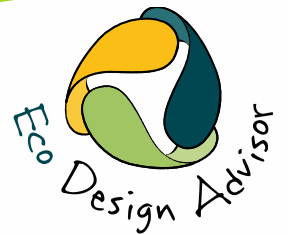


Eco Design Advisor

PowerPoint Template



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NZ Building Code

The Building Code is
the Minimum!



We need to address
H1



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NZ Building Code

Compliance Document for
New Zealand Building Code
Clause **H1**
Energy Efficiency – Third Edition

Prepared by the Department of Building and Housing

What does
H
stand for?



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Before you start

- Know your client, design to them NOT NZS 3604:2011



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Before you start

Number of users
Movement of occupants
Activities of occupants
Time of occupancy



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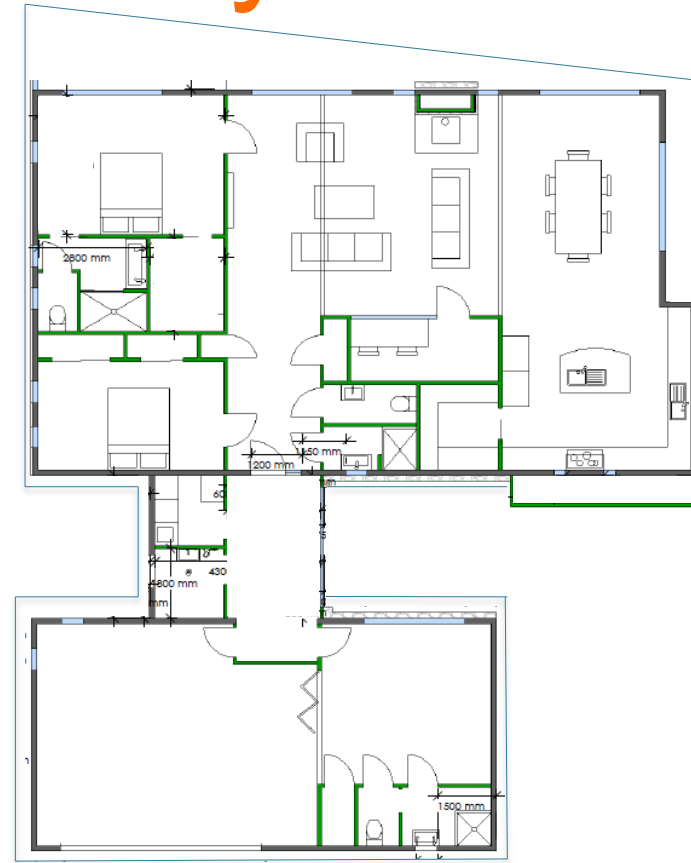
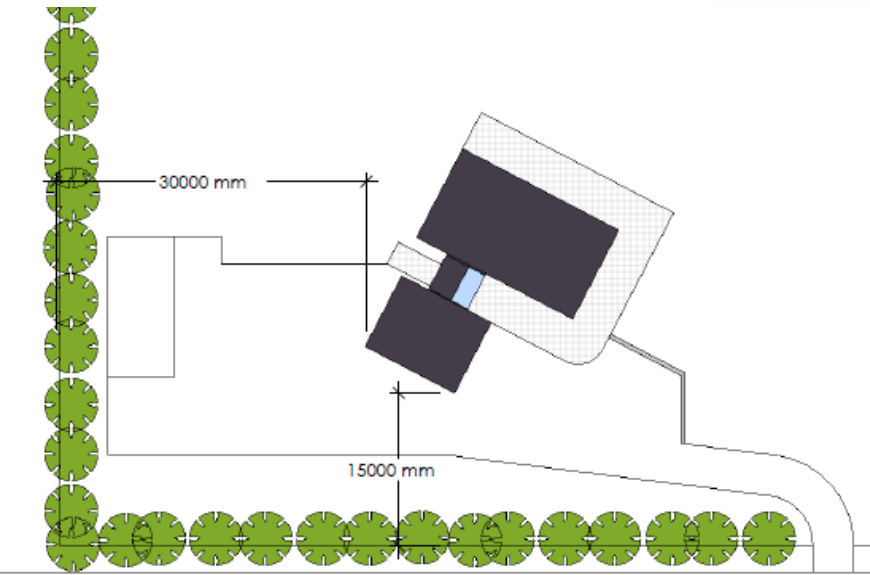
Before you start

