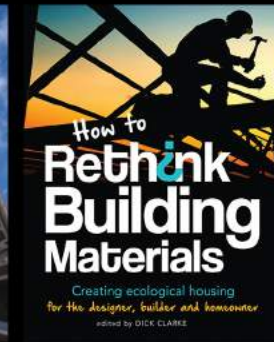
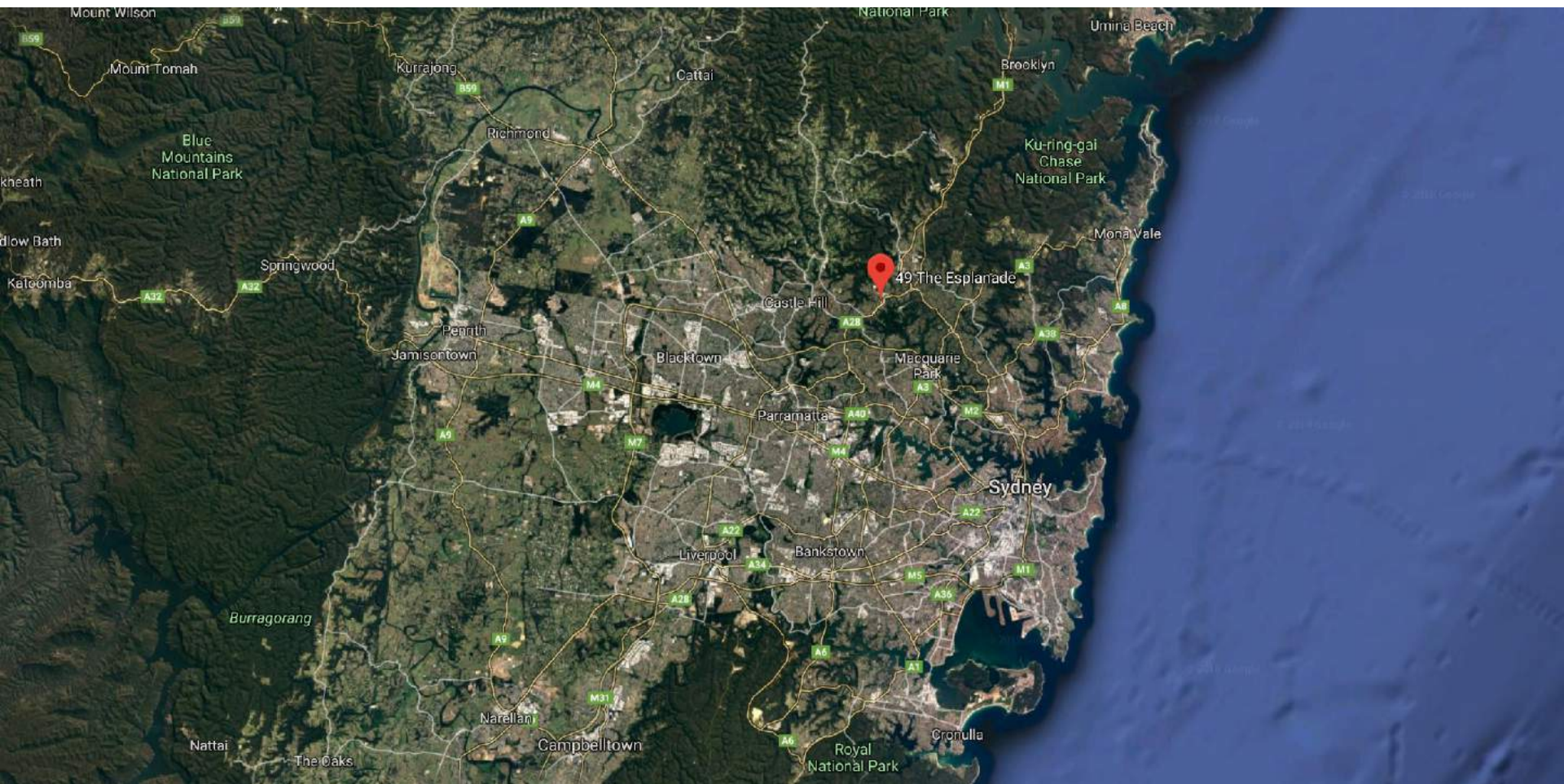


