BUILDING EDMONTON

UNLEASHING INNOVATION IN CONSTRUCTION & ENGINEERING:

Our Next Industrial Cluster

SPRING 2025

EDMONTON CHAMBER OF COMMERCE

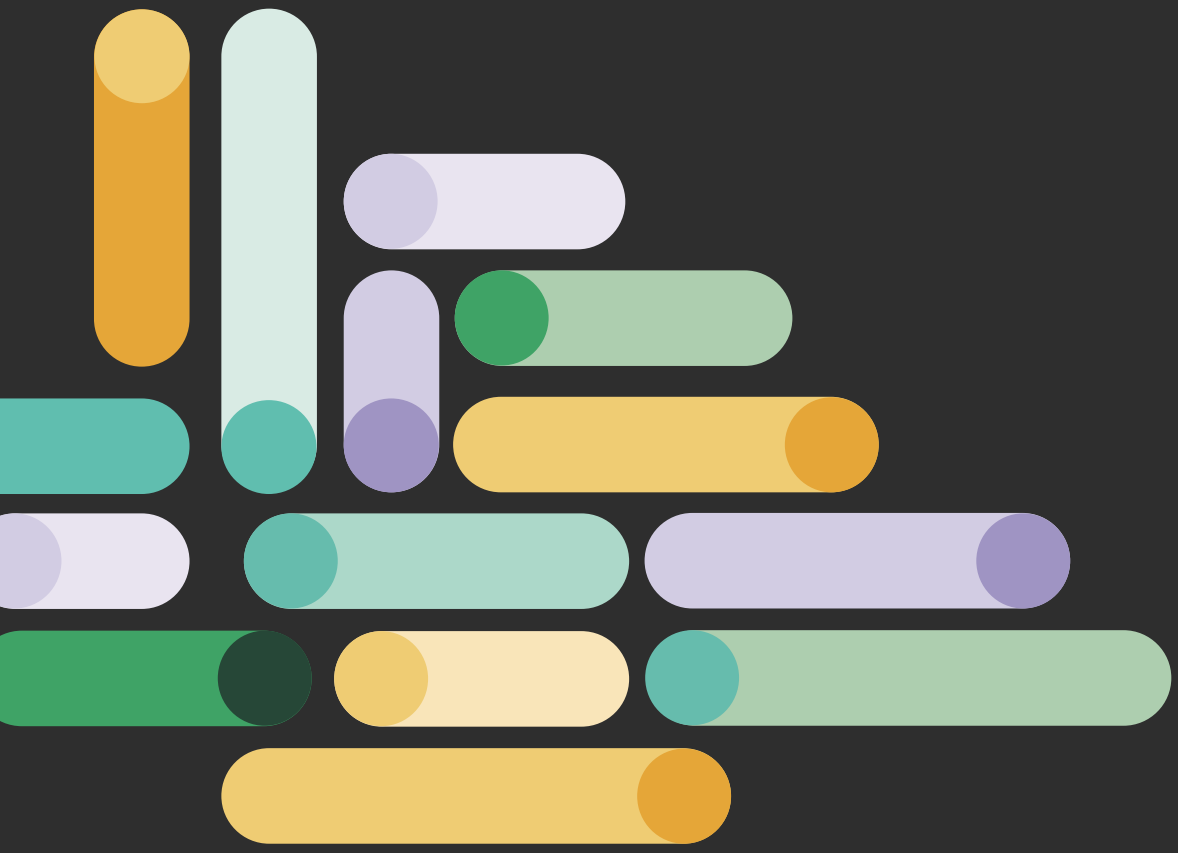


TABLE OF CONTENTS

1.0

UNLEASHING EDMONTON'S ADVANTAGE

To become Canada's fastest-growing and most resilient economy, Edmonton must expand its traditional economic base while fostering new sectors that generate high-paying jobs and competitive advantages. Our greatest potential exists in those sectors where Edmonton already holds a strong global presence. Our region boasts a number of major construction and engineering firms, domain expertise in AI and Robotics, a disproportionally large number of engineers, and a low cost of research and development. These attributes are all aligned to accelerating global demand.

At the intersection of Edmonton's strengths lies a unique opportunity: the integration of artificial intelligence (AI)—encompassing machine learning, reinforcement learning, computer vision, and robotics—with the construction and engineering (CE) sector, which includes architecture and related trades. Edmonton is ideally positioned for this AI x CE intersection, as it hosts the headquarters of leading engineering and construction firms alongside top-tier AI and computer engineering programs at its research and polytechnic institutions, as well as a responsive regulatory environment that is striving to enable growth.

Connecting AI x CE represents an unparalleled opportunity for our city, region, province, and country. Industrial strategy is back, and Edmonton is in a position like no other.

In recent months, the Edmonton Chamber of Commerce has convened the business, technology, and academic communities to establish the AI x CE strategy as a top priority for economic growth and resilience. Together, we have constructed a comprehensive plan to position Edmonton as a leader in North America by leveraging this sectoral intersection and delivering solutions that address the unique challenges of the CE sector while creating prosperity for Edmontonians and Albertans.

The CE sector—Alberta's third-largest industry—contributes $28 billion (8.1% of Alberta's GDP) and 10% of provincial employment[1]. Despite its size, the industry faces significant challenges, including labour shortages, productivity bottlenecks, slow technology adoption, limited research and development (R&D) investment, and difficulty attracting skilled youth (ages 18-24) to the occupation. These challenges are exacerbated by the hyper-competitive and fragmented nature of the sector, where small firms often prioritize the next task over testing innovative tools or practices. Many of these challenges can be addressed through the adoption of technologies such as artificial intelligence (AI), machine learning, automation, robotics, and digital tools, which can enable the sector to innovate and become more attractive and competitive. Given the global construction industry was valued at $14 trillion in 2023 and projected to almost double by 2040, industry-leading firms and technology-enabled solutions originating in Alberta have the potential to scale dramatically and transform our economy[2].

