



Kakatoosoyiists “Star Lodges”

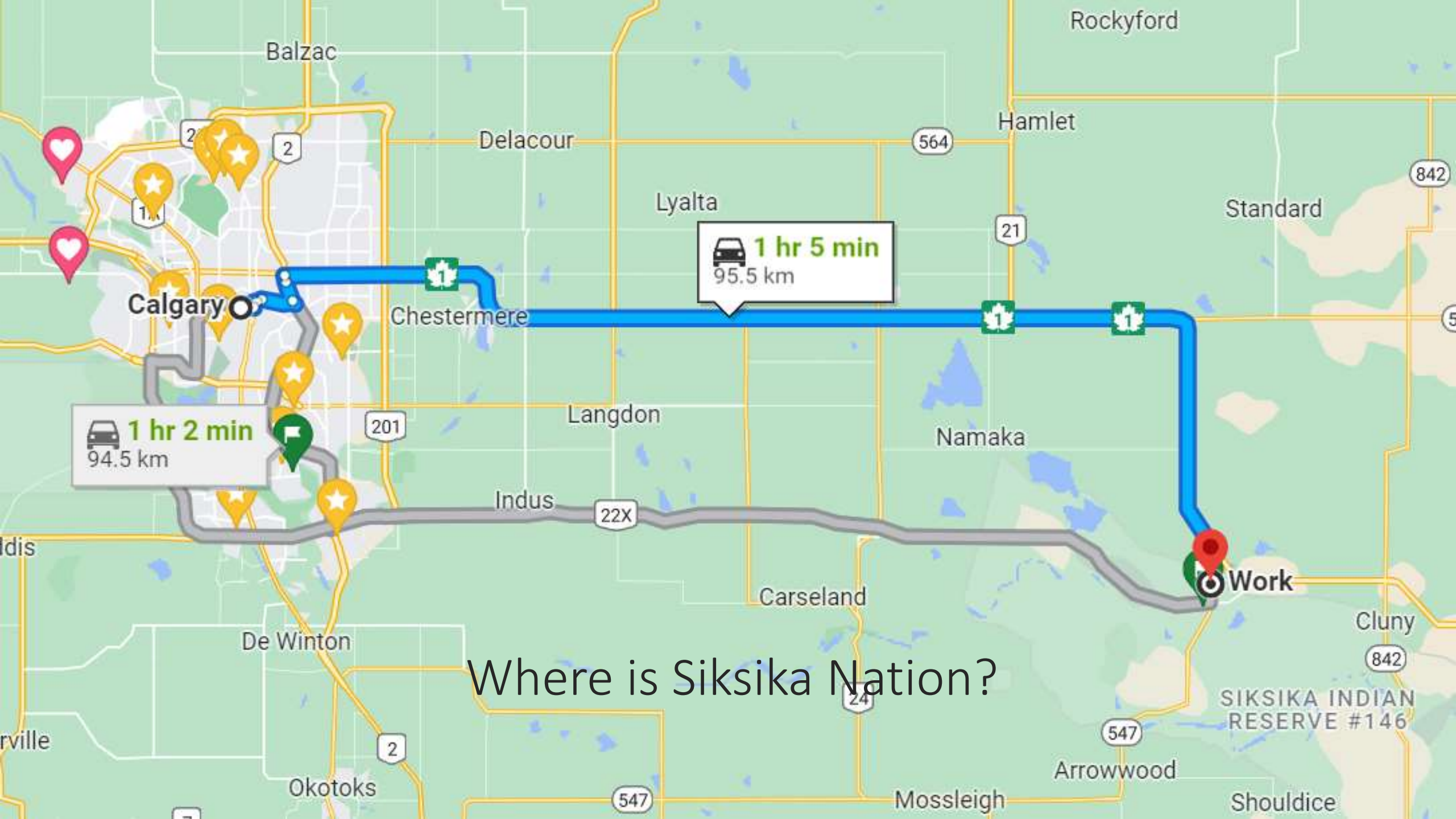




Siksika Housing



Siksika Housing



1 hr 2 min
94.5 km

1 hr 5 min
95.5 km

Where is Siksika Nation?

SIKSIKA INDIAN RESERVE #146



We have distinct communities, with our own unique names with unique stories

Clan system is still part of the community fabric

SIKSIKA NATION | JANUARY 2023

SHORT TERM HOUSING STRATEGY



URBAN SYSTEMS
SUITE 101, 134-D AVENUE SE,
CALGARY AB T2C0X5
T: (403) 251-0193

Primary Challenges to On-Reserve Housing at Siksika:

- Growing housing gap
- Limited on-reserve capacity (Skilled and Unskilled labour)
- Growing population
- Aging/Failing housing stock
- Off-reserve members want to come home
- Limited funding

Population projection



Figure 5 - Projected Population







•How does it Work?

