



CANADIAN HOME BUILDERS' ASSOCIATION  
**netzero** home  
LEADERSHIP SUMMIT

welcome



# MEET OUR DAY 1 CO-HOSTS!



**Sonja Winkelmann,  
Senior Director, Net Zero  
Energy Housing, CHBA**



**Chris Williams,  
Vice President, Avalon  
Master Builder**



# Land Acknowledgement

We acknowledge that the land where the Richmond Neighborhood is located rests on the traditional territories of the Musqueam, Squamish, and Tsleil-Waututh.

We also acknowledge the systemic policies of genocide, relocation, and assimilation that still impact many Indigenous families today.

As settlers and guests on these lands we respect the work of Native Nations, leaders, and families, and make ongoing efforts to center Indigenous knowledge, creativity, and resilience.



**Sign in & out  
with Vanessa  
from CHBA-BC  
for your CPDs!**







**Complimentary Wi-Fi**

**Network: RiverRockHotel**

There is no password, just choose "log-in".







**# NZLeadershipSummit**  
**# NZLS2024**

*Tag us!* **@CHBANetZero**





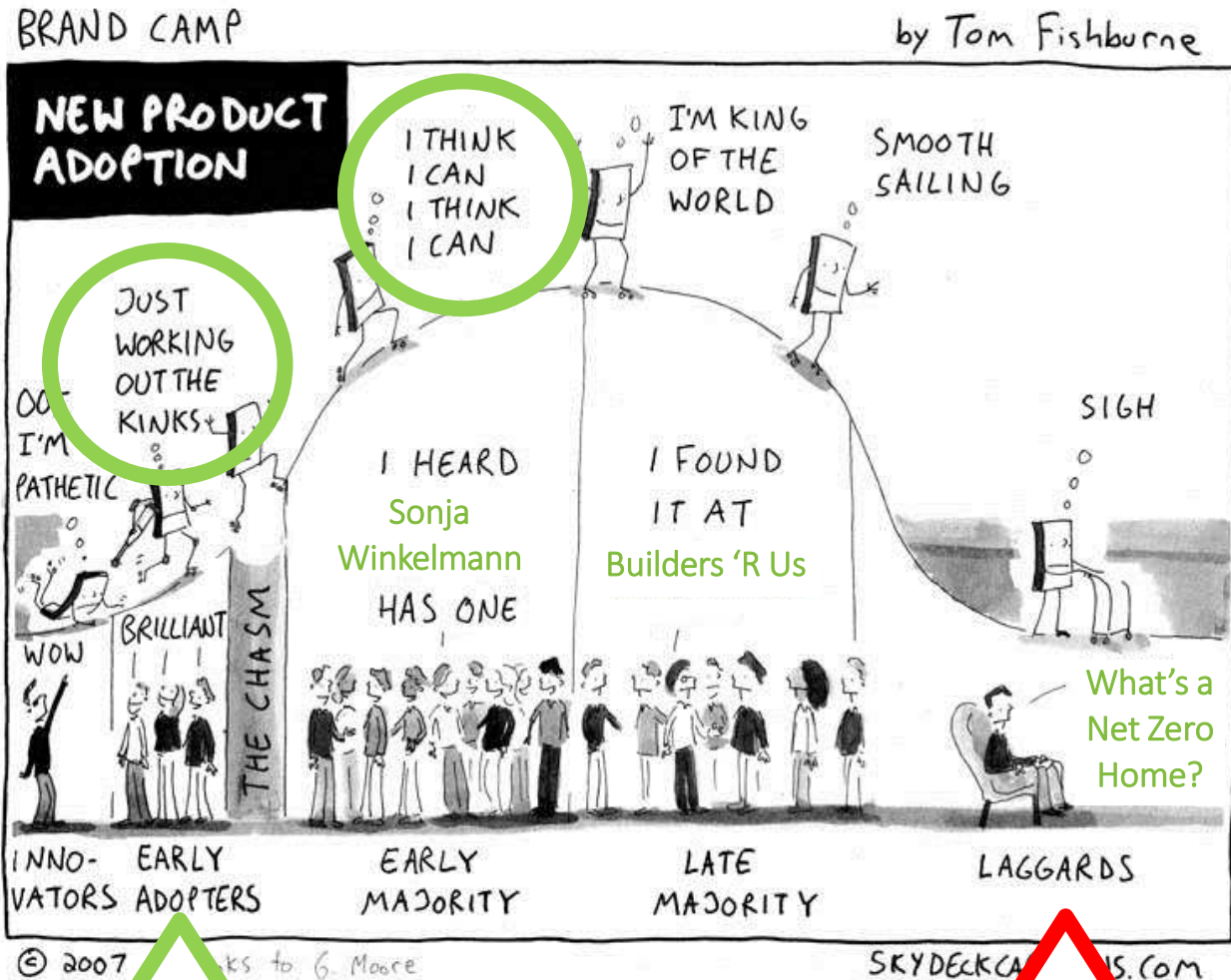
**Building  
Codes**



**Builders**



# The Diffusion of Innovations



## THE PREDICAMENT OF KNOWLEDGE

- Innovators & early adopters are the holders of the most current knowledge.
- To be able to “cross the chasm” we must disseminate this knowledge, **shortening the learning curve and paving the way for the early majority.**
- The challenge is to effectively apply what we already know and what we continue to learn, en masse.

