26TH ANNUAL

26TH LCI CONGRESS
OCTOBER 22-25, 2024

Lean Jeopardy

Micro dosing to Help Surf the Small Waves

Danielle Zauscher, University of Alberta
Chris Holtz, Bird Construction
Bianca Dahlman, Reimagine Architects
Jason Russell, University of Alberta

SURFING THE WAVE OF LEAN DESIGN AND CONSTRUCTION

Thursday, October 24, 2024 9:30 am

JEOPARTY!

LCI CONGRESS EDITION

FIRST PEOPLES' HOUSE

BEFORE

AFTER

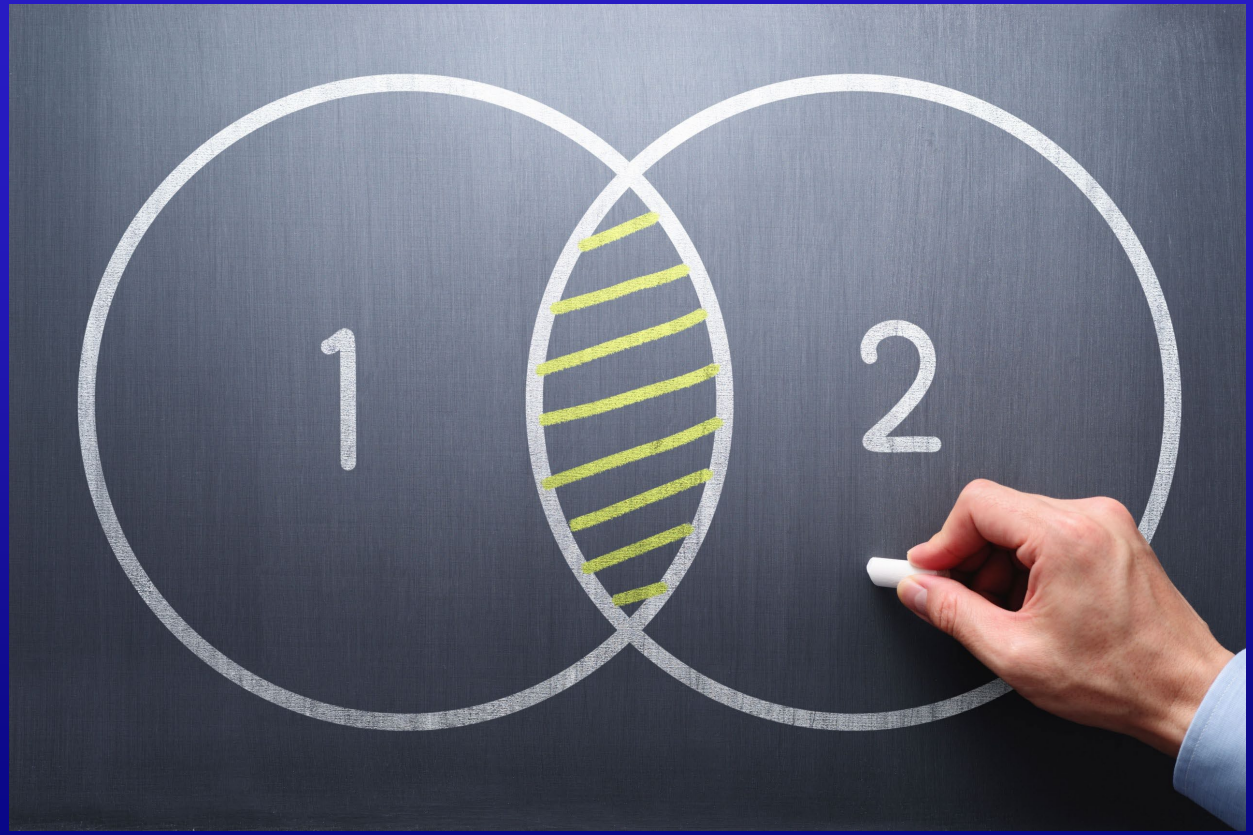

$0
Bianca
$0
Chris
carhartt
$0
Danielle

PANEL

LIKE, THIS ROOM IS TOTALLY A MICRO SHACK, BRO!	DUDE, FORGET PEOPLE LETS JUST LIKE TOTALLY GO WITH ROBOTS	PICK THE CREW FOR THIS PARTY WAVE DUDES	OTHER GNARLY TRICKS
$100	$100	$100	$100
$500	$500	$500	$500
$1000	$1000	$1000	$1000

PICK THE CREW FOR THIS PARTY WAVE, DUDES · $100

In a non IPD setting these 2 things share common values, scope, boundary definition, and are related by timing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LIKE, THIS ROOM IS TOTALLY A MICRO SHACK, BRO! · $100

On a project of smaller size, these factors must be taken into account during the bidding phase in order to maximize the value of the “micro – shack”

FIRST PEOPLES'
HOUSE PROJECT

PANEL

LIKE, THIS ROOM IS TOTALLY A MICRO SHACK, BRO!	DUDE, FORGET PEOPLE LETS JUST LIKE TOTALLY GO WITH ROBOTS	PICK THE CREW FOR THIS PARTY WAVE DUDES	OTHER GNARLY TRICKS
	$100		$100
$500	$500	$500	$500
$1000	$1000	$1000	$1000

