



# QUALITY & PERFORMANCE WITHIN A BUDGET

Richard Popenhagen  
Eco Design Advisor  
Nelson City Council



Independent advice for a comfortable, efficient, healthy home

For more information  
[ecodesignadvisor.org.nz](http://ecodesignadvisor.org.nz)



“Our homes should be bloody nice places to live. They should make us feel like better, healthier, kinder, more civilized human beings.



They should detox us from the ravages of the world. They should give us space and light and generous headroom.

There should be plenty of storage for life's clutter and an ease and joy in interacting with the building that continues day after day.

In short, we should have a positive, enriching relationship with our home.”

Kevin McLoud – Grand Designs Handbook

# Site challenges



**Slope  
Views v Sun  
Height covenants  
Planning  
restrictions**

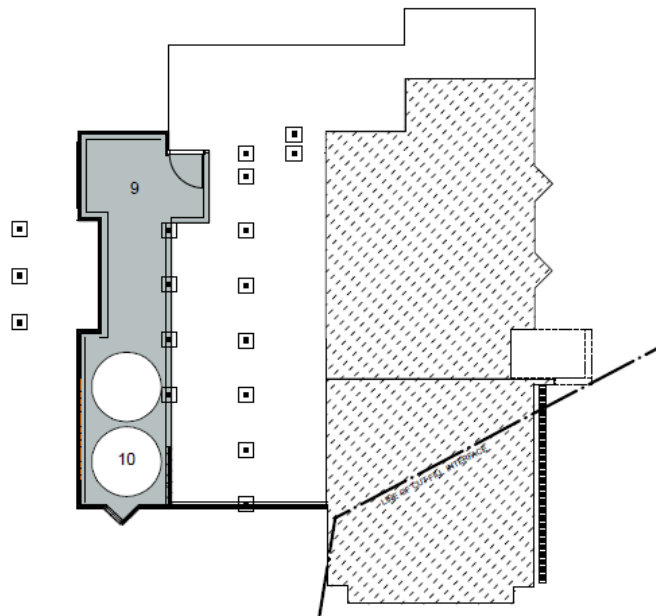




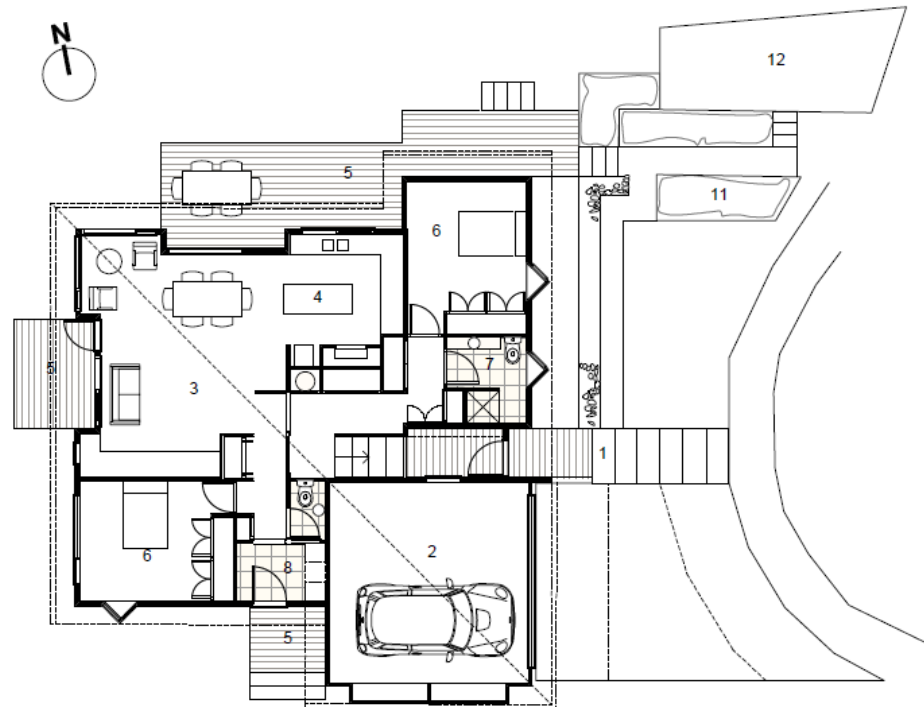




SITE PLAN

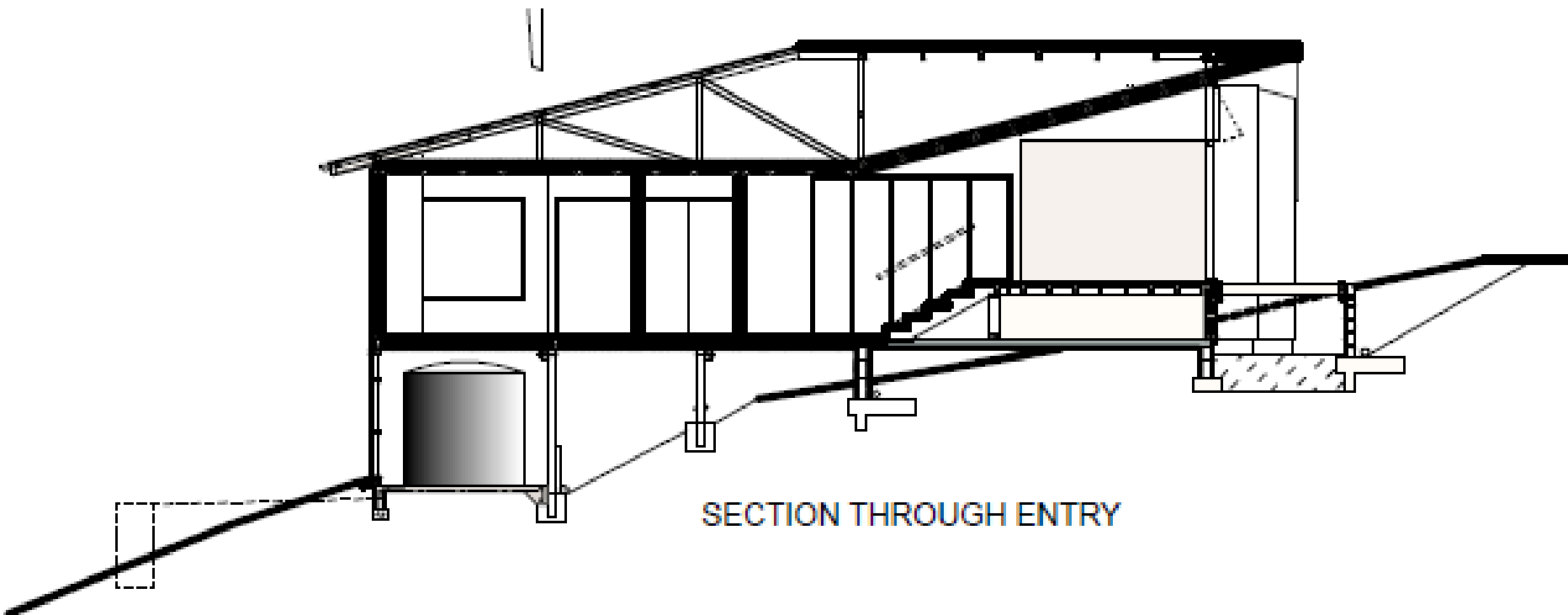


LOWER LEVEL PLAN



LIVING LEVEL PLAN

- 1 ENTRY
- 2 GARAGE
- 3 LIVING
- 4 KITCHEN
- 5 DECK
- 6 BEDROOM
- 7 BATHROOM
- 8 LAUNDRY
- 9 WORKSHOP
- 10 WATER TANKS
- 11 VEGETABLE/HERB
- 12 TRAILER PARK



SECTION THROUGH ENTRY





# Warm

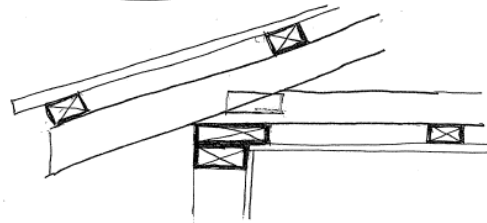


Independent advice for a comfortable, efficient, healthy home

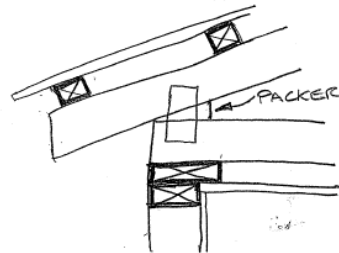
For more information  
[ecodesignadvisor.org.nz](http://ecodesignadvisor.org.nz)

# ROOF FRAMING

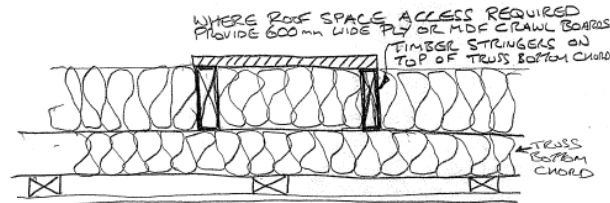
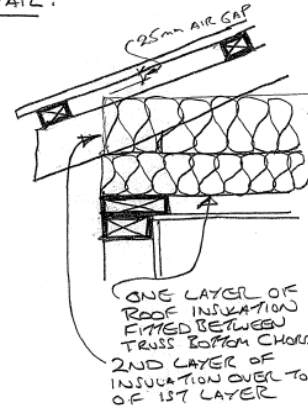
JUNE 2015



