- Prepare plans for environmental protection, such as wildlife preserves, national and provincial parks, and protection of watersheds
- Present plans to civic, rural and regional authorities and hold public meetings to present plans, proposals or planning studies to the general public and special interest groups
- Review and evaluate proposals for land use and development plans and prepare recommendations
- Process application for land development permits and administer land use plans and zoning by-laws
- Formulate long-range objectives and policies relative to future land use and the protection of the environment
- Supervise and co-ordinate work of urban planning technicians and technologists.

engineering or a related discipline is required.
- A master's degree in one of these disciplines may be required.
- Membership in the Canadian Institute of Planners is usually required.
- Urban and land use planners are regulated in Nova Scotia, New Brunswick, Quebec, Alberta, the Northwest Territories and Nunavut, and membership in a provincial planning institute may be required in other provinces.
- Leadership in Energy and Environmental Design (LEED) certification is offered by the Canada Green Building Council and may be required by some employers.

Job Titles

Illustrative Titles	Other Titles
community and urban planner	city planner
environmental planner	city planner - land use
land use planner	community and urban planner
municipal planner	community planner
park planner	community recreation planner
planner	environmental planner
recreation planner	heritage planner - land use

regional planner urban planner	heritage work planner land use planner land use specialist long-range planner - land use mass transit services analyst municipal park planner municipal planner neighbourhood planner park planner planner planning analyst - land use recreation planner regional planner senior planner - land use site planner town planner transportation planner transportation route planning analyst urban and regional planner urban planner urban renovation planner zoning officer - land use

Inclusions

- None

Exclusions

- Architects (See 2151 Architects)
- Architecture and science managers (See 0212 Architecture and science managers)
- Engineering managers (See 0211 Engineering managers)
- Land surveyors (See 2154 Land surveyors)

Additional Information

- Progression to management positions in planning is possible with experience.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	12,435	5,490	2,670	21.5%
Employee	11,375	4,995	2,435	21.4%
Self-Employed	1,065	490	235	22.1%
% Self-Employed	8.6%	8.9%	8.8%	
Average Income	74,345	72,031	75,938	102.1%
Median Income	72,542	70,511	72,662	100.2%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	500	300	160	32.0%
15-19	20	20	15	75.0%
20-24	475	285	145	30.5%
25-64	11,330	4,900	2,420	21.4%
25-34	3,795	1,755	1,000	26.4%
25-29	1,650	810	465	28.2%
30-34	2,145	940	530	24.7%
35-44	3,210	1,290	600	18.7%
45-54	2,530	1,065	475	18.8%
55-64	1,800	790	350	19.4%
65-74	575	275	75	13.0%
75+	30	15	15	50.0%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	0.0%
Secondary (high) school diploma or equivalency certificate	5.4%
Apprenticeship or trades certificate or diploma	0.6%
College, CEGEP or other non-university certificate or diploma	5.3%
University certificate or diploma below bachelor level	1.1%
University certificate, diploma or degree at bachelor level or above	87.4%

Gender (Toronto, 2016)

Female	45.0%
Male	55.0%

Land surveyors (2154)

Land surveyors plan, direct and conduct legal surveys to establish the location of real property boundaries, contours and other natural or human-made features, and prepare and maintain cross-sectional drawings, official plans, records and documents pertaining to these surveys. They are employed by federal, provincial and municipal governments, private sector land surveying establishments, real estate development, natural resource, engineering and construction firms, or they may be self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Develop survey plans, methods and procedures for conducting legal surveys • Plan, direct and supervise or conduct surveys to establish and mark legal boundaries of properties, parcels of lands, provincial and Canada Lands, Aboriginal land claims, wellsites, mining claims, utility rights-of-way, roadways and highways • Survey and lay out subdivisions for rural and urban development	• A bachelor's degree in geomatics engineering or survey engineering or A college diploma in survey science or geomatics technology with additional academic credits and successful completion of equivalent examinations set by a regional board of examiners for land surveyors is required.

- Determine precise locations using electronic distance measuring equipment and global positioning systems (GPS)
- Analyze, manage and display data using geographic information systems (GIS) and computer-aided design and drafting (CAD)
- Record all measurements and other information obtained during survey activities
- Prepare or supervise the preparation and compilation of all data, plans, charts, records and documents related to surveys of real property boundaries
- Certify and assume liability for surveys made to establish real property boundaries
- Advise, provide consultation and testify as an expert witness on matters related to legal surveys
- May supervise other land surveyors, and land survey technologists and technicians.

- A one- to three-year articling period is required.
- Successful completion of professional land surveyor examinations is required.
- A federal or provincial land surveyor's licence is required.

Job Titles

Illustrative Titles	Other Titles
Engineering managers (See 0211 Engineering managers)	Engineering managers (See 0211 Engineering managers)
Engineering technologists and technicians who apply geotechnical and topographical information to land use and urban planning (See 2231 Civil engineering technologists and technicians)	Engineering technologists and technicians who apply geotechnical and topographical information to land use and urban planning (See 2231 Civil engineering technologists and technicians)
Geomatics and survey engineers (See 2131 Civil engineers)	Geomatics and survey engineers (See 2131 Civil engineers)
Hydrographic surveyors (See 2113 Geoscientists and oceanographers)	Hydrographic surveyors (See 2113 Geoscientists and oceanographers)
Land survey technologists and technicians (See 2254 Land	Land survey technologists and technicians (See 2254 Land survey technologists and technicians)
	Technical occupations in geomatics and meteorology (See 2255 Technical occupations in geomatics and meteorology)
	Urban and land use planners (See 2153 Urban and land use planners)

survey technologists and technicians)
Technical occupations in geomatics and meteorology (See 2255 Technical occupations in geomatics and meteorology)
Urban and land use planners (See 2153 Urban and land use planners)

Inclusions

- None

Exclusions

- Engineering managers (See 0211 Engineering managers)
- Engineering technologists and technicians who apply geotechnical and topographical information to land use and urban planning (See 2231 Civil engineering technologists and technicians)
- Geomatics and survey engineers (See 2131 Civil engineers)
- Hydrographic surveyors (See 2113 Geoscientists and oceanographers)
- Land survey technologists and technicians (See 2254 Land survey technologists and technicians)
- Technical occupations in geomatics and meteorology (See 2255 Technical occupations in geomatics and meteorology)
- Urban and land use planners (See 2153 Urban and land use planners)

Additional Information

- Federal statutes require a separate licence from the Association of Canada Land Surveyors to survey areas such as national parks, Aboriginal lands, offshore areas and northern territories.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	7,755	2,025	810	10.4%
Employee	6,655	1,775	730	11.0%
Self-Employed	1,100	250	80	7.3%
% Self-Employed	14.2%	12.3%	9.9%	
Average Income	79,732	84,151	118,685	148.9%
Median Income	65,397	59,583	62,532	95.6%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	90	45	20	22.2%
15-19	0	0	0	#N/A
20-24	90	45	20	22.2%
25-64	7,230	1,845	745	10.3%
25-34	2,280	460	185	8.1%
25-29	1,135	230	95	8.4%
30-34	1,140	235	90	7.9%
35-44	1,775	325	145	8.2%
45-54	1,690	555	190	11.2%
55-64	1,495	500	225	15.1%
65-74	380	100	40	10.5%
75+	45	30	0	0.0%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	0.0%
Secondary (high) school diploma or equivalency certificate	13.5%
Apprenticeship or trades certificate or diploma	3.1%
College, CEGEP or other non-university certificate or diploma	19.6%
University certificate or diploma below bachelor level	4.9%
University certificate, diploma or degree at bachelor level or above	58.3%

Gender (Toronto, 2016)

Female	8.6%
Male	91.4%

Landscape and horticulture technicians and specialists (2225)

Landscape and horticulture technicians and specialists survey and assess landscapes; draw sketches and build models of landscape designs; construct and maintain gardens, parks, golf courses and other landscaped environments; advise clients on issues related to horticulture such as irrigation; breed, cultivate and study plants; and treat injured and diseased trees and plants. They are employed by landscape designers and contractors, lawn service and tree care establishments, golf courses, nurseries and greenhouses, and municipal, provincial and national parks, or they may be self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Arborists and tree service technicians • Examine trees and shrubs to diagnose problems and disease, and apply various treatments such as pruning, spraying, repairing damaged areas and injecting with treatment solutions. • Golf course superintendents • Direct crews who maintain the health and appearance of golf courses and their surrounding landscapes, plant and move trees, and apply fertilizers, fungicides, herbicides and pesticides. • Horticulturists • Plan and co-ordinate the growth and use of plants for landscaping, ornamental uses and other purposes. • Landscape designers and landscape architectural technicians and technologists • Survey and assess sites, prepare drawings, sketches and reports and perform other duties to assist landscape architects in designing landscaped environments. • Landscape gardeners • Plant and maintain private and public lawns and gardens. • Landscapers • Plan and construct landscaped environments which may include trees,	• Completion of a university or college program in agronomy, arboriculture, horticulture, landscaping, landscape design or landscape technology is usually required. • Experience as a landscape and grounds maintenance labourer may be required for golf course superintendents, landscape gardeners and landscapers. • An apprenticeship program is available for horticulturists, arboriculturists and landscape gardeners. • Trade certification for landscape horticulturists is available, but voluntary, in all provinces. • A provincial licence to apply chemical fertilizers, fungicides, herbicides and pesticides may be required. • In Quebec, membership in the regulatory body is required to use the title of Professional Technologist. • Red Seal endorsement is also available to qualified landscape horticulturists

shrubberies, lawns, fences, decks, patios and other landscape structures.
- Lawn care specialists
- Visit clients, assess the health of lawns, and apply fertilizer, pesticides and other lawn care products.

upon successful completion of the interprovincial Red Seal examination.

Job Titles

Illustrative Titles	Other Titles
arborist	arboriculturist
golf course superintendent	arborist
greenskeeper	cloning technician - cannabis
horticultural technician	cultivation technician
horticulture specialist	floriculturist
horticulturist	gardener
hydroponics technician	golf course superintendent
landscape architectural technician	greens superintendent
landscape designer	greenskeeper
landscape gardener	horticultural technician
landscape technician	horticultural technologist
landscaper	horticulture specialist
lawn care specialist	horticulture technician
tree service technician	horticulture technologist
	horticulturist
	hydroponics technician
	interior plantscape specialist
	irrigation technician (except agriculture)
	landscape architectural technician
	landscape architectural technologist
	landscape designer
	landscape gardener
	landscape horticulturist
	landscape technician
	landscaper
	lawn care specialist
	lawn care superintendent
	plant doctor
	plantscape technician
	tree and shrub specialist
	tree service technician
	turfgrass management specialist

Inclusions

- None

Exclusions

- Biological technologists and technicians (See 2221 Biological technologists and technicians)
- Botanists (See 2121 Biologists and related scientists)
- Contractors and supervisors, landscaping, grounds maintenance and horticulture services (See 8255 Contractors and supervisors, landscaping, grounds maintenance and horticulture services)
- Forestry technologists and technicians (See 2223 Forestry technologists and technicians)
- Landscape architects (See 2152 Landscape architects)
- Managers in horticulture (See 0822 Managers in horticulture)
- Nursery and greenhouse workers (See 8432 Nursery and greenhouse workers)

Additional Information

- The Red Seal endorsement allows for interprovincial mobility.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	19,635	7,050	2,295	11.7%
Employee	15,030	5,445	1,725	11.5%
Self-Employed	4,605	1,610	570	12.4%
% Self-Employed	23.5%	22.8%	24.8%	
Average Income	32,438	34,815	35,170	108.4%
Median Income	25,812	29,743	30,432	117.9%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	2,220	1,110	335	15.1%
15-19	355	175	55	15.5%
20-24	1,865	930	275	14.7%
25-64	16,515	5,620	1,855	11.2%
25-34	5,120	2,070	680	13.3%
25-29	2,430	1,020	310	12.8%
30-34	2,690	1,050	375	13.9%

35-44	3,950	1,325	440	11.1%
45-54	3,975	1,270	445	11.2%
55-64	3,470	960	285	8.2%
65-74	745	270	90	12.1%
75+	150	55	15	10.0%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	6.7%
Secondary (high) school diploma or equivalency certificate	20.0%
Apprenticeship or trades certificate or diploma	8.0%
College, CEGEP or other non-university certificate or diploma	30.8%
University certificate or diploma below bachelor level	5.3%
University certificate, diploma or degree at bachelor level or above	29.2%

Gender (Toronto, 2016)

Female	27.3%
Male	72.7%

Architectural technologists and technicians (2251)

Architectural technologists and technicians may work independently or provide technical assistance to professional architects and civil design engineers in conducting research, preparing drawings, architectural models, specifications and contracts and in supervising construction projects. They are employed by architectural and construction firms, and governments.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Assist in the development of architectural designs • Analyze building codes, by-laws, space requirements, site requirements and other technical documents and reports	• Completion of a two- to three-year college program in architectural technology or a related subject is usually required. • Certification in architectural technology or in a related field through provincial

- Prepare manual and CAD (computer-assisted design) drawings, specifications, cost estimates and listings of quantities of material from conceptual drawings and instructions
- Construct architectural and display models, and 3-D virtual models of architectural designs
- Prepare contract and bidding documents
- May supervise drafters, technicians and technologists on the architectural team
- May supervise construction projects and co-ordinate, monitor and inspect work done by others.

associations of architectural or engineering/applied science technologists and technicians may be required by employers.
- A period of supervised work experience, usually two years, is required before certification.
- Membership in the provincial regulatory body is mandatory in British Columbia.
- In Quebec, membership in the regulatory body for professional technologists is required to use the title "Professional Technologist."

