WEATHERTIGHTNESS TIPS FOR WINDY SITES

Twelve simple construction tips can improve the weathertightness of buildings in windy situations.

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Wind can drive water into small gaps in buildings, creating weathertightness issues. However, this risk can be minimised by considering the direction of the prevailing winds when making decisions on the way some things are installed and the direction laps will face.

Laying roof cladding

1 Lay roofing sheets with laps away from the prevailing winds wherever possible to minimise the chance of wind driving water under the laps (see Figure 1). The same rule also applies to joints in ridge cappings. For hip cappings, however, the higher always laps over the lower.

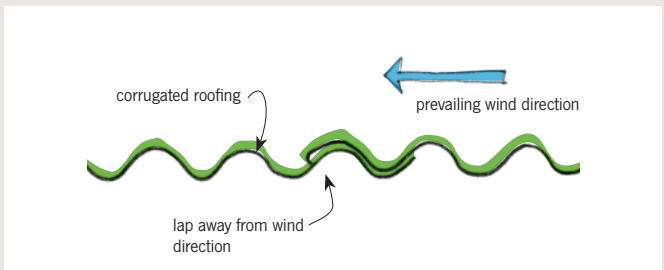

Figure 1: Lapping roof cladding.

Cladding

2 Install vertical shiplap so that the wind drives water over the laps and not into them (see Figure 2). Vertical board is not recommended for windy situations, but if the rest of the design is low risk, it could be used in very high wind zones and comply using the risk matrix.

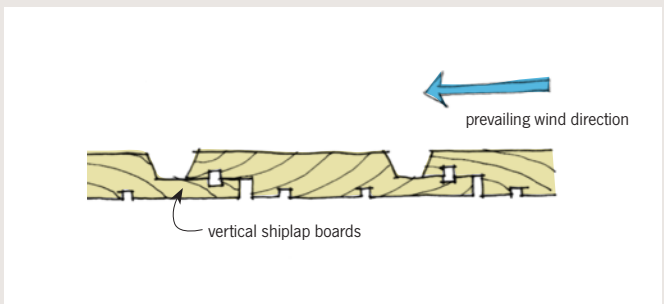

Figure 2: Lapping direction of vertical board cladding.

3 Protect cladding material scarfed joints from prevailing winds (see Figure 3). Note: Design to avoid these joints if possible by using full-length boards.

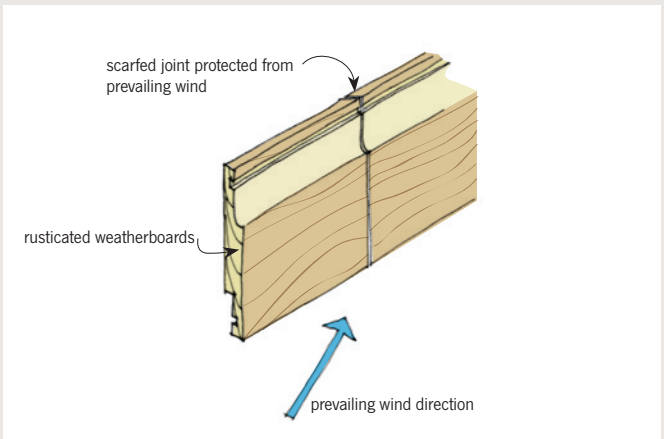

Figure 3: Direction of scarfed joints.

4 The order in which boxed corners are assembled is important, (see Figure 4). The correct lapping of the boards will minimise the joint's exposure to water penetration in windy locations.

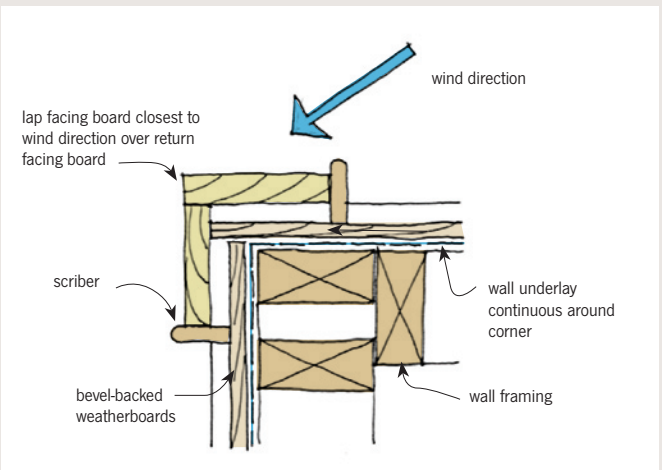

Figure 4: Lapping boxed corners (detail similar for cavity installations).

