



Happy Valley Outfall Channel

Community Information Session

Monday 12 November 2012

1. Welcome and Introductions

- Steve Dangerfield – SA Water, Manager Stakeholder Engagement
- Simon Bower - SA Water, Project Manager
- Alyssa Freeman – SA Water, Stakeholder engagement

Meeting Purpose

- Importance of the Happy Valley Channel system in managing and mitigating against flood events
- Existing community use
- Happy Valley channel upgrade objectives
- Community issues
- SA Water technical issues
- Site future

Agenda

- 1. Welcome and Introductions**
- 2. Happy Valley Reservoir/Channel background**
 - Location
 - History
 - How the system works
 - Use
- 3. Happy Valley channel upgrade project objectives**
- 4. Community Issues**
- 5. SA Water concerns**
- 6. Workshop**
 - Developing a community design brief
- 7. Next steps** **Meeting to be minuted and distributed to attendees**

2. Happy Valley Reservoir/Channel

Background

The Happy Valley Reservoir/Channel

- Happy Valley Reservoir was built between 1892 and 1897
- The project involved three major works:
 - Creating an off-stream storage with a diversion channel to prevent polluted water from entering the dam
 - Construction of a diversion weir to transfer water from the Onkaparinga River to the reservoir via a 5 kilometre long, 3 metre diameter tunnel
 - A stone outlet tower and a 2.4 kilometre, 2 metre diameter tunnel under Black Road to supply piped water to Adelaide
- The capacity of the reservoir is 11,600 megalitres
- 40% of Adelaide is currently supplied with water from the Happy Valley Reservoir

The Happy Valley Reservoir/Channel

- 2002
 - \$22 million rehabilitation project was launched at Happy Valley as part of a program designed to meet or exceed national and international guidelines for management of dam structures.
 - Work completed in August 2004.
 - Involved strengthening and raising the wall with 300,000 cubic metres of fill.
 - Upgrading the spillway and modifying the pipes and roadway below the dam to allow construction of the new wall.
 - While project delivered technical solutions to dam upgrade, concerns raised by community regarding lack of amenity consideration.

Happy Valley Channel location



Happy Valley Reservoir

- The outfall channel is 500m long and is the only flood bypass for the Happy Valley Reservoir.
- Trees growing on the banks and in the channel and are now relatively large. The channel runs through SA Water owned land that abuts onto private residential properties.
- The channel provides an open space amenity value to the surrounding urban area.