Job Titles

Illustrative Titles	Other Titles
architectural design technician architectural design technologist architectural technician architectural technologist	architectural assistant architectural design technician architectural design technologist architectural technician architectural technologist registered building technician registered building technologist residential buildings technologist

Inclusions

- None

Exclusions

- Architects (See 2151 Architects)
- Civil engineering technologists and technicians (See 2231 Civil engineering technologists and technicians)
- Construction estimators (See 2234 Construction estimators)
- Construction inspectors (See 2264 Construction inspectors)
- Construction managers (See 0711 Construction managers)
- Drafting technologists and technicians (See 2253 Drafting technologists and technicians)
- Land survey technologists and technicians (See 2254 Land survey technologists and technicians)

Additional Information

- There is mobility to other related occupations such as drafters, civil engineering technologists and technicians, construction estimators and construction inspectors.
- Progression to supervisory positions is possible with experience.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	10,690	4,225	2,295	21.5%
Employee	8,940	3,445	1,855	20.7%
Self-Employed	1,755	775	440	25.1%
% Self-Employed	16.4%	18.3%	19.2%	
Average Income	50,933	50,908	50,927	100.0%
Median Income	48,012	49,064	48,808	101.7%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	1,215	505	270	22.2%
15-19	50	25	20	40.0%
20-24	1,165	475	250	21.5%
25-64	9,245	3,605	1,970	21.3%
25-34	3,445	1,370	735	21.3%
25-29	1,795	700	385	21.4%
30-34	1,655	670	350	21.1%
35-44	2,515	885	480	19.1%
45-54	2,145	900	505	23.5%
55-64	1,140	450	245	21.5%
65-74	200	100	55	27.5%
75+	30	10	10	33.3%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	0.0%

Secondary (high) school diploma or equivalency certificate	5.9%
Apprenticeship or trades certificate or diploma	0.5%
College, CEGEP or other non-university certificate or diploma	37.6%
University certificate or diploma below bachelor level	2.9%
University certificate, diploma or degree at bachelor level or above	53.2%

Gender (Toronto, 2016)

Female	32.1%
Male	67.9%

Industrial designers (2252)

Industrial designers conceptualize and produce designs for manufactured products. They are employed by manufacturing industries and private design firms or they may be self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Consult with client, engineers or production specialists to establish product requirements • Analyze the intended use of product and user preferences • Conduct research into cost, properties of production materials and methods of production • Develop manual and computer-assisted design (CAD) concepts, sketches or models for approval • Prepare manufacturing drawings, specifications and guidelines for production and construct prototype of design • Consult with engineers and production staff during manufacturing stage.	• A university degree in industrial design, architecture, engineering or A college diploma in industrial design is required. • Creative ability, as demonstrated by a portfolio of work, is required.

Job Titles

Illustrative Titles	Other Titles
furniture designer industrial design consultant industrial designer industrial products designer product designer	business products designer consumer products designer container designer ergonomic products designer fixture designer furniture designer industrial design consultant industrial designer industrial products designer product designer toy designer - industrial design

Inclusions

- None

Exclusions

- Architectural technologists and technicians (See 2251 Architectural technologists and technicians)
- Civil engineering design technologists (See 2231 Civil engineering technologists and technicians)
- Electrical and electronics design technologists (See 2241 Electrical and electronics engineering technologists and technicians)
- Engineering design and drafting technicians and technologists (See 2253 Drafting technologists and technicians)
- Graphic designers and illustrators (See 5241 Graphic designers and illustrators)
- Interior designers and interior decorators (See 5242 Interior designers and interior decorators)
- Mechanical engineering equipment designers (See 2232 Mechanical engineering technologists and technicians)
- Theatre, fashion, exhibit and other creative designers (See 5243 Theatre, fashion, exhibit and other creative designers)

Additional Information

- There is mobility between positions in this unit group.
- Mobility is possible to other design occupations.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	9,175	3,615	2,105	22.9%
Employee	7,320	2,860	1,655	22.6%
Self-Employed	1,855	755	450	24.3%
% Self-Employed	20.2%	20.9%	21.4%	
Average Income	54,828	57,804	57,565	105.0%
Median Income	49,371	53,011	51,002	103.3%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	650	280	165	25.4%
15-19	30	15	10	33.3%
20-24	615	265	160	26.0%
25-64	8,160	3,180	1,845	22.6%
25-34	2,610	1,075	690	26.4%
25-29	1,325	575	350	26.4%
30-34	1,295	505	345	26.6%
35-44	2,450	850	450	18.4%
45-54	1,870	785	465	24.9%
55-64	1,225	475	235	19.2%
65-74	325	135	85	26.2%
75+	50	20	15	30.0%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	0.0%
Secondary (high) school diploma or equivalency certificate	10.9%
Apprenticeship or trades certificate or diploma	2.2%
College, CEGEP or other non-university certificate or diploma	23.6%

University certificate or diploma below bachelor level	5.5%
University certificate, diploma or degree at bachelor level or above	58.3%

Gender (Toronto, 2016)

Female	33.9%
Male	66.1%

Drafting technologists and technicians (2253)

Drafting technologists and technicians prepare engineering designs, drawings and related technical information, in multidisciplinary engineering teams or in support of engineers, architects or industrial designers, or they may work independently. They are employed by consulting and construction companies, utility, resource and manufacturing companies, all levels of government and by a wide range of other establishments.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Drafting technologists • Develop and prepare engineering designs and drawings from preliminary concepts, sketches, engineering calculations, specification sheets and other data • Operate computer-assisted design (CAD) and drafting workstations • Develop and prepare design sketches • Complete documentation packages and produce drawing sets • Check and verify design drawings to conform to specifications and design data • Write technical reports • Prepare contracts and tender documents • Prepare construction specifications, costs and material estimates • Supervise and train other technologists, technicians and drafters. • Drafting technicians	• Completion of secondary school is usually required. • Completion of a two- to three-year college program in engineering design and drafting technology or in a related field is usually required for drafting and design technologists. • Completion of a one- to two-year college program in drafting or Completion of a three- to four-year apprenticeship program or Four to five years of related experience plus completion of college or industry courses in drafting are usually required for drafting technicians. • Trade certification for draftspersons is available, but voluntary in Ontario. • Certification in engineering design and drafting

- Develop and prepare engineering drawings, plans, diagrams or layouts from sketches
- Operate computer-assisted drafting equipment or a conventional drafting station.

technology or in a related field through provincial associations of engineering/applied science technologists and technicians may be required by employers.
- A period of supervised work experience, usually two years, is required before certification.

Job Titles

Illustrative Titles	Other Titles
architectural draftsperson	aeronautical draftsperson
computer-assisted design and drafting technologist	air conditioning systems draftsperson
computer-assisted drafting (CAD) technician	architectural draftsperson
design and drafting technologist	chief draftsperson
drafting office supervisor	civil draftsperson
drafting technician	commercial draftsperson
drafting technologist	computer-aided design (CAD) specialist - drafting
draftsperson	computer-aided design (CAD) technologist
electrical draftsperson	computer-aided drafting (CAD) technician
electromechanical draftsperson	computer-assisted design and drafting technologist
electronic draftsperson	computer-assisted drafting (CAD) draftsperson - printed circuit boards
engineering design and drafting technologist	computer-assisted drafting (CAD) operator
mechanical draftsperson	computer-assisted drafting (CAD) technician
steel detailer - drafting	computer-assisted electromechanical design draftsperson
structural draftsperson	design and drafting technologist
structural steel drafter-detailer	design draftsperson
	design technician - drafting
	design technologist - drafting
	detail draftsperson
	detailer
	detailer - structural steel drafter
	drafter
	drafting checker
	drafting clerk
	drafting design checker
	drafting group leader
	drafting office supervisor
	drafting supervisor
	drafting technician

drafting technologist
drafting tracer
draftsman/woman
draftsperson
draftsperson - computer-assisted design
draftspersons supervisor
electrical drafting supervisor
electrical draftsperson
electrical marine draftsperson
electromechanical draftsperson
electronic draftsperson
engineering design and drafting technologist
engineering draftsperson
general draftsperson
geological draftsperson
geophysical draftsperson
heating and ventilation systems draftsperson
heating systems draftsperson
hull draftsperson - shipbuilding and repair
hydraulic machinery draftsperson
marine drafting supervisor
mechanical building draftsperson
mechanical design draftsperson
mechanical draftsperson
mine draftsperson
municipal draftsperson
optical draftsperson
petroleum exploration draftsperson
piping draftsperson
process piping draftsperson
refrigeration systems draftsperson
ship detail draftsperson
shipbuilding draftsperson
steel detailer - drafting
steel frame draftsman/woman
steel frame draftsperson
structural draftsperson
structural steel detailer
structural steel drafter-detailer
structural steel draftsperson
survey draftsperson
technical illustrator - drafting
tool checker - drafting
tool design draftsperson

Inclusions

- None

Exclusions

- Architectural design technologists (See 2251 Architectural technologists and technicians)
- Civil engineering design technologists (See 2231 Civil engineering technologists and technicians)
- Electrical and electronics engineering design technologists (See 2241 Electrical and electronics engineering technologists and technicians)
- Industrial designers (See 2252 Industrial designers)
- Mechanical engineering design technologists (See 2232 Mechanical engineering technologists and technicians)

Additional Information

- Mobility is possible to civil, mechanical, electrical or other engineering design technologies through educational or work specialization.
- Senior and supervisory drafting and design technology workers require experience.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	27,975	7,890	3,680	13.2%
Employee	25,280	7,225	3,380	13.4%
Self-Employed	2,690	665	305	11.3%
% Self-Employed	9.6%	8.4%	8.3%	
Average Income	52,164	49,926	47,847	91.7%
Median Income	48,347	47,903	45,080	93.2%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	2,300	830	365	15.9%
15-19	185	95	50	27.0%
20-24	2,110	730	315	14.9%
25-64	24,725	6,675	3,130	12.7%

25-34	7,205	1,875	895	12.4%
25-29	3,475	960	455	13.1%
30-34	3,725	915	445	11.9%
35-44	7,010	1,575	720	10.3%
45-54	6,465	1,975	955	14.8%
55-64	4,050	1,255	555	13.7%
65-74	875	360	170	19.4%
75+	75	30	20	26.7%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	0.3%
Secondary (high) school diploma or equivalency certificate	11.2%
Apprenticeship or trades certificate or diploma	2.6%
College, CEGEP or other non-university certificate or diploma	35.9%
University certificate or diploma below bachelor level	3.9%
University certificate, diploma or degree at bachelor level or above	46.2%

Gender (Toronto, 2016)

Female	32.6%
Male	67.4%

Land survey technologists and technicians (2254)

Land survey technologists and technicians conduct or participate in surveys to determine the exact locations and relative positions of natural features and other structures on the earth's surface, underground and underwater. They are employed by all levels of government, architectural and engineering firms, and by private sector surveying establishments.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Land survey technologists	• This group performs some or all of the following duties: • Land survey technologists

- Assist survey engineers or professional surveyors to develop methods and procedures for conducting field surveys
- Conduct field surveys and operate survey instruments and computer equipment to measure distance, angles, elevations and contours
- Record measurements and other information obtained during field survey activities
- Determine precise geographic locations using global positioning systems (GPS) equipment
- Analyze latitude, longitude and angles and compute trigonometric and other calculations to plot features, contours and areas to a specific scale
- Prepare detailed drawings, charts and plans and survey notes and reports
- Supervise and co-ordinate field survey activities.
- Land survey technicians
- Participate in field surveys and operate survey instruments and devices
- Keep records, measurements and other survey information in systematic order
- Assist in the calculation, analysis and computation of measurements obtained during field surveys
- Assist in the preparation of detailed drawings, charts and plans.
- Land survey technologists and technicians may specialize in one of the following types of surveys: geodetic survey, topographic survey, legal (cadastral) survey or engineering survey.

- Assist survey engineers or professional surveyors to develop methods and procedures for conducting field surveys
- Conduct field surveys and operate survey instruments and computer equipment to measure distance, angles, elevations and contours
- Record measurements and other information obtained during field survey activities
- Determine precise geographic locations using global positioning systems (GPS) equipment
- Analyze latitude, longitude and angles and compute trigonometric and other calculations to plot features, contours and areas to a specific scale
- Prepare detailed drawings, charts and plans and survey notes and reports
- Supervise and co-ordinate field survey activities.
- Land survey technicians
- Participate in field surveys and operate survey instruments and devices
- Keep records, measurements and other survey information in systematic order
- Assist in the calculation, analysis and computation of measurements obtained during field surveys
- Assist in the preparation of detailed drawings, charts and plans.
- Land survey technologists and technicians may

	specialize in one of the following types of surveys: geodetic survey, topographic survey, legal (cadastral) survey or engineering survey.

Job Titles

Illustrative Titles	Other Titles
engineering survey technologist geodetic survey technologist geomatics technologist - land surveying land survey technician legal survey technician topographic survey technician transit operator - surveying	engineering survey technician engineering survey technologist geodetic survey technician geodetic survey technologist geomatics technician - land surveying geomatics technologist - land surveying instrument man/woman - surveying land survey technician land survey technologist legal survey assistant legal survey technician legal survey technologist plane table operator - surveying topographic survey technician topographic survey technologist transit man/woman - surveying transit operator - surveying

Inclusions

- None

Exclusions

- Drafting technologists and technicians (See 2253 Drafting technologists and technicians)
- Engineering technologists and technicians who apply geotechnical and topographical information to land use and urban planning (See 2231 Civil engineering technologists and technicians)
- Geological, geophysical, hydrographic and mine survey technologists (See 2212 Geological and mineral technologists and technicians)
- Land surveyors (See 2154 Land surveyors)
- Technical occupations in geomatics and meteorology (See 2255 Technical occupations in geomatics and meteorology)

Additional Information

- Mobility is possible between the various occupations in this unit group.
- Progression to supervisory positions is possible with experience.

- Progression to land surveyor position is possible with completion of professional surveyor examinations and certification.
- Geomatics is an interdisciplinary field encompassing the collection, analysis and presentation of geographically referenced data.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	4,895	815	255	5.2%
Employee	4,750	780	245	5.2%
Self-Employed	145	35	10	6.9%
% Self-Employed	3.0%	4.3%	3.9%	
Average Income	46,265	41,076	42,391	91.6%
Median Income	42,704	35,961	39,446	92.4%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	1,095	310	85	7.8%
15-19	125	55	15	12.0%
20-24	975	250	65	6.7%
25-64	3,660	465	175	4.8%
25-34	1,265	205	70	5.5%
25-29	600	110	40	6.7%
30-34	670	100	35	5.2%
35-44	905	45	20	2.2%
45-54	790	110	45	5.7%
55-64	700	105	35	5.0%
65-74	135	40	0	0.0%
75+	0	0	0	#N/A

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	7.4%

Secondary (high) school diploma or equivalency certificate	24.1%
Apprenticeship or trades certificate or diploma	0.0%
College, CEGEP or other non-university certificate or diploma	33.3%
University certificate or diploma below bachelor level	0.0%
University certificate, diploma or degree at bachelor level or above	33.3%

Gender (Toronto, 2016)

Female	18.2%
Male	81.8%

Graphic arts technicians (5223)

Graphic arts technicians assist in conceptualizing a project, interpreting design specifications or sketches, preparing the page make-up, lay-out and lettering, and preparing production materials for press, electronic or multimedia publishing. They are employed by publishing, communications, advertising, marketing, printing and multimedia establishments, and by television and film production companies. They may also be self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Review the graphic designer's instructions • Produce or assist in developing and producing design concepts • Capture elements such as titles, text, drawings, illustrations, graphics, lettering and colour harmonization, using a computer • Produce computerized images and drawings • Digitize images using peripherals and transform them using retouching systems, graphic palettes or specialized software • Perform the layout, page make-up and placement using the conceptual mock-ups provided	• A college diploma in commercial or graphic arts, computer graphics or animated design is required. • Experience or training in multimedia design at a post-secondary, college or technical institution may be required. • Creative ability and artistic talent, as demonstrated by a portfolio of work, are required.