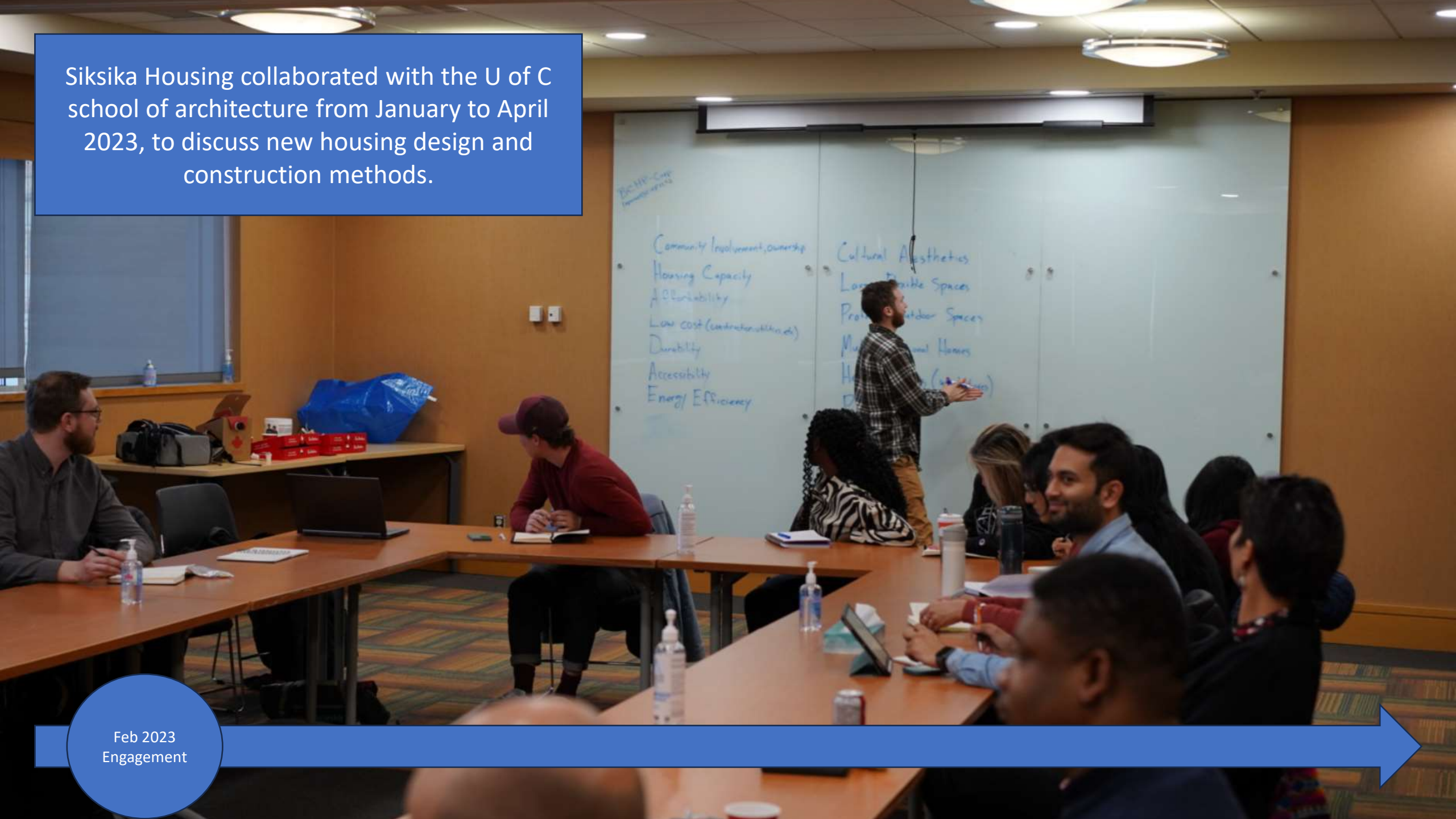
- Houses are designed using special software.
- Giant 3D-printers use computer-guided "arms" to layer materials precisely, building the walls and structure piece-by-piece.

•Benefits of 3D Printed Housing

- Faster construction
- Potentially lower costs
- Unique and flexible designs
- Less waste than traditional building methods
- R32 insulation
- Durable (Bomb Shelter Strength!)