# Passive House: what's it worth?

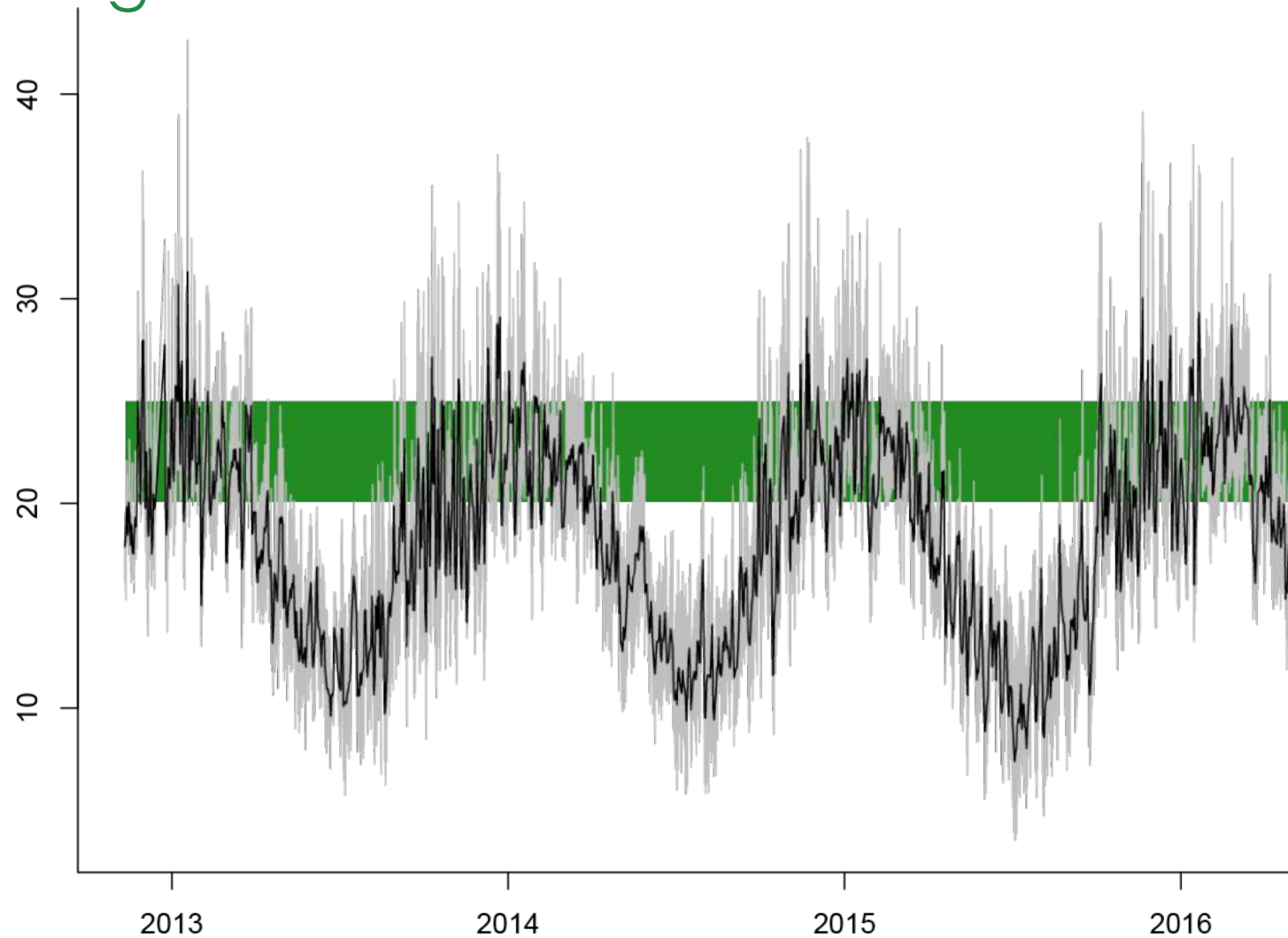




# Location



## Existing home





# Brief

- Beauty through function
- Want to be warm
- Low running costs
- No draughts
- Not a large house
- High ceilings
- Keep the gum tree
- Music to move through the house



# Starting Point

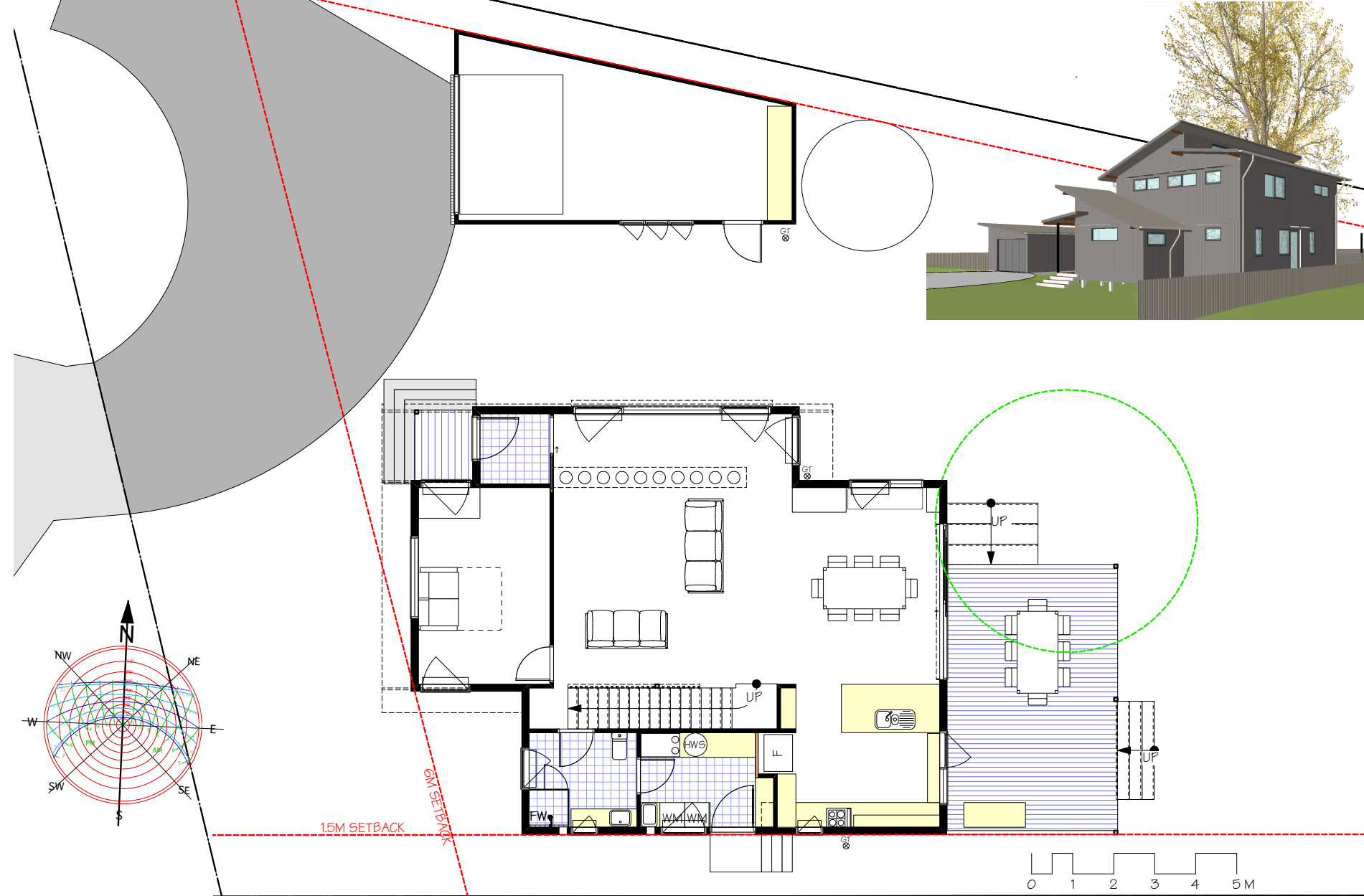
- Traditional passive solar design
- Light weight
- Timber framed walls
- Traditionally framed roof
- Thermally improved aluminium double glazed windows (local)
- One operable, external, vertical shade device
- Water tanks (internal and external)
- Heat pump hot water