Happy Valley Reservoir/Channel

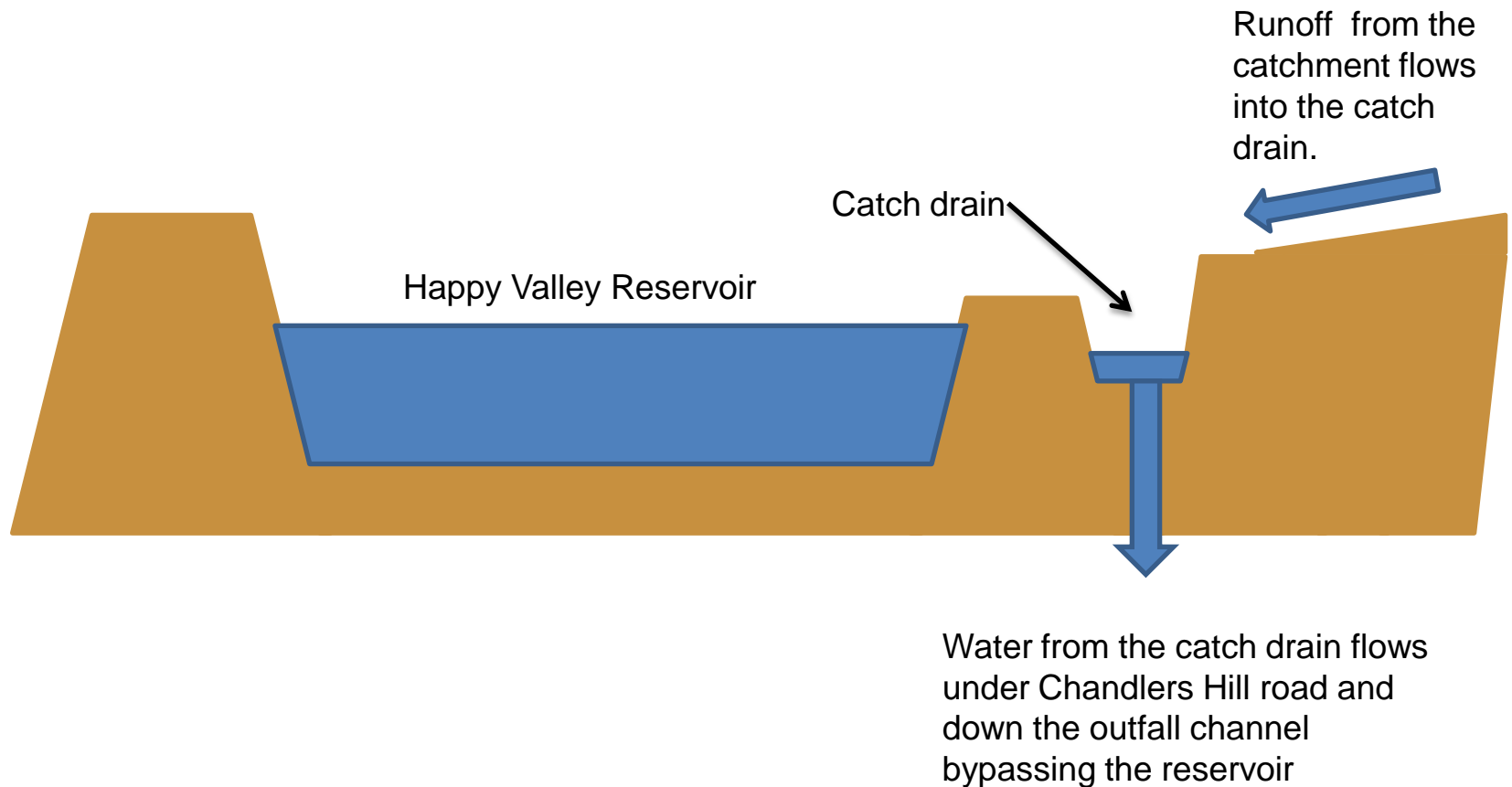
How it works

- The bypass catch drain and channel form a critical part of the dam.
- The channel is effectively a spillway, the catch drain and channel carry water from storm events past the reservoir preventing pollution entering the reservoir.
- Water from large flood events spill over the catch drain into the reservoir and is stored in the reservoir before slowly flowing out down the channel.
- If the channel becomes blocked its capacity is reduced which may cause the channel or the Dam banks to over flow.