- Produce proofs and camera-ready materials and prepare film and any other prepress materials
- Paint or ink individual cells of 2-D or 3-D animated drawings according to animator's specifications using an electronic palette
- Lay out, draw or paint letters, figures, logos and designs for windows, advertisements, billboards, vehicles, books and publications using specialized software or painting equipment
- Work in an interdisciplinary environment.

Job Titles

Illustrative Titles	Other Titles
animated cartoon technician animation painter computer graphics technician graphics technician multimedia graphic design technician	airbrush artist animated cartoon inker animated cartoon painter animated cartoon technician animated cartoons inker and painter animation camera operator animation inker animation painter apprentice sign painter art work assembler cartoon background artist compositor - animation compositor - film computer graphics design technician computer graphics operator computer graphics technician design assistant - advertising production digital graphic design technician graphic arts assembler graphic arts copy stylist graphic arts renderer graphic arts technician graphics technician hand painter - graphic arts lettering artist mannequin artist multimedia graphic design technician multimedia graphics technician paste-up artist

photo process letterer - graphic arts
photo stencil maker
photograph retoucher
photographic airbrush artist
photographic colourist
photography colourist
poster layout designer
poster painter
rendering specialist
screen stencil cutter - graphic arts
sign layout detailer
sign painter
sign writer
silkscreen stencil cutter
silkscreen technician
stencil marker
stencil marker - graphic arts
traffic sign painter
video game artist
video game designer
vinyl lettering artist
visual effects (VFX) artist
visual effects artist

Inclusions

- animation camera operator
- poster painter

Exclusions

- Camera, platemaking and other prepress occupations (See 9472 Camera, platemaking and other prepress occupations)
- Correspondence, publication and regulatory clerks (See 1452 Correspondence, publication and regulatory clerks)
- Desktop publishing specialists (See 1423 Desktop publishing operators and related occupations)
- Graphic designers and illustrators (See 5241 Graphic designers and illustrators)

Additional Information

- Progression to graphic designer positions is possible with experience or supplementary training.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	9,155	1,690	1,040	11.4%
Employee	7,405	1,270	810	10.9%
Self-Employed	1,750	420	235	13.4%
% Self-Employed	19.1%	24.9%	22.6%	
Average Income	46,180	47,046	49,809	107.9%
Median Income	38,658	39,921	41,221	106.6%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	780	185	100	12.8%
15-19	75	25	10	13.3%
20-24	705	160	90	12.8%
25-64	8,150	1,450	915	11.2%
25-34	3,035	605	410	13.5%
25-29	1,355	285	215	15.9%
30-34	1,680	325	195	11.6%
35-44	2,635	295	170	6.5%
45-54	1,585	370	215	13.6%
55-64	885	175	110	12.4%
65-74	195	35	10	5.1%
75+	35	20	10	28.6%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	4.8%
Secondary (high) school diploma or equivalency certificate	14.9%
Apprenticeship or trades certificate or diploma	2.9%
College, CEGEP or other non-university certificate or diploma	38.0%

University certificate or diploma below bachelor level	3.8%
University certificate, diploma or degree at bachelor level or above	35.1%

Gender (Toronto, 2016)

Female	27.4%
Male	72.6%

Graphic designers and illustrators (5241)

Graphic designers conceptualize and produce graphic art and visual materials to effectively communicate information for publications, advertising, films, packaging, posters, signs and interactive media such as Web sites and CDs. This unit group also includes graphic designers who are supervisors, project managers or consultants. They are employed by advertising and graphic design firms, by establishments with advertising or communications departments and by multimedia production companies, or they may be self-employed. Illustrators conceptualize and create illustrations to represent information through images. They are almost solely self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Graphic designers • Consult with clients to establish the overall look, graphic elements and content of communications materials in order to meet their needs • Determine the medium best suited to produce the desired visual effect and the most appropriate vehicle for communication • Develop the graphic elements that meet the clients' objectives • Prepare sketches, layouts and graphic elements of the subjects to be rendered using traditional tools, multimedia software and image processing, layout and design software • Estimate cost of materials and time to complete graphic design	• A university degree in visual arts with specialization in graphic design, commercial art, graphic communications or cartooning or Completion of a college diploma program in graphic arts is required. • Experience or training in multimedia design at a post-secondary, college or technical institution may be required. • In addition to the arts, training in biology, engineering, architecture or a scientific field is usually required for medical, technical and scientific illustrators. • Creative ability and artistic talent, as demonstrated by a

- Use existing photo and illustration banks and typography guides or hire an illustrator or photographer to produce images that meet clients' communications needs
- Establish guidelines for illustrators or photographers
- Co-ordinate all aspects of production for print, audio-visual or electronic materials, such as Web sites, CDs and interactive terminals
- Co-ordinate sub-contracting
- Work in a multidisciplinary environment
- Supervise other graphic designers or graphic arts technicians.
- Illustrators
- Consult with clients to determine the nature and content of illustrations in order to meet their communications needs
- Develop and produce realistic or representational sketches and final illustrations, by hand or using computer-assisted design (CAD) software, for printed materials such as books, magazines, packaging, greeting cards and stationery
- Assist in developing storyboards for electronic productions such as multimedia, interactive and digital products and television advertising and productions
- Produce 2-D and 3-D animated drawings or computer illustrations
- May adapt existing illustrations.
- Illustrators may specialize in a particular field such as illustrations for children, advertising, editorials, humour, or medical, scientific or technical illustration, or multimedia design.

portfolio of work, are required for graphic designers and illustrators.

Job Titles

Illustrative Titles	Other Titles
3D animation artist	2D animation artist

advertising designer
animator - animated films
bank note designer
cartoonist
commercial artist
graphic artist
graphic designer
graphic designer - multimedia
illustrator
layout designer
medical illustrator
multimedia illustrator
scientific illustrator

2D animator
3D animation artist
3D animator
3D artist
3D modeler
advertising art director
advertising art supervisor
advertising artist
advertising designer
advertising illustrator
advertising illustrator chief
advertising layout designer
animated cartoon artist
animated cartoon artist - visual arts
animated cartoon colourist
animation artist
animation layout designer
animator - animated films
art layout designer
artistic illustrator
assistant animator - animated films
background artist
bank note designer
biological illustrator
business forms designer
calligrapher
calligraphic artist
caricaturist
cartoon film artist
cartoonist
cartoonist sketch
catalogue illustrator
cell animator
character animator
colour artist - cartoons
colourist - cartoons
commercial artist
commercial design artist
commercial designer
communication designer
computer animator
computer graphics specialist
content director
content strategist
cover designer
cover page illustrator

cybergraphic designer
digital animator - artist
editorial cartoonist
electronic games designer
fashion illustrator
flash designer
form layout designer
forms designer
graphic artist
graphic arts room supervisor
graphic design and illustration animator
graphic designer
graphic designer - multimedia
graphic designer - multimedia, interactive or new media
graphic designer and layout artist
illustrator
illustrator and graphic designer
interactive media designer
Internet graphic designer
layout artist
layout designer
litho artist
medical illustrator
multimedia design specialist
multimedia designer
multimedia illustrator
multimedia instructional designer and scriptor
multimedia products designer
multimedia products designer-ideaman/woman
new media graphics designer
newspaper illustrator
package designer
page designer
paper securities designer
pictographist
political caricaturist
political cartoonist
poster artist
registered graphic designer (RGD)
scientific illustrator
sign designer
sports cartoonist
storyboard artist
title artist
user experience designer

wallpaper colourist
wallpaper designer
Web designer - graphic design
Web graphic designer
Web page designer

Inclusions

- None

Exclusions

- Advertising managers (See 0124 Advertising, marketing and public relations managers)
- Graphic arts technicians (See 5223 Graphic arts technicians)
- Interior designers and interior decorators (See 5242 Interior designers and interior decorators)
- Painters, sculptors and other visual artists (See 5136 Painters, sculptors and other visual artists)

Additional Information

- Progression to management or senior design positions is possible with experience.
- The title "registered graphic designer" is recognized by law in Ontario.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	62,750	27,735	17,325	27.6%
Employee	43,205	19,160	12,230	28.3%
Self-Employed	19,545	8,575	5,100	26.1%
% Self-Employed	31.1%	30.9%	29.4%	
Average Income	39,966	41,222	43,404	108.6%
Median Income	35,988	37,144	39,911	110.9%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	5,910	2,700	1,645	27.8%
15-19	350	125	65	18.6%
20-24	5,560	2,575	1,585	28.5%

25-64	55,610	24,450	15,355	27.6%
25-34	21,640	9,285	6,245	28.9%
25-29	10,615	4,715	3,130	29.5%
30-34	11,030	4,570	3,120	28.3%
35-44	17,225	7,245	4,505	26.2%
45-54	10,550	4,910	2,905	27.5%
55-64	6,190	3,015	1,695	27.4%
65-74	1,110	525	305	27.5%
75+	125	60	20	16.0%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	1.4%
Secondary (high) school diploma or equivalency certificate	10.7%
Apprenticeship or trades certificate or diploma	1.3%
College, CEGEP or other non-university certificate or diploma	39.1%
University certificate or diploma below bachelor level	4.4%
University certificate, diploma or degree at bachelor level or above	43.0%

Gender (Toronto, 2016)

Female	47.9%
Male	52.1%

Interior designers and interior decorators (5242)

Interior designers and interior decorators conceptualize and produce aesthetic, functional and safe designs for interior spaces in residential, commercial, cultural, institutional and industrial buildings. They are employed by architectural and interior design firms, retail establishments, construction companies, hospitals, airlines, hotel and restaurant chains, and other establishments, or they may be self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties:	• Interior designers

- Consult with clients to determine needs, preferences, safety requirements and purpose of space
- Develop detailed plans and 3-D models showing arrangement of walls, dividers, displays, lighting and other fixtures using computer-assisted design (CAD) software and graphics software
- Develop plans, elevations, cross sections and detailed drawings, and advise on selection of colours, finishes and materials, floor and wall coverings, window treatments, interior and exterior lighting, furniture and other items, taking into account ergonomic and occupational health standards
- Estimate costs and materials required and may advise on leasing, real estate and marketing
- Prepare plans and specifications for the final interior designs in accordance with current practices and codes
- Work in a multidisciplinary environment
- May direct site work crews and subcontractors.
- Interior designers are experts in the area of interior architecture, construction materials and building codes. They may specialize in designing interiors for residential, commercial, institutional, cultural and industrial buildings and for aircraft, ships or trains, trade shows and exhibitions. Interior decorators may specialize in decorating residential or commercial interior spaces, home staging, colour consulting and home organizing.
- A university degree or college diploma in interior design is usually required.
- The National Council for Interior Design Qualification (NCIDQ) examination may be required after six years of combined study and experience.
- Certification by a provincial institute or association is required to use protected titles related to interior designers in all provinces except Prince Edward Island.
- Interior decorators
- A college certificate or diploma in interior decoration is usually required.
- Membership in the Canadian Decorators' Association is available to qualified decorators.

Job Titles

Illustrative Titles	Other Titles
aircraft interior designer interior decorator interior design technician	aircraft interior designer building space planner business aircraft interior designer

interior designer	certified interior designer
kitchen designer	colour consultant - home decorating
office space planner	decorating consultant
retail space planner	designer - interior design
	green design consultant - interior design
	home decorating consultant
	home decorator
	home organizer
	home stager
	home staging consultant
	interior decorating consultant
	interior decorator
	interior design consultant
	interior design project manager
	interior design technician
	interior designer
	interior designer assistant
	interior space designer
	kitchen designer
	licensed interior designer
	office space planner
	registered interior designer
	retail space planner
	space management consultant

Inclusions

- home staging consultant
- space management consultant

Exclusions

- Graphic designers and illustrators (See 5241 Graphic designers and illustrators)
- Industrial designers (See 2252 Industrial designers)
- Lighting designers (See 5243 Theatre, fashion, exhibit and other creative designers)
- Painters and decorators (except interior decorators) (See 7294 Painters and decorators (except interior decorators))
- Theatre, fashion, exhibit and other creative designers (See 5243 Theatre, fashion, exhibit and other creative designers)

Additional Information

- None

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	25,635	10,885	6,660	26.0%
Employee	15,380	6,240	3,735	24.3%
Self-Employed	10,260	4,640	2,925	28.5%
% Self-Employed	40.0%	42.6%	43.9%	
Average Income	36,173	37,908	40,002	110.6%
Median Income	29,902	30,662	31,880	106.6%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	1,485	640	370	24.9%
15-19	90	40	25	27.8%
20-24	1,390	600	350	25.2%
25-64	22,975	9,645	5,980	26.0%
25-34	6,615	2,680	1,770	26.8%
25-29	3,230	1,330	905	28.0%
30-34	3,385	1,350	870	25.7%
35-44	5,800	2,265	1,420	24.5%
45-54	6,265	2,790	1,735	27.7%
55-64	4,295	1,910	1,050	24.4%
65-74	1,035	515	270	26.1%
75+	150	90	40	26.7%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	3.4%
Secondary (high) school diploma or equivalency certificate	11.0%
Apprenticeship or trades certificate or diploma	2.2%
College, CEGEP or other non-university certificate or diploma	31.2%

University certificate or diploma below bachelor level	4.7%
University certificate, diploma or degree at bachelor level or above	47.6%

Gender (Toronto, 2016)

Female	76.7%
Male	23.3%

Theatre, fashion, exhibit and other creative designers (5243)

Theatre, fashion, exhibit and other creative designers conceptualize and produce designs for film, television, theatre and video productions, garments and textiles, displays and exhibits, and for other creative items such as jewellery and trophies. Theatre designers are employed by performing arts and broadcasting companies and by festivals; fashion designers are employed by clothing and textile companies or may be self-employed; and exhibit designers are employed by museums and retail establishments. Other creative designers in this unit group are employed by manufacturing establishments or may be self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Theatre designers • Design and create settings, scenic environments, properties, costumes and lighting for theatre, film and video productions, operas and ballets. • Fashion designers • Design and create clothing and accessories for men, women and children. • Exhibit designers • Plan and develop permanent and temporary or moveable exhibits and displays for museum exhibitions, trade shows, conventions, retail spaces and other exhibitions. • Theatre designers may specialize in costume, lighting or set design; fashion designers may specialize in men's, women's or children's apparel or in	• This group performs some or all of the following duties: • Theatre designers • Design and create settings, scenic environments, properties, costumes and lighting for theatre, film and video productions, operas and ballets. • Fashion designers • Design and create clothing and accessories for men, women and children. • Exhibit designers • Plan and develop permanent and temporary or moveable exhibits and displays for museum exhibitions, trade shows, conventions, retail spaces and other exhibitions. • Theatre designers may specialize in costume,

	different lines such as sportswear, footwear or formal wear.	lighting or set design; fashion designers may specialize in men's, women's or children's apparel or in different lines such as sportswear, footwear or formal wear.

