

Contribution of the Architectural Services Industry to Ontario's Economy

Independent Real Estate Intelligence

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Contribution of the Architectural Services Industry to Ontario's Economy

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EXECUTIVE SUMMARY

The architecture industry plays an important role and makes a significant contribution to Ontario's economy. The architectural services footprint in Ontario is much more than the spending and design associated with the architectural services industry and the vertical construction industry, it also encompasses spending in the architectural, engineering and related technologies education & training sector, spending by tourists whose travel to Ontario is significantly motivated by Ontario's architecture, as well as the economic benefits that all of these activities generate.

The architecture industry in Ontario creates and supports thousands of jobs and adds tremendous value to Ontario's gross domestic product (GDP) annually.

Economic activity from the architecture industry's entire footprint in Ontario totaled **\$186.7 billion, accounting for 17% of GDP**. The industry also **contributes \$94.4 billion to Ontario's GDP** and generates **\$57.1 billion in personal income** as well as **\$41.3 billion in business earnings**. In addition, the footprint of the architecture industry supports 776,000 jobs in Ontario.

The architectural services industry's expenditure in providing architectural and related services' contribution to the Ontario economy cannot be overlooked, as it produces **\$4.3 billion in annual economic activity**. These activities add to the economy in various ways by:

- Contributing **\$2.7 billion** to Ontario's GDP;
- Supporting **21,000 jobs each year**, many of which are high-paying jobs in professions and the trades;
- Generating **\$1.8 billion in personal income**, related to labour income and other sources of income; and
- Generating **\$1.1 billion in business earnings** for small, medium and large companies.

Architectural services play a crucial role in supporting Ontario's construction industry. Every year, the construction sector generates about \$168.9 billion in economic activity and contributes about \$83.7 billion to Ontario's GDP. It also supports \$50.3 billion in personal income and \$36.2 billion in business earnings. There are 673,585 jobs that are supported by the construction sector in Ontario.

Ontario's architects also contribute to Ontario's prosperity in varied and significant ways. Building design is at the foundation of the aesthetic appeal, functionality, and environmental sustainability of buildings and the space in between. It is also instrumental in:

- Supporting the housing, workplace and recreational needs of Ontario residents;
- Contributing to the tourism and economic investment attractiveness of Ontario; and
- Influencing the construction and assessment values of our buildings, and therefore, the property taxes collected by governments.

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	i
1 INTRODUCTION	1
1.1 Report Structure.....	2
1.2 Research Methodology.....	2
1.3 Caveat.....	4
2 PROFILE OF ONTARIO’S ARCHITECTURAL INDUSTRY	5
2.1 Economic Benefits Measured by This Report.....	5
2.2 The Architectural Services Industry	6
2.3 Architectural Education and Training Sector.....	10
2.4 Architecture Tourism	10
2.5 Construction	12
3 ESTIMATED ECONOMIC CONTRIBUTIONS	13
3.1 Economic Benefits Associated with the Architectural Footprint in Ontario.....	13
3.2 Economic Benefits of Ontario’s Architectural Services Industry.....	14
3.3 Economic Benefits of Ontario’s Architectural Education, Training & Related Spending	15
3.4 Economic Benefits of Architecture Related Tourism Spending.....	16
3.5 Economic Benefits of Ontario’s Construction Sector.....	17
4 OTHER BENEFITS.....	19
4.1 Good Design of Buildings.....	19
5 CONCLUSION	20
GLOSSARY	
APPENDIX A: Description of the Input-Output Model	

1 INTRODUCTION

The architectural services industry plays a critical role in Ontario's economy, particularly in its rapidly expanding real estate industry. The development and construction of buildings, and subsequently their daily operations, directly support thousands of jobs and add tremendous value to Ontario's gross domestic product (GDP). Although architectural services professionals represent a very small minority of the range of professionals and trades involved in bringing new buildings to life, they play an important and outsized role. Architectural designs are essential to the multi-billion-dollar construction sector. In addition to building up and maintaining Ontario's infrastructure, the construction sector generates about \$83.7 billion per year, or 7.5% of Ontario's GDP. It is also a significant source of jobs, wages and government revenue. Ontario's physical infrastructure provides an important platform for economic growth, prosperity and social well-being.

While millions of Ontarians rely on buildings designed by the architectural industry for housing, commercial accommodation and recreation spaces, its fundamental value to our communities and economy can sometimes be overlooked.

Gaining an understanding of the extent of the economic contribution of an industry such as architectural services is of importance to multiple stakeholders. Policymakers, as well as municipal planners and politicians, can make smarter decisions and have an improved perspective on the industry with more information on its extent. Homeowners, contractors, developers, and private and public investors in Ontario will be better able to see how their decisions affect the industry and the millions of Ontarians who live, work and play in the properties designed by architects.

In 2024, Altus Group was approached by the Ontario Association of Architects (OAA) to a 2017 Study that analysed the economic benefits of the architectural services industry and its contribution to the construction sector.

This report takes a comprehensive approach to assessing the economic contribution of the entire footprint of the architectural services industry in Ontario. This includes an assessment of the impact of spending associated with the provision of architectural services, the architectural education and training sector, tourism induced by architecture, and the vertical (building) construction sector.

