

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







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

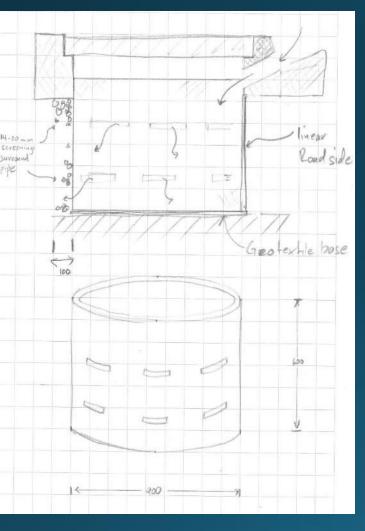


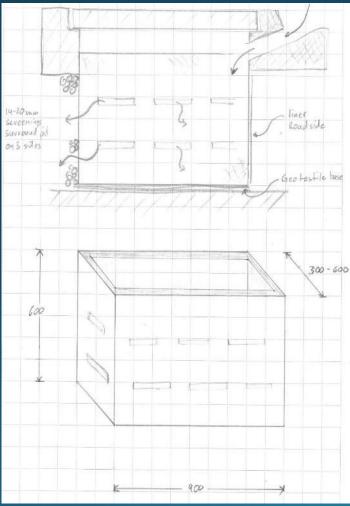
Key design criteria

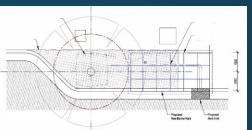
- Large, unobstructed opening to avoid blockage and maximise water capture
- Underground to retain aesthetic, minimise safety risk and minimise maintenance burden
- Between trees to avoid drowning tree and avoid need for connection to drain.
- Look for off-the-shelf options
- Easy to construct, mimic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

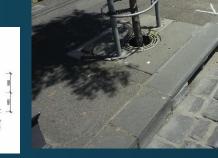


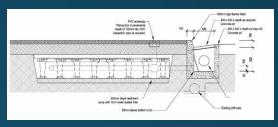
Developed 4 options



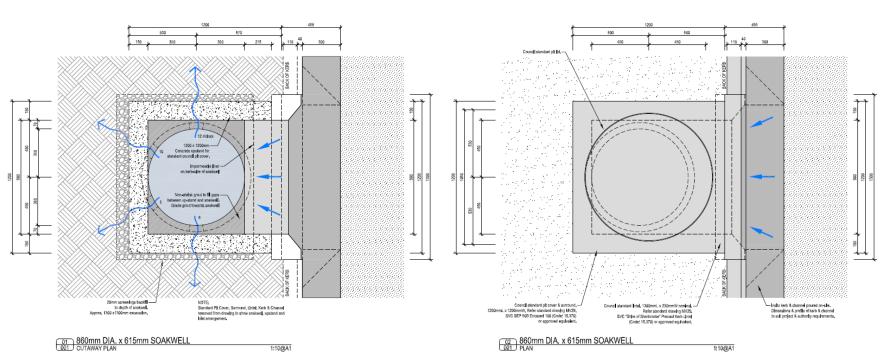


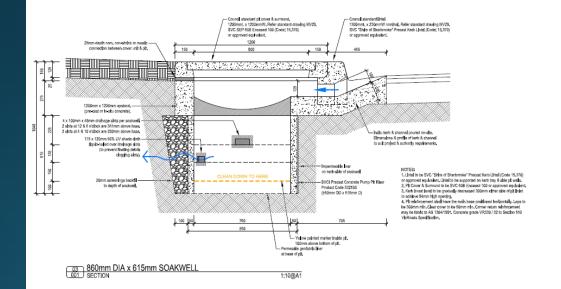












DO NOT SCALE - USE WRITTEN DIMENSIONS ONLY

WARNING: Beware of underground services. The location of underground services are approximate only, and the exact location of all services should be proven on-site.

NOTES:

1, Al seleculas shall be checked and approved on site by the superferenced point to construction.
2. Any discrepances shall be immediately reported to the superferenced, who shall listen further hashcultons.
3. Service boardon shown are foldered expl., Locate all services on alte prior to any excession or planting, and printed same duffing constructions.
4. Relocate trees to inform on Confirm annies locations.



CONTRACTOR MUST DIAL 1100 TO CONFIRM LOCATION OF EXISTING SERVICES AND COMPLY WITH ANY AUTHORITY REQUIREMENTS REGARDING EXISTING SERVICES PRIOR TO COMMENCEMENT OF



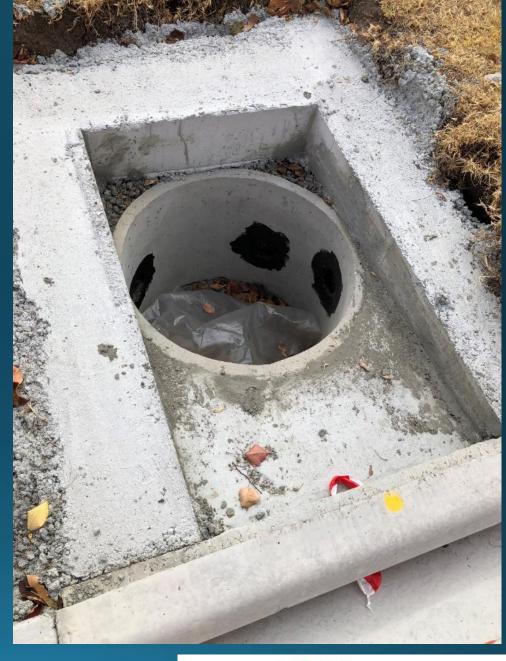
(C) COPYRIGHT 2018 THREE ACRES LA











RPEC Ralf Pfleiderer Environmental Consulting



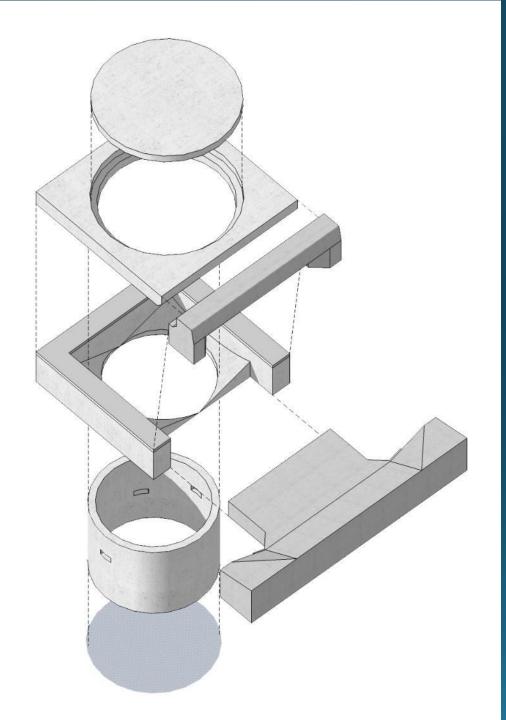
Learnings

- 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?

