



INTEGRATED PROJECT DELIVERY



WHAT IS INTEGRATED PROJECT DELIVERY (IPD)?

This disruptive building method optimizes early engagement from all stakeholders, including trade partners, architects, owners, and contractors. It puts the right people in the room at the right time and leverages everyone's talents. This multi-party contract allows for a much deeper level of collaborative design and construction while naturally fostering efficiency and innovation. Aligning goals, sharing risk and reward, and creating high-performance teams- it's challenging our industry as a better way to build.

THE IPD APPROACH STRIVES TO:

- Increase value to the owner
- Utilize lean design and construction methods
- Identify and eliminate waste areas
- Make progress visible in real-time
- Improve project efficiency at all phases of design, fabrication, and construction
- Improve the long-term lifecycle and maintenance of projects

WHY IPD?

On a traditional project the design is completed and the construction team is procured under a separate contract. These construction projects frequently suffer from adversarial relationships, low rates of productivity, high rates of inefficiency and rework, frequent disputes and lack of innovation. This results in too many projects costing too much and taking too long to build.

With collaborative delivery, early integration between owners, designers, and contractors is central to project success. Having all parties on board from the start leverages the collective experience and expertise of all team members, which allows for much earlier identification of potential problems. This results in greater opportunity to maximize value and minimize overall project risk.



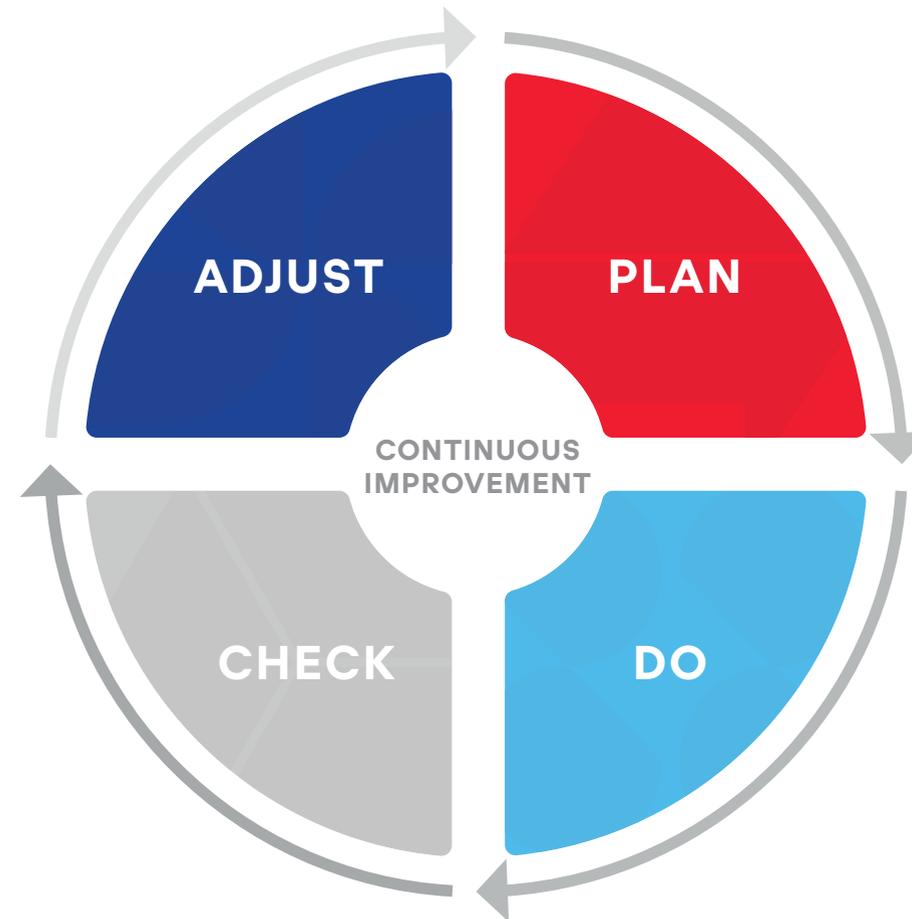
OAKVILLE FIREHALL - ONTARIO

“ Traditional methods still have their place in the industry; however, I can’t imagine using them for complex projects again. IPD solved the problems traditional contracts inherently have through true collaboration. Meaningful early involvement from the builders and open-minded consultants is the key to success. When we share risks and rewards and act as one - the project benefits ”

