A Home with a View

on Salt Spring Island

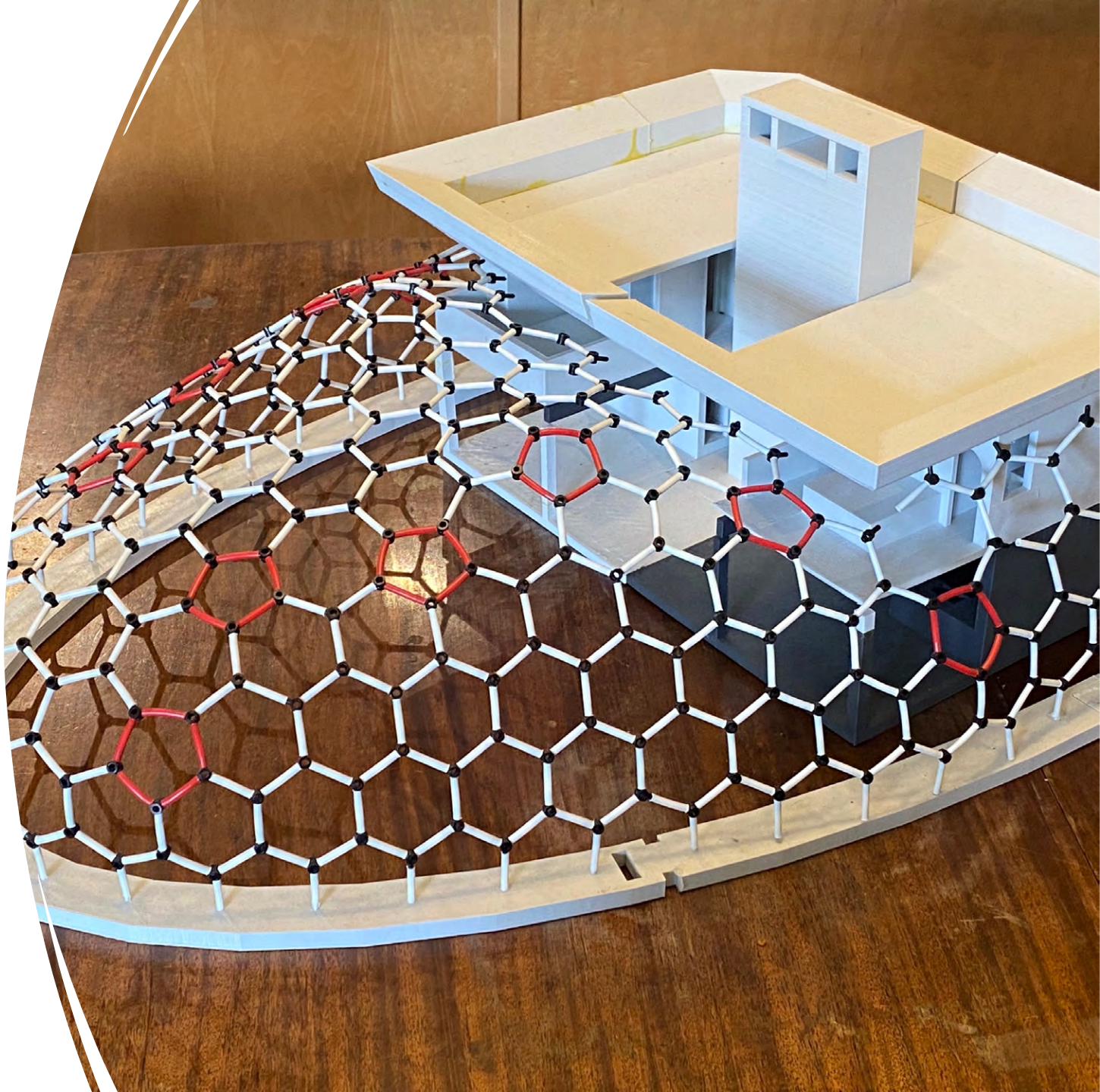
Energized by the Sun

- South-east facing
- 450 meters above the sea
- Same latitude as Paris
- 2200 hours of sun a year, especially in the summer

