

An aerial photograph of a large, multi-level highway interchange with several overpasses and ramps. The surrounding area includes green fields, a body of water, and some industrial or commercial buildings in the distance. The image is used as a background for the text.

Integrated Project Delivery (IPD) Discovering the Cornerstones of an Integrated Project Delivery Process

One Team, One Vision, One Goal Driven by a Desire

INTRODUCTION

Aura Robinson & ISL Engineering

The Problem

Let's Explore this together What
Conclusion

CHANGE BY DESIGN

Love it, change it or leave it!

What They Don't Tell you about IPD "the Catch"

What are the hidden Gems

01

02

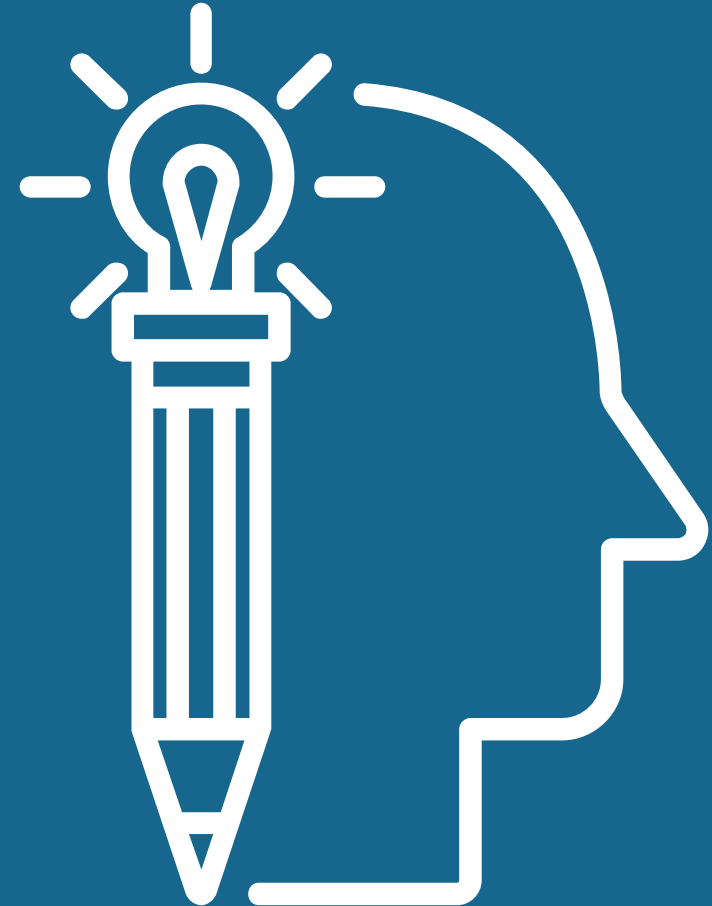
03

04

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THE PROBLEM



PROJECT EXECUTION =

FEAR, RISK, LOSS before GAIN

Delivering Projects Traditionally

P R O J E C T
I
L O S S
K



CURRENT INDUSTRY REALITIES



Over Budget



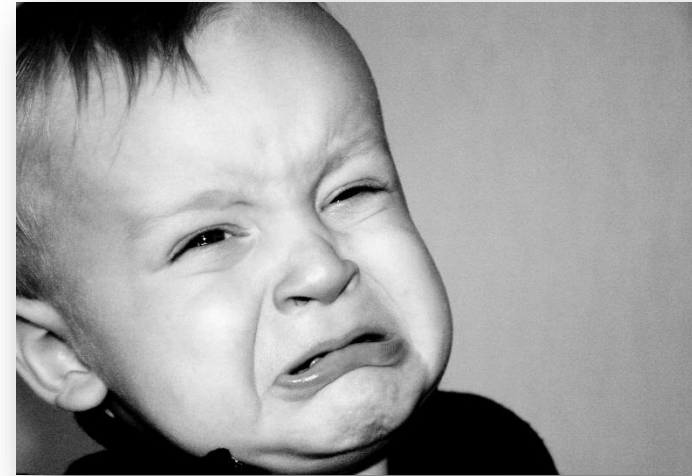
Schedule Delays



Quality



Legal Claims Increased



What Other Ailments do Transportation Projects suffer from ?



Physical and Environmental

- Conventional physical constraints impacting transport infrastructure.
- Climate constraints and weather disruptions.



Demand

- Transport infrastructure designed to meet a specific demand level.
- Variations in the demand and accidents can create bottlenecks.



Financing

- Transportation infrastructure is capital intensive.
- Securing financing can constrain infrastructure development.



Construction and Maintenance

- Construction and maintenance of infrastructure create disruptions in existing operations.