Edmonton's growing expertise in both AI and the CE industries creates a competitive advantage not found elsewhere. However, despite this opportunity, the CE sector is highly competitive. Firms within the sector have not historically collaborated with each other on innovation and transformational opportunities, unless external pressures have demanded it, as occurred when the sector came together to unite around safety. Today, facing common productivity and labour challenges, these sectors are coming together to establish the AI x CE Cluster—a dynamic ecosystem with the potential to become the leading jurisdiction in North America for CE innovation.

This AI x CE strategy outlines our path to prosperity.

2.0

OUR LABOUR & PRODUCTIVITY IMPERATIVE

With global demand set to grow from $14 trillion in 2023 to $22 trillion by 2040, CE leaders in Alberta are sitting on the precipice of tremendous opportunity[3]. However, within the province, the industry is not in a position to capitalize on the opportunities on the horizon. A number of barriers stand in the way:

- Labour shortage and an aging workforce
- Productivity declines
- Regulatory impediments to technology adoption
- Technological, cultural, and collaboration complacency

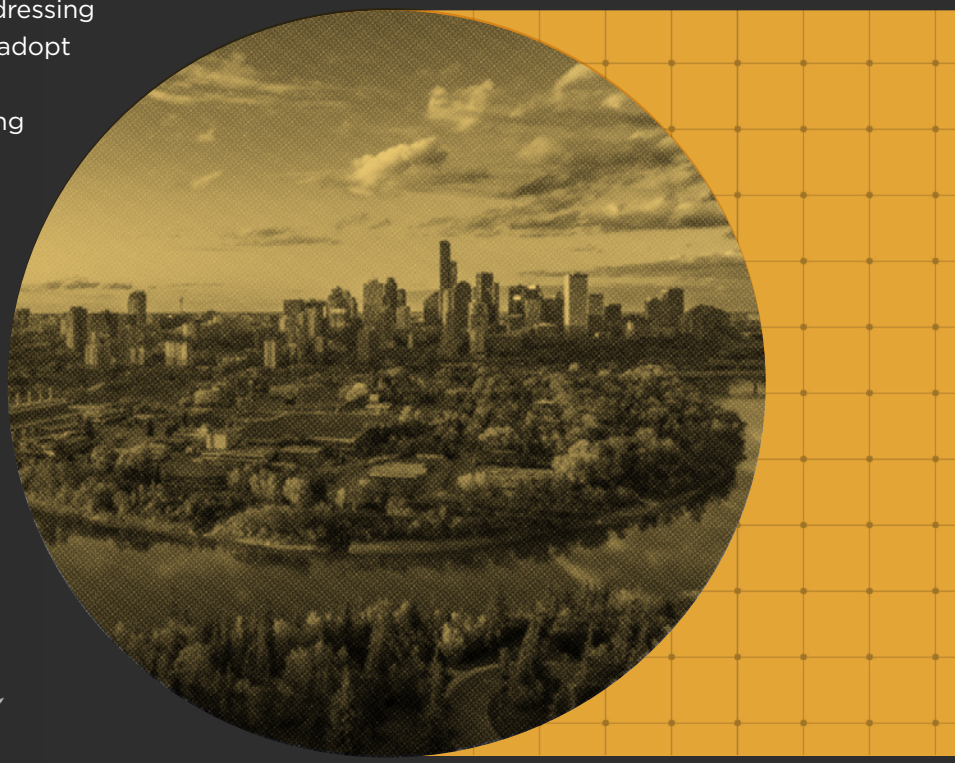
Without action, these barriers will impede the industry's capacity to innovate, adopt new technologies, and maintain competitiveness.

Industrial strategy is back, but needs technology adoption for success.

2.1 Labour Availability and Workforce Demographics

The CE sector in Alberta faces a critical shortage of skilled labour. The industry is not attractive to today's youth, and the current workforce is aging. These challenges have led to:

- **Higher unemployment and imminent retirements:** Alberta's construction job vacancy rate reached 6.7% in the third quarter of 2023, nearly triple the pre-COVID average of 2.5%.[4] [5] Existing labour shortages will be exacerbated by the projected retirement of skilled trades workers in Canada, creating an urgent need to recruit and train a generation of new workers that are not otherwise entering the trades.[6]
- **Difficulty in hiring trades-certified employees:** More than 73% of Alberta businesses reported difficulty hiring trades-certified employees in 2023, reflecting the depth and urgency of the workforce challenge[7]. Businesses need to adopt technology-based solutions to supplement today's available workforce, while today's workforce needs to be able to port their credentials seamlessly between roles. Both of these needs highlight a structural labour dilemma that will not improve on its own.
- **Proficiency of Employers:** Advances in robotics and automation will quickly reshape the roles and skills required in construction and engineering. The trades of tomorrow will demand proficiency in digital tools, robotics, and new construction methods. Addressing this shift will require leaders to adopt a forward-looking approach to workforce development, focusing on reskilling existing workers and using technology to attract young talent into the trades and the sector. require a forward-looking approach to workforce development, focusing on reskilling existing workers, and using technology to attract young talent into the trades and the sector.



2.2 Productivity Declines

The construction sector in Canada, including Alberta, has faced decades of stagnant productivity, contributing to a significant drag on the overall economy. Construction productivity has declined for more than 40 years, with no meaningful growth recorded.[8] This trend is especially concerning as construction's share of economic activity continues to rise. Key factors contributing to the productivity decline include:

- **Dominance of small firms leads to a fragmented industry structure:** In 2023, 88% of construction businesses in Alberta had fewer than 20 workers, highlighting the industry's reliance on small firms.[9] While this structure fosters competition, it also presents significant challenges. Smaller firms often operate with limited resources, making it difficult to adopt new technologies, invest in workforce training, or achieve economies of scale. Additionally, they face disproportionately higher regulatory burdens and financial risks, which can stifle long-term innovation and productivity improvements.
- **Busyness impedes investment:** High demand for construction and engineering services keeps firms focused on meeting immediate deadlines—trying to solve systemic problems with more labour—and leaving limited time and resources to test and implement new technologies or provide advanced training for their workforces.
- **Fragmented structure discourages collaboration:** The fragmented industry structure, dominated by resource-constrained small firms and low barriers to entry, creates a highly competitive environment where firms prefer not to collaborate. This behaviour slows the adoption of productivity-enhancing technologies such as automation, robotics, and AI-driven project management tools, many of which require collaboration to share risk, costs, proof of concept, and breakthroughs.

