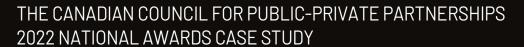
Bundled but Unique: Delivering Alberta's State-of-the-Art High Schools









The Canadian Council for Public-Private Partnerships 2022 National Award Case Studies

Gold Award for Project Development: P3 Schools Bundle #2, Alberta

CCPPP Membership

As the voice of Canada's infrastructure community, the Council offers unique networking opportunities, industry insights gleaned from important research & thought leadership opportunities, while advocating for the sector and promoting the use of public-private partnerships. Amplify the voice of your organization with membership.

Why our Members are Members

Virtually all major players in the infrastructure sector are members of the Council. They represent public sector owners and the leading construction, engineering, legal, advisory firms, banks and financiers, and operators and facilities maintenance firms working hard to build Canada's much needed public infrastructure.

Our members are diverse but our 2022 member survey found there are shared reasons why they've joined CCPPP:

- Networking
- Concern about the infrastructure industry. They consider their organization an important player and want to be at the table
- Access to government decision-makers
- Access to research
- Access to private sector decision-makers

We've also responded to their desires for more value added to their membership. This includes:

- Round-table discussions on critical issues
- Council programs and activities to reach promising new audiences
- Networking events outside of the Annual Conference
- Revised and updated CCPPP website
- Ability to work with the Council to promote their thought leaders

To learn more about joining our network, please contact us!

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Introduction

For more than 30 years, The Canadian Council for Public-Private Partnerships (CCPPP) and its members from the public and private sectors have played a strong role in refining the P3 model and promoting new approaches to infrastructure development and service delivery.

Governments across Canada are using the public-private partnership (P3) model to build, maintain and operate much needed infrastructure, from schools and hospitals to bridges and highways.

In 2024, there are more than 300 active P3 projects in operation or under construction valued at more than \$139.4 billion. Along the way, the 'made-in-Canada' P3 model has become globally renowned but, as the winners of the 2022 National Awards for Innovation and Excellence in Public-Private Partnerships demonstrate, it has never stopped evolving.

This year, CCPPP is publishing three case studies on these exemplary projects, joining the more than 80 that have been published to date. Designed to inspire others to consider innovative and efficient models for procuring infrastructure, the studies highlight many of the lessons learned about P3s. Each case provides a close look at how a successful P3 has worked, including how the partnership was established, its structure and operation and its resulting benefits.

It is important to learn from these complex projects as we move forward. After all, investment in infrastructure is critical for the future of our communities and country because it creates jobs, drives growth, stimulates productivity, and builds a legacy for us to thrive.

Canadians want — and expect — critical infrastructure to be built quickly and with the best value for taxpayers. Using public-private partnerships is an advantage given the model's greater potential to offer a fixed price and on-time delivery, a more optimal allocation of risks and improved life cycle maintenance and operations.

In 1998, CCPPP established the National Awards for Innovation and Excellence in Public-Private Partnerships to honour governments and/or public institutions and their private sector partners who have demonstrated excellence and innovation in P3s. Gold, Silver and Awards of Merit are given in the areas of project development, financing, infrastructure, service delivery or other notable attributes to projects from across the country and at all levels of government.

Winning projects are chosen on the basis of the following criteria:

- Innovative features;
- Relevance or significance as a national and/or international model;
- Economic benefit (job creation, enhanced economic value, export potential, etc.);
- Measurable enhancement of quality and excellence of service or project;
- Appropriate allocation of risks, responsibilities and returns between partners; and
- Effective use of financing and/or use of non-traditional sources of revenue.

2022 Award Winners



Infrastructure - Gold Award: Gatineau 2, Library and Archives Canada

The \$330-million (NPV) state-of-the-art new Preservation Storage Facility, built as part of the Gatineau 2 project, reached substantial completion in June 2022. It sits next to and complements the existing award-winning Preservation Centre in Gatineau, Que., which is also undergoing improvements as part of this DBFOM project. The Preservation Storage Facility is the first net-zero carbon building dedicated to archival preservation in the Americas and is the largest facility of its kind in the world equipped with a high-tech automated

storage and retrieval system. Overall, the Gatineau 2 project is enabling Library and Archives Canada to ensure that our country's precious collections are kept under optimal preservation conditions and is setting a new benchmark for archival facilities worldwide.

Partners: Library and Archives Canada, Plenary Properties Gatineau (Plenary Americas and PCL Investments Canada Inc.)



Project Development – Silver Award: Accelerated High Speed Internet Program, Ontario

This innovative \$1.25-billion project is the first of its kind to execute a large-scale electronic reverse auction in Canada designed to foster competition among national, regional and local internet service providers (ISPs) with the goal of connecting up to 266,000 of the hardest to reach homes and businesses across Ontario with high-speed internet by the end of 2025. Under AHSIP, ISPs had the opportunity to bid for provincial subsidies for defined geographic areas as part of a two-stage competitive procurement process. In August 2022, the province announced it had signed DBFOM agreements with eight ISPs to serve as many as 339 municipalities. The project is a unique example of how P3s can be used to bring digital equality quickly and efficiently to rural and remote Canadians.

Partners: Ontario Ministry of Infrastructure, Infrastructure Ontario, Bell Canada, Bragg Communications, Cogeco Connexion, Community Network Partners, Eh! Tel Networks Inc., North Frontenac Telephone Company, Rogers Communications Canada Inc., and Xplore Inc.



Infrastructure - Silver Award: Highway 7 West Bus Rapid Transit, Ontario

In-service since 2019, this \$333.2-million project delivered a 12.6-kilometre bus rapid transit (BRT) corridor in Vaughan and Richmond Hill, connecting to the 34-kilometre BRT network serving York Region's growing urban centres. The system, which was delivered on time and on budget, included the construction of 20 centre-median station platforms, a unique multi-use path on the Highway 7 bridge over Highway 400 and enhanced streetscaping. To date, the corridor has provided residents and commuters with better connections, has led to a decrease in traffic collisions and supported a big boost in commercial and residential development. Strong and effective partnerships enabled this project's seamless delivery.

Partners: York Region Rapid Transit Corporation and EDCO (EllisDon Civil Ltd. and Green Infrastructure Partners Inc.)



Project Development - Award of Merit: Grandview Children's Treatment Centre Redevelopment Project, Ontario

This project, currently in the development phase, will serve as the new headquarters for Grandview Kids, which specializes in care and support for children and youth with physical, communication and

developmental needs, and their families. The new four-storey facility will have a gross area of 94,733 sq. feet and will increase the centre's ability to offer more services and serve a greater number of children and youth in Ontario's Durham region. In 2021-2022, Grandview Kids provided services to more than 16,000 young people, however there are an estimated 11,500 children on the wait list. As part of the development phase, the consortium is hosting design workshops with the centre's clinical and non-clinical staff, families and clients to receive feedback on drawings and plans, which include input on the architecture, electrical, structural and mechanical design. Construction is currently underway.