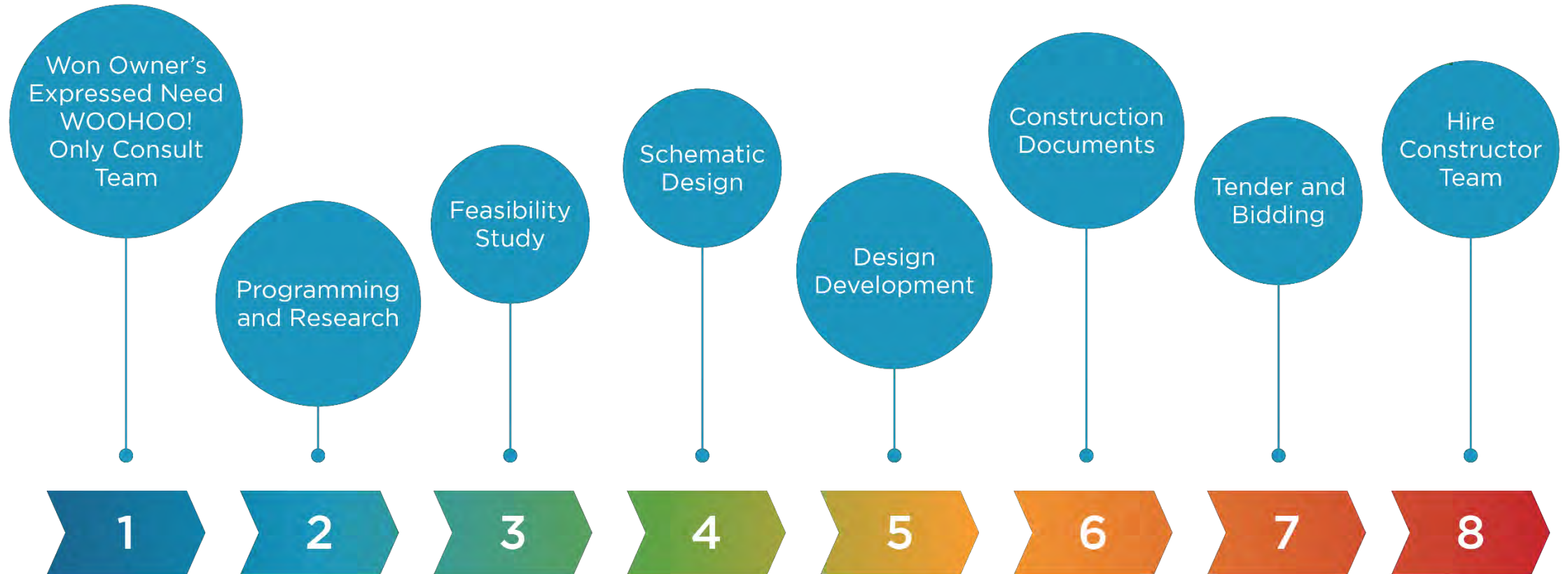
Regulations

- Restrictions about how transport infrastructure can be developed, owned and operated.
- Pressures from advocacy groups.

**How do we
solve it ?**

**Change
by
Design**

TRADITIONAL DESIGN PROCESS



DEEPER DIVE

70% of project cost is determined in the first 10%

Clients Value Proposition

Stakeholders End User

DD

Means Methods Operators

Rework = Waste

Tender & Bidding

Addenda

Base Target Ascension

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Missed Opportunities

5

Missed Opportunities

6

7

7a

SD

Maintenance Constructor Risk

End User Risk

Constructor

CD

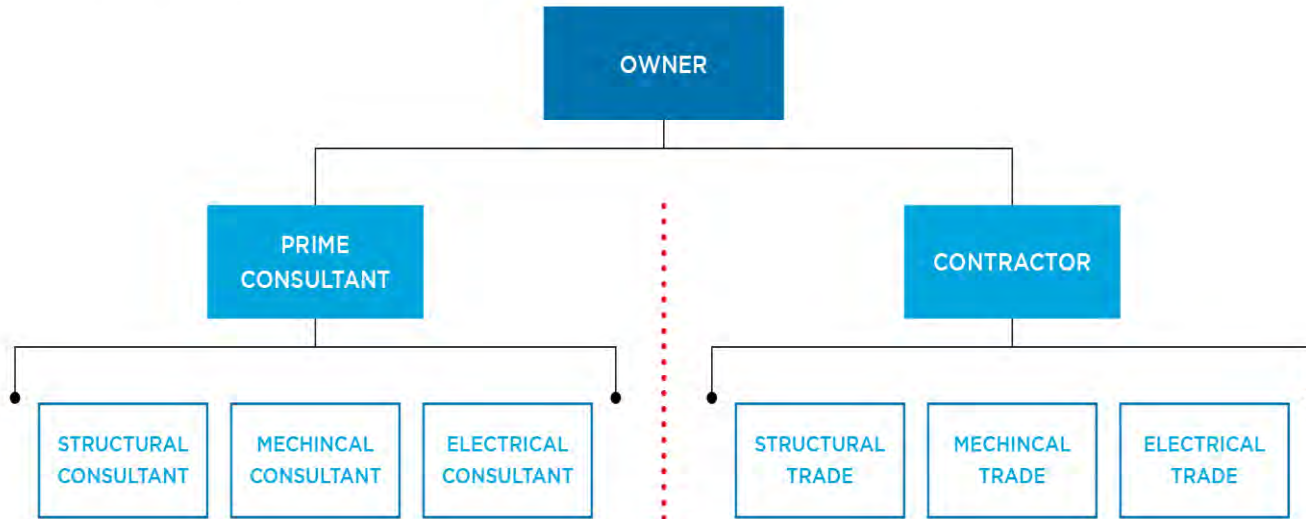
Rework = Waste

The IPD/Alliance contract is formed by the Owner, designer, construction contractor, suppliers and potentially stakeholders (e.g., local organization, community stakeholder, funding organization, etc.) to plan, design, construct and commission a capital project.