Earth Anchored

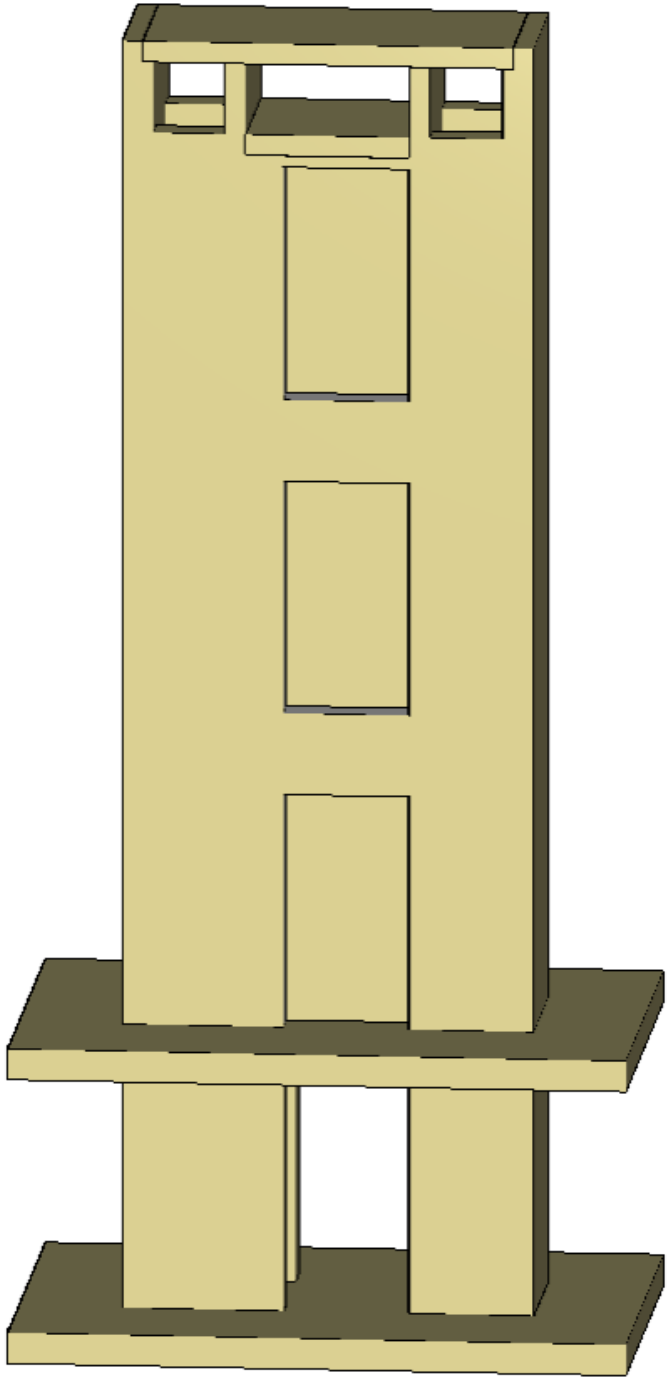
Geopolymer Home
with
Solarium Surround

Warmed in winter and cooled in summer by natural and mechanical heat pumps



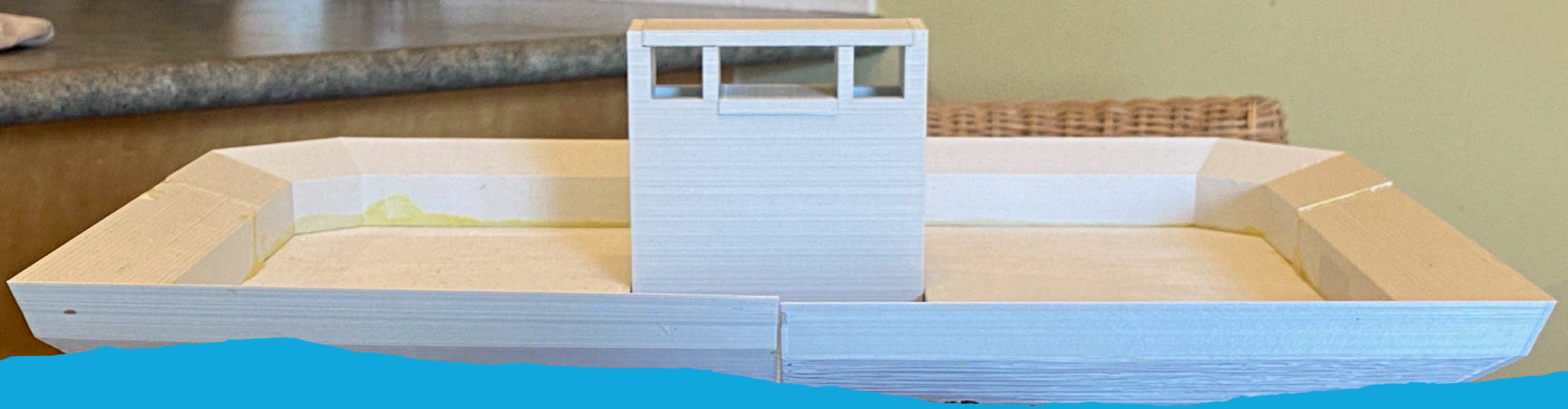
Geopolymer Structures

- Central Trunk, pillars and floors reinforced with Basalt rod and hemp fiber
- Foamed Geopolymer concrete insulating walls
- Carbon Fiber reinforced ceramic frame of Solarium