Job Titles

Illustrative Titles	Other Titles
clothing designer	assistant costume designer
costume designer	clothing designer
couturier - haute couture	costume designer
display designer	costume designer - exhibits and theatre
fabric designer	couturier - haute couture
fashion designer	crest designer
fur designer	designer - theatre
jewellery designer	display design supervisor
lighting designer	display designer
museum exhibit designer	display designer - museums and art galleries
shoe designer	display designers supervisor
trophy designer	embroidery designer
window display designer	exhibit and display designer
	exhibit designer
	exhibit designer - museums and art galleries
	exhibit designers supervisor
	exhibition designer - museums and art galleries
	fabric designer
	facilities designer
	fashion co-ordinator
	fashion designer
	fashion goods co-ordinator
	fashion goods exhibit co-ordinator
	fashion stylist
	fashion wear designer
	fishing lure designer
	food stylist
	fur designer
	garment designer
	glove designer
	handbag designer
	hat designer
	heraldist
	jacket designer
	jewellery designer
	lighting designer

lighting designer - exhibits
luggage designer
luggage stylist
memorial designer
museum designer
museum exhibit designer
novelties stylist
pottery designer
rug designer
scene designer
scene designer assistant
set decorator - theatre and motion pictures
set designer - theatre
shoe designer
show and demonstration designer
sound designer
stage scenery designer
store display designer
swimming pool designer
textile designer
theatre designer
tile designer
toy designer - arts and crafts
trophy designer
visual display stylist
visual merchandiser
window display designer
women's fashion designer

Inclusions

- exhibit designer - museums and art galleries
- facilities designer
- fashion co-ordinator
- fashion stylist
- visual merchandiser

Exclusions

- Diorama makers - museums and galleries (See 5212 Technical occupations related to museums and art galleries)
- Graphic designers and illustrators (See 5241 Graphic designers and illustrators)
- Industrial designers (See 2252 Industrial designers)
- Interior designers and interior decorators (See 5242 Interior designers and interior decorators)
- Patternmakers - textile, leather and fur products (See 5245 Patternmakers - textile, leather and fur products)

- Tailors, dressmakers, furriers and milliners (See 6342 Tailors, dressmakers, furriers and milliners)

Additional Information

- Designers may advance to supervisory and management positions.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	14,790	5,485	3,885	26.3%
Employee	9,780	3,465	2,460	25.2%
Self-Employed	5,010	2,020	1,425	28.4%
% Self-Employed	33.9%	36.8%	36.7%	
Average Income	38,715	37,246	38,534	99.5%
Median Income	29,880	27,703	29,837	99.9%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	1,365	620	420	30.8%
15-19	115	60	30	26.1%
20-24	1,250	560	395	31.6%
25-64	12,880	4,630	3,345	26.0%
25-34	4,520	1,670	1,310	29.0%
25-29	2,310	835	655	28.4%
30-34	2,210	830	655	29.6%
35-44	3,690	1,185	860	23.3%
45-54	2,855	1,065	725	25.4%
55-64	1,815	715	440	24.2%
65-74	455	175	75	16.5%
75+	85	60	35	41.2%

Educational Attainment (Toronto, 2016)

Highest Education	Share

No certificate, diploma or degree	2.6%
Secondary (high) school diploma or equivalency certificate	18.1%
Apprenticeship or trades certificate or diploma	2.3%
College, CEGEP or other non-university certificate or diploma	32.8%
University certificate or diploma below bachelor level	4.3%
University certificate, diploma or degree at bachelor level or above	40.0%

Gender (Toronto, 2016)

Female	70.5%
Male	29.5%

Patternmakers - textile, leather and fur products (5245)

Patternmakers in textile, leather and fur products create master patterns for the production of garments, footwear and other textile, leather or fur products. They are employed by pattern manufacturers, textile, leather or fur products manufacturers, or they may be self-employed.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Examine sketches, samples of articles and specifications of designs to determine number, size and shape of pattern parts and assess the amount of cloth required to make a product • Draw, lay out and cut master patterns of products • Outline parts of patterns on paper and mark patterns to indicate details such as the placement of pockets and pleats on garments, decorative stitching on shoe parts or eyelets on canvas products • Create pattern size variations from master patterns using computer or drafting instruments, or forward patterns to computer operator to create pattern size variations	• Completion of secondary school is required. • College courses in design and patternmaking or One to two years of on-the-job training are required. • Courses in computer-assisted patternmaking may be required.

- Lay out master patterns on fabric and cut sample patterns
- Mark size, identification, style and sewing instructions on sample patterns.

Job Titles

Illustrative Titles	Other Titles
dress patternmaker	canvas goods maker
embroidery patternmaker	canvas goods pattern designer and patternmaker
fur garment patternmaker	canvas layer-out - textile products
garment patternmaker	canvas pattern designer
leather products patternmaker	canvas patternmaker
shoe patternmaker	cartoon embroidery enlarger
textile products patternmaker	digitizer operator - textile, leather and fur products
	doper - fabric products
	doper and marker
	dress patternmaker
	embroidery patternmaker
	fur garment patternmaker
	fur patternmaker
	fur products patternmaker
	garment patternmaker
	last-pattern grader
	layer-out and patternmaker
	lay-out and patternmaker
	leather products patternmaker
	men's and women's wear patternmaker
	modifier and lay-out marker
	modifier and marker
	pattern designer and patternmaker - textile, leather and fur products
	pattern grader
	pattern marker
	pattern marker - fabric products
	pattern modifier
	pattern modifier - textile, leather and fur products
	patternmaker - computer assisted
	patternmaker - textile products
	patternmaker - textile, leather and fur products
	sail lay-out and patternmaker
	sail maker
	shoe patternmaker
	shoe-last patternmaker
	textile identification mark remover
	textile mark remover

textile marker-down
textile products patternmaker
tracer-patternmaker

Inclusions

- None

Exclusions

- Supervisors, textile, fabric, fur and leather products processing and manufacturing (See 9217 Supervisors, textile, fabric, fur and leather products processing and manufacturing)

Additional Information

- Progression to supervisory positions is possible with experience.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	1,045	255	160	15.3%
Employee	800	160	125	15.6%
Self-Employed	240	100	35	14.6%
% Self-Employed	23.0%	39.2%	21.9%	
Average Income	42,875	35,609	41,017	95.7%
Median Income	38,947	23,950	37,556	96.4%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	45	15	15	33.3%
15-19	10	0	0	0.0%
20-24	35	15	10	28.6%
25-64	935	205	125	13.4%
25-34	120	25	25	20.8%
25-29	55	20	20	36.4%
30-34	65	0	10	15.4%
35-44	210	50	10	4.8%
45-54	285	45	30	10.5%

55-64	315	85	60	19.0%
65-74	65	35	25	38.5%
75+	0	0	0	#N/A

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	11.1%
Secondary (high) school diploma or equivalency certificate	22.2%
Apprenticeship or trades certificate or diploma	11.1%
College, CEGEP or other non-university certificate or diploma	40.7%
University certificate or diploma below bachelor level	7.4%
University certificate, diploma or degree at bachelor level or above	11.1%

Gender (Toronto, 2016)

Female	57.1%
Male	42.9%

Supervisors, textile, fabric, fur and leather products processing and manufacturing (9217)

Supervisors in textile, fabric, fur and leather products processing and manufacturing supervise and co-ordinate the activities of workers engaged in textile, fabric, fur and leather products processing and manufacturing. They are employed by textile manufacturing companies, tanneries and other manufacturers of fabric, fur and leather products.

Job Duties and Requirements

Job Duties	Employment Requirements
• This group performs some or all of the following duties: • Supervise, co-ordinate and schedule the activities of production workers who operate machines to process natural, synthetic and hybrid textile fibre, yarn and thread; bleach, dye and finish textiles; operate manufacturing machines to cut, stitch and produce	• Completion of secondary school is usually required. • Post-secondary education in textile technology or a related field may be required for some positions in this group. • Several years of experience as a worker in the unit group

fabric, fur or leather garments and other products; and inspect textile products
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Resolve work problems and recommend measures to improve productivity and product quality
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports
- May set up machines and equipment.

being supervised are usually required.
- Experience may be required in a specific process, or with a specific product or type of equipment.

Job Titles

Illustrative Titles	Other Titles
boot and shoe foreman/woman	alterations supervisor - clothing manufacturing
canvas products manufacturing foreman/woman	assemblers supervisor - fabric, fur and leather products manufacturing
dye room supervisor	beam department foreman/woman - hide and pelt processing
embroidery supervisor - fabric products	bleaching foreman/woman - textiles
fabric-cutting department foreman/woman	boot and shoe foreman/woman
finishing supervisor - textiles	bootmakers and shoemakers foreman/woman
foreman/woman - textile processing	bootmakers foreman/woman
fur dressing foreman/woman	canvas products manufacturing foreman/woman
hat and cap makers foreman/woman	card room supervisor - textiles
knitting supervisor	clothing manufacturing foreman/woman
sample room foreman/woman - leather products	cutter supervisor - fabric, fur and leather products manufacturing
sewing machine operators supervisor	cutting department foreman/woman - fabric, fur and leather products manufacturing
stitching department supervisor	cutting room foreman/woman - fabric, fur and leather products manufacturing
tannery foreman/woman	dress repairs foreman/woman - clothing manufacturing
	dressmakers supervisor
	dressmaking department foreman/woman
	dressmaking department supervisor
	dye department foreman/woman - textiles
	dye foreman/woman - textiles
	dye room foreman/woman - textile processing
	dye room supervisor

dye room supervisor - textiles
dye room supervisor - textiles processing
dyehouse foreman/woman - hide and pelt processing
dyehouse foreman/woman - textiles
dyehouse supervisor - textile processing
dyeing supervisor - textiles
embroidery supervisor - fabric products
fabric products embroidery supervisor
fabric-cutting department foreman/woman
felt hat finishing room foreman/woman
finishing department foreman/woman - fabric, fur and leather products manufacturing
finishing department foreman/woman - textile processing
finishing department supervisor - textile processing
finishing supervisor - textiles
footwear finishing foreman/woman
footwear manufacturing foreman/woman
foreman/woman - textile processing
fur dressing foreman/woman
fur dressing foreman/woman - hide and pelt processing
fur dressing supervisor
fur hatmaking department foreman/woman
fur products manufacturing foreman/woman
furriers foreman/woman
furriers supervisor
garment manufacturing foreman/woman
glove makers foreman/woman
glove manufacturing foreman/woman
handbag manufacturing foreman/woman
hat and cap makers foreman/woman
hat dyer supervisor
hat trimming department foreman/woman
hide tanning supervisor
hide-house foreman/woman - hide and pelt processing
hosiery foreman/woman
inspection foreman/woman - textile processing
inspector, grader, sampler and tester foreman/woman - fabric, fur and leather products manufacturing
knitting foreman/woman
knitting foreman/woman - textile processing
knitting supervisor

knitting supervisor - textile processing
latex carpet-backing department foreman/woman
layout and marking foreman/woman - fabric, fur and leather products manufacturing
leather finishing foreman/woman - hide and pelt processing
leather products manufacturing foreman/woman
luggage assembly foreman/woman - fabric, fur and leather products manufacturing
millinery foreman/woman - fabric, fur and leather products manufacturing
preparation department foreman/woman - textiles
production foreman/woman - fabric, fur and leather products manufacturing
production foreman/woman - fur products manufacturing
quality control foreman/woman - textiles
quilting foreman/woman - textile processing
sample room foreman/woman - fabric, fur and leather products manufacturing
sample room foreman/woman - leather products
sewing machine operator supervisor - fabric, fur and leather products manufacturing
sewing machine operators foreman/woman - fabric, fur and leather products manufacturing
sewing machine operators supervisor
spinning room foreman/woman - textiles
spinning supervisor - textiles
spun yarn preparation foreman/woman
spun yarn preparation supervisor - textile processing
stitchers foreman/woman - fabric, fur and leather products manufacturing
stitching department foreman/woman - fabric, fur and leather products manufacturing
stitching department supervisor
stitching department supervisor - fabric, fur and leather products manufacturing
suitmaking foreman/woman
tannery foreman/woman
tannery foreman/woman - hide and pelt processing
tannery supervisor - hide and pelt processing
tanyard foreman/woman - hide and pelt processing
textile processing foreman/woman
textile processing supervisor
tufted-carpet weaver supervisor
tufting supervisor - textiles

twisting foreman/woman - textiles
upholsterers foreman/woman - fabric, fur and leather products manufacturing
upholstery-cutting and sewing foreman/woman
weave room foreman/woman - textile processing
weave room supervisor
weave room supervisor - textile processing
weaving foreman/woman
weaving inspector foreman/woman - textile processing
weaving room supervisor - textile processing
weaving room supervisor - textiles
weaving supervisor
wool sorter and grader foreman/woman - textile processing
wool sorting and grading foreman/woman
woven fabric inspection foreman/woman - textile processing
yarn preparation supervisor - textiles

Inclusions

- None

Exclusions

- Machine operators and related workers in textile, fabric, fur and leather products processing and manufacturing (See 944 Machine operators and related workers in textile, fabric, fur and leather products processing and manufacturing)
- Master dyers and textile colour technologists (See 2211 Chemical technologists and technicians)
- Tailors, dressmakers, furriers and milliners (See 6342 Tailors, dressmakers, furriers and milliners)
- Technologists and technicians in textile manufacturing (See 2233 Industrial engineering and manufacturing technologists and technicians)
- Textile machinery mechanics (See 7311 Construction millwrights and industrial mechanics)

Additional Information

- There is some mobility among supervisory positions in this group.
- Progression to managerial positions is possible with experience.