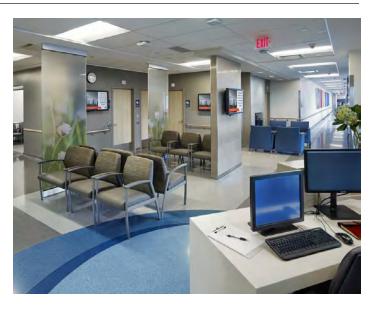
Partners: Infrastructure Ontario, Grandview Children's Centre, and Children First Consortium (Amico Design Build Inc. and Sacyr Construction S.A)



Infrastructure – Award of Merit: Royal Inland Hospital – Phil & Jennie Gaglardi Tower, British Columbia

In operation since February 2022, this new \$417-million, 300,000 sq. foot patient care tower at Royal Inland Hospital in Kamloops houses new clinical, administrative and support spaces, including a surgical suite and neonatal intensive care unit serving 220,000 residents of B.C.'s Thompson Cariboo Shuswap region. Under a single project agreement, the project used a DBFM model with a construction management agreement, resulting in an estimated savings of \$64 million compared with a traditional procurement. During construction, the project faced a number of extraordinary impacts caused by the pandemic, wildfires and extensive flooding caused by the 2021 atmospheric rivers. The events impacted resources, supply chain logistics, workflows, and budgets yet EllisDon still found innovative ways to ensure project success with the hospital completed on time and on budget. The project demonstrates the P3 model's delivery of value, timeliness, and accountability.

Partners: Infrastructure BC, Interior Health Authority, and EllisDon Infrastructure Healthcare



Service Delivery – Award of Merit: Oakville Trafalgar Memorial Hospital, Ontario

In operation since 2015, this \$2-billion DBFM hospital project remains one of the largest infrastructure projects in Ontario. The LEED® Gold facility, with 457 beds and shelled-in space to facilitate 602 beds by 2023, is equipped with multiple smart technology enhancements and opened on time and on budget. The project demonstrates the resiliency of the P3 model, with top service delivery continuing despite the global collapse of initial consortium partner Carillion Canada Inc. in 2018. As a result, EllisDon stepped in at short notice and took over 100 per cent responsibility for the 30-year management of the hospital's facilities and services. Partners: Infrastructure Ontario, Halton Healthcare Services Corp., and Hospital Infrastructure.

Partners: Halton Healthcare Services Corporation, Infrastructure Ontario and Hospital Infrastructure Partners (Carillion Canada Inc., EllisDon Corp. and Fengate Capital Management Ltd.)

Acknowledgements

CCPPP has a team of dedicated Award selection committee volunteers who review the applications, select the winners and provide feedback on the case studies. Using their extensive P3 knowledge and experience, they select the winners from a pool of qualified applications and then ensure the case studies provide a learning tool for seasoned practitioners, as well as those new to the P3 model. The following panelists comprised the 2022 selection committee:

- Brad Nicpon, Chair of the Awards Selection Committee and Partner, McCarthy Tétrault LLP
- Shariq Alvi, Managing Director, Energy Infrastructure and Transition Investment Banking, CIBC Capital Markets
- Rupesh Amin, Managing Partner, Infrastructure & Development, Forum Equity Partner
- Peter Hepburn, Managing Director and Head, Infrastructure and Project Finance, National Bank Financial Markets
- Alain Massicotte, Partner, Blake Cassels and Graydon LLP
- Johanne Mullen, Partner, National Capital Projects and Infrastructure Leader, PwC Canada
- Dr. Alan Russell, Professor Emeritus, Department of Civil Engineering, University of British Columbia
- Lindsay Wright, Senior Manager, Global Infrastructure, KPMG LLP

Erica Leung, Ian Podmore and Mark Raboud, Concert Infrastructure; Amy Kasnickas and Stephanie Williamson, Plenary Americas; Linda Cabral and Jennifer Robinson, CCPPP, authored the 2022 Award Case Studies, which were developed with significant input and review from the project partners and procurement agencies as well as the diligent work of the researchers.





CCPPP would like to thank them for their contributions as well as Infrastructure Canada for its research support for the case studies.



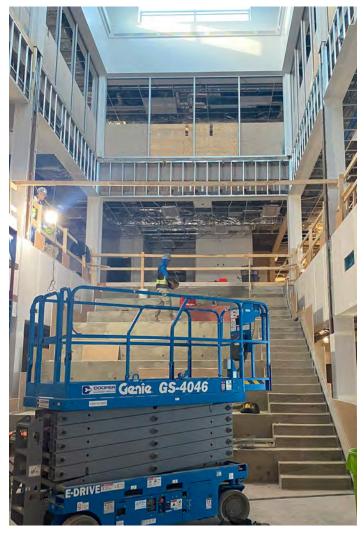
Infrastructure Canada The National Awards for Innovation and Excellence in Public-Private Partnerships were made possible by the generous support of the following 2022 sponsors:

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The atrium at Heritage Valley in January 2024.

About CCPPP

Established in 1993, The Canadian Council for Public-Private Partnerships is a national not-for-profit non-partisan, member-based organization with broad representation from across the public and private sectors.

Our Mission: To shape the future of Canada's infrastructure and services by delivering value to Canadians through public-private partnerships (P3s).

CCPPP is committed to the advancement of public-private partnership models through:

- Convening both public and private market participants to discuss leading practices and harness lessons learned and adapting the model as needed
- Advocating for the use of public-private partnership models, where appropriate to build a sustained pipeline of projects across the country, and
- Conducting research to support evidence-based decision making and demonstrate the benefits of the model

The Council will advocate for procurement models to deliver infrastructure and services to Canadians that provide efficient solutions to public sector objectives, provide value to taxpayers, and encompass each of the following four essential attributes of most effective P3s:

- Allocate the appropriate risk transfer to the party best suited to manage it
- Consider the whole life cycle of the asset
- Drive innovation and efficiencies, and
- Leverage private capital and expertise

The Council will first and foremost support the long-term alignment of incentives through the inclusion of private capital, given its demonstrated effectiveness as a tool to achieve desired outcomes. It will also continue to work with the broader partnership-model community to advance areas of common interest.

Our awards case studies, guidance and analysis reports are available on CCPPP's website at pppcouncil.ca/what-do-we-do/research

Quick Facts - P3 Schools Bundle #2, Alberta¹

Project type

Design-Build-Finance-Maintain (DBFM)

Asset/Service

32.5-year DBFM agreement for five high schools delivered through a single bundled project agreement. The new schools feature:

- A combination of traditional classroom spaces with large collaboration spaces, learning commons and larger flexible classrooms that utilize partitions and breakout rooms
- Most schools also have numerous specialized program spaces such as auditoriums, advanced science labs, audio/ visual production classrooms, automation labs and culinary arts classrooms.

Design and construction period:

32 months

Maintenance period:

30 years

Handback:

May 31, 2054

Status

Contractor used staggered construction for the five schools

- South East High School (Edmonton) September 2021
- Edmonton Heritage Valley Catholic High School May 2022
- Leduc High School May 2022
- Langdon Junior/Senior High School May 2022
- Blackfalds High School June 2022

¹ Background and facts in this case study rely on the information contained in the award application submitted jointly by the project partners in September 2022 to The Canadian Council for Public-Private Partnerships. Information from the submission has been supplemented and updated with information from the procurement documents, the project agreement, the project report, other sources as noted and personal interviews with project partner representatives.

Partners

Public Sector

Government of Alberta

Private Sector

- Concert-Bird Partners comprised of:
 - Concert Infrastructure Ltd.
 - Bird Construction
 - Wright Construction Western Inc.
 - Ainsworth
 - BR2 Architecture

Other participants

Public Sector

- KPMG Financial Advisor
- Deloitte Transaction Process Advisor
- EY Capital Market Advisor
- OPTIMUSISBR Fairness Advisor

Private Sector

Manulife Financial and ATB Financial - Debt Financing

Project cost, financing and Value-for-Money (VfM)

Total project cost

\$300.3 million NPV

Project financing

Concert Infrastructure (80 per cent) and Bird Capital (20 per cent) provided the required equity capital for the transaction. The private sector debt was secured by the equity partners directly from Manulife Financial and ATB Financial, through medium-term debt and a long-term bond structure totalling \$107 million.

