STORMWATER DRAINAGE INFORMATION SHEET

GENERAL REQUIREMENTS

All developments within the City of Melville (*the City*) are required to provide on-site stormwater drainage within their lot boundaries. Stormwater management needs to be designed such that each lot manages and disposes of stormwater without impacting neighbouring lots. A stormwater drainage plan must be approved by the City for all developments.

The stormwater disposal system may vary depending on the site conditions; however, the following are the City's preferred stormwater disposal systems:

- On-site disposal via soakwells
- On-site disposal via underground and/or above ground tanks for re-use
- Deep aquifer recharge, suitable for large developments or sites with high water tables

STORMWATER DISPOSAL METHOD

On-Site Disposal

Within the City of Melville, most developments are suitable for on-site disposal of stormwater via soakwells. The capacity of the soakwells can be determined using the calculations below.

Off-Site Disposal (Connect to the City's Drainage System)

The City of Melville ***does not permit*** direct connection to the City's stormwater drainage networks.

GENERAL SUBMISSION GUIDELINES

1. All Development plans submitted shall include the following minimum key drainage details within a site plan:
   - 1.1 Existing ground levels or contours
   - 1.2 Proposed levels of paved or concrete areas
   - 1.3 Details of proposed roof and pavement drainage disposal systems
   - 1.4 Size (depth & diameter) and locations of all soakwells
   - 1.5 Size and location of all proposed stormwater pipes

2. The following *General Conditions* shall apply for all Developments:
   - 2.1 All stormwater shall be retained and disposed of on site
   - 2.2 All soakwells installed in paved or concrete areas shall be provided with trafficable lids and made accessible for maintenance purposes
   - 2.3 Soakwells shall be no closer than one (1) metre to a footing or boundary
   - 2.4 All soakwells shall be sourced from an accredited supplier

2.5 All soakwells installed within flexible pavement areas (bitumen or brick paving) shall be provided with an appropriate base to prevent any subsidence of the well liners

2.6 It is the owner's responsibility to regularly clean and maintain on-site drainage systems to ensure its ongoing functionality

2.7 Cut-off drains shall be installed between the driveway and crossover and connected to the internal stormwater drainage disposal system for all lots above road level

3. The following Design Conditions shall apply for all Developments:

3.1 All drainage systems designed for commercial, industrial & mixed-use multi-level developments, including residential below road level, shall be certified by a suitably qualified engineer (registered with Engineers Australia), post construction.

3.2 The appointed engineer shall amongst other design criteria, take into account the lot geographical location, soil geotechnical conditions and applicable critical rainfall intensities in the sizing of the appropriate devices.

3.3 The design and installation of the systems shall conform to the requirements of the Building Code of Australia (BCA) and the Australian Standard (AS 3500)

3.4 The City recommends the use of the following **minimum Design Criteria** for the sizing of all water retention devices. Any deviation thereof, will need to be supported by a Certificate of Design Compliance by a registered professional engineer:

a) Commercial, industrial & mixed-use multi-level developments shall have all soakwells and/or water retention devices designed to cater for a recommended minimum 1:100 Average Recurrence Interval (ARI), 24 hours duration storm event

b) Residential developments located below road level shall have all soakwells and/or water retention devices designed to cater for a recommended minimum 1:100 Average Recurrence Interval (ARI), 24 hours duration storm event

c) Residential developments (single & double storey units only) located above road level shall have all soakwells and/or water retention devices designed to cater for a recommended minimum 1:20 ARI, one (1) hour duration storm event

CALCULATING DRAINAGE CAPACITY

All developments are required to provide drainage infrastructure within their lot boundary. The required stormwater drainage capacity can be calculated using the following:

<u>General Residential</u>

- Where an Overland Flow Path is provided, the development shall manage stormwater for a 1 in 20 year Average Recurrence Interval (ARI), for a one (1) hour time duration

- For a 1 in 20 year storm event, a drainage coefficient of 0.034 can be multiplied by the impervious area of the lot. Where lots are less than 300m² in area, the entire lot area shall be used to calculate the required capacity
- Where **No** Overland Flow Path is provided, especially residential lots below road level, the development shall manage stormwater for a 1 in 100 year Average Recurrence Interval (ARI), for a 24 hours' time duration

Commercial, Industrial and Mixed-Use Multi Level Developments

- All development shall manage stormwater for a 1 in 100 year Average Recurrence Interval (ARI), for a 24 hours' time duration

In general, where a development is required to provide for a 1 in 100 year storm event, a certified stormwater management plan shall be required that has been designed by suitably qualified engineer as accredited by Engineers Australia (EA).

An Overland Flow Path is considered as the provision of a 300mm clearance from the road level to the lot level, as per the Stormwater Management Manual for Western Australia.

For further information, please contact the City of Melville's Senior Design Engineer on 9364 0681.