Intelligent, Intuitive, Inspired

iN ENGINEERING + PLANNING

PLANNING
LAND DEVELOPMENT
ENGINEERING
BUILDING DESIGN

ENGINEERING PROCESS FOR ALTERNATIVE CONSTRUCTION METHODS

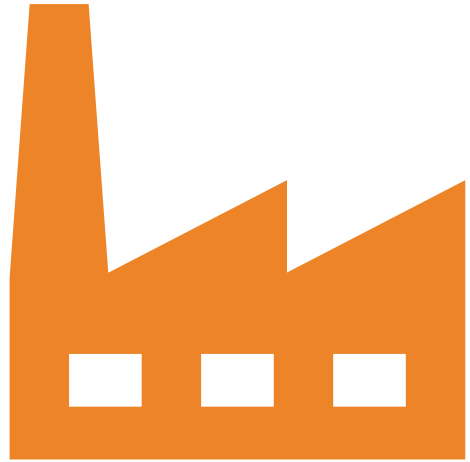
MODULAR, PRE-FABRICATED, AND TINY HOMES

THE WAY WE HAVE ALWAYS DONE IT

DESIGN BID BUILD

FACTORY CONSTRUCTION

- MODULAR
- PRE-FABRICATED
- TINY-HOMES



MODULAR CONSTRUCTION

- STANDARD UNITS
- ASSEMBLED ON SITE
- PRE-FINISHED
- CSA A277 PROCEDURE FOR CERTIFICATION OF PREFABRICATED BUILDINGS, MODULES, AND PANELS

PRE-FABRICATED HOMES

- CSA Z240 MANUFACTURED HOMES

ASSEMBLED IN THE FACTORY

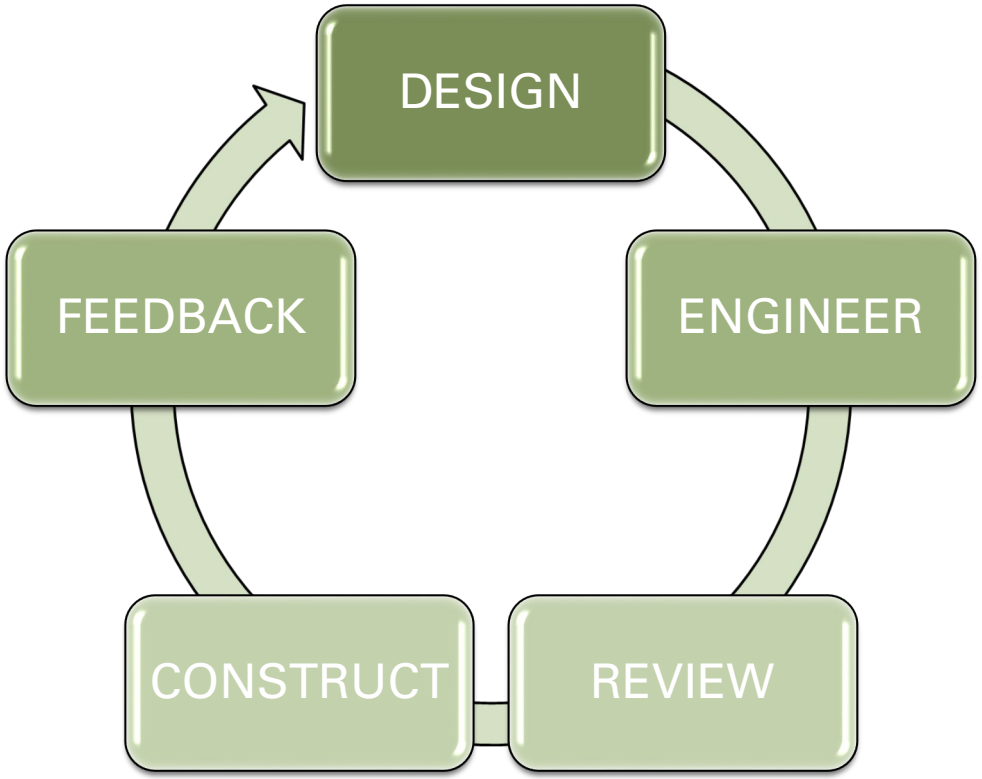
ASSEMBLED ON SITE

GRAND RIVER MODULAR

TINY HOMES

- TWO PERMIT SYSTEM AS OF JANUARY 2022
- LESS THAN 37m^2 (398 sq.ft.)
- BUILDING PERMIT IN LOCATION OF MANUFACTURING
- BUILDING PERMIT IN LOCATION OF CONSTRUCTION
- MUNICIAPPLY LED MODULE INSPECTIONS vs FACTORY CERTIFICATION FROM CSA