Spend time on site,
Look around and get a
feel for the surroundings



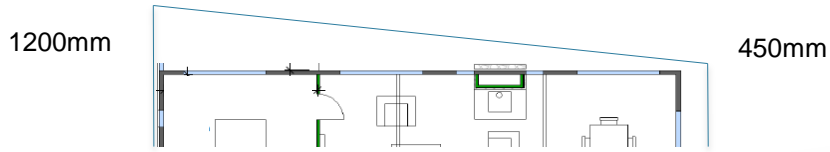
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Site and Layout

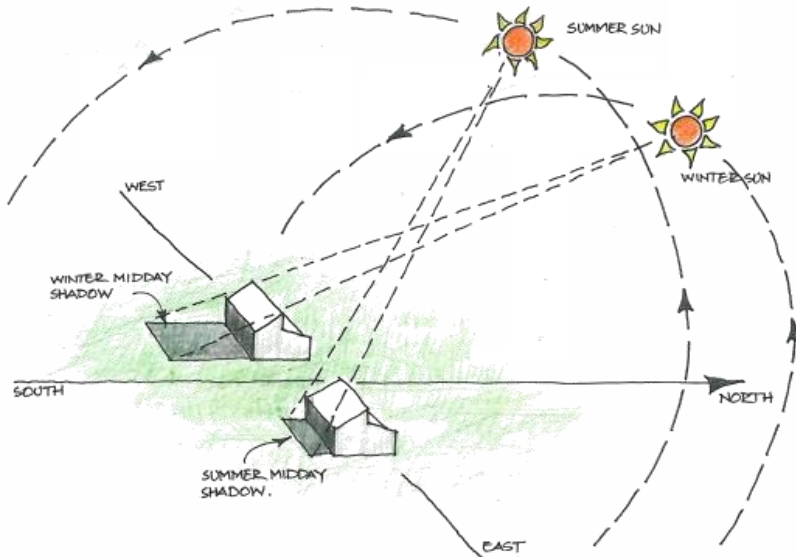


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Solar gain



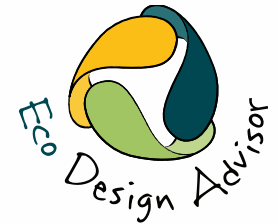
Eaves



Winter

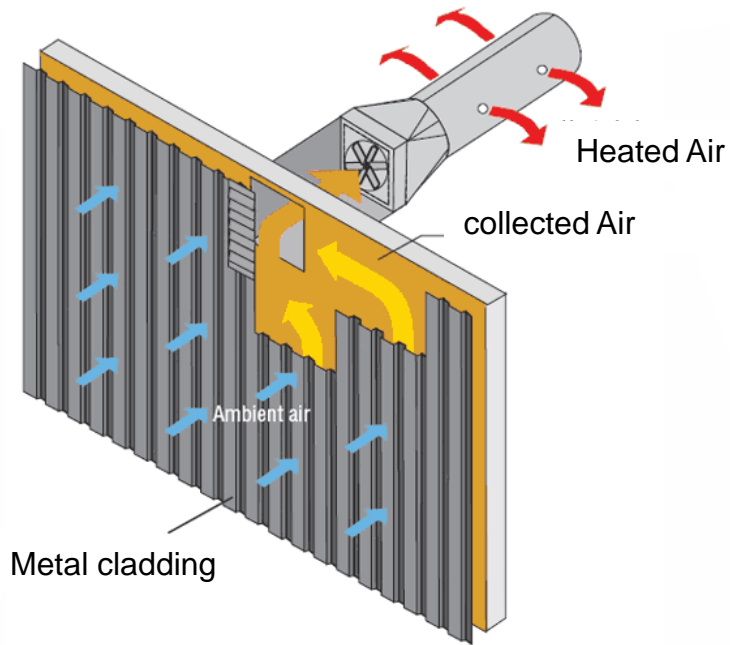


Summer



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Solar wall

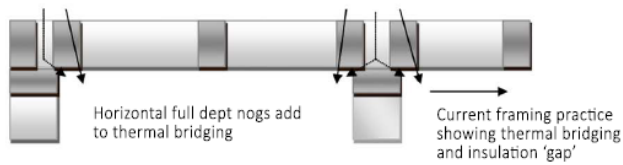


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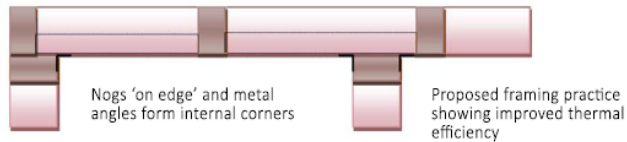
Framing

