



Degree:

Passive House
meets Prefab
Architecture

Wood Solutions, June 2023

ARKit

Desires:

Thermal comfort
+ low energy use



Passive House

Short construction
time + high quality



Prefab

Passive House

passivhaus



Passive House

V

Typical Construction

15
kWh/sqm

Energy

40-200
kWh/sqm

0.6
Air changes / hr*

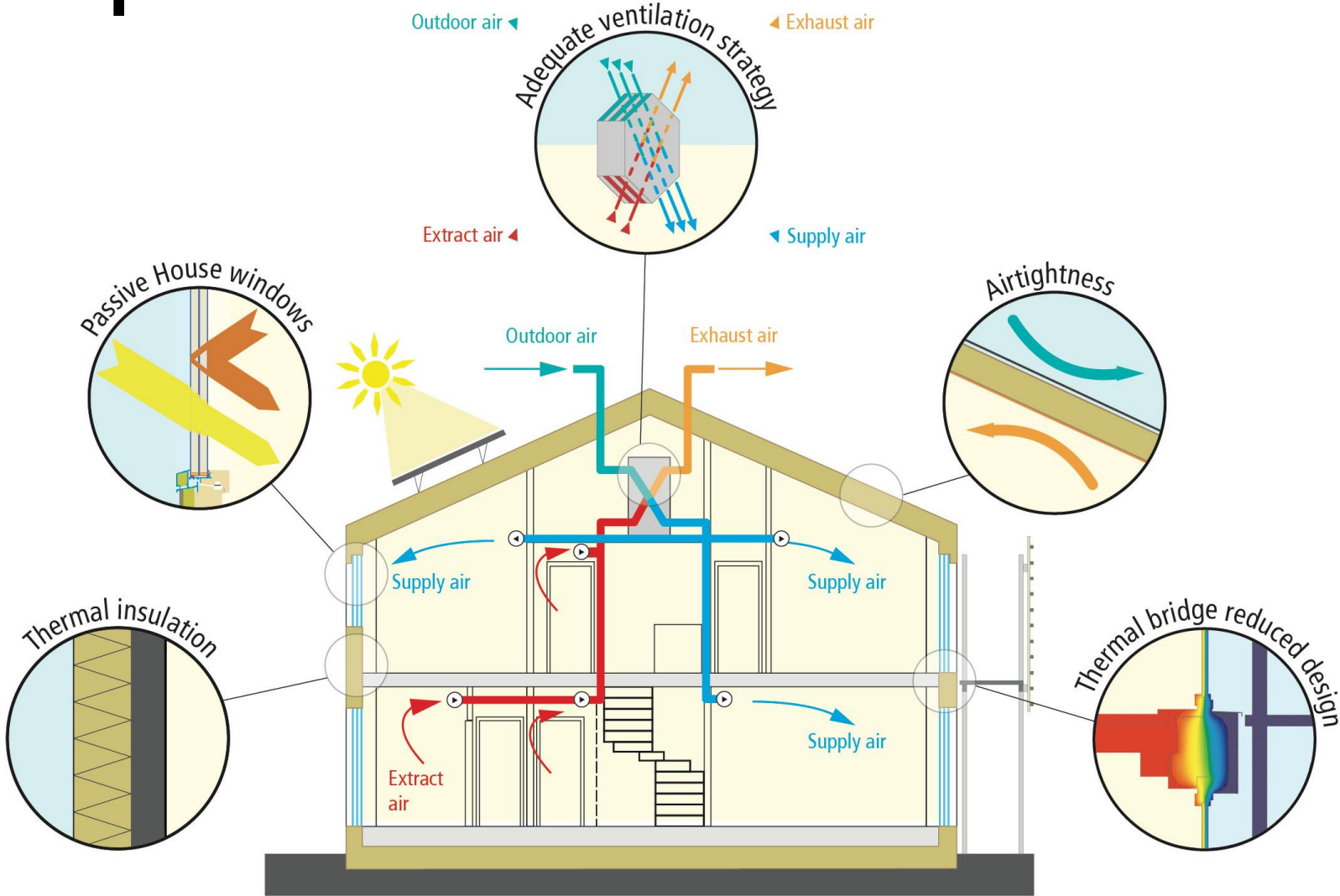
Air
Tightness

10-15
Air changes / hr**

*Verified by testing at construction phase

***Measuring Buildings – Air-tightness of new house construction*, CSIRO (2016), Average for houses constructed in last 3 years

5 key principles:

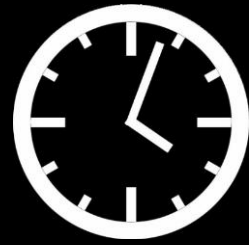


Prefab

modern methods of construction



Why build off-site?