Voluntary Programs

Building Codes





**YOU KNOW WHAT'S  
GONNA HAPPEN NOW?  
WORLDS COLLIDE.**

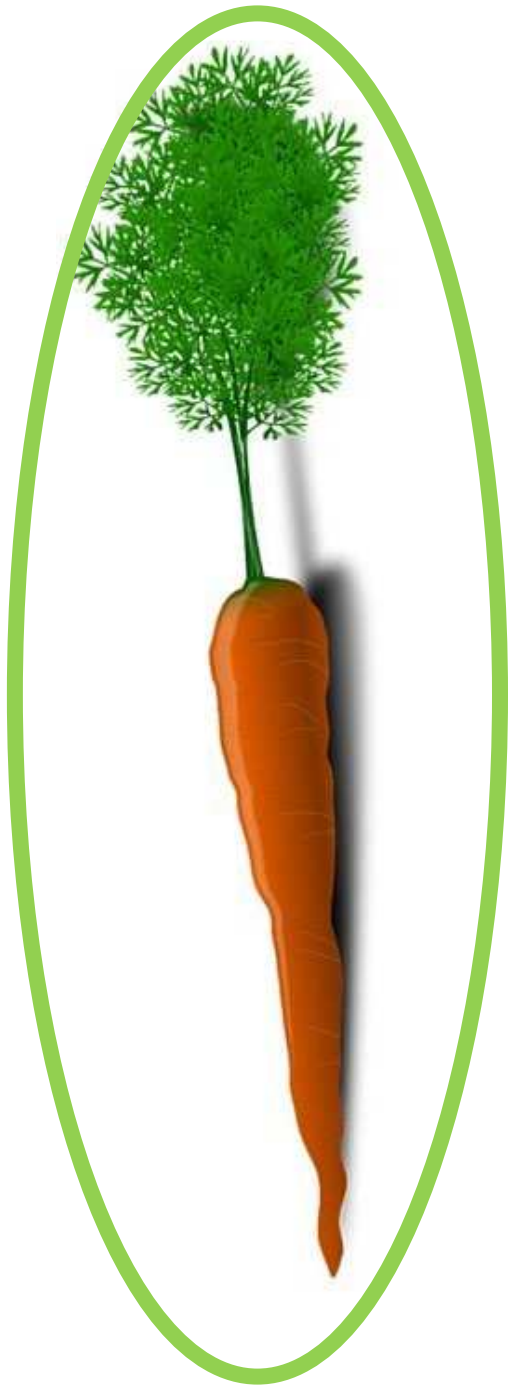




**Design**

**User Experience**





**VS.**



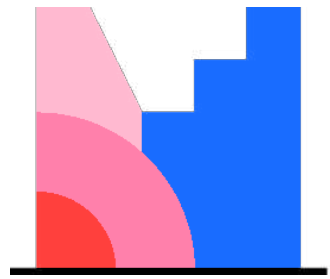




# Audience Engagement: Catch Box







# Mentimeter



[www.menti.com](https://www.menti.com)

Poll # 23 21 62 5



# Day 1 Agenda

Find it online at [www.chba.ca/nzls](http://www.chba.ca/nzls)

- 
- 8:30 AM **CATALYZING PREFABRICATION THROUGH DESIGN to achieve higher performance in housing.**
- 
- 10:15 AM Break and networking in the DEMO HUB
- 
- 10:45 AM **FINDING THE EMISSIONS SWEET SPOT. How much is too much?**
- 
- 12:00 PM Lunch Buffet and networking in the DEMO HUB
- 
- 1:15 PM **WHO'S DOING WHAT? And is it enough to get us there?**
- 
- 2:30 PM Break and networking in the DEMO HUB
- 
- 3:00 PM **SAFE HAVENS. Protecting our assets and our families.**
- 
- 4:15 PM Day 1 wrap-up
- 
- 5:00 PM – Cocktails and buffet dinner, Open Mic, “High Performance Brain”
- 9:15 PM auction, and networking in the DEMO HUB
- 

Access the full agenda online here:



Access the speaker info online here:







**CATALYZING PREFABRICATION  
THROUGH DESIGN to achieve  
higher performance in housing.**





**Kevin Lee**  
CEO, CHBA



**Keith Herring**  
Director,  
Modular &  
Construction  
Systems, CHBA



**Mike Schmidt**  
President, Auto  
Construct  
Incorporated



**Chris Williams**  
Vice President,  
Avalon Master  
Builder



**Neil Hawkins**  
Development  
Manager,  
Avalon Master  
Builder

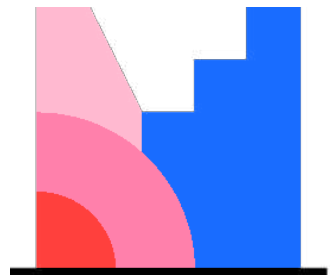




**Kevin Lee,  
CEO, CHBA**







# Mentimeter



**[www.menti.com](https://www.menti.com)**

**Poll # 23 21 62 5**



**Keith Herring,  
Director, Modular and  
Construction Systems, CHBA**







## Modular Construction Council Strategic Plan

- Sector Transition Strategy - B2G and B2B, automation, multi-family modular, panels, industry and municipal awareness
- Recognition of the carbon impact
- Application for funding for transition HUB for factory built is being completed in summer 2024

## Sector Transition Strategy HUB

- What can we do?
- Facilitate education, training and transition, building officials
- Provide Soft Cost financing, infrastructure Investments, tax incentives, distribute funds for other subsidiary and supplier industries

# CHBA SECTOR TRANSITION STRATEGY



Photo courtesy of Westell Homes, London, ON

## SECTOR TRANSITION STRATEGY

Solutions to the barriers preventing Canada from building 5.8 million homes



Canadian Home Builders' Association  
141 Laurier Avenue West, Suite 500  
Ottawa, ON K1P 5J3



### GETTING TO 5.8 MILLION HOMES

Accomplishing the goal of doubling housing starts is a complex matter that is not achievable with the current status quo. To do it, we need a whole-systems approach by all governments at the local, provincial and federal level.

Canada's housing industry cannot build 5.8 million homes without the government supporting systemic change in four areas: financial, policy, labour, and productivity.

CHBA's Sector Transition Strategy builds on and relies on enactment of CHBA's recommendations to address housing affordability and supply to create the environment where housing production can actually increase. It then focuses on supporting and de-risking an industry transition to incorporate more factory-built systems in order to increase productivity with the goal of addressing Canada's 3.5 million housing unit supply deficit.



Continue federal leadership but ensure a holistic approach



Remove barriers to homeownership for first-time buyers



Lower government-imposed costs that add to affordability challenges



Remove barriers within the home building process



Avoid adding costs through codes and regulations



Address labour shortages



Support increased productivity



### HOW GOVERNMENT CAN SUPPORT CHBA'S SECTOR TRANSITION STRATEGY FOR HOUSING SUPPLY

There are concrete steps the government can take to help to address Canada's housing crisis and improve housing affordability through the increased productivity of factory-built solutions. The actions on this page came from input and feedback from builders across the country, including critical insight from CHBA's Modular Construction Council, which is made up of representatives from many of Canada's current factories.

The pyramid on this page and the next is a made-in-Canada plan that will allow for the residential construction sector to transition to more factory-built homes to increase housing supply and build 5.8 million homes to close the supply deficit. It is modelled after *Canada's Plan for a Clean Economy*, as clean technology faces similar market penetration challenges. Just as the government stepped forward in Budget 2023 to address the climate crisis with a made-in-Canada plan for a clean economy, Canada needs a made-in-Canada plan for housing supply, using similar tools.

#### Strategy and Main Tools







## Keith Herring

Director, Modular & Construction Systems

**Canadian Home Builders' Association**

289.251.0754 | keith.herring@chba.ca



Email me to discuss your needs and how to be part of the Sector Transition Strategy HUB!