Current Framing Practice

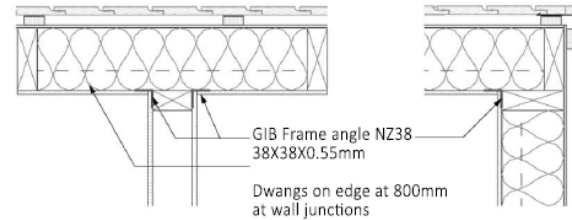
This literature challenges current framing practices and proposes an alternative, as illustrated in below image. The alternative method improves thermal efficiency and minimise joint imperfections commonly resulting from linings being fixed to multiple timber framing members which move independently with moisture changes or when the building is subjected to wind or earthquake forces.



Proposed Framing Practice



Wall Junction Details

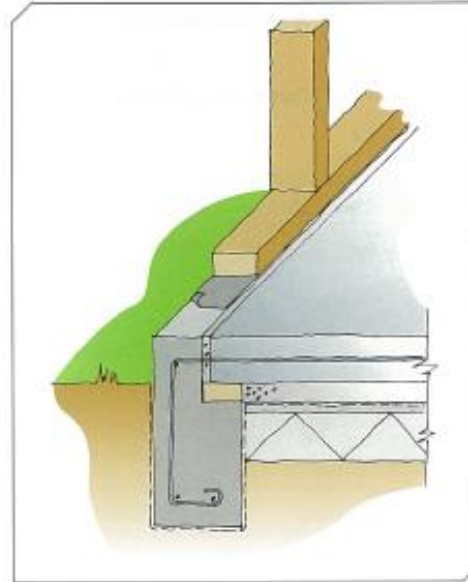
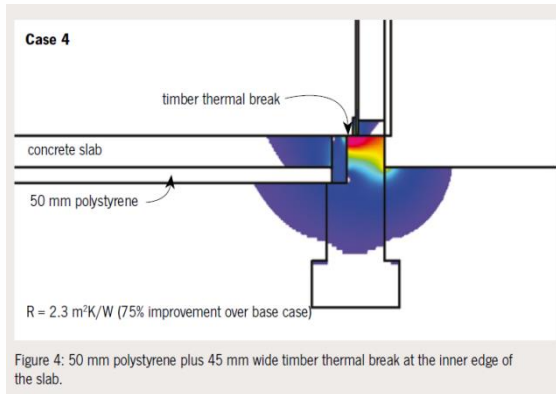
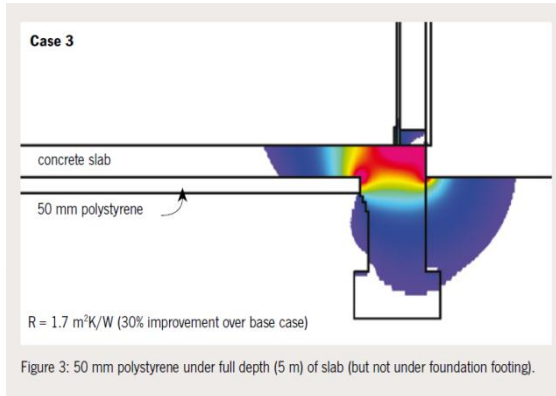