Prefab methods



1. VOLUMETRIC
"MODULAR"



2. PANELISED



3. HYBRID



GROUND FLOOR PLAN



- | | | |
|-------------|-------------|-------------------|
| 1 Entry | 6 Kitchen | 11 Master bedroom |
| 2 Courtyard | 7 Pantry | 12 Ensuite |
| 3 Deck | 8 Laundry | 13 Bathroom |
| 4 Living | 9 Study | 14 Bedroom |
| 5 Dining | 10 Playroom | 15 Bedroom |



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Degree

—KTA
KERSTINTHOMPSONARCHITECTS

atelier ten

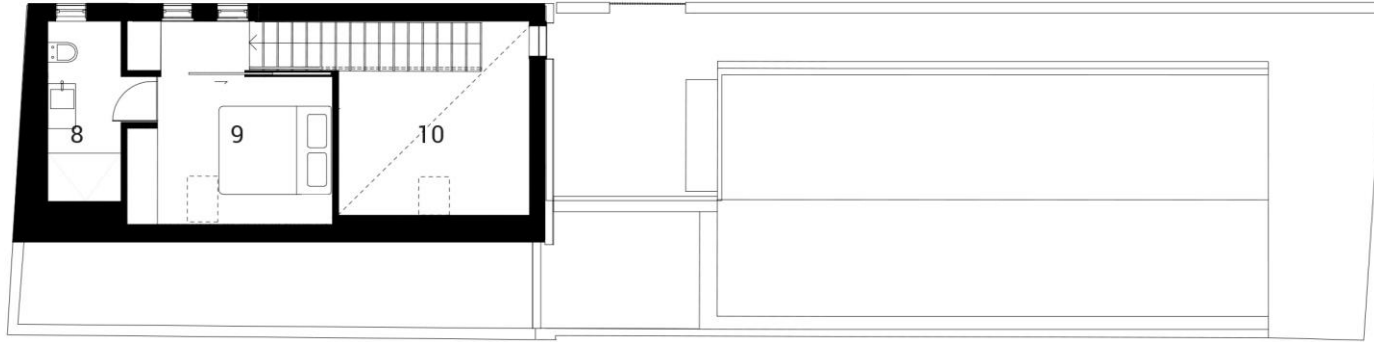
ARKit
Advanced Prefabricated Architecture