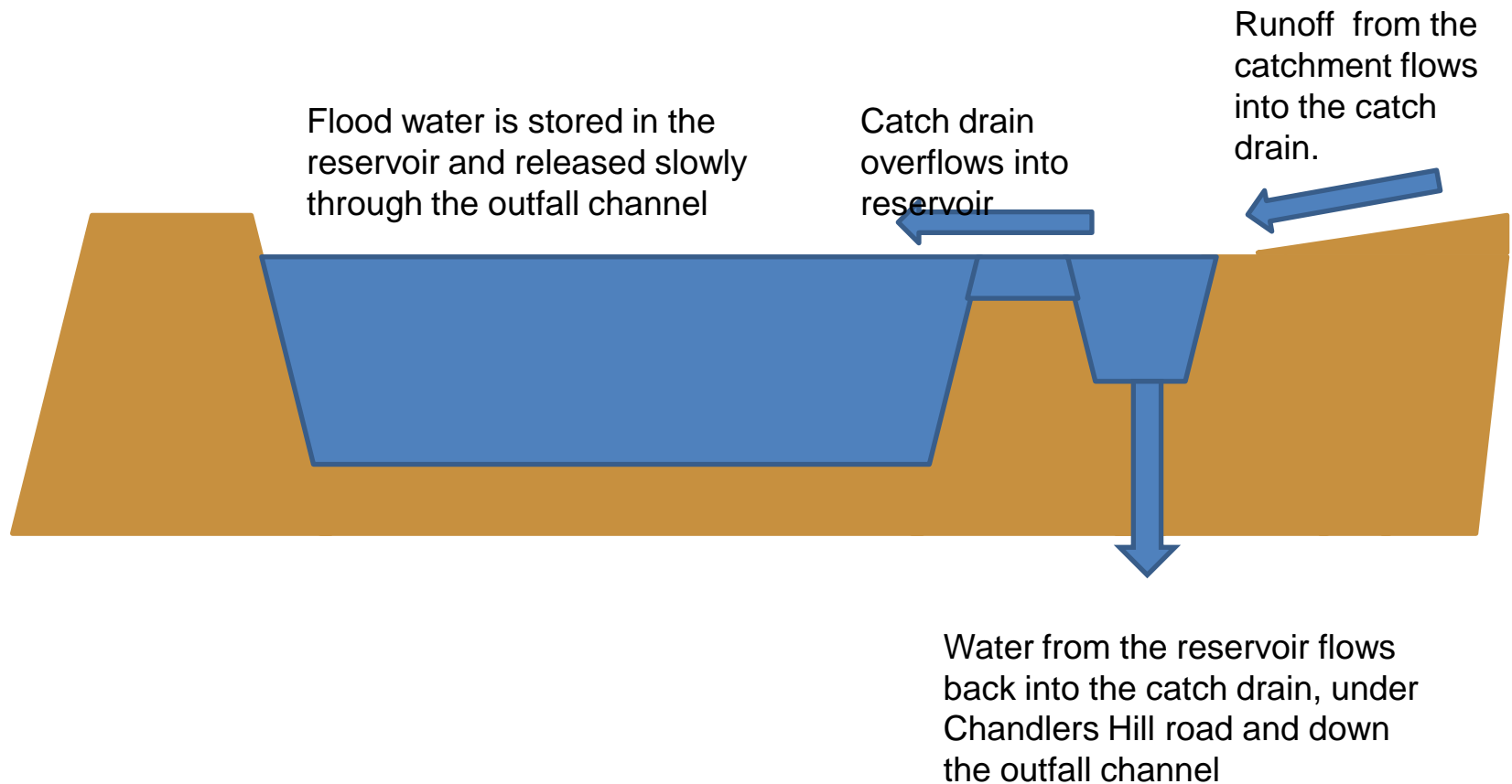
Happy Valley Reservoir



Operation of Happy Valley Reservoir during rain



Operation of Happy Valley Reservoir During Flood



Happy Valley Reservoir/Channel - Responsibility

- Crucial flood mitigation infrastructure for the Happy Valley reservoir system and the upstream urban residential areas.
- Responsibility to ensure the management of the channel in terms of its ability to receive and discharge stormwater during high rainfall and flood events.
- Responsibility for public safety.
- The Happy Valley channel is a widely used community asset
 - Public amenity
 - Home to an array of bird and animal life
 - Well utilised walking trail

Happy Valley Reservoir/Channel - History

- Increasing urban development adjacent the reservoir has increased surface runoff
- Identified need to increase capacity of channel
- Erosion and undercutting has been an issue with the channel with repairs made in the past
- As part of the dam upgrade in 2004, parts of the channel bed were deepened to improve its hydraulic capacity.
- This work, while increasing the capacity did not prevent further erosion and undercutting
- Minimal trees were removed or pruned during the channel works in 2004.

Happy Valley Channel – Initial project scope April 2010

1. Removal of all trees located in or in the immediate surrounds of the Happy Valley drain site, including 180 Aleppo Pines, 20 Olive trees, 15 Ash Trees and 25 Eucalyptus species.
2. A fencing project will be carried out after the tree removal to provide a more substantial pedestrian barrier down either side of the channel – pegs installed to identify location.
3. Upgrade of the channel by addressing areas of erosion and undercutting of the banks using gabions, reno mattresses and mass concrete.

3. Happy Valley Reservoir/Channel

Upgrade Objectives

Happy Valley channel upgrade objectives

- Protect the Happy Valley Community against risk of flooding
- Ensure capacity of channel to receive stormwater runoff during rain and flood events
- Ensure long term integrity of the channel
- Maintain a community asset
- Improve safety for both operators and the community

4. Community issues

Community Issues

- Discussion and Recording of issues

5. SA Water Concerns

Key SA Water issues

- Increasing upstream development placing the asset under stress
- Increasing erosion of the channel floor
- Water Quality in reservoir
- Safety – operators and community/public
- Potential for trees to fall into the channel and partially block it
- Capacity of channel to receive existing and future stormwater events
- Flood mitigation

Happy Valley Channel



Happy Valley channel



Givens

- Community value of asset is acknowledged
- Initial project scope reviewed
- Given both community and SA Water concerns, do nothing is not an option
- Overall strategy will require some tree removal
- Improvement in safety
- Opportunity to link corridor to water proofing the south project to the west
- Development of a concept plan to be implemented in stages