GIB Rondo Ceiling Battens & Wall to Ceiling Details



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Slab and Foundation



| Construction | Area/perimeter ratio | | | | | | |
|---|----------------------|-----|-----|-----|-----|-----|-----|
| | 1.3 | 1.9 | 2.2 | 2.5 | 2.8 | 3.1 | 4.0 |
| | Construction R-value | | | | | | |
| 140 mm stud, full cover 100 mm EPS | 2.3 | 2.7 | 2.9 | 3.1 | 3.3 | 3.5 | 4.2 |
| 90 mm stud, full cover 100 mm EPS | 1.9 | 2.2 | 2.3 | 2.5 | 2.6 | 2.8 | 3.2 |
| 140 mm stud, full cover 50 mm EPS | 1.8 | 2.1 | 2.3 | 2.4 | 2.6 | 2.7 | 3.2 |
| 140 mm stud, 1.2 m x 50 mm perimeter EPS | 1.6 | 1.9 | 2.0 | 2.2 | 2.3 | 2.5 | 2.9 |
| 90 mm stud, full cover 50 mm EPS | 1.5 | 1.8 | 2.0 | 2.1 | 2.3 | 2.4 | 2.9 |
| 90 mm stud, 1.2 m x 50 mm perimeter EPS | 1.4 | 1.7 | 1.8 | 1.9 | 2.1 | 2.2 | 2.7 |

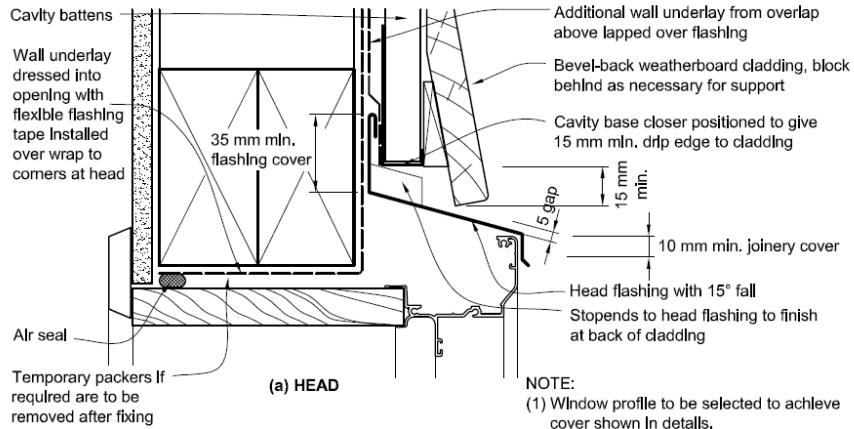
Notes

1. For dry sandy loam, multiply the construction R-value by 1.2
2. For wet or saturated clay or for areas with a high water table, multiply the construction R-value by 0.8
3. Expanded polystyrene (EPS) assumed to be grade S (thermal conductivity 0.042 W/mK)
4. Thermal break is 10 mm extruded polystyrene (XPS)



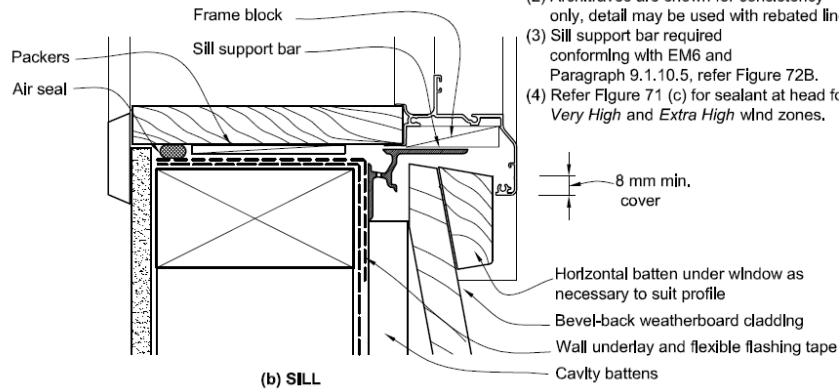
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Windows



(a) HEAD

- NOTE:
- (1) Window profile to be selected to achieve cover shown in details.
 - (2) Architraves are shown for consistency only, detail may be used with rebated liner.
 - (3) Sill support bar required conforming with EM6 and Paragraph 9.1.10.5, refer Figure 72B.
 - (4) Refer Figure 71 (c) for sealant at head for Very High and Extra High wind zones.