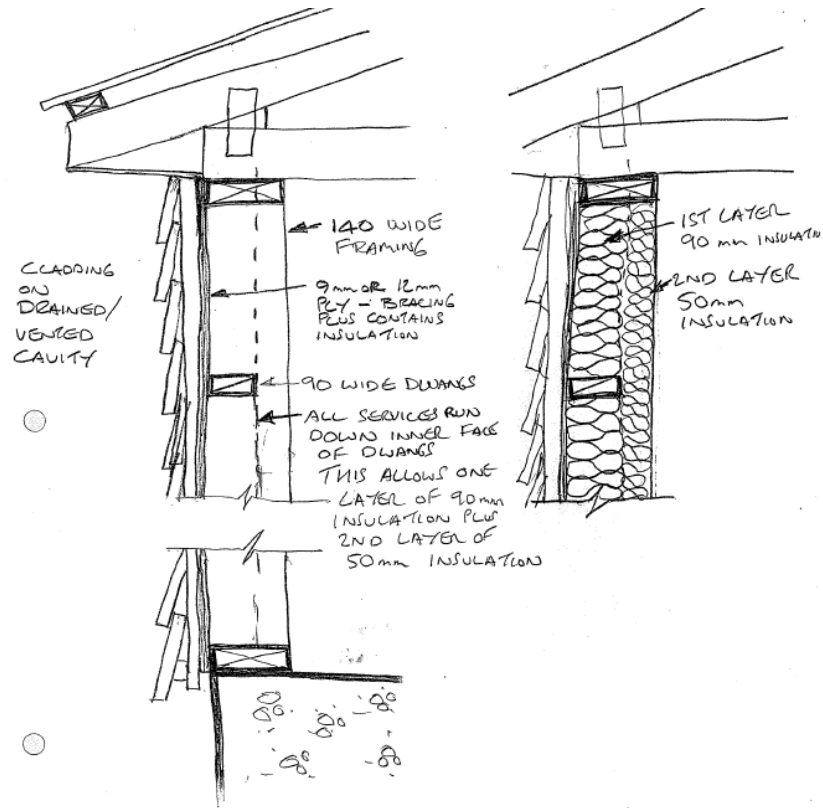
STD ROOF TRUSS DOES NOT ALLOW FOR THICK ENOUGH ROOF INSULATION TO EXTEND OVER TOP PLATE AND MAINTAINING A 25mm MINIMUM GAP BETWEEN THE TOP OF THE INSULATION & THE UNDERSIDE OF THE ROOF  
DO NOT USE THIS DETAIL!



USE "STEPPED" TRUSS WHERE TOP CHORD SITS ABOVE BOTTOM CHORD



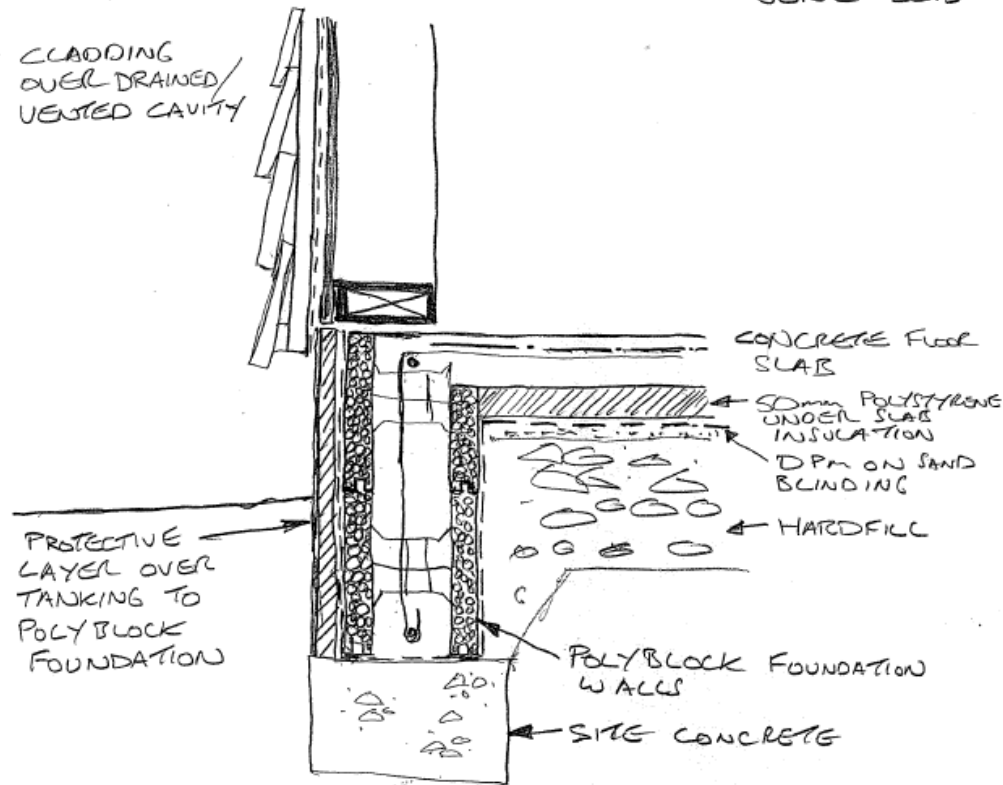
ACCESS ACROSS INSULATION IN ROOF SPACE



WALLS  
EITHER

140 WIDE FRAMING OR  
90 WIDE FRAMING WITH  
50 mm WIDE GIRTS TO ACCOMMODATE  
TWO LAYERS OF INSULATION,  
DEPENDS ON WALL CLADDING WHICH  
IS BETTER OPTION (HORIZONTAL OR  
VERTICAL FIXED CLADDING).

