

Innovative Passive Irrigation Soak Wells in Moonee Valley

5 June 2019

Brief from Council

- 5 possible locations nominated
- Kerb cut-out like Barrow St Moreland example but...
 - Not with wooden edging
 - Ideally have “cover” around tree, avoid tripping hazards
- Trees to sit in or alongside
- Have underdrain
- Preference for “off the shelf” or pre-cast solution
- Low cost / minimal maintenance

Design Process

- Site meeting with council to discuss options which included maintenance staff
- Research and develop design options
- Discuss 4 concept design pros and cons with council including maintenance manager
- Develop the detailed design
- Meeting to finalise design ready for tender
- Source (and purchase) pre-cast units
- Assist in construction supervision

Inlet failure



Sediment build-up
blocking water inflow



Site meeting



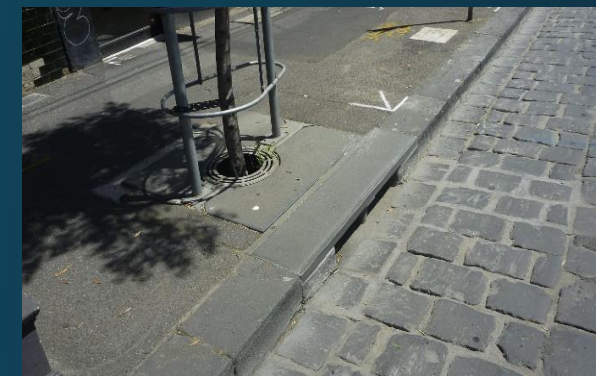
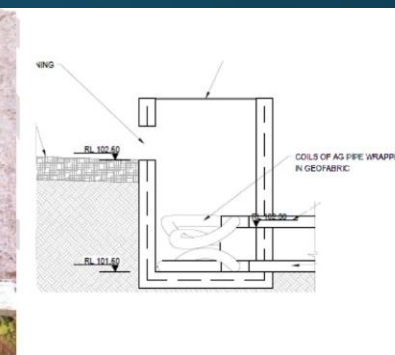
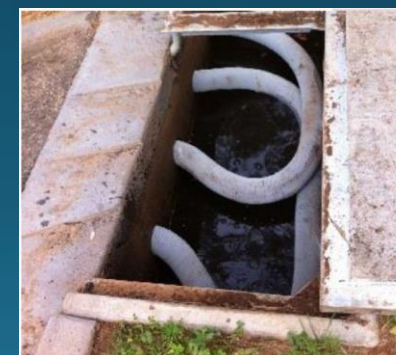
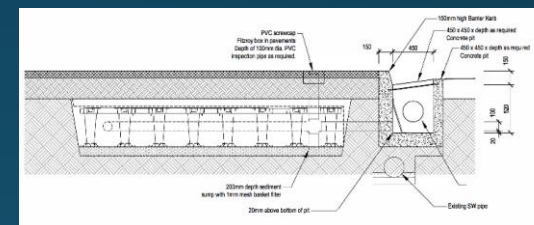
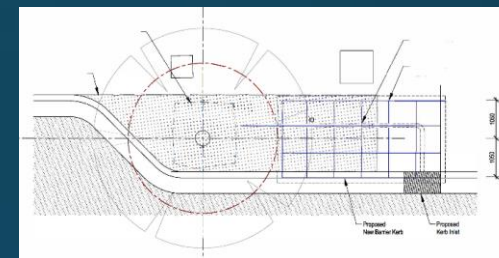
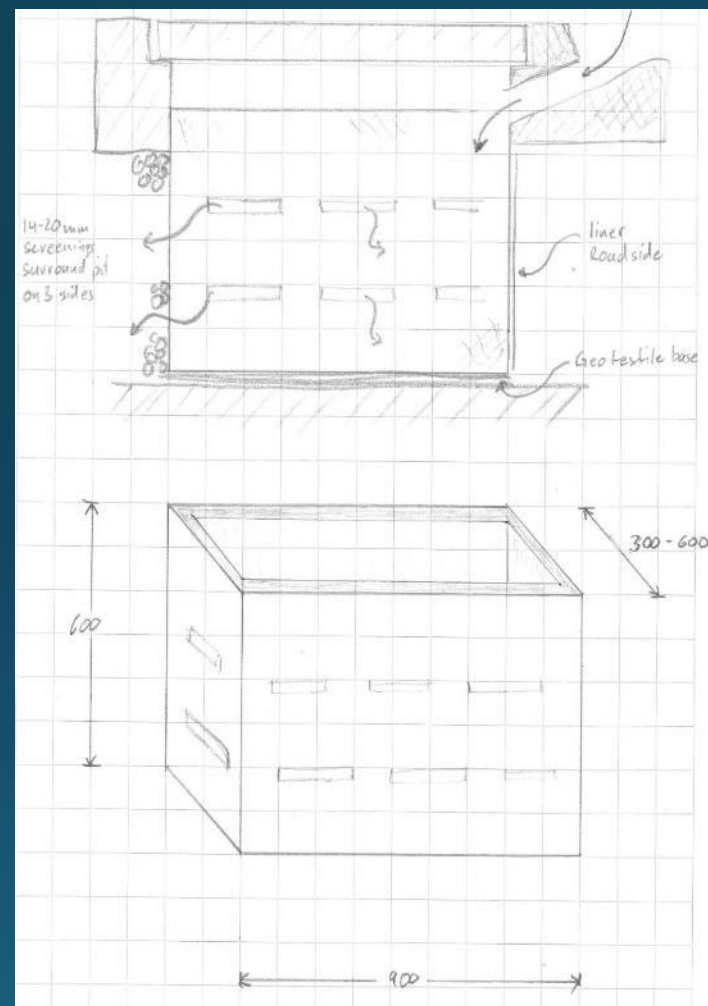
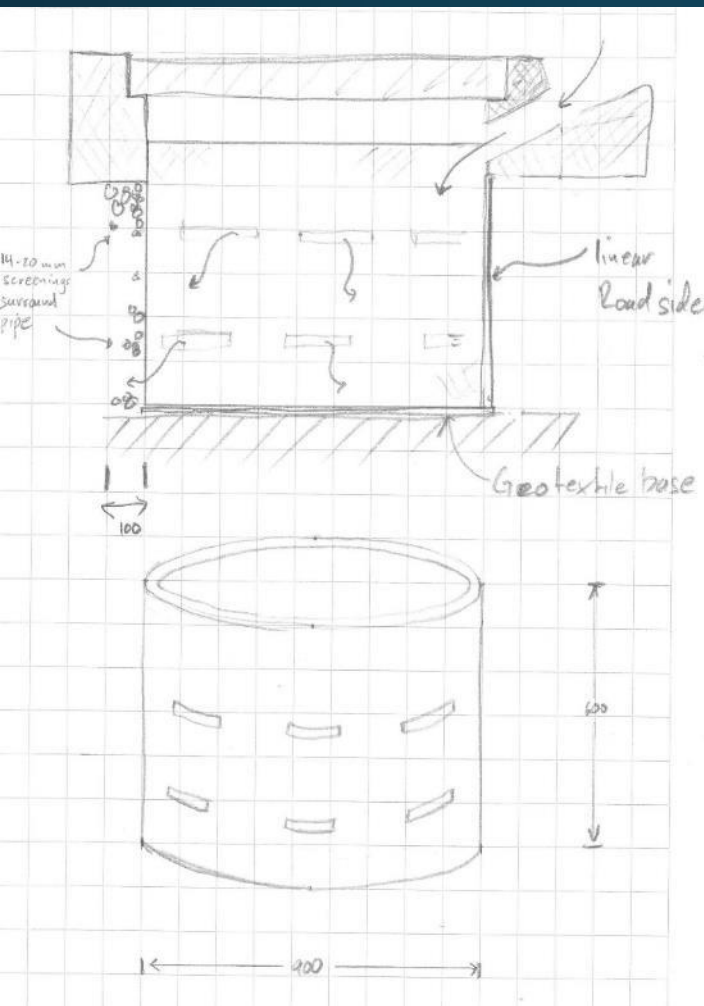
Site discussions