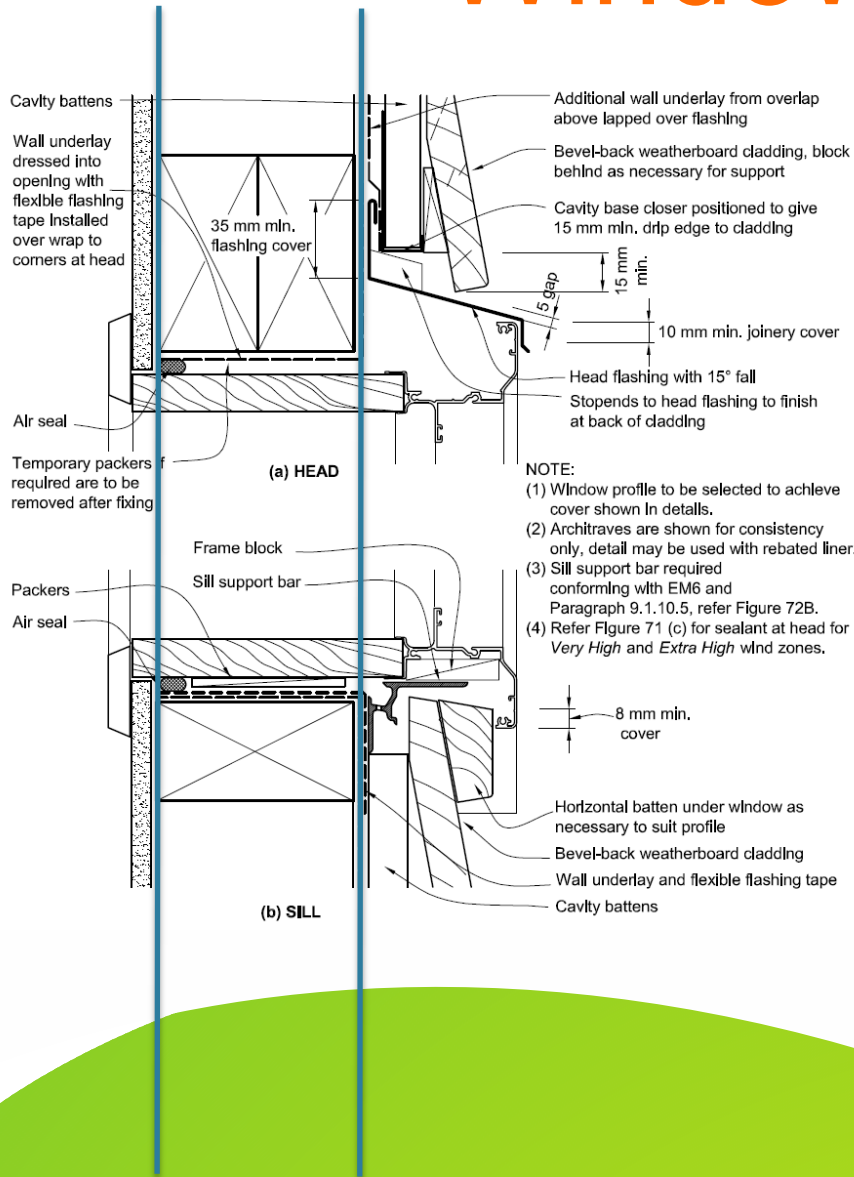


(b) SILL



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Windows

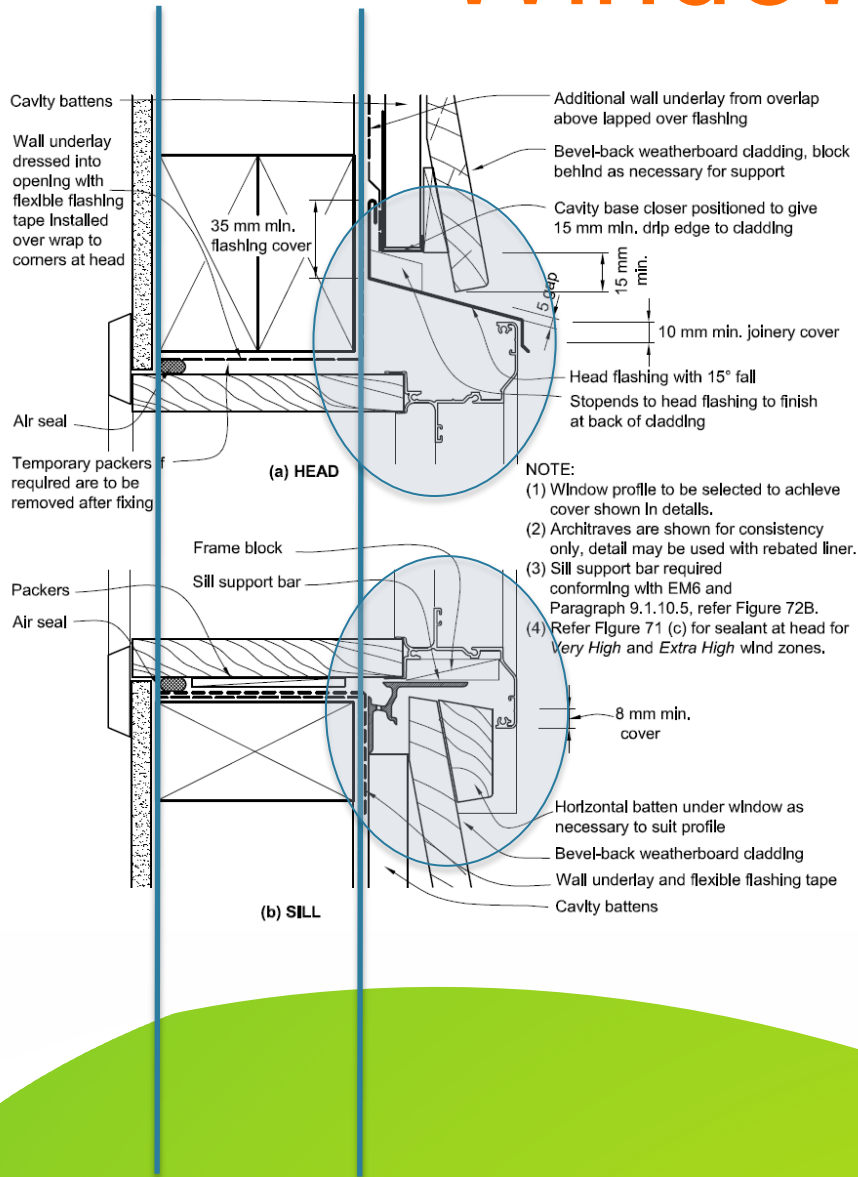


- NOTE:**
- (1) Window profile to be selected to achieve cover shown in details.
 - (2) Architraves are shown for consistency only, detail may be used with rebated liner.
 - (3) Sill support bar required conforming with EM6 and Paragraph 9.1.10.5, refer Figure 72B.
 - (4) Refer Figure 71 (c) for sealant at head for Very High and Extra High wind zones.