- Matt Kachel, Eng. L, AScT.
Capital Projects Supervisor
City of Kamloops

LEAN THINKING

IPD IS AN IDEAL ENVIRONMENT FOR LEAN TOOLS AND TECHNIQUES. THE CULTURE OF TRUST AND RESPECT, ALONG WITH A HIGH DEGREE OF TRANSPARENCY AND PSYCHOLOGICAL SAFETY, MAKES SHARING IDEAS AND COLLABORATION CENTRAL TO CONTINUOUS IMPROVEMENT.



WHAT IS LEAN THINKING?

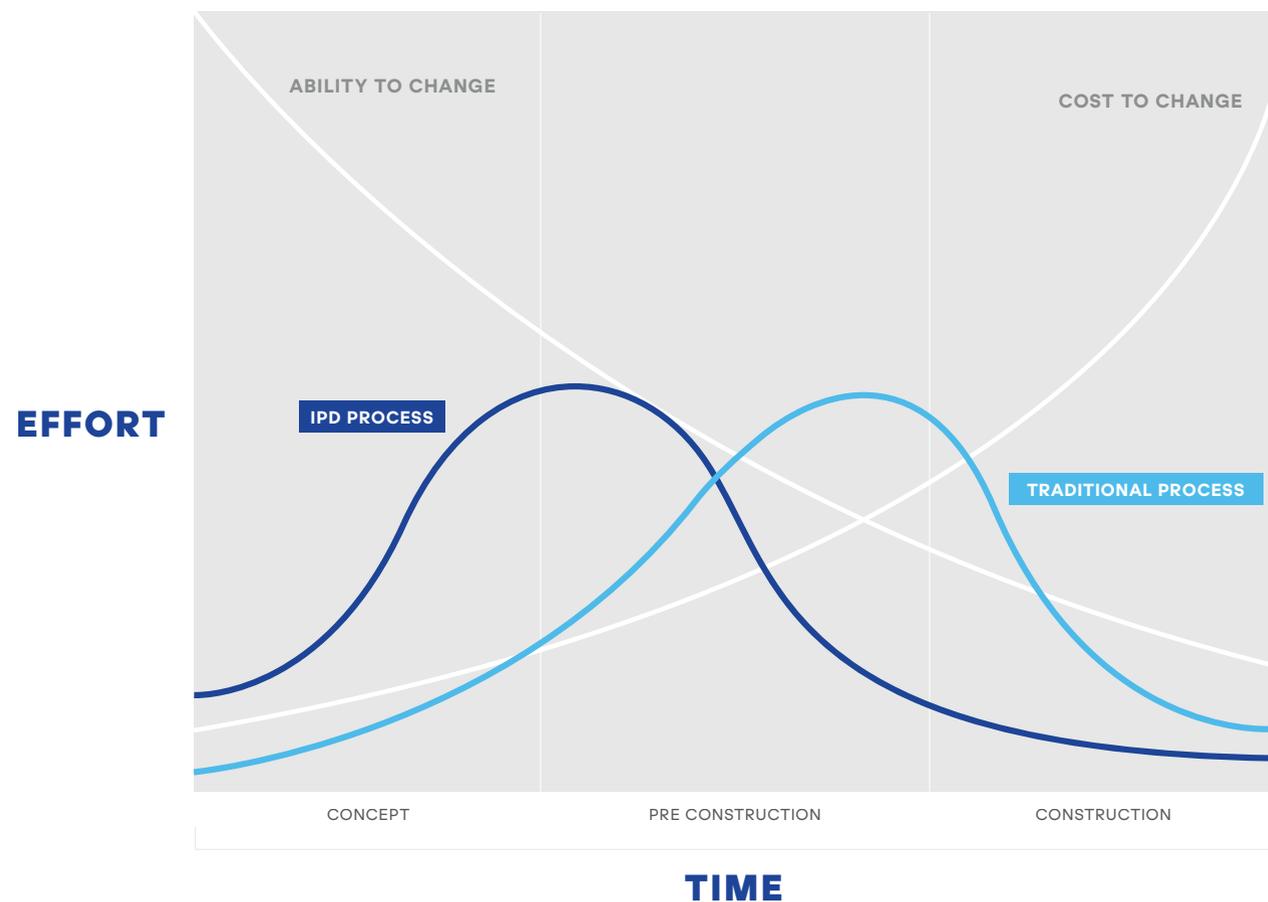
According to the Lean Enterprise Institute, “the ultimate goal [of lean] is to provide perfect value to the customer through a perfect value creation process that has zero waste.” ‘Zero waste’ consists of optimizing materials, human effort, space, time, and cost to just the right amount and no more. It has proven to improve safety, quality, productivity, and worker satisfaction. Lean thinking focuses on defining customer value and mapping this out to establish the project’s goals. Understanding client needs will guide the team to understand the risks that could arise and the problems we should seek to fix. This ultimately results in high quality products and services being delivered in an optimal manner

