

## **BUILDING MATTER** – Roof drainage design using a box gutter system

### **PROJECT ADDRESS**

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### **SCOPE**

This PBDB relates to the design of a box gutter system forming part or all of the roof drainage system for the subject property.

Roof drainage is regulated in the states and territories of Australia in different ways. The NCC provides Deemed-To-Satisfy solutions for box gutter systems using the following acceptable construction manual, applicable in all states and territories:-

*AS/NZS 3500.3 Plumbing and drainage Part 3: Stormwater drainage*

Additionally, the following handbooks are also applicable in some states and territories:-

*SA HB 39 Installation code for metal roof and wall cladding*

*SAA/SNZ HB114 Guidelines for the design of eaves and box gutters*

### **PROBLEM** - DfS box gutter solution is not suitable for roof layout and / or is not aesthetically acceptable

Available DfS box gutter solutions provided in AS/NZS 3500.3 ('3500.3') are limited to the following three box gutter overflow devices only:

- Open fronted rainhead in accordance with Figure 3.7.3 (a) of 3500.3
- Sump / side overflow device in accordance with Figure 3.7.3 (b) of 3500.3
- Sump / high capacity overflow device in accordance with Figure 3.7.3 (c) of 3500.3

Further information on DfS box gutter systems is provided in the VBA's Plumbing Practice Note RP-02: Box Gutters. Whilst this is a Victorian publication, it provides a general overview of the available box gutter overflow devices in 3500.3.

[https://www.vba.vic.gov.au/\\_data/assets/pdf\\_file/0009/135684/RP-02-Box-Gutters.pdf](https://www.vba.vic.gov.au/_data/assets/pdf_file/0009/135684/RP-02-Box-Gutters.pdf)

The available DfS solutions for box gutter overflow devices provided in 3500.3 are very limiting with respect to the design of roof drainage, and the following is noted in particular:

- The rainhead in accordance with Figure 3.7.3 (a) of 3500.3 is generally not aesthetically acceptable because it is open fronted
- None of the 3500.3 devices permit a change in direction of box gutters
- Further to the above, clause 4.7.1 of 3500.3 states 'Gutters shall not be jointed along the length to increase the gutter depth'. However, this may be necessary in order to achieve a change in direction.
- The Sump / high capacity device is complicated to fabricate

Alternative proprietary roof drainage products will be considered for suitability for this project under a Performance Solution.

**KEY STAKEHOLDERS** (strike out whichever is not applicable)

**Building owner / building owner's representative**

Name: \_\_\_\_\_

Company: \_\_\_\_\_ Phone No: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**Roof drainage designer - Civil / Hydraulic Engineer or Roof plumber**

Name: \_\_\_\_\_

Company: \_\_\_\_\_ Phone No: \_\_\_\_\_

Registration Category: \_\_\_\_\_ Registration # \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**Building surveyor / Building certifier**

Name: \_\_\_\_\_

Company: \_\_\_\_\_ Phone No: \_\_\_\_\_

Licensing authority: \_\_\_\_\_ Registration # \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**Architect / Building Designer**

Name: \_\_\_\_\_

Company: \_\_\_\_\_ Phone No: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**Builder**

Name: \_\_\_\_\_

Company: \_\_\_\_\_ Phone No: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**Other (specify)**

Name: \_\_\_\_\_

Company: \_\_\_\_\_ Phone No: \_\_\_\_\_

Role in project: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_