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Windows

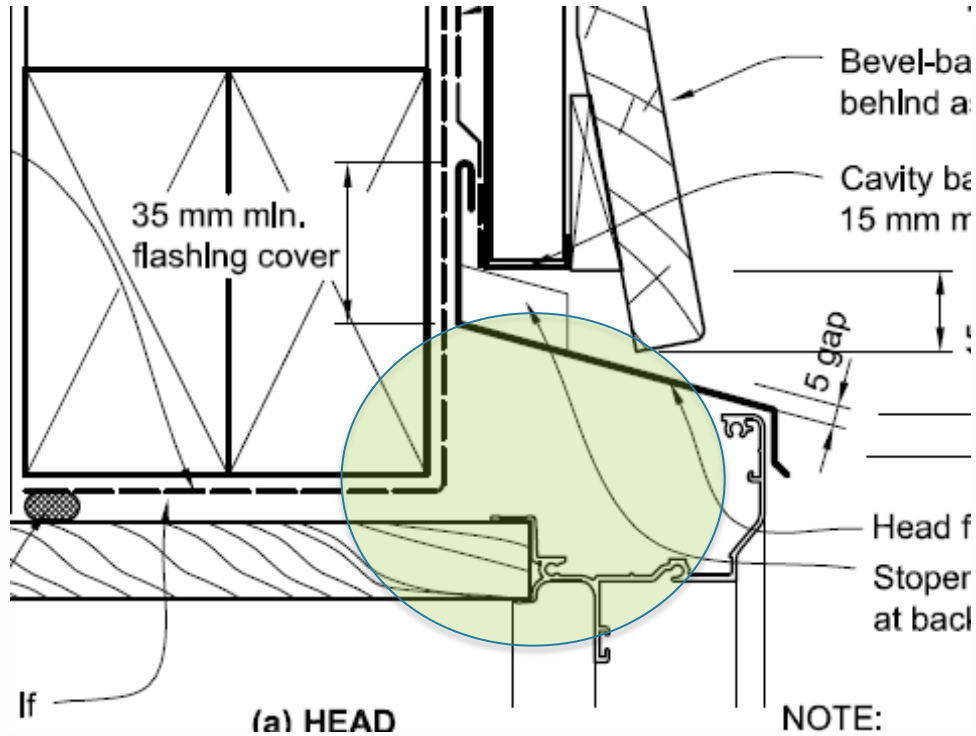


- NOTE:**
- (1) Window profile to be selected to achieve cover shown in details.
 - (2) Architraves are shown for consistency only, detail may be used with rebated liner.
 - (3) Sill support bar required conforming with EM6 and Paragraph 9.1.10.5, refer Figure 72B.
 - (4) Refer Figure 71 (c) for sealant at head for Very High and Extra High wind zones.



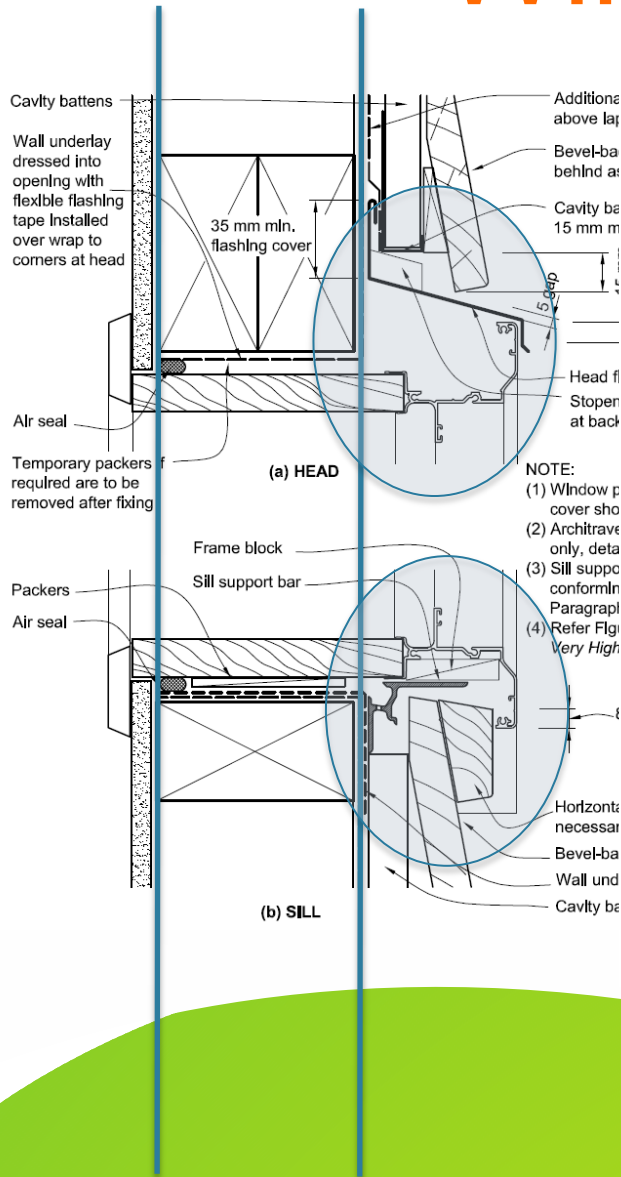
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Windows