WHY IS LEAN THINKING IMPORTANT?

A lean thinking culture focuses on respect for people and continuous improvement. This empowers people to make their work better every single day. Lean incorporates the entire organization, makes people feel valued, and improves knowledge transfer between diverse groups. Furthermore, it demonstrates early improvements that increase employee motivation. It’s not hard to see why IPD is an ideal delivery model to incorporate lean thinking which ultimately benefits the entire team including the owner.

DELIVERING IN IPD

An integrated project differs from start to finish from a traditional project. Design decisions are moved towards the beginning phases of the project, where these decisions can be more effective and less costly. This means early engagement of key stakeholders including clients, trade partners, and consultants. By moving the design phase forward and implementing early team engagement, the project has a higher level of completion prior to preconstruction.



“ I’ve worked in this area a long time and our IPD project was the first project in my career where I can say that we got everything we wanted (Scope), in the time we wanted (Schedule) and to the standards we needed (Quality). In traditional project management we are told that you can only pick 2 of the 3, this is not the case for IPD. ”

-Matt Kachel, Eng. L, AScT.
Capital Projects Supervisor
City of Kamloops

SOME DEFINING FEATURES OF IPD

VALIDATION

TRADITIONAL



IPD



In traditional Design-Bid-Build or Lump Sum delivery, the team talks first about what they're going to build, and then how they're going to build it, while generally not even worrying about who will be building it until bids are received. The first time the owner receives any validated sense of certainty about project outcomes is when the bids come in, or when the project comes back from tender. That's the first moment that the market makes a commitment to perform the work for a specific amount of money within a defined time period. And ample industry research tells us that those are very often only beginning points; projects frequently go over budget through change orders and have associated schedule extensions and delays.

Contrast this with the validation stage in IPD. During validation, team members come together to test the alignment of the owner's business case objectives and expectations of a project with its budget, schedule, and other constraints. Validation is an iterative process - a constant cycling between design, estimating, and constructability analysis. The goal is to develop the project design only to the degree necessary to achieve confidence. Validation is a process that establishes collective confidence for the IPD team: it proves or disproves whether the team can meet the full range of the owner's conditions of satisfaction (CoS) within the owner's allowable cost and schedule constraints.

WHY DO VALIDATION?

The purpose of validation is confidence. The validation process results in a comprehensive report that is essentially a collective statement by the team: 'We can build this building, that does these things, for this much money, in this much time.' If the specifics of those outcomes are acceptable to the owner, it allows the owner and the team to proceed with confidence that the project is viable.