Total Workforce (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
Total Workers	1,875	640	340	18.1%
Employee	1,750	605	320	18.3%
Self-Employed	130	35	25	19.2%
% Self-Employed	6.9%	5.5%	7.4%	
Average Income	43,709	44,196	40,597	92.9%
Median Income	41,143	41,708	38,421	93.4%

Workforce by Age (2016)

	Canada	Ontario	Toronto	Toronto % of Canada
15-24	35	15	10	28.6%
15-19	0	0	0	#N/A
20-24	35	15	0	0.0%
25-64	1,740	595	315	18.1%
25-34	230	95	40	17.4%
25-29	110	40	25	22.7%
30-34	120	55	20	16.7%
35-44	345	150	70	20.3%
45-54	610	185	110	18.0%
55-64	550	165	95	17.3%
65-74	85	25	15	17.6%
75+	15	0	0	0.0%

Educational Attainment (Toronto, 2016)

Highest Education	Share
No certificate, diploma or degree	21.7%
Secondary (high) school diploma or equivalency certificate	40.6%
Apprenticeship or trades certificate or diploma	2.9%
College, CEGEP or other non-university certificate or diploma	14.5%

University certificate or diploma below bachelor level	2.9%
University certificate, diploma or degree at bachelor level or above	17.4%

Gender (Toronto, 2016)

Female	67.1%
Male	32.9%

Industry Profiles

Architectural services (541310)

This Canadian industry comprises establishments primarily engaged in planning and designing the construction of residential, institutional, leisure, commercial and industrial buildings and other structures by applying knowledge of design, construction procedures, zoning regulations, building codes and building materials.

Industry Titles

Illustrative Examples	Other Examples
• None	• architects (except landscape), offices of • architectural consultants (except landscape) • architectural design services and advice • buildings and structures, architectural design services (except landscape)

Inclusions

- None

Exclusions

- design and construction of buildings, highways or other structures (See 23 Construction)
- design-builders (See 23 Construction)
- planning and designing landscapes (See 541320 Landscape architectural services)
- providing construction management services - classified by type of construction (See 23 Construction)

Industry Size (Canadian Business Counts, 2020; total employment estimated)

			Canada	Ontario	Toronto	Toronto % of Canada
Estimated Total Employment			20,147	7,941	5,777	28.7%
Number of Firms	Without Employees		4,350	1,713	1,188	27.3%
	With Employees		2,895	1,115	703	24.3%
	By Employee Count	1-4	1,695	689	447	26.4%
		5-9	568	196	109	19.2%
		10-19	344	130	84	24.4%
		20-49	212	70	36	17.0%
		50-99	50	17	14	28.0%
		100-199	19	9	9	47.4%
		200-499	6	3	3	50.0%
		500+	1	1	1	100.0%

Industry Size by Year (Canadian Business Counts, 2015-2020; total employment estimated)

	Firm Count				Estimated Total Employment			
	Canada	Ontario	Toronto	Toronto % of Canada	Canada	Ontario	Toronto	Toronto % of Canada
2015	1,115	936	599	53.7%	7,941	5,523	3,796	47.8%
2016	2,602	984	637	24.5%	15,785	5,894	4,051	25.7%
2017	2,670	1,031	656	24.6%	17,642	7,005	4,967	28.2%
2018	2,714	1,046	659	24.3%	18,139	6,854	4,926	27.2%
2019	2,854	1,122	709	24.8%	19,262	7,544	5,435	28.2%
2020	2,895	1,115	703	24.3%	20,147	7,941	5,777	28.7%

Landscape architectural services (541320)

This Canadian industry comprises establishments primarily engaged in planning, designing and administering the development of land areas for projects such as parks and other recreational areas, airports, highways, hospitals, schools, land subdivisions, and commercial, industrial and residential areas by applying knowledge of land characteristics, location of buildings and structures, use of land areas, and design of landscape projects.

Industry Titles

Illustrative Examples	Other Examples
• city, town or urban planning services (except engineers) • garden planning services • land use planning services • offices of landscape architects • recreational area planning and designing services (e.g., ski, golf course, waterparks)	• industrial development planning service (i.e., urban planning) • landscape planning services • waterpark designing and planning

Inclusions

- None

Exclusions

- city, town or urban planning engineers (See 541330 Engineering services)
- designing, installing and maintaining the materials specified in the landscaping design as part of an integrated service (See 561730 Landscaping services)
- operating retail nursery and garden centres that also provide landscape consulting and design services (See 444220 Nursery stores and garden centres (US))

Industry Size (Canadian Business Counts, 2020; total employment estimated)

			Canada	Ontario	Toronto	Toronto % of Canada
Estimated Total Employment			3,430	1,659	988	28.8%
Number of Firms	Without Employees		1,272	547	266	20.9%
	With Employees		803	362	163	20.3%
	By Employee Count	1-4	533	243	98	18.4%
		5-9	159	63	30	18.9%
		10-19	74	37	22	29.7%
		20-49	30	14	9	30.0%

50-99	5	4	3	60.0%
100-199	2	1	1	50.0%
200-499	0	0	0	N/A
500+	0	0	0	N/A

Industry Size by Year (Canadian Business Counts, 2015-2020; total employment estimated)

	Firm Count				Estimated Total Employment			
	Canada	Ontario	Toronto	Toronto % of Canada	Canada	Ontario	Toronto	Toronto % of Canada
2015	362	343	153	42.3%	1,659	1,334	782	47.1%
2016	801	340	158	19.7%	3,146	1,411	807	25.7%
2017	733	329	153	20.9%	2,918	1,394	811	27.8%
2018	729	325	143	19.6%	3,192	1,671	953	29.8%
2019	776	358	158	20.4%	3,424	1,728	1,001	29.2%
2020	803	362	163	20.3%	3,430	1,659	988	28.8%

Interior design services (541410)

This Canadian industry comprises establishments primarily engaged in planning, designing and administering projects in interior spaces to meet the physical and aesthetic needs of people, taking into consideration building codes, health and safety regulations, traffic patterns and floor planning, mechanical and electrical needs, and interior fittings and furniture. Interior designers and interior design consultants work in areas such as hospitality design, health care design, institutional design, commercial and corporate design and residential design.

Industry Titles

Illustrative Examples	Other Examples
• **None**	• decoration services for special events

- designers, interior, offices of
- home staging services
- house staging services
- interior decorating consulting service
- interior decorators consulting service (except painters)
- interior design consulting services
- interior design services
- interior lighting consultants
- layouts-office, factory (designers, interior)

Inclusions

- interior decorating consultants engaged exclusively in providing aesthetic services associated with interior spaces

Exclusions

- painting contractors (See 238320 Painting and wall covering contractors)

Industry Size (Canadian Business Counts, 2020; total employment estimated)

			Canada	Ontario	Toronto	Toronto % of Canada
Estimated Total Employment			5,720	3,101	2,286	40.0%
Number of Firms	Without Employees		5,632	2,624	1,709	30.3%
	With Employees		1,950	945	671	34.4%
	By Employee Count	1-4	1,505	719	513	34.1%
		5-9	293	146	101	34.5%
		10-19	111	50	32	28.8%
		20-49	31	21	17	54.8%
		50-99	10	9	8	80.0%
		100-199	0	0	0	N/A
		200-499	0	0	0	N/A
		500+	0	0	0	N/A

Industry Size by Year (Canadian Business Counts, 2015-2020; total employment estimated)

	Firm Count	Estimated Total Employment

	Canada	Ontario	Toronto	Toronto % of Canada	Canada	Ontario	Toronto	Toronto % of Canada
2015	945	735	531	56.2%	3,101	2,148	1,607	51.8%
2016	1,758	812	579	32.9%	5,002	2,396	1,740	34.8%
2017	1,821	870	627	34.4%	5,122	2,649	2,043	39.9%
2018	1,892	909	652	34.5%	5,344	2,790	2,129	39.8%
2019	1,936	925	666	34.4%	5,522	2,868	2,222	40.2%
2020	1,950	945	671	34.4%	5,720	3,101	2,286	40.0%

Industrial design services (541420)

This Canadian industry comprises establishments primarily engaged in creating and developing designs and specifications that optimize the function, value and appearance of products.

Industry Titles

Illustrative Examples	Other Examples
• automobile industrial design services • furniture design services • industrial design consulting services • modelling services (for scale models) • package design (industrial) services	• designing electronic devices • furniture designers • industrial design services • industrial tool design services • restaurant equipment design services

Inclusions

- determination of materials, construction, mechanisms, shape, colour, and surface finishes of the product, taking into consideration human needs, safety, market appeal and efficiency in production, distribution, use and maintenance

Exclusions

- applying principles of engineering in the design, development and utilization of machines, materials, instruments, structures, processes and systems (See 541330 Engineering services)
- designing clothing, shoes and jewellery (See 541490 Other specialized design services)
- designing, subcontracting the manufacturing and marketing of products (See 31-33 Manufacturing)

Industry Size (Canadian Business Counts, 2020; total employment estimated)

		Canada	Ontario	Toronto	Toronto % of Canada
Estimated Total Employment		1,229	396	219	17.8%
Number of Firms	Without Employees	1,051	434	257	24.5%
	With Employees	506	199	118	23.3%
	By Employee Count: 1-4	417	175	104	24.9%
	By Employee Count: 5-9	54	15	9	16.7%
	By Employee Count: 10-19	27	7	5	18.5%
	By Employee Count: 20-49	8	2	0	0.0%
	By Employee Count: 50-99	0	0	0	N/A
	By Employee Count: 100-199	0	0	0	N/A
	By Employee Count: 200-499	0	0	0	N/A
	By Employee Count: 500+	0	0	0	N/A

Industry Size by Year (Canadian Business Counts, 2015-2020; total employment estimated)

	Firm Count				Estimated Total Employment			
	Canada	Ontario	Toronto	Toronto % of Canada	Canada	Ontario	Toronto	Toronto % of Canada
2015	199	195	110	55.3%	396	506	260	65.6%
2016	536	198	108	20.1%	1,365	549	262	19.2%
2017	529	207	114	21.6%	1,606	736	371	23.1%

2018	528	215	124	23.5%	1,574	767	385	24.5%
2019	527	206	120	22.8%	1,429	582	351	24.6%
2020	506	199	118	23.3%	1,229	396	219	17.8%

Graphic design services (541430)

This Canadian industry comprises establishments primarily engaged in planning, designing and managing the production of visual communication, so as to convey specific messages or concepts, clarify complex information or project visual identities.

Industry Titles

Illustrative Examples	Other Examples
• commercial art services • graphic design consulting services • independent graphic designers • silk screen design service (serigraphy) • Web page layout design (without programming)	• art studios, commercial • commercial artists, independent • corporate logo consulting services • graphic arts and related design • illustrators, commercial • independent artists, medical illustration • independent graphic artists • visual communication, design consultants

Inclusions

- commercial artists engaged exclusively in generating drawings and illustrations requiring technical accuracy or interpretative skills
- designing the visual layout of printed materials, web pages, packaging labels and graphics, advertising, signage systems, logos and corporate identification

Exclusions

- creating and placing advertising campaigns in media (See 541810 Advertising agencies)
- creating cartoons and visual art (See 711511 Independent visual artists and artisans (CAN))
- creating or placing public display advertising material (See 541850 Display advertising)
- producing animated films (See 512110 Motion picture and video production (US))

- providing advice concerning marketing strategies (See 541611 Administrative management and general management consulting services (US))
- web page development (See 541514 Computer systems design and related services (except video game design and development) (CAN))

Industry Size (Canadian Business Counts, 2020; total employment estimated)

			Canada	Ontario	Toronto	Toronto % of Canada
Estimated Total Employment			5,678	2,823	2,145	37.8%
Number of Firms	Without Employees		7,940	3,506	2,227	28.0%
	With Employees		1,993	896	590	29.6%
	By Employee Count	1-4	1,587	721	465	29.3%
		5-9	265	105	71	26.8%
		10-19	100	48	35	35.0%
		20-49	35	17	14	40.0%
		50-99	3	2	2	66.7%
		100-199	2	2	2	100.0%
		200-499	1	1	1	100.0%
		500+	0	0	0	N/A

Industry Size by Year (Canadian Business Counts, 2015-2020; total employment estimated)

	Firm Count				Estimated Total Employment			
	Canada	Ontario	Toronto	Toronto % of Canada	Canada	Ontario	Toronto	Toronto % of Canada
2015	896	948	646	72.1%	2,823	2,996	2,251	79.7%
2016	2,104	940	644	30.6%	6,386	3,147	2,323	36.4%
2017	2,086	949	657	31.5%	6,273	3,089	2,330	37.1%
2018	2,037	923	620	30.4%	5,830	2,787	1,956	33.5%
2019	2,023	909	615	30.4%	5,636	2,652	1,947	34.5%
2020	1,993	896	590	29.6%	5,678	2,823	2,145	37.8%

Other specialized design services (541490)

This Canadian industry comprises establishments, not classified to any other Canadian industry, primarily engaged in providing professional design services.

