



Decarb Lunch

Series

Zebx

The OSO Residential Development

Thu Dec 1, 2022,
from 12- 1pm PST

Free Webinar | zebx.org



INTEGRAL

VIDORRA

DEVELOPMENTS

mood provided by: spring gang
song: Mama Funk

PODCASTS



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**The ZEBx Podcast is now on
Spotify, Apple & Google**

zebx
ENERGY SUSTAINANCE BUSINESS EXCHANGE

RESOURCES

SORTING:



Categories:

- ☐ Articles
- ☐ Case Studies
- ☐ Past Events
- ☒ Podcasts
- ☐ Reports
- ☐ Videos & Slides

Series:

- ☐ Decarb Lunch
- ☐ Deep Emissions Retrofit Dialogue
- ☐ NZER Challenge Playbook Series
- ☐ NZER Challenge Winners Series
- ☐ Tech Demonstration

Systems:

- ☐ Building Enclosure
- ☐ Domestic Hot Water Heat Pump
- ☐ Geothermal
- ☐ Mechanical
- ☐ Solar Energy



PODCAST & SLIDES



The ZEBX Podcast Decarb Lunch
Jan 2022: Reducing Embodied
Carbon for Step Code Homes

PODCAST



PODCAST & SLIDES



The ZEBX Podcast Decarb Lunch
Oct 2021: From Net-Zero Energy to
Near-Zero Emissions

PODCAST



PODCAST



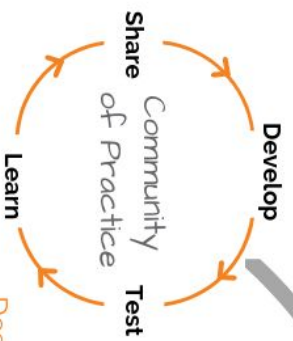
The ZEBX Podcast Decarb Lunch
Jul 2021: Developer/Builder
Recipes for Low-Cost, All-Electric,
Step 4 Residential Construction

PODCAST



COLLABORATE

Accelerate Solutions



Designers
Builders
Academia
Developers
Manufacturers

zeb
x

"connecting industry to solutions"

Government
Global Experts
Mission-Aligned Organizations
Industry Associations

SCALE

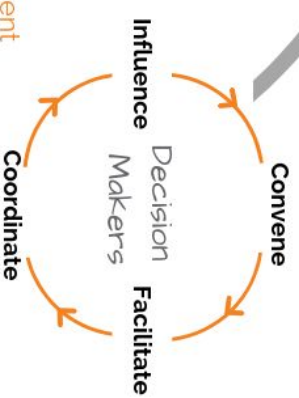
Build Capacity

Case Studies
Best Practices
Industry at Large
Training & Education
Program Delivery

zebx.org

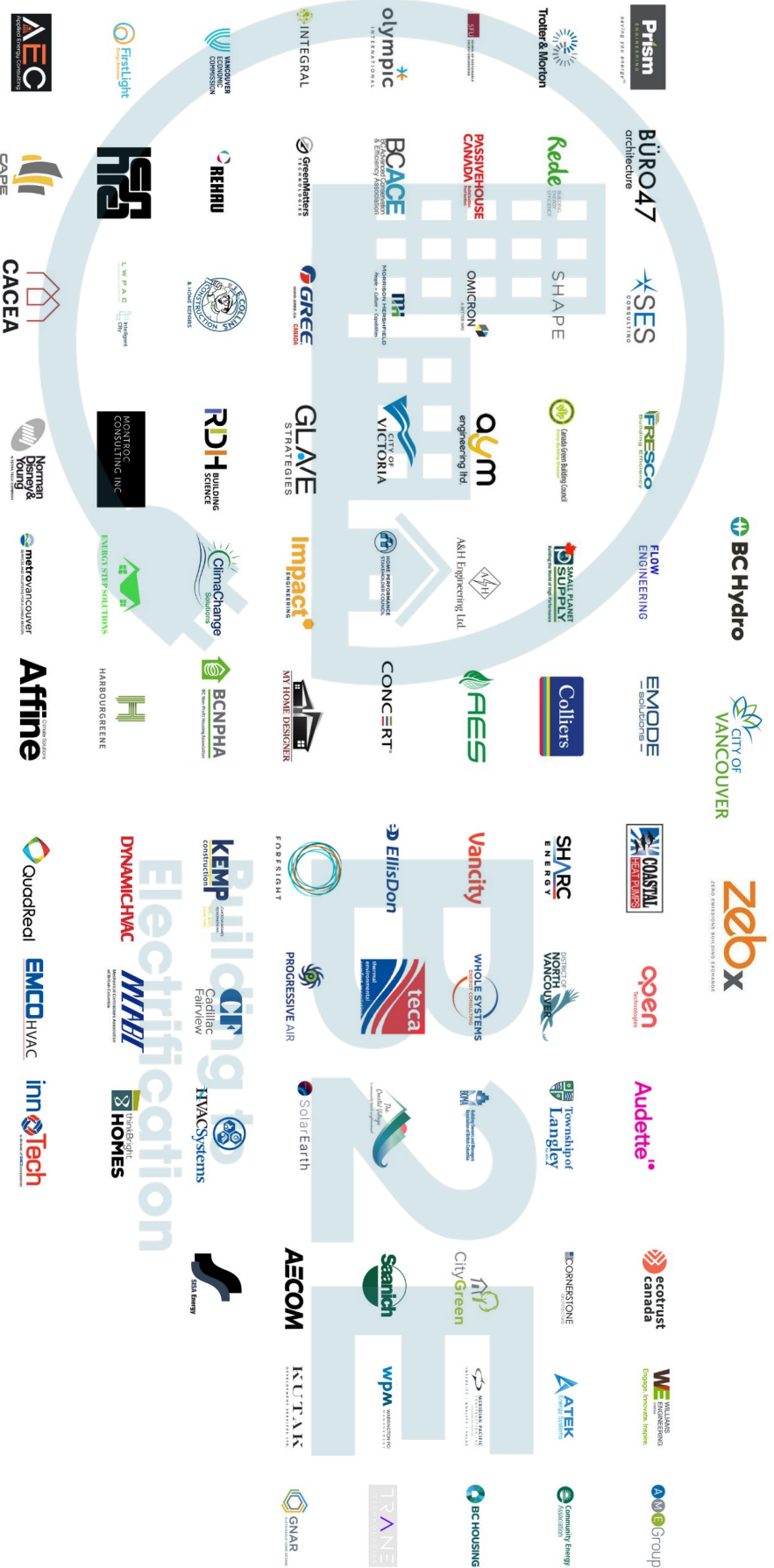
~~ADVANCE~~ **ACCELERATE**

Remove Barriers &
Identify Opportunities



We're in a
climate
emergency!

We are a broad **coalition working together** to electrify buildings in British Columbia in order to reduce their climate impacts and reliance on fossil fuels.



b2electrification.org



Carbon
Leadership
Forum
Vancouver

joins

Zebx

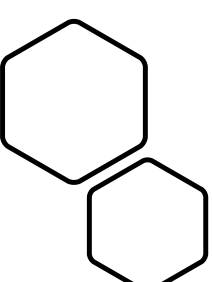
ZEBx is proud to announce the **Carbon Leadership Forum, Vancouver** has joined our organization.

clfvancouver.com

CONSTRUCTION COST ANALYSIS OF HIGH-PERFORMANCE MULTI-UNIT RESIDENTIAL BUILDINGS IN BRITISH COLUMBIA

JUNE 2021

zeb
x



Does it really cost more to build a high-performance building? Historically, this question has been addressed with theoretical studies, but nothing beats having the actual data. ZEBx, in partnership with BTY Group and seven builders from across BC, has completed a cost analysis of seven high-performance, wood-framed, mid-rise, multi-unit residential buildings that meet Step 4 of the Energy Step Code or the Passive House standard. The results of the study may surprise you!