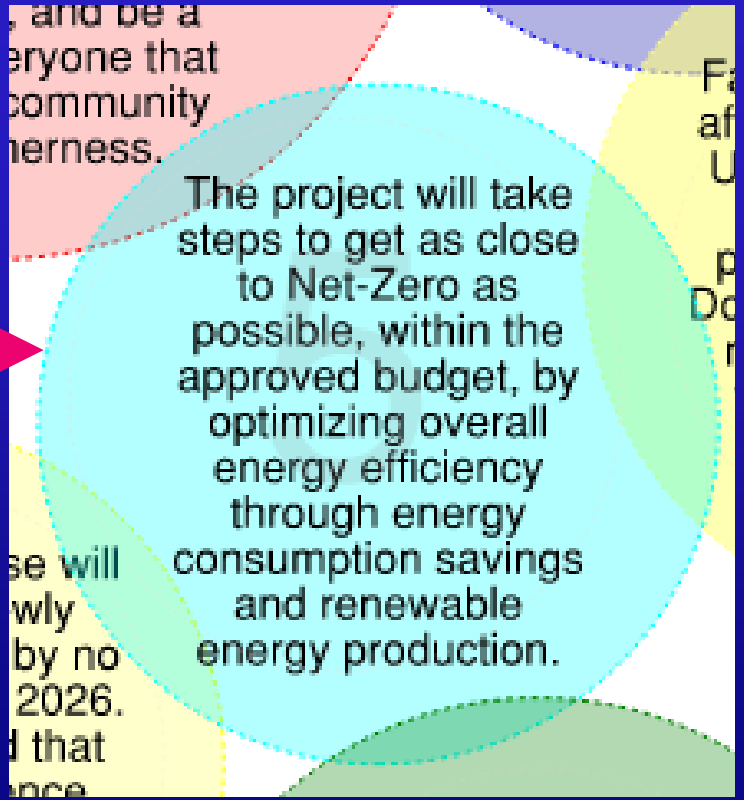
LIKE, THIS ROOM IS TOTALLY A MICRO SHACK, BRO! · $500

Regardless of scale these foundational values should be determined by the team.

Choosing By Advantages: First Peoples' House Solar Array Alternatives

Max Points	Criteria and Factors		Alternative 1 *Option 1 Net Zero +++ (ED Park / FPH Roof)*		Alternative 2 *Option 2 Net Zero ++ (ED Park / FPH Canopy)*		Alternative 3 *Option 3 Net Zero + (FPH Roof / FPH Parking)*		Alternative 4 *Option 4 Net Zero Ready (FPH Roof)*		Alternative 5 *Option 5 Net Zero Ready - (Only Provisions for Future Solar)*	
				90.2		**89.7**		**90.3**		**97.5**		**80.0**
	How much energy does the solar produce?											
	Producing enough energy to be Net Zero is better	Attribute	607MWh		491MWh		354MWh		154MWh		0 MWh	
30	*Net Zero Target is 460MWh.*	Advantage	100%	**30**	100%	**30**	77%	**23.1**	33%	**9.9**	None	**0**
	How much daylight does the solar array block from getting into first peoples' house											
	Blocking less daylight is better	Attribute	Canopy Blocks Some		Canopy blocks some		Blocks alot		Canopy blocks Some		None	
25	*"The right to light" daylight is critical to creating positive environment and connection to the sun trama inducing darkness*	Advantage	Allows some sunlight	**18.75**	Allows some sunlight	**18.75**	None	**0**	Allows some sunlight	**18.75**	Allows all sunlight	**25**
	How much area does the install limit for future installations for solar initiatives											
	Less area is better	Attribute	2578m2 on parkade		2578m2 on parkade		0m2		0m2		0m2	
10	Solar will be a key factor when redeveloping the education complex in-line with the education masterplan	Advantage	None	**0**	None	**0**	2578m2 less	**10**	2578m2 less	**10**	2578m2 less	**10**
	How much area of solar exists on or immediately beside First Peoples House (Supporting the image of solar)											
	More area near FPH is better	Attribute	778m2		338m2		2420m2		778m2		0m2	
25	*It is important to the project that solar exists in the FPH building in terms of the energy brand/imaging*	Advantage	778m2 more area	**8.0**	338m2 more area	**3.5**	2420m2 more area	**25**	778m2 more area	**8.0**	None	**0**
	What is the average efficiency of the solar arrays											
	Higher efficiency is better	Attribute	83% Efficient		85% Effecient		80% Efficient		79.2% Efficient		No Solar	
25	(Acceptable threshold for solar productivity is 75% efficient)	Advantage	83% more efficient	**24.4**	85% more efficient	**25.0**	80% more efficient	**23.5**	79.2% more efficient	**23.3**	None (does not produce)	**0**
	How easy is it to access for maintenance?											
	Easier/more convenient is better	Attribute	Fairly easy to access		Fairly Easy to access		Difficult to access canopy		Easy to access		No maintenance	
15	*Access is tied to height of installation, location of installation, and effort required to access*	Advantage	Moderately Easy	**9**	Moderately Easy	**9**	None (most difficult)	**0**	Easiest to access	**12**	No maintenance	**15**
	How much effort is required to maintain (More area = more maintenance)											
	Easier/more convenient is better	Attribute	3356m2		2919 m2		2421 m2		778 m2		No maintenance	
15	*Based on the principal of more solar requires more upkeep.*	Advantage	Most area	**0**	437m2 less area	**2.0**	935m2 less area	**4.2**	2578m2 less area	**3.5**	3356 m2 less area	**15.0**
	How much infrastructure (Structure, Cabling, Distribution, ETC) is required to make system work											
	Less infrastructure is better	Attribute	Most Infrastructure required		Alot of infrastructure required		Some infrastructure required		Little infrastructure required		Least infrastructure Required	
15	Key conciderations are proximity to FPH (cabling), and structural infrastructure requirements	Advantage	None	**0**		**1.5**		**4.5**		**12**		**15**
	Cost of Alternative		$2,317,229.00		$1,987,873.00		$2,010,145.00		$597,146.00		$364,137.00	