THE ENGINEERING LOOP



CABN

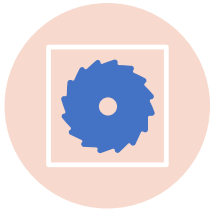
ENGINEERING AND DESIGN WORKFLOW

DISCOVERY PHASE

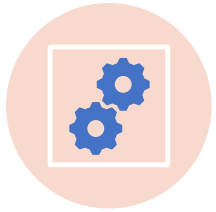
ENGINEERING & DESIGN PHASE

PERMITTING PHASE

PRE-CONSTRUCTION PHASE



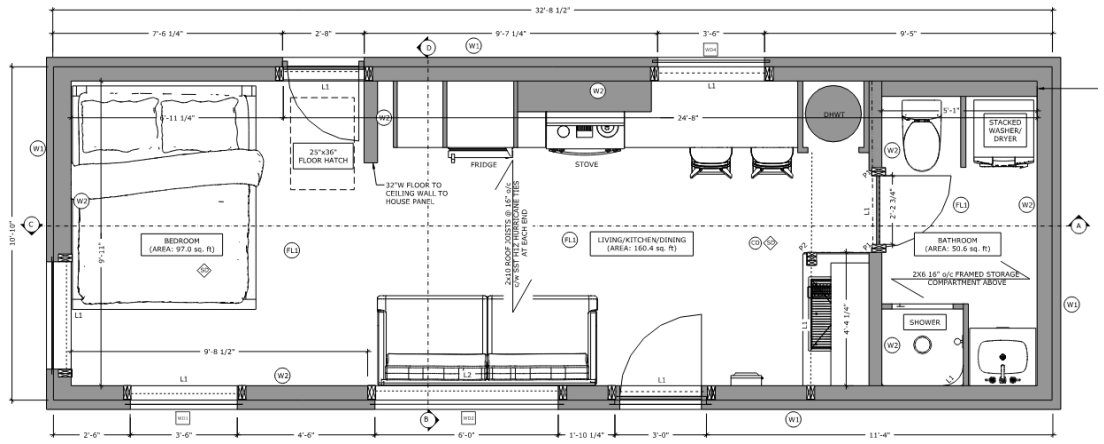
CONSTRUCTION



COMMISSIONING

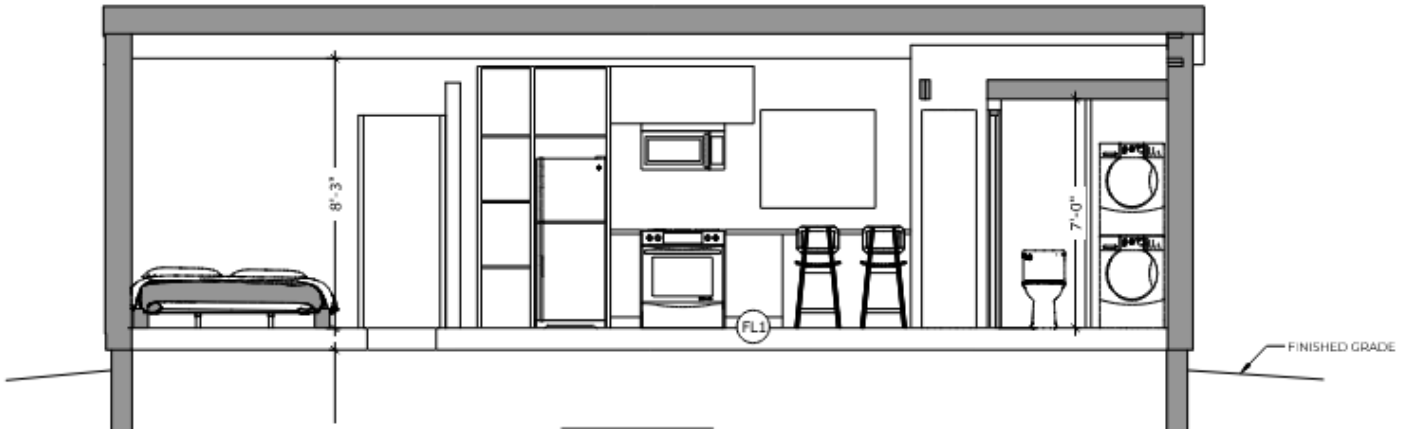
WATC PROJECT CASE STUDY

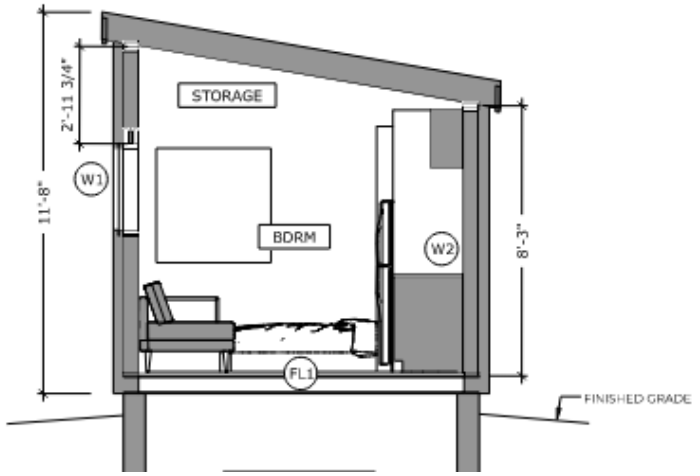
- First Tiny Home in Ontario
- Led to OBC Changes for Permitting
- Wanted to minimize material waste



DESIGN CONSIDERATIONS

- Site Design
  - Final Location not known
  - Designed for higher wind loads for transportation
  - Dimension limited by transportation
  - Foundation Options
- Building Design
  - Simple and material efficient
  - Minimum size for function
  - Energy Efficiency
  - Replicable





QUESTIONS

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