PODCAST

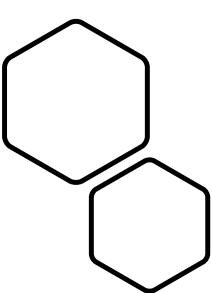


The ZEBx Podcast

Decarb Lunch

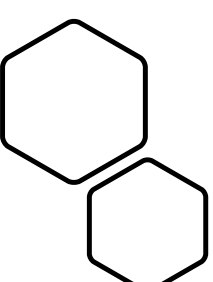
**Developer/Builder Recipes for
Low-Cost, All-Electric, Step 4
Residential Construction**

Season 1 Episode 5



In our June Decarb Lunch, we presented ZEBx's in-depth analysis of construction costs for high-performance multi-family buildings in BC. Of the seven buildings in the study, two all-electric, Step 4 buildings were constructed for well under the average cost of similar code-minimum residential buildings in the area. How did they achieve this impressive result? Was it the fact that they are both developers and builders? Do they have some special recipe for constructability or cost-effective high-performance building development?

CASE STUDY



What makes the OSO residential development in Golden BC impressive is not just the fact that the buildings are all-electric (climate-friendly), energy-efficient (top step of the BC Energy Step Code), and climate-resilient, but also how they were constructed in a highly cost-effective way. This had a lot to do with the developer/builder that has several high-performance building projects under its belt. Check out our most recent, in-depth case study on this finalist of the CleanBC Net-Zero Energy-Ready Challenge.



POLL 1

Tell us about yourself!

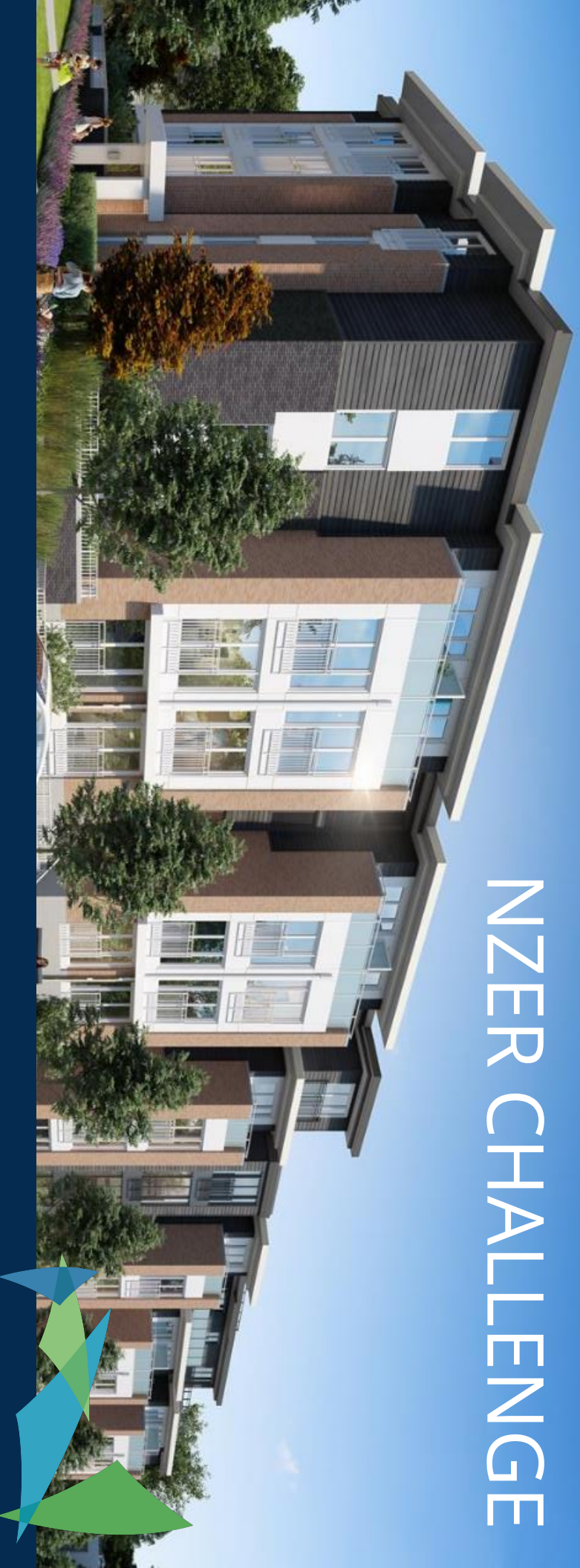
Three-part anonymous poll



INTEGRAL

zobx

BETTER BUILDINGS NZER CHALLENGE



Lisa Westerhoff
Principal, Integral Group



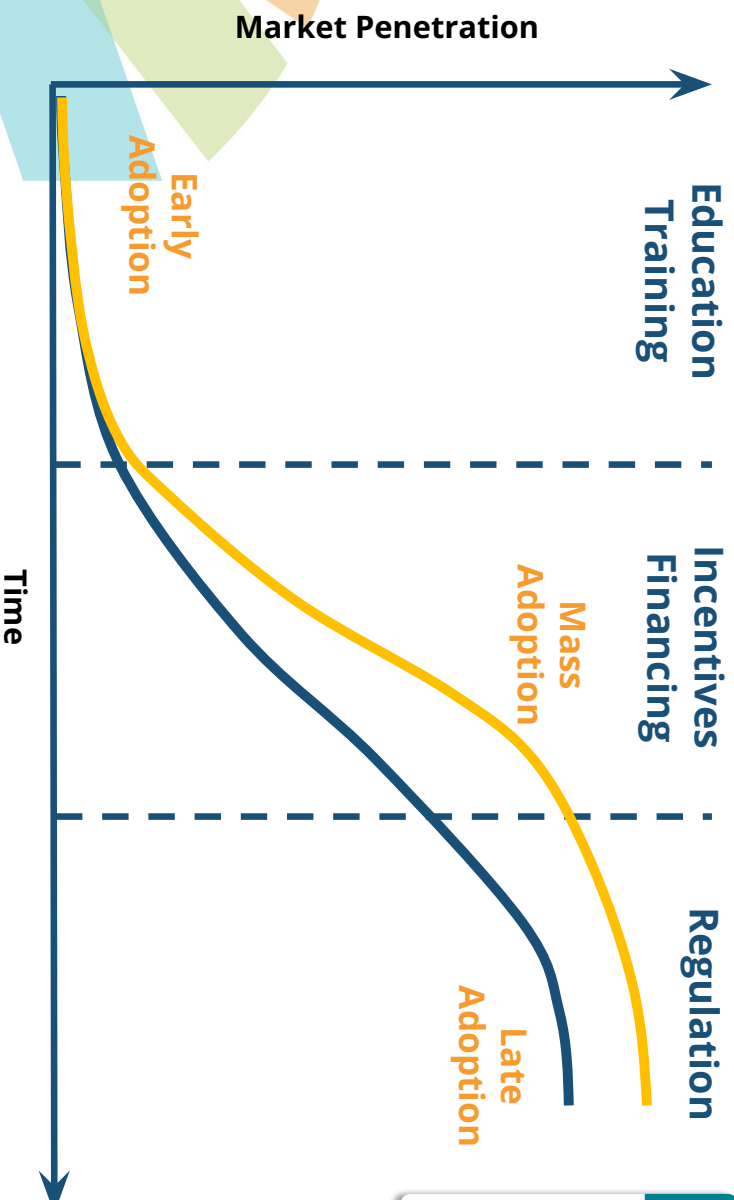
INTEGRAL

The Net-Zero Energy-Ready Challenge

- Designed to **support, promote and celebrate** the design and construction of net-zero energy-ready buildings
- Intended to help **offset any incremental design and construction costs** for high-performance buildings
- Projects are showcased as leading examples of **innovative, energy-efficient designs**



Accelerating Market Transformation



cleanBC
BETTER BUILDINGS

NET-ZERO ENERGY-READY CHALLENGE WINNER

PEAT COMMONS WEST Project Team

Developer: Peatt Commons Inc.

Energy modelling: Edge Consultants

Mechanical engineering: Avalon Mechanical Consultants

Electrical engineering: Magma Consulting

Building envelope consulting: Aqua Coast Engineering Ltd.

Architecture: Jack James Architect

General contractor: DB Services of Victoria Inc.