The First Peoples' House new location will be a home away from home for Indigenous students. It will be a vibrant, welcoming space that provides the opportunity to gather in multiple ways, which include feasts and ceremony. This space will revitalize connections to belonging and warmth, and be a space for everyone that exemplifies community and togetherness.
Success from the perspective of FPH includes; space for movement, and feelings of welcoming, warmth, safety, nature, community, belonging, and togetherness. (refer to FPH/TYP feasibility study for more)
The scope of the project will be delivered for not more than $24,000,000.
Facilities and Operations affected groups including Utilities, AMO (including TIMS) will be integral partners on the project. Done successfully this will result in handover of a facility that minimizes operational burdens.
The project will take steps to get as close to Net-Zero as possible, within the approved budget, by optimizing overall energy efficiency through energy consumption savings and renewable energy production.
First Peoples' House will move into the newly renovated building by no later than March 1, 2026. It is acknowledged that time is of the essence, and opening the renovated facility as soon as possible is the goal.
First Peoples' House (FPH), and the community that FPH serves, will be integral partners on the project in a good way and will feel respected and heard throughout the process. Done successfully this community, and the University as a whole, will be proud of the new facility.
The fully integrated and collaborative design and construction teams will promote early and open communication that will result in a more constructable design, reduction in RFI's, SI's, and Change Orders throughout the renovation process.
The project will be delivered in a fully integrated and collaborative way, whereby the Project Delivery Team, Executive Oversight Committee, First Peoples' House, and all other affected groups remain respectful, open, willing to share information, timely in the sharing of information and making of decisions, and accountable to each other for the successful delivery of the project.
The project delivery team will reduce the risk of unforeseen impacts to the project's schedule and budget by rigorously validating the existing conditions of the building and the project's scope during the early stages of the project, and collaboratively delivering the design and construction of the project.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PANEL

LIKE, THIS ROOM IS TOTALLY A MICRO SHACK, BRO!	DUDE, FORGET PEOPLE LETS JUST LIKE TOTALLY GO WITH ROBOTS	PICK THE CREW FOR THIS PARTY WAVE DUDES	OTHER GNARLY TRICKS
	$100		$100
	$500	$500	$500
$1000	$1000	$1000	$1000

OTHER GNARLY TRICKS · $100

When full co-location isn't possible or practical, these web based collaboration tools can help lean out team interactions.

Jun 24-30
July 1 - 7 (Canada Day)
July 8 - 14
July 15-21
July 22-28
July 29 - August 4
Aug 5 - 11 (Heritage Day)
Aug 12-18
Aug 19-25
August 26 - Sept 1
TP2 Draft
TP2 Code Review with AHJ at Mark (TIME) (NEED)
TP2 Constructibility Review with Consultants & Bird - July 2 (NEED)
TP2 - IFT - July 5 (TIME) (NEED)
Model Review (UOA) (TIME) (NEED)
Tender TP2 - July 8 (TIME) (NEED)
90% TP3 Draft (TIME) (NEED)
Bird Initiates Cost Plan 4 (NEED)
TP3 Constructibility Review with Consultants & Bird - July 16
90% TP3 (TIME) (NEED)
TP2 TENDER CLOSES - July 22 (TIME) (NEED)
TP3 Draft IFT (TIME) (NEED)
Controls Meeting / Mech Review Comments
TP3 IFT - August 2 (TIME) (NEED)
TP2 RECOMMENDATION REVIEW - July 30 (TIME) (NEED)
TP3 Model Review (UOA) (TIME) (NEED)
MAINTENANCE & OPERATIONS MODEL START UP (TIME)
TP2 Contract Award - August 6
Cost Plan 4 Completed - August 6 (NEED)
TP3 UOA Cost Analysis (TIME) (NEED)
TP3 IFT Submission to U of A & Bird - August 15 (TIME)
TP3 Tender (NEED)
Elevator (TIME) (NEED)
TP3 Adenda August 28 (TIME) (NEED)
TP3 TENDER CLOSES - August 30 - Sept 4 (TIME) (NEED)
Review Furniture Package with FPH (TIME) (NEED)

Join at menti.com | use code 9342 1700

Mentimeter

How are we doing with our Conditions of Satisfaction - Part 1?