The impacts studied include:

- The **size and share of Gross Domestic Product (GDP)**;
- **Jobs created, directly and indirectly**;
- **Jobs and economic activity** induced by the direct and indirect rounds of job creation;
- **Wage and salary income** generated by the direct and indirect jobs created;
- **Business earnings**, generated by the direct and indirect economic activity created; and
- **An array of other benefits to Ontario.**

1.1 Report Structure

The report contains the following four main sections:

- **Section Two** provides an economic profile of Ontario's architectural industry, including recent economic trends, and the economic indicators used in this report;
- **Section Three** estimates the economic benefits generated by the architectural footprint in Ontario, including economic activity, GDP, employment, income, and other benefits;
- **Section Four** provides a synopsis of other benefits of architecture, including the importance of good building design, architecture's contribution to the provision of residential and commercial accommodation for Ontario's residents and visitors; and
- **Section Five** is the conclusion.

In addition, appendices are provided with detailed tables and information on the methodology used in the report.

1.2 Research Methodology

The data in this report are derived from several sources, as listed below:

- **Statistics Canada:** Data on the operating revenue and expenses of architectural services, expenditures of students enrolled in architectural studies, investment in residential and non-residential building construction, the input-output model, and activities related

to real estate management are sourced from Canada's national statistical agency, Statistics Canada;

- **Altus Group:** Site development and management fees estimates were derived from Altus Group Cost Consulting information. We estimated site development expenditures at about 11% of new residential construction costs, and management fees at about 3% of investment in residential apartments and investment in commercial and institutional buildings. Information also came from Altus Group's in-house databases for sale transactions of commercial real estate properties in Canada; and
- **Other Secondary Sources:** The analysis also uses data from Canada Mortgage and Housing Corporation (CMHC), The Ontario Association of Architects (OAA), and the Ontario Ministry of Tourism's "Travel Activities and Motivations" survey.

The methodology employed in this study has two major components:

- 1. Estimations of Direct Activity:** The estimates of economic activity within the various components of the industry draw heavily on data from Statistics Canada and other sources as described above. Where direct data are not available, estimates are calculated, based on appropriate indirect sources of information; and
- 2. Analysis of Spinoff Activity:** In addition to the direct activity (estimated in 1. above), it is important to consider two more rounds of spinoff economic activity, including the indirect (suppliers of goods and services to the architectural services industry and the construction sector) and induced (expenditure of income earned by the architectural services industry) rounds of activity. The analysis uses economic multipliers, which are derived from the Statistics Canada's Input-Output Model of the Ontario Economy. These multipliers are applied to the direct activity (estimated in 1. above) to determine total economic activity. The input-output approach is the most appropriate approach to use in undertaking a study such as this as it very carefully maps and tracks the detailed interrelatedness between all sectors of the economy. In this way, the model is able to track the impact of spending on the provision of architectural services, construction and building operations back to all aspects of the value chain.

A more detailed discussion of the Statistics Canada Input-Output model can be found in Appendix A.

1.3 Caveat

This analysis has been prepared on the basis of the information and assumptions set forth in the text. However, it is not possible fully to document all factors or account for all the changes that may occur in the future. This report relies on information from a variety of secondary sources. While every effort is made to ensure the accuracy of the data, Altus Group cannot guarantee the complete accuracy of the information used in this report from these secondary sources. This report has been prepared solely for the purposes outlined herein and is not to be relied upon or used for any other purposes or by any other party without the prior written authorization of Altus Group Limited.

2 PROFILE OF ONTARIO'S ARCHITECTURAL INDUSTRY

This section provides an overview of economic indicators used in this report to illustrate recent trends in the architecture industry and measure its contribution to the Ontario economy i.e. industry revenues, employment etc. It also explains how architectural services and the overall footprint of architecture-related spending in Ontario make a significant contribution to the economy and social well-being of Ontario and its residents.

2.1 Economic Benefits Measured by This Report

This report analyzes economic benefits of the architectural industry in Ontario as well as its broader footprint, which is comprised of architecture building design and other related services, education and training, tourism, and construction. The various benefits are generated by four major components of the industry:

- **The architectural services provided by the members of the OAA are essential components of construction activity:** The planning, design, site development and construction and/or renovation of various buildings contribute directly to the Ontario economy and generate substantial “spinoff” benefits. The operating expenditure of the architecture industry also has a multiplier effect on provincial economic activity: operating expenditure, including salaries, wages, commissions and benefits, as well as professional, administrative and rental, leasing and accommodation expenditure, generate notable economic benefits annually;
- **The architectural education and training sector;**
- **Tourism spending** induced by visitors to Ontario that are attracted by the province’s architecture generates billions of dollars in economic activity and related economic and social benefits; and
- **Investment spending of the construction sector** generates a significant contribution to Ontario’s economy annually.

To quantify the economic contribution of the architecture industry and construction sector, this report focuses on several economic parameters, including:

- **Economic Activity:** The volume of goods and services consumed in the economy that are related to the provision of architectural services such as sub-contracting professional services to other design professionals and both residential and non-residential construction investment;
- **Contribution to GDP:** The value-added component of the economic activities, quantified by the contribution of the activities to Ontario's Gross Domestic Product (GDP);
- **Jobs:** The number of jobs generated from the activities of architectural services and construction, including both direct and spinoff jobs;
- **Income:** The volume of income generated through these various economic activities, including: wages, other labour earnings, mixed-income, and corporate profits; and
- **Government Tax Revenues:** Federal and provincial tax revenues, primarily personal and corporate income taxes, and other payroll deductions.