Fascia

5 An easy option to help protect fascia support framing is a strip of wall underlay fastened around external and internal corners (or it could be a flashing) and behind mitre joins in timber fascia (see Figures 5a and b). These mitres are often neglected, and if they open up they allow water into the supporting framing, which can track across the soffit to damage wall framing. Consider the way mitres in fascias are constructed on gable ends. Be sure to set up the mitres so that water running down any fascia with a join is directed out of the mitre, not into it – higher fascia boards should lap over lower fascia boards.

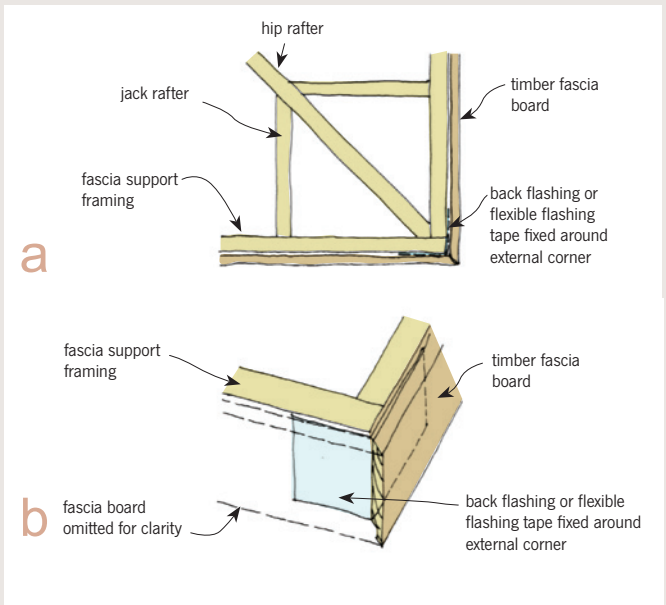

Figure 5: Roof/fascia board framing in plan (a) and isometric view (b).

6 Think about the prevailing wind direction when setting out where the joins in the run of the fascia will occur. Lap the mitres so the prevailing wind will push water over the mitre, not into it (the same as for weatherboards).

Doors

7 Always specify weather seals to the jambs of doors in exterior walls on windy sites.

8 Would the door be less vulnerable to leaks if it opened out or opened in? Outward-opening doors get pushed harder into the jamb seals as the wind increases (see Figure 6a). Inward-opening doors are usually only held near the centre by the latchset and are pushed away from their jamb seal, allowing water to be pumped through the door/jamb gap (see Figure 6b).

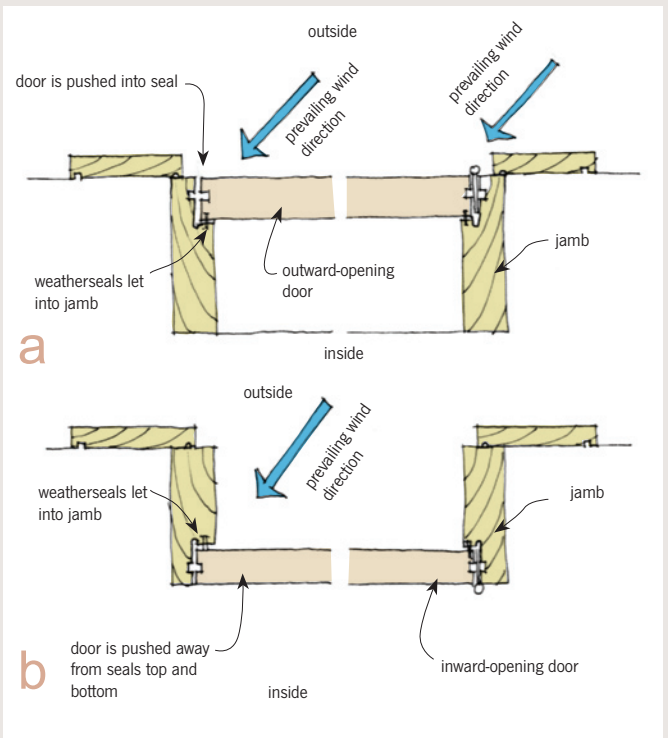

Figure 6: Door opening outward (a) and inward (b).

9 On exterior sliding doors and windows, the outside slider should lap the inside slider so the wind drives water over the lap, not into it (see Figure 7). →

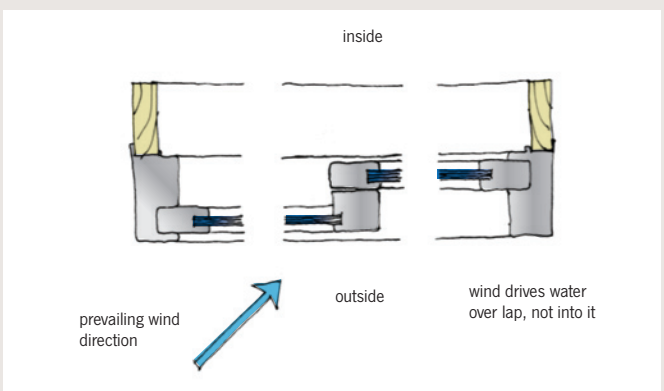

Figure 7: Sliding door and window lapping.