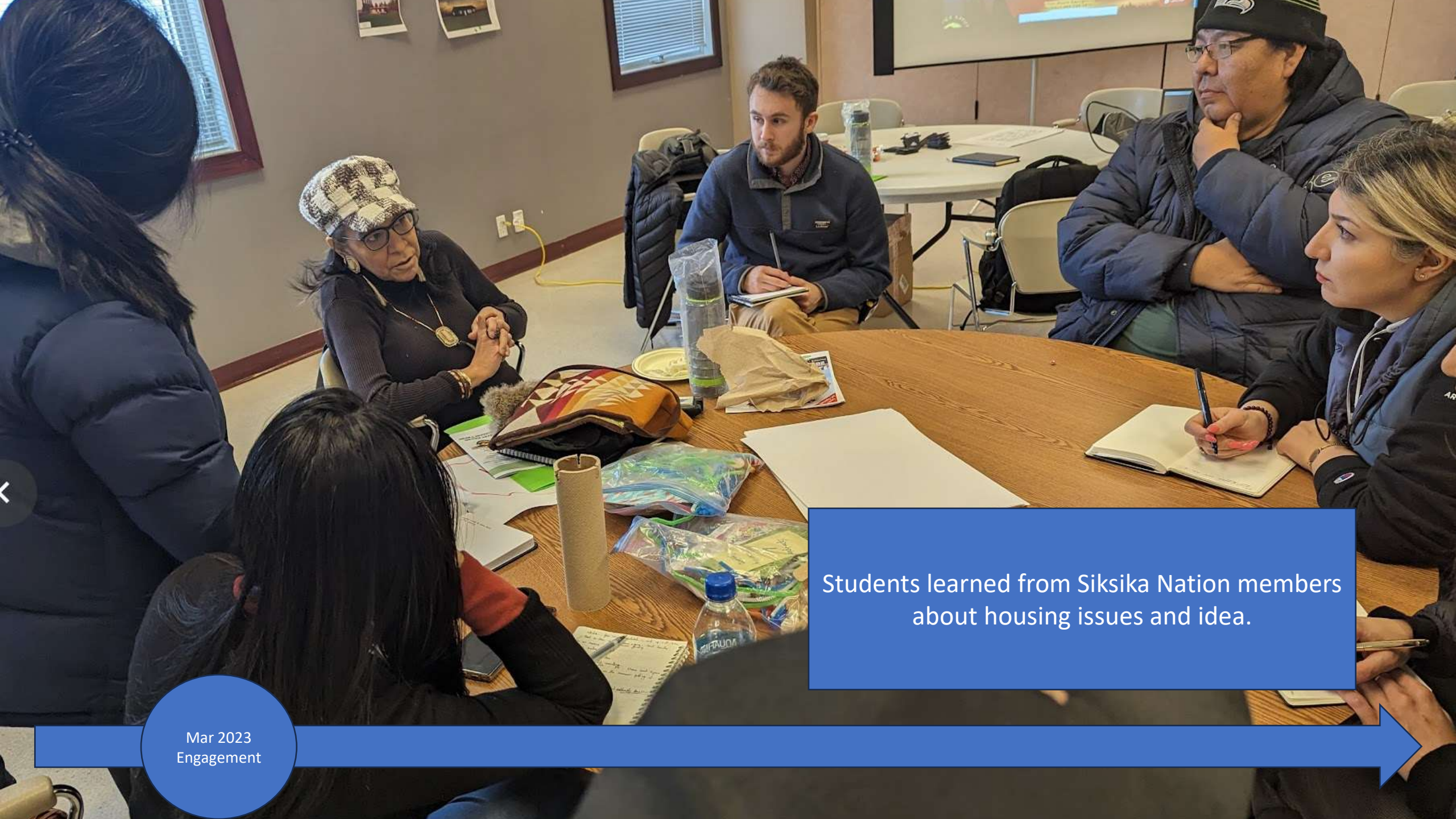


Siksika Housing collaborated with the U of C school of architecture from January to April 2023, to discuss new housing design and construction methods.



Feb 2023
Engagement





Students learned from Siksika Nation members about housing issues and idea.



Students presented their ideas at Blackfoot Crossing in April 2023, including 3D printed housing technology.

Apr 2023
Engagement



Calgary

Siksika Nation building 3D printed housing for members at risk of homelessness

Nation says it's the first housing project of its kind in Alberta and largest in Canada



Brendan Coulter · CBC News · Posted: Nov 02, 2023 5:00 AM MDT | Last Updated: November 2,



The Siksika Nation is using a large 3D printer, which includes a 4-foot tall robotic arm, to build a group of fourplexes that will be used as transitional housing. (Radja Mahamba/CBC News)

f X e in

The Siksika Nation is using 3D printing technology to build housing for nation members fleeing domestic violence or otherwise at risk of homelessness.

The project, named Kakatoosoyiists, which translates to Star Lodges due to the significance of stars in Siksika culture, will be 16 one-bedroom units built across four buildings on the nation about 100 kilometres east of Calgary.

"The reason is, according to our creation stories, the stars provide guidance, sense of direction, protection and life lessons," said Siksika Knowledge Keeper Eldon Weasel Child.

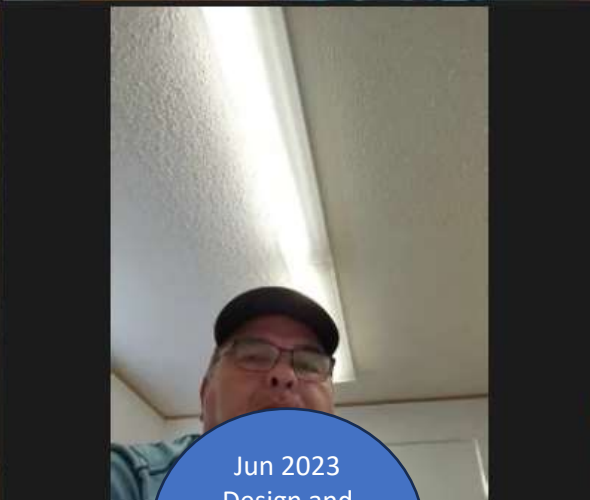
"These are some of the good intentions we have for the future tenants of the homes."

ADVERTISEMENT

Adobe Creative

Students
over 60%

Siksika Nation received \$2.6M in funding from Indigenous Services Canada to pilot 4 fourplexes using 3D concrete printing technology. The design for these homes was supported by the U of C school of architecture.