2.2 The Architectural Services Industry

The architecture industry plays an important role in Ontario's economy. The design and construction of residential, industrial, commercial, institutional and government buildings and their daily operations directly support thousands of jobs each year. The construction sector also provides housing and workplaces to millions of Ontarians, while architecture students in Ontario and the educational infrastructure established for their training make a noteworthy economic contribution.

Architectural companies, architects and other professionals involved in the provision of architectural services generate significant economic activity in Ontario as they compensate employees; pay utilities, office expenses, and rental and leasing fees; advertise and sub-contract services to other construction design service providers such as landscape architects, engineers, and interior designers.

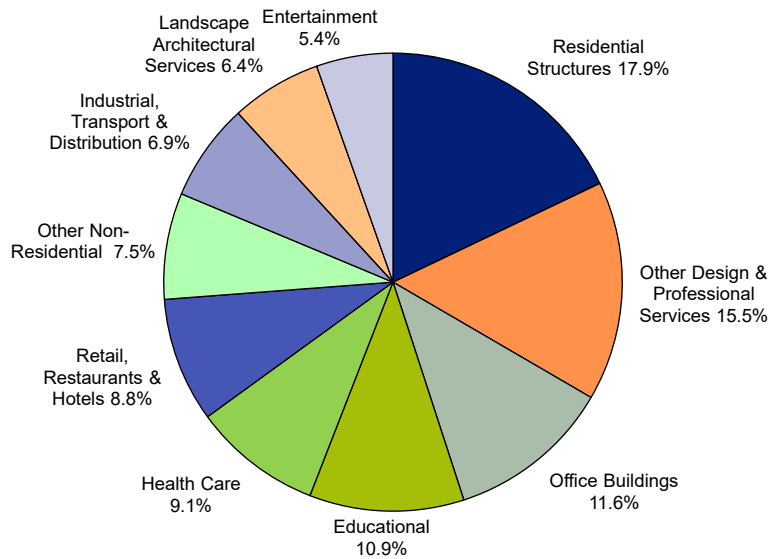
2.2.1 Distribution of Operating Revenue by Type for Architectural & Landscape Architectural Services

The architecture industry generated \$2.8 billion in revenues in 2023, up from \$1.3 billion a decade ago.

Figure 1 shows the distribution of operating revenue by type of service, earned from the provision of architectural services, landscape architectural services, and other design & professional services¹ (for Canada).

Figure 1

Distribution of Operating Revenue by Type for the Architectural & Landscape Architectural Services Industries, 2023 (Canada)



Source: Altus Group Economic Consulting based on data from Statistics Canada

The analysis is based on data from Statistics Canada’s Annual Survey of Service Industries and shows the following trends:

- The architectural services industry generated 75.6% of the total industry operating revenue of architectural services and landscape architectural services in 2023. Landscape architects (6.7%) and other design and professional services (17.5%) accounted for the other 24.4% of industry operating revenue.

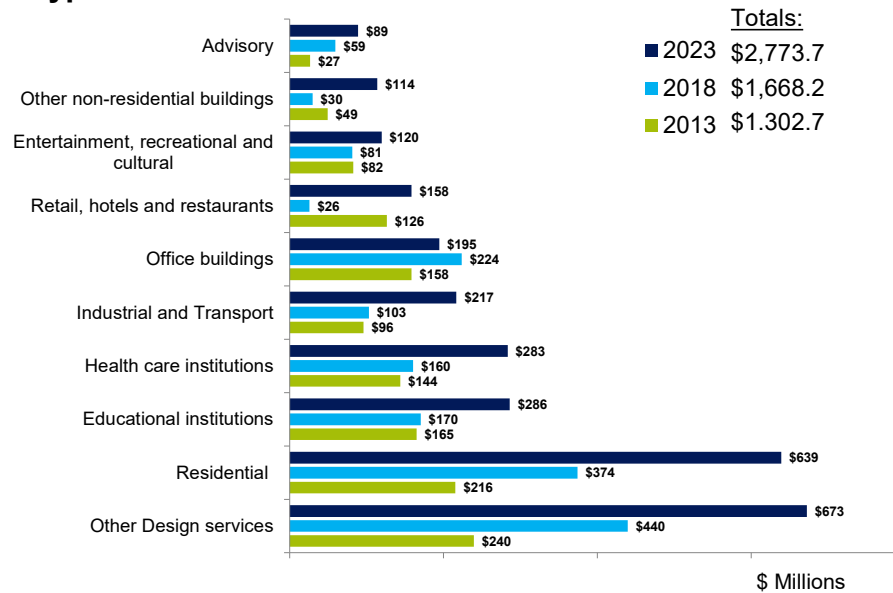
¹ Services include urban planning, project site master planning, interior design, engineering and other services.