6. Workshop

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Process

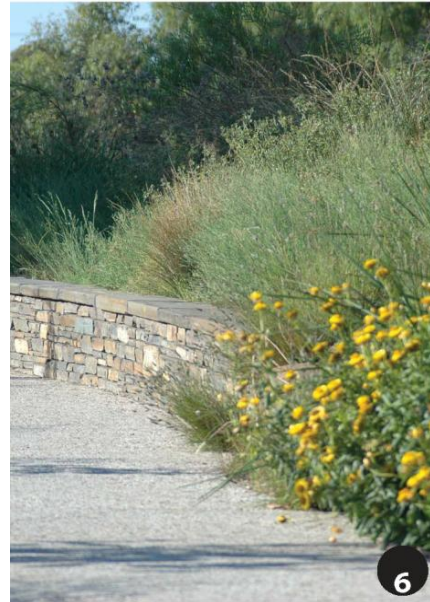
- Independent assessment
 - SA Water will arrange an independent assessment of the flood hydrology of the reservoir and the hydraulic capacity of the catch drain.
 - The risk of flooding caused by a partially blocked channel can then be assessed before deciding on which if any trees need to be removed.
- Scoping of Community Design Brief
- Project scope determined
- Formation of community working group

Developing a design brief

- Issues
 - Site Narrative – what we like/don't like
 - Site vision – ideas
-
- Technical Information
 - Constraints
 - Trade-offs
-
- Concept Plans
 - Modifications
 - Final Design

Fencing within landscapes





Brainstorm

- What do you like?
 - 4 cards per table (one idea per card)
- What don't you like?
 - 4 cards per table (one idea per card)
- What ideas do have to improve the channel?
 - 3 ideas per table (one idea per card)

7. Next Steps

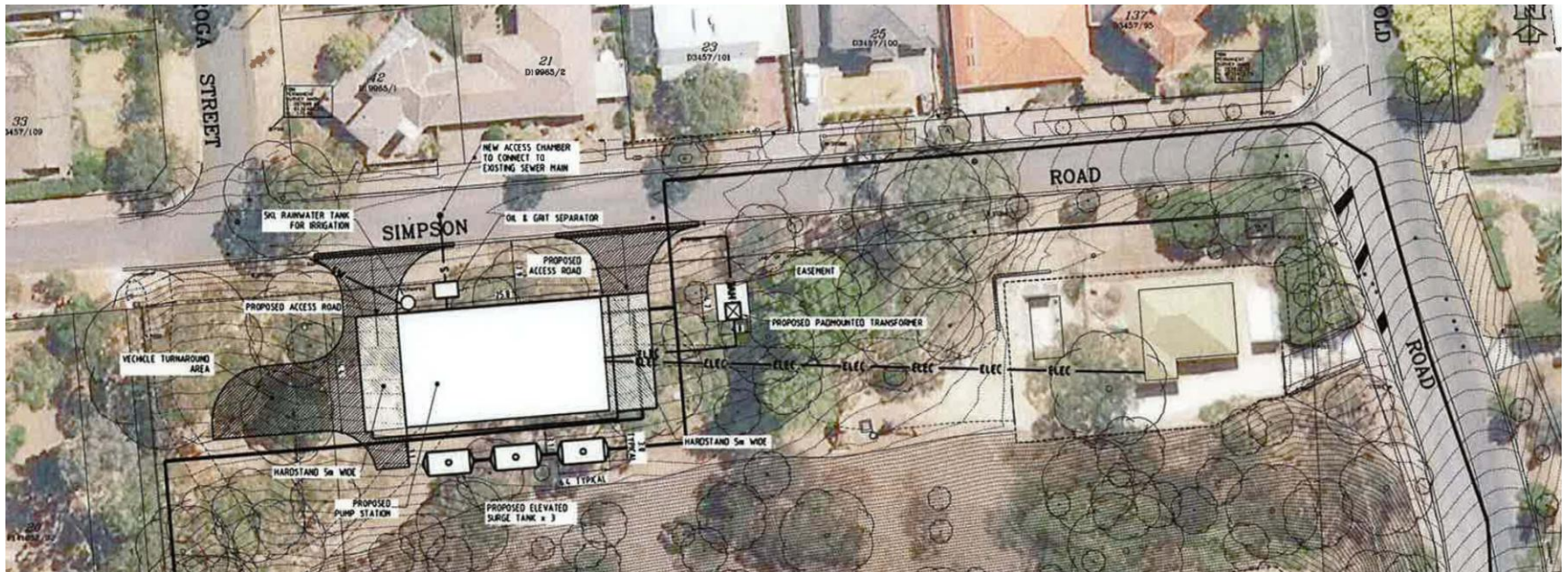
- Engage independent assessor to inspect the channel and consider technical issues and make recommendations
- **Form community working group (maximum 12-15)**
- Consider ideas
- Formulate design brief
- Deliver concept plan accounting for community views and technical issues