BRITISH COLUMBIA

Canada

Forestry Innovation



Supporting Local Government Leadership

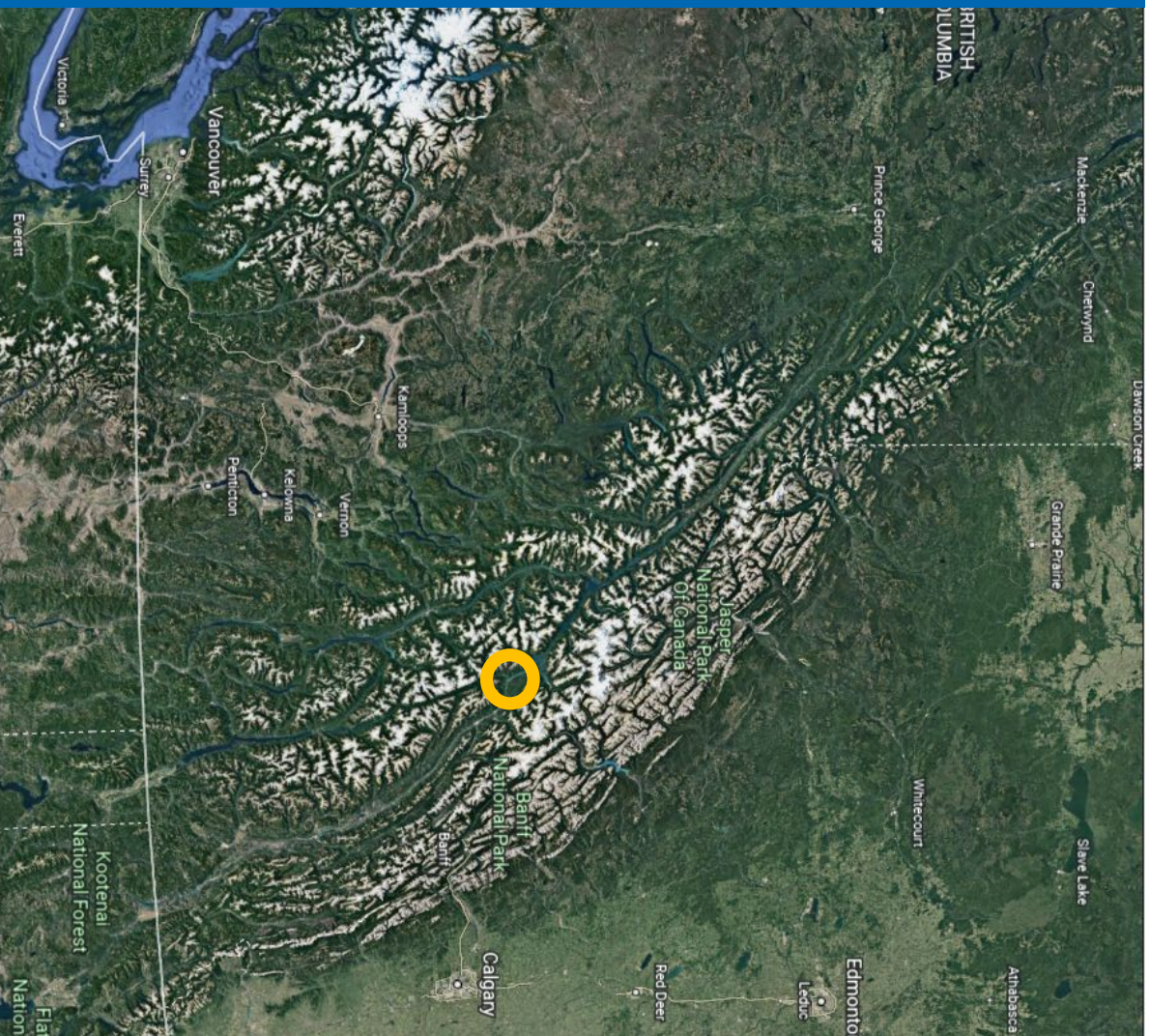
- ❑ Consulting with local building industry to adopt higher steps of the Step Code
- ❑ Providing incentives for higher levels of performance
- ❑ Creating Low Carbon Energy System Pathways to incentivize emissions reductions
- ❑ Removing barriers to higher efficiency buildings (e.g. DPA design guidelines)



What's Next?

- Incoming GHGI metrics
- Measuring and regulating embodied carbon
- Identifying and supporting operational performance improvements
- Ensuring future climate readiness & resilience



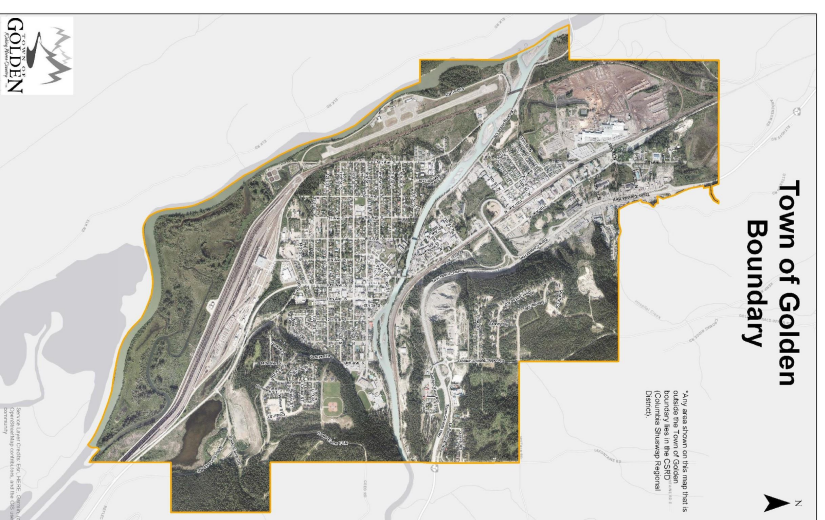


Step Code in Golden

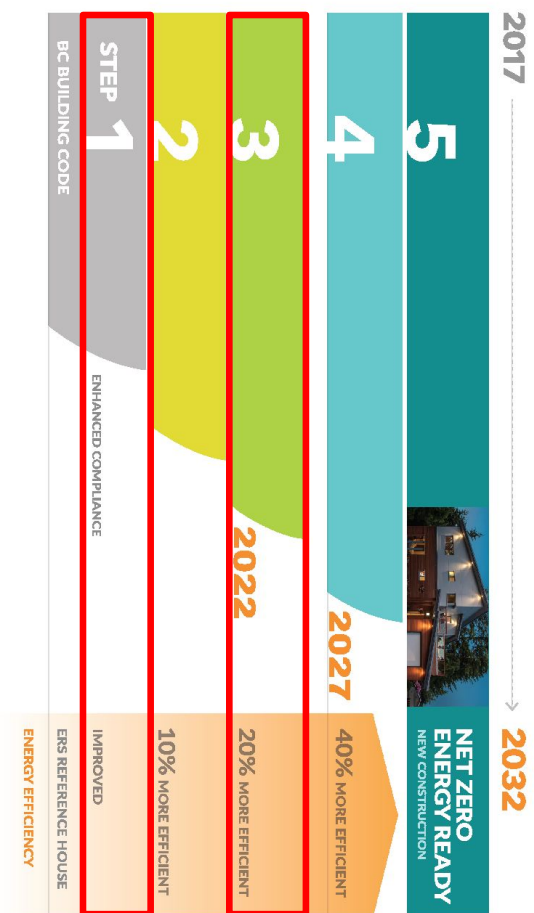
Phil Armstrong
Director of Planning and
Development

Caspar Viereckel
Building Official

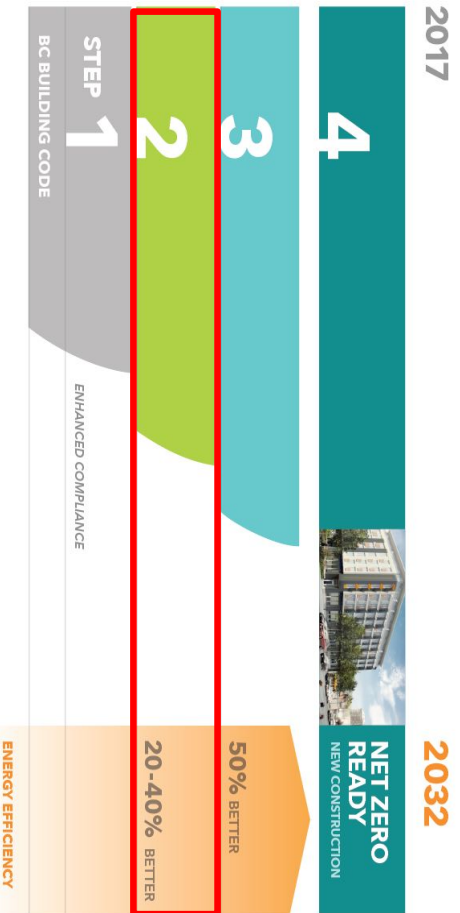
Town of 3,986 people.