Download the  
**Sector Transition Strategy**  
[www.chba.ca/sectortransition](http://www.chba.ca/sectortransition)







**Mike Schmidt,  
President,**

**Auto Construction Incorporated**



# The Prefabrication Journey

*Start with a Strong Foundation*



# What is your business objective?



**Volume**



**Speed**



**Quality**



**Complexity**



# What form of prefabrication is best for your application?



Production Capacity  
Manufacturing Footprint  
Design Flexibility  
Standard Freight

Speed of Construction  
System Integration  
Remote Work  
Inclement Weather

# You don't need a factory to get started.

Use the “Book-End Strategy”.

## Take Control



Design for Manufacturing  
and Assembly



Manufacturing  
Facility

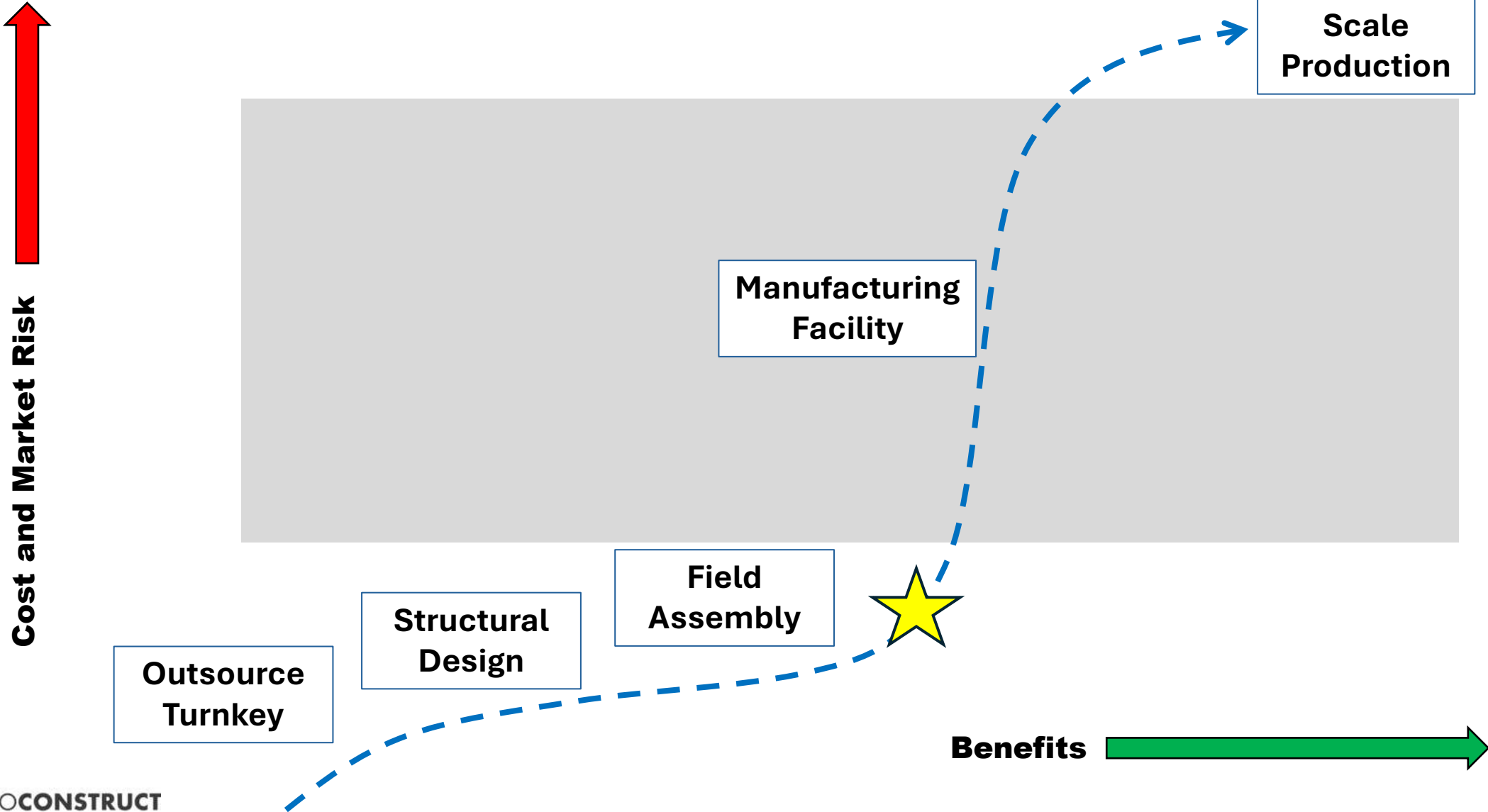
## Get Traction



Field Execution



# The Point of Diminishing Returns



# Begin with the end in mind.



**“Onsite assembly  
informs offsite  