2.3 Regulatory Impediments to Technology Adoption

Adoption of digital infrastructure and new skillsets is inconsistent across firms, creating barriers to sector-wide improvement. Key factors include:

- **Uneven digital readiness:** Many established firms operate with minimal digital infrastructure and often rely on outdated systems. Without a solid digital foundation, it becomes challenging to adopt and scale new tools that enhance productivity. Partial or fragmented technology adoption limits the industry's potential gains, as the innovators are brought down by the laggards at the job site.

- **Outdated regulations:** Existing building codes and regulations are not aligned with modern technology capabilities, creating additional barriers to automation and digital innovation. Firms are hesitant to invest in innovation when they will need to wait for the regulations to catch up.
- **Regulatory ambiguity:** The rapid introduction of technologies like AI, robotics, and drones creates uncertainty about how existing regulations will apply and what new policies may emerge. This uncertainty deters investment and slows innovation.
- **Regulatory inconsistencies:** Non-standardized building codes, permitting, and licensing requirements across jurisdictions create inefficiencies and make it difficult for firms to scale operations across the province and between provinces. This lack of harmonization hinders competition and makes it challenging to innovate and streamline practices on a broader scale.

Setting the Pace: How the City of Edmonton is Breaking Down Barriers

The City of Edmonton is transforming development through its Auto Review system—the first automated development permit process in Canada[10]. Builders now receive same-day approvals, cutting down the typical two-week wait. Overall improvements to permit and licence services save customers an estimated $6 million and 109,000 days each year. This innovative approach has contributed to Edmonton outpacing much larger cities, like Toronto, in housing development. In 2023, Edmonton recorded 9,441 ownership housing starts compared to Toronto's 8,730, despite Toronto being four times larger.[11] Edmonton's commitment to continuous regulatory innovation fosters an environment where the CE sector can thrive, setting a national example of how smart regulation can accelerate growth while maintaining oversight.

2.4 Technological, cultural, and collaboration complacency

The above barriers to adoption have the risk of creating a culture of complacency—where existing business models remain unchallenged despite short- and medium-term risks. While many local firms will succeed based on sheer human effort, a new cohort of leaders are emerging and embracing a technology-enabled vision that will direct change and profitability in the industry. This new vision includes:

- **Pricing model changes:** Automated tasks such as design, project management, and cost estimation, which have traditionally been billed on an hourly basis, will bring about substantial change. As efficiency improves, firms may face pressure to transition from hourly billing to value-based or fixed-fee pricing, disrupting established revenue models.
- **Risk model changes:** CE firms are traditionally risk-averse, focusing on proven methods over untested innovations. Ambiguity around the costs, impacts, and regulatory implications of new tools amplifies perceived risks. Owners who adopt collaborative approaches and introduce mandatory technology platforms or applications will enjoy lower risks and overall costs.
- **Industry profit changes:** Each industry segment operates within its own profit structure, with contractual complexities that discourage cross-sector collaboration and joint investment in new technologies. This structure has traditionally squeezed lower parts of the value chain in a zero-sum gain mentality, as opposed to growing the size and share of the pie.
- **Collaborative innovation changes:** A disconnect between industry challenges and the research and innovation community slows the implementation of technology-based solutions. Edmonton's robust innovation ecosystem—which includes AI, machine learning, and robotics—has yet to be fully integrated with the CE sectors, representing a significant opportunity for industrial cluster development.

"The adoption of robotics and artificial intelligence within the housing industry is the only viable solution to achieve the goals of governments to build an adequate supply of housing at affordable and attainable prices. The combination of robots, driven by AI will reduce the construction cycle time sign and transform the landscape of manufacturing homes in North America, Europe and elsewhere. I highly encourage everyone in our industry, from the general contractors to the trades, to get involved in this important initiative for Alberta. It will put Edmonton and Alberta at the forefront of housing innovation."

— REZA NASSERI, CEO of Landmark Homes and Founder of Promise Robotics.

3.0

THE INTERSECTION OF AI X CE

3.1 Edmonton's Strategic Advantage: AI x CE Innovation

Edmonton's domain expertise in AI and CE creates a unique and timely advantage. The region is ideally positioned to both address the industry's challenges through technological solutions and export those scalable solutions globally. By leveraging its strengths, Edmonton aims to create a collaborative ecosystem—an AI x CE Cluster—that will harness local expertise, build a culture of innovation and technology adoption, and strengthen economic resilience and dominance across the industry and its value chains. The result will position Edmonton as the leader in CE innovation capable of outperforming every other jurisdiction in North America.

3.2 Defining AI: Beyond Artificial Intelligence

The use of the term Artificial Intelligence (AI) within this strategy serves as an umbrella term for a series of platform technologies defined as the following:

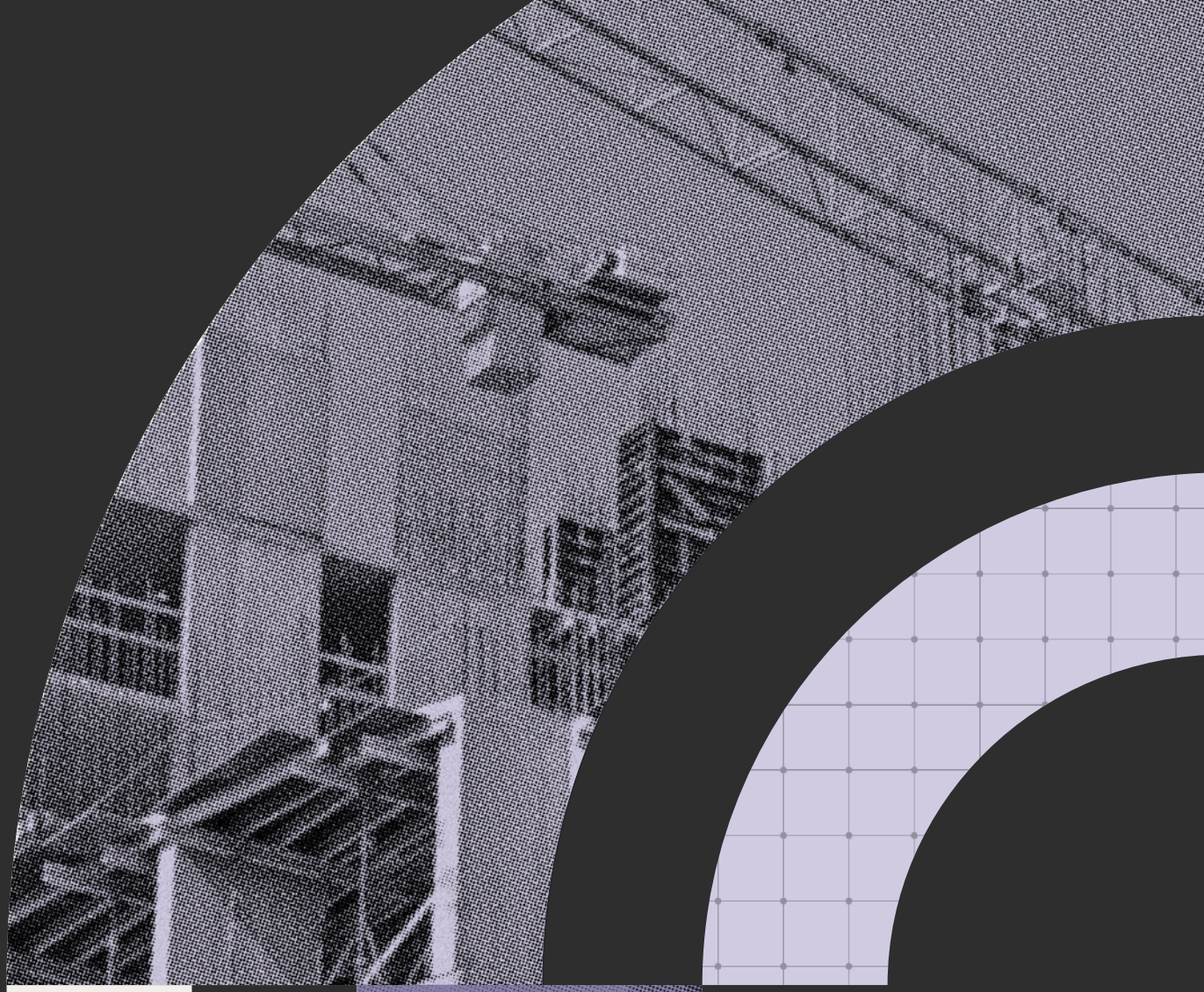
- Artificial Intelligence: Encompassing machine learning, natural language processing, and computer vision, AI enables computers to mimic human decision-making processes. At the industry level, AI can optimize planning, identify emerging issues, and provide data-driven insights for project management and efficiencies.
- **Robotics:** Robotics technology minimizes dependence on human labour by deploying machines to perform repetitive or labour-intensive tasks. Examples include automated bricklaying, inspections, and prefabrication, where robotics can increase efficiency and consistency. Robotics generally operate through AI-driven instruction and programming.
- **Automation:** Automation streamlines workflows by automating tasks like scheduling, material procurement, and equipment operation. It reduces human error, speeds up project timelines, and can support autonomous machinery on construction sites.

These technologies represent a transformational opportunity for Edmonton's construction and engineering sectors. Our AI capacity offers powerful tools to enhance productivity, reduce labour reliance, and improve safety and project outcomes. Edmonton's leadership in AI applied research and commercialization is anchored by the University of Alberta (U of A) (including the Faculty of Engineering and the Construction Innovation Centre), the Alberta Machine Intelligence Institute (Amii), NAIT's applied AI programming, and the Government of Alberta's GovLab—all of which leverage industry partnerships, AltaML's large collection of data scientists, and a formidable group of nascent entrepreneurial ventures. Collectively, Edmonton is positioned to be at the forefront of developing, adopting, and exporting an endless flow of construction and engineering solutions.

3.3 Defining CE: Our Construction and Engineering Heritage

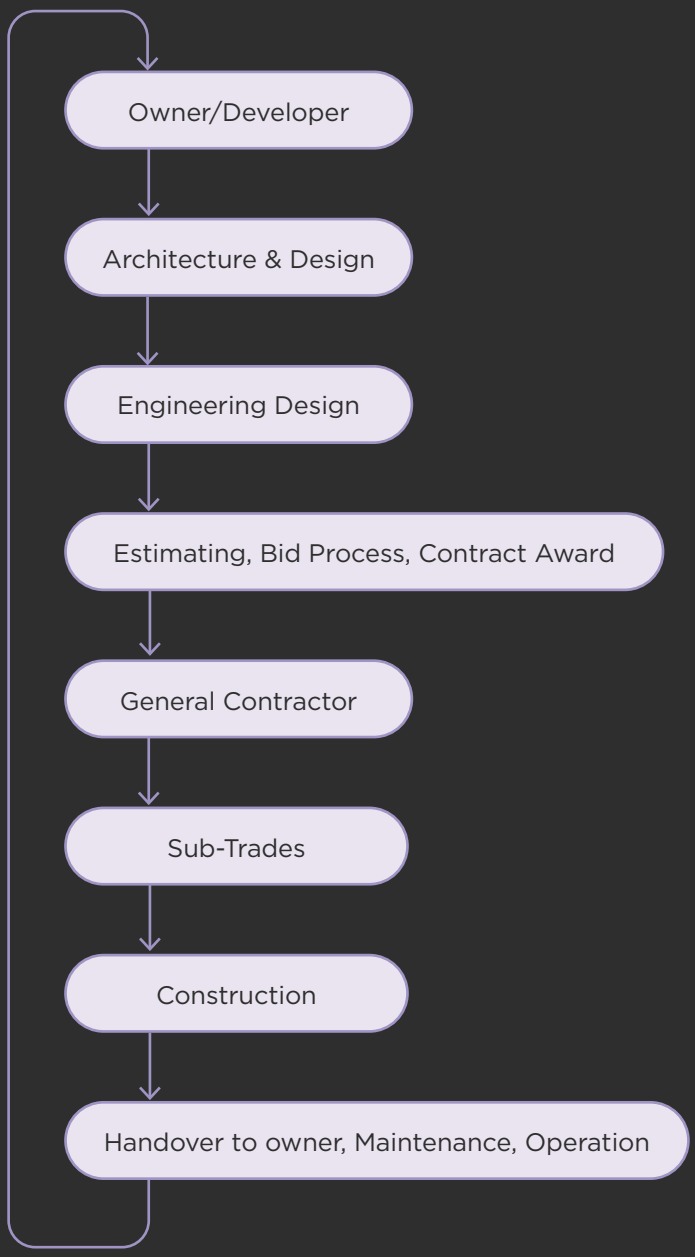
CE is the foundation of the Edmonton economy and contributes substantially to employment, GDP, and local philanthropy. For generations, Edmonton-based companies and families have designed, engineered, and constructed under the harshest conditions—and built some of North America's most reputable companies.