- Mostly single family dwellings.
- Some older apartments from 1970s
- In the last five years have seen a handful of multi-family and mixed use buildings (prior to that no multi-family for decades)



PATHWAY TO 2032: **PART 3 (WOOD-FRAME RESIDENTIAL)**



- Step 1** for Part 9 buildings since March 2022
- Step 3** December 15th

- Step 2** for Part 3 buildings since March 2022.
- At this no next step proposed.

Goals

- Adoption of Step 1 prior to becoming mandatory to allow for “no fail” trial period for local contractors
- Step 2 necessary to avoid large multi-family projects getting built to low NECB 2015 standards



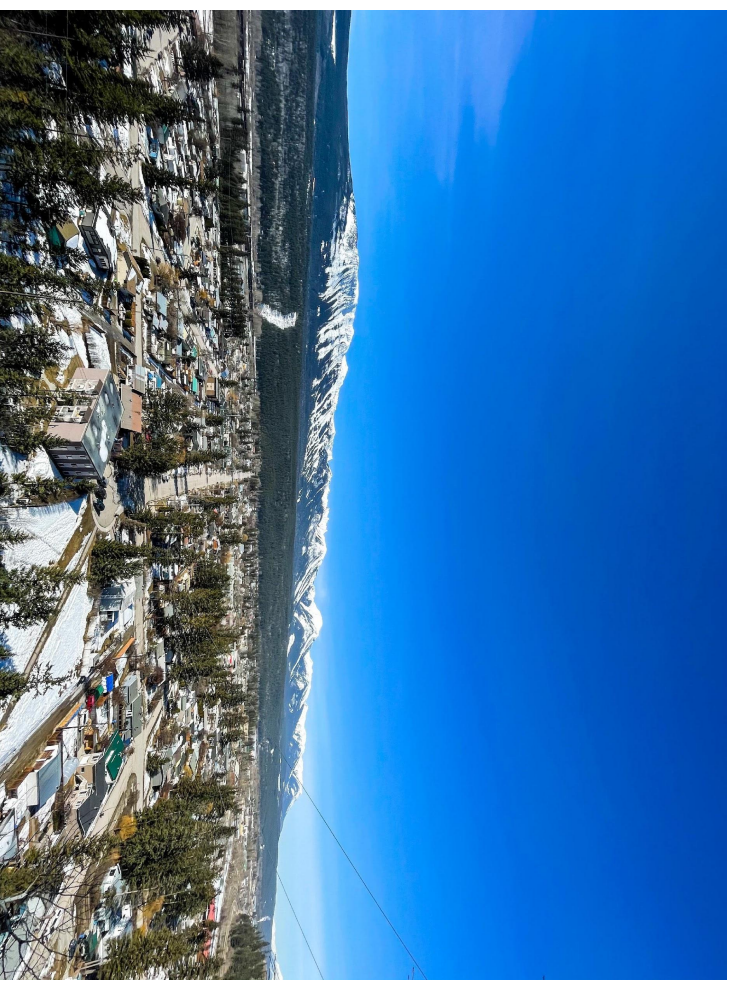
Challenges

- Shortage of skilled workers for local contractors
- High costs for efficient mechanical systems (heat pumps) in single family dwellings
- Lack of progressive approach by Architects/RPs for large buildings



Experience

- Contractors need to be creative, experiment with new technologies and alternative solutions
- Progressive projects, such as OSO lead the process, sparking interest in builders and public
- Town acts as hub, relaying information on best practices, materials/technologies or contractor availability



John's slides go here

POLL 1

What did you tell us about yourself?