TARGET VALUE DESIGN

WHAT IS TARGET VALUE DESIGN?

Target Value Design (TVD) is a philosophy of designing to a budget, instead of budgeting a design. Cost estimating becomes a crucial part of design development, with constant checks against the target budget. Therefore, the goal is to design to a detailed budget, as opposed to waiting and budgeting a detailed design (as is common in more traditional delivery methods).

WHO NEEDS TO BE INVOLVED IN TARGET VALUE DESIGN?

You need to have the right people at the right time to drive TVD. It requires extensive collaboration between designers and builders, particularly cost estimators and trade partners. The companies involved in the highest-risk elements of the project, or those parts that are fundamental to project success, should be at the table early to provide continuous feedback as the design progresses. This allows trade partners to give input to the design at a time when it can make a difference in achieving the owner's goals, while still maintaining the budget.



CO-LOCATION



WHAT IS CO-LOCATION?

Co-location is when team members from different firms meet and perform work together in one physical space over an extended period. This strategy can significantly improve collaboration and help build team relationships. Remember, co-location is working side by side, which may happen in a Big Room or other spaces (even virtually). Simply holding meetings and having materials posted in a Big Room is not the same as co-location.

WHY IS CO-LOCATION IMPORTANT?

For any design and construction project, the sheer magnitude of participants, information, analysis, and handoffs present formidable challenges. And these challenges are only exacerbated by the pace at which decisions and actions are needed. Co-location helps the project team overcome these challenges, efficiently. Co-location facilitates better sharing of pertinent project information; reduces latency in asking and answering questions; supports collaborative work on innovative project solutions; eliminates misunderstandings, rework, or gaps in expectations; and, expedites project decision-making.

COST TRANSPARENCY IN IPD



ST. JOSEPH HIGHSCHOOL - ALBERTA

A powerful component in the IPD process is the organization of financials. From the outset of a project, all costs are set and agreed upon by all team members. Costs are shared in an open-book style throughout the project. There is shared risk/reward in the IPD agreement, which motivates all team members to optimize the entire project, instead of only their respective portions. During the project all profits are set aside in a collective pool. As project milestones are completed, all team members receive a pay out - as long as the project stays healthy. This team initiative creates more buy in and includes everything from labour rates to claw-back provisions.

“ Working on an IPD project we review the overall design and entire budget as a team regularly, not just the estimated building cost but the design cost as well. Each partner submits their time and costs based on the previously agreed rates as an invoice monthly and the team reviews costs compared to forecast and completion. I feel challenged to provide my very best effort and I’m personally rewarded by the collaboration, in turn I become more invested in the project. ”

**-Lorne Goodall, G.S.C
Division Manager
Lower Mainland Projects, Houle**

RISK MANAGEMENT

“ Typically, risk is managed by individual organizations in a project which leads to inefficiency and guarded approaches to collaboration. In IPD, the risks and their management are led by the overall project team which ultimately leads to better mitigation solutions. Our experience has been when the consultants, trade partners and owners examine risks together, the solution is a more wholistic approach to mitigation that usually helps to lessen the risk’s impact. ”

- Bill Lett
Managing Principal
Lett Architects Inc

IPD projects are further differentiated by using a project level risk register to keep a detailed list of potential issues. A team-developed risk register keeps the entire team focused on consistently identifying risks, uncertainties, and opportunities for technical and budget issues. This proves confidence in the project as a whole, as mechanisms are in place to quickly implement mitigation strategies. The risk register is a key for tracking what the risks of a project are and, depending on the nature of the risk, who is responsible for managing them.