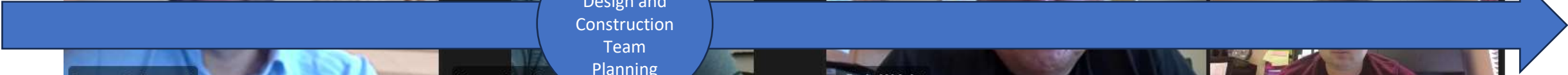
RB

Raven Black

GC

Gaylene Own Chief

Jun 2023
Design and
Construction
Team
Planning

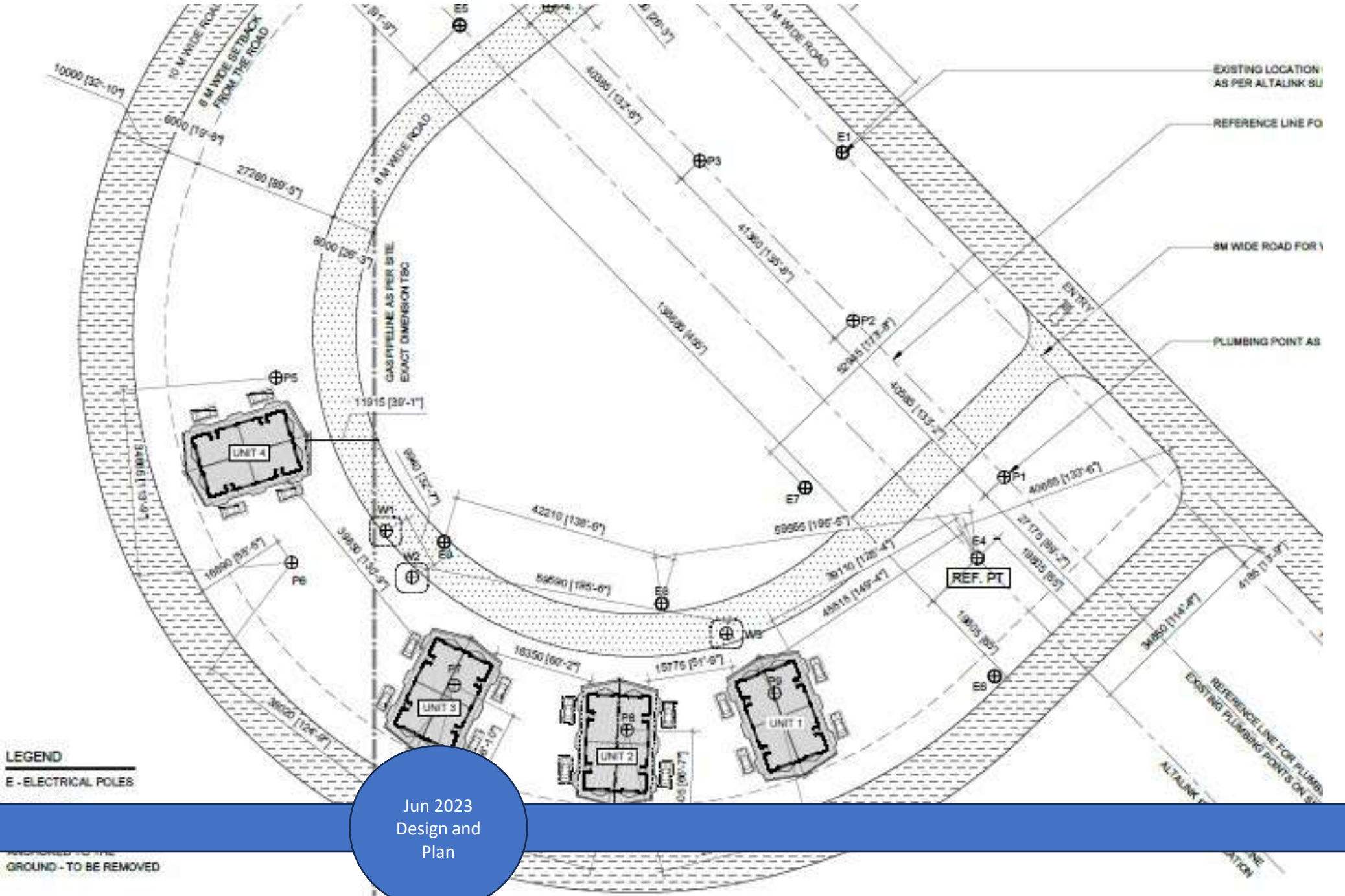




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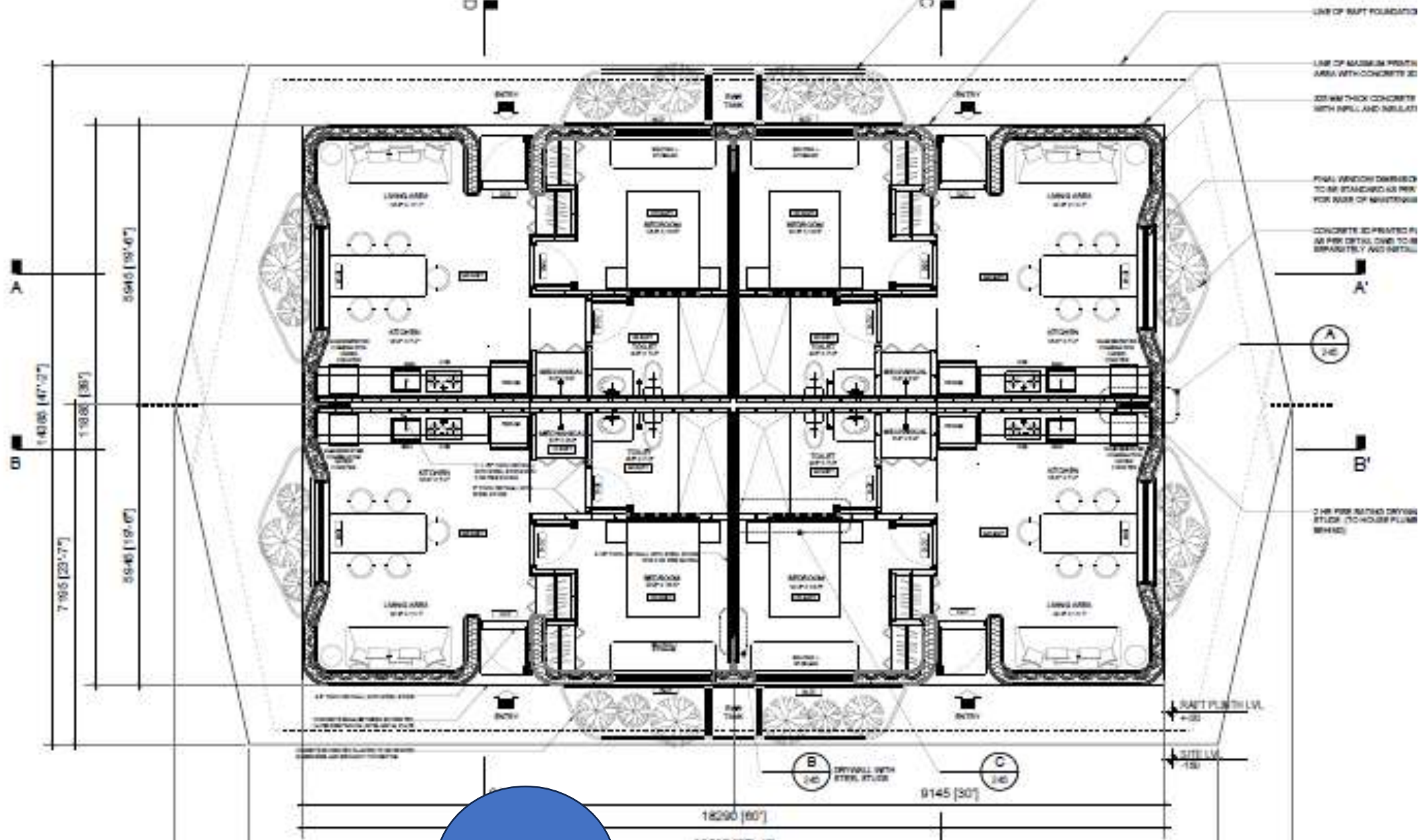
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3D Housing Site