- Mounded nature strips makes a cut-out back of kerb difficult with level changes, size and mowing maintenance for residents
- Large width with trees in centre – significant size of cut-out
- Resident or council to maintain?
- Passive irrigation or raingarden?
- Idea is not to change looks of street significantly
- Avoid negative aesthetics of trapping litter at surface level

Key design criteria

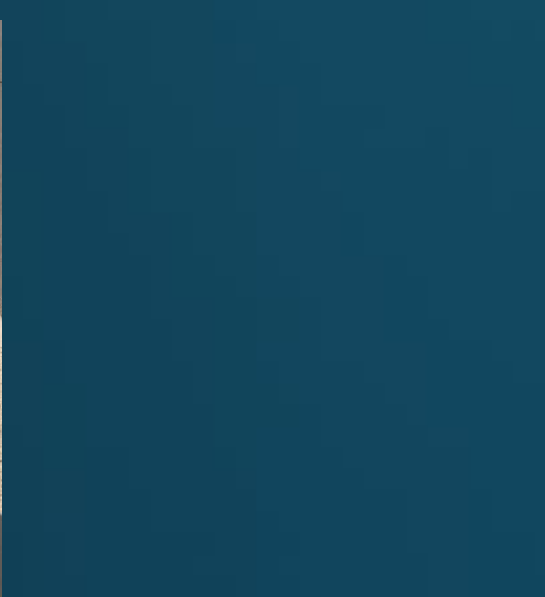
- Large, unobstructed opening to avoid blockage and maximise water capture
- Underground to retain aesthetic, minimise safety risk and minimise maintenance burden
- Between trees to avoid drowning tree and avoid need for connection to drain.
- Look for off-the-shelf options
- Easy to construct, mimic standard pit designs
- No new maintenance requirements – fits with existing tasks

Developed 4 options





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Learnings

- Must test for services – redundant and not mapped on dial-before-you-dig
- Use of experienced contractor helpful
- Inlet open constructed too narrow in height
- Ideally fall should be greater, bridging services didn't help
- Infiltration slow in clay soils but that's good, not leaking into service trenches
- Each site will be slightly different so project management by experienced person helpful to get the right outcome
- Cost approximately \$3500, equivalent to install of standard side entry pit

Next steps

- MVCC getting design and installation reviewed by a separate consultant
- Likely develop a monitoring program to track water capture, tree health and litter & sediment accumulation
- Review design and potentially trial more next year

Questions?