25

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PICK THE CREW FOR THIS PARTY WAVE DUDES · $500

With less time to deliver projects you have less time to get these team development processes right, making it even more important.


STORMING
Challenging each other
NORMING
Working with each other
FORMING
Learning about each other
PERFORMING
Working as one

PANEL

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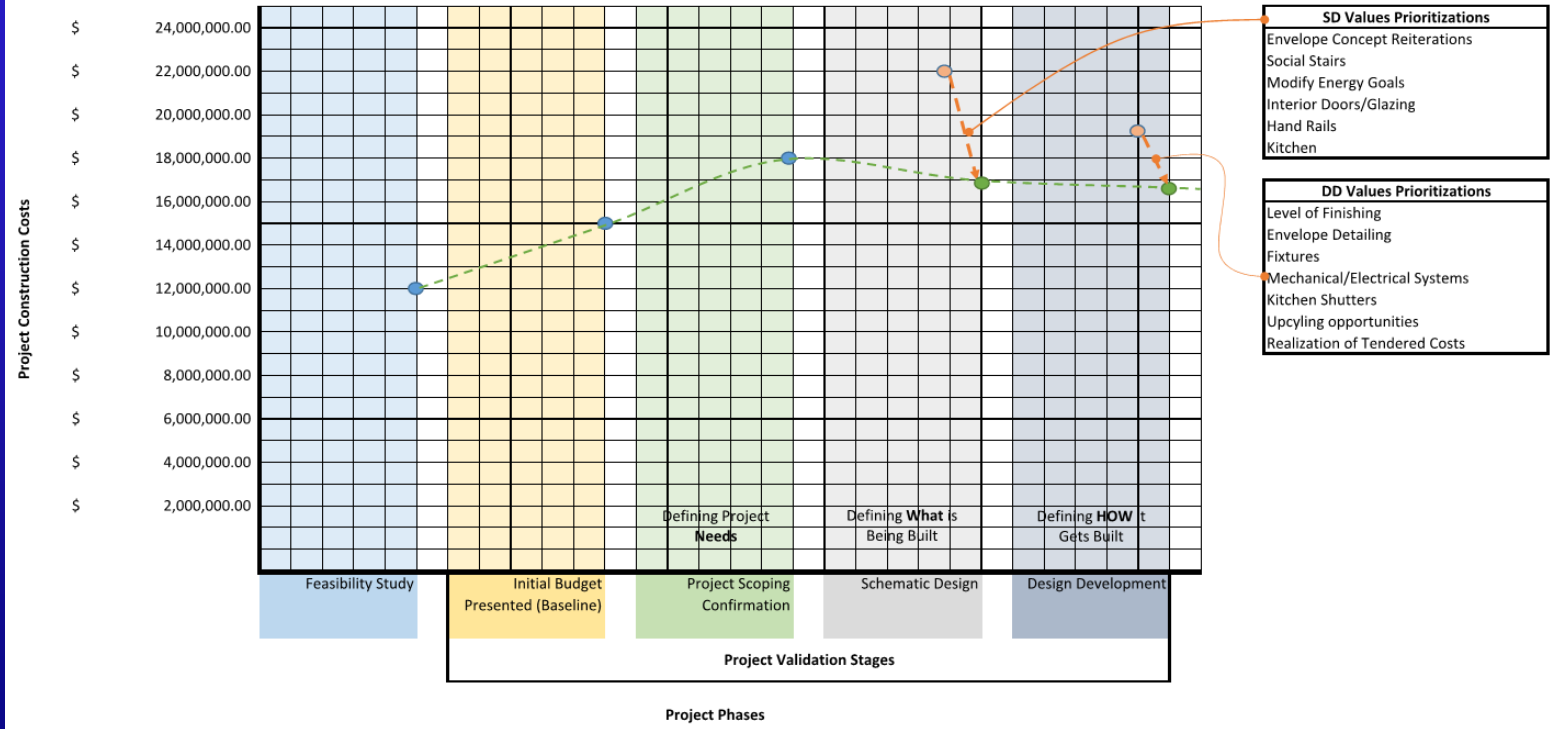
OTHER GNARLY TICKS· $500

Though its made extremely more difficult without the benefits of IPD, this project delivery model can still benefit micro projects.

First Peoples House Project Construction (Hard Cost) Budget Progression through Validation Phases



SD Values Prioritizations
Envelope Concept Reiterations
Social Stairs
Modify Energy Goals
Interior Doors/Glazing
Hand Rails
Kitchen

DD Values Prioritizations
Level of Finishing
Envelope Detailing
Fixtures
Mechanical/Electrical Systems
Kitchen Shutters
Upcyling opportunities
Realization of Tendered Costs