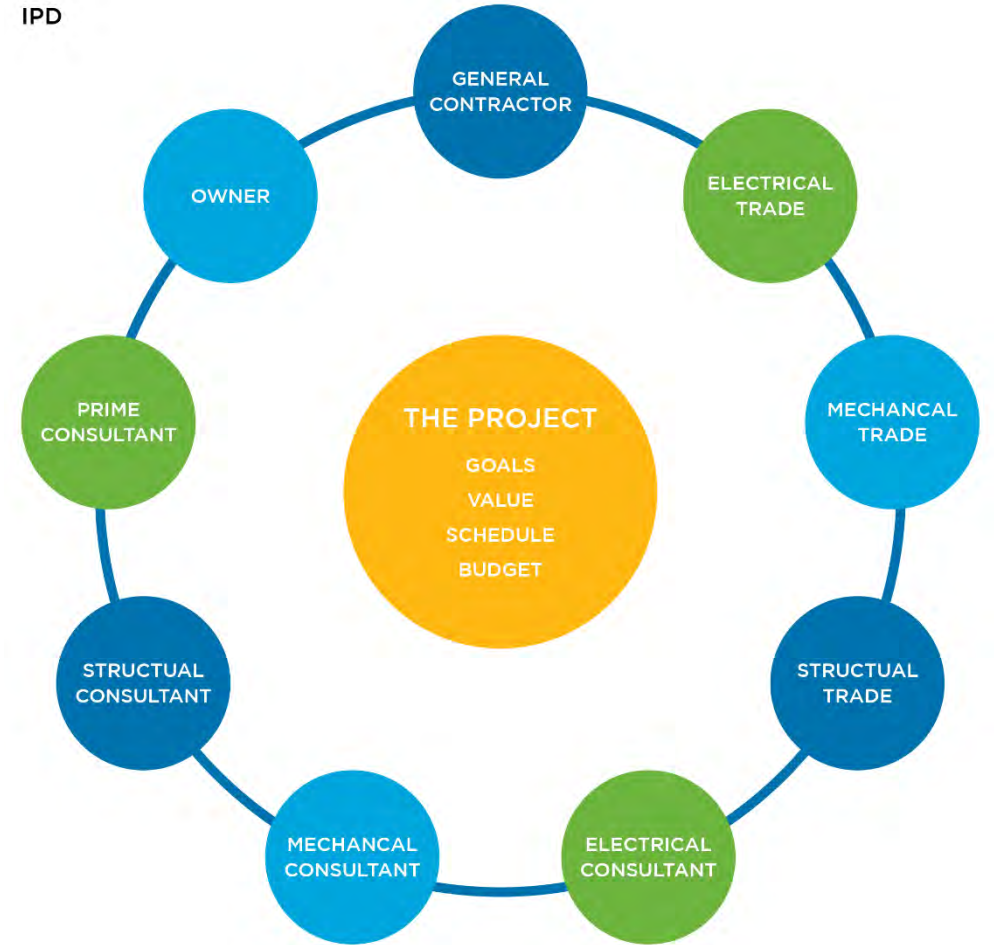
Compensation under an IPD/Alliance model is directly tied to cost, schedule and profitability milestones of the overall project. The fundamental difference between an IPD/Alliance and traditional contracts is the underlying principle:

a non-adversarial approach between the contracting parties. This is achieved through establishment of IPD/Alliance principles, good faith commitments, and adoption of no-dispute provisions. The Alliance contract and supporting structures promote a positive culture based on “no-fault, no-blame” and unanimous decision-making, and require all Participants to find the “best for project” solutions. The collaboration requires a greater time commitment on the Owner’s part, but efficiencies and win-win situations are maximized.