manufacturing.”**





# Thank you



**Mike Schmidt**

mike.schmidt@autoconstruct.ca

+1 780 964 1479







**Chris Williams,  
Vice President,  
Avalon Master Builder**

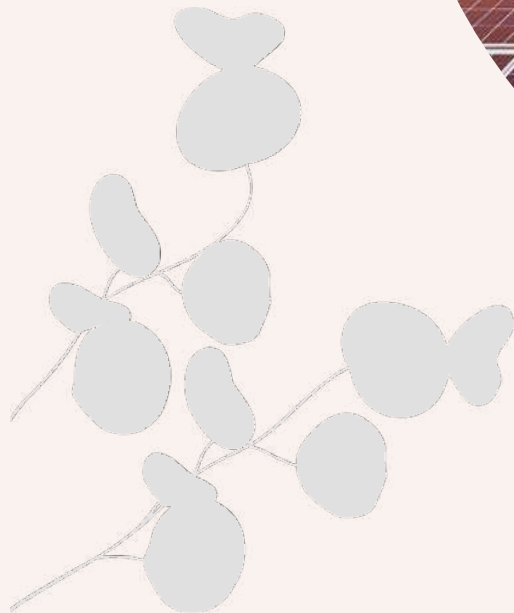




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# Building a better Blender

Adoption of Technology to build repeatable and more cost-effective homes





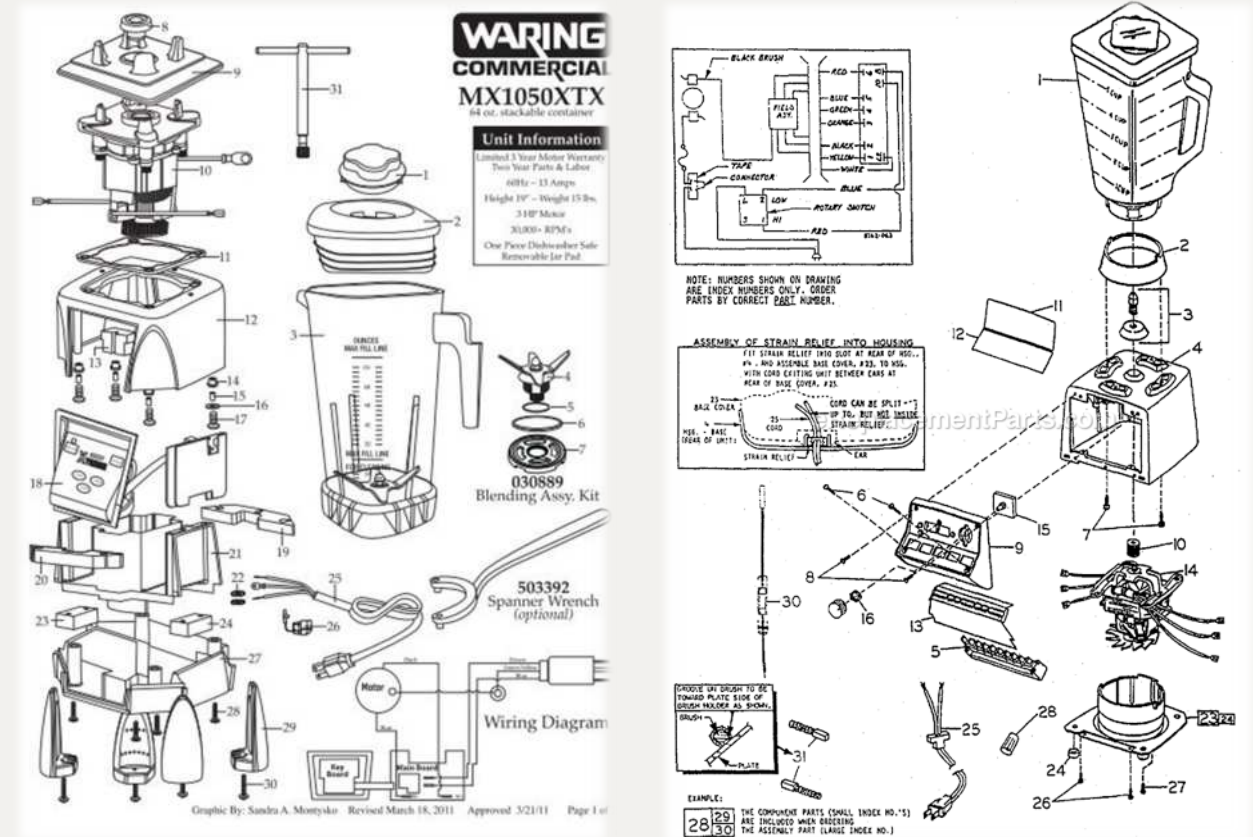
# Building a better Blender



This is the same blender...



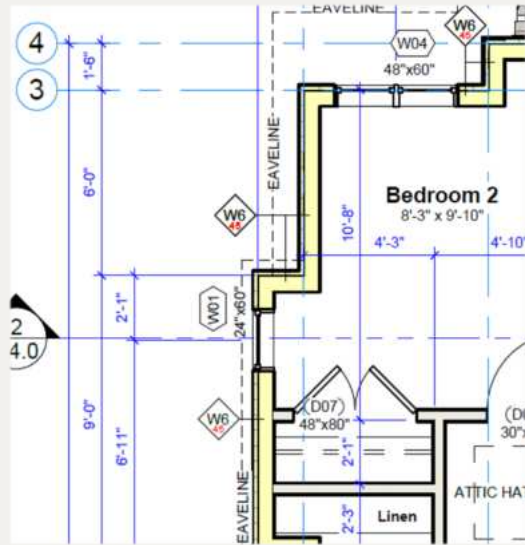
# Building a better Blender



This is the same house...



# Building a better Blender



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  - interior finish

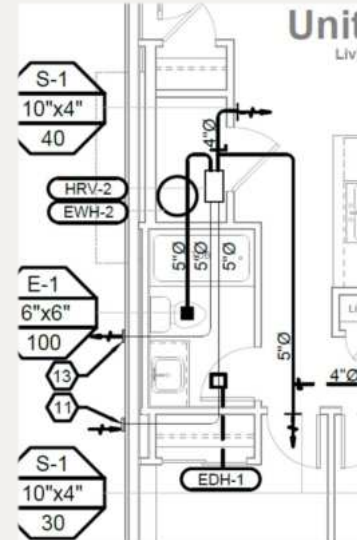


-Framing Dimensions w/ general assembly notes

-Detailed wall assembly up to carpenter

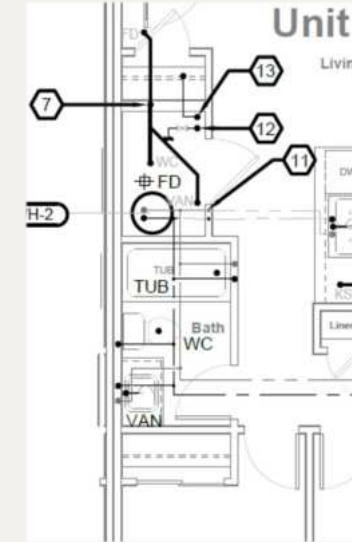
-Termination locations for Plumbing and HVAC