$100
Bianca
$100
Chris
$100,000
Danielle

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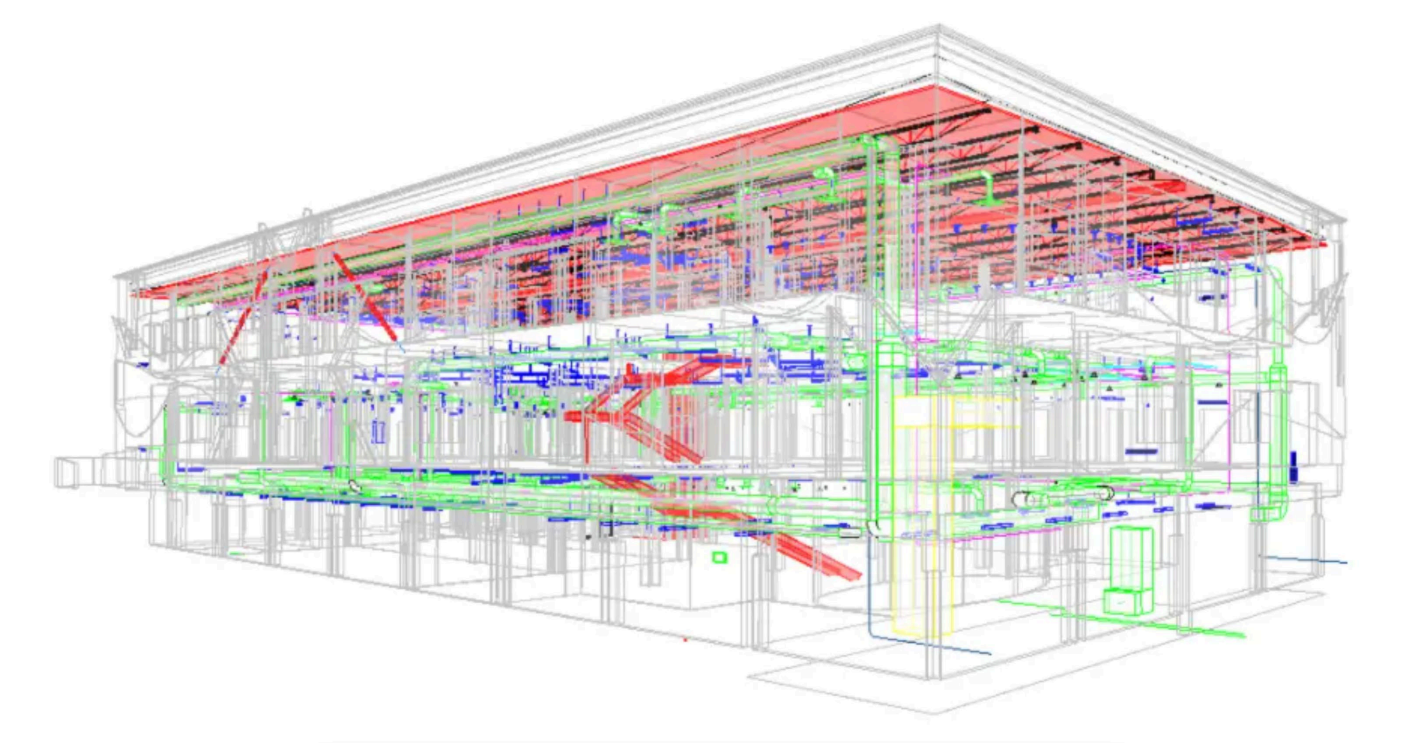
It's easier said than done but this realtime function is amped up with BIM.



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Pay special attention to these frameworks to keep your micro-shack from being cluttered with the 8 wastes.


D Defects
O Over/Under Production
W Waiting
N Not Utilizing Talent
T Transportation
I Inventory
M Motion
E Extra Processing
The 8 WASTES of Lean

ROLE	NAME	TITLE
Project Delivery Team		
Project Oversight	Tony Hodge	Director, Infrastructure Development, F&O
Project Oversight	Jason Russell	Manager, Project Delivery, F&O UA PMO
Project Manager	Danielle Zauscher	Project Manager, F&O UA PMO
Project Manager	Tracey Didluck	Project Manager, F&O UA PMO
Project Coordinator	Adam Wild	Project Coordinator, F&O UA PMO
Project team	Kelly Hopkin	Manager, Campus Planning & Architecture, F&O
Space Governance	Tracy Johnson	Manager, Space Planning and Stewardship, F&O
Space Planning	Nicole Gaboury	Space Planner, Space Planning and Stewardship
User Group Primary Representative: First Peoples' House	Shana Dion	Assistant Dean, First Nation, Métis & Inuit Students, Dean of Students
NET Zero and Sustainability Champion	Micheal Versteege	Manager, Energy & Climate Action, VPFO-Utilities
Student Representative	Anika Fuhr Kuharic	First Peoples' House
User Group Representative	Suzanne Butler	First Peoples' House - Transition Year Program
User Group Representative	Lacee Wuttunee	First Peoples' House , onîkânîw

Facilities and Operations Buildings, Infrastructure, Trades, and Engineering (BITE)		
Engineering and Technical Services: Representing oversight on University design standards, best practices, and quality	Keith Hollands	Director, Engineering Operations
	Kris Pucci	Manager of Engineering
	Henry Chu	Electrical Engineer
	Hamoon Azizi	Mechanical Engineer
Trades, Infrastructure and Maintenance: Representing operational integration with the project's design and construction	Darren St. Hilaire	Director, Trades and Infrastructure Maintenance
	Quentin Pacholik	Trades Construction Superintendent
	Ryan Topham	Electrical Manager
	Wyatt Maskoske	Key Maintenance Initiatives Electrical
	Bill Shaughnessy	Mechanical Manager
	Dan Kostic	Key Maintenance Initiatives Mechanical