JUNE 2015



EDGE INSULATION OF CONCRETE SLAB -  
APPROXIMATELY 80% OF HEAT LOSS THROUGH A  
CONCRETE SLAB OCCURS THROUGH THE EDGE.

## WEERS Report

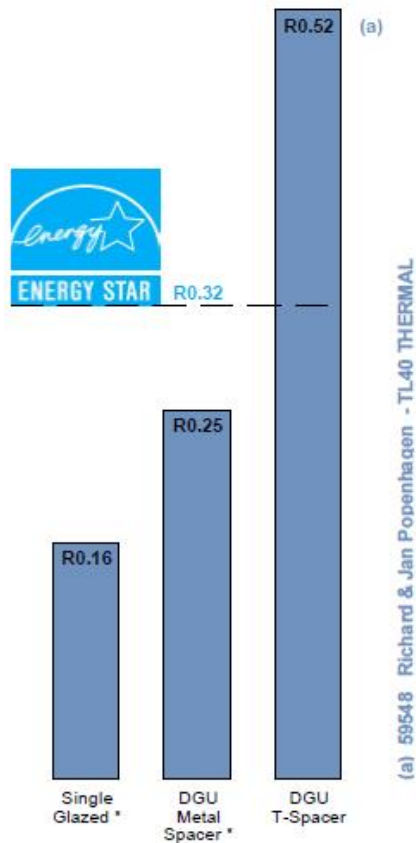
Printed: 7/15/2016 4:11:34 PM

X1 Version 3.2.0.1517

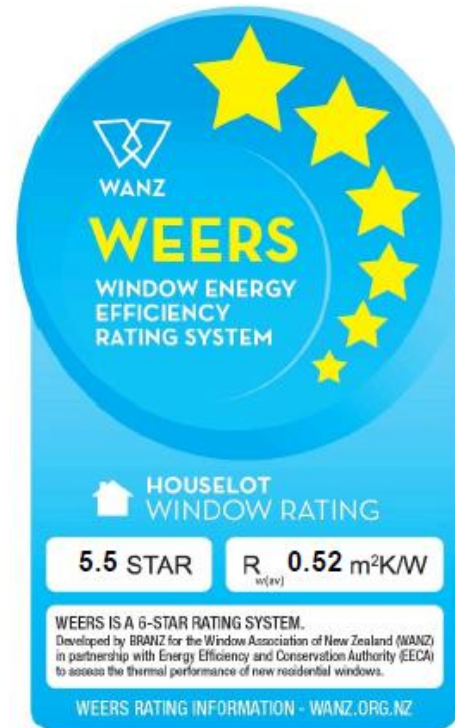
Client No. 0876

Quote No. 59548 (Item Range: 1-20)