INTEGRAL

Zerox

Simple works 1901







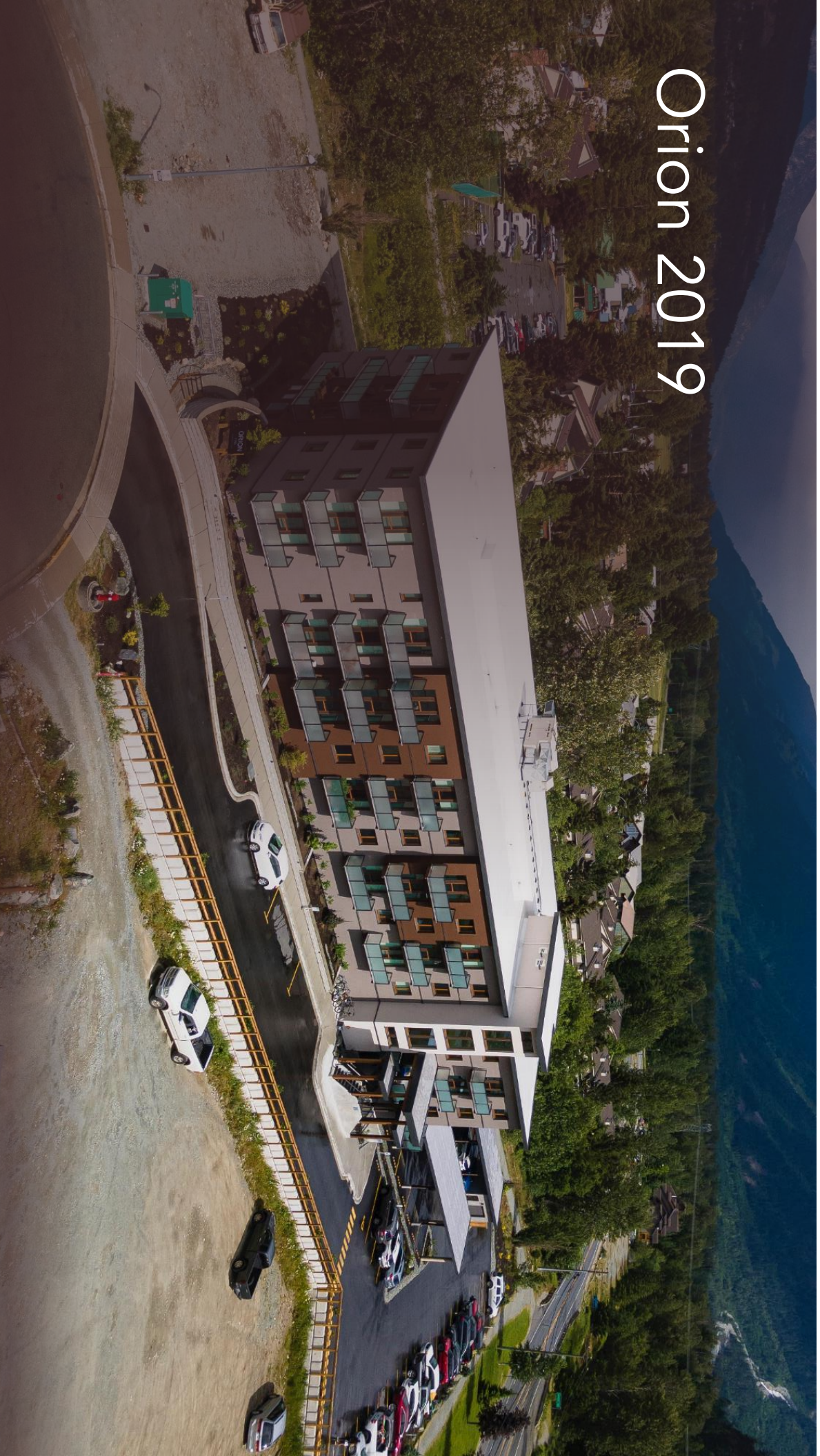
Solana 2014



Radius 2017



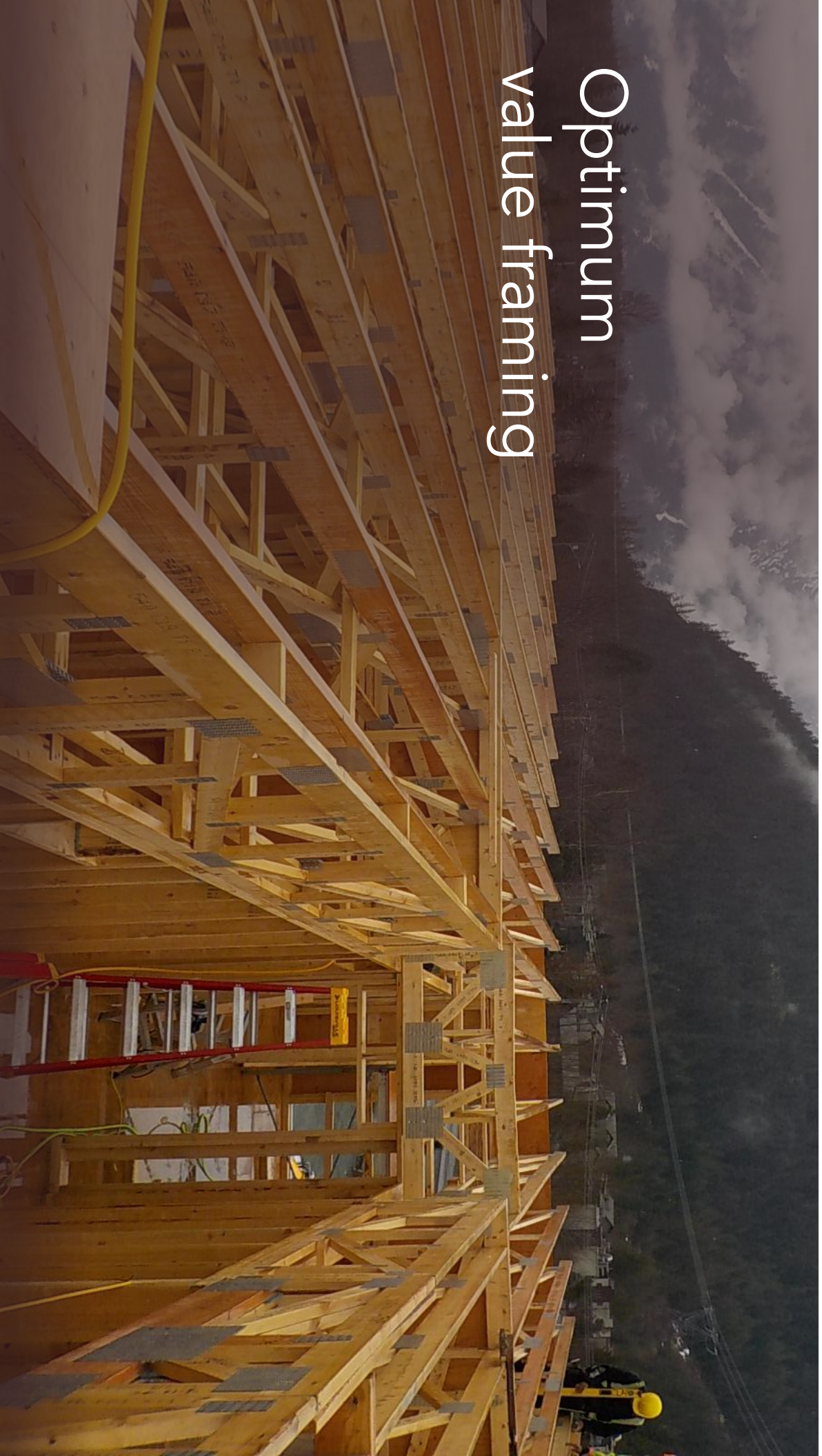
Orion 2019



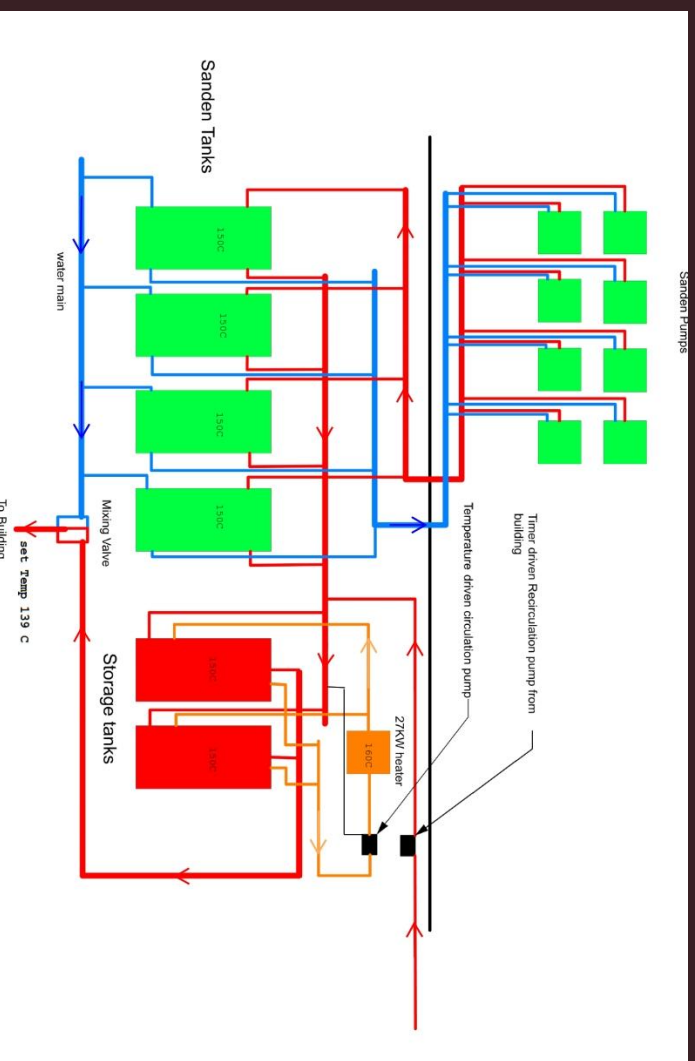
Nudura ICF



Optimum value framing



Heat Pump Hot Water System



Hot water



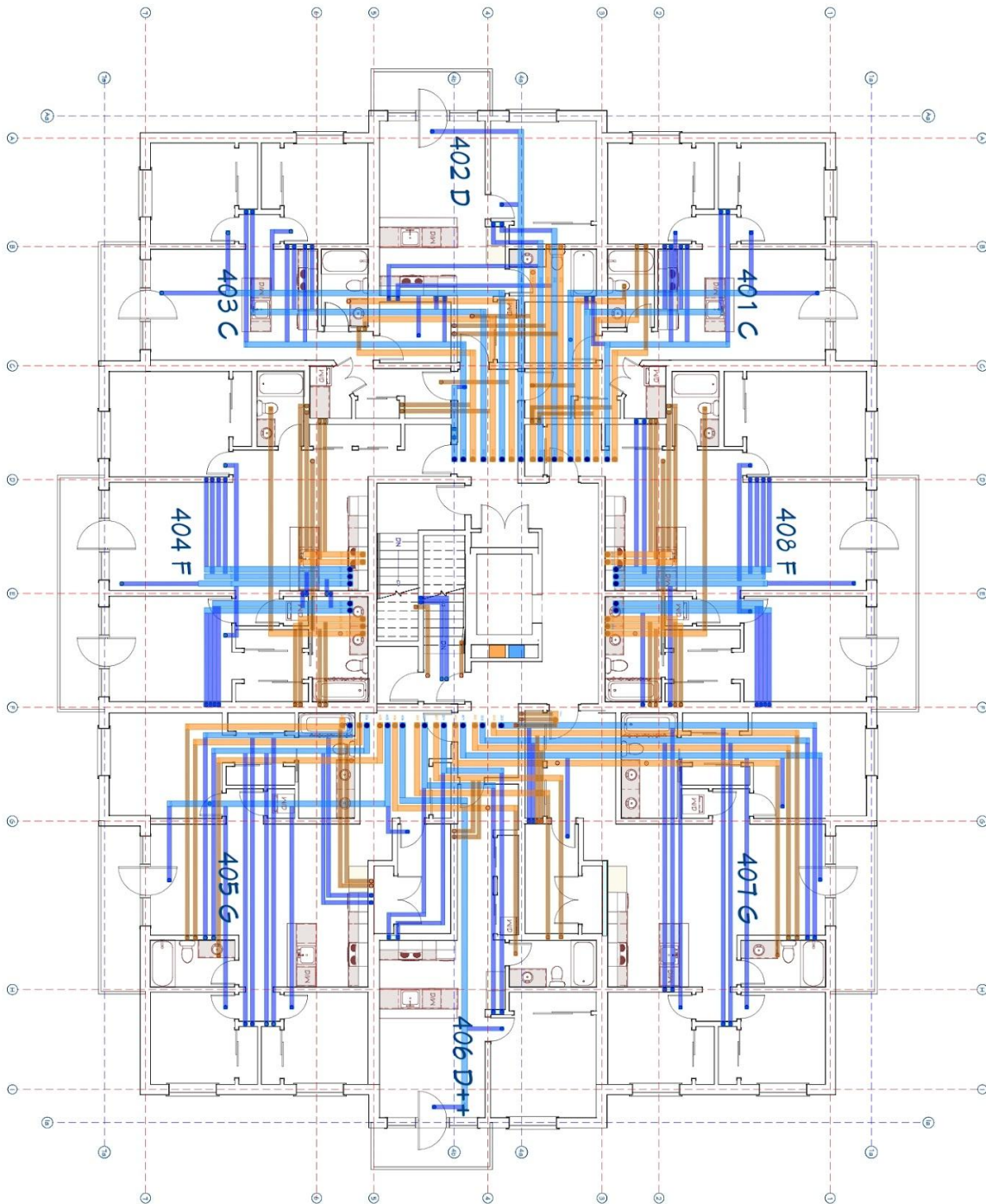












DATE: 2021-06-17
 SCALE: 3/16" = 1'

DRAWINGS PROVIDED BY:
 Innovation Building Group
 Ryan Nadeau
 ryan.nadeau@innovationbuilding.com

Oso Mechanical Plans

INNOVATION
 BUILDING

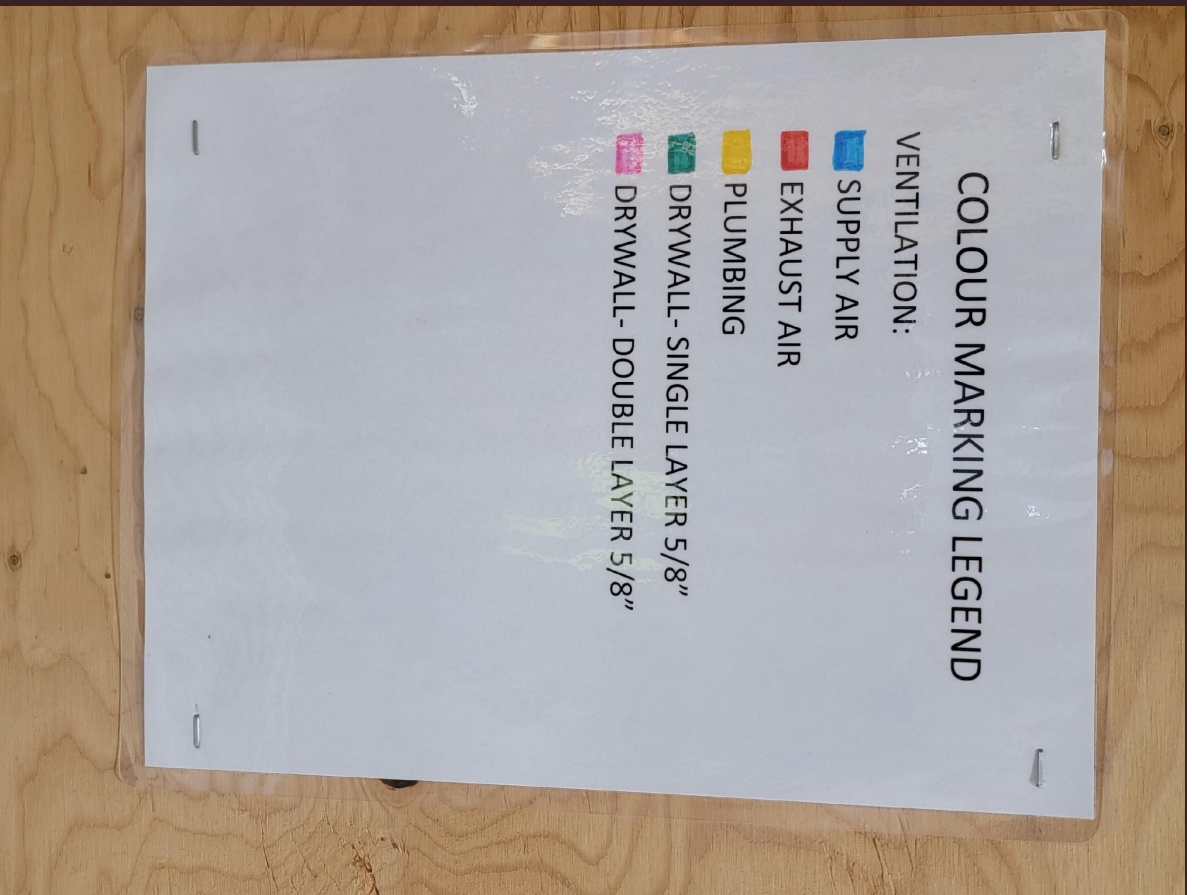
Revision Table			
Number	Date	Revised By	Description















EIFS from Adex



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Innovation
BUILDING GROUP
Construction Hours Per Village Of Pemberton Bylaw
Monday - Saturday
7:00 AM - 8:00 PM
Sunday / Holidays
10:00 AM - 4:00 PM
Village of Pemberton
Local Regulation Bylaw No. 2008-2013
Construction Hours means any hours allowed for or restricted during the
construction process. Construction activities should be restricted to any
working restrictions or any restrictions to being allowed to any location.

































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To prevent damage or injury, carefully follow the
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Disconnect water supply before servicing.
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WARNING: TO PREVENT FIRE AND ELECTRICAL SHOCK,
NEVER REPAIR OR SERVICER WITH ELECTRICAL POWER.

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PROFONDEUR 1/2" 100°C

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Model CE 36-40W
Serial Number: 17152

