Stormwater checklist: for buildings and works

This checklist is a handy reference guide to support compliance with stormwater management requirements for residential and non-residential buildings and works, under relevant clauses of the Victoria Planning Provisions.

This includes buildings and works covered by 53.18-6 (Site management objectives), and relevant stormwater buildings and works provisions under Clauses 55.03-4 (Permeability and stormwater management objectives), 55.07-5 (Integrated water and stormwater management objectives) and 58.03-8 (Integrated water and stormwater management objectives) under the Victoria Planning Provisions (VPP).

The development application should consider the information required by your approval authority to satisfy requirements, including but not limited to the items in the checklist below. Please note that the requirements listed below may differ for different development types and from council to council.

Some councils may ask for a site layout plan showing the Water Sensitive Urban Design (WSUD) treatment systems proposed, demonstrating that there is space to accommodate such treatment and that it satisfies all VPP objectives and standards. The design detail for each WSUD treatment system may then be a requirement of permit if a planning approval is granted.

Conversely, other councils may require design detail and supporting information as part of the application assessment process (before a decision on the outcome of the application is determined).

It is recommended that you check the requirements with your relevant local council.

A: Proposed development description

❑ **A1:** Describe the proposed development, i.e. describe the land use, anticipated tenancy, buildings and works, number of car parking spaces, expected number of occupants, etc.

B: Site layout plan, catchment areas and WSUD treatment systems

❑ **B1:** Provide a site layout plan showing all building roofs and covered areas, pervious (unsealed) surface areas and impervious (unsealed) surface areas with dimensions. These details must be consistent with the plans and other documents lodged with the planning application.

❑ **B2:** Show the site boundary, dimensions, and total site area on the site layout plan.

❑ **B3:** Show the location of the Legal Point of Discharge (LPOD) on proposed plans. This is generally requested from the council and should be to the municipal drainage system with direction on how the connection is to be made, e.g. connect to underground pipe, to gutter, etc. Show all drainage pipe infrastructure on a plan. The specific depth of LPOD is required only for systems which include an underground drainage outlet component. Generally, the developer (not Council) needs to confirm the depth of the LPOD.

❑ **B4:** Specify the area draining to each downpipe, rainwater tank and LPOD (includes both impervious and pervious areas). Arrows can be used to indicate the direction of flow for impervious surfaces. All impervious areas are to drain to either a WSUD treatment system or directly to the legal point of discharge. The designer is to group impervious and pervious areas into internal drainage catchment areas.
Definitions: Impervious areas include roofs, covered areas and sealed surfaces. Pervious

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areas include unsealed areas such as garden beds and lawns.

- ❑ **B5:** Show the location, type and surface area (m^2) of the proposed WSUD treatment systems on a plan, including how each internal catchment area to be treated will be connected to a WSUD element, e.g. roof to rainwater tank, driveway to bioretention raingarden. Show how piped connections will be made within the site and to the LPOD. If impervious areas are not being treated by a WSUD element, clearly annotate this.
- ❑ **B6:** Indicate the expected volume (in litres) of on-site stormwater reuse and how this has been calculated (e.g. the dwelling will have an expected occupancy of 3 persons based on there being 3 bedrooms, and an estimated 20 litres of water per day, per person will be used for toilet flushing).
- ❑ **B7:** If relevant to the development type, identify potential toxicants generated by the business, where they will be located on the premises, and what structural isolation is required to prevent the runoff draining to a WSUD treatment system or stormwater drain. *Note: this is more common for industrial and commercial premises.*
- ❑ **B8:** Describe how the stormwater management design contributes to local cooling, improving local habitat outcomes and providing attractive/enjoyable spaces.
- ❑ **B9:** Provide a table summarising the internal drainage catchment areas shown on the site layout plan, the size of the catchment area, the percentage of the site this represents and information about the corresponding WSUD treatment system. The table should equal 100% of total site area and 100% of the subject site needs to be accounted for. The information should correspond to the information shown on the site layout plan.

