



## Mitigation of Risk, Creation of feature: Simpson Street Stormwater Management

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### *Biography:*

Ronak is a civil engineer has over 15 years of experience in several fields such as design of hydraulic structures including spillway, bottom outlets and surge tank, design of drainage system of roads, rail and land developments and hydraulic design of bridges at river crossing.

Ronak is passionate about integrating strong engineering solutions and sees her technical knowledge as one of her key assets in helping to provide creative and innovative solutions to drainage projects. Ronak is particularly interested in developing solutions that become community assets and enhance the landscape.

She is currently working in Calibre Consulting, passionate to find a sustainable solution to improve the urban environment as well as the nature.

Ronak was the design manager of the Simpson St Stormwater project and worked closely with council and relevant stakeholders in the delivery of this project.

The Simpson St Stormwater Project typifies the new frontier in Green Infrastructure (GI), creating systems that are multifunctional while maximising urban ecosystem services (flood protection, water supply for irrigation, stormwater management, capacity building and jobs production, community and aesthetic enhancement). This project includes upgrade of drainage infrastructure and the construction of a Retarding Basin within the middle of the Warrnambool Racecourse. Some other unique elements include design of a low maintenance system that has low maintenance taking into account potential accessibility issues.

The primary system including pipework, sediment basin, highflow bypass, sump and retarding basin have been designed to cater for up to 10% AEP. Higher flowrates, will pass through Tozer Road channel at east side of the Racecourse.

The whole system which lies within and adjacent to the Warrnambool racecourse and is designed to minimise maintenance due to potential accessibility issues with the racecourse hosting large events during spring and summer. This paper specifically looks at ways in which the scheme has been designed to minimise maintenance. Specific controls include:

- Emergency weir at side of the Sediment Basin will divert the flow to highflow bypass channel
- Junction pit at the end of main trunk will release the flow up to 3 EY towards the Sediment Basin and divert up to 10% AEP flow to the highflow bypass to be directed to RB.
- Junction pit at the upstream of the Tozer Road channel will enable diverting the flow up to 10% AEP towards the RB and divert the higher flow towards the Tozer road channel.

The pits are designed to control the flow by its level and divert it if reaches to a certain level. This will work as an emergency system in case the RB outlet is blocked and will be started prior to overtopping the RB. In addition, the reclined grate at the top of diversion pits will help self-cleaning while the flow will push from inside out. This will reduce the risk of pit blockage during a major flood.