CONTRACT STRUCTURE

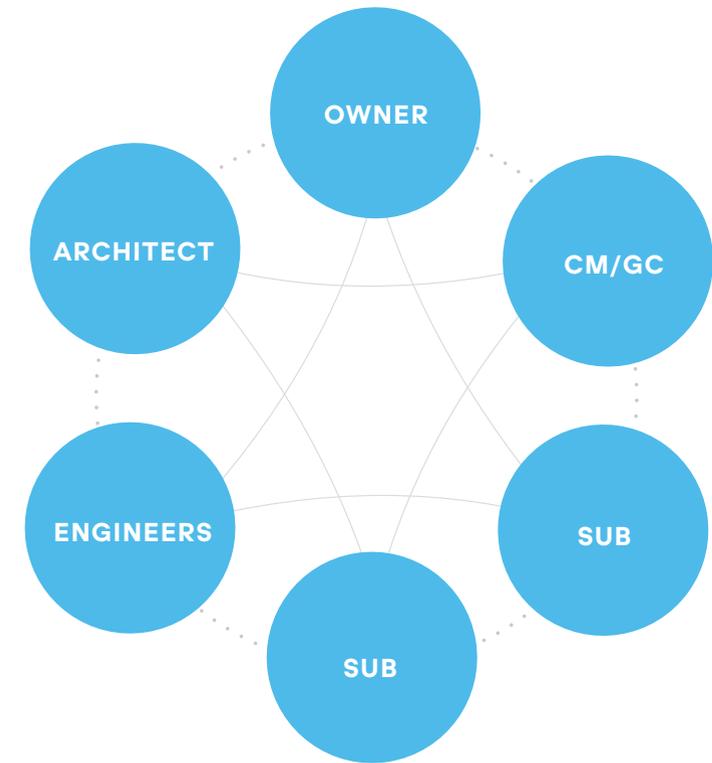
CONTRACT DESIGN AND STRUCTURE

The greatest difference of IPD from other building methods is the contract. A single contract is signed by all, which binds team members together with shared risk and responsibility. The removal of traditional contractual boundaries allows the team to focus and optimize the whole project from the onset. Early integration creates opportunity for higher positive impacts of return and keeps expenditures low. Although procurement for public entities may seem like a challenge, the very large majority of IPD projects in Canada are being successfully delivered by public entities at the federal, provincial, and municipal levels.

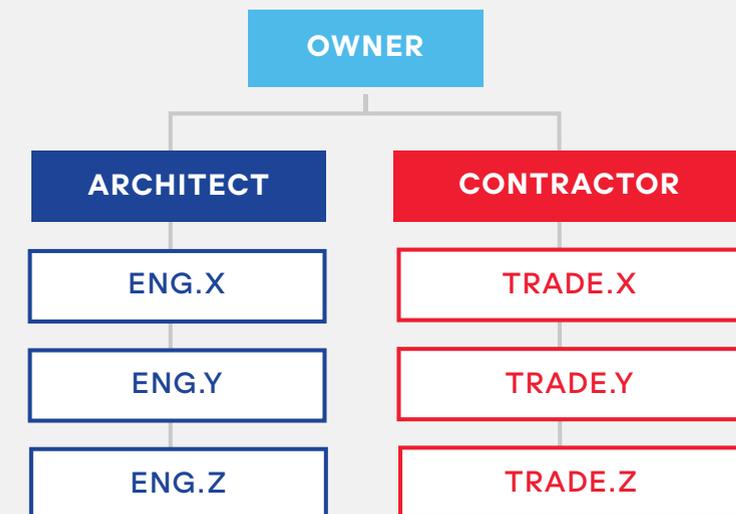
HOW DOES IPD COMPARE?

IPD naturally fosters a culture of collaboration and innovation. When the owner, designer, consultants, constructor, subcontractors, and suppliers understand the value of collaboration, we see all players acting in a trusting, helpful, and respectful fashion. IPD principles rely heavily on the psychology of making shared commitments. The prime contractor, owner, and designers don't operate in a command and control mode, as is often the case with traditional delivery methods. Instead, the teams talk about shared goals and collectively decide how to get there. The result is an open, collaborative, high-performing team composed of key project stakeholders all acting in the best interests of the project. In the end, ideal members of an IPD team have five shared qualities. They are accountable, innovative, collaborative, engaged, and open-minded.