Payments

During Construction

The government is providing partial funding (approximately \$108 million) for the schools in an amount that is approximately 50 per cent of the cost of building the schools. This partial funding is paid through progress payments over the course of construction. Payments commence once 30 per cent of the construction is complete, and the remaining 70 per cent of the partial funding is paid monthly based on percentage complete during the construction period.

During Operations

- Monthly service payments over a 30-year period for construction of the facility, building maintenance, life cycle repair and renewal and project financing.
- Subject to financial deductions based on performance requirements established in the project agreement.

Value-for-Money - DBFM

\$114.5 million or 27.6 per cent (in 2021 dollars)

Project highlights and innovative features

- The first ever P3 bundle in Alberta comprised exclusively of high schools.
- Once completed in May 2024, the state-of-the-art schools will serve almost 7,000 students in the municipalities of Blackfalds, Edmonton, Leduc and Langdon.
- The project created buy-in and collaboration among all stakeholders during every stage of procurement and delivery. This early and transparent engagement of school jurisdictions has dramatically improved support for the P3 delivery model as well as the end product being delivered by the project.
- Given the significant impact of the pandemic to all parties, the schools have been designed to meet the needs of classroom configuration and teaching techniques, changing populations and class size.
- Targeting LEED® Silver certification for all schools.
- As of winter 2024, 99 per cent of the work was awarded to locally based businesses.

Project website

P3 Value For Money Assessment And Project Report : 2019 P3 Schools Bundle

Alberta P3 Schools Bundle (P3SB2)



The P3SB2 project is delivering five new high schools that will be the province's largest and most state-of-the-art. They are located in four different municipalities and are part of five separate school jurisdictions.

These are transformative projects, delivering the first high schools ever located in some communities and significantly reducing travel time for students between municipalities. They are also specifically tailored to the needs of the individual communities in which they are located.

The school bundling project, set to open to students in September 2024, is supporting about 1,700 construction-related jobs and providing 7,000 new student spaces in Alberta.²

This is the fourth school bundling project undertaken in Alberta. In total, 40 new schools have been built since 2008 under P3 contracts in the province, making the province a leader in this approach to school construction and maintenance in North America. Except for those currently under construction, all of these these schools — owned and operated by various school jurisdictions across Alberta — are now in the operations phase and maintained by the P3 private sector partner.

School bundling projects have also been undertaken in Saskatchewan and Nova Scotia.⁵

The Government of Alberta decided to bundle the schools together in one design, build, finance, and maintain (DBFM) public-private partnership (P3) agreement because of improved cost and schedule certainty, a transparent and accountable procurement process, faster delivery and an effective 30-year warranty. Importantly, a Value-for-Money (VfM) assessment found estimated cost savings of approximately \$114.5 million compared with a traditional design bid-build procurement approach.⁶



Official groundbreaking in Leduc.

- 2 Government of Alberta. P3 approach is building new schools across Alberta, May 26, 2022. https://www.alberta.ca/release.cfm?xID=82643E40679BE-CBAF-AE5E-E346AC8A97629C8B (Accessed August 23, 2023).
- 3 Government of Alberta. Public-private partnerships (P3s). https://www.alberta.ca/public-private-partnerships (Accessed August 23, 2023).
- 4 In September 2008, Alberta entered into a DBFM agreement with BBPP Alberta Schools for 18 new schools. Construction was completed in June 2010. In April 2010, Alberta signed a DBFM agreement with B2L Partnership for 10 new schools. Construction was completed in June 2012. In September 2012, Alberta signed a DBFM agreement with ABC Schools Partnership for 12 new schools. Construction was completed in June 2014.
- 5 Bundled DBFM P3 Projects in Canada include Nova Scotia P3 Schools Project; North Island Hospitals Project; Saskatchewan Joint Use Schools Project 1; Saskatchewan Joint Use Schools Project 2; Alberta Schools Alternative Procurement 1 (ASAP 1); Alberta Schools Alternative Procurement 2 (ASAP 2); Alberta Schools Alternative Procurement 3 (ASAP 3); Ontario Provincial Police Modernization; Newfoundland and Labrador Central LTC.
- 6 Government of Alberta. P3 Value for Money Assessment and Project Report: 2019 P3 Schools Bundle, December 2021, page 3. https://open.alberta.ca/dataset/14cfdb4e-9166-4c8a-8d8a-0953c0a3083b/resource/40949912-5c8e-4593-bcf4-7c8279ef5e96/download/infra-p3-value-for-money-assessment-and-project-report-2019-schools-bundle.pdf (Accessed August 23, 2023).

In September 2021, after a 12-month comprehensive, competitive procurement process, Concert-Bird Partners was selected as the preferred proponent and the project reached financial close that same month in the midst of the pandemic.⁷

The \$300.3-million project broke ground in September 2021 with Edmonton South East high school, followed by Edmonton Heritage Valley Catholic high school, Leduc high school and Langdon junior/ senior high school (May 2022), and Blackfalds high school (June 2022). The intentional stagger of the starts provided increased time for permitting and site requirements compared to a typical project. It also helped prioritize the resources of select subcontractors and manage supply demands on key materials. Overall, the project will create a total permanent structure area of 59,853 square metres.

Unlike other bundled delivery models, which were generally developed to deliver more standardized type facilities, this project is delivering schools that that were independently designed in direct consultation with their associated school jurisdiction to meet the specific needs and educational programs of their communities. This includes different functional planning, selection of different building systems, finishings and architectural expression. Building forms vary, including heights, which reach up to four storeys.

"The PPP process has been instrumental in the success of the project . . . In addition to the cost savings attributed to the PPP procurement model, we believe that enhanced quality could be achieved based on both the model, careful project planning and collaboration with the Concert-Bird Partners team. The team used lessons from previous PPP projects to develop among other things, better collaboration with school jurisdictions, which is ensuring that the communities are receiving schools that best meet their end needs."

- George El-Mehallawy
Director, P3 Delivery, Alberta Infrastructure —
Learning Facilities Branch

The merits of using the bundled DBFM in this context are far reaching. Notably in the economies of scale and the sophistication of the coordinated delivery, which offer benefits to the specialized nature of each school being delivered.

The team delivering this project directly addressed numerous key challenges, notably:

- Establishing a solid working relationship with each of the five school jurisdictions and communities involved.
- Tackling the challenging market in 2022-2023, including the lingering impacts of the COVID-19 pandemic, supply constraints, labour shortages, as well as general cost escalation (inflation).
- Given the status of the Albertan economy, it was critically important the project serve to maximize work generation for local businesses and trades people. Concert-Bird Partners is working to ensure the project is directly delivered by Albertans. In fall 2023, an estimated 99 per cent of the work has been awarded to locally-based businesses.⁹

The team has made it a clear priority to meet frequently with each school jurisdiction to understand their concerns, integrate them as an on-site partner during the delivery, and operate with a level of transparency and collaboration previously not achieved on projects of this nature.