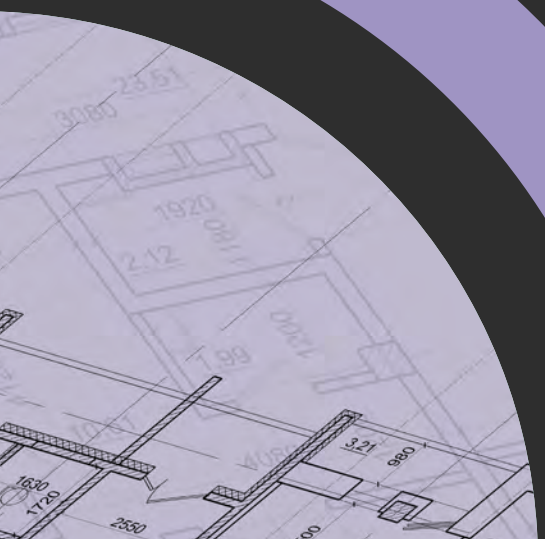
Our CE domain is strengthened by the presence of renowned research institutions, multiple headquarters of globally competitive companies, and robust training programs for skilled trades. We also have a culture of hard work, grit, and a competitive mindset. In short, we're driven to be the best—and have the structures and supports in place to achieve that objective.



The CE sector encompasses far more than traditional building and infrastructure projects; it includes a range of interconnected components and sub-sectors, collectively referred to as the built environment. Within this broad value chain, multiple subsegments interact, but generally operate in silos, including:

Built Environment Value Chain





Throughout this value chain, each construction project is typically unique, shaped by specific site conditions and individual client requirements, resulting in a high degree of customization. Unlike consolidated industries like telecommunications or financial services, CE remains highly fragmented with a large number of specialized players and low barriers to entry. Despite shared, industry-wide challenges, this fragmentation leads to a culture of limited collaboration across segments, creating friction and delays at each step of the value chain, which in turn creates significant barriers to adopting innovation, technology platforms and standardization.

3.4 Edmonton's AI x CE Cluster – A Global First

To break down silos, increase labour availability and productivity, drive down project costs and completion times, and improve safety and profitability, the CE sector in Edmonton is working together to build an economic growth plan that emphasizes efficiency, competitiveness, and innovation, and that is driven by private sector leadership.

Rather than replicating traditional industrial cluster models, Edmonton's approach focuses on enabling collaboration, reducing barriers to adoption, and fostering innovation that empowers companies to compete globally. By leveraging existing strengths in AI and CE, Edmonton can drive transformative solutions tailored to industry needs while ensuring efficiency and accountability in how resources are used.

> **Edmonton's AI x CE Cluster is a collaborative group of companies, suppliers, service providers, and institutions in the Edmonton region working together to solve the industry's major challenges and build competitive advantages.**

As Edmonton-based companies continue to compete and win in the global marketplace, they will gain a unique advantage by working collectively at the local cluster level on technology-based solutions that create prosperity and competitive advantages for those located in the region.

> **That is the principal outcome of the AI x CE strategy.**

4.0
VISION & OUTCOMES

The vision for Edmonton's CE sector is that:
Edmonton will become the global leader in CE innovation, offering unparalleled economic advantages to businesses, professionals, and trades based in Alberta.

The mission for Edmonton's AI x CE Cluster is to:
Promote innovation and collaboration between industrial and technology companies to advance economic growth, solve industry challenges, and create unique advantages for those located in the Edmonton region.

This initiative is anticipated to benefit:

- **Albertans:** Advanced technologies will enable faster delivery of more affordable, safer, and higher-quality homes, buildings, and structures.
- **CE firms:** Increased adoption of technologies will improve productivity and profitability, and empower firms to outperform industry peers outside of Alberta.
- **Inspired building owners:** Technology adoption will reduce construction and lifecycle costs, construction timelines, safety incidents, and development risk.
- **The Alberta government:** By delivering public infrastructure faster and more cost-effectively, the Province can ensure taxpayer value while safely and reliably meeting growth demands.
- **Alberta post-secondaries:**

  The U of A will advance its position as a top-ranked global institution in CE, leading the way in artificial intelligence, machine learning, robotics, automation research innovation, and commercialization.

  The Northern Alberta Institute of Technology (NAIT) is respected globally for training the "trades of the future," equipping a new generation of skilled professionals with expertise in advanced technologies.
- **Edmonton's physical and digital sandboxes:** These groups will become magnets for local and global partners seeking investment collaborations that de-risk the piloting and adoption of technology innovations in robotics, automation, and digital construction.
- **Alberta's skilled trades:** Youth (ages 18-24) will see the trades as an opportunity to augment traditional labour with new technologies that drive human productivity and worksite safety, leading to increased interest in entering the workforce.
- **Entrepreneurs and innovators:** Increased collaboration and technology adoption will create demand for more startups and corporate ventures that can drive local innovation in the CE sectors—which can then be exported globally.
- **Alberta regulators:** By becoming part of the local innovation ecosystem and earning renown for achieving outcomes while managing safety and risks—regulators in the province will raise the bar for regulators across Canada.