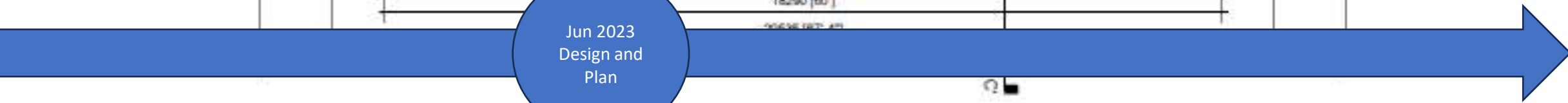


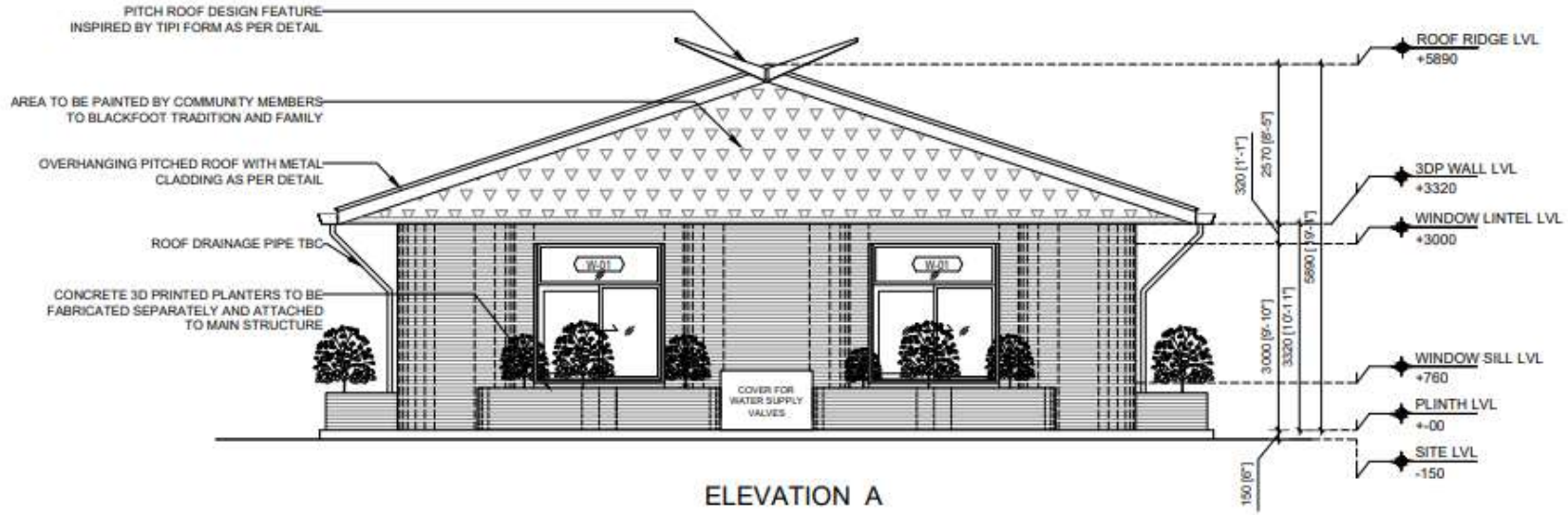
Jun 2023
Design and
Plan

LEGEND
E - ELECTRICAL POLES
GROUND - TO BE REMOVED



Jun 2023
Design and
Plan

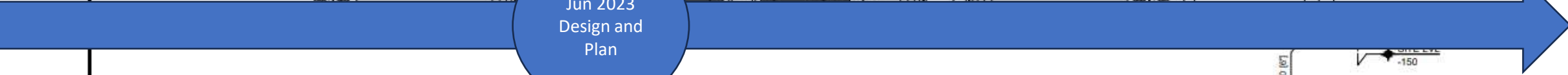




ELEVATION A



Jun 2023
Design and
Plan



ROOF RIDGE COVERED BY METAL SHEET

METAL SHEETING ON ROOF

HIGH CEILING HEIGHT FOR OPEN AND LIGHT FILLED SPACES

345 MM THICK 2 HR FIRE RATING DRYWALL WITH STEEL STUDS (TO HOUSE PLUMBING SERVICES BEHIND)

325 MM THICK CONCRETE 3DP WALLS WITH INFILL AND INSULATION

WOODEN DESIGN ELEMENT

SNOW STOPPER AS PER ROOF DETAILS

ENTRANCE DOOR

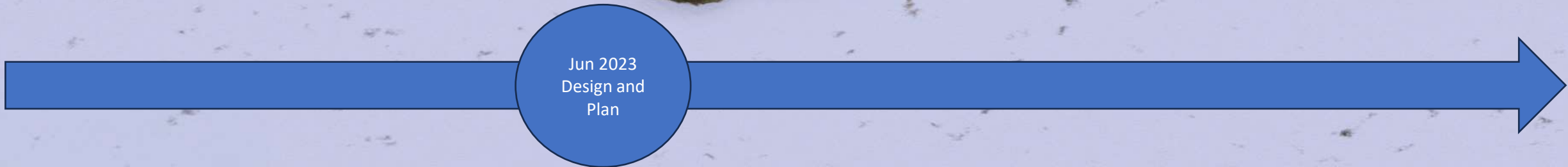
CONCRETE 3D PRINTED PLANTER AS PER DETAIL DWG TO BE PRINTED SEPARATELY AND INSTALLED