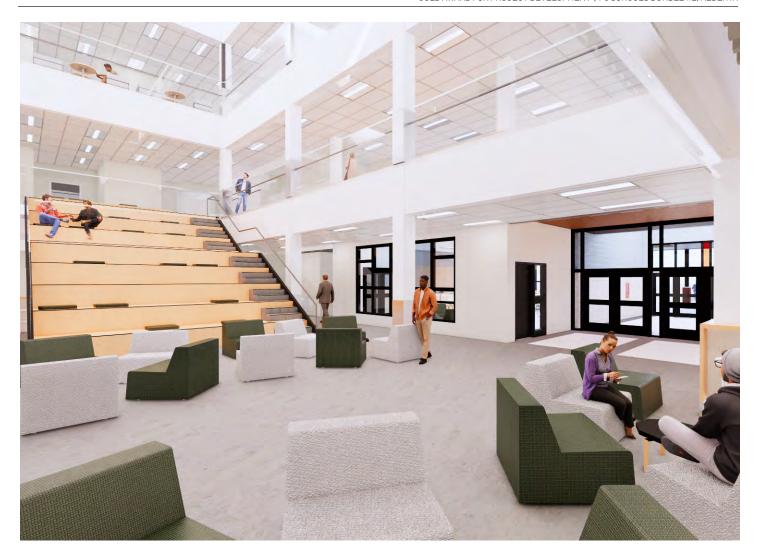
In 2022, the P3SB2 project won gold for project development at CCPPP's National Awards for Innovation & Excellence in P3s. The awards committee commended the project for its ability to progress from procurement to financial close in the midst of the pandemic and for delivering VfM for taxpayers, showcasing the benefits and value of a P3 bundling approach to delivering schools.

The project also won the Best Education and Higher Education
Project at the North American P3 Bulletin Awards, largely attributed
to the ability of the partners involved to achieve new levels of
collaboration and for its procurement and delivery during some of
the most challenging economic and construction conditions seen in
recent history.

⁷ Bird Construction has previous P3 school bundling experience in Alberta through BBPP Alberta Schools and B2L Partnership, while Concert Infrastructure is also involved in B2L Partnership.

⁸ Government of Alberta. P3 approach is building new schools across Alberta, May 26, 2022. https://www.alberta.ca/release.cfm?xID=82643E40679BE-CBAF-AE5E-E346AC8A97629C8B (Accessed August 23, 2023).

⁹ Interview with Concert-Bird Partners in spring 2023.



A rendering of the design flexibility in the new high schools. A large presentation staircase and common areas doubles as an auditorium and educational space for larger groups at Edmonton – Heritage Valley.

Background and Rationale

Each year, school jurisdictions across Alberta create a list of building projects that are important to their communities for the next three years. The province uses this information to create its capital plan to decide what projects will be approved when funding is available.

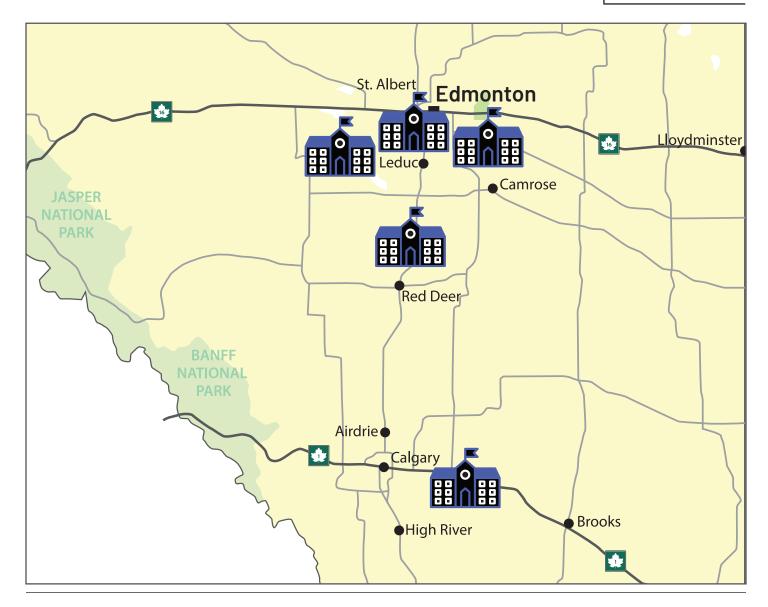
Factors that are considered include:

- a school's impact on health and safety of students
- the condition of the buildings, and
- enrolment trends

If a project is approved, the local school jurisdiction, Alberta Education and Alberta Infrastructure work together on the details of the project to help ensure it meets students' needs.

In 2020, the Alberta government approved the construction of 11 new schools, including five high schools. The high schools were bundled together into a single procurement using the public-private partnership DBFM model.

School Jurisdiction ¹⁰	Community	Project Type	Total Student Capacity
Edmonton School Division	Edmonton - South East	High School (10-12)	2,513
Black Gold School Division	Leduc	High School (10-12)	1,121
Edmonton Catholic Separate School Division	Edmonton – Heritage Valley	High School (10-12)	1,330
Wolf Creek School Division	Blackfalds	High School (9-12)	970
Rocky View School Division	Langdon	Junior/Senior High School (7-12)	1,004
		Total	6,938



10 At the time of publication in fall 2023, the schools have unofficially changed their names to Edmonton South East - South East High School; Leduc - Ohpaho Secondary School; Edmonton Heritage Valley - Father Michael McCaffery High School; Blackfalds - Iron Ridge Secondary Campus; and Langdon - Langdon High School.

Description of the Project

The project is delivering five of Alberta's most state-of-the-art high schools. The unique design of each school embraces new teaching and educational planning, tailored to the needs of the community, educators and students it serves.

In general, the design of each of the school has extensive programmatic flexibility, integrating traditional classroom spaces with large collaboration spaces, learning commons and larger classrooms that utilize partitions and breakout rooms to maximize the opportunities for students to collaborate and gain the benefit of customized educational programming.

Large common areas link different educational programs across numerous floors into a larger "campus hub" settings not typically seen in traditional high school design. These areas serve to function as the heart of the schools.

In some schools, large presentation staircases and common areas will double as auditoriums and educational space for larger groups. The nature of these designs requires extensive planning, notably

in terms of acoustics, audio and visual technologies, lighting, mechanical and electrical coordination, and life safety. These spaces are also supported by leading edge technologies, including enhanced data and Wi-Fi capabilities, lighting and theatre controls, display, sound and acoustic systems. These systems are of greater complexity than is typically associated with school delivery.

In addition, most schools have numerous specialized program spaces including:

- Drama/auditorium
- Advanced science labs
- Information services classrooms (computer labs)
- Advanced fitness training facilities
- Audio/visual production classrooms
- Automation labs
- Mechanics, welding and automotive repair labs
- Construction classrooms
- Culinary arts classrooms, including master chef kitchens and canteens
- Cosmetology studios



A progress shot of Edmonton South East in mid-2023.



The exterior of Edmonton South East in January 2024.



Blackfalds high school rendering.



Edmonton - Heritage Valley rendering.



A rendering of Leduc high school.



A rendering of Langdon high school.

Project Development Innovation

A Bundling Done Differently

The most innovative aspect of the P3SB2 project delivery is the application of a bundled DBFM to five highly specialized, large and custom designed high schools in new communities still undergoing site-based land developments.

Unlike past multi-site bundled school deliveries, the five high schools in this bundle are being delivered by numerous separate design teams in direct consultation with school jurisdiction representatives.

This means each school is uniquely designed to meet the needs of its community. As such, the procurement process was structured to allow bidding teams greater flexibility to adjust the design to optimize for the merits of bundled project delivery, while not adversely impacting the programmatic intent of the school jurisdiction-led base designs.

This shows the adaptability and value that can be derived from a bundled project delivery. While most think of bundled projects as "cookie cutter" in design and scope, the actual merit and value of bundled delivery has little to do with the design and more to do with the sophistication and quality of the project team's delivery and economies of scale.