Industry Titles

Illustrative Examples	Other Examples
• clothing design services • fashion design services • floats, design services • set design, theatrical (except independent) • shoe design services • textile design services	• consultants, fashion • costume design services (except independent designers) • fashion designer • fur design services • jewellery design services • museum exhibit design service

Inclusions

- None

Exclusions

- independent theatrical set and costume designers (See 711512 Independent actors, comedians and performers (CAN))
- providing architectural design services (See 541310 Architectural services)
- providing computer systems design services (See 541514 Computer systems design and related services (except video game design and development) (CAN))
- providing engineering design services (See 541330 Engineering services)
- providing graphic design services (See 541430 Graphic design services)
- providing industrial design services (See 541420 Industrial design services)
- providing interior design services (See 541410 Interior design services)
- providing landscape architectural design services (See 541320 Landscape architectural services)

Industry Size (Canadian Business Counts, 2020; total employment estimated)

		Canada	Ontario	Toronto	Toronto % of Canada
Estimated Total Employment		1,671	961	843	50.4%
Number of Firms	Without Employees	2,538	1,105	737	29.0%
	With Employees	495	198	134	27.1%
	By Firm Size: 1-4	414	164	111	26.8%
	By Firm Size: 5-9	55	24	13	23.6%

10-19	20	9	9	45.0%
20-49	4	0	0	0.0%
50-99	1	0	0	0.0%
100-199	0	0	0	N/A
200-499	0	0	0	N/A
500+	1	1	1	100.0%

Industry Size by Year (Canadian Business Counts, 2015-2020; total employment estimated)

	Firm Count				Estimated Total Employment			
	Canada	Ontario	Toronto	Toronto % of Canada	Canada	Ontario	Toronto	Toronto % of Canada
2015	198	181	131	66.2%	961	541	399	41.5%
2016	459	194	139	30.3%	1,440	569	414	28.7%
2017	464	206	147	31.7%	1,289	558	389	30.2%
2018	502	218	149	29.7%	1,451	526	358	24.6%
2019	508	211	148	29.1%	1,517	670	532	35.1%
2020	495	198	134	27.1%	1,671	961	843	50.4%

Job Posting Criteria

All data from Burning Glass for jobs posted in the Toronto Metro (CMA).

Job postings were selected using two criteria:

1. The keywords “design” or “architect” were used in the job posting. (The search would find any words containing those, so designer, architecture, codesign, etc. would be found.)
2. The job post included a mention of skills that fell under the general skill cluster of “design” as defined by Burning Glass analysis of global job postings. Specific skill categories included in the cluster are identified below.
3. The job post included a mention of skills that fell under the general Architecture and Construction skill cluster and in the specific skill of Architectural Design

Job postings were collected for two time periods:

1. 2019 (any time that year) – considered as a measure of activity prior to Covid.
2. The previous 12 months (August 1, 2020 – July 31, 2021 for this data)

Job postings totals were also reported by industry and occupation. Both the Burning Glass occupations (derived from their analysis of global job postings) and NOC (Statistics Canada) occupations are reported.

Skill Clusters

Burning Glass defines the “Design” skill cluster as having any of the following skills

- Animation and Game Design
- Art and Illustration
- Creative Design
- Digital Design
- Graphic and Visual Design
- Graphic and Visual Design Software
- Industrial Design
- Presentation Design
- User Interface and User Experience (UI/UX) Design

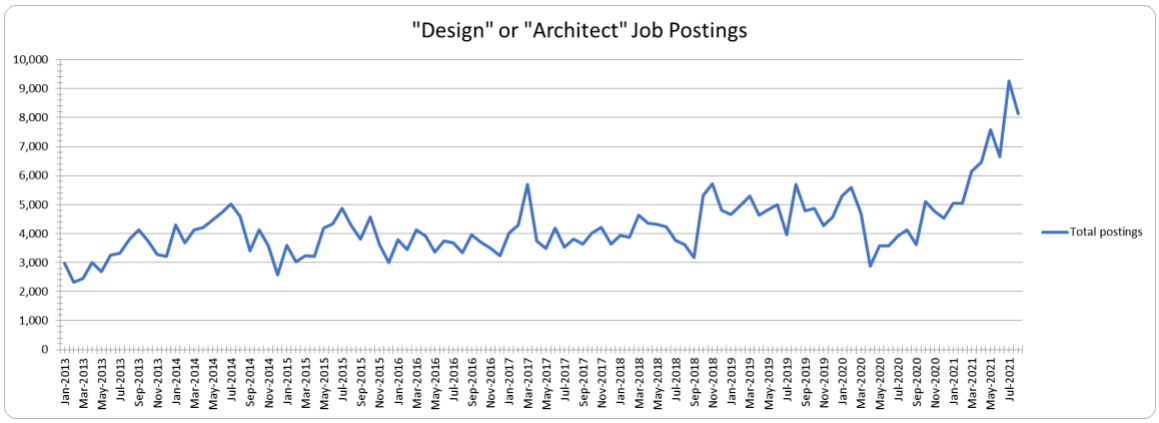
The specific skill cluster for “Architectural Design” in the Architecture and Construction general skill cluster has also been included.

Job Postings 2013-2021

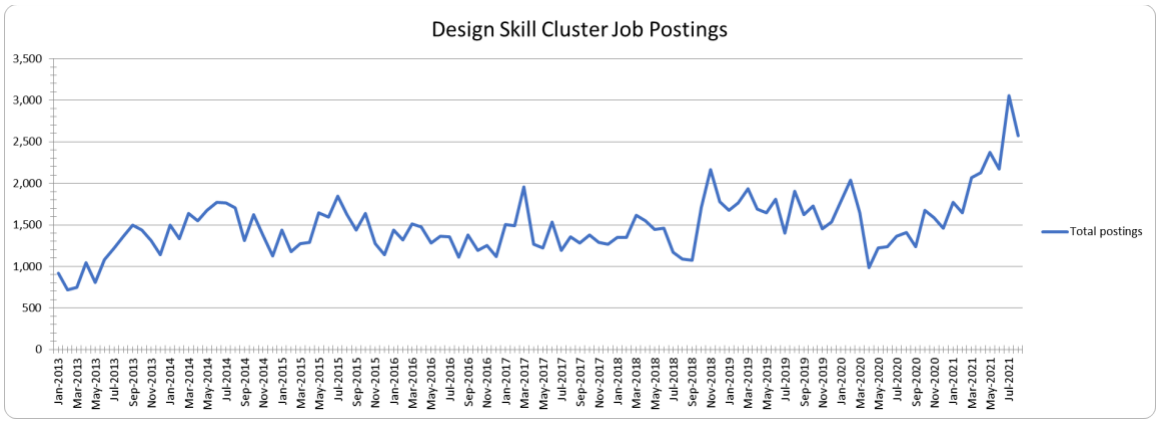
The charts below show the total number of job postings in Toronto by month from January 2013 to August 2021 for the criteria.

- For the keywords
    - The number of postings was consistently between 3,000 and 4,000 per month through 2018.
    - In 2019, it increased to around 5,000 per month.
    - Dropped back down in 2020 (Covid).

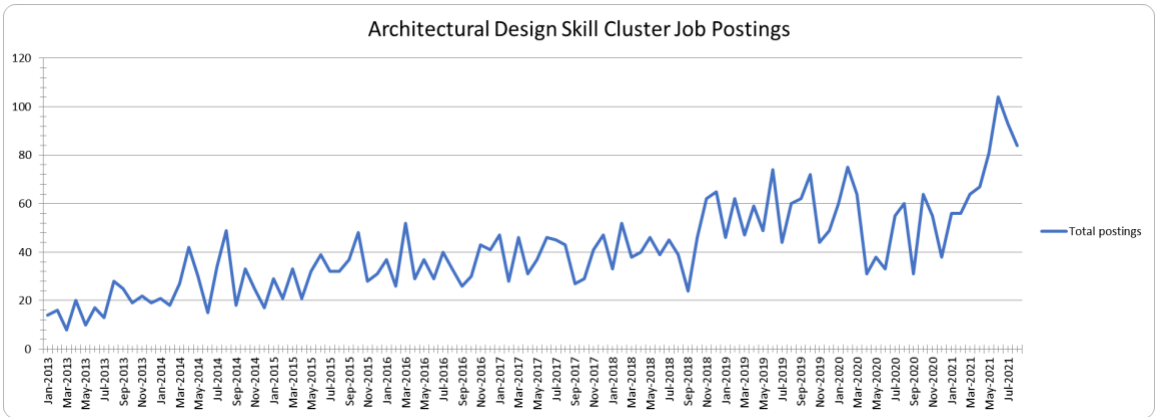
- Has risen steadily since May 2020.
- Is now at 8,000 to 9,000 job postings per month. July 2021 was 9,249 and August 2021 was 8,142.



- For the Design Skill Cluster
  - The overall pattern is the same as for the keywords but at lower numbers
  - At around 1,300 per month 2013-2018
  - Up to 1,700 per month in 2019
  - Dropped back down in March 2020
  - Now at 3,053 in July 2021 and 2,569 in August 2021



- For the Architectural Design Skill Cluster
  - The overall pattern is the same as for the keywords but at lower numbers
  - Steadily increased over time.
  - At around 35 per month 2013-2018
  - Up to 55-70 per month in 2019
  - Dropped back down in March 2020
  - Now at 93 in July 2021 and 84 in August 2021 (over 100 in June 2021)



By Industry and Occupation

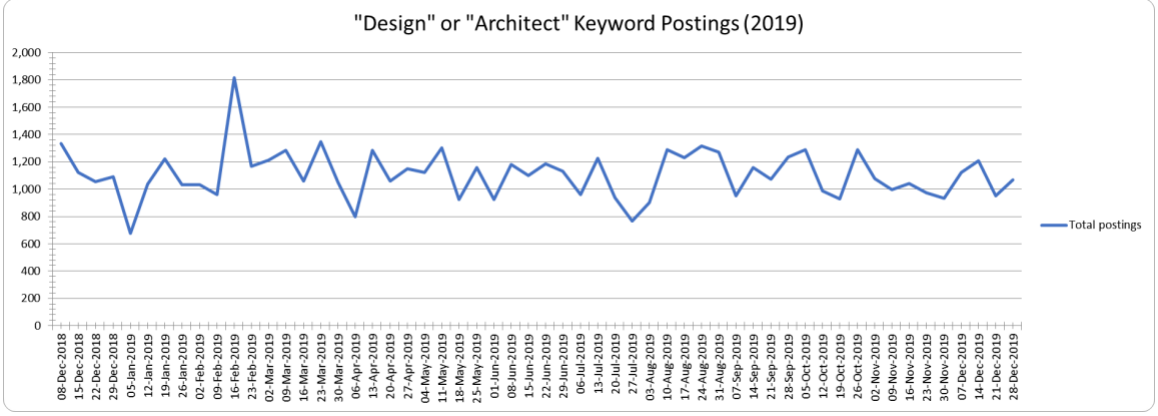
The job postings do not always contain enough information to determine the industry and/or occupation for that posting. As a result, the more specific information for each of the two time periods (2019 and previous 12 months) is based on a limited number of postings. The table below shows the total number of postings for the keyword and skill cluster, for each time period, and for industry and occupation (both Burning Glass and NOC). As shown in the table, roughly ½ of the job postings don't have a clearly identifiable industry; roughly nine in ten can't identify the Burning Glass occupation; and 19 in 20 don't have an NOC occupation code. Postings may still be categorized by industry sector or occupational family without having enough information to identify a specific industry or occupation. Not enough information is available to make any assumptions about those that can be specifically identified except to say that all results by industry and occupation must be interpreted as being "only for those that can be identified" and should not be taken as representative of the entire sector. The industry/occupation results from the Census presented with the profiles, while less timely, is more representative of the sector.

		Total Postings	Industry Identified	Burning Glass Occupation	NOC Occupation
Design or Architect Keyword	2019	57,508	27,382	5,542	3,438
	Previous 12 Months	68,290	32,836	6,159	3,785
Design Skill Cluster	2019	20,153	9,744	2,309	1,516
	Previous 12 Months	22,576	11,149	2,330	1.396
Architectural Design Skill Cluster	2019	668	322	78	49
	Previous 12 Months	769	449	109	38

Since the Skill Cluster results correlate strongly with the job posting keyword results but have lower total numbers and are divided into two groups, only the job posting keywords results are presented. The skill cluster data is available if interested or could provide more detailed analysis for specific skills if needed.

2019 Job Postings

The chart below shows the total number of job postings by week for 2019. The average number of new job postings per week was 1,107. The highest number of postings was 1,816 in the week of February 16 and the lowest was 676 in the week of January 5. Overall, during the year, the number of postings was generally between 1,000 and 1,200 and remained steady but flat throughout the year.



The table below shows the total number of job postings and the total share for 2019 by industry sector. The total number of postings only includes detailed industries in the top 200 while the share is the average of the quarterly share for all job postings. The difference, like for Manufacturing, is explained by postings in specific industries that don't make the top 200.

NAICS	Industry Sector	Total Postings	Share of All Postings
52	Finance and Insurance	8,374	23.1%
54	Professional, Scientific, and Technical Services	6,003	25.5%
51	Information	3,094	8.3%
31-33	Manufacturing	2,540	11.9%
44-45	Retail Trade	2,212	7.0%
56	Administrative and Support and Waste Management and Remediation Services	1,331	3.6%

61	Educational Services	1,269	3.4%
62	Health Care and Social Assistance	991	3.0%
92	Public Administration	844	2.3%
23	Construction	600	2.2%
48-49	Transportation and Warehousing	572	1.7%
72	Accommodation and Food Services	478	1.8%
71	Arts, Entertainment, and Recreation	432	1.1%
53	Real Estate and Rental and Leasing	429	1.9%
81	Other Services (except Public Administration)	342	1.1%
22	Utilities	256	0.9%
42	Wholesale Trade	240	0.6%
21	Mining, Quarrying, and Oil and Gas Extraction	53	0.3%
55	Management of Companies and Enterprises	34	0.2%
11	Agriculture, Forestry, Fishing and Hunting	n/a	0.1%

Most “Design” or “Architect” jobs are in Finance and Insurance or Professional, Scientific, and Technical Services with roughly one-in-ten jobs posted in each of Information, Manufacturing or Retail. The three tables below show by specific industry the total number of postings for the top industry sectors. Information, Manufacturing and Retail are combined and only show the top 20 industries. The Finance Industry is primarily employment in Banks and Insurance. Professional services are as expected with Architectural and Design Services. The others are more divided among Software/IT, Manufacturing (including automotive, aerospace and measurement devices), and Retail. Although Software and IT jobs have been excluded from the detailed analysis and scope of this report, they still encompass both design and architectural concepts and language in their job postings and so are counted here.