- Register interest with Alyssa Freeman – end of session

Close

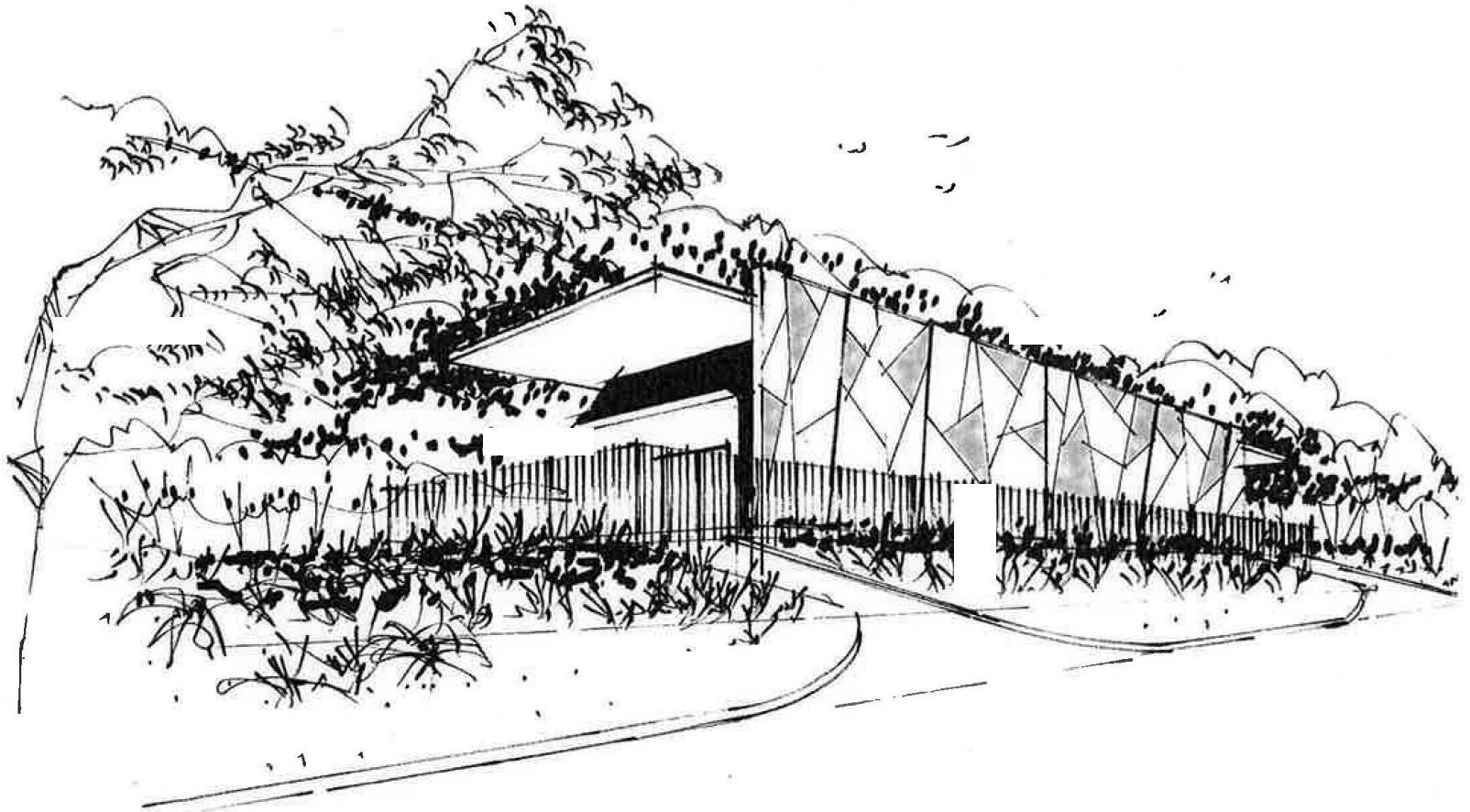
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