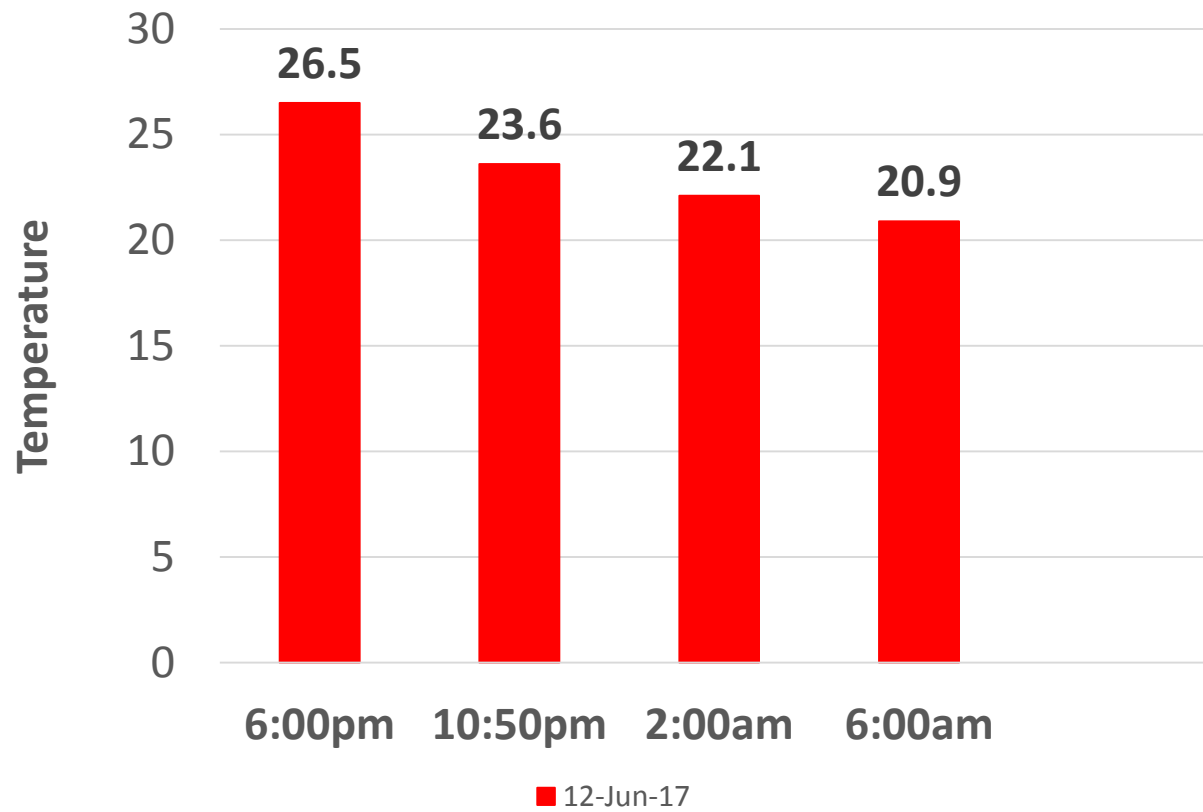
Page 1



\* These values are representative from 10 Wanz standard house lots using standard aluminium