Economic outcomes (2035) expected from this initiative include:

- **Alberta employment growth of 20,000 workers per year** into new technology-augmented construction, engineering, and related trades jobs and professions.
- **48% increase in labour productivity over 10 years (4% compound annual growth rate)** in Alberta's CE sector resulting from the adoption of new technologies and processes.
- **Over $100 million of private capital per year** will be attracted to commercialization and early-stage technology ventures focused on the construction and engineering industry.
- **A minimum of five new multinational firms** will establish research, development, commercialization and manufacturing activities in the Edmonton region.
- **$20.0 billion of GDP by 2035** will be directly attributed to technology-driven product development, manufacturing, and exports in the construction and engineering industry. development, manufacturing, and exports in the construction and engineering industry.

5.0
AI X CE STRATEGY

STRATEGIC GOAL #1

Advance and Sustain Edmonton's Advantage through Leadership and Collaboration

To establish Edmonton as a global leader in construction and engineering innovation, a dedicated leadership entity is needed to unite key partners, implement strategic initiatives, and promote Edmonton on the global stage. This new entity, a dedicated cluster organization, will provide direction, resources, and advocacy to ensure Edmonton's leadership in the application of AI, automation, and robotics within the built environment. We will:

» **Establish and fund an "AI x CE Cluster"** as the non-profit leadership entity responsible for implementing this strategy and to position Edmonton as a global hub for construction and engineering innovation. The cluster's mission would be to promote innovation and collaboration between CE and technology companies to advance economic growth, solve industry challenges, and create unique advantages for those located in the Edmonton region.

» **Establish a Cluster Ignition Council** comprised of leaders from CE firms, asset owners, post-secondary institutions, and the entrepreneurial community. The Council will provide stewardship, advocacy, funding, and accountability to the cluster for the first five years of operation.

» **Launch a construction and engineering technology roadmap** under the cluster's guidance to connect researchers, entrepreneurs, and industry leaders under a unified set of priorities. This roadmap will identify research and commercialization priorities, pilot projects, infrastructure, and funding to address industry challenges and encourage academic discoveries toward practical, scalable innovations for the CE sector.

» **Develop a global branding strategy** to position Edmonton as the leading innovation hub for AI, automation, and robotics in construction and engineering. We will partner with Edmonton Global, Invest Alberta, and industry leaders to create compelling branding materials, promote international partnerships, and attract investment.

» **Advocate for AI x CE innovation as a provincial priority** by working with the Government of Alberta to incorporate CE innovation into Alberta Innovates' strategic focus. This will encourage an alignment of funding, policy support, and visibility for Edmonton's leadership in the sector.

Setting the Pace: U of A Mechatronics Program—Powering the Engineers of Tomorrow

The U of A's new Mechatronics and Robotics Program[12] is poised to transform the talent pipeline for Alberta's construction and engineering sectors, addressing the growing demand for skilled professionals who can design, build, and maintain automated systems. As industries like manufacturing, oil and gas, and residential construction adopt robotics and AI-driven technologies, companies often struggle to find qualified workers locally, resorting to out-of-province recruitment. Launching in 2025, this five-year program—featuring 20 months of industry co-op placements—will equip students with expertise in control systems, sensors, and robotics. Graduates will be ready to contribute immediately to innovations like robotic home-building systems used by Alberta-based companies such as Landmark Homes.

STRATEGIC GOAL #2

Develop a Future-Ready Workforce for Innovation and Productivity

Edmonton's future competitiveness depends on a workforce that is skilled, adaptable, and ready to excel as technology transforms the CE sector. Addressing labour shortages, advancing digital literacy, and preparing for the integration of robotics and automation are essential to meeting industry demands. By establishing clear pathways for individuals to upskill, re-credential, and transition into new roles, Edmonton has the opportunity to develop a resilient, future-ready labour force. We will:

» **Expand workforce capacity** by increasing the number of post-secondary seats (FLEs) in construction trades and engineering programs by 50% over the next decade. These seats will be concentrated in high-demand and interdisciplinary areas, such as the U of A's new mechatronics program.

» **Introduce micro-credentialling and skill-transfer programs** to help workers transition seamlessly between trades, across disciplines, and among roles—enabling rapid skill acquisition and adaptation to new technologies as well as faster job site approvals.

» **Enhance corporate digital literacy and infrastructure** through industry-sponsored programs that improve digital and technology education and that upgrade technology infrastructure for companies in the built environment.

» **Promote Building Information Modelling (BIM) adoption in public projects** by mandating the use of BIM for publicly funded buildings and creating initiatives to increase BIM adoption across the industry, improving collaboration and efficiency.

» **Establish "Trades of the Future" programs** at NAIT and in collaboration with other post-secondary institutions to integrate robotics and automation into trade training, preparing the next generation for evolving roles in construction and engineering.

» **Create peer advisory groups** that pair technology entrepreneurs and workers with CE professionals, fostering cross-industry knowledge sharing and innovation in the built environment space.

STRATEGIC GOAL #3

Build and Activate Infrastructure to Accelerate Adoption

To drive innovation in construction and engineering, Edmonton must establish advanced physical, digital, and data infrastructure that bridges the gap between technological development and industry adoption. This foundation will enable Edmonton to lead in fields like robotics, automation, BIM, and digital twin technology, and facilitate real-world testing, risk mitigation, and shared expertise. By addressing out-of-date or misaligned regulations, Edmonton can also ensure that infrastructure investments are supported by a regulatory environment that fosters innovation. We will:

- **Build a physical and digital sandbox** to allow entrepreneurs and innovators to test and de-risk site, engineering, and data-related innovations, creating a safe environment for experimentation and refinement.
- **Create an open-access Construction Robotics Centre** as a shared facility where companies and researchers can develop and test robotic technologies for construction tasks. This centre will focus on practical applications such as automated fabrication and precision assembly, making advanced robotics more accessible for businesses.
- **Establish an active robotic productivity program** that de-risks the adoption of robotics into businesses through a combined robot leasing and utilization program.
- **Support the creation of a built environment data repository** to serve as a comprehensive database of construction and engineering images and datasets, essential for driving AI algorithms. Firms that contribute to the repository will gain access to high-quality datasets, enabling them to leverage AI tools that improve project accuracy, safety, and efficiency. By pooling resources, Edmonton firms can drive cutting-edge AI development while benefiting from insights that enhance competitiveness in global markets.