- The majority of the operating revenue earned from the provision of architectural services (about 48.1% of total industry operating revenue) is from the design of non-residential structures; and
- The largest sources of operating revenue from non-residential structures are the design of office buildings (7%), education institutions (10.3%), healthcare institutions (10.3%), and retail, restaurant and hotel establishments (5.7%).

Figure 2 shows the operating revenue of architectural and landscape architectural services by type of service in 2013, 2018 and 2023. It provides a comparative illustration of the growth in operating revenues over a ten and five-year period.

Figure 2

Ontario Architectural Services Operating Revenue by Type of Service



Source: Altus Group Economic Consulting based on data from Statistics Canada

- In 2023, the architectural and landscape architectural services industry earned \$2.8 billion in operating revenue, of which 75% was generated by architectural services.
- Operating revenue of the architectural and landscape architectural services industry increased by 13.3% per year between 2018 and 2023, compared to 5.6% per year in the prior five years.
- Over the five-year period, operating revenue grew by a total of 66%.

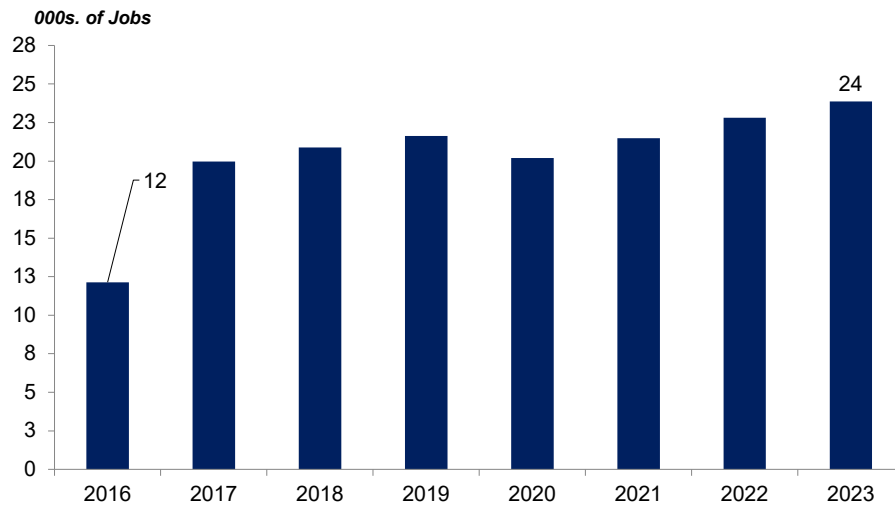
- All types of services, with the exception of office building design grew in the last five years, which speaks to the weakness in office markets across Canada following the pandemic.

2.2.2 Jobs Profile of Architectural, Engineering and Related Services Industry in 2023

- Architects are categorized by the Labour Force Survey as part of a broader group of professionals including engineers and related services, a category which accounted for some 85,000 jobs in Ontario in 2023. Roughly 13,000 of those jobs were created since 2018. Between 2018 and 2023 employment grew by an annual average of 3.5%, compared to 3.0% per year in the prior five years. In comparison, during the same period, job growth in Ontario was a 1.4% per year between 2018 and 2023 and 1.8% in the prior five years;
- Architectural is estimated to account for 28% of these jobs in 2023, up from 20% in 2016. It is estimated that there are 24,000 jobs in fields related to architecture in Ontario in 2023, up from 12,000 in 2016.

Figure 3

Employment – Architectural Services, 2001 to 2023



*Estimated using Census of Canada and other occasional data on employment by minor occupation, 2016, 2017 and 2021
Source: Altus Group Economic Consulting based on Statistics Canada

- As of September 2024, the average weekly earnings for architects and engineers in Ontario was \$1,802, 40% higher than the Ontario overall average of \$1,280.
- Average weekly earnings are up 30% from the time of the last report.

2.2.3 Number of Architectural Services Firms and Firm Size Distribution

There are over 4,000 registered firms in architectural (3,085) and landscape architectural services (978). The majority of these firms are self-employed (do not have employees) or small businesses. More than half are self-employed (2,502). The majority with employees (1,237) of Ontario's architectural services firms are small firms with 1-10 employees. There are only 15 medium and large-sized firms with over 100 employees.

2.3 Architectural Education and Training Sector

There were 121,095 students enrolled in architecture, engineering, and related technologies programs at Ontario's colleges and universities in the 2022/2023 school year, up from 94,071 in 2016. Almost 60% of those students were university students and almost 40% were college students

The tuition fees of architecture students account for about 30% of related post-secondary revenue and expenditure. With per-student architecture and related technologies tuition fees averaging roughly \$8,700 a year, it is estimated that some \$29,000 per student is spent by the architecture post-secondary education sector per year.

Gross post-secondary spending in Ontario to educate and train students of architecture, engineering, and related technologies is about \$3.5 billion.

Another \$1.9 billion is spent on the non-tuition expenses of university and college students, including accommodation, food, books and other supplies².

Altus Group estimates that every year, almost \$5.4 billion is spent in the post-secondary education sector on the educational, training, and related living costs of architecture, engineering, and related technologies students.