TRADITIONAL



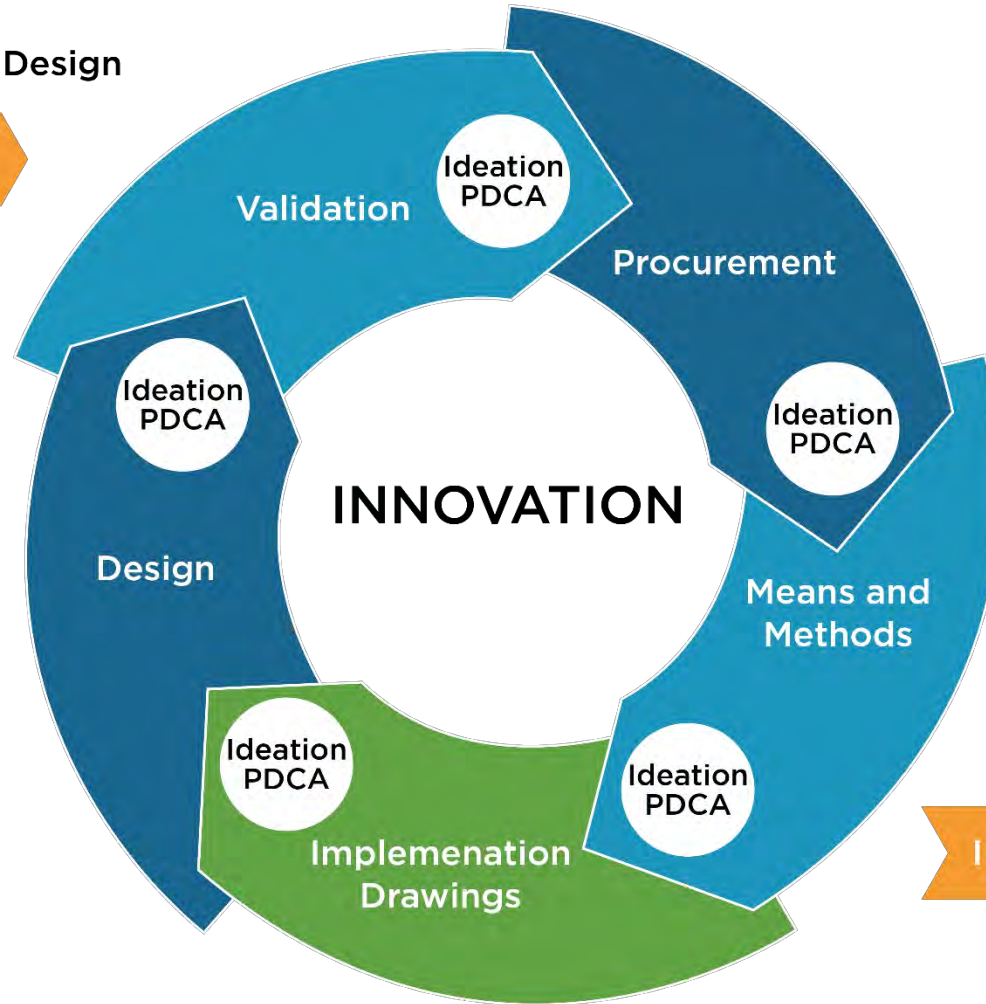
IPD



IMPROVED DESIGN PROCESS

Construction Informing Design

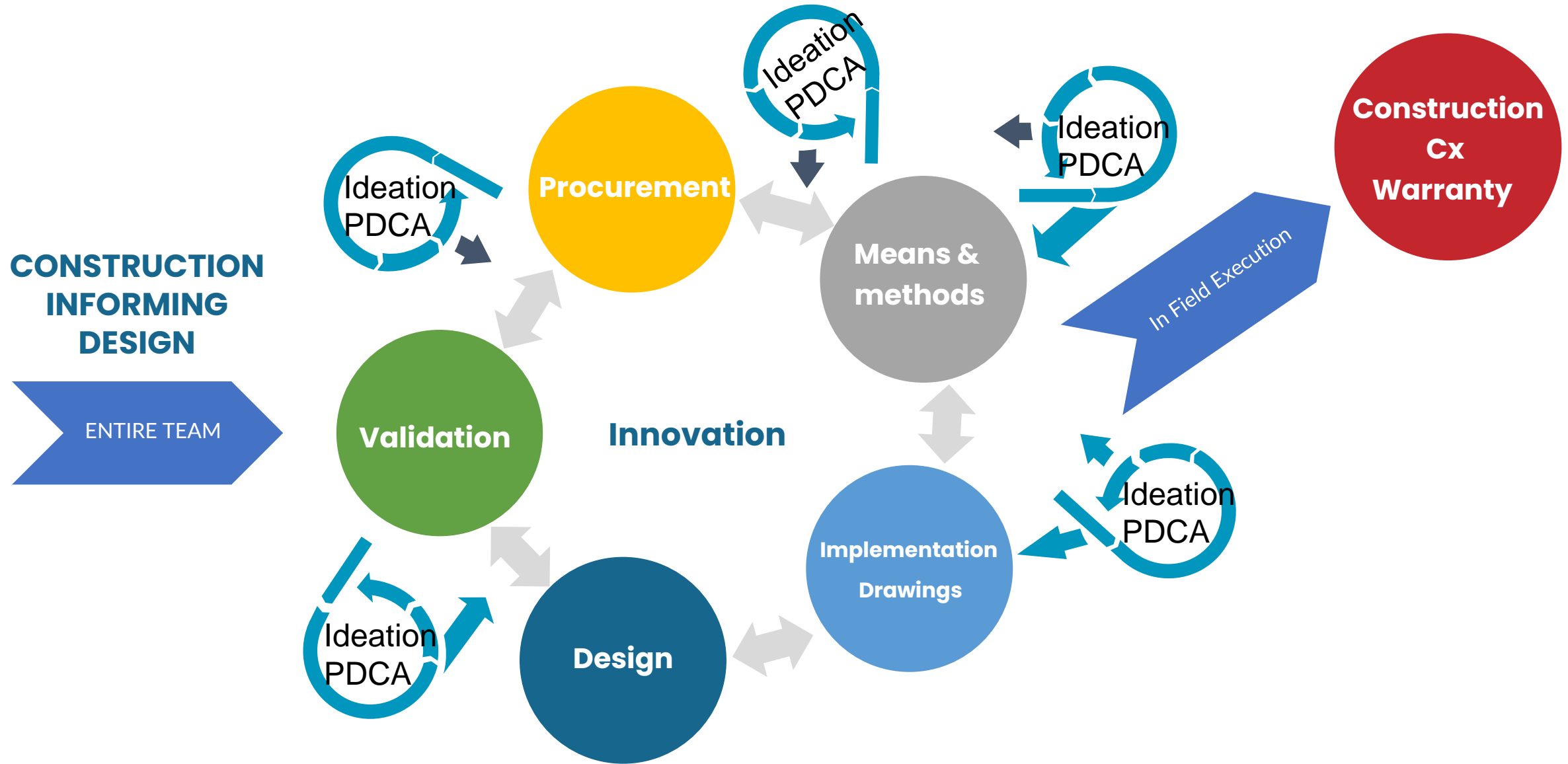
ENTIRE TEAM



IN FIELD EXECUTION

Construction CX Warranty

IMPROVED DESIGN PROCESS – IPD



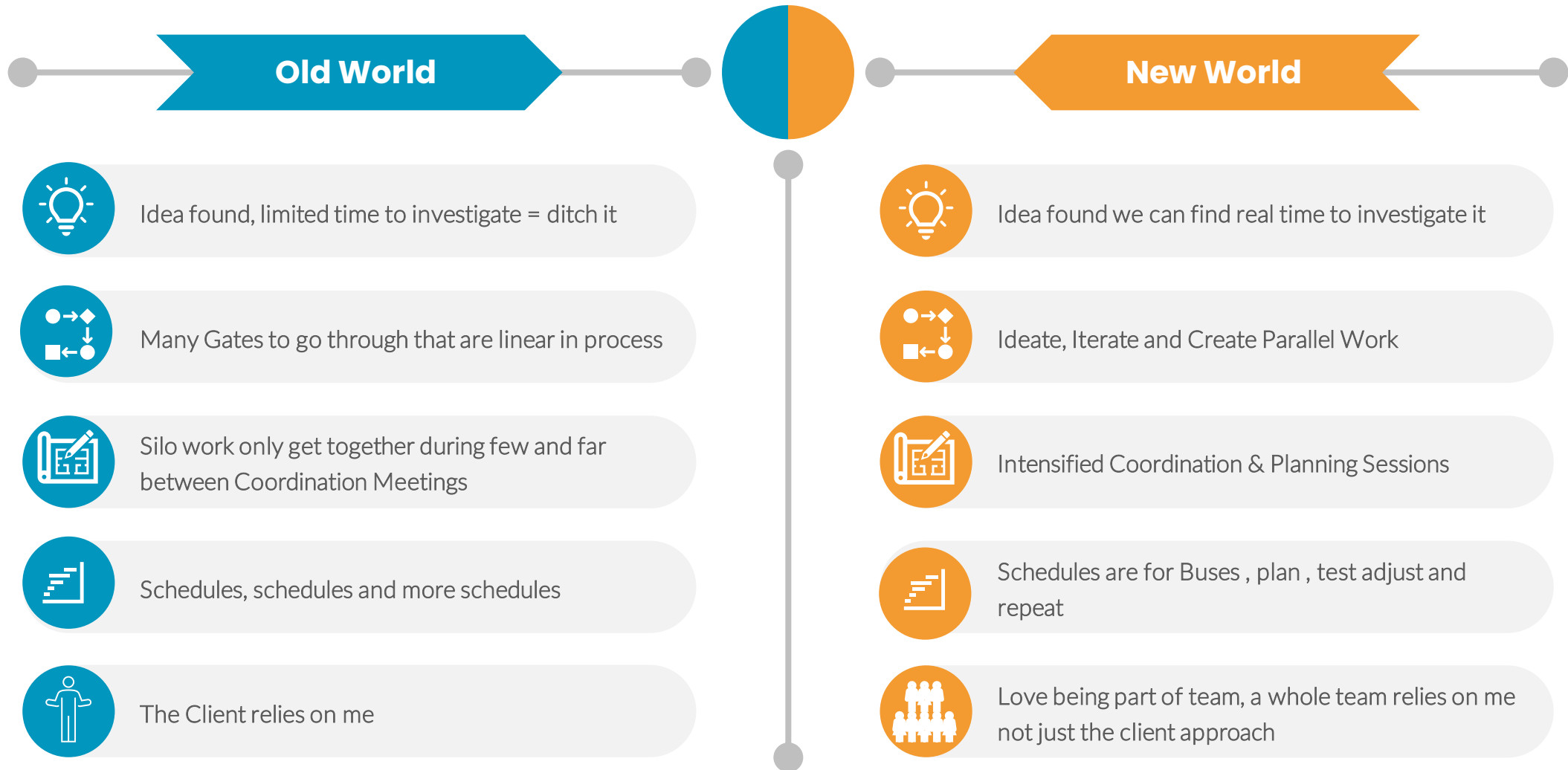


Traditional Delivery



IPD

Old World (Traditional) vs New World (Design Thinking)



PESTEL ANALYSIS



How to spot a possible IPD project?



POLITICAL

Need the project
Right Away.



ECONOMIC

Only one funding
source available
and limited.



SOCIOCULTURAL

Community
Engagement



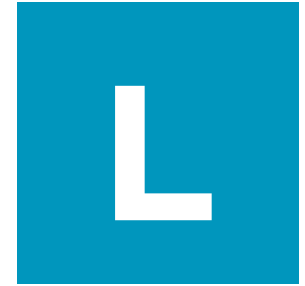
TECHNOLOGICAL

Make a big impact.



ENVIRONMENTAL

Needs a change and
the team can make
an impact.



LEGAL

Tired of
Legal Claims.