IPD PROJECT STRUCTURE



TRADITIONAL PROJECT STRUCTURE



DELIVERY METHOD

PROJECT DELIVERY METHOD IS THE SINGLE GREATEST DETERMINATE OF SUCCESS IN TERMS OF COST CONTROL, QUALITY OF WORK, SCHEDULE, PERFORMANCE AND POSITIVE SOCIAL IMPACT. SO, HOW DOES IPD COMPARE TO OTHER DELIVERY METHODS?

TRADITIONAL DELIVERY METHODS		INTEGRATED PROJECT DELIVERY
Linear, distinct, segregated knowledge gathered, and shared as needed.	PROCESS	Integrated, early contributions of knowledge and information is shared openly.
Fragmented, assembled as “minimum-necessary” or “just-as-needed”. Strongly hierarchical and controlled.	TEAMS	Integrated team composed of all project stakeholders. Assembled early. Open and collaborative.
Individually managed, transferred to the greatest extent possible.	RISK	Collectively managed. Appropriately shared.
Individually pursued. Minimum effort for max return. First cost based.	REWARD	Team success tied to the project success. Shared reward.
Paper- PDF based. Analog	COMMUNICATIONS	Virtual and digitally based. BIM enabled.
Segregated responsibilities by contract boundaries. Minimum effort for maximum return. Minimize or transfer risk.	AGREEMENT	Multi-party agreement. Encourage open sharing and full integration. Responsibility for success is shared.

PROVEN EXPERIENCE

IPD REQUIRES A RELENTLESS FOCUS ON SERVICE AND COLLABORATION. STARTING WITH EARLY ENGAGEMENT OF KEY STAKEHOLDERS, WE WORK WITH CLIENTS, TRADE PARTNERS, AND CONSULTANTS TO BUILD TRUST. BY CONTINUOUSLY INNOVATING THROUGH OUR COLLABORATIVE APPROACH, WE CAN CREATE MORE EFFICIENCY, COST SAVINGS, AND A MUCH BETTER WORKING EXPERIENCE FOR EVERYONE.