2017-08 drg 80 detail

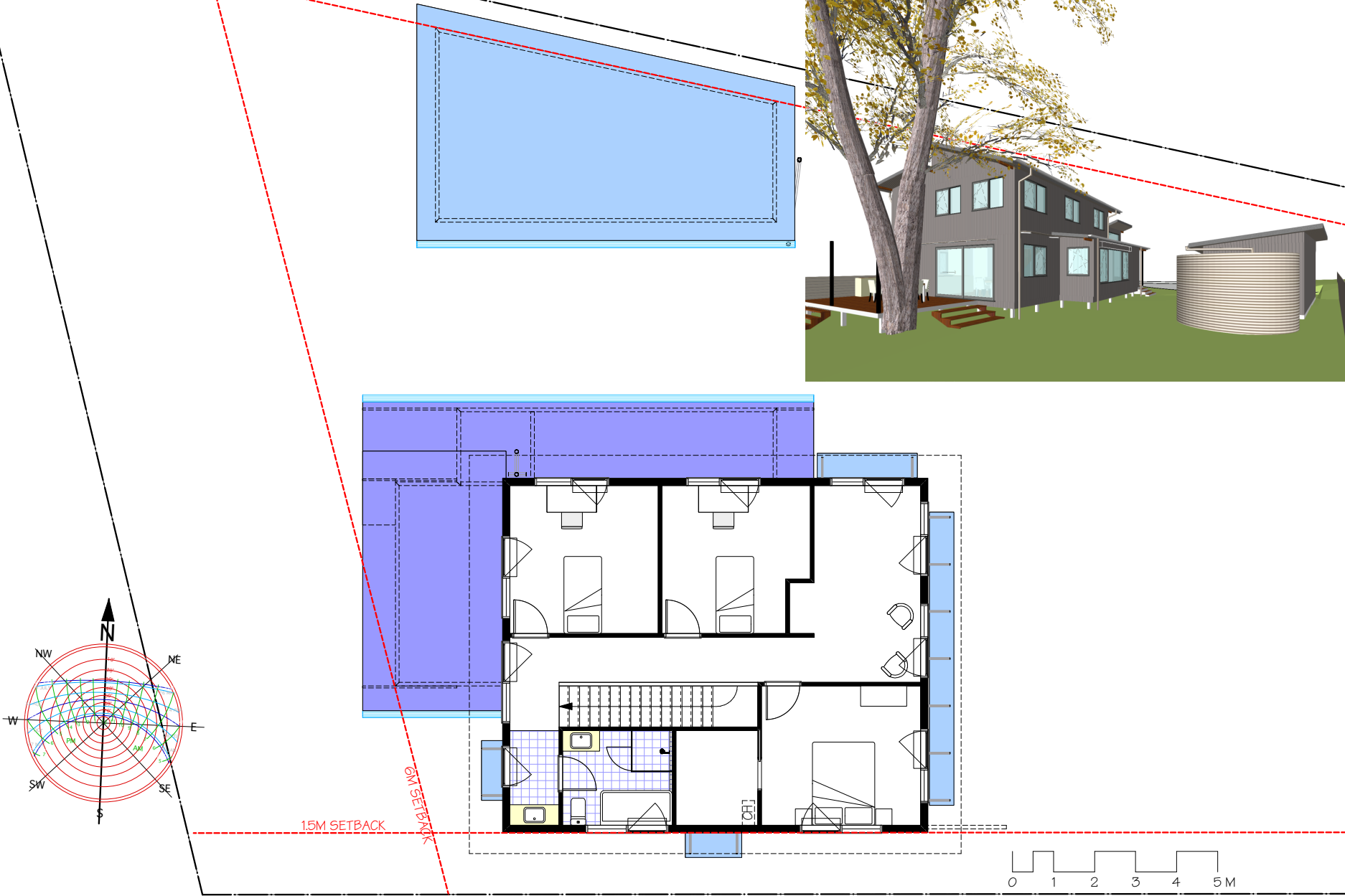




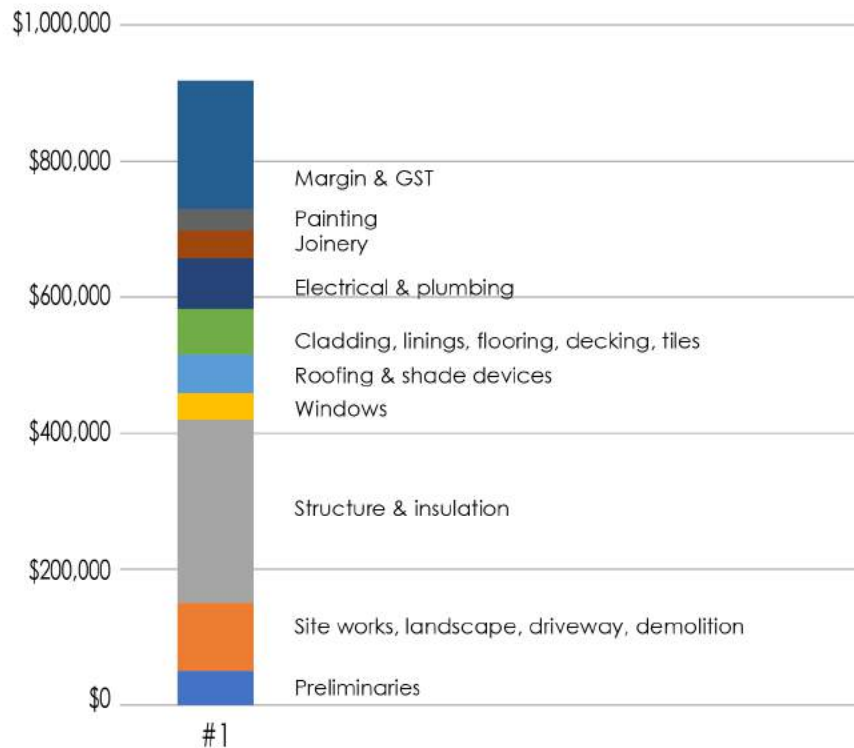








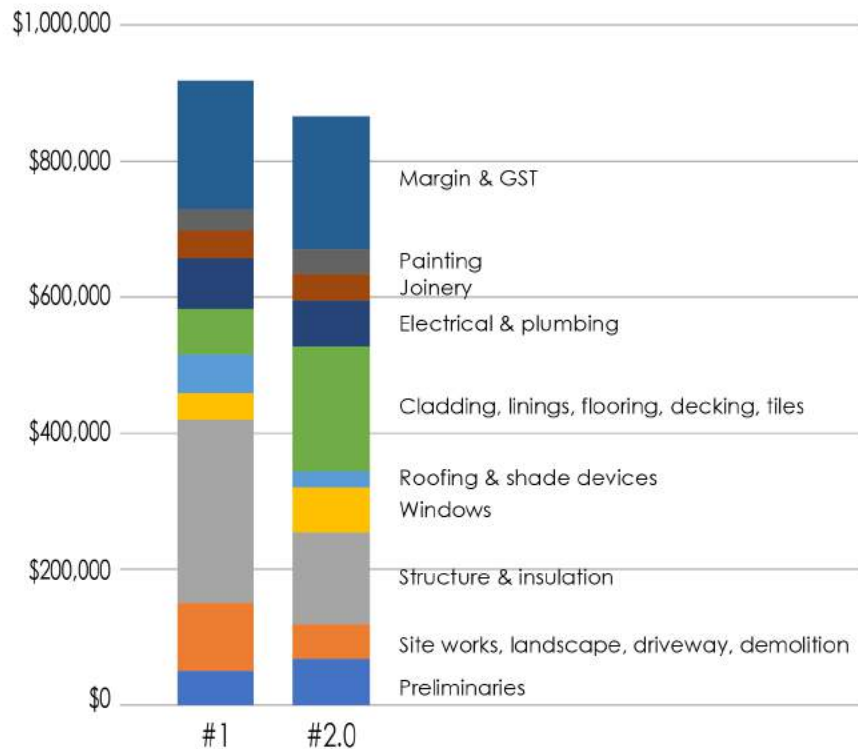
# Builder #1



- Not a Passive House
- Pre-cut stick frame
- On-site construction