2.4 Architecture Tourism

In 2023, Ontario hosted 124 million Canadian and foreign tourists, who spent a total of \$113 billion dollars. It is estimated that roughly \$2.0 billion of that

² University students in Ontario spend up to \$16,000 a year on non-tuition expenses.

spending was driven by tourists primarily motivated to visit Ontario for its historic sites, museums and architecture

The architecture of buildings is one of the attractions of arts and culture tourists. It is also an important feature of all buildings involved in the tourism infrastructure of most destinations. These buildings include airports, hotels, museums and art galleries, heritage buildings, entertainment venues, restaurants, and of course, iconic buildings and landmarks.

Arts and culture tourists are visitors who are motivated to travel in order to visit historic sites; patronise museums, art galleries, and art performances; and attend festivals, fairs and attractions.

Statistic Canada's 2007 "Travel Activities and Motivations" survey³ provides more details about the trip motivations and demographics of arts and culture tourists. According to a 2012 Ontario Arts and Culture Tourism Profile, North American arts and culture tourists who travelled to Ontario in 2010 were "likely drawn from the pool of all North American tourists who have been to Ontario over a two-year span and were motivated to take a trip by an arts or cultural activity".

Of the North American overnight trips to Ontario, 89% have participated in an arts or cultural activity as one of their many travel activities on trips taken over a two-year period. Visiting historic sites or strolling in cities to see architecture was a significant motivator for 61% of North Americans who have visited Ontario. However, for almost one-fifth of North Americans with Ontario travel experience, visiting historic sites and/or strolling through cities to see architecture was the main reason for travelling to Ontario. The single largest motivator to visit Ontario was a desire to visit historic sites and see architecture.

A similar

³ This survey examined out-of-town, overnight travel behaviour of one or more nights over the 2005-2007 period and provided detailed information on Travelers' activities, travel motivators, places visited, type of accommodation used, impressions of Canada, its provinces and territories, demographics and media consumption patterns. Mexico is excluded from the North American classification.

2.5 Construction

The vast majority of buildings built in Ontario are designed by architects and in many cases other architectural services critical to the development processes. Architects and the services that they provide are vital to Ontario's construction industry. Ontario's construction sector is an important component of Ontario's economy, and a range of economic benefits are generated from Ontario's vertical construction industry (i.e. building construction). Construction spending includes the residential and non-residential construction investment, site development expenditures, and management fees.

3 ESTIMATED ECONOMIC CONTRIBUTIONS

This section presents the economic benefits arising from the contribution of architects to the Ontario economy, including the benefit of spending arising from the provision of architectural services, sub-contractors, professionals, etc.

The non-tax benefits are calculated using multipliers derived from Statistics Canada's Interprovincial Input-Output Model of the Canadian Economy, and it is recognized that there are three "rounds" of activity:

- The direct round (actual economic activities and actual jobs within the multi-family rental sector); and
- Two spinoff rounds: the indirect (providers of goods and services to the sector) and the induced (economic activity and jobs related to the spending of incomes earned by workers in the sector).

In this section, economic benefits are generally expressed as direct impacts (the direct round) and "total impacts" – all three rounds.

A detailed description of the input-output model methodology is provided in Appendix A.

3.1 Economic Benefits Associated with the Architectural Footprint in Ontario

The architectural services footprint in Ontario is much more than the spending and design associated with the architectural services industry and the vertical construction industry; it also encompasses spending in the architectural, engineering and related technologies education & training sector, spending by tourists whose travel to Ontario is significantly motivated by Ontario's architecture, as well as the economic benefits that all of these activities generate.

The architectural footprint in Ontario results in billions of dollars of spending and economic activity that generates many more billions of dollars of Gross Domestic Product (GDP), personal income, and business earnings, as well as hundreds of thousands of direct, indirect and induced jobs. These significant economic benefits to the Ontario economy are built up from the spending and economic impact of:

- Architectural services;
- Architectural education and training sector;

- Tourism induced by architecture; and
- Vertical (i.e. building) construction.

Ontario's architectural footprint delivers significant economic benefits annually by generating:

- About **756,224 person-years** of direct, indirect and induced employment;
- About **\$186.7 billion** in direct, indirect and induced economic activity;
- About **\$94.4 billion** in net contribution to GDP, or 8.0% of Ontario GDP;
- About **\$57.2 billion** in personal income tied to the creation of direct, indirect and induced jobs; and
- Some **\$41.3 billion** in operating business earnings (Economic Benefits of Ontario's Architectural Services).

Direct jobs and economic activity result from spending associated with architectural services; architectural education, training and related accommodations and amenities; tourism induced by architecture; and the vertical construction industry.

Figure 4

	Estimated Economic Benefits of the Architecture Industry in Ontario						
	Overall Architectural Footprint	Components of Architectural Footprint					
	Architectural Services	Post-secondary spending	Non-Tuition Student Spending	Education & Training	Tourism	Construction	
Economic Activity (\$millions)	186,697	4,312	5,320	3,656	8,976	4,526	168,883
Gross Domestic Product (\$millions)	94,438	2,654	3,947	2,114	6,061	2,007	83,717
Number of Jobs*	776,188	20,904	30,872	26,978	57,849	23,849	673,585
Wages (\$millions)	57,152	1,821	2,300	1,356	3,656	1,388	50,287
Business Earnings (\$millions)	41,312	1,146	1,960	977	2,936	966	36,264

* Person-years of employment
Source: Altus Group Economic Consulting based on Input / Output Model and Other Sources

3.2 Economic Benefits of Ontario's Architectural Services Industry

Ontario's architectural services industry designs and contributes to the construction of residential, industrial, commercial, institutional and government buildings. These daily operational activities directly support thousands of jobs each year.