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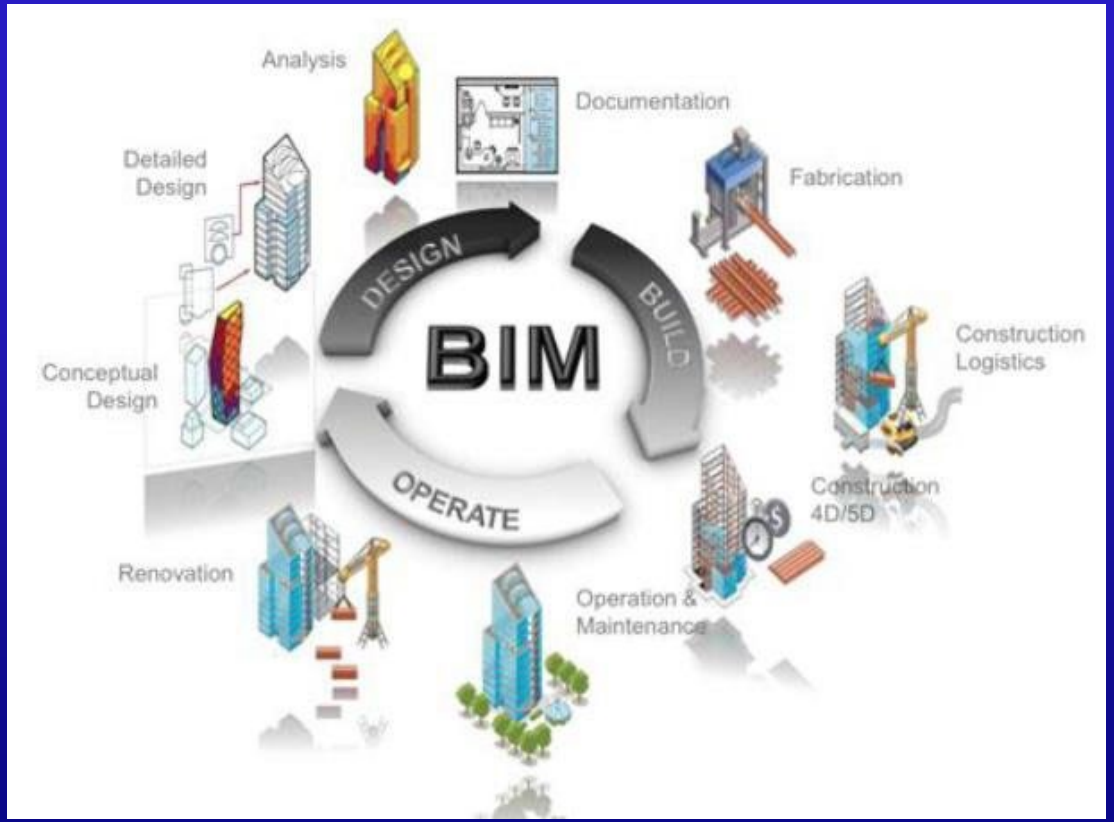
DUDE, FORGET PEOPLE, LET'S JUST, LIKE, TOTALLY GO WITH ROBOTS, MAN! · $1000

These factors have the largest impact on determining the level of detail of the BIM Execution Plan (BXP).


Analysis
Documentation
Detailed Design
Fabrication
DESIGN
BUILD
BIM
Conceptual Design
Construction Logistics
OPERATE
Construction 4D/5D
Renovation
Operation & Maintenance

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		$1000	$1000

DUDE, FORGET PEOPLE, LET'S JUST, LIKE, TOTALLY GO WITH ROBOTS, MAN! · $500

A major challenge to BIM at microscale in non IPD settings is its use in eliminating this wasteful process.

1.0 Construction Manager (CM)

2.0 Primary Trade Partners (PTP) Labor

Mech	Elec	Interiors	Envelope
• Plumbing • Fire Protection • HVAC • Controls	• Services & Distribution • Lighting Devices & Heating • Systems & Ancillaries	• Partitions • Doors • Wall Finishes • Ceiling Finishes	• Walls above grade • Windows/ Entrances • Roof Coverings • Projections