Lessons Learned



PEOPLE FIRST



DO NOT UNDERSTIMATE THE POWER OF COLOCATION



Co-locate In Person When Possible

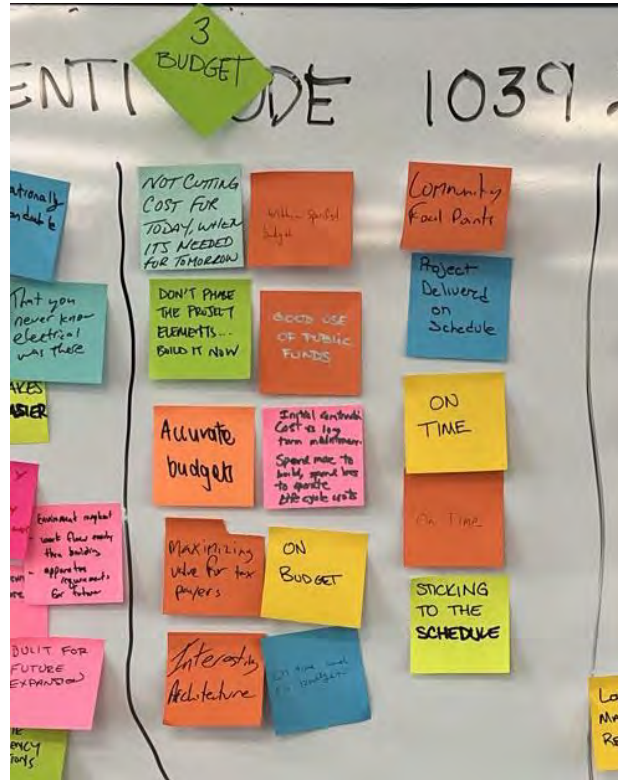
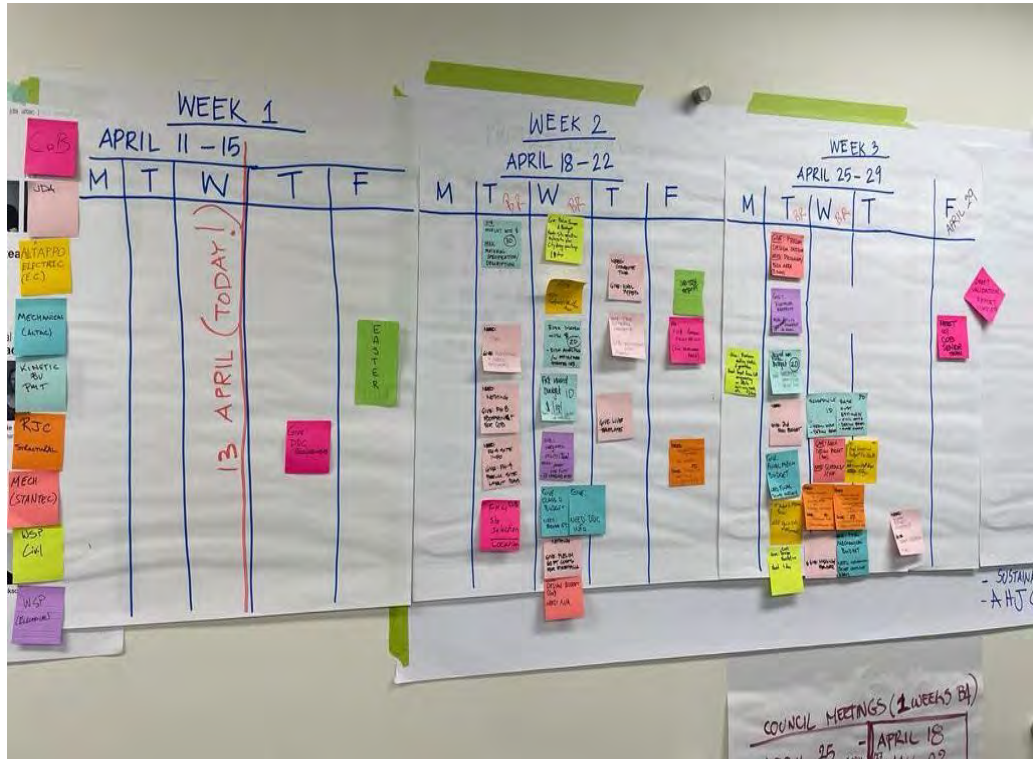


Integrated Expertise. Locally Delivered. 

