



TREE PITS

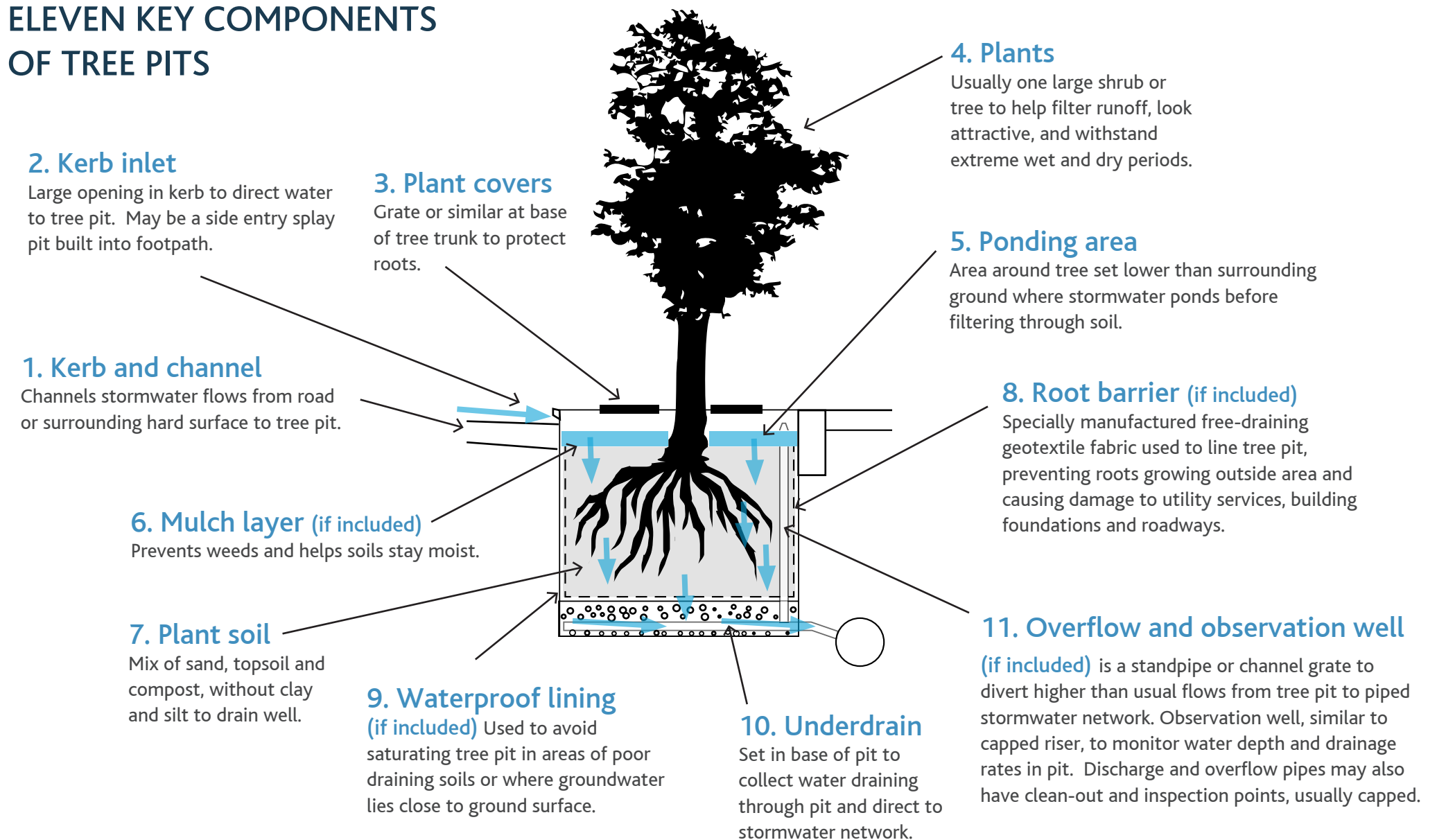
Operation & Maintenance Guide

STORMWATER DEVICE INFORMATION SERIES

WHAT ARE TREE PITS?