Architectural companies, architects and other professionals involved in the provision of architectural services generate significant economic activity in Ontario as they compensate employees; pay utilities, office expenses, and rental and leasing; advertise and sub-contract services to other construction design service providers, such as landscape architects, engineers, and interior designers.

The operating expenditures of the architectural services industry deliver annual economic benefits by generating:

- About **20,900 person-years** of direct, indirect and induced employment;
- About **\$4.3 billion** in direct, indirect and induced economic activity;
- About **\$2.7 billion** in net contribution to GDP;
- About **\$1.8 billion** in personal income tied to the creation of direct, indirect and induced jobs; and
- Some **\$1.1 billion** in operating business earnings (Figure 5).

Direct jobs and economic activity also results from operating expenditures incurred in the provision of architectural services.

Figure 5

Estimated Economic Benefits of Architecture Industry in Ontario

	Direct	Indirect	Induced	Total
Economic Activity (\$millions)	2,353	920	1,040	4,312
Gross Domestic Product (\$millions)	1,517	520	616	2,654
Number of Jobs*	12,235	4,174	4,496	20,904
Wages (\$millions)	1,200	336	285	1,821
Business Earnings (\$millions)	351	179	616	1,146

* Person-years of employment

Source: Altus Group Economic Consulting based on Input / Output Model and Other Sources

3.3 Economic Benefits of Ontario's Architectural Education, Training & Related Spending

Ontario's education and training infrastructure for the architectural, engineering and related technology services industries is responsible for billions of dollars of spending and economic activity and thousands of jobs. The over 121,000 architecture, engineering, and related technologies students enrolled in Ontario's colleges and universities are supported by an education

and training ecosystems that generates about \$5.4 billion in annual spending, or \$45,000 per student. Spending includes expenditure on tuition, academic and research grants, public and private sector investments, student accommodation, meals, supplies, amenities and other living expenses of students.

Spending in Ontario's architectural education and training sector delivers annual economic benefits by generating:

- About **57,849 person-years** of direct, indirect and induced employment;
- About **\$9.0 billion** in direct, indirect and induced economic activity;
- About **\$6.0 billion** in net contribution to GDP;
- About **\$3.7 billion** in personal income tied to the creation of direct, indirect and induced jobs; and
- Some **\$2.9 billion** in operating business earnings (Figure 6).

Figure 6

Estimated Economic Benefits of Architectural Education, Training & Related Spending in Ontario

	Direct	Indirect	Induced	Total
Economic Activity (\$millions)	5,449	1,519	2,008	8,976
Gross Domestic Product (\$millions)	4,030	839	1,193	6,061
Number of Jobs*	42,260	6,902	8,688	57,849
Wages (\$millions)	2,609	497	550	3,656
Business Earnings (\$millions)	1,418	326	1,193	2,936

* Person-years of employment

Source: Altus Group Economic Consulting based on Input / Output Model and Other Sources

3.4 Economic Benefits of Architecture Related Tourism Spending

The single largest motivator to visit Ontario among many tourists is a desire to visit historic sites and see architecture. The architecture of Ontario's built environment is a magnet for tourists, especially those that are attracted to the unique features of the province, its cities and iconic structures and heritage buildings. Altus Group estimates that North American travellers to Ontario who were primarily motivated by Ontario's historic sites, museums and architecture spent around \$2.0 billion across Ontario. This spending by

tourists that are drawn to Ontario mainly by its architecture delivers annual economic benefits by generating:

- About **23,849 person-years** of direct, indirect and induced employment;
- About **\$4.5 billion** in direct, indirect and induced economic activity;
- About **\$2.0 billion** in net contribution to GDP;
- About **\$1.4 million** in personal income tied to the creation of direct, indirect and induced jobs; and
- Some **\$3.2 billion** in operating business earnings (Figure 7).

Direct jobs and economic activity result from spending by tourists whose travel to Ontario is significantly motivated by its architecture.

Figure 7

Estimated Economic Benefits of Tourism Spending Induced by Architecture in Ontario

	<u>Direct</u>	<u>Indirect</u>	<u>Induced</u>	<u>Total</u>
Economic Activity (\$millions)	2,033	459	2,033	4,526
Gross Domestic Product (\$millions)	1,095	453	459	2,007
Number of Jobs*	17,006	3,497	3,345	23,849
Wages (\$millions)	916	259	212	1,388
Business Earnings (\$millions)	34	3,173	34	3,241

* Person-years of employment

Source: Altus Group Economic Consulting based on Input / Output Model and Other Sources

3.5 Economic Benefits of Ontario's Construction Sector

The vast majority of buildings built in Ontario are designed by architects and in many cases other architectural services critical to the development processes. Architects and the services that they provide are vital to Ontario's construction industry. Ontario's construction sector is an important component of Ontario's economy, and a range of economic benefits are generated from Ontario's vertical construction industry (i.e. building construction).