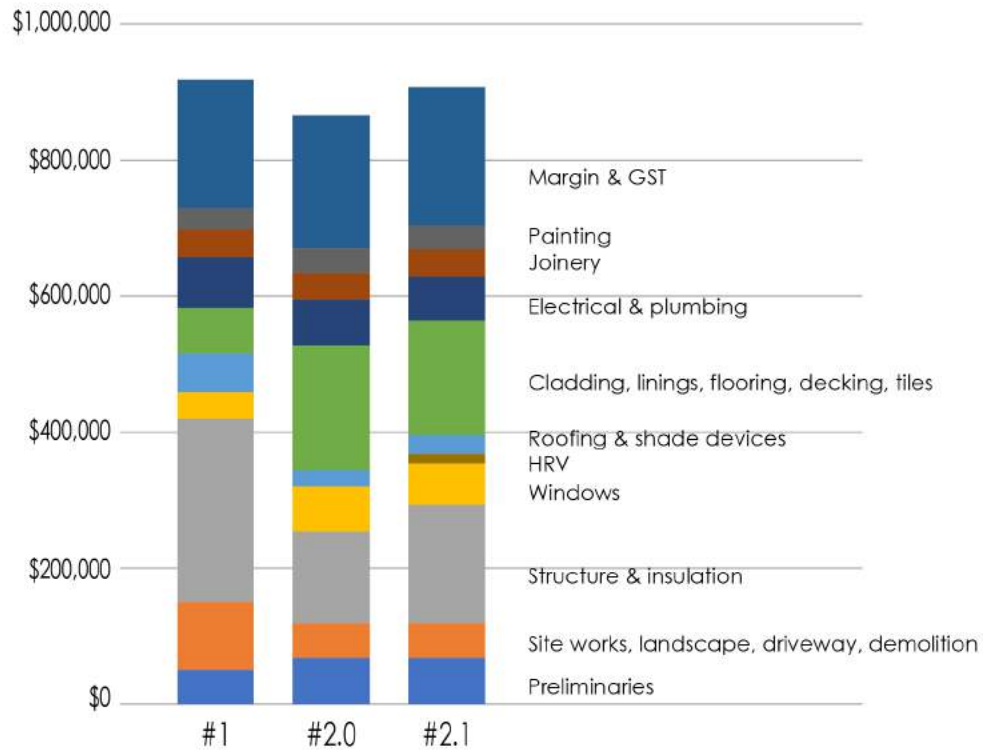


# Builder #2.0



- Still not a Passive House
- Timber frame
- On-site construction

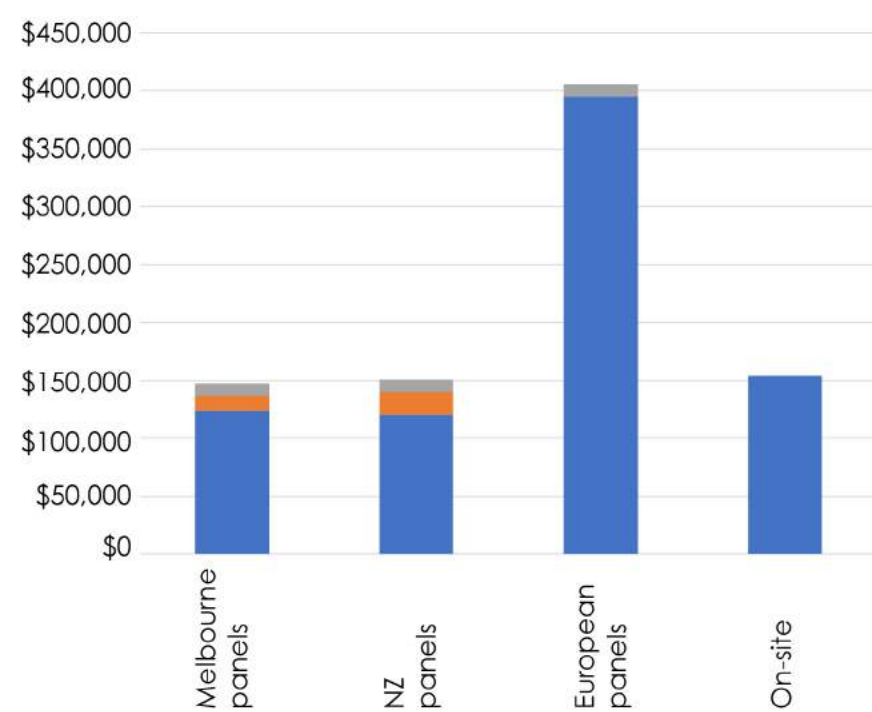
# Builder #2.1



- Passive House!
- Off-site panelisation
- Builder now CPHT