NAICS	Industry (Finance and Insurance)	Job Postings
5221	Depository Credit Intermediation	6,318
5241	Insurance Carriers	1,094
5239	Other Financial Investment Activities	326
5231	Securities and Commodity Contracts Intermediation and Brokerage	159
5223	Activities Related to Credit Intermediation	128
5222	Nondepository Credit Intermediation	122
5242	Agencies, Brokerages, and Other Insurance Related Activities	102
5232	Securities and Commodity Exchanges	86
5259	Other Investment Pools and Funds	25
5251	Insurance and Employee Benefit Funds	14

NAICS	Industry (Professional, Scientific, and Technical Services)	Job Postings
5413	Architectural, Engineering, and Related Services	1,921
5416	Management, Scientific, and Technical Consulting Services	1,355
5415	Computer Systems Design and Related Services	636
5414	Specialized Design Services	558
5417	Scientific Research and Development Services	485
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	465
5419	Other Professional, Scientific, and Technical Services	336
5418	Advertising, Public Relations, and Related Services	186
5411	Legal Services	61

NAICS	Industry (Information, Manufacturing, Retail Trade)	Job Postings
5112	Software Publishers	843
3344	Semiconductor and Other Electronic Component Manufacturing	798
5171	Wired Telecommunications Carriers	688
5172	Wireless Telecommunications Carriers (except Satellite)	546
4481	Clothing Stores	446
4451	Grocery Stores	392
3363	Motor Vehicle Parts Manufacturing	328
4541	Electronic Shopping and Mail-Order Houses	300
3254	Pharmaceutical and Medicine Manufacturing	274
4411	Automobile Dealers	268
4521	Department Stores	249
5191	Other Information Services	213
5152	Cable and Other Subscription Programming	184
5121	Motion Picture and Video Industries	166
3364	Aerospace Product and Parts Manufacturing	137
5151	Radio and Television Broadcasting	127
5179	Other Telecommunications	120
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	106
5111	Newspaper, Periodical, Book, and Directory Publishers	100
4529	Other General Merchandise Stores	95

The table below shows the total number of job postings and the total share for 2019 by occupational family group. The total number of postings only includes detailed occupations in the top 200 while the share is the average of the quarterly share for all job postings. There is little difference between the two as the top 200 occupations account for almost all with either keyword.

NOC Family	Family Desc	Total Postings	Share of All Postings
2	Natural and applied sciences and related occupations	24,815	45.8%
0	Management occupations	10,362	20.1%
1	Business, finance and administration occupations	6,745	12.4%
6	Sales and service occupations	4,085	7.6%
4	Occupations in education, law and social, community and government services	2,643	4.9%
5	Occupations in art, culture, recreation and sport	2,355	4.4%
7	Trades, transport and equipment operators and related occupations	1,304	2.6%
9	Occupations in manufacturing and utilities	577	1.4%
3	Health occupations	226	0.6%
8	Natural resources, agriculture and related production occupations	160	0.4%

Most occupations are in Natural and Applied Sciences (nearly half) with Management and Business occupations comprising another third.

The four tables below show the specific occupations within the top three occupation families (Natural and Applied Science, Management, Business) and for all other occupation families. Only the most prevalent occupations (those with 100+) are shown for each. As with industry, many of the occupations are Software/IT related, but as with industry, the ubiquity of design and/or architecture mentions in many job postings is worth noting.

NOC Code	Occupation (Natural and applied sciences and related occupations)	Job Postings
2173	Software engineers and designers	8,102
2171	Information systems analysts and consultants	3,590
2175	Web designers and developers	2,112

2147	Computer engineers (except software engineers and designers)	2,022
2172	Database analysts and data administrators	1,327
2283	Information systems testing technicians	773
2131	Civil engineers	689
2282	User support technicians	664
2253	Drafting technologists and technicians	593
2281	Computer network technicians	585
2161	Mathematicians, statisticians and actuaries	565
2132	Mechanical engineers	517
2133	Electrical and electronics engineers	446
2174	Computer programmers and interactive media developers	375
2148	Other professional engineers, not elsewhere classified (n.e.c.)	300
2252	Industrial designers	243
2141	Industrial and manufacturing engineers	216
2234	Construction estimators	213
2121	Biologists and related scientists	155
2151	Architects	150
2263	Inspectors in public and environmental health and occupational health and safety	148
2241	Electrical and electronics engineering technologists and technicians	145
2153	Urban and land use planners	121
2233	Industrial engineering and manufacturing technologists and technicians	103

NOC Code	Occupation (Management occupations)	Job Postings
0125	Other business services managers	2,945
0124	Advertising, marketing and public relations managers	2,061
0213	Computer and information systems managers	1,230
0601	Corporate sales managers	996
0211	Engineering managers	481

0122	Banking, credit and other investment managers	411
0711	Construction managers	389
0311	Managers in health care	330
0911	Manufacturing managers	302
0114	Other administrative services managers	263
0421	Administrators - post-secondary education and vocational training	142
0112	Human resources managers	135
0511	Library, archive, museum and art gallery managers	128
0731	Managers in transportation	104
0111	Financial managers	103

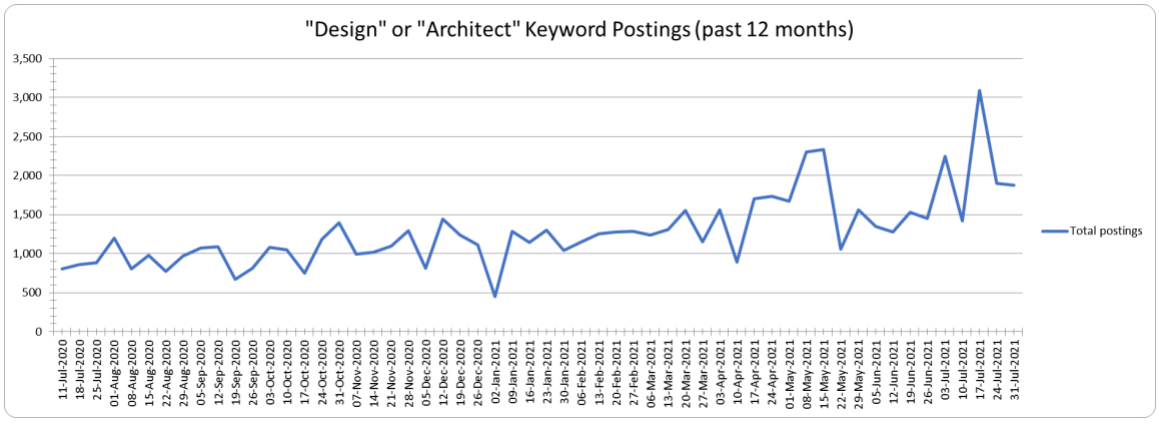
NOC Code	Occupation (Business, finance and administration occupations)	Job Postings
1122	Professional occupations in business management consulting	1,655
1121	Human resources professionals	1,121
1123	Professional occupations in advertising, marketing and public relations	569
1112	Financial and investment analysts	432
1111	Financial auditors and accountants	367
1241	Administrative assistants	294
1211	Supervisors, general office and administrative support workers	292
1223	Human resources and recruitment officers	261
1225	Purchasing agents and officers	255
1523	Production logistics co-ordinators	221
1226	Conference and event planners	175
1411	General office support workers	151
1311	Accounting technicians and bookkeepers	127

NOC Code	Occupation (All other)	Job Postings
4163	Business development officers and marketing researchers and consultants	1,154

6411	Sales and account representatives - wholesale trade (non-technical)	1,151
5241	Graphic designers and illustrators	818
5243	Theatre, fashion, exhibit and other creative designers	551
6421	Retail salespersons	501
6211	Retail sales supervisors	456
6552	Other customer and information services representatives	382
6221	Technical sales specialists - wholesale trade	286
4162	Economists and economic policy researchers and analysts	258
5121	Authors and writers	247
6733	Janitors, caretakers and building superintendents	246
7452	Material handlers	203
5254	Program leaders and instructors in recreation, sport and fitness	180
9619	Other labourers in processing, manufacturing and utilities	171
4166	Education policy researchers, consultants and program officers	167
4011	University professors and lecturers	146
7611	Construction trades helpers and labourers	145
6541	Security guards and related security service occupations	123
6622	Store shelf stockers, clerks and order fillers	122
8612	Landscaping and grounds maintenance labourers	121
9415	Inspectors and testers, mineral and metal processing	118
4423	By-law enforcement and other regulatory officers, not elsewhere classified (n.e.c.)	106
7301	Contractors and supervisors, mechanic trades	99
5242	Interior designers and interior decorators	97
5223	Graphic arts technicians	92

Past 12 Months (July 2020 – August 2021) Postings

The chart below shows the total number of job postings by week for the past 12 months. The average number of postings per week was 1,282. The highest number was 3,094 in the week of July 17, 2021, and the lowest was 454 in the week of January 2, 2021. Overall, during the past 12 months, the number of job postings increased during this period by about 20 jobs per week on average. Increasing by nearly 1,000 jobs from an average of about 750 in July 2020 to 1,750 in July 2021.



The table below shows the total number of job postings and the total share for the past 12 months by industry sector. The total number of postings only includes detailed industries in the top 200 while the share is the average of the quarterly share for all job postings. The difference, like for Manufacturing, is explained by postings in specific industries that don't make the top 200.

NAICS	Industry Sector	Total Postings	Share of All Postings
52	Finance and Insurance	9,392	23.0%
54	Professional, Scientific, and Technical Services	7,485	23.3%
51	Information	3,659	8.5%
31-33	Manufacturing	2,790	11.6%
44-45	Retail Trade	2,487	6.8%
61	Educational Services	2,140	5.2%
62	Health Care and Social Assistance	1,645	4.1%
56	Administrative and Support and Waste Management and Remediation Services	1,061	2.6%
48-49	Transportation and Warehousing	938	2.6%
23	Construction	834	2.9%
92	Public Administration	664	1.7%
81	Other Services (except Public Administration)	502	1.4%
53	Real Estate and Rental and Leasing	430	2.0%
72	Accommodation and Food Services	405	1.3%
42	Wholesale Trade	326	0.7%
71	Arts, Entertainment, and Recreation	280	0.6%
22	Utilities	253	0.8%
21	Mining, Quarrying, and Oil and Gas Extraction	80	0.4%
55	Management of Companies and Enterprises	39	0.2%
11	Agriculture, Forestry, Fishing and Hunting		0.2%

Most “Design” or “Architect” jobs are in Finance and Insurance or Professional, Scientific, and Technical Services with roughly one-in-ten jobs posted in each of Information or Manufacturing. Retail is the next largest sector, but since Covid, jobs in Retail have been lower. The three tables below show the total number of postings for the top industry sectors. Information, Manufacturing and Retail are combined and only show the top 25 industries. The Finance Industry is primarily employment in Banks and Insurance. Professional services are as expected with Architectural and Design Services. The others are more divided among Software/IT, Manufacturing (including semiconductors, pharmaceuticals and measurement devices), and Retail. Although Software and IT jobs have been excluded from the detailed analysis and scope of this

report, they still encompass both design and architectural concepts and language in their job postings and so are included here.

NAICS	Industry (Finance and Insurance)	Job Postings
5221	Depository Credit Intermediation	6,138
5241	Insurance Carriers	1,813
5239	Other Financial Investment Activities	408
5231	Securities and Commodity Contracts Intermediation and Brokerage	345
5222	Nondepository Credit Intermediation	195
5232	Securities and Commodity Exchanges	169
5242	Agencies, Brokerages, and Other Insurance Related Activities	129
5223	Activities Related to Credit Intermediation	128
5251	Insurance and Employee Benefit Funds	51
5259	Other Investment Pools and Funds	13
5211	Monetary Authorities-Central Bank	3

NAICS	Industry (Professional, Scientific, and Technical Services)	Job Postings
5413	Architectural, Engineering, and Related Services	1,898
5416	Management, Scientific, and Technical Consulting Services	1,770
5415	Computer Systems Design and Related Services	1,106
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	792
5417	Scientific Research and Development Services	628
5414	Specialized Design Services	545
5419	Other Professional, Scientific, and Technical Services	465
5418	Advertising, Public Relations, and Related Services	177
5411	Legal Services	104

NAICS	Industry (Information, Manufacturing, Retail Trade)	Job Postings
5112	Software Publishers	987
5171	Wired Telecommunications Carriers	924
3344	Semiconductor and Other Electronic Component Manufacturing	780
4541	Electronic Shopping and Mail-Order Houses	558
5172	Wireless Telecommunications Carriers (except Satellite)	495
3254	Pharmaceutical and Medicine Manufacturing	457
4451	Grocery Stores	384
5191	Other Information Services	383
4481	Clothing Stores	300
4413	Automotive Parts, Accessories, and Tire Stores	298
4411	Automobile Dealers	258
5152	Cable and Other Subscription Programming	217
3363	Motor Vehicle Parts Manufacturing	202
4521	Department Stores	185
5151	Radio and Television Broadcasting	177
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	176
5179	Other Telecommunications	154
3333	Commercial and Service Industry Machinery Manufacturing	130
5182	Data Processing, Hosting, and Related Services	126
4461	Health and Personal Care Stores	120
5111	Newspaper, Periodical, Book, and Directory Publishers	109
4441	Building Material and Supplies Dealers	100
5121	Motion Picture and Video Industries	81
3121	Beverage Manufacturing	80

The table below shows the total number of job postings and the total share for the past 12 months by occupational family group. The total number of postings only includes detailed occupations in the top 200 while the share is the average of the quarterly share for all job postings. There is little difference between the two as the top 200 occupations account for almost all with either keyword.

NOC Family	Family Desc	Total Postings	Share of All Postings
2	Natural and applied sciences and related occupations	28,967	44.4%
0	Management occupations	12,992	21.0%
1	Business, finance and administration occupations	8,222	12.6%
6	Sales and service occupations	4,127	6.7%
4	Occupations in education, law and social, community and government services	4,115	6.3%
5	Occupations in art, culture, recreation and sport	2,374	3.8%
7	Trades, transport and equipment operators and related occupations	1,528	2.6%
9	Occupations in manufacturing and utilities	731	1.4%
3	Health occupations	295	0.7%
8	Natural resources, agriculture and related production occupations	293	0.5%

Most occupations are in Natural and Applied Sciences (nearly half) with Management and Business occupations comprising another third.

The four tables below show the specific occupations within the top three occupation families (Natural and Applied Science, Management, Business) and for all other occupation families. Only the most prevalent occupations (roughly 100+) are shown for each. As with industry, many of the occupations are Software/IT related, but as with industry, the ubiquity of design and/or architecture in many job postings is shown.