59548 Richard & Jan Popenhagen -  
TL40 THERMAL





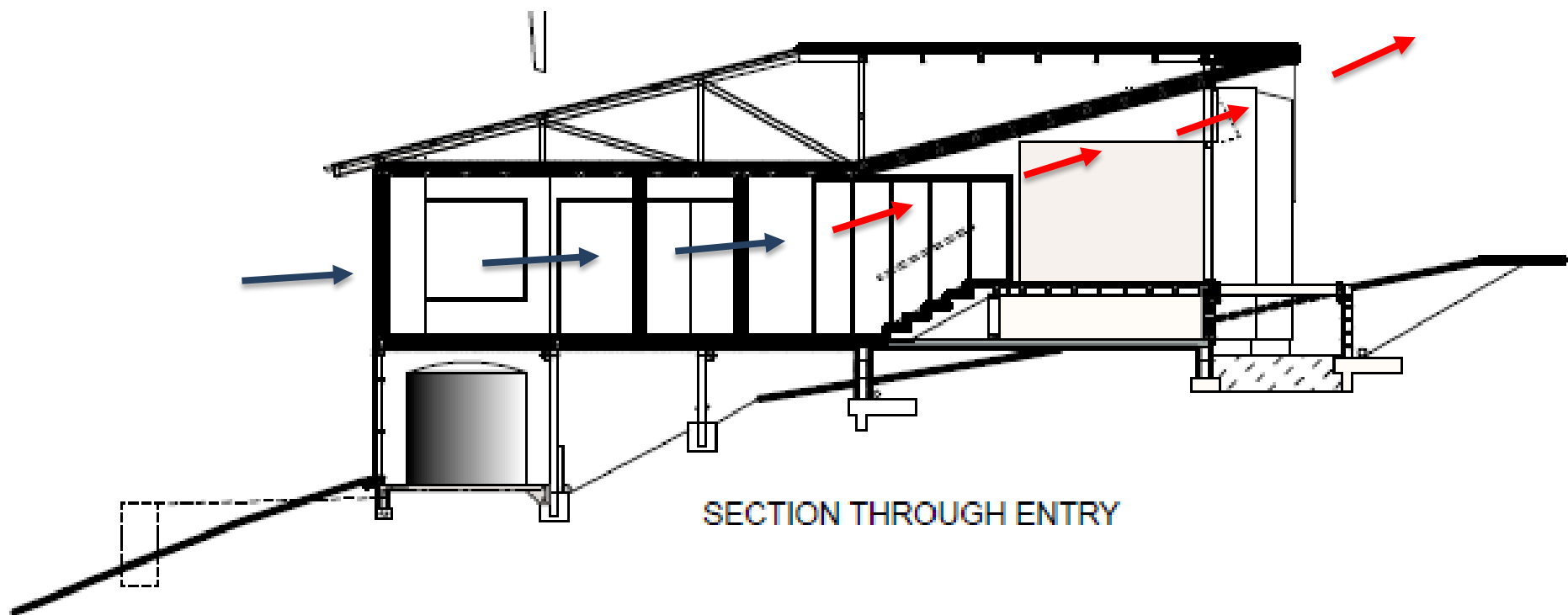


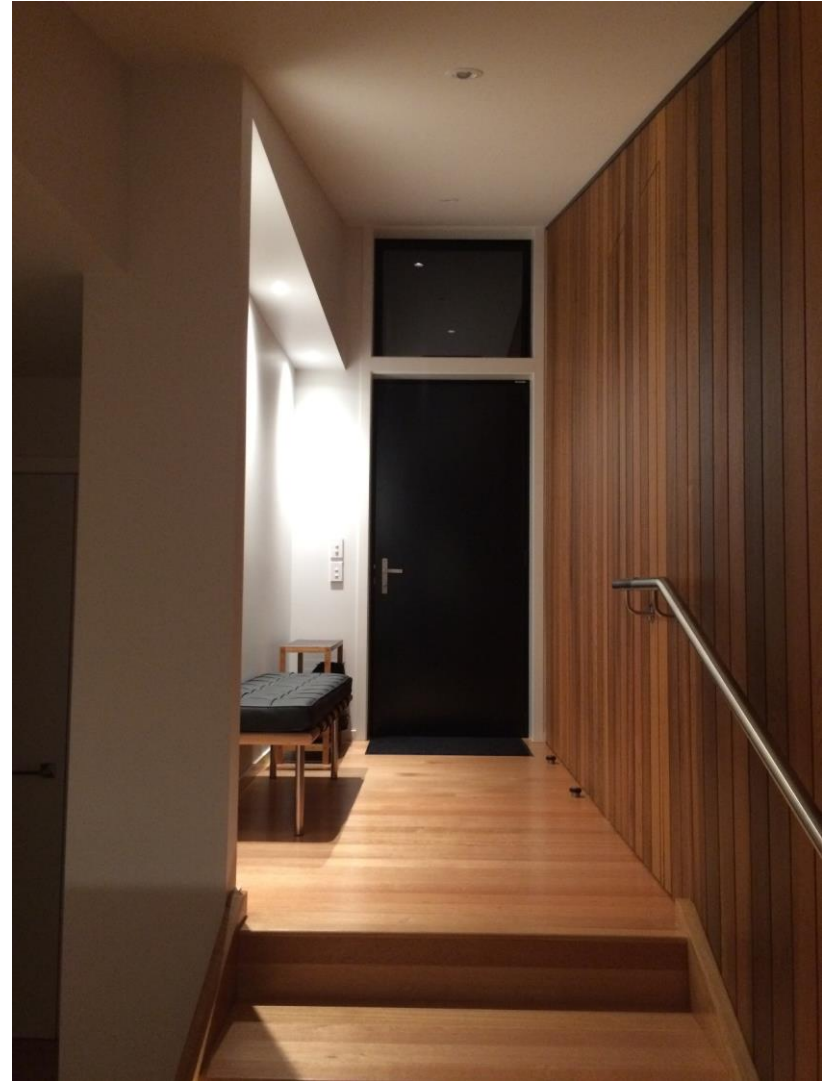
# Dry



Independent advice