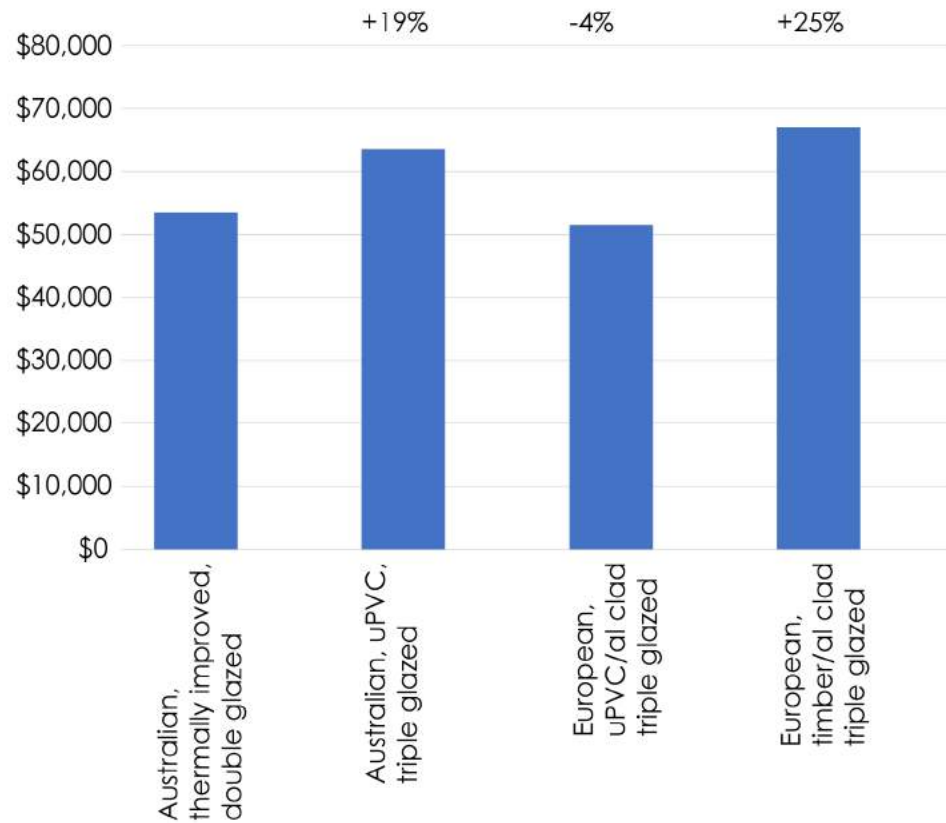


# Panelisation



- Panels were very cost effective
- Freight is a cost challenge
- Site access was complex
- No decrease in Preliminaries
- Panel costs not directly comparable in this case
- European version includes windows