NOC Code	Occupation (Natural and applied sciences and related occupations)	Job Postings
2173	Software engineers and designers	9,260
2171	Information systems analysts and consultants	4,619
2147	Computer engineers (except software engineers and designers)	2,215
2175	Web designers and developers	2,102

2172	Database analysts and data administrators	1,753
2283	Information systems testing technicians	1,005
2282	User support technicians	774
2161	Mathematicians, statisticians and actuaries	721
2131	Civil engineers	687
2253	Drafting technologists and technicians	678
2281	Computer network technicians	633
2133	Electrical and electronics engineers	550
2132	Mechanical engineers	495
2151	Architects	384
2148	Other professional engineers, not elsewhere classified (n.e.c.)	358
2252	Industrial designers	339
2174	Computer programmers and interactive media developers	326
2234	Construction estimators	248
2141	Industrial and manufacturing engineers	196
2241	Electrical and electronics engineering technologists and technicians	190
2121	Biologists and related scientists	188
2263	Inspectors in public and environmental health and occupational health and safety	161
2153	Urban and land use planners	135
2233	Industrial engineering and manufacturing technologists and technicians	126
2134	Chemical engineers	114

NOC Code	Occupation (Management occupations)	Job Postings
0125	Other business services managers	3,463
0124	Advertising, marketing and public relations managers	2,842
0213	Computer and information systems managers	1,708
0601	Corporate sales managers	1,249
0711	Construction managers	561

0211	Engineering managers	552
0122	Banking, credit and other investment managers	499
0311	Managers in health care	359
0911	Manufacturing managers	317
0114	Other administrative services managers	316
0421	Administrators - post-secondary education and vocational training	168
0731	Managers in transportation	154
0112	Human resources managers	137
0111	Financial managers	125
0712	Home building and renovation managers	115

NOC Code	Occupation (Business, finance and administration occupations)	Job Postings
1122	Professional occupations in business management consulting	2,308
1121	Human resources professionals	1,403
1123	Professional occupations in advertising, marketing and public relations	733
1111	Financial auditors and accountants	466
1112	Financial and investment analysts	430
1211	Supervisors, general office and administrative support workers	370
1241	Administrative assistants	304
1223	Human resources and recruitment officers	302
1523	Production logistics co-ordinators	288
1225	Purchasing agents and officers	281
1311	Accounting technicians and bookkeepers	191
1411	General office support workers	178
1226	Conference and event planners	130
1252	Health information management occupations	113
1253	Records management technicians	102
1114	Other financial officers	100

NOC Code	Occupation (All other)	Job Postings
4163	Business development officers and marketing researchers and consultants	1,770
6411	Sales and account representatives - wholesale trade (non-technical)	1,192
5241	Graphic designers and illustrators	709
6421	Retail salespersons	551
4216	Other instructors	488
5243	Theatre, fashion, exhibit and other creative designers	487
6211	Retail sales supervisors	432
6552	Other customer and information services representatives	390
4011	University professors and lecturers	364
5121	Authors and writers	363
6221	Technical sales specialists - wholesale trade	318
7452	Material handlers	282
4162	Economists and economic policy researchers and analysts	274
6733	Janitors, caretakers and building superintendents	266
8612	Landscaping and grounds maintenance labourers	215
9619	Other labourers in processing, manufacturing and utilities	212
4166	Education policy researchers, consultants and program officers	168
7611	Construction trades helpers and labourers	159
9415	Inspectors and testers, mineral and metal processing	153
5136	Painters, sculptors and other visual artists	146
6541	Security guards and related security service occupations	141
4165	Health policy researchers, consultants and program officers	135
7301	Contractors and supervisors, mechanic trades	130
4423	By-law enforcement and other regulatory officers, not elsewhere classified (n.e.c.)	121
6341	Hairstylists and barbers	119
5223	Graphic arts technicians	116
7271	Carpenters	115

9417	Machining tool operators	108
6235	Financial sales representatives	108
4033	Educational counsellors	108
5254	Program leaders and instructors in recreation, sport and fitness	103
5122	Editors	101

Comparing 2019 to the Past 12 Months

In comparing 2019 to the past 12 months, the first seven months of 2020 are not included. As seen in the overall monthly charts (at the beginning), job posting activity decreased at the beginning of 2020 but then saw accelerated growth starting in May. The 2019 numbers represent the “steady state” prior to Covid. The impact of Covid is seen as is the recovery (at least for job postings).

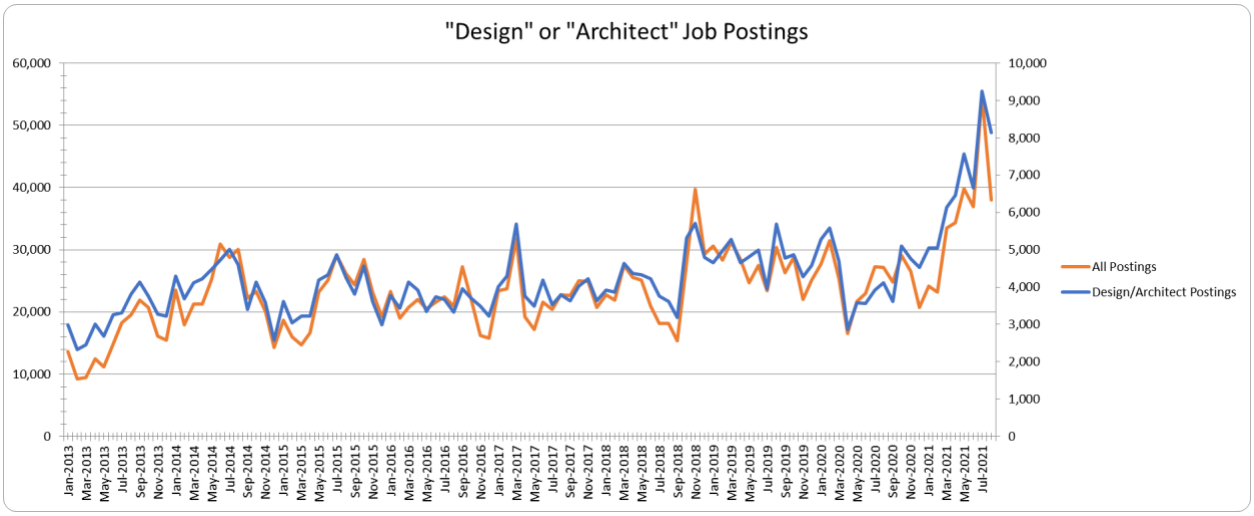
While the most recent 6 (2021) of the past 12 months have seen significant increases in the number of job postings, the early 6 (second half of 2020) was similar to 2019 with only a slight average increase, week to week.

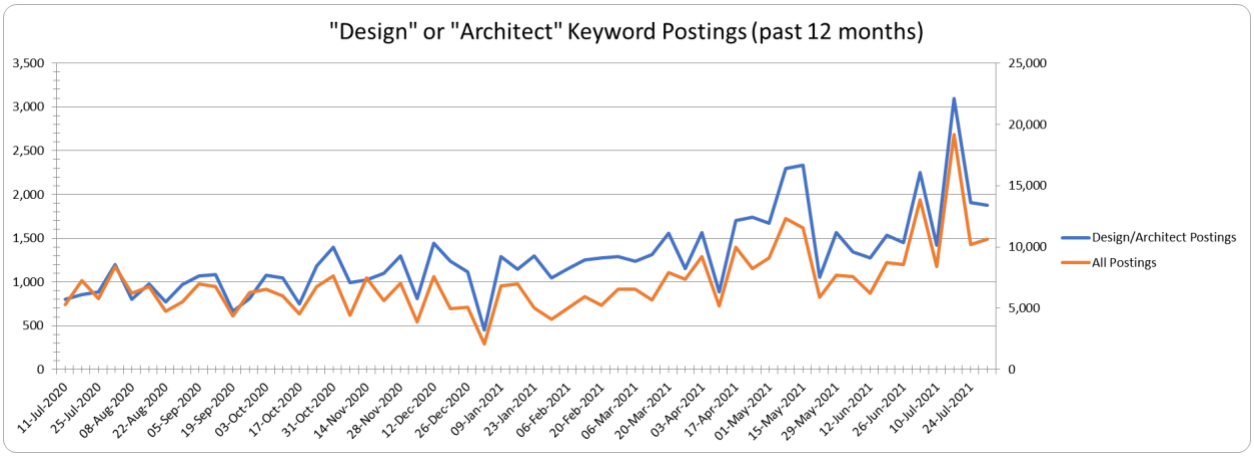
While the number of postings has increased, the share of job postings by industry is generally consistent. Education and Health Care, which combined accounted for only about 1 in 15 Design jobs in 2019, increased to be above 1 in 10 over the past 12 months, but those are sectors which have seen overall increases from Covid and related factors. The specific posting industries with the industry sectors remained stable between the two timeframes.

As with industry, when investigated by occupation, the number of postings has increased, but the share among occupational family groups has remained steady. Education, law and social and government services increased its share from 4.9% in 2019 to 6.3% over the past 12 months. This is in line with the industry increases. The top specific occupations within each occupation family have also remained steady with almost all the top 10 occupations within each family from 2019 remaining in the top 10 for the past 12 months.

Comparing Design/Architect to All Job Postings

Generally similar – although the most recent months show a slightly larger increase for Design/Architect in the most recent months.





Looking at just the past 12 months, you can see how Des/Arch was tracking with all postings but then jumps higher and stays above (relatively speaking since the number of postings is always higher for all).

But, still very similar. So the growth mainly reflects the overall job market rather than something specific to the Design Sector.

Companies by Industry (City of Toronto, D&B Hoovers)

Architectural Services

Company Name	Employees (All Sites)	Employees (Single Site)	Revenue (USD)	NAICS 2017 Description
Total (top 250) – 110 firms	4,554	2,973	795M	
Ingenium Group Inc	1000	1	190M	Architectural Services
HOK Architects Corporation	227	102	39M	Architectural Services
NORR Limited	220	192	41M	Architectural Services
Daniels LR Corporation	200	200	34M	Architectural Services
Adamson Associates	200	0	34M	Architectural Services
Zeidler Partnership Architects	180	95	34M	Architectural Services
Diamond and Schmitt Architects Incorporated	135	135	23M	Architectural Services
CORE Architects Inc	115	115	19M	Architectural Services
Allied Technical Sales Inc	115	115	21M	Architectural Services
KPMB Architects	101	101	17M	Architectural Services
Quadrangle Architects Limited	100	100	17M	Architectural Services

Graphic Design Services

Company Name	Employees (All Sites)	Employees (Single Site)	Revenue (USD)	NAICS 2017 Description
Total (top 250) – 61 firms	1,348	983	254M	
Interpublic Group of Companies Canada, Inc, The	300	5	65M	Graphic Design Services
Pigeon Brands Inc	80	60	15M	Graphic Design Services
Bridgeable Inc	50	50	8.6M	Graphic Design Services
Shikatani Lacroix Design Inc	45	45	9.2M	Graphic Design Services
Jam3 Inc	40	40	6.8M	Graphic Design Services
Meadow Wood Communication Group Inc, The	38	1	7.7M	Graphic Design Services
Works Design Communications Ltd, The	38	38	6.5M	Graphic Design Services
SFP Inc	35	35	7.1M	Graphic Design Services
Central Station Marketing Inc	33	33	6.6M	Graphic Design Services
Mau, Bruce Design Inc	30	30	6.1M	Graphic Design Services
Artshouse Communications Inc	30	30	5.1M	Graphic Design Services

Industrial Design Services

Company Name	Employees (All Sites)	Employees (Single Site)	Revenue (USD)	NAICS 2017 Description
Total (top 250) – 14 firms	265	186	114M	
Watt International Inc	50	1	21M	Industrial Design Services
Qualcomm Atheros Canada Corporation	50	50	32M	Industrial Design Services
InteraXon Inc	30	0	13M	Industrial Design Services
DTAH Architects Limited	20	20	8.5M	Industrial Design Services
Kerr & Company Inc	20	20	6.5M	Industrial Design Services
Kramer Design Associates Ltd	17	17	7.2M	Industrial Design Services
Taylor/Sprules Corporation	15	15	4.8M	Industrial Design Services
Cricket Design Company Inc	10	10	3.2M	Industrial Design Services
Infrastructure Interior Design Inc	10	10	3.2M	Industrial Design Services
Watt International Inc	50	1	21M	Industrial Design Services

Interior Design Services

Company Name	Employees (All Sites)	Employees (Single Site)	Revenue (USD)	NAICS 2017 Description
Total (top 250) – 41 firms	800	688	335M	
Event Rental Group GP Inc	180	180	116M	Interior Design Services
Figure3	55	55	7.5M	Interior Design Services
Straticom Planning Associates Inc	40	40	17M	Interior Design Services
Vretta Inc	35	0	14M	Interior Design Services
2161457 Ontario Inc	30	0	13M	Interior Design Services
Cecconi Simone Inc	30	30	12M	Interior Design Services
Burdifilek Inc	25	25	10M	Interior Design Services
X-Design Inc	21	20	9.1M	Interior Design Services
Smith Grimley Harris Design Partners Inc	20	1	8.5M	Interior Design Services
Gluckstein Design Planning Inc	20	20	8.5M	Interior Design Services

Landscape Architectural Services

Company Name	Employees (All Sites)	Employees (Single Site)	Revenue (USD)	NAICS 2017 Description
Total (top 250) – 18 firms	372	366	47M	
NAK Design Strategies Inc	58	58	6.1M	Landscape Architectural Services
MBTW Group, The	55	55	9.2M	Landscape Architectural Services
Land Design Incorporated	54	54	5.6M	Landscape Architectural Services
Architects Alliance	45	45	4.7M	Landscape Architectural Services
Squires Lawn & Garden Co Ltd	20	20	2.7M	Landscape Architectural Services
Janet Rosenberge And Associates Landscape Architects Inc.	16	16	2.2M	Landscape Architectural Services
Mark Goger Stone Work	16	16	2.1M	Landscape Architectural Services
O'Brien, Brendan Landscaping Inc	12	12	1.6M	Landscape Architectural Services
Ferris + Associates Inc.	12	12	1.6M	Landscape Architectural Services
Earth Inc	12	12	1.6M	Landscape Architectural Services
NAK Design Strategies Inc	58	58	6.1M	Landscape Architectural Services

Other Specialized Design Services

Company Name	Employees (All Sites)	Employees (Single Site)	Revenue (USD)	NAICS 2017 Description
Total (top 250) – 4 firms	68	68	17M	
Seamless Costumes	30	30	4.5M	Other Specialized Design Services
Creative Matters Incorporated	15	15	6.4M	Other Specialized Design Services
1179312 Ontario Inc	13	13	1.9M	Other Specialized Design Services
Caftcad	10	10	4.2M	Other Specialized Design Services