for a comfortable, efficient, healthy home

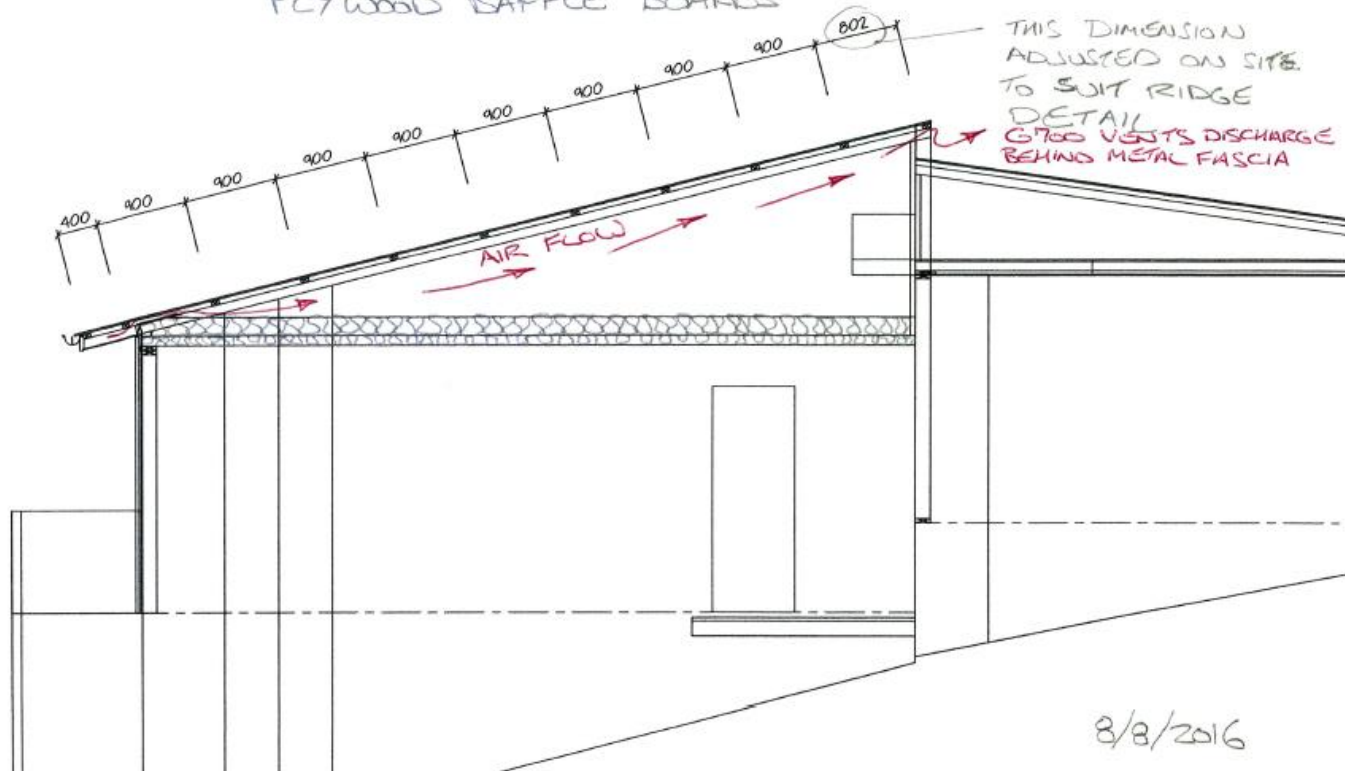
For more information  
[ecodesignadvisor.org.nz](http://ecodesignadvisor.org.nz)