-Detailed plumbing and heat run up to mech trade



**HVAC DRAWING KEY NOTES: (#)**

1. S/A FLOOR GRILLE. (S/A DUCT RUNNING IN FLOOR BELOW).
2. 4"Ø DRYER EXHAUST UP TO ROOF. INSTALL ROOF TERMINATION AS PER DRYER MANUFACTURER RECOMMENDATIONS.
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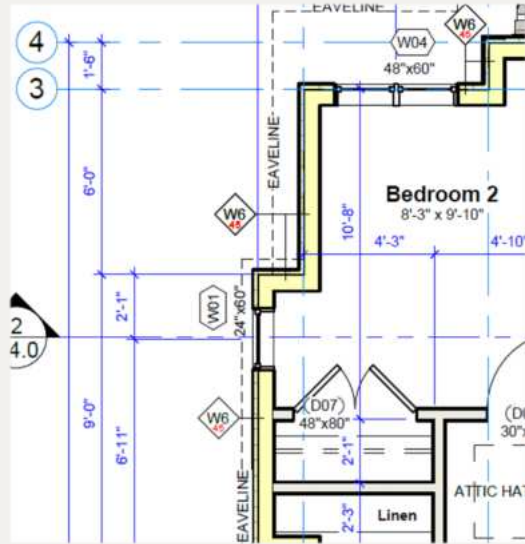
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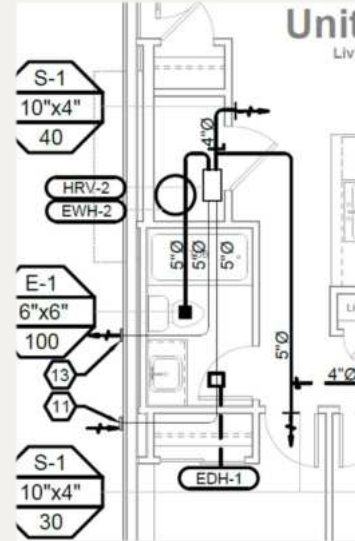


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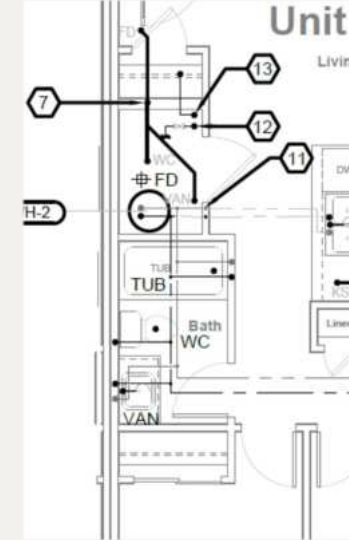
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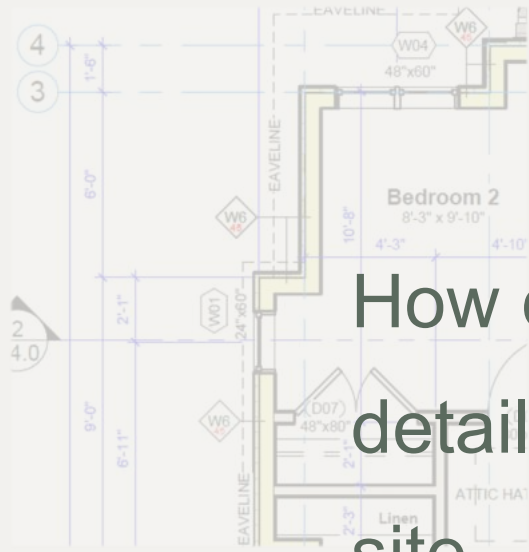


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# Building a better Blender



How can all variables be considered when detailed design --per scope-- takes place on site --independently-- during construction?

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# Avalon BHAG

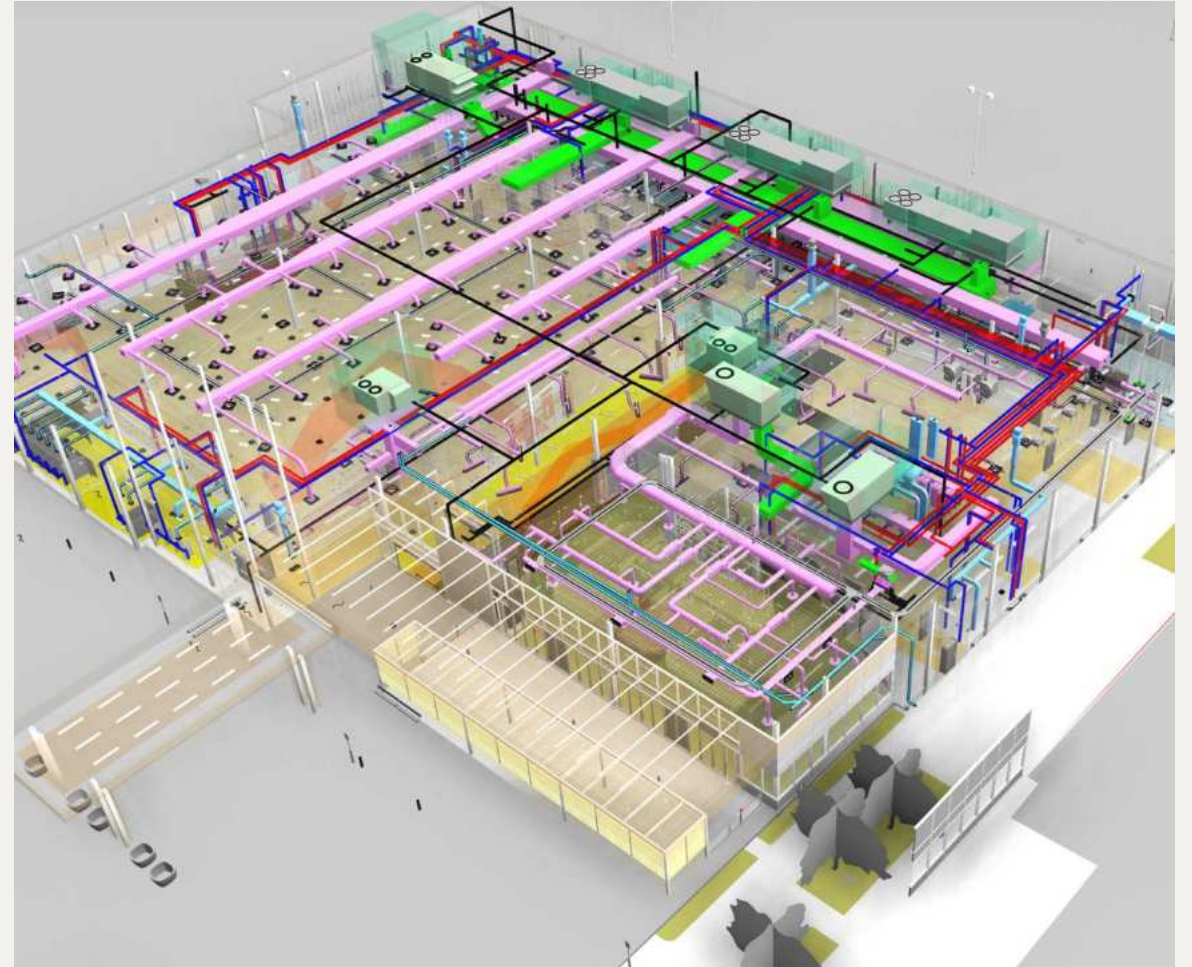
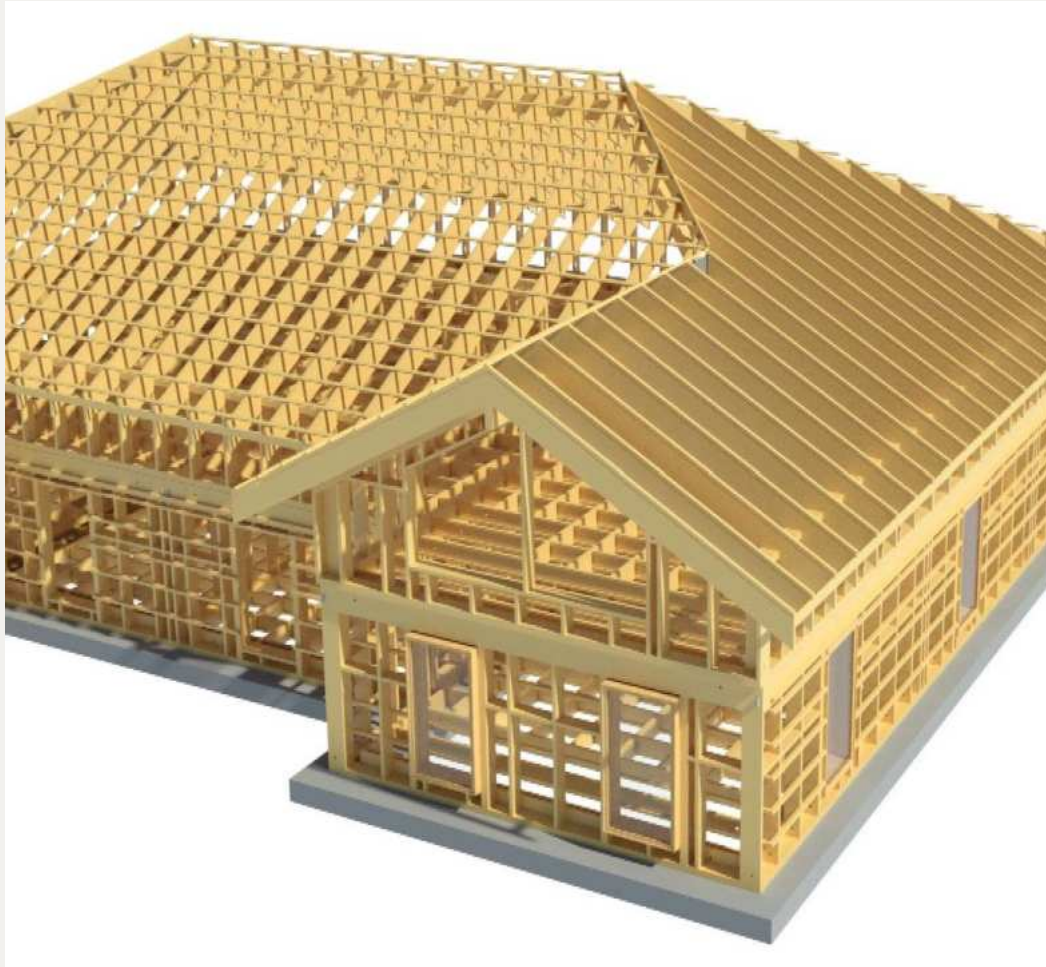