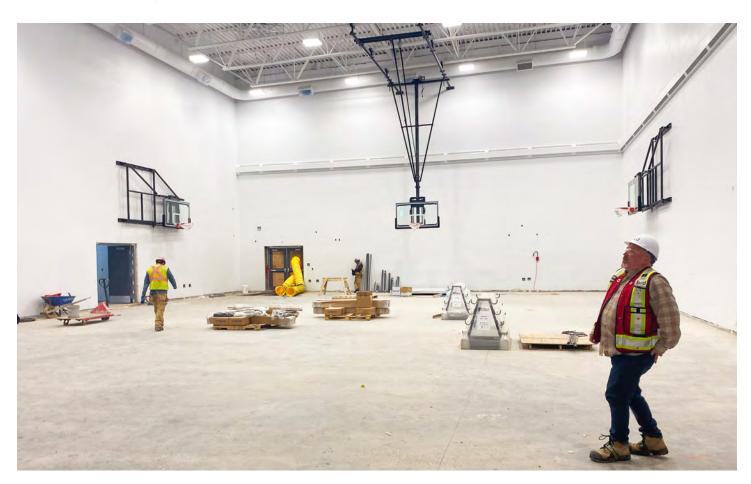
To date, bundling has been used in Canada to deliver P3 hospitals, schools, childcare facilities, and justice/policing facilities. Given the growing demands of our smaller communities and their changing demographics, this tool is an invaluable approach to meet the many infrastructure needs that exist across Canada — at scale.

This approach was successful for P3SB2 because of the following key benefits:

 Bundling reduces overall project costs by creating macro economy of scale efficiencies across multiple smaller projects. It also lowers overall financing, procurement, due diligence and closing costs with a single project agreement for all five schools. Value-for-Money (VfM) analysis supports the delivery at reduced cost to taxpayers.

- Increases administrative efficiencies by affording multiple small-scale projects (five schools) with the expertise of a large multi-disciplinary P3 project delivery team.
 Efficiencies apply equally across all project phases (construction and maintenance periods).
- Reduces project risks through increased levels of accountability government has over a single vendor responsible for all aspects of project delivery. The Alberta government can more easily manage and track bundled projects with consistency of approach, delivery, maintenance and management across projects. In projects with multiple providers, "finger pointing" can become the norm and project management inefficiencies result in project delays.
- Increased level of competition by attracting both larger scale contractors, while also allowing smaller and local trade participation. Competition can be retained through formal, transparent bidding processes. Bundling expands the

- competitive procurement process, particularly in markets where there is a limited number of contractors to deliver the work and expands the opportunities for local contractors. Bundling enhances the attractiveness of smaller projects to the market and as a result increases the level of competition for the work which delivers greater value for money for scarce departmental resources.
- Increased levels of knowledge transference amongst contractors, notably local general and subcontractors who are integrated into the design-build process thus increasing market capacity.
- Robust risk transference protections, including buffers from the impacts of the COVID-19 pandemic and general economic and construction market specific escalations.
- Bundling allows for knowledge transference and the incorporation of lessons learned from other sites to improve quality and reduce potential challenges.



The basketball hoops are up and awaiting student athletes at Edmonton's Heritage Valley gymnasium in January 2024.

Multi-Site Delivery

The most unique, challenging, and intensive aspect of a multisite project execution is that of site preparation and approvals on numerous sites concurrently. This work requires extensive resourcing and coordination amongst all stakeholders involved.

This complexity has proven too great for some jurisdictions. While there are many highly successful examples of P3 bundling in Canada, the challenge of bundled delivery has resulted in similar projects being cancelled, re-rationalized, or shelved.

For this project, the Alberta government created dedicated teams and resources to engage all affected stakeholders on a coordinated basis. This included the support of Alberta Infrastructure's Technical Services Branch and the school jurisdictions who were on-boarded as partners in the project.

Typically, when delivering new schools, especially in growing communities, the sites selected are in new subdivisions. This means that certainty of servicing and site conditions typical of infill projects in urban environments often do not exist at time of bid.

School sites are most often true greenfield sites with limited access, including yet to be subdivided land in communities under development. This is true of P3SB2.

As such the Alberta government worked diligently with each municipality during the RFP period to provide bidders with accurate information outlining the conditions of each site, the development conditions requiring resolution prior to construction permitting and timelines for key activities associated with each site's "readiness." This included detailed assessments of infrastructure requirements and other information.

To achieve construction starts at each site required the direct cooperation and engagement of each key stakeholder: the Alberta government, Concert-Bird Partners, multiple bridging team members, four municipalities and their supporting team members, utility companies, land developers, five school jurisdictions and other parties.

The delivery has been made possible by using temporary roads, sequential permitting and prioritizing resources to enable the fast-tracked start of select sites.

Procurement Process

The Alberta government procured the project as five bundled schools in a single P3 contract. The province chose P3 delivery over traditional delivery for the following reasons:

- Value-for-Money
- Cost, quality and schedule certainty
- Transparent and accountable procurement process, and
- An effective 30-year warranty

By using this model, the government can optimize risk allocation between public and private sectors, which incentivizes them to deliver the project on time, on budget and to the required quality standards.

Alberta utilized its existing DBFM Agreement to service this project, including its well tested RFQ and RFP documentation and procurement processes. The bundled P3 model was initially set out by the Alberta government in 2008 for the delivery of the ASAP I (Alberta Schools Alternative Procurement I) project and later adopted in other Canadian provinces such as Ontario and Saskatchewan, as well as Maryland.

Before formally launching the procurement process, the government conducted an extensive market sounding program to road test the proposed project with industry in recognition of its experience, to gain its perspective and gauge interest. The market soundings aided the government in its work to finalize the scope of each school and the makeup of the bundle. It also ensured ample competition.

The procurement for the P3SB2 project involved a competitive two-stage bidding process, involving a Request for Qualifications (RFQ) stage followed by a Request for Proposals (RFP). To ensure procedural fairness, the government retained a fairness auditor to oversee and report on the RFQ and RFP process.

During the RFQ stage, interested private sector partners were required to demonstrate their qualifications, experience and financial capability to undertake a project of this scale. The government evaluated the submissions based on a set of predefined criteria, including experience, technical capabilities, financial strength and capacity to deliver the project.

Four teams responded to the RFQ, with three prequalified teams shortlisted and invited to participate in the RFP stage.

Figure 1: Shortlisted teams¹¹

Alberta Partnership for Learning	Concert-Bird Partners	Plenary-Maple High Schools
 Graham Capital Partners LP GEC Architecture Gibbs Gage Architects Graham Design Builders LP Johnson Controls Canada LP 	 Concert Infrastructure Ltd. BR2 Architecture Bird Construction Wright Construction Western Inc. Ainsworth Inc. 	 Plenary Americas LP Stantec Architecture Ltd. Maple Reinders Constructors Ltd. Honeywell Canada Ltd.

During the RFP stage, the government provided detailed project requirements and evaluation criteria, and the bidders were required to submit a proposal outlining their approach to design, construction, financing and maintenance of the schools.

The government evaluated the proposals based on several criteria, including technical quality, financial feasibility and Value-for-Money. After a thorough evaluation process, the winning bidder was selected based on their ability to deliver a high-quality project that met the government's requirements while providing value for money.



The exterior of Blackfalds in January 2024.

¹¹ Government of Alberta. Building the schools Alberta needs, November 5, 2020. https://www.alberta.ca/release.cfm?xID=75636FD227662-A6BA-6D1A-6ED2520C179167F0 (Accessed August 23, 2020).