STIEBEL ELTRON



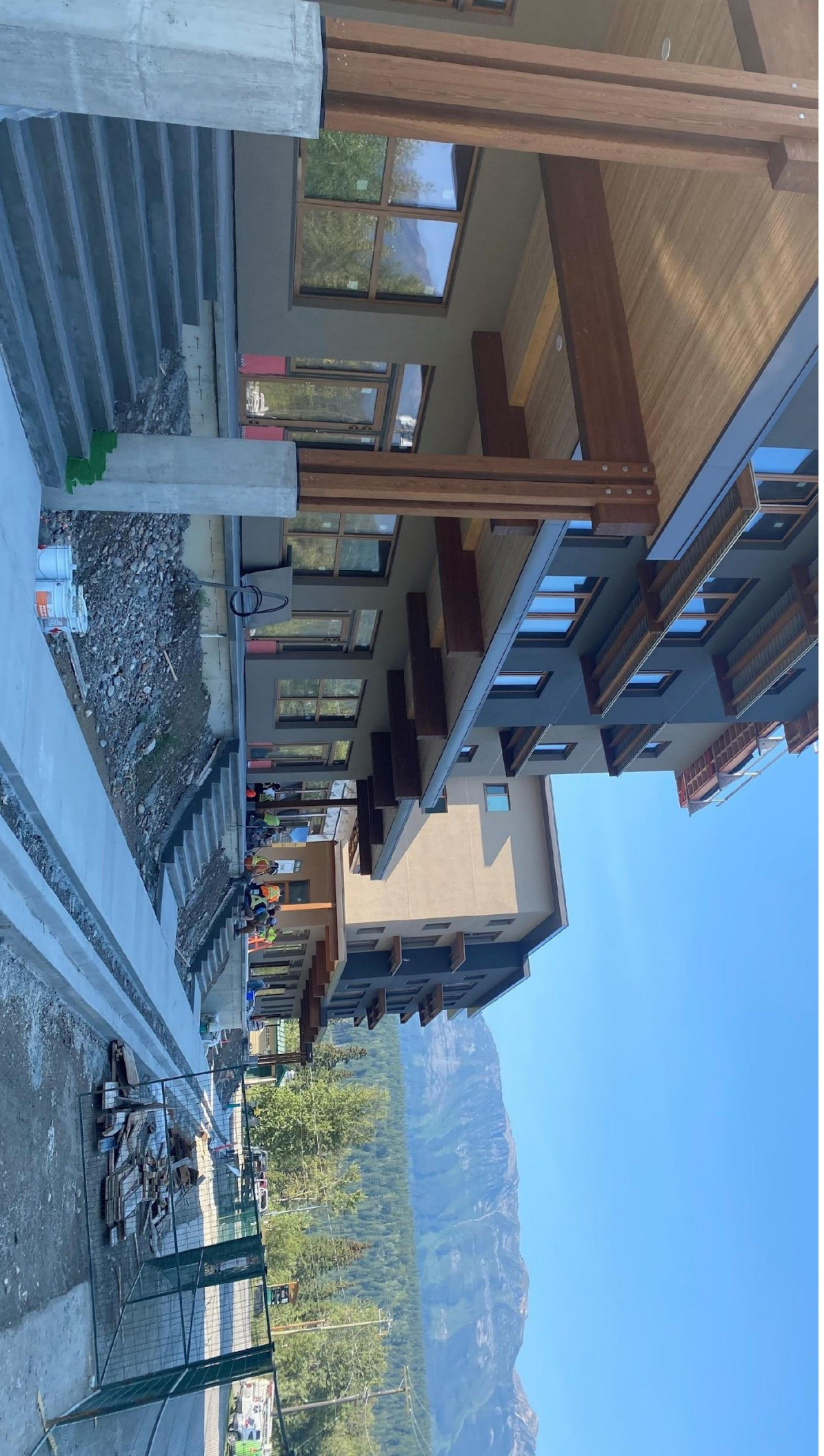




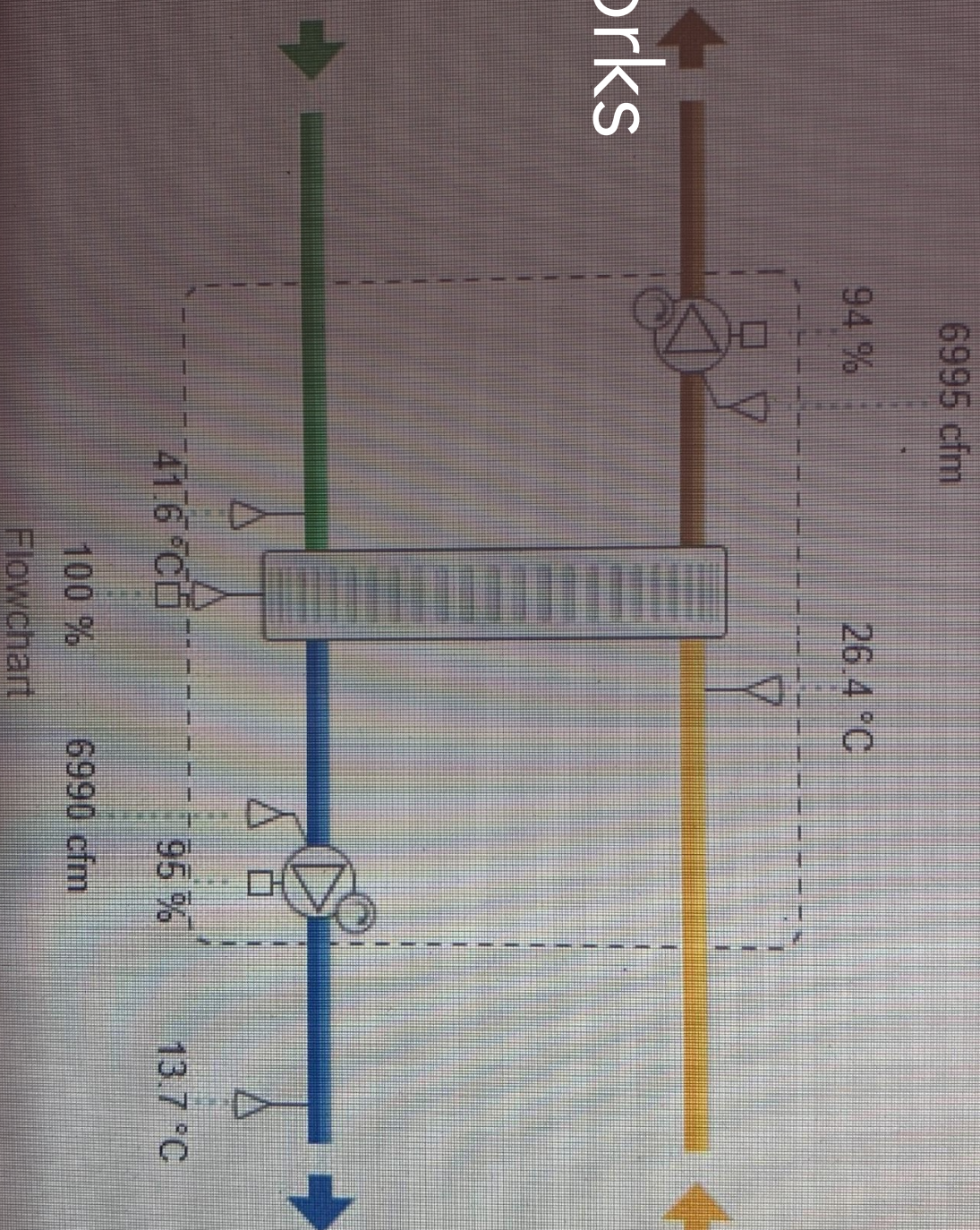








It works



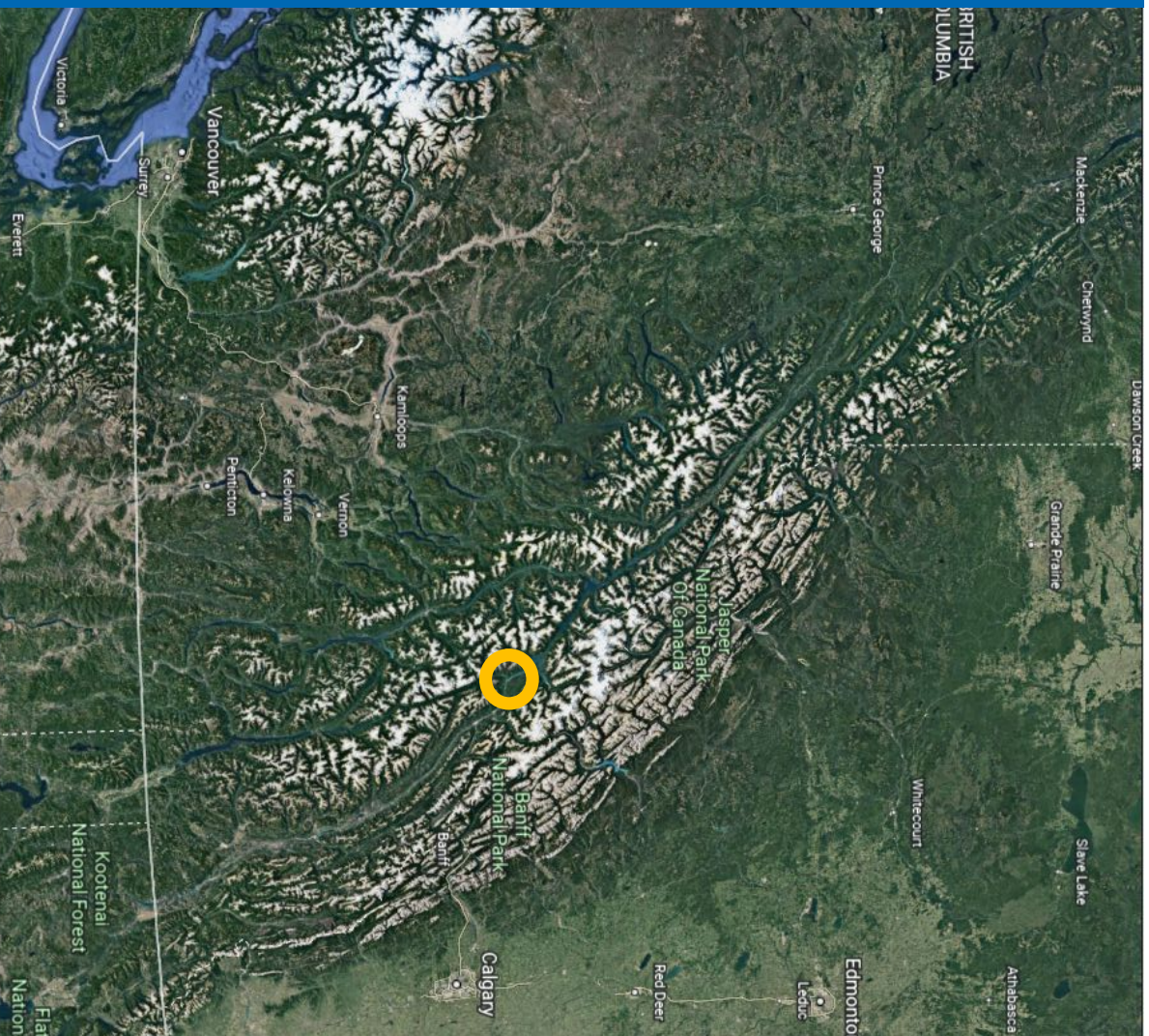
Ebbtide 2023









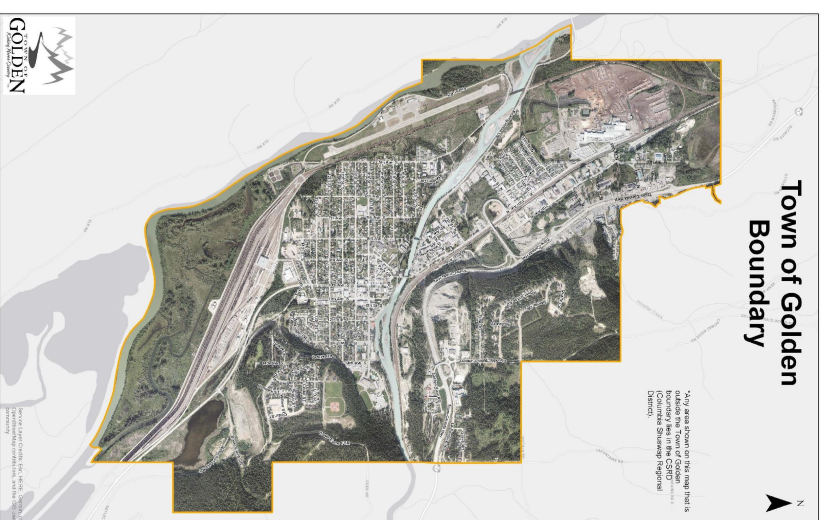


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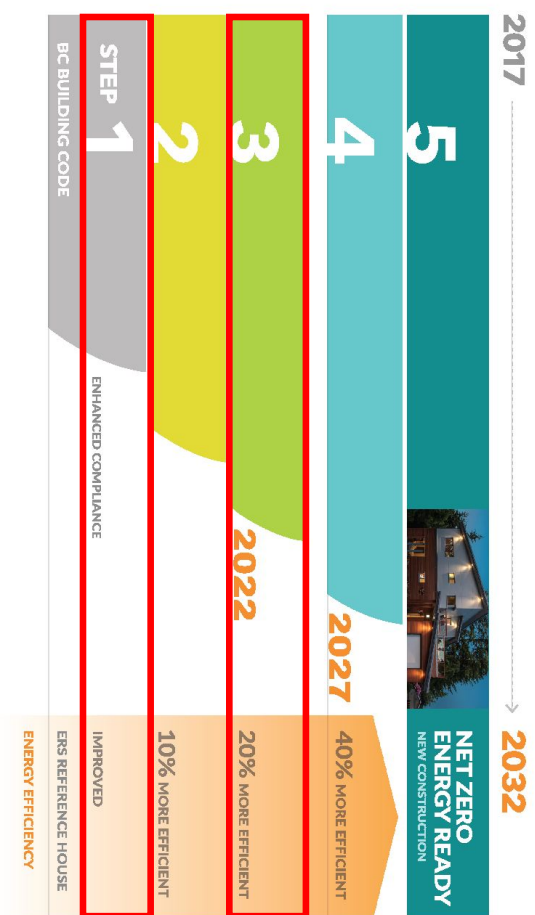