Reinforced Geopolymer Structural Trunk

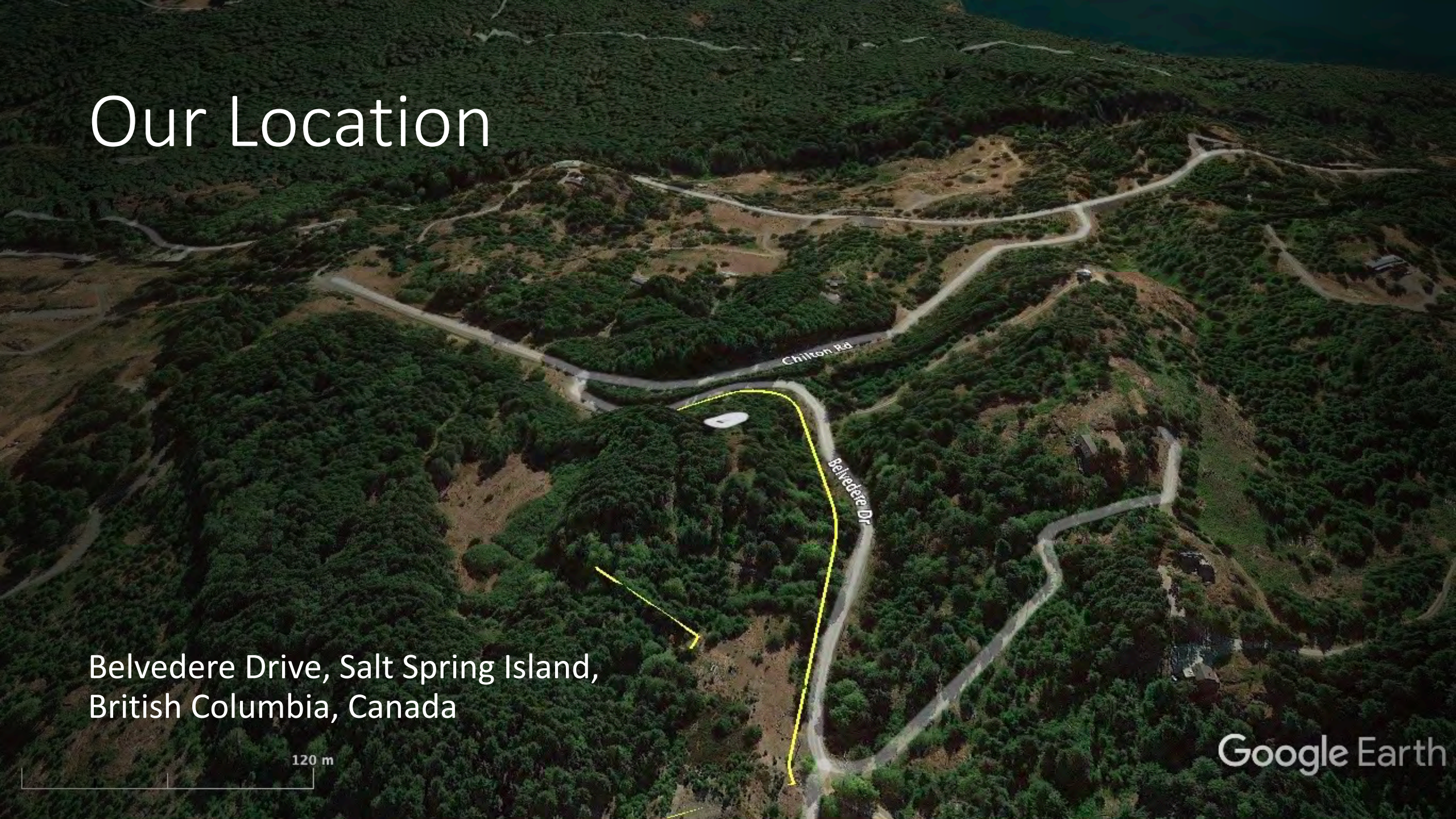
- Connects main two floors to the utility room below and the roof above
- Fresh air exchange, plumbing ventilation, heating and cooling, water gathered from the roof to underground cisterns with overflow to the garden
- Misty waterfall on the south side of the Trunk flows into the Great room and out to the garden.
- Supports 2nd floor and roof



Water from the Sky

- The eaves slope inward gathering water to the trunk to store in underground cisterns
- Warm water is stored under the south side, cool under the north side
- Earth tubes draw fresh winter air through the warm side,
  hot summer air comes through the cool side, stale air is let out through the top
- Heat pumps move heat from warm surfaces to/from cisterns as required
  Infrared panels provide quick heat when needed.
- A misty waterfall may be released to cool and balance humidity

Our Location



Belvedere Drive, Salt Spring Island,
British Columbia, Canada

Thoughts, Ideas and Experiments

- Waffle Iron ceilings embed structure, modular pours then cover pour
- Aluminum forms for the trunk, where we slide up the form after setting
- Fiber inside the form for quick turn around
- Basalt reinforcement instead of steel, no electric potential, no rust
- Plaster finishes, or special geopolymer finish coat, no paint
- All walls except trunk and pillars are filled with geopolymer foam

Work so far

In our 1st year we have 2 small sheds on Portland concrete foundations for electric connection and a well pumphouse.

Needs and Motivations

- We need Geopolymer materials, as close to local as possible
- We would like to use rock from our site, or nearby
- We plan to get a small electric excavator, such as the Volvo ECR 25
- We need to develop ways to work at small to medium scale
- We plan to do most of the work ourselves, to manage cost and are willing to work slowly

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