Before

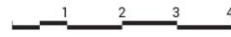


After

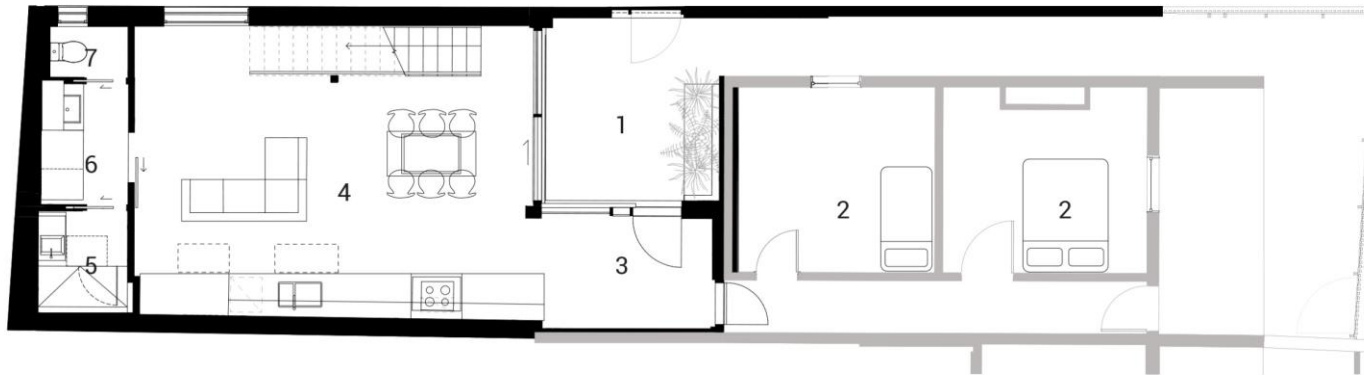




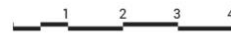
MEZZANINE FLOOR PLAN



- 8 Ensuite
- 9 Bedroom
- 10 Void

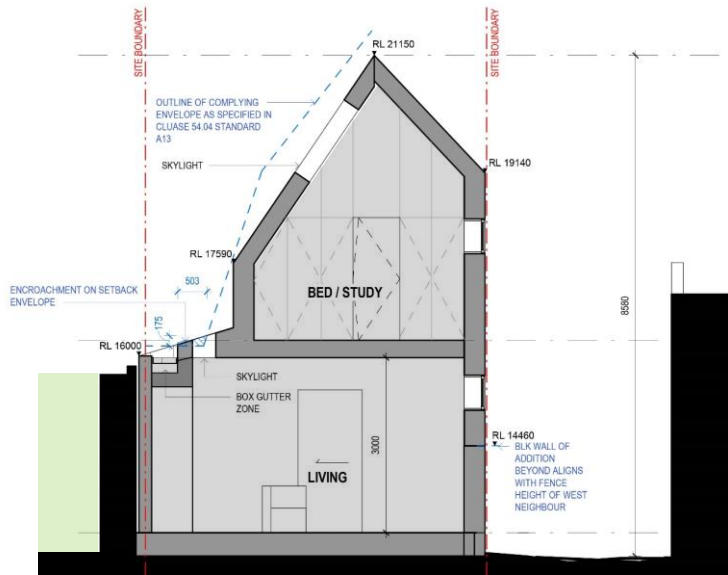


GROUND FLOOR PLAN

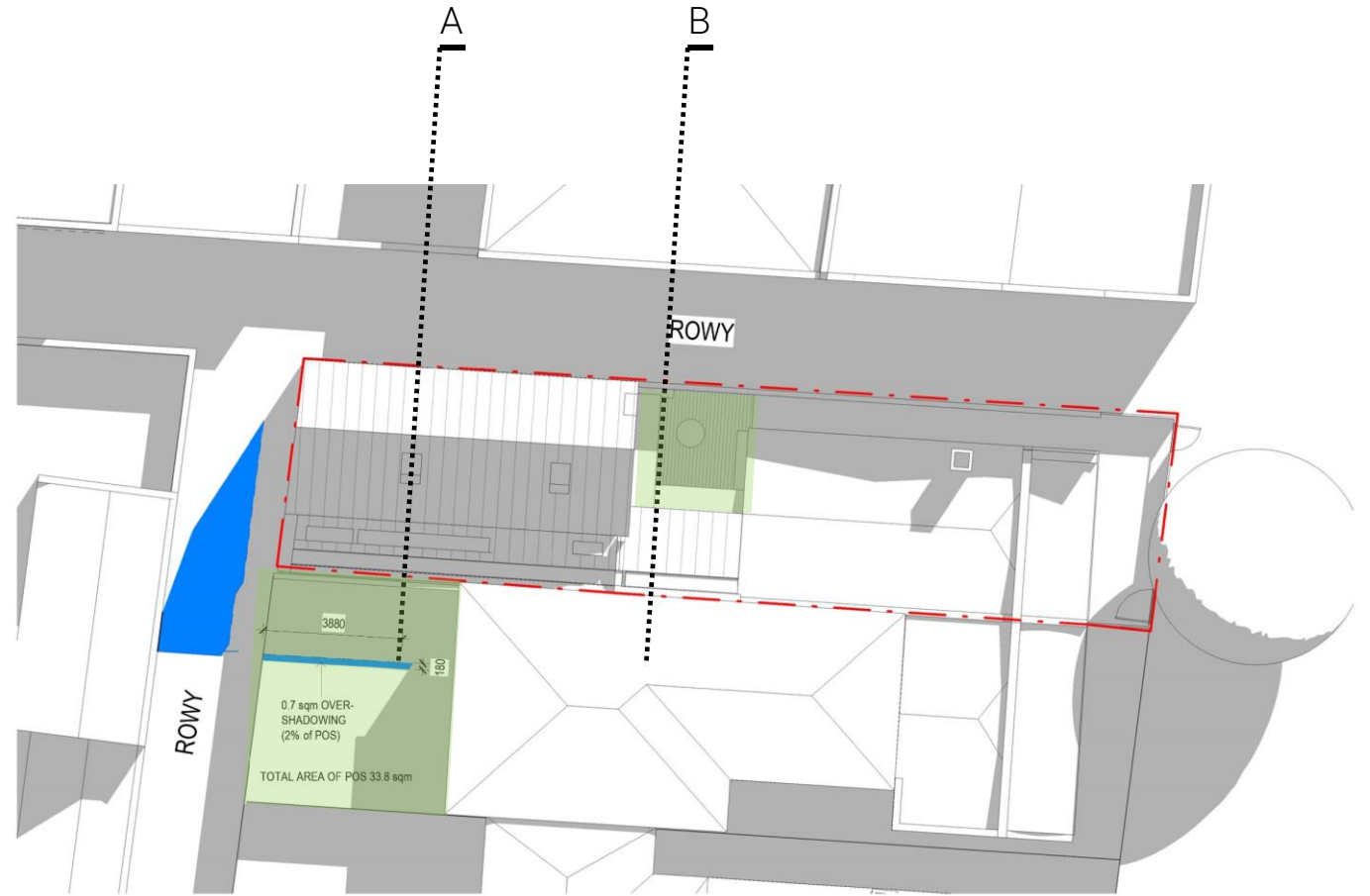
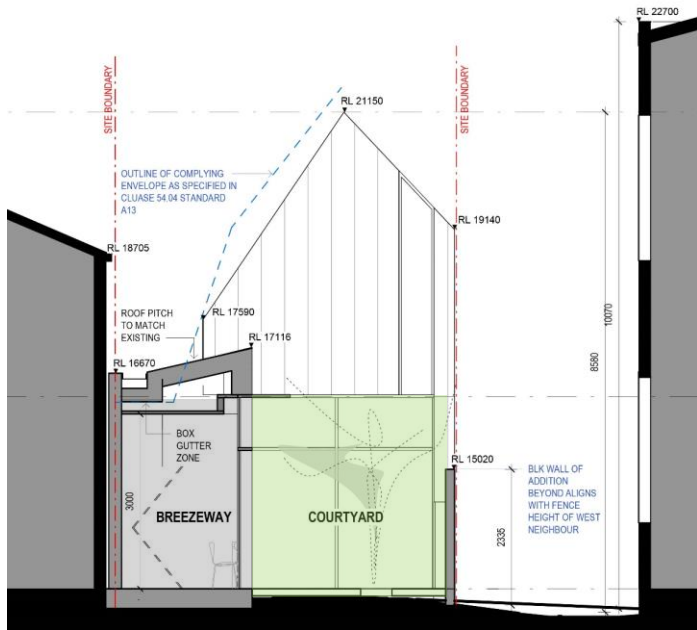