Tree pits collect stormwater runoff from small carpark areas or roads. Runoff filters through the tree roots and surrounding soil mix, trapping sediment and pollutants before flowing to a piped stormwater system.

ELEVEN KEY COMPONENTS OF TREE PITS



How and when should maintenance be carried out?

Generally, an operation and maintenance manual or consent conditions will outline maintenance details for a set of tree pits, but these may not be available. The schedule below shows the typical action and timing for tree pit maintenance.

There should be a full inspection a year after construction of the tree pit. This may coincide with the end of the defects liability period, so could be done by the contractor. Because tree pits are often near roadways and carparks, traffic management must be put in place during maintenance.

MAINTENANCE SCHEDULE

TIMING	COMPONENT	ACTION
Following storms	Kerb and channel	<ul style="list-style-type: none"> Remove rubbish, leaves and debris. Check for defects or damage requiring repair (cracking, loose concrete or similar) and let owner know.
	Kerb outlet	<ul style="list-style-type: none"> Check outlet is not blocked and clear of any rubbish and leaves.
	Ponding area	<ul style="list-style-type: none"> Look inside pit through outlet or plant covers to see if ponding area is filled with sediment, leaves, rubbish. If so, clear manually by removing plant covers or use vacuum system.
	Overflow pipe (if present)	<ul style="list-style-type: none"> Check pipe or grate is clear of debris
Monthly	Plants	<ul style="list-style-type: none"> Check health of plant. Watering may be required in dry periods, especially during plant establishment.
	Plants	<ul style="list-style-type: none"> Trees may need staking until mature. Check stakes and ties and replace and repair if necessary.
3 Monthly	Kerb and channel	<ul style="list-style-type: none"> Remove rubbish, leaves and debris. Check for defects or damage requiring repair (cracking, loose concrete or similar) and let owner know.
	Kerb outlet	<ul style="list-style-type: none"> Check outlet is not blocked and clear of any rubbish and leaves.
	Mulch layer (if present)	<ul style="list-style-type: none"> Remove any weeds by hand, removing plant cover if necessary. Do not use herbicides or pesticides as these will pollute stormwater.
	Overflow pipe (if present)	<ul style="list-style-type: none"> Check pipe is clear of rubbish, leaves and debris.

MAINTENANCE SCHEDULE

TIMING	COMPONENT	ACTION
6 Monthly	Plants	<ul style="list-style-type: none"> • Check tree is not blocking pedestrian way or vehicle vision lines. • If necessary, prune as advised by arborist. • Check with Council for pruning rules.
	Ponding area	<ul style="list-style-type: none"> • Look inside pit through outlet or plant covers to see if ponding area is filled with sediment, leaves, rubbish. If so, clear manually by removing plant covers or use vacuum system.
	Overflow pipe (if present)	<ul style="list-style-type: none"> • Test pipe is not blocked by filling with 1 litre of water and checking water drains away. • If not draining, clean pipe with hose or manually.
Annually	Kerb outlet	<ul style="list-style-type: none"> • Check outlet and pit is structurally sound by looking for cracks and damage. • Repair or report to owner for repair.
	Plant covers	<ul style="list-style-type: none"> • Check for damage and repair if possible. If replacement required, report to owner.
	Ponding area	<ul style="list-style-type: none"> • Inspect area is functioning by checking: <ul style="list-style-type: none"> - level of soil and mulch is set below kerb outlet. - soil mix surface does not have fine crust, preventing draining. - remove and rework top layer. - water is not still ponding 24 hours after rain. - test by filling with water and monitoring over 24 hours.
	Plant soil	<ul style="list-style-type: none"> • Check soil is not compacted, is free draining and pit is not over or underfilled. • Remove or fill as required with clay-free sand and topsoil mix. • Test drainage by filling with water and monitoring over 24 hours.
	Underdrain system	<ul style="list-style-type: none"> • Check pit drainage by filling with water and monitoring over 24 hours. • If not draining, attempt clearing overflow pipe, if present. • Clear using low (not high) pressure water blaster hose. • If still not draining, pit may need plants and mulch removed, and plant soil and underdrain system replaced.

TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEMS	SOLUTION
Stormwater bypasses tree pit	Rubbish, leaves and other debris blocking kerb outlet	<ul style="list-style-type: none">• Clear rubbish and debris.
	Plant soil mix and mulch level too high	<ul style="list-style-type: none">• Remove plant covers. Remove soil mix or mulch to reform ponding area.
	Kerb outlet damaged or not constructed properly (kerb and channel shaped wrong, outlet too small, outlet covered by paving, road) so water does not enter tree pit.	<ul style="list-style-type: none">• Report to owner of pit to correct.
Stormwater ponding in area surrounding tree pit (in carpark or on roadway)	Earthworks in area causing sediment runoff to build up in ponding area.	<ul style="list-style-type: none">• Check ponding area is below surrounding ground and remove excess material if necessary.
	Layer of fine sediment forming crust on pit surface.	<ul style="list-style-type: none">• Remove sediment crust and rework top surface of soil mix.
	Soil mix is not allowing drainage.	<ul style="list-style-type: none">• Replace soil with topsoil, compost and sand mix.
	Soil compacted.	<ul style="list-style-type: none">• Loosen top 500mm of soil by tilling or forking.
	Tree pit overfilled with mulch or soil.	<ul style="list-style-type: none">• Remove plant covers.• Remove soil mix or mulch and form ponding area 200-300mm below surrounding hard surface and overflow.
Mulch flowing off pit	Overflow or discharge pipe clogged.	<ul style="list-style-type: none">• Inspect and clear pipes.
	Soil mix clogged with fine sediments or clays.	<ul style="list-style-type: none">• Remove soil and replace with topsoil, compost and sand mix.

SYMPTOM	POSSIBLE PROBLEMS	SOLUTION
Sulphury smell in pit	Organic material rotting in garden.	<ul style="list-style-type: none"> • Check pit is draining within 24 hours after rain. See above for ponding solutions.
	Underdrain clogged and water not draining.	
Trees or shrubs dying, or stressed (yellowed leaves, wilting, leaves dropping)	Trees or shrub variety not suitable for conditions, (eg too wet/dry/shady/windy).	<ul style="list-style-type: none"> • Choose plants suitable for local conditions. • Choose non-deciduous trees to minimise leaf falls.
	Ponding or flooding is waterlogging plants.	<ul style="list-style-type: none"> • Check pit drains completely 24 hours after rain. See above for ponding solutions.
	Hazardous runoff poisoning plant (eg fuel, paint, oil).	<ul style="list-style-type: none"> • Check soil and mulch for polluted runoff (discoloured mulch, rainbow slicks). • Heavy contamination may require pit to be cleaned out and rebuilt. • Consult with owner and/or arborist.
	Trees dehydrated due to dry conditions. New plants need watering while establishing.	<ul style="list-style-type: none"> • Watering should not be needed except in extreme dry conditions, or when plants are establishing. • Check soil moisture content and water if necessary.
	Trees stressed by plant pest or diseases. Pests may be insects or animals.	<ul style="list-style-type: none"> • Consult with local garden centre or arborist. • Trees may need replacement with pest resistant species.

Quick maintenance checks

- ✓ Remove rubbish, leaves and debris from pit.
- ✓ Check Council tree pruning rules.
Consent may be required to avoid fines.
- ✓ Use soil mix of topsoil, compost and sand.
- ✓ Put traffic management plan in place to protect maintenance crew from traffic on road or carpark.

Avoid

- ✗ Do not overfill pit with soil and mulch.
Level should be below surrounding hard surface and overflow.
- ✗ Do not prune trees without arborist advice to avoid tree damage.
- ✗ Do not compact soil mix.
Use drainage test to check soil freely drains.
- ✗ Do not include clay or silt in soil mix – this will restrict drainage.

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