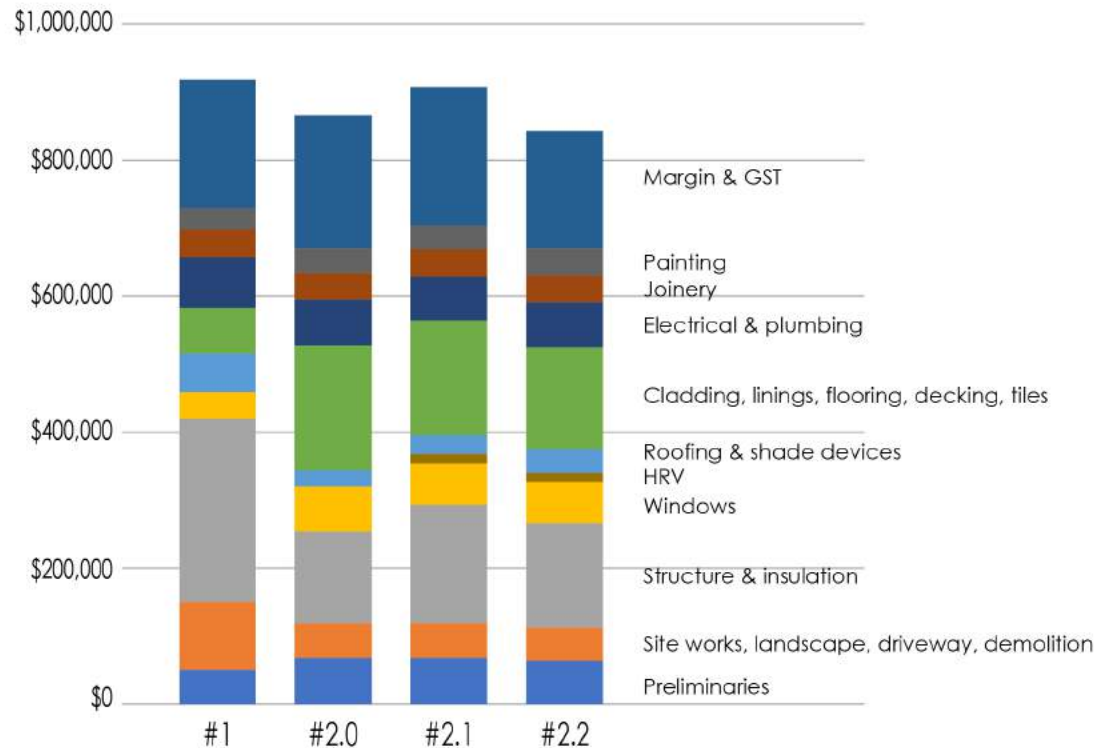
# Windows



- Good double glazed local windows are not cheap
- Australian glass is relatively expensive
- Locally assembled uPVC can compete if double glazed
- uPVC has an image problem for some
- uPVC can have aesthetic challenges if not aluminium finished
- Exchange rate is a risk