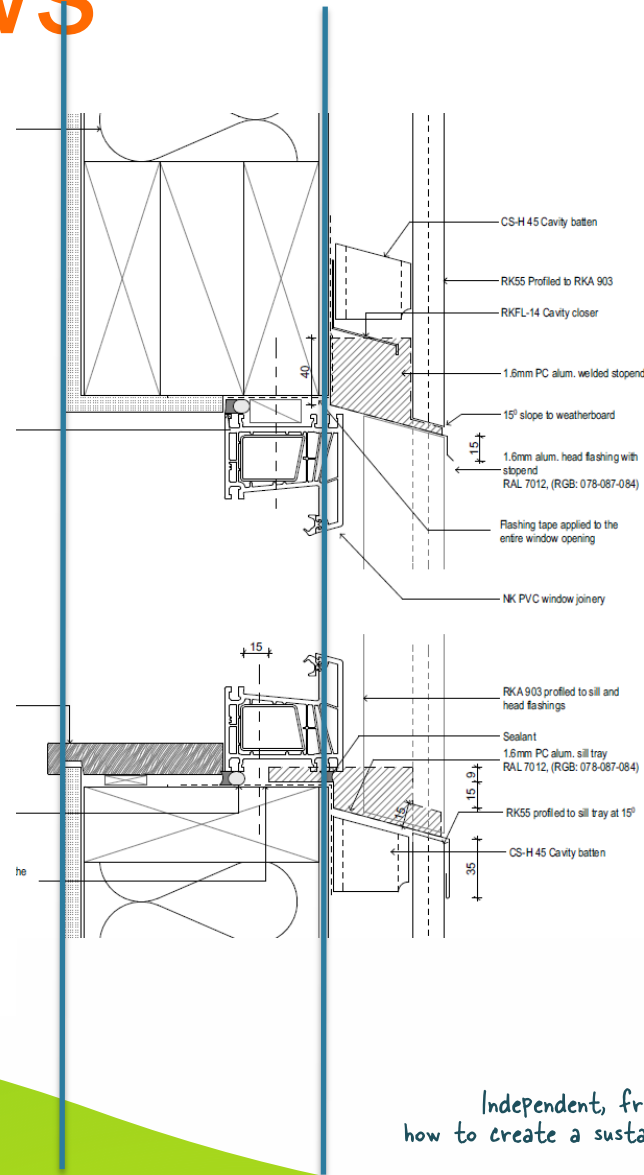


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Windows



NOTE:
 (1) Window p
 cover sho
 (2) Architrave
 only, deta
 (3) Sill supp
 conformln
 Paragrph
 (4) Refer Flg
 Very High



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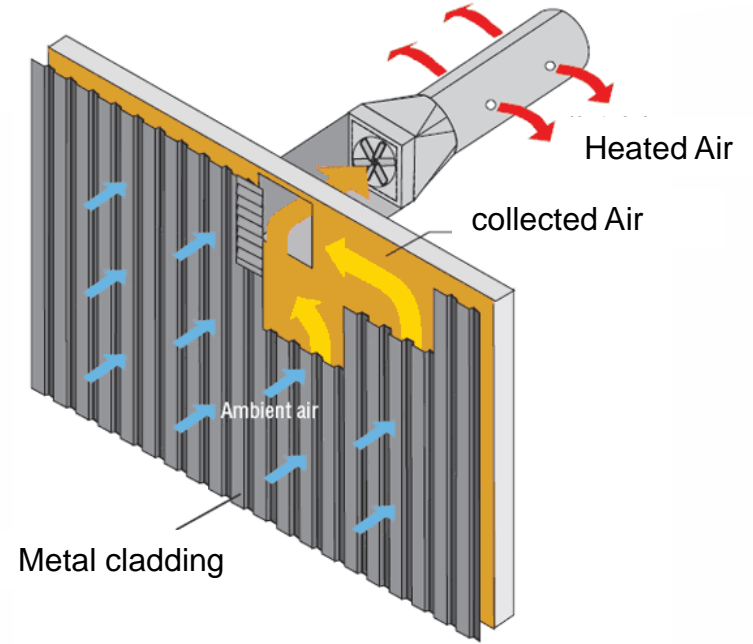
R values

| | Climate Zones 1 and 2 | Climate Zones 3 | Riverton house |
|---------------|-----------------------|-----------------|----------------|
| Roof | R 2.9 | R 3.3 | R 6.1 |
| Walls | R 1.9 | R 2.0 | R 4 |
| Floor | R 1.3 | R 1.3 | R 4 |
| Heated floors | R 1.9 | R 1.9 | R 4 |
| Windows | R 0.26 | R 0.26 | R 0.7 |



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Heating



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Solar PV



The house is to be made
Solar and Geothermal ready



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