**Investment in technology** to create a **repeatable approach** to building homes while **delivering an EBITDA** of \$X per year with **leadership engagement** and **profit sharing**.

What we have determined thus far (BIM)...



# Building Information Modeling (BIM) Details





# Building Information Modeling (BIM) Details

## Collaborative Design

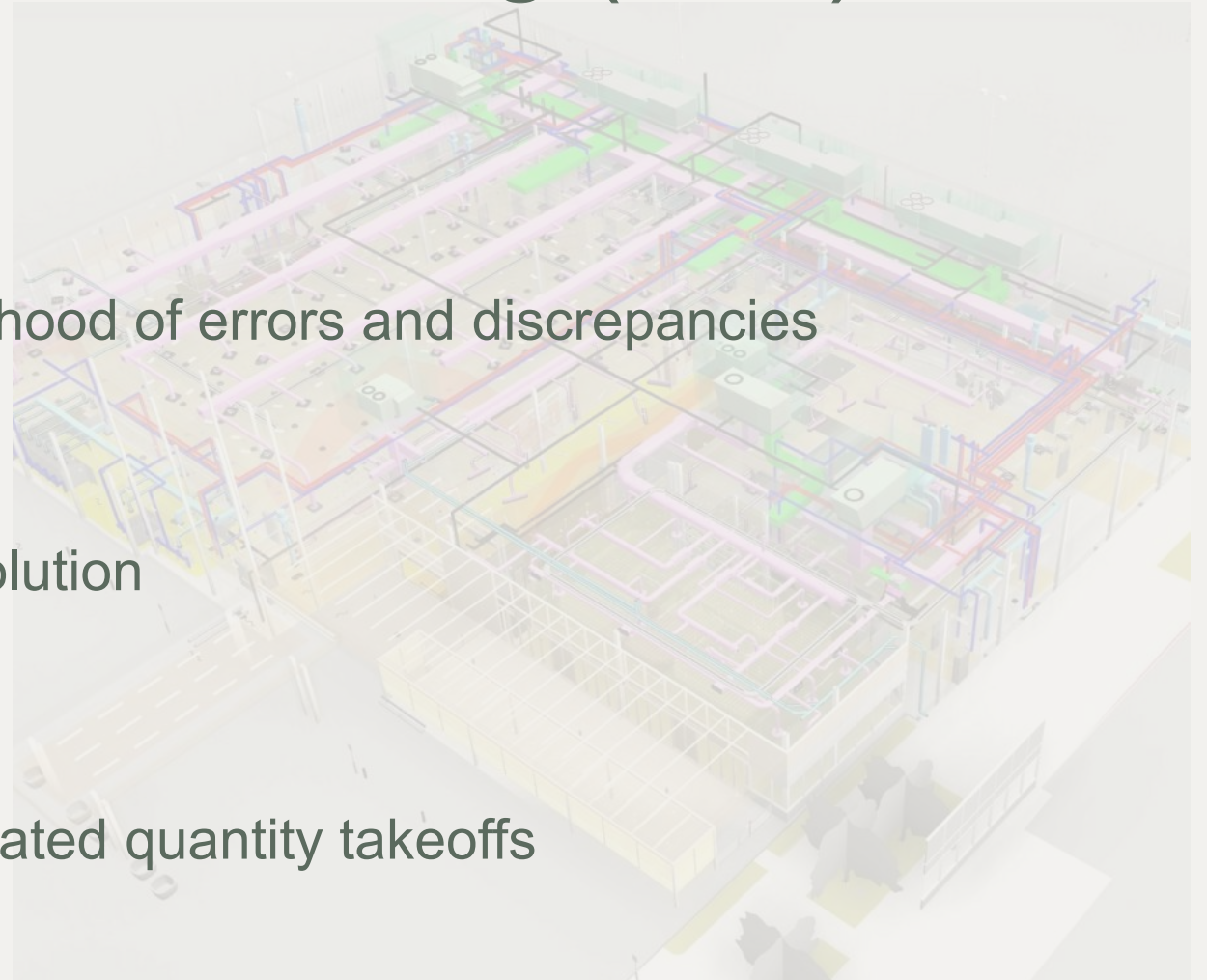
- Collaboration among all stakeholders
- Centralized platform reduces the likelihood of errors and discrepancies