C: Modelling and compliance

- ❑ **C1:** Compliance summary with objectives outlined in the relevant Clause (53.18, 55.03, 55.07 or 58.03).
- ❑ **C2:** Provide relevant stormwater treatment performance modelling (e.g. MUSIC, STORM or Insite Water, as appropriate and acceptable to Council) information including:
  - ❑ A STORM report with a minimum 100% rating or MUSIC (or other acceptable modelling) report demonstrating the proposal meets best practice environmental management (BPEM) performance for urban stormwater being:
    - ❑ Total suspended solids (TSS): 80% retention of the typical urban annual load
    - ❑ Total phosphorus (TP): 45% retention of the typical urban annual load
    - ❑ Total nitrogen (TN): 45% retention of the typical urban annual load
    - ❑ Litter: 70% retention of the typical urban annual load.
  - ❑ A summary of the modelling input parameters used for the proposal, including each WSUD treatment system and rainfall data/location.
  - ❑ As relevant, screen print of model analysis (e.g. STORM report) or a schematic of the model (e.g. for MUSIC).
  - ❑ If using MUSIC, the applicant should submit a copy of the MUSIC file (.sqz) used to generate treatment performance and the model file must be checked using the free online MUSIC auditor tool (https://www.musicauditor.com.au/) .
- ❑ **C3:** Demonstrate design minimises impact of chemical pollutants and other toxicants (as relevant).

D: Functional design consideration

Note: This section may be required for inclusion with the planning application, or else the information is to be provided as a condition of permit. Check with your council for advice on which applies.

Note: Under the relevant Clause (53.18, 55.03, 55.07 or 58.03) all applications must be accompanied by details of the proposed stormwater management system,

including drainage works and retention, detention and discharges of stormwater to the drainage system.

- ❑ **D1:** Plan from Checklist item B or amended plan required by permit.
- ❑ **D2:** Sectional view of each WSUD treatment showing indicative levels (e.g. a raingarden must show the depth of the various soil profile layers, i.e. filter media, etc.).
- ❑ **D3:** Size of treatment elements, e.g. tank volume, raingarden overall width and length.
- ❑ **D4:** Details of pipe connections between any rainwater tank and end uses, such as toilet/s, laundry, irrigation etc.
- ❑ **D5:** Relative Levels (RLs) for each WSUD treatment including surface level, extended detention depth, filter layers and depth, under drain system, and connection to LPOD.
- ❑ **D6:** Plant species and planting densities to be used in any vegetated treatment systems, in accordance with best practice requirements (e.g. Melbourne Water recommends 6-10 plants/m^2 in a raingarden).
- ❑ **D7:** For vegetated treatment systems, management of the interface between the WSUD treatment and immediately surrounding areas, e.g. car parking spaces, walkways, lawns, so that the WSUD elements and public safety are protected.

E: Site management plan

- ❑ **E1:** A statement outlining the environmental protection measures to protect the stormwater system during construction (e.g. sediment, dust, waste, chemicals management).
- ❑ **E2:** Site management measures shown on a plan which is suitable for endorsement.

F: Asset maintenance program

Note: This section may be required by your council. Check with your council for further advice on what is required. It is recommended the following is submitted:

- ❑ **F1:** A clear diagram with labels to identify key elements to be regularly inspected and maintained.
- ❑ **F2:** A checklist summarising key treatment elements, and inspection and maintenance tasks and frequency.
- ❑ **F3:** Outline of who is going to own and maintain the WSUD assets and the associated costs (i.e. future tenants or owners, a body corporate, etc.).

Assessing appropriateness of ongoing maintenance arrangements is critical in ensuring continued function of stormwater management assets.

It is suggested property owners record the location and details of their buried on-site stormwater management assets and attach it to property title documents. Councils should also consider recording information about the location of buried stormwater infrastructure on private land where required as part of a planning permit, to support future asset management and/or enforcement.

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