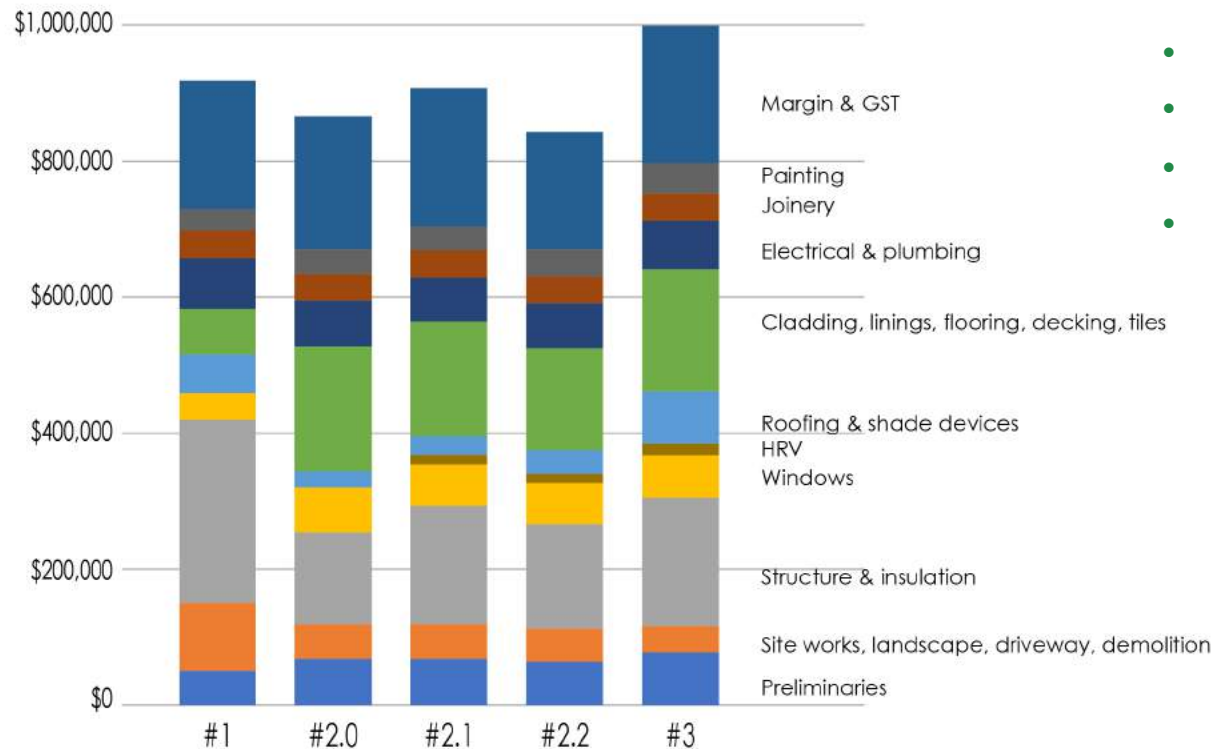


## Builder #2.2



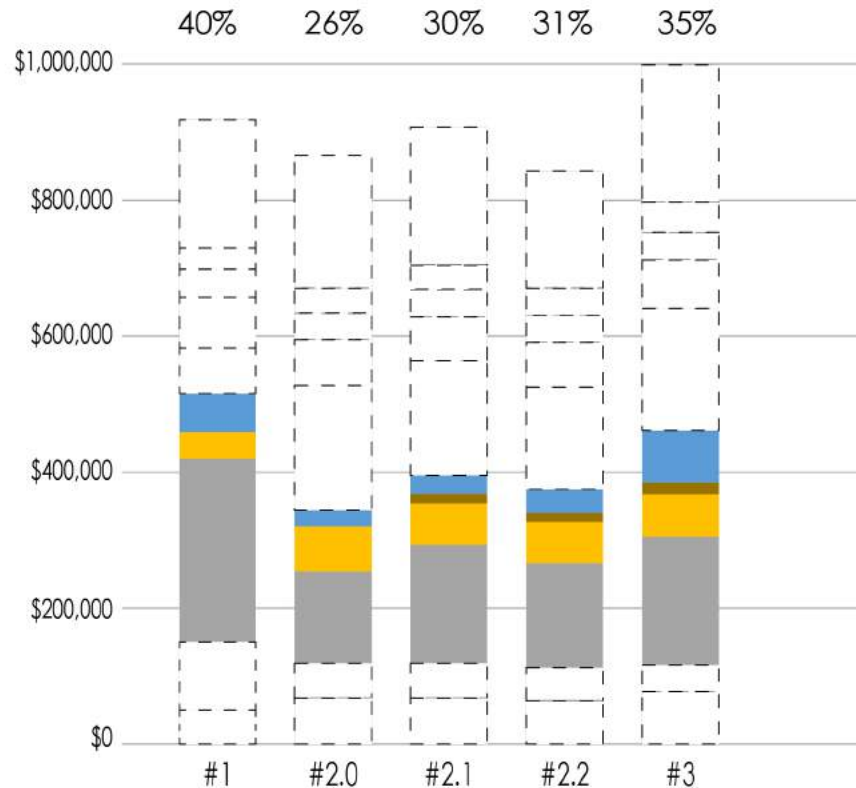
- Passive House!
- On-site construction
- Savings on cladding