## Spatial Coordination

- Design stage clash detection and resolution

## Quantifications and Estimates

- Precise fitment of scopes allow automated quantity takeoffs





# BIM – Comes with Instructions

We determine the “how to“ for framing

- Most efficient use of lumber is pre-determined
- Most efficient assembly pre-determined
- This can extend to all scopes of work (plumbing, mechanical, drywall, etc)



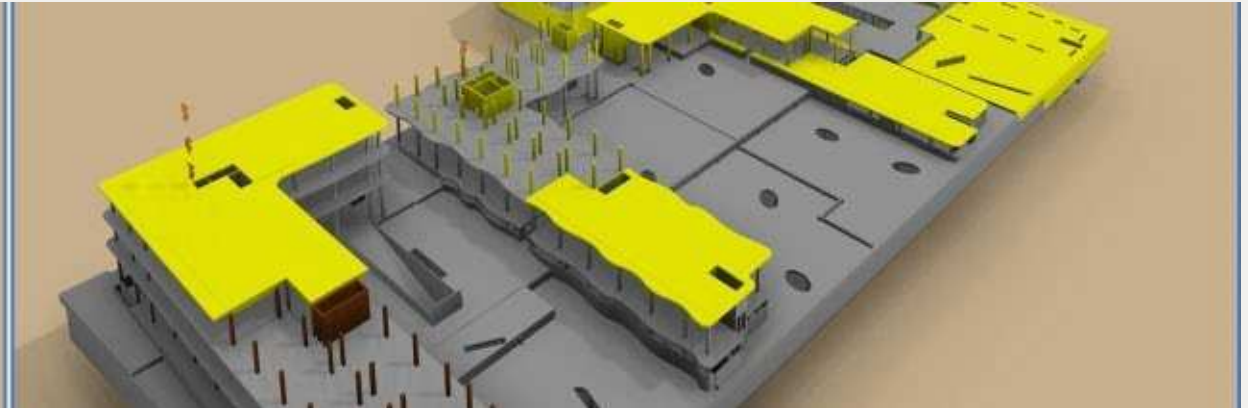
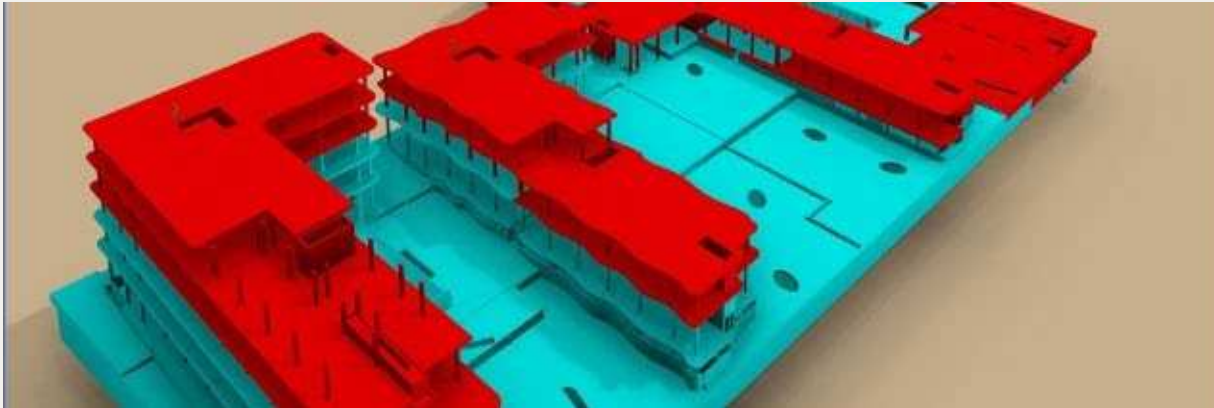




# BIM + Time = 4D

Time-Based (BIM 4D) models allow visualization of construction sequencing

- Simulate and analyze different construction sequences virtually
- Identify the most efficient and cost-effective scheduling options
- Optimize resource allocation



# BIM w/ Augmented Reality

BIM data onto the physical construction site

- Allows visualization of the final construction in the real world
- Provides workers with real-time guidance
- Allows comparison of the physical construction progress against the BIM model
- Enables quick identification of deviations from the original design