"The construction industry is suffering from productivity challenges and labour shortages which is only getting worse with an aging workforce and demand surpassing supply. Robotics and automation have significantly improved productivity in other industries and with an inflection point of artificial intelligence and digitization technologies, the same can happen for construction and engineering. Edmonton is home to leading expertise in construction, engineering, artificial intelligence and entrepreneurial talent – which are key components for creating and commercializing those solutions here. This initiative is key to accelerating these innovations and establishing Edmonton as a global leader in construction robotics and automation."

— BRUCE ALTON, CEO & Co-founder of RoBIM Technologies Inc.

» **Create a BIM owners' association** to promote BIM adoption, educate asset owners on the value of BIM and lay the groundwork for Edmonton and Alberta to become internationally recognized leaders in BIM and digital infrastructure.

» **Partner with associations and key stakeholders** to ensure initiatives and investments are strategically aligned and highly visible. Organizations such as Canadian Home Builders' Association (CHBA), Edmonton Construction Association (ECA), BILD Alberta, Foresight, and others already have established programs and processes that can be expanded or leveraged through collaboration. Additional funding could support the enhancement of existing programs or the development of new ones to maximize efficiency and impact.

» **Collaborate with municipalities and industry bodies to modernize regulations and standards** by engaging the City of Edmonton, other local municipalities, the Safety Codes Council, and organizations like BILD Alberta, Edmonton Construction Association (ECA), Alberta Construction Association (ACA), Construction Owners Association of Alberta (COAA), Alberta Roadbuilders & Heavy Construction Association (ARHCA), and Independent Contractors and Businesses Association (ICBA). We will work with these groups to review and update mandates, streamline engineering and construction practices, reduce regulatory barriers, and encourage the adoption of new technologies and automation. And, we will support these efforts with targeted change management programs to improve adoption rates across the sector.

STRATEGIC GOAL #4

Expand Capital Access and Scale High-Growth Companies

To unlock the full economic potential of CE innovation, Edmonton must increase the capital available for promising startups and scale-ups, particularly those targeting industry-specific challenges. By fostering a strong pipeline of investable companies, Edmonton can drive local wealth creation, generate high-quality jobs, and export Alberta-grown solutions to meet global industry demands. Expanding access to funding and support for new ventures will not only grow Edmonton's innovation ecosystem but also enable Alberta's $30 billion CE sector to stay competitive and resilient. We will:

- **Support the University of Alberta's Construction Innovation Centre** as a central hub for connecting industry problems with innovative solutions. By facilitating partnerships between companies and startups, the Centre can encourage the formation of new ventures and in-house innovation teams that directly address the sector's most pressing challenges.
- **Create a built environment accelerator and/or venture studio** in collaboration with Alberta Innovates and industry-focused venture funds. Through mentorship, company development programs, and partnerships with existing agencies, this initiative can increase deal flow and support the growth of early-stage, innovation-focused ventures in construction and engineering.
- **Establish a built environment venture capital fund** to invest in seed and Series A companies focused on CE innovation. Early-stage startups in Alberta face significant barriers to accessing capital, particularly those with less than $500,000 in revenue. Closing this gap will enable high-potential companies to scale, commercialize their solutions, and position Edmonton as a global leader in built environment innovation. Alberta Enterprise Corporation and the University of Alberta Innovation Fund are potential partners to initiate this undertaking.
- **Launch demo camps and pitch competitions** that inspire entrepreneurs and innovators to tackle solvable industry challenges in a format that allows winning teams to own their intellectual property (IP) and to receive funding to take their ideas to the next stage of evolution.
- **Establish an AI x CE venture lab program** for intrapreneurs and entrepreneurs seeking dedicated space (including digital/physical sandboxes and test centres) for teams to collaborate, access programming and mentorship, de-risk the development of new technologies in real working environments, and create a community of innovators dedicated to creating breakthrough solutions in the industry.

STRATEGIC GOAL #5

Establish Edmonton as the Global Hub for AI x CE Research and Innovation Excellence

Edmonton's success as a leader in CE innovation is reliant on its continued advancement of research and innovation that combines cutting-edge artificial intelligence with industry expertise. By strengthening collaborations between academic institutions, industry, startups, and government, Edmonton can drive impactful discoveries, attract global talent, and develop transformative solutions for challenges in the built environment. Prioritizing research excellence will position Edmonton as the premier destination for those seeking to pioneer advancements at the intersection of AI x CE. We will:

- **Support Alberta post-secondary institutions in extending their world-class research and training capabilities** by expanding faculty, research labs, and student capacity through partnerships with the provincial government, industry sponsors, and private donors. We will also work to establish additional privately-funded research chairs and specialty labs to attract global talent and align academic efforts with the challenges facing the built environment.
- **Develop an applied research fund for CE innovation** through co-investment from key government and private sector stakeholders. This fund will support projects that pair academic research with industry needs, accelerating solutions with high commercialization potential and directly benefiting Edmonton's economy.
- **Create an AI fellowship program for CE** to attract top-tier graduate and post-doctoral talent. Delivered by local universities in collaboration with local institutes and industry mentors, the program will focus on developing real-world AI applications for CE challenges, providing students with hands-on opportunities to address pressing issues.
- **Establish a global exchange program for built environment innovations** by partnering with international universities, industry leaders, and trade organizations. This program will enable knowledge sharing, joint research initiatives, and global talent attraction while showcasing Edmonton's infrastructure and innovation capabilities.
- **Convene leading thinkers and practices** on an annual basis to discuss what new technologies, novel processes, and refined business models are emerging in other jurisdictions for the benefit of Edmontonians. This event would evolve into a major economic event for the Edmonton region—one that attracts the best in the world.
- **Implement an open innovation attraction program** to attract the investments of global players on important industry challenges. By establishing innovation labs for multi-national corporations, Alberta can build a critical mass of the best and brightest to work on local and global challenges in CE.

6.0 IMMEDIATE ACTION STEP

This AI x CE Strategy **unites** the work and ambition of industry, academia, labour, technology entrepreneurs and the Edmonton Chamber of Commerce into a strategic imperative and economic growth plan that can significantly benefit Edmonton, Alberta, and Canada.