BIM & VR EVERY WEEK



Do NOT Complicate Technology



FORECASTING

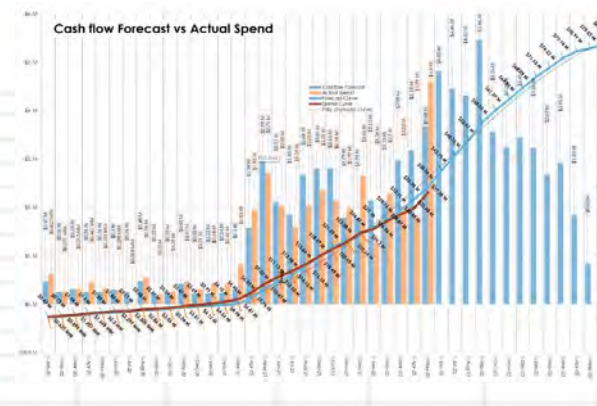


Forecasting
Include Risk & Opportunity Register
RELIGIOUSLY

Base Target Cost	Overhead %	Profit %	Base Target Cost	Cost Profit Pool \$	Profit Pool %	Final Target Cost	Base Target Cost To Final Target Cost Variance	Final Target Cost % Short	Final Target Cost Savings Share	Owner Change Situations	Budget Transfers	Added Value Innovation Items	Final Target Cost After Additions	Cost to Date	Estimated Cost At Completion	Final Target Cost To Final Cost Variance	Final Cost % Short	Final Cost Savings Share	CD Risk Pool	Added Value Incentives Used	Total profit Pool	
Kinetic	3.70%	2.00%	28,883,877.47	854,862.88	30.72%	28,883,877.47	105,543.92	3.81%	(3,883.97)	0.00	0.00	0.00	28,883,877.47	382,813.58	28,879,852.27	0.00	17.88%	10,430.80	0.00		856,407.31	
Johnston Davidson Architecture	113.00%	12.00%	1,843,480.03	221,217.80	9.24%	1,847,807.37	4,427.34	2.31%	(2,323.08)	0.00	0.00	0.00	1,847,807.37	703,446.78	448,312.48	0.00	4.82%	2,888.87	0.00		221,991.39	
Alta Pro	11.70%	12.00%	4,388,817.27	590,870.07	23.02%	4,832,911.23	45,093.96	3.78%	(3,787.74)	0.00	0.00	0.00	4,832,911.23	78,888.49	4,388,888.87	-0.01	11.30%	8,718.21	0.00		591,800.34	
Atlas Mechanical	9.00%	12.00%	3,438,213.70	454,748.88	27.38%	3,388,179.00	-47,036.71	8.84%	(8,881.82)	0.00	0.00	0.00	3,388,179.00	86,722.81	3,388,179.00	-88,812.13	11.88%	7,887.84	0.00		453,852.23	
RUC	102.00%	12.00%	218,783.58	28,285.23	1.10%	210,887.44	-7,796.15	0.27%	(275.85)	0.00	0.00	0.00	210,887.44	114,814.02	210,887.44	0.00	0.88%	320.32	0.00		28,288.58	
WSP Civil	81.00%	12.00%	178,338.12	21,823.08	0.80%	248,814.18	68,235.06	0.22%	(228.22)	0.00	0.00	0.00	248,814.18	134,834.79	248,840.87	476.62	0.43%	282.58	0.00		21,838.48	
WSP Electrical	81.00%	12.00%	284,830.48	34,178.88	1.40%	271,588.21	-13,242.28	0.36%	(389.24)	0.00	0.00	0.00	271,588.21	132,105.71	271,504.39	-84.39	0.71%	418.88	0.00		34,237.42	
Startec	81.00%	12.00%	247,440.48	28,882.88	1.24%	236,332.80	-11,107.67	0.31%	(312.08)	0.00	0.00	0.00	236,332.80	78,385.77	236,340.32	-82.38	0.62%	382.28	0.00		28,740.08	
Risk Register			0.00	0.00	0.00%	0.00	0.00	0.00%	-		0.00		0.00	0.00	0.00	0.00	0.00%	-			0.00	
COB								78.00%	(78,481.88)				0.00					28,187.77	0.00		-48,283.81	
Contingency (Shared Cost / Salvant)													0.00									
Total			45,522,047.88	2,383,247.28	100.00%	45,622,663.28	100,615.37	100.00%	(100,615.37)	-	-	-	45,622,663.28	1,880,212.83	43,872,794.38	(16,389.54)	100.00%	58,385.54	-	-	2,383,247.28	
Total Project Budget			47,815,284.87	2,383,247.28		45,622,663.28	100,615.37		-100,615.37	0.00	0.00	0.00	45,622,663.28	1,880,212.83	43,872,794.38							2,383,247.28
Base Target Cost On validation report			47,815,284.88																			
Variance							0.01															

Schedule A - Profit Pool Distribution

Partner	Milestone 1 Building Permit	Milestone 2 Building Tight	Milestone 3 Drywall	Milestone 4 Occupancy	Milestone 5 Warranty	Total	Final Target Cost Saving Share	Final Cost Saving Share	Total Cost Saving Share						
Kinetic	8%	88,387.03	23%	213,740.72	30%	238,488.88	32%	271,588.12	8%	42,748.14	100%	854,862.88	-8,383.87	10,430.80	1,444.83
Johnston Davidson Architecture	10%	77,426.18	40%	88,487.04	10%	22,121.78	10%	22,121.78	8%	11,080.88	100%	221,217.80	-2,323.08	2,888.87	273.78
Alta Pro	8%	44,883.81	23%	137,687.32	30%	189,201.02	32%	178,214.42	8%	27,333.90	100%	590,870.07	-8,787.74	8,718.21	892.47
Atlas Mechanical	8%	52,378.87	23%	183,888.47	30%	186,423.77	32%	208,518.88	8%	32,737.28	100%	454,748.88	-8,881.82	7,887.84	1,208.53
RUC	10%	8,188.11	40%	10,302.08	10%	2,623.92	10%	2,623.92	8%	1,311.76	100%	218,783.58	-775.85	320.32	44.36
WSP Civil	10%	7,513.08	40%	8,809.24	10%	2,152.12	10%	2,152.12	8%	1,076.06	100%	178,338.12	-128.22	282.58	38.37
WSP Electrical	10%	11,882.88	40%	13,871.88	10%	3,417.87	10%	3,417.87	8%	1,708.88	100%	284,830.48	-339.24	418.88	37.78
Startec	10%	10,382.80	40%	11,877.14	10%	2,989.28	10%	2,989.28	8%	1,484.64	100%	247,440.48	-812.08	382.28	50.17
Risk Register		0.00		0.00		0.00		0.00	0%	0.00		0.00	0.00	0.00	0.00
COB	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00			-78,481.88	28,187.77	-48,283.81
Total		281,334.28		648,342.08		631,400.30		662,608.07		103,662.36		2,383,247.28	(100,615.37)	58,385.54	(42,220.04)



SUMMARY

WHAT WE FOUND WORKED BEING ON 12 IPD PROJECTS

◆ Get Comfortable with Confusion

It gets harder before it gets easier, and it will get better !

◆ Be Ready to Spend Time in It not just on it

Think of the difference between low resolution pixelized TV and Hi Def

◆ CULTURE , CULTURE , CULTURE

This is the secret sauce!

◆ Aim for Better Designs & Continuously Check them against the Target

Challenge the status quo as much as possible



◆ Curiosity

Be keen and curious.

◆ Have a Thing 1 & Thing 2 on your team .