# Builder #3



- Passive House!
- On-site construction
- Not a CPHT
- Explicit risk premium

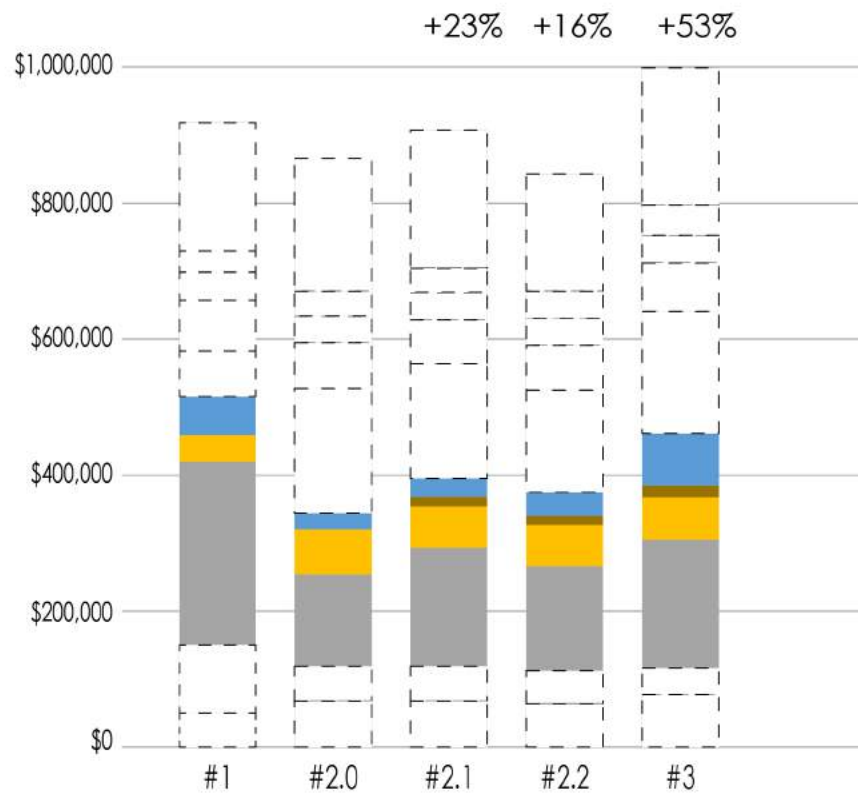
# Passive House specific



- PH related elements are ~30% of the total cost in a custom built home

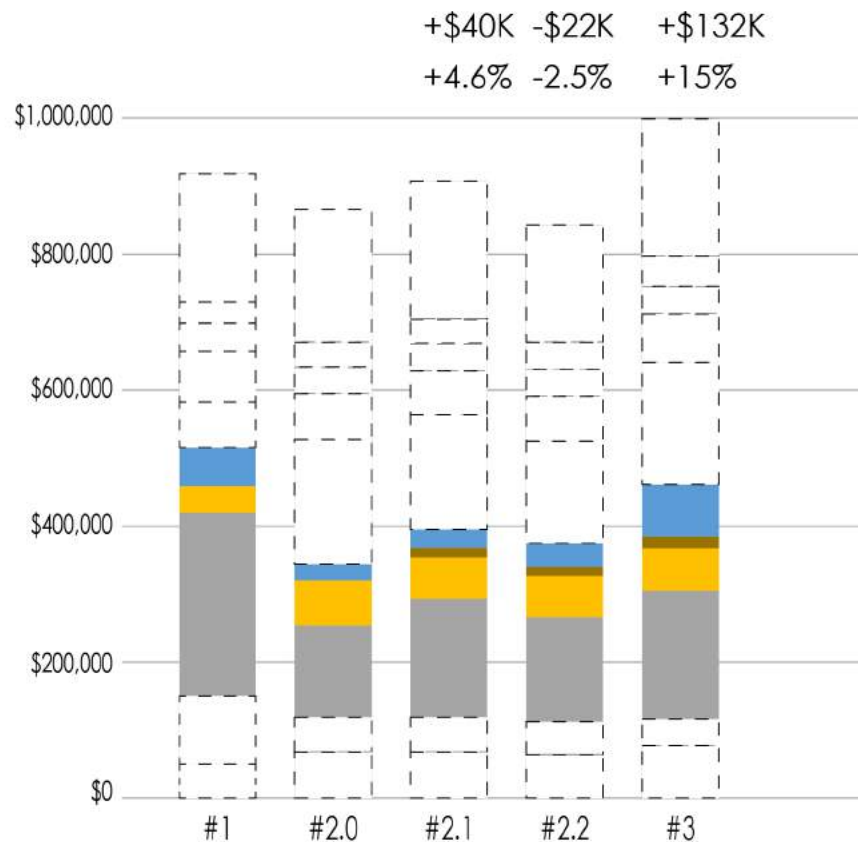


# The PH-specific premium



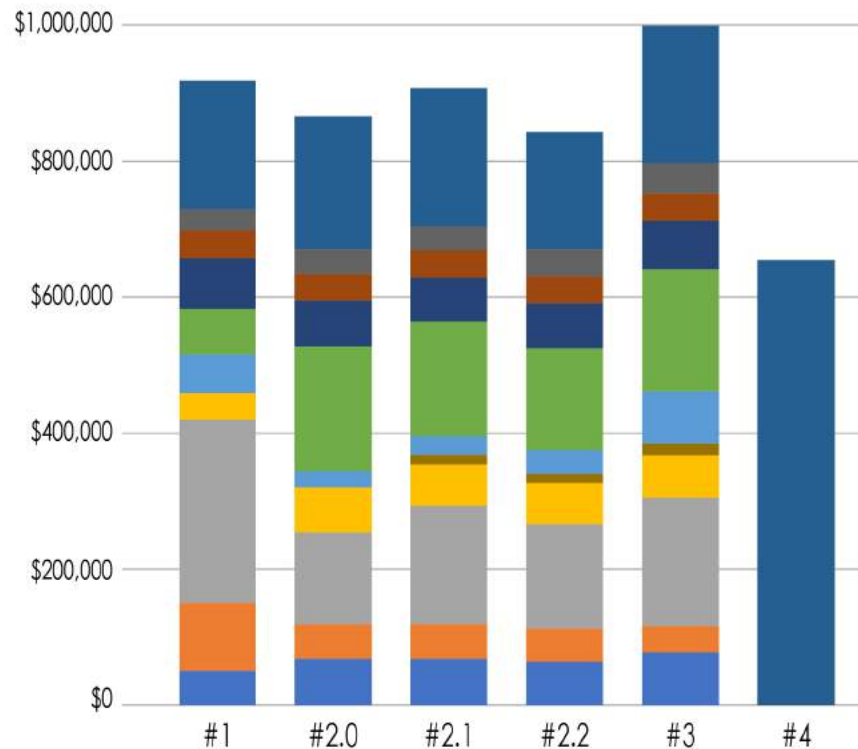
- % increase against #2.0

# Delivering Passive House



- Total \$ cost less than passive solar

# PH vs Project Home



- Based on original non-PH design
- Concerns over quality
- Refused to tender for PH-version



# Conclusions

- The cost premium is negligible/non-existent with good design (if custom builder)
- The cost premium is ~30% to a project home but quote amount isn't the issue.....
- Additional window costs are minimal
- Savings from off-site prefabrication are location dependant
- Refining a design with a single builder has benefits
- CPHT knowledge is helpful in avoiding risk premium



Progress





Thank you

Questions...