This AI x CE Strategy **intersects** Edmonton's domain expertise in AI and robotics with its century-long leadership in CE, reintroducing industrial policy and the importance of industry-led clusters for industrial innovation and competitiveness.

This AI x CE Strategy has built **momentum and engagement** across the region and is ready to be formally launched through three immediate action steps:

Step #1: To establish an AI x CE Cluster organization housed within the Edmonton Chamber of Commerce, and to establish a Cluster Ignition Council comprised of leaders from CE firms, asset owners, post-secondary institutions, and the entrepreneurial community to steward and govern the initial activities of the cluster organization.

Step #2: To secure three-year operating support from the federal and provincial governments to build out the engagement processes, industry workplans, technology roadmaps, and marketing strategies needed to establish critical mass and sustainable funding from industry.

Step #3: To launch an AI x CE venture lab program at Edmonton Unlimited for intrapreneurs and entrepreneurs seeking dedicated space (including digital/physical sandboxes and test centres) for teams to collaborate, access programming and mentorship, build pilots and prototypes, de-risk the development of new technologies in real working environments and create a community of innovators dedicated to creating breakthrough solutions in the industry.

The Edmonton Chamber of Commerce is committed to bringing this AI x CE Strategy to fruition, alongside its members and stakeholders who have demonstrated their leadership and resolve in the creation of this document and the strategies herein.

This is a critical time for Edmonton, Alberta, and Canada to change the trajectory of productivity and the cost of construction. Future generations will benefit from the work we do today, and we look forward to the economic and societal outcomes that are within reach.

7.0
ORGANIZATIONS ENGAGED

This AI x CE Strategy was shaped by the insights and expertise of industry leaders, researchers, policymakers, and innovators across the Edmonton region and throughout Alberta. Their contributions have helped identify key opportunities and challenges, laying the foundation for ongoing collaboration to drive AI-driven innovation in CE.

We sincerely thank the contributors who shared their time and expertise throughout this process, including:

- Alberta Enterprise Corporation
- Alberta Innovates
- Alberta Machine Intelligence Institute (Amii)
- AltaML
- Angel, private equity, and venture capital experts
- Capital Power
- City of Edmonton
- Clark Builders
- Consentia
- Consulting Engineers of Alberta
- Edmonton Construction Association
- Edmonton Unlimited
- Ellis-Don
- Elm Construction
- Entrepreneurs and startups
- Government of Alberta
- Jaffer Group of Companies
- Landmark Homes
- Lear Construction
- MacEwan University
- NAIT (Northern Alberta Institute of Technology)
- North Pointe Homes
- PCL Construction
- Promise Robotics
- Rally Engineering
- RoBIM Technologies Inc.
- Safety Codes Council of Alberta
- Stantec
- Synergy Group of Companies
- University of Alberta
- Williams Engineering

8.0
ENDNOTES

[1]Government of Alberta (2023). Economic Dashboard – Construction. [online: web] URL: https://economicdashboard.alberta.ca/topics/construction/

[2]Research and Markets (2024). Construction Global Industry Guide 2019 – 2028. [online: web] URL: https://www.researchandmarkets.com/reports/5312058/construction-global-industry-guide-2019-2028

[3]Research and Markets (2024). Construction Global Industry Guide 2019 – 2028. [online: web] URL: https://www.researchandmarkets.com/reports/5312058/construction-global-industry-guide-2019-2028

[4]Government of Alberta (2024). "Alberta Job Vacancy Report: Third Quarter (Q3), July – September 2023" [online: web]. URL: https://open.alberta.ca/dataset/20f6ac7c-0a56-4b77-a3cc-3b9adae24425/resource/d111bc80-d917-42d6-bf8a-ce7ed22af810/download/jet-alberta-job-vacancy-report-2023-q3.pdf

[5]Government of Canada (2021). "Alberta Sector Profile: Construction" [online: web]. URL: https://www.jobbank.gc.ca/trend-analysis/job-market-reports/alberta/sectoral-profile-construction

[6]Buildforce Canada (2021). "National Summary" [online: web] URL: http://www.buildforce.ca/wp-content/uploads/2024/06/2021-Resume-national-Regard-Prospectif_1.pdf

[7]Business Council of Alberta (2024). "Stretched Thin: Labour Supply in the Skilled Trades" [online: web]. URL: https://businesscouncilab.com/wp-content/uploads/2024/10/Stretched-Thin-Labour-Supply-in-the-Skilled-Trades-DISTRIBUTION.pdf

[8]TD Economics (2024). "From Bad to Worse: Canada's Productivity Slowdown is Everyone's Problem" [online: web] URL: https://economics.td.com/ca-productivity-bad-to-worse#:~:text=And%20then%20there's%20the%20construction,over%20the%20past%20forty%20years

[9]Government of Alberta (2023). "Alberta Construction Industry Profile 2023" [online: web]. URL: https://open.alberta.ca/dataset/742e2ac1-efd8-4894-9fb6-320746fa10ab/resource/21563000-6190-4b08-8ac3-a0819d62918d/download/jet-alberta-construction-industry-profile-2023.pdf

[10]City of Edmonton (2024). Ready, Set, Build [online: web] URL: https://myemail-api.constantcontact.com/News-Release---Ready--set--build--Edmonton-first-Canadian-municipality-to-introduce-automated-development-permits--enabling-same.html?soid=1127191170163&aid=sc5-WH-X5Qw

[11]Toronto Star (2025). Edmonton is crushing Toronto when it comes to building new homes. An astounding Canadian first is a big reason why. [online: web] URL: https://www.thestar.com/business/edmonton-is-crushing-toronto-when-it-comes-to-building-new-homes-an-astounding-canadian-first/article_767a2c2a-d1b9-11ef-9665-1374b8e91b63.html

[12]University of Alberta (2024). New mechatronics and robotics engineering program will help students 'create the next generation of the world we live in' [online: web] URL: https://www.ualberta.ca/en/folio/2024/09/new-mechatronics-robotics-engineering-program.html

Produced by the Edmonton Chamber of Commerce
with assistance of Optimus SBR.

Document design contributed
by Edmonton Global.