- 1 Courtyard
- 2 Existing Bedroom
- 3 Breezeway
- 4 Living & Kitchen
- 5 Shower
- 6 Laundry
- 7 Powder

Section A



Section B



Shadows @ equinox 12pm

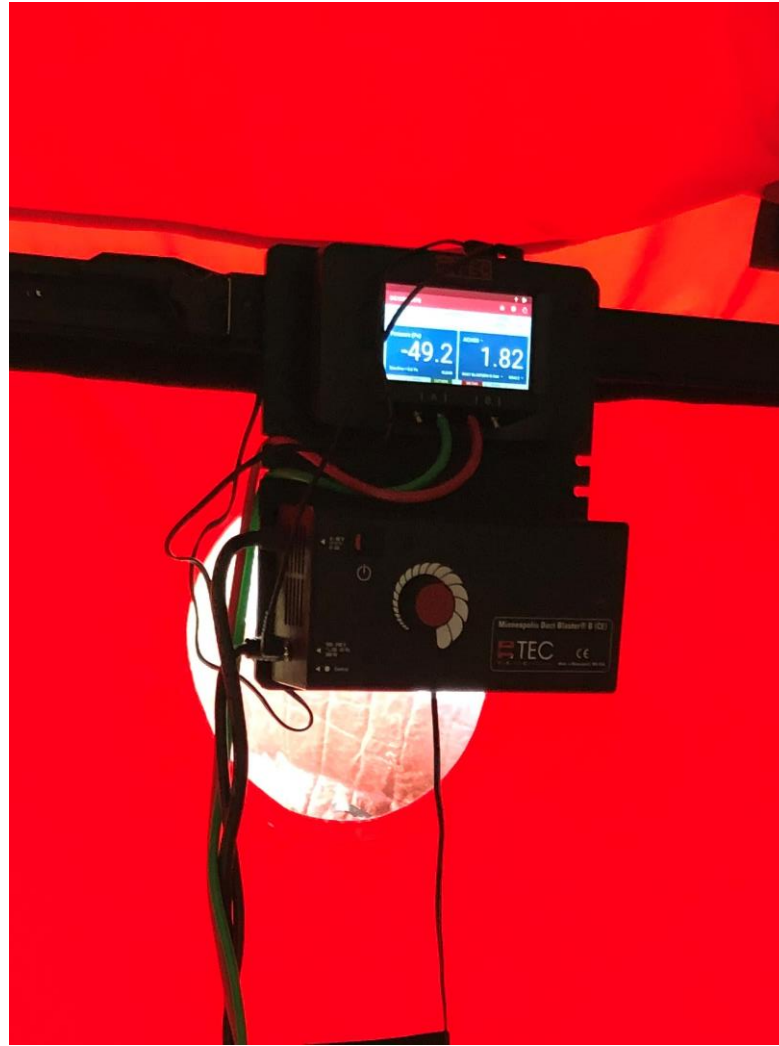




Detail



Achieving and verifying air tightness





Thanks!

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