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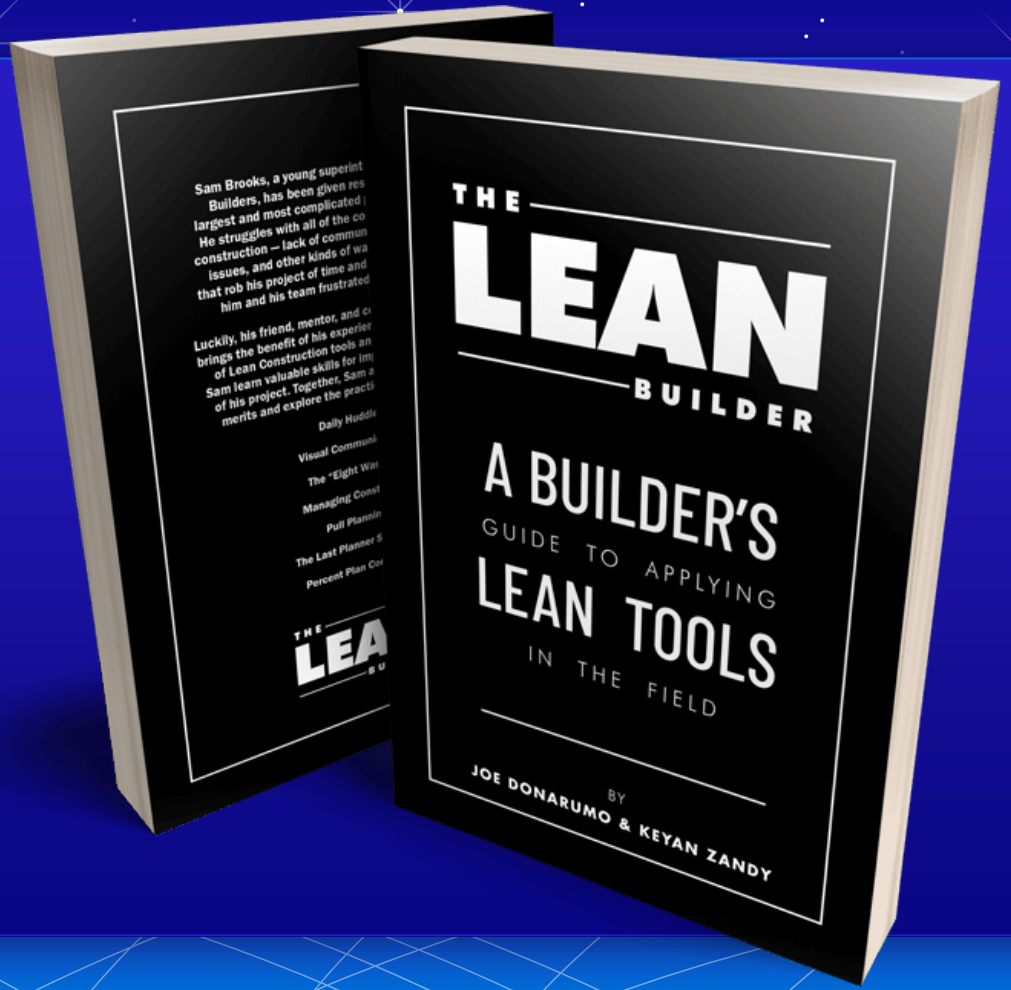
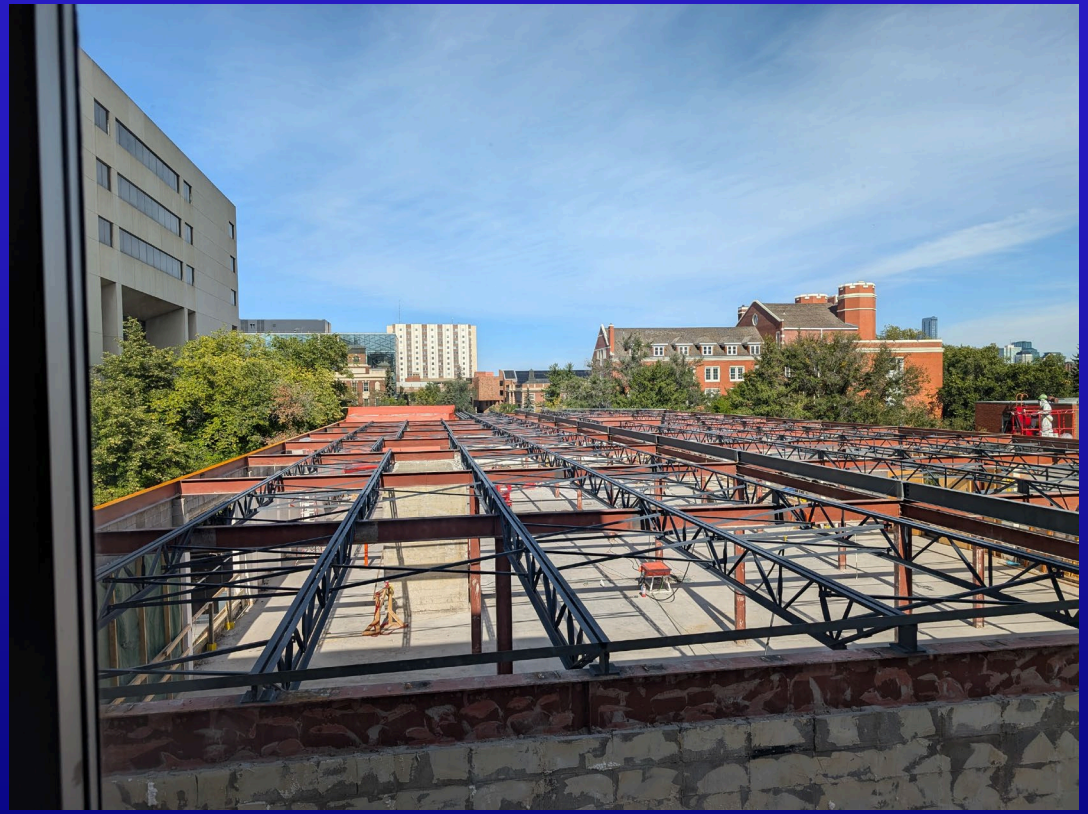
		$1000	$1000