Table 1: Project timeline

September 8, 2020

RFQ issued

October 8, 2020

RFO deadline

November 4, 2020

RFP issued

December 2, 2020

SR Package 1 submission deadline (general information as well as a management plan and preliminary designs)

March 4, 2021

SR Package 2 submission deadline (detailed management plans and detailed designs)

May 13, 2021

SR Package 2B submission deadline (Following SR Package 2 evaluation and clarification but prior to SR Package 3 deadline, each proponent is required to submit a restated SR Package 2B incorporating all of the clarifications provided by the proponent in response to the province's requests for clarification and an indicative financial model and indicative financing plan)

July 22, 2021

SR Package 3 submission deadline (Final financial model, final financing plan, a financial offer and preferred proponent deposit)

September 28, 2021

Financial Close

Late September 2021

Construction Start

May 31, 2024

Scheduled Substantial Completion

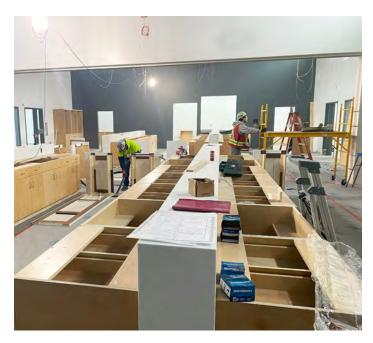
May 31, 2054

Project Handback

COVID-19 Impact on Procurement

The project procurement and the financial closing process were undertaken during the peak of the pandemic. The Alberta government met this challenge by adopting a fully virtual procurement from start to finish for the first time.

This meant all key meetings were conducted using various online meeting forums, all submissions were electronically submitted, and the closing process was conducted virtually as well. To achieve this was no small task, as the province had to adapt all its procurement and submission protocols.

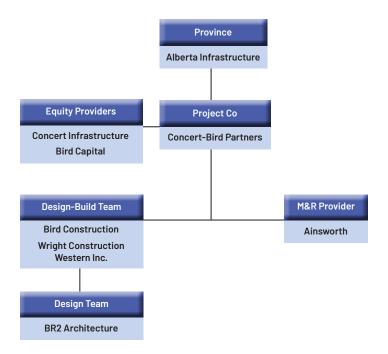


A science lab comes together at the Langdon school in January 2024.

Overall Structure of the Agreement

Concert-Bird Partners assembled a team of developers, designers, contractors, financiers, operators and advisors to fulfill Alberta Infrastructure's objectives.

All team members were purposely selected based on experience, best-in-class skill sets within the industry and each specific discipline/focus, as well as a proven focus on successful long-term project outcomes and partnerships.



Risk Allocation

The project's DBFM Agreement assigns risks to the party best situated to address them.

Ultimately the agreement and supporting documents assign the overall delivery responsibility to Concert-Bird Partners, which in turn has provided a fixed price/fixed schedule delivery solution to the province. This is done on a risk allocation typical of most P3s delivered in Canada.

The P3SB2 project is one of only a handful of P3 projects across Canada that were able to achieve financial close and provide a fixed price/fixed schedule solution at the peak of the global pandemic — a time of unprecedented economic volatility and general market uncertainty. The challenges tackled included major labour and material supply challenges, inflation and evolving government health and safety precautions related to COVID-19.

The procurement model allowed the competition to price these risks, protecting Alberta taxpayers from sudden cost shocks caused by market conditions.

The Alberta government mitigated risks associated with site zoning, development permit and servicing risks by advancing the design prior to procurement, aligning the design to the development planning, and allowing for faster design development during delivery. This was instrumental in allowing the school design to advance concurrently with the sites preparations to receive the buildings once designed and permitted.

The government's transparency on the status of each site's condition, servicing and ongoing approvals processes led directly to the private sector partners' confidence in bidding on the project.

The government needed lessons from previous school bundles to provide the P3SB2 project with a schedule that allotted increased time to address risks during construction. This significantly derisked the project for all parties and provided greater certainty of on-time delivery to the communities involved.

The Concert-Bird Partners team used the 32-month construction schedule as an opportunity to start the largest school early in September 2021, while deferring the remaining four sites to a spring 2022 start.

In addition, this schedule increased opportunities for greater collaboration and design refinement with input from the school jurisdictions involved. This ensured tender packages were fully detailed and could be awarded closer to the intended scopes commencement. The deferred start also allowed early subtrade engagement, enhancing design and value engineering activities.

Once operational, the Alberta government will use a performance monitoring program that is similar to the one used in previous P3 school bundle projects it has conducted. This includes an extensive monitoring and deduction program focused on driving optimal performance outcomes at each school.



A drone shot showing construction progress at Leduc's high school in mid-2023.



The exterior of Leduc's high school in January 2024.



Table 2: Allocation of key responsibilities and risks

Risks and Responsibilities	Alberta	Concert-Bird Partners	Shared
Construction Risks			
Construction costs		•	
Material and wage inflation		•	
General Risks			
Land acquisition	•		
Coordination and approvals through users			
Life cycle management		•	
Utilities hook up/connections			
Approval Risk			
Development permits			
Building permits		•	
Occupancy permits		•	
Municipal requirements			
Technical Risks			
Structure safety			
Construction and operation performance specification risks			
Design quality issues			
Financial and Economic Risks			
Cash flow management – construction and operations			
Sourcing of capital - construction			•
Sourcing of capital - operations			
Operations and Maintenance Risks			
Changes in legislation			
Labour and Material issues			
Performance issues			

Financial Arrangements

Concert and Bird Capital are the co-leads of the team responsible for the overall financing and are also the equity owners of Concert-Bird Partners. Both companies have extensive experience running funding competitions, selecting and negotiating a fixed financing solution in public-private partnerships.

To finance the P3SB2 project, Concert and Bird Capital provided the required equity capital for the transaction. The private sector debt was provided by Manulife Financial and ATB Financial, selected through a competitive funding competition.

The government is providing partial funding (approximately \$108 million) for the schools in an amount that is approximately 50 per cent of the cost of building the schools. This partial funding is paid through progress payments over the course of construction. Progress payments start once 30 per cent of the construction is complete.

Total Project Cost: \$300.3 million (2021 dollars) NPV

The financing team led by Concert and Bird Capital created a competitive and deliverable financing plan, with a fully functional and robust financial model. The financing solution is guided by the following principles:

- Reliable Sources of Equity Concert-Bird Partners' equity capital was directly provided by the equity members
 Concert and Bird Capital.
- Optimized debt financing The consortium carried out a
 competitive process to source the senior debt, evaluating
 all options on the basis of balancing the certainty of
 reaching financial close with ensuring the most competitive
 all-in financing for the Alberta government, taking into
 consideration all-in interest rates, financing conditions and
 the relative costs of the required performance security.
- Fully committed financing with credit committee approval

 In order to maximize execution certainty, the consortium
 received commitments from its senior lenders based on a
 detailed debt term sheet, enabling the greatest certainty
 of execution and financial close to be achieved in the time
 period prescribed in the RFP.
- Senior debt due diligence The senior lenders completed detailed due diligence on the project and the financing proposal in order to provide a debt financing commitment prior to bid submission. Comprehensive due diligence

- included the review of various information packages, negotiated construction and maintenance and renewal drop down heads of terms agreements, discussions with legal counsel and technical and insurance advisors' due diligence reports.
- No refinancing risk The consortium's solution consists of a combination of medium-term and long-term financing solutions that will fully amortize over the maintenance and renewal period. As such, it does not require a mandatory refinancing, which would introduce refinancing risk to the project. The resulting fixed-term financing solution provides the government with greater certainty of deliverability and enhances the long-term viability of the consortium's solution for the project.
- No interest rate risk The consortium's interest costs were fixed from financial close for the entire term of the project as the senior debt was issued at a fixed interest rate. Fixing interest rates on the senior debt eliminates the possibility of cost escalation due to interest rate fluctuation and ensures that the consortium's financing solution provides long-term stability of the project.
- Achieving an expedited financial close The consortium
 was able to draw on its experience reaching financial close
 on Alberta Schools Alternative Procurement (ASAP) III, in
 addition to other transactions outside of Alberta, to ensure
 a quick and efficient financial close process on the P3SB2
 transaction.