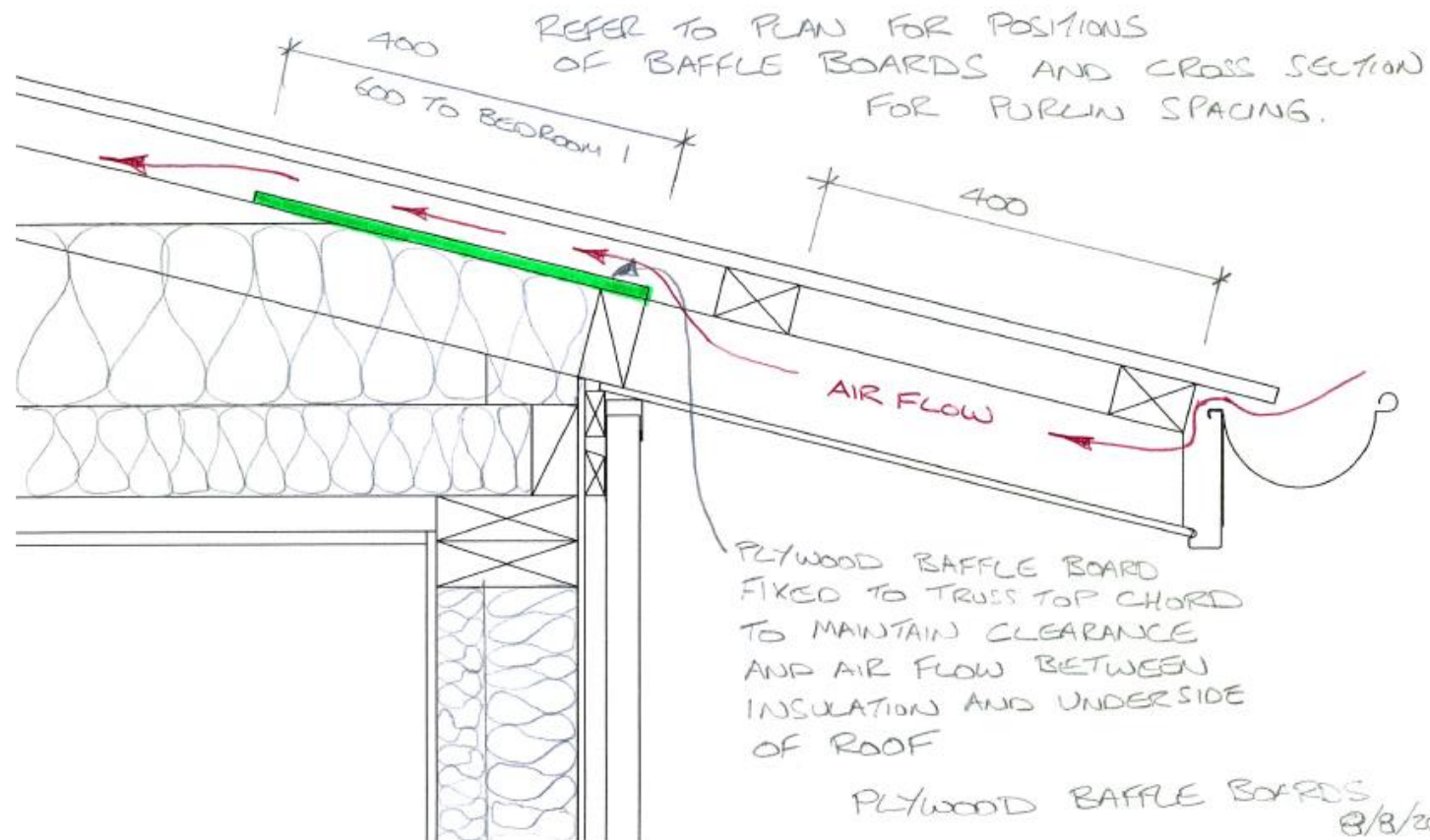




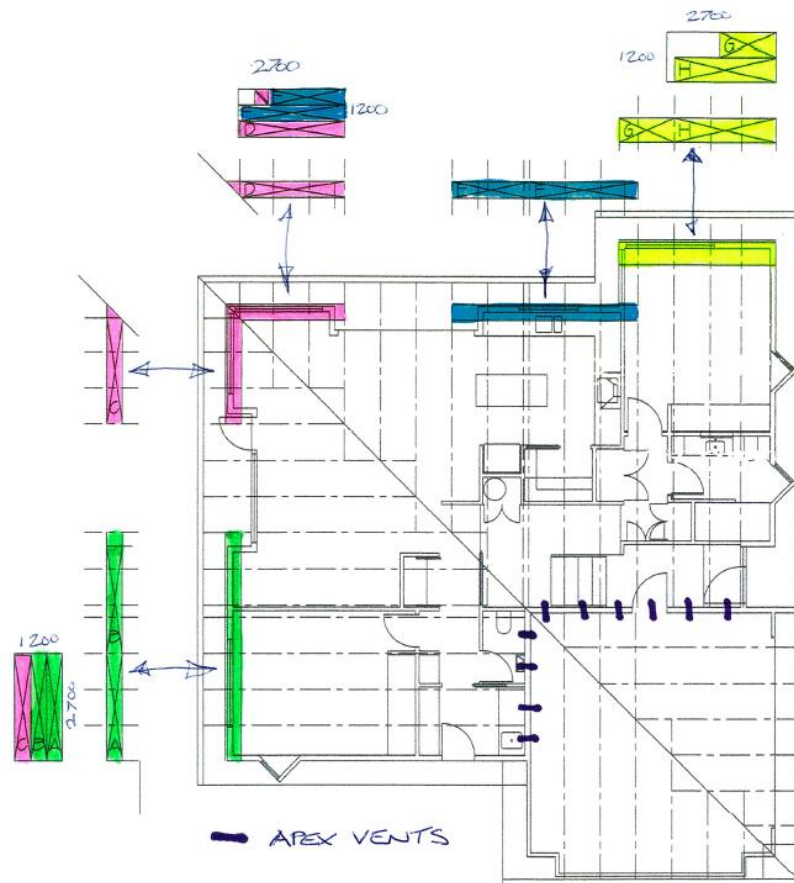


PURLIN SPACING TO ACCOMMODATE  
PLYWOOD BAFFLE BOARDS



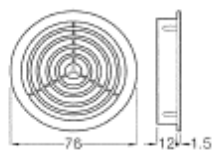






PLYWOOD Baffle Boards  
 CUT FROM 12mm H3.2 DD PLYWOOD  
 3 SHEETS 2700 x 1200 REQUIRED 8/8/2016













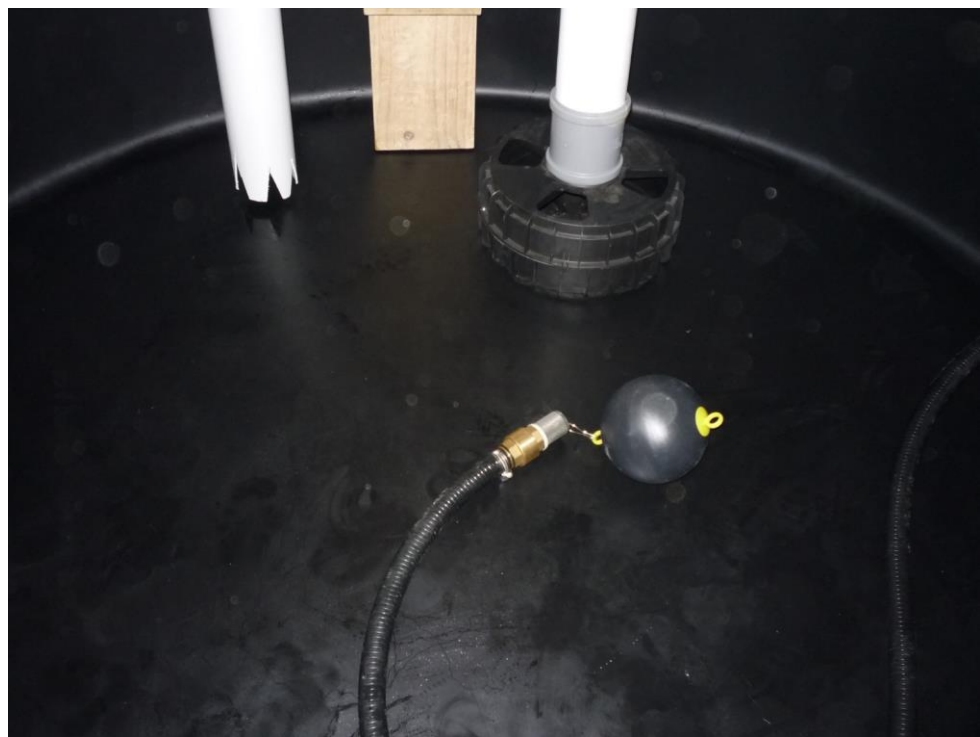
# Rain Harvesting



Independent advice for a comfortable, efficient, healthy home

For more information  
[ecodesignadvisor.org.nz](http://ecodesignadvisor.org.nz)

























**Yes we could have built a bigger house.**



**But on our budget, the quality would likely have been mediocre and the performance poor.**

**We chose to build a smaller house, of better quality and far better performance.**





Independent advice for a comfortable, efficient, healthy home

For more information  
[ecodesignadvisor.org.nz](http://ecodesignadvisor.org.nz)