Below are estimates of the jobs, economic activity, personal income, and business earning that are sustained or generated annually as a result of the residential and non-residential construction activity, site development expenditures, and management fees:

- Approximately **673,585 person-years** of direct, indirect and induced employment;
- About **\$168.9 billion** in direct, indirect and induced economic activity;
- Some **\$83.7 billion** in total net contribution to GDP;
- About **\$50.3 billion** in personal income from the creation of direct, indirect and induced jobs; and
- Some **\$36.2 billion** in total operating business earnings (Figure 8).

Figure 8

Estimated Economic Benefits of Ontario's Construction Sector and Development Activities

	Direct	Indirect	Induced	Total
Economic Activity (\$millions)	95,629	46,787	26,466	168,883
Gross Domestic Product (\$millions)	44,695	23,335	15,687	83,717
Number of Jobs*	349,204	200,546	123,835	673,585
Wages (\$millions)	28,385	14,668	7,234	50,287
Business Earnings (\$millions)	11,910	8,667	15,687	36,264
* Person-years of employment				
Source: Altus Group Economic Consulting based on Input / Output Model and Other Sources				

4 OTHER BENEFITS

4.1 Good Design of Buildings

There are many potential benefits of well-designed buildings as a result of a design from a qualified architect, including:

- The improvement of indoor environmental quality (IEQ) can reduce respiratory illnesses, allergies and asthma (8% to 25% decrease in symptoms), and reduce sick building syndrome symptoms (20% to 50% decrease in symptoms) for the patrons of the building.⁴
- Good building design can reduce future operating and maintenance costs.⁵
- The life expectancy of a building can be increased with good design and regular maintenance.⁶
- Good building design can improve safety and reduce crime.⁷

⁴ Center for Environmental Design Research at the College of Environmental Design, *Benefits of Improving Occupant Comfort and Well-being in Buildings*, Berkeley USA

⁵ Government of Western Australia, *Good Design Guide*, February 2013

⁶ Journal of Building Appraisal, *Implications of Design Deficiency on Building Maintenance at Post-Occupational Stage*, August 2007

⁷ Commission for Architecture & the Built Environment, *The Value of Good Design*, London UK, 2002

5 CONCLUSION

The architecture industry plays an important role and makes a significant contribution to Ontario's economy. The architectural services footprint in Ontario is much more than the spending and design associated with the architectural services industry and the vertical construction industry; it also encompasses spending in the architectural, engineering and related technologies education & training sector, spending by tourists whose travel to Ontario is significantly motivated by Ontario's architecture, as well as the economic benefits that all of these activities generate.

The architecture industry in Ontario creates and supports thousands of jobs and adds tremendous value to Ontario's gross domestic product (GDP) annually.

Economic activity from the architecture industry's entire footprint in Ontario totaled \$186.7 billion, or 17% of GDP. The industry also contributes \$94.4 billion to Ontario's GDP, generates \$57.1 billion in personal income, and generates \$41.3 billion in business earnings. In addition, the footprint of the architectural industry supports nearly one million jobs in Ontario.

Architectural services play a crucial role in supporting Ontario's construction industry. Every year, the construction sector generates about \$168.9 billion in economic activity and contributes about \$83.7 billion to Ontario's GDP. It also supports \$50.3 billion in personal income and \$36.2 billion in business earnings. There are 673,585 jobs that are supported by the construction sector in Ontario.

Ontario's architects also contribute to Ontario's prosperity in varied and significant ways. Building design is at the foundation of the aesthetic appeal, functionality, and environmental sustainability of buildings and the space in between. It is also instrumental in supporting the housing, workplace and recreational needs of Ontario residents; contributing to the tourism and economic investment attractiveness of Ontario, influencing the construction and assessment values of our buildings, and therefore the property taxes collected by governments.

Glossary

Capital Investment in Vertical Construction (buildings) — A term that represents investment in the erection, assembly, and completion of free-standing and static buildings in the residential, industrial, commercial and/or institutional sectors, generally on a permanent foundation, bedding or location. It includes both new construction and renovation:

- **New Construction Investment** — spending that includes capital investment in construction of new buildings and major additions to existing buildings.
- **Capital Improvement** — spending that includes capital investment related to the alteration and improvements of existing buildings.

Economic Impact — the generation of new spending and the creation of new jobs within a jurisdiction as a result of new economic activity in a specific sector. Generally, there are three “rounds” of economic impact:

- **Direct Impact** — effects of economic activity directly related to the subject sector.
- **Indirect Impact** — effects are related to economic activity in industries providing goods and services to the companies directly involved in the particular sector.
- **Induced Impact** — effects are generated from the expenditure of incomes generated in the direct and indirect rounds.

Note: collectively the ‘indirect’ and ‘induced’ rounds are referred to as economic “**spinoff**” activities.

Economic Parameters — a set of statistical measurements that can illustrate a sector’s impacts on the economy. In this report, they include:

- **Economic Activity** –the volume of goods and services consumed in the economy related to the development, construction and ongoing operation of the office real estate sector.
- **Contribution to GDP** - the value-added component of the economic activities, a measure of the contribution of the activities to Canada’s GDP.
- **Jobs** - in this report, the term “jobs” is close to but not the same as “person-years of employment.” The estimate of jobs provides the

number of workers that would be employed for a full-year; however, the estimate of person-years of employment includes both full and permanent part-time jobs.