Value-for-Money (VfM)

By using a public-private partnership to design, build, finance and maintain five new high schools as part of the P3SB2 Project, the Alberta government will save approximately \$114.5 million over the life cycle of the project (in 2021 dollars) compared to a traditional design bid-build approach (\$300.3 million instead of \$414.8 million, a 27.6 per cent savings). It will also deliver the schools at a guaranteed fixed date.

12-13 Government of Alberta. P3 Value for Money Assessment and Project Report: 2019 P3 Schools Bundle, December 2021, page 3. https://open.alberta.ca/dataset/14cfdb4e-9166-4c8a-8d8a-0953c0a3083b/resource/40949912-5c8e-4593-bcf4-7c8279ef5e96/download/infra-p3-value-for-money-assessment-and-project-report-2019-schools-bundle.pdf (Accessed August 23, 2023).

The Value-for-Money (VfM) report was independently prepared by the Government of Alberta in collaboration with KPMG and includes a complete summary of the risk allocation and structuring of the DBFM agreement.

This assessment shows that using a P3 model delivered VfM. The process to procure, award and close the transaction with Concert-Bird Partners was overseen directly by OPTIMUS|SBR, an independent fairness advisor.

"As the fairness auditor for the project, we certify that the principles of openness, fairness, consistency and transparency have been, in our opinion, properly established and maintained throughout the procurement process. Furthermore, we were not made aware of any issues that emerged during the process that would impair the fairness of this initiative," said lead fairness auditor Jamie O'Brien in the report.¹⁴

Community and Social Benefits

Sustainable Design

The project includes sustainable design features, such as energy-efficient systems, water conservation measures and environmentally friendly building materials. This will help reduce the environmental impact of the schools and promote sustainability in the community. All schools included in the bundle are targeting LEED® Silver Certification.

Key sustainable design features include:

- Energy-efficient Systems: The schools are designed to reduce energy consumption and greenhouse gas emissions through the use of energy-efficient lighting, heating, ventilation, and air conditioning (HVAC) systems.
- Water Conservation: The schools will use water-efficient fixtures such as low-flow toilets, faucets and showers. Landscaping is designed to be maintained without irrigation or with at least a 50 per cent reduction in water usage.
- Sustainable Materials: The schools are constructed using low-VOC (volatile organic compounds) paints, recycled content flooring and sustainably sourced wood. These materials are

- chosen for their durability, energy efficiency and environmental sustainability.
- 4. Sustainable Sites: The project includes provisions for sustainable site design with features such as joint use gyms, cafeterias, parking and fields. In addition, the schools have been designed to reduce light pollution.



Langdon High School site blessing.

Community Benefits

A school is an important cornerstone of a thriving and prosperous community. Notably some of these communities are receiving their first high school, meaning children will no longer have to bus long distances to other communities. They are also being constructed in close proximity to existing community facilities and schools.

The design of these schools is the direct result of the school jurisdictions inputs to deliver state-of-the-art learning environments that are designed to meet the evolving needs of students and educators. Science labs, libraries, gymnasiums, and outdoor play areas are designed to be more engaging and dynamic, providing students with a better learning experience that can help improve their academic performance. The schools are also equipped with the latest technology to enhance learning and teaching.

In addition, they feature best-in-class ventilation systems to help reduce the spread of airborne viruses and secure entry systems that require visitors to be screened and identified before being granted access to the school.

page 24-26. https://open.alberta.ca/publications/p3-value-for-money-assessment-and-project-report-2019-p3-schools-bundle (Accessed August 23, 2023).

¹⁴ Government of Alberta. P3 Value for Money Assessment and Project Report: 2019 P3 Schools Bundle, December 2021.

A key aspect of community impact is the integration of First Nations participation, acknowledging the important role they play in each community. Some schools will receive Indigenous names and curriculum will focus on educating students on the history of local First Nations. Indigenous leaders have also blessed school sites and conducted ceremonies in front of future students on the summer solstice and National Indigenous Peoples Day.

Communication

Between Partners Before And During Procurement

Communication is key to every phase of a project delivery, including engagement with the market prior to procurement. The Alberta government used market soundings as an important tool in this engagement. While market soundings can serve as a "tick in the box" effort by independent firms with no participation by public project leaders, that was not the case for this project.

The government held transparent discussions with the private sector on the challenges and objectives faced by the project. This active dialogue with industry was instrumental in determining the ultimate procurement approach taken.

Once in procurement, the communication processes were administered with the help of procurement advisors and fairness monitors to ensure a compliant, fair and collaborative process. This resulted in extensive engagement with bidders during both the RFQ and RFP periods, further strengthening bidder's confidence in the process.

In addition, the project team conducted extensive consultations with local communities, Alberta Education and Alberta Infrastructure to ensure their input and feedback were incorporated into the project's design and planning. The project team has maintained open and transparent communication with the communities throughout the project's development and implementation phases.

Between Partners After Financial Close

After Concert-Bird Partners was selected a variety of communication tools were adopted. Notably, the project is administered with an "all hands" call attended to by representatives of the Alberta government and the consortium team. Dialogue in this forum is open, collaborative and solutions oriented.

The forum intentionally defers contractual interpretation debates and other points of contention to dedicated one-off meetings, so the broader project culture is never affected. There is also less formal engagement at every level of the project team, including direct engagement between the design-builder and government as necessary, the design team and bridging team, and between all members and the school jurisdictions.

While these formats constitute the informal project delivery, to ensure the project is administered formally the government and consortium hold monthly project meetings to address specific project needs in a formal recorded fashion using meeting minutes. These meetings are supported by focused site tours and dedicated meetings with each school jurisdiction monthly.

With The Public Prior To And During The Project

The Alberta government has administered this project in accordance with its proven community consultation and engagement strategies. Notably all schools were planned for through tested business case, funding and approval processes.

The government, Indigenous Peoples, school jurisdictions and Concert-Bird Partners recognized the significance of these projects to local communities through site specific site blessings, sod turning events and site events celebrating the start of construction. Going forward, the sites are expected to generate considerable interest by the communities they support.

Government public communication is managed directly by dedicated teams, supported by project resources. Concert-Bird Partners also provides input and support via its appointed project director and marketing and communication team members from Concert and Bird.

Description Of Any Disputes And How They Were Resolved

Any challenges that have arisen on the project have thus far been resolved through open communication. The processes outlined earlier have been instrumental in avoiding fundamental disagreements, with all parties focusing on the collective best interests of the project, resolving matters through the spirit of partnership that P3s are expected to achieve.



A drone shot showing construction progress at Edmonton - Heritage Valley in mid-2023.

Lessons Learned

The most important lesson learned is the importance of communication. The open and transparent dialogue during the market sounding process enabled the Alberta government to rationalize a project scope that extracted the benefits of P3 and bundled project delivery, while ensuring sufficient market interest and competition to enable the procurement. This included:

- Early non-project specific market soundings on the P3 delivery model and lessons learned from past projects;
- Validation of scope and scale of the bundled package;
- Geographic dispersion of schools and;
- Avoidance of modular constructed classrooms.

While Canada has a highly successful history of adopting a bundle P3 delivery model to produce critical social infrastructure, the model continues to have limited utilization nationwide given a general unfamiliarity and limited comfort in amending traditional delivery approaches.

The Alberta government is continuing to lead with this approach, adapting and evolving the P3 bundling model to deliver value to taxpayers.