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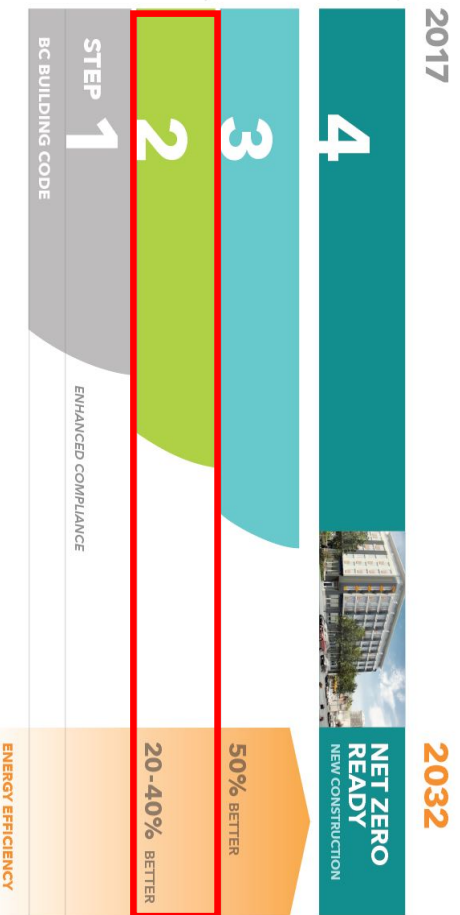
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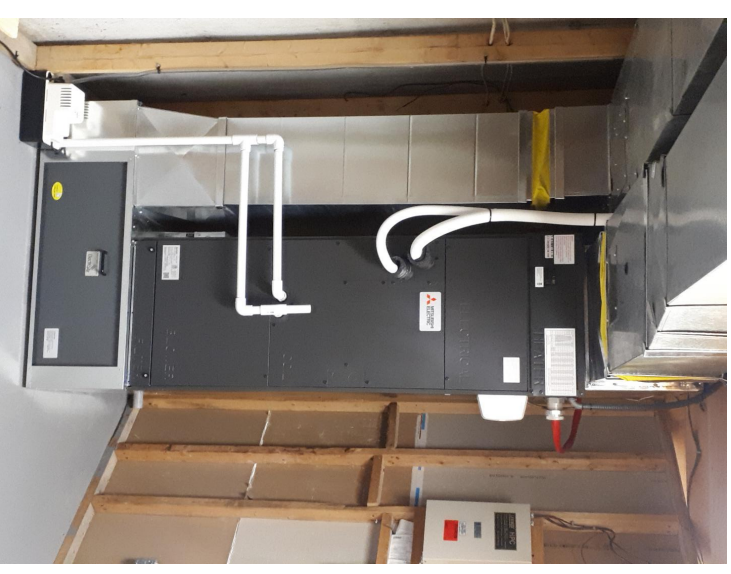
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