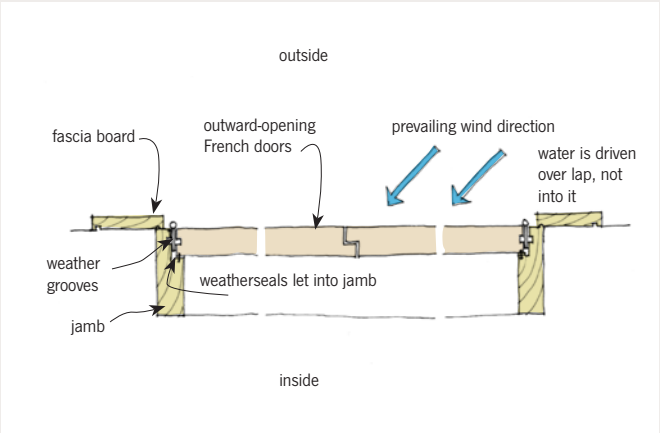

Figure 8: French door opening.

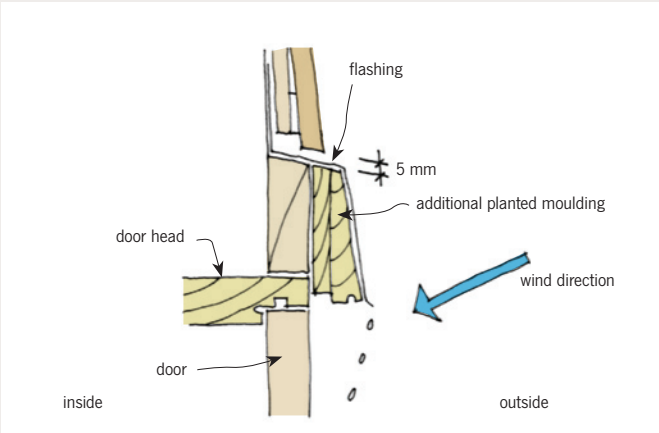

Figure 9: Additional weathering protection for French doors on exposed sites.

FRENCH DOORS

10 When ordering French doors (opening out as a pair), decide which door will be the lead door (first opening) after considering the prevailing wind direction. These doors will be rebated at the leading edge, and which way they lap at the rebate can make the difference between wind-driven water being blown over or into the lap (see Figure 8). Always specify seals to the jamb rebates.

11 Exterior French doors (opening out) in windy situations require additional weathering details at the head. A planted timber moulding with flashing over it moves the drip line off the facing and further out (see Figure 9). Then, when water drips or runs off and is blown back at the door, it has dropped below the critical door head to door clearance gap.

Windows

12 In timber awning and top-hung windows, a weak point in windy areas is where the top of the sash closes to the head of the window frame. Water runs down the facing and gets blown back under the facing into the clearance gap between the top of the sash and the head of the window frame. Provide a barrier at this point:

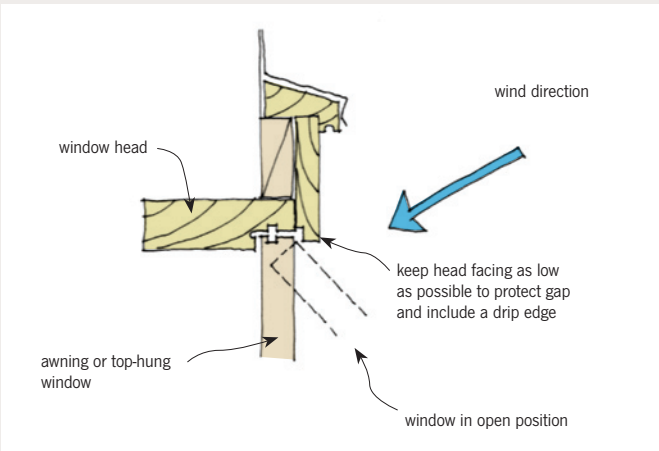

Figure 10: Protecting window head from water ingress.

- For awning windows, drop the head facing to cover the gap (see Figure 10). Check the action of the window stays for clearance – they usually drop down in the opening then rotate out.
- For top-hung windows, use the French door head detail.