Recognizing and empowering the school jurisdictions as key project stakeholders has created better and more collaborative project design and built their trust and confidence in the project as the end users of these important educational facilities. The collaboration

of all stakeholders has worked to address previous challenges on bundled school projects.

When bidding a fixed price/fixed schedule delivery for a construction project, it can be challenging to accurately estimate the time and resources required to complete the project. There are many factors that can impact the timeline, including unexpected weather, delays in the delivery of materials and changes in the scope of work. These risks can be especially acute when working on a project with seasonal constraints on construction, such as a school building that must be completed before the start of the academic year. To address these risks, this project has used extended construction timelines. By allowing for more time to complete the project, Concert-Bird Partners can better manage unexpected delays and changes in scope. This provides greater flexibility in scheduling work during periods of more favorable weather, helping to reduce the risk of weather-related delays.

In recent years, the province has worked to increase their capacity to deliver projects such as these to maximize benefits to Albertans. This included strengthened project delivery methodologies and processes to address past lessons learned. The collaboration of all stakeholders has also worked to address challenges from previous bundled school projects.

The Concert-Bird Partners team and Alberta Infrastructure intend to use the experience gained from this project to further enhance the procurement, design, construction and maintenance of future bundled projects in Alberta and across Canada.

Concluding Comments

The P3SB2 project is an innovative and forward-thinking approach to modernizing the education system and investing in the local community.

Building on a long track record of success in the Canadian market, notably Alberta, using the P3 model to deliver education projects and bundling project deliveries, the project has:

 Improved the model, notably through enhanced collaboration with all stakeholders, active community engagement and progressive school designs;

- Showcased the application and merits of bundled project delivery to larger and more complex projects and;
- Furthermore, the project's ability to navigate challenging site approvals and site readiness conditions showcases the important benefits that collaboration achieves.

By creating state-of-the-art learning environments, promoting sustainability, and engaging with the community, the project team has set a new standard for public infrastructure projects that prioritize the needs and well-being of the community. The project demonstrates what can be achieved when the government, private sector partners and the local community work together towards a common goal.



A rendering depicting presentation staircase and common areas at Edmonton's South East High School.

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Appendix: CCPPP's National Award Case Studies 1998-2022

Broadband

Accelerated High Speed Internet Program, Ontario (2022)

Defence

Communications Security Establishment Canada Long-Term Accommodation Project (2011)

Education

P3 Schools Bundle #2, Alberta (2022)

Quad at York University, Ontario (2018)

Saskatchewan Joint Use School Projects (2015)

Alberta School Alternative Procurement - Phase 1(ASAPI), Alberta (2010)

O'Connell Drive Elementary School, Nova Scotia (1998)

Energy

Energy Services Acquisition Program (ESAP)/Energy Service Modernization (ESM) Project, Ottawa-Gatineau (2020)

Fort McMurray West 500-kV Transmission Project, Alberta (2018)

John Hart Generating Station Replacement Project, B.C. (2014)

Britannia Landfill Gas to Electricity Project, Ontario (2005)

Vancouver Landfill Gas Cogeneration Project, B.C. (2003)

vancouver Landrill Gas Cogeneration Project, B.C. (2003

Bruce Nuclear Power Facility, Ontario (2000)

Waterloo Landfill Gas Power Project, Ontario (2000)

Government Services

Gatineau 2, Library and Archives Canada (2022)

Archives of Ontario - Offsite Archival Storage (2006)

Cook Chill Food Production Centre, Ontario (2005)

DriveTest: Ontario Driver Examination Services (2004)

Transforming the Delivery of Ontario's Social Assistance System (2003)

Emergency Service Mobile Communications in Ontario (2000)

Electronic Child Health Network, Toronto, Ontario (1999)

Teranet, Ontario (1998)

Health

Cortellucci Vaughan Hospital, Ontario (2021)

New Oakville Trafalgar Memorial Hospital, Ontario (2016)

Humber River Hospital, Ontario (2015)

BC Cancer Agency Centre for the North and Fort St. John Hospital &

Residential Care Project, B.C. (2012)

Centre Hospitalier de l'Université de Montréal Project (2012)

Glen Campus - McGill University Health Centre, Quebec (2010)

Women's College Hospital Redevelopment Project, Ontario (2010)

Royal Jubilee Hospital Patient Care Centre, B.C. (2009)

VIHA Residential Care and Assisted Living Capacity Initiative, B.C. (2007)

Abbotsford Regional Hospital and Cancer Centre, B.C. (2008, 2005)

Facility Management for the Royal Ottawa Health Care Group, Ontario (2000)

Devonshire Care Centre, Alberta (2000)

Shaikh Khalifa Medical Centre, United Arab Emirates (2000)

IT Infrastructure

Connecting Small Schools in Newfoundland (2003)

Justice & Corrections

Forensic Services and Coroner's Complex, Ontario (2016)

Okanagan Correctional Centre, British Columbia (2015)

Elgin County Courthouse, Ontario (2014)

Ontario Provincial Police Modernization Project (2013)

Surrey Pretrial Services Centre Expansion, B.C. (2011)

Durham Consolidated Courthouse, Ontario (2007)

Central North Correctional Centre, Ontario (2002)

Five Corners Project, B.C. (2002)

Real Estate

Aurora College Family Student Housing, Northwest Territories (1999) Legislative Chamber, Offices and Housing, Nunavut (1999)

Recreation & Culture

L'Adresse symphonique, Quebec (2011)

SHOAL Centre: Seniors Recreation Centre, B.C. (2004)

John Labatt Centre, London, Ontario (2002)

Skyreach Place, B.C. (2000)

Social Housing

Single Room Occupancy Renewal Initiative Project, B.C. (2013)

Transportation

L.F. Wade International Airport Redevelopment Project, Bermuda (2021)

Valley Line West LRT, Alberta (2021)

Waterloo LRT ION Stage 1, Ontario (2020)

Regina Bypass, Saskatchewan (2020)

Gordie Howe International Bridge Project (2019)

Tłıcho All-Season Road Project

North Commuter Parkway & Traffic Bridge Replacement, Sask. (2018)

Igaluit International Airport, Nunavut (2017)

Southwest Calgary Ring Road, Alberta (2016)

Disraeli Freeway and Bridges Project, Winnipeg, Manitoba (2012)

Canada Line, B.C. (2009)

Confederation Bridge, PEI (2009)

Highway 407 ETR, Ontario (2008 & 1999)

Autoroute 30, Montreal, Quebec (2008)

Northwest Anthony Henday Drive, Alberta (2008)

William R. Bennett Bridge, B.C. (2008)

Autoroute 25, Montreal, Quebec (2007)

Kicking Horse Canyon Project - Phase 2, B.C. (2007)

Golden Ears Bridge, B.C. (2006)

Anthony Henday Drive Southeast Leg Ring Road, Alberta (2005)

Sea-to-Sky Highway Improvement Project, B.C. (2005)

Sierra Yoyo Desan Resource Road, B.C. (2004)

Fredericton-Moncton Highway Project, New Brunswick (2003)

Belledune Port Authority, New Brunswick (2000)

Retendering Alberta's Highway Maintenance Contracts (2000)

Cobequid Pass Toll Highway, Nova Scotia (1998)

Water, Wastewater & Biosolids

Calgary Composting Facility, Alberta (2017)

City of Saint John Safe Clean Drinking Water Project, New Brunswick (2017)

Regina Wastewater Treatment Plant Upgrade Project, Saskatchewan (2014)

Biosolids Management Facility, Sudbury, Ontario (2013)

Britannia Mine Water Treatment Plant, B.C. (2006)

Goderich Water and Sewer Services, Ontario (2000)

Port Hardy Treatment Project, B.C. (2000)