BARRIE-SIMCOE EMERGENCY SERVICES CAMPUS

BARRIE ON
\$86.5 MILLION

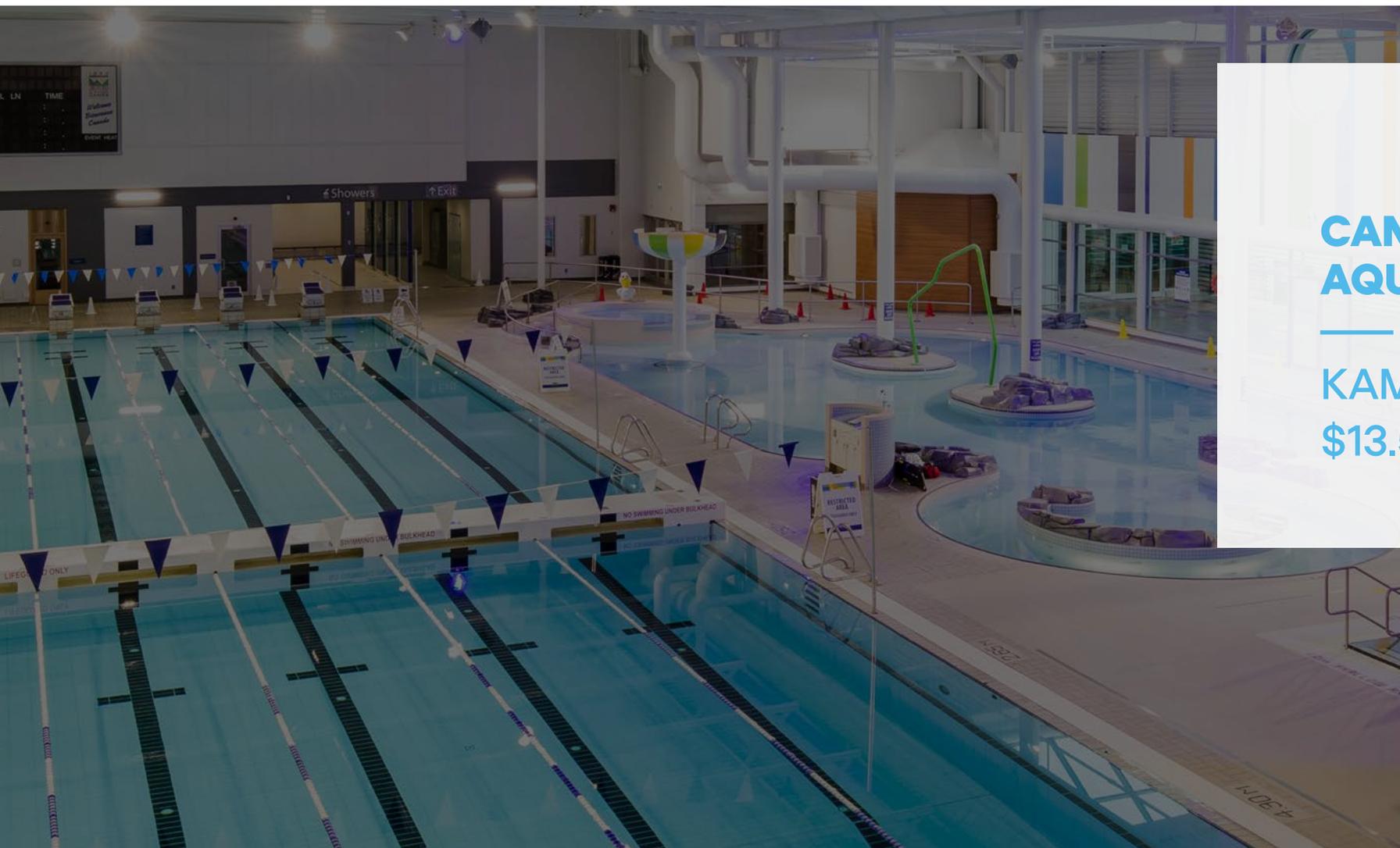
The concept for this campus was to bring the Barrie Police Service, Barrie Fire and Emergency Service, and Simcoe County Paramedic Service under one roof using Integrated Project Delivery (IPD). The final project was the result of an intense and iterative process.

This collaborative approach brought together diverse teams to work collectively towards one goal: providing exceptional value to the client.

[Read more](#)



PROVEN EXPERIENCE



CANADA GAMES AQUATIC CENTER

KAMLOOPS BC
\$13.5 MILLION

The City of Kamloops was the first municipality in British Columbia to pursue and complete a project by way of Integrated Project Delivery (IPD). This major renovation was for the Canada Games Aquatic Centre, Kamloops' main aquatic recreation facility (originally constructed in 1992).

[Read more](#)