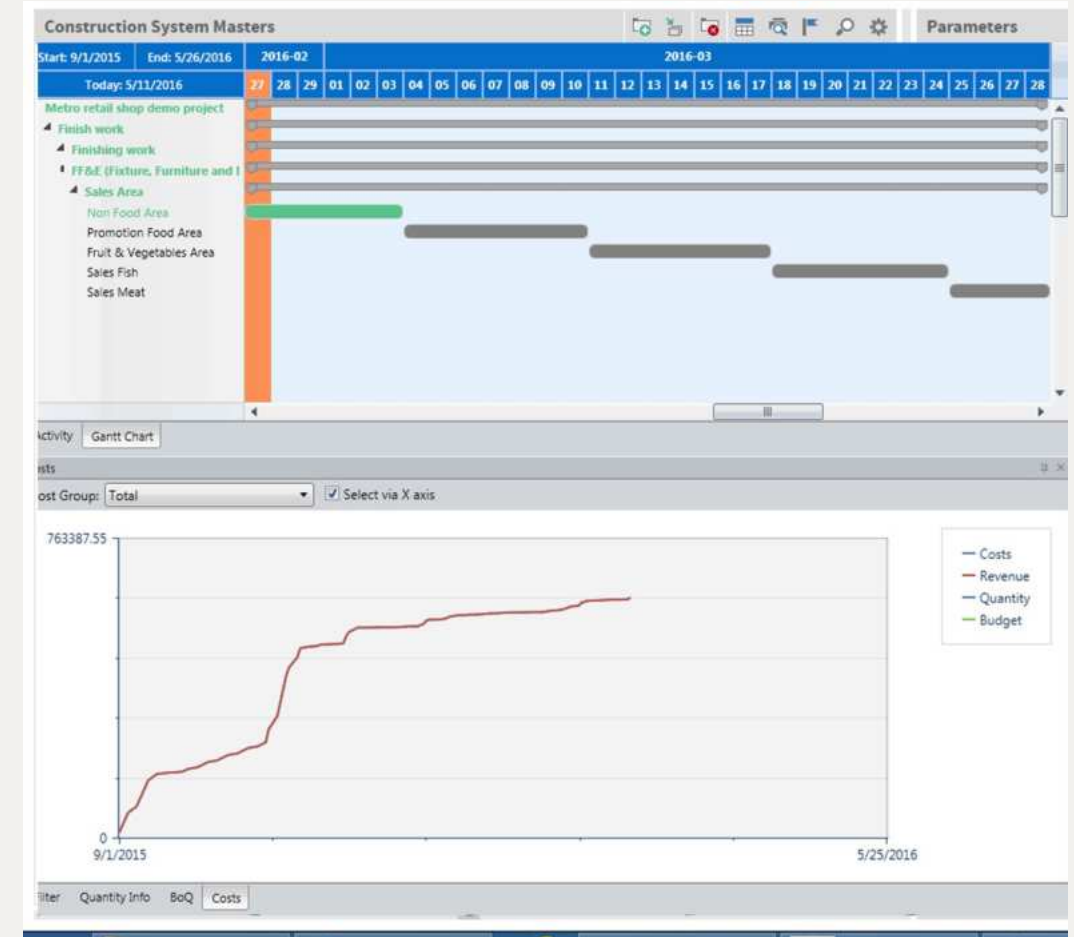




# BIM 4D (Time) + Cost = 5D

Integration of detailed cost information with and 4D models

- Accurate quantification of materials, labor, and other resources at each construction stage
- Real-Time cost updates as project progresses
- Detailed cash flow planning







**Neil Hawkins,  
Development Manager,  
Avalon Master Builder**





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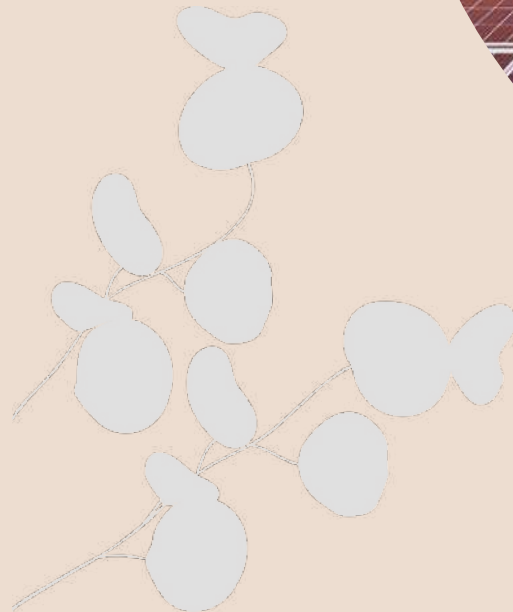
# 2024 Net Zero Leadership Summit

CHBA Net Zero Home MURB Pilot - Avalon

## Utilizing Prefabrication to improve project efficiency.

Avalon Master Builder

June 2024





Knock down wall packages

# Types of Pre-fab framing



Factory built wall panels







Factory installed blocking







Factory assembled floor cassettes





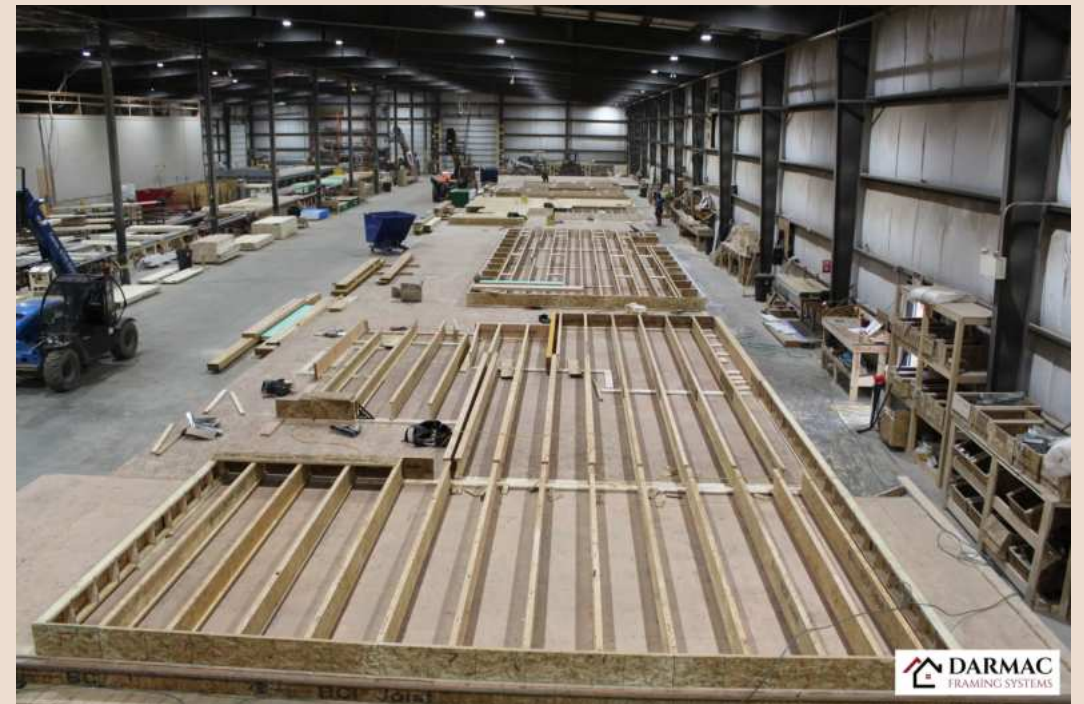
Factory built floor  
System installed on  
Foundation.







Wall production line



Factory production line





## 6-unit townhome block Three weeks to complete on-site work



Thank you!







*Questions?*







CANADIAN HOME BUILDERS ASSOCIATION  
**netzero** home  
LEADERSHIP SUMMIT

# Networking Break

**in the Demo Hub. (Whistler Ballroom)**

**Be back by 10:45 am.**