OTHER GNARLY TRICKS· $1000

I r good atdoin’ this good work on small sites toodoods

Translation: Builders’ can use these lean practices on small scale projects too


Sam Brooks, a young superint
Builders, has been given res
largest and most complicated
He struggles with all of the co
construction — lack of commun
issues, and other kinds of wa
that rob his project of time and
him and his team frustrated
Luckily, his friend, mentor, and c
brings the benefit of his experier
of Lean Construction tools an
Sam learn valuable skills for im
of his project. Together, Sam a
merits and explore the practi
Daily Huddle
Visual Communi
The "Eight Wa
Managing Const
Pull Plannin
The Last Planner S
Percent Plan Co
THE
LEA
THE
LEAN
BUILDER
A BUILDER'S
GUIDE TO APPLYING
LEAN TOOLS
IN THE FIELD
BY
JOE DONARUMO & KEYAN ZANDY



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		$1000	

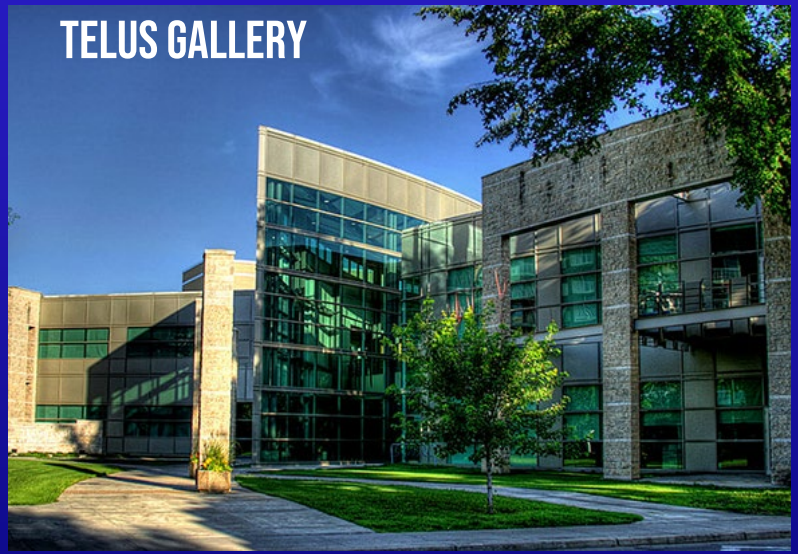
PICK THE CREW FOR THIS PARTY WAVE, DUDES· $1000

This contract delivery method cannot be made lean

UNIVERSITY OF ALBERTA PAST PROJECTS

FIRST PEOPLES' HOUSE

FUTURE UNIVERSITY OF ALBERTA PROJECTS




$6
Bianca
$50
Chris
$750,000
Danielle


WINNER!

LIKE, THIS ROOM IS TOTALLY A MICRO SHACK, BRO!

BUILD TRUST AND CREATE AN ENVIRONMENT THAT FOSTERS COLLABORATION

FACILITATES FASTER DECISION MAKING WHICH IS NEEDED WITH LESS TIME

CO-LOCATION IS STILL POSSIBLE BUT WHAT DOES THAT LOOK LIKE

BREAKDOWN SILOS

DUDE, FORGET PEOPLE LETS JUST LIKE TOTALLY GO WITH ROBOTS

SMALL BUDGETS SOMETIMES CANT WITHSTAND BIM.... WITHOUT OPERATIONAL ROI ADDED

USE OF BIM IN PRODUCTION MODELLING, DOWN WITH SHOP DRAWINGS!

CAN BE DIFFICULT TO GET “PART-TIME” BIM EXPERTS

PICK THE CREW FOR THIS PARTY WAVE DUDES

GOOD PEOPLE MAKE GOOD THINGS HAPPEN

ALIGN CONDITIONS OF SATISFACTION

TRADITIONAL CONTRACTS REQUIRE INTENTIONAL EFFORTS AROUND COLLABORATION

LESS TIME TO FORM. STORM. NORM. AND PERFORM.

OTHER GNARLY TRICKS

USE TECHNOLOGY TO KNOCK DOWN BOARDERS

COST AS AN INPUT INTO DESIGN IS A MUST REGARDLESS OF SCALE (TVD)

BUILDERS LEAN IN THE FIELD DOES NOT DISCRIMINATE AGAINST THE SCALE OR AMOUNT OF RESOURCES ON A PROJECT

In the spirit of continuous improvement, we would like to remind you to complete this session's survey! We look forward to receiving your feedback.

Contact Us

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Chris Holtz

Bird Construction

Chris.holtz@bird.ca

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OCTOBER 22-25, 2024

Thank you for attending this presentation. Enjoy the rest of the 26th Annual LCI Congress!