Jun 2023
Design and
Plan

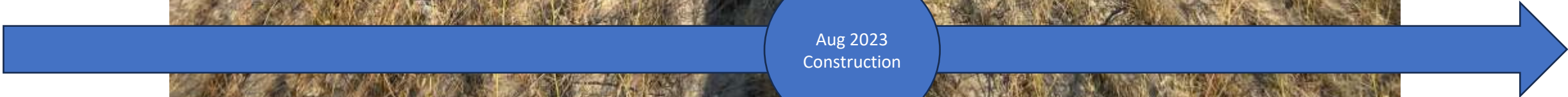


Jun 2023
Design and
Plan





Aug 2023
Construction





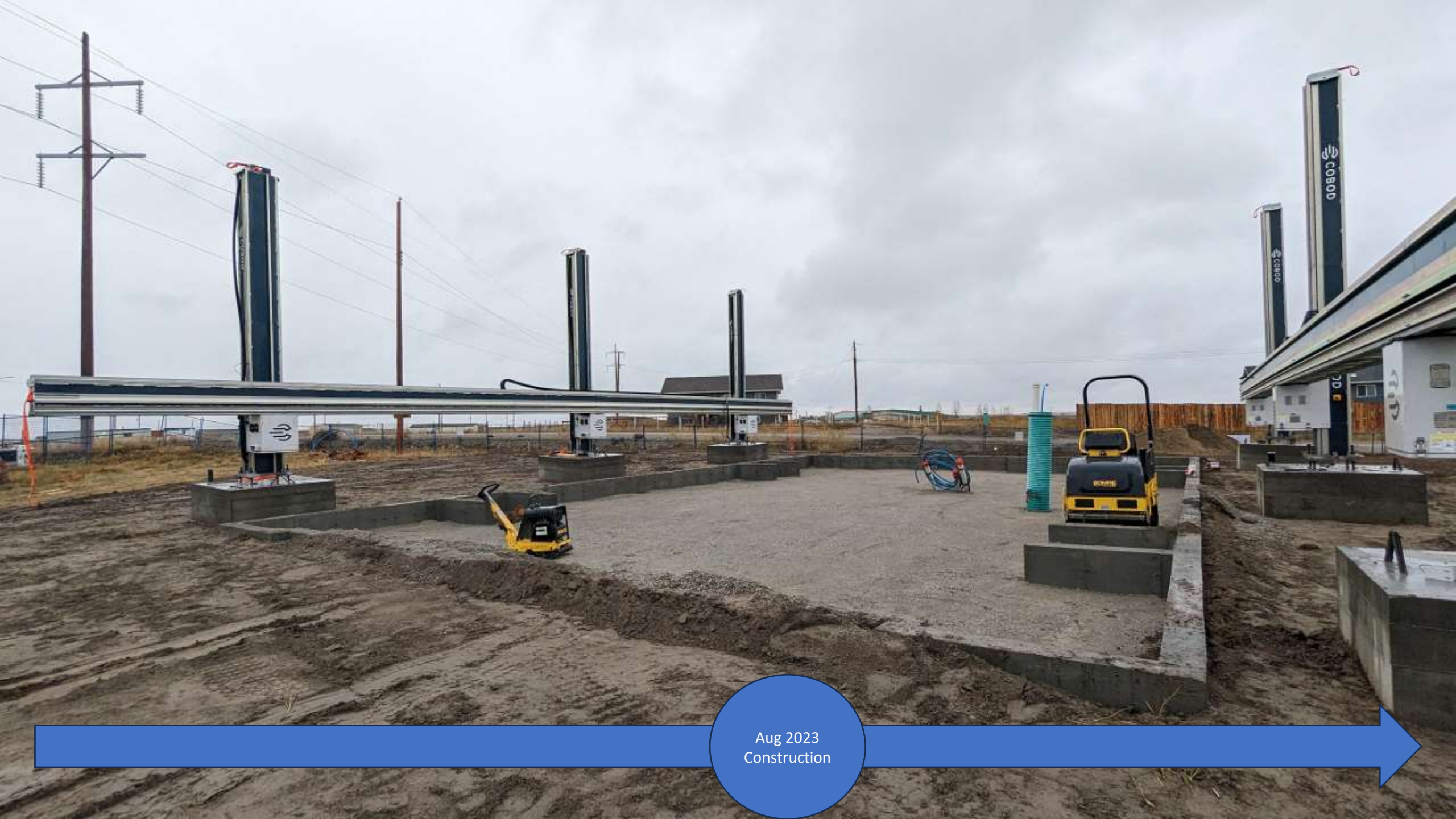
Aug 2023
Construction





Aug 2023
Construction

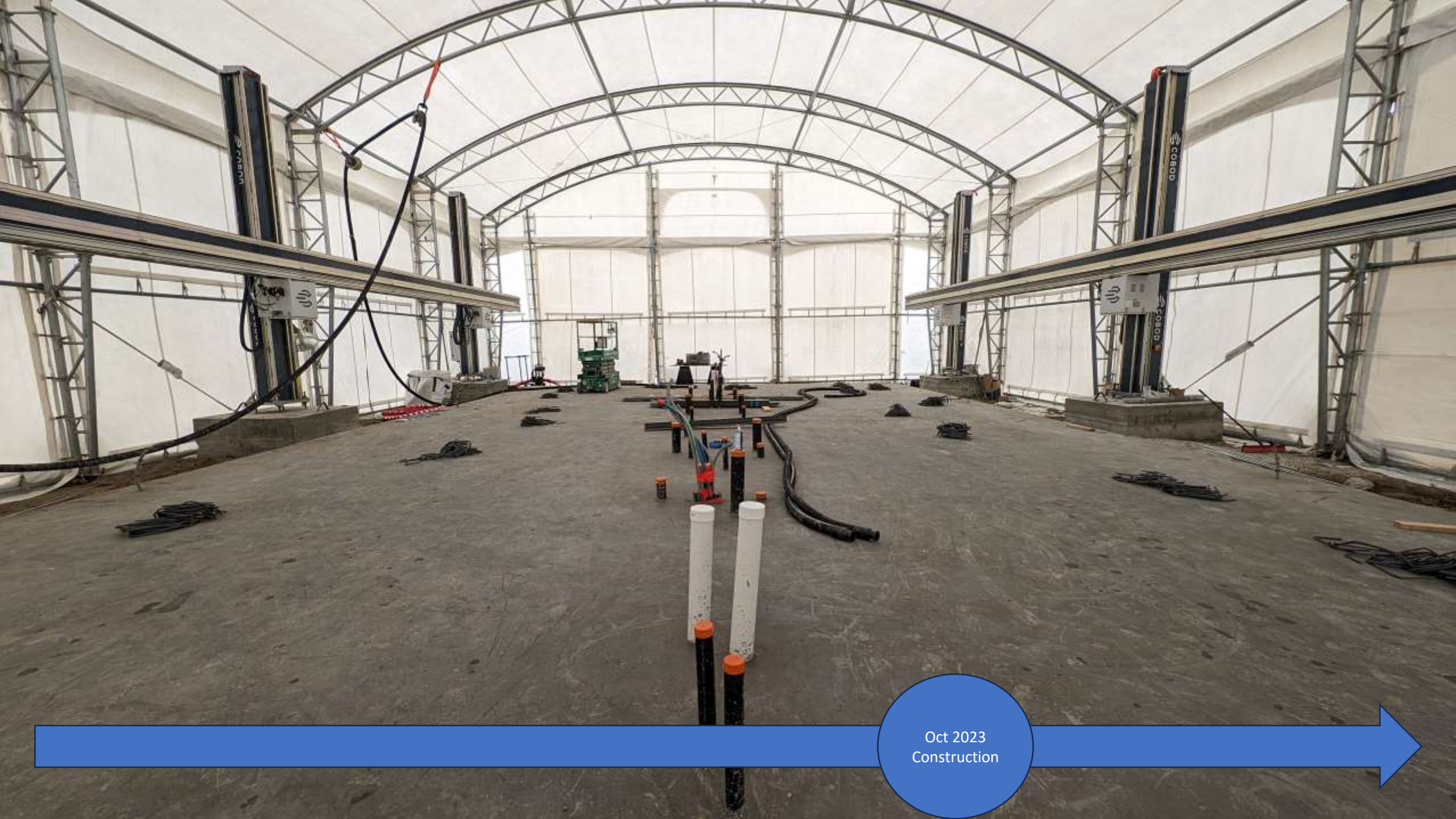




Aug 2023
Construction



Oct 2023
Construction



Oct 2023
Construction



Oct 2023
Construction

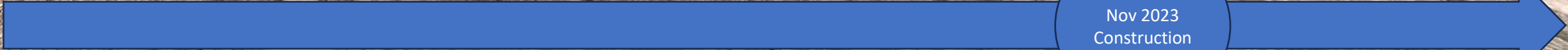


Oct 2023
Construction



Oct 2023
Construction





Nov 2023
Construction





Building 1

Building 2

Building 3

Building 4

Nov 2023
Construction



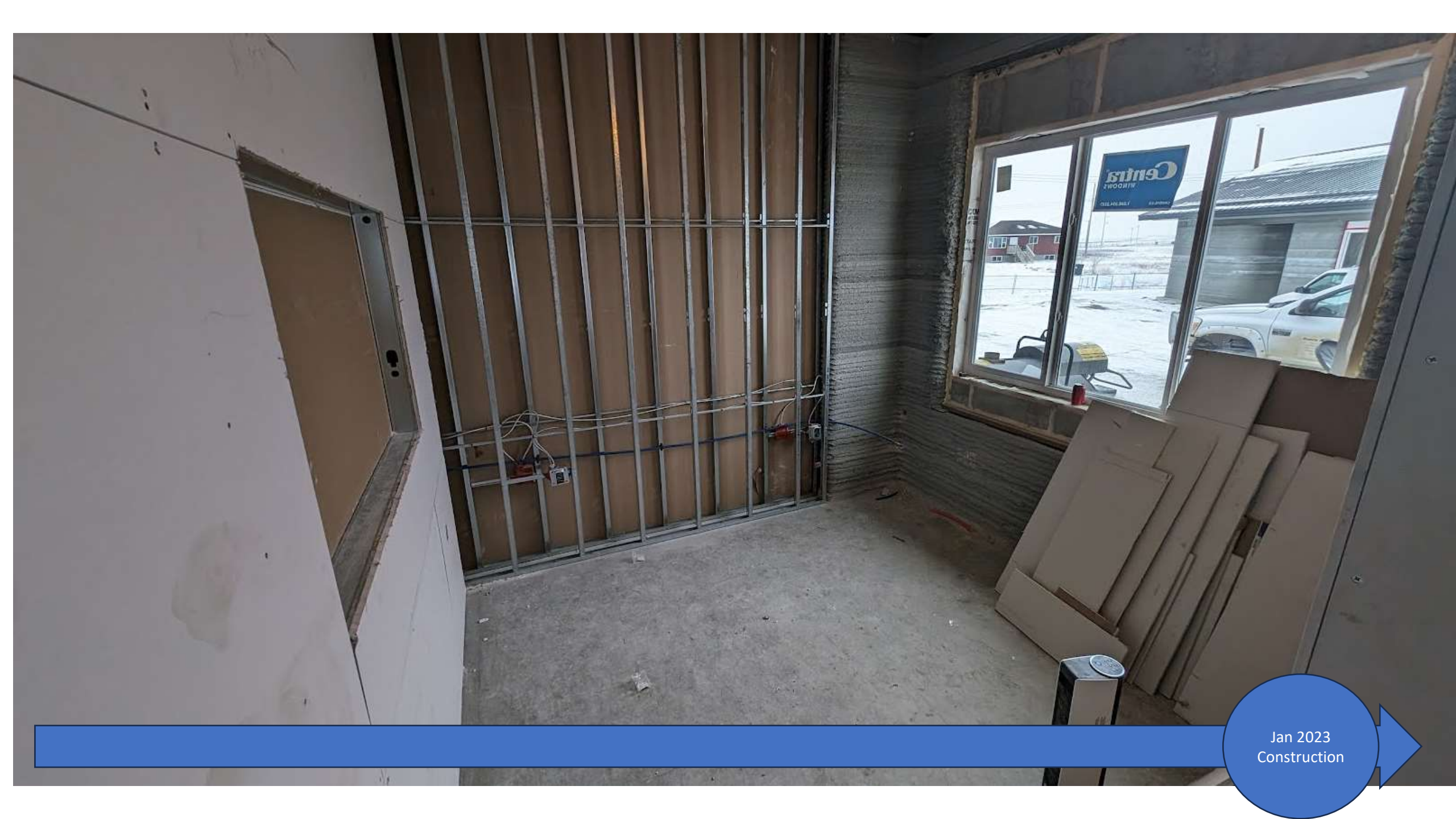
Nov 2023
Construction

This project is creating new training and employment opportunities for Siksika Nation contractors and youth, which were previously limited due to the use of prefabricated homes.



Dec 2023
Construction





Jan 2023
Construction





- **It's Still New**

- Technology is developing so there are limitations on size and design
- We're figuring out what works best, building standards, and ways to improve it.

- **Costs**

- As these houses spread, construction costs are expected to go down over time.



- **Made from Recycled Plastic**
 - Plastic recyclables, like water bottles, are shredded and formed into building panels.
- **Advantages of Eco Plast Homes**
 - Reduces plastic pollution and helps the environment
 - Durable, strong homes
 - Energy Efficient
 - No Mould
 - Easy to assemble and transport, great for remote locations or emergency areas
 - Helps reduce energy poverty









Funding from:

- Alberta Eco Trust
- SSRIA

- **Innovative Solutions**
 - Both 3D Printed and Eco Plast housing address different challenges in the housing market.
- **The Promise of Technology**
 - Advancements in technology bring about faster, less wasteful, and potentially more affordable and eco-friendly ways to build.
- **What Do YOU Think?**
 - Which idea seems more exciting to you and why?



Thank you!

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www.siksikahousing.com