Get comfortable explaining and validating your ideas.

◆ SCRUM IT and Track it

Track your PPC

◆ DO NOT DO IT ALONE

Speak up and be part of your new project community someone has already been where you are

What They Don't Tell You About IPD

It works for transportation projects like a charm

Kingston 3rd Crossing

180 Mil CAD

1.2 KM

UNESCO World Heritage Site

Provincially Significant Wetland

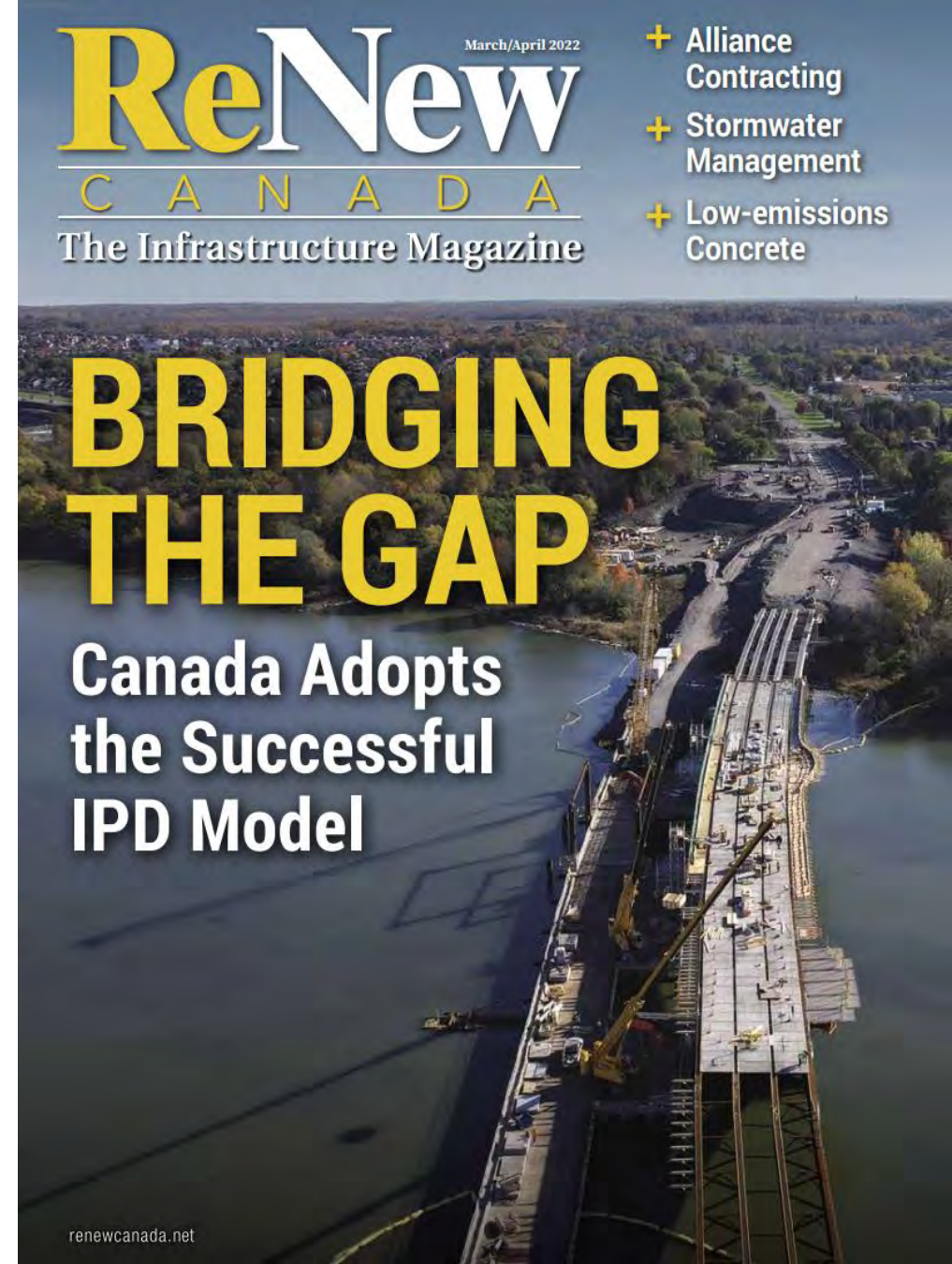
Union Station Enhancement, TO, ON

Crossrail (London, UK)**: Europe's largest infrastructure project involved multiple stakeholders, contractors, and governments working collaboratively.

Denver Union Station (Colorado, USA)**: This was a transit expansion project that involved significant collaboration between multiple stakeholders, including the city, regional transportation district, and private partners.

North Carolina Department of Transportation.

Brisbane Airport Link (Australia) This was a major urban toll road and tunnel project which required collaboration between various stakeholders for its planning and construction.

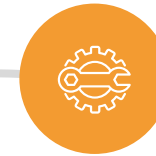


Integrated Expertise. Locally Delivered. ■ ■ ■ ■ ■

It's not new in Canada been around for 20+ years. We even have a Canadian Contract for it.



You can right Size the frame work to your project.



The owners Time & Obligation Can be easily managed.

When you go IPD you never go PPP , PDB, DBD again or any other type of traditonal delivery



The Contract is adaptable and yes it has rigor



Talent retention on IPD projects are second to none

The Future of projects is Precon and More Precon



*Efficiency is
doing things
right,
Effectiveness is
doing the right
things.*

PETER F. DRUCKER

THANK YOU

GET IN TOUCH

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