- **Income** - the volume of income generated through various economic activities, with income including wages, other labour earnings, mixed-income, and corporate profits.
- **Government Tax Revenues** - federal and provincial tax revenues, primarily personal and corporate income taxes, and other payroll deductions such as Canadian Pension Plan contribution and Employment Insurance premium.

Full-Time Equivalent Jobs — represents the number of workers that would be employed for a full-year. Full-time equivalent jobs includes both full and permanent part-time jobs at the ratios appropriate for each of the industries involved. For example, two part-time jobs of twenty hours per week would be equivalent to one full-time equivalent job at forty hours per week.

Gross Domestic Product (GDP) — the total unduplicated value of the goods and services produced in the economic territory of a country or region during a given period.

Mixed-Income — this type of income consists of earnings of proprietors of unincorporated businesses (sole proprietorships and partnerships) such as retailers and consultants, earnings of independent professional practitioners such as lawyers and dentists, net (after expenses) rental income of owners of real property and the accrued net farm income of farm operators.

Multiplier — an input-output multiplier is a quantitative measure created by a particular input-output based economic model. It is an analytical answer to a hypothetical question about how a certain expenditure is expected to impact the economy.

Ongoing Operations of Properties - in this report, this term includes two categories of economic activity: brokerages fees and building management fees.

Sector – a grouping of industries or firms by similar characteristics of operations (e.g., retail trade sector, manufacturing sector, construction sector, mining sector, service sector, government sector).

Appendix A

Description of the Input-Output Model

Estimates for the economic impact of the current operations of the architectural sector are derived through the use of Statistics Canada's Input-Output Model of the Canadian Economy. The current model relates to the year 2021.

An input-output model is used to estimate the impacts of various types of economic activities. It is an accounting framework of an economy's production system. It shows the interconnections that exist between the various sectors of the economy when goods and services are produced. Using an input-output model, it is possible to determine which goods and services are required to achieve a certain production level in a particular industry – or the economy as whole.

There are generally said to be **three “rounds”** of impact:

- **Direct round** – jobs and economic activity directly related to the industry;
- **Indirect round** – jobs and economic activity connected to the supply chain supporting the industry; and
- **Induced round** – jobs and economic activity stimulated by the first two rounds.

Direct and Indirect Impacts

The model takes expenditure on a given economic activity and translates it into the impacts on various industries – and ultimately, the amount of income, economic output, GDP and jobs supported.

A key component of an input-output model is the set of “input structures” for each economic activity covered by the model. An input structure literally splits the original expenditure among all the different inputs that are used in that economic activity. For example, building construction involves expenditures within a variety of industries – wood, steel, concrete, various service industries, etc. Each of these industries has an input structure of its own that involves inputs from a variety of other industries plus labour and owners of firms in that industry.

The input structure used to account for the impact on various sectors takes into consideration the origin of the various inputs. The model, therefore, is able to segment the location of the impacts that will take place somewhere in

the province and those that take place elsewhere in Canada. Imported materials and services do not provide an economic impact with respect to their point of origin, but will contribute to the economy in terms of components of their value added that accrue on Canadian soil – such as transportation and wholesale and retail margins.

An input-output model includes a full array of input structures that have been estimated for all industries in the economy. Use of the model in this analysis involves estimating the impacts of new building construction. To generate these estimates, capital investment in construction is applied to the model.

Definition of Jobs Impact

Some of the findings are presented in terms of “jobs” generated. This is the term used by the Input-Output Division of Statistics Canada in its estimates of employment generated. The estimate of jobs provides the number of workers that would be employed for a full-year; however, the estimate includes both full and permanent part-time jobs at the ratios appropriate for each of the industries involved.

Induced Impact

Traditionally, there is thought to be an additional round of economic impact from an activity, referred to as an induced impact. This is the so-called Keynesian multiplier effect resulting from the expenditure of incomes generated in the first two rounds. The wages, salaries and other income that accrue to households as a result of the direct and indirect rounds will, in turn, generate economic activity as these households spend their incomes in the general economy.

Change in Employment Estimates 2018 versus 2023

Statistics Canada updates the level of its multipliers every 2 to 3 years. The 2021 update resulted in a significant revision to the structure of the Canadian economy. The result has been a significant reduction in the number of jobs created for every \$1 spent in the economy between 2013 and 2021. This has in part reduced the estimated impact of the architecture industry on jobs.

The impact of the change in the multiplier is seen in Figure A1. The figure shows that:

- Adjusting for the structure of the economy, the architecture sector created an additional 242,254 – 344,165 jobs since 2018.

Figure A1

Effect of the Multiplier on Change in Jobs Supported by the Architecture Sector, Ontario, 2018 and 2024 Study

	<u>2018</u>	<u>2024</u>	<u>Change</u>
		Jobs	
At 2013 Multipliers	956,525	1,300,690	344,165
At 2024 Multipliers	533,934	776,188	242,254

* Person-years of employment

Source: Altus Group Economic Consulting based on Input / Output Model and Other Sources