PROVEN EXPERIENCE



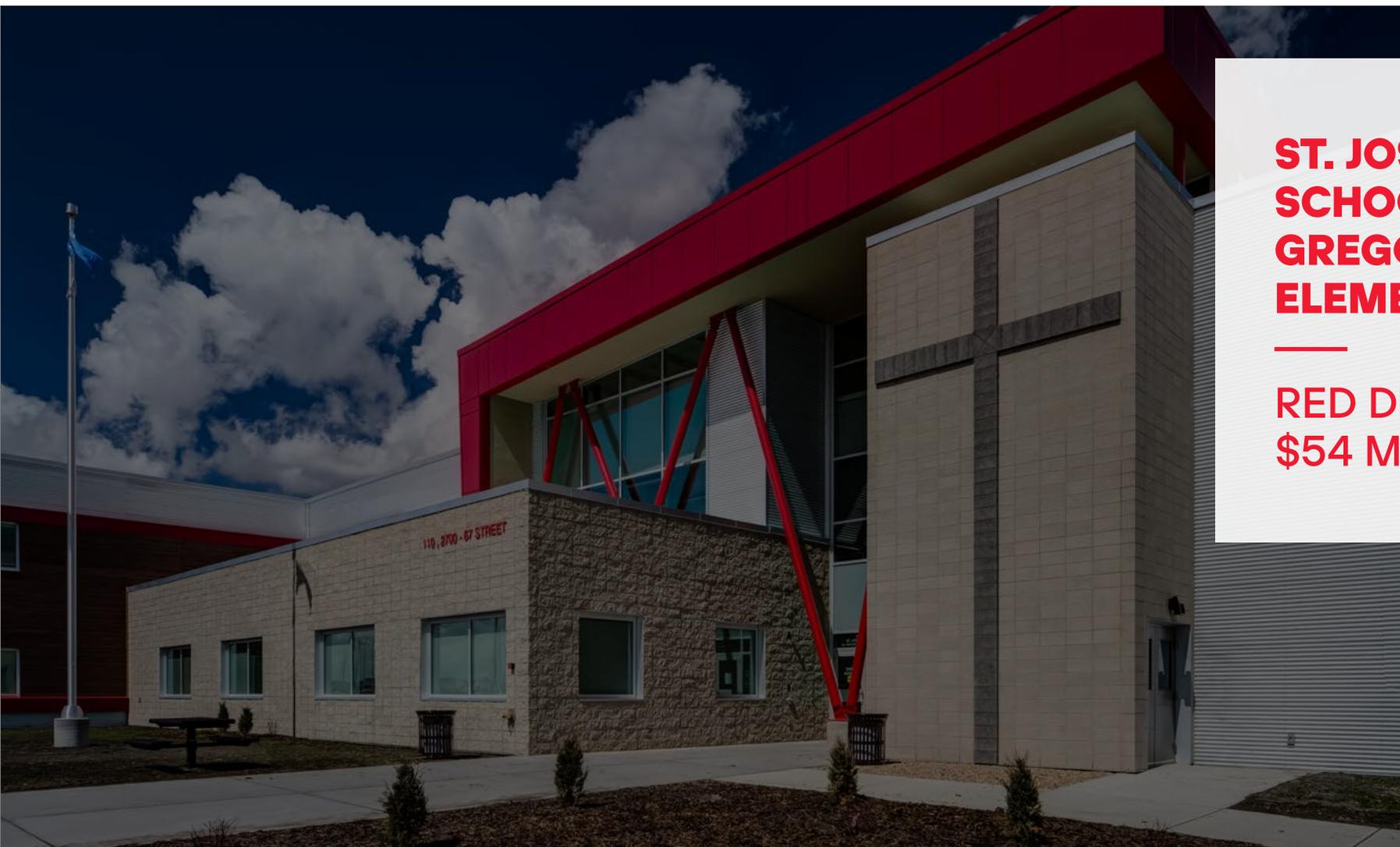
SAKAW TERRACE SENIOR HOUSING

EDMONTON AB
\$39 MILLION

This project provided incredible value to the community and its residencies by offering affordable and independent living for seniors. Multiple sustainable measurements were implemented during the completion of this project from LED lights to Combined Heating and Power (CHP) units.

[Read more](#)

PROVEN EXPERIENCE



**ST. JOSEPH HIGH
SCHOOL AND ST.
GREGORY THE GREAT
ELEMENTARY**

**RED DEER AB
\$54 MILLION**

These two projects were undertaken by the same IPD partners. As a team, we set the core values to strive for, which included supporting our partner's education model and delivering a project in which not only the building itself, but the delivery process, was inspiring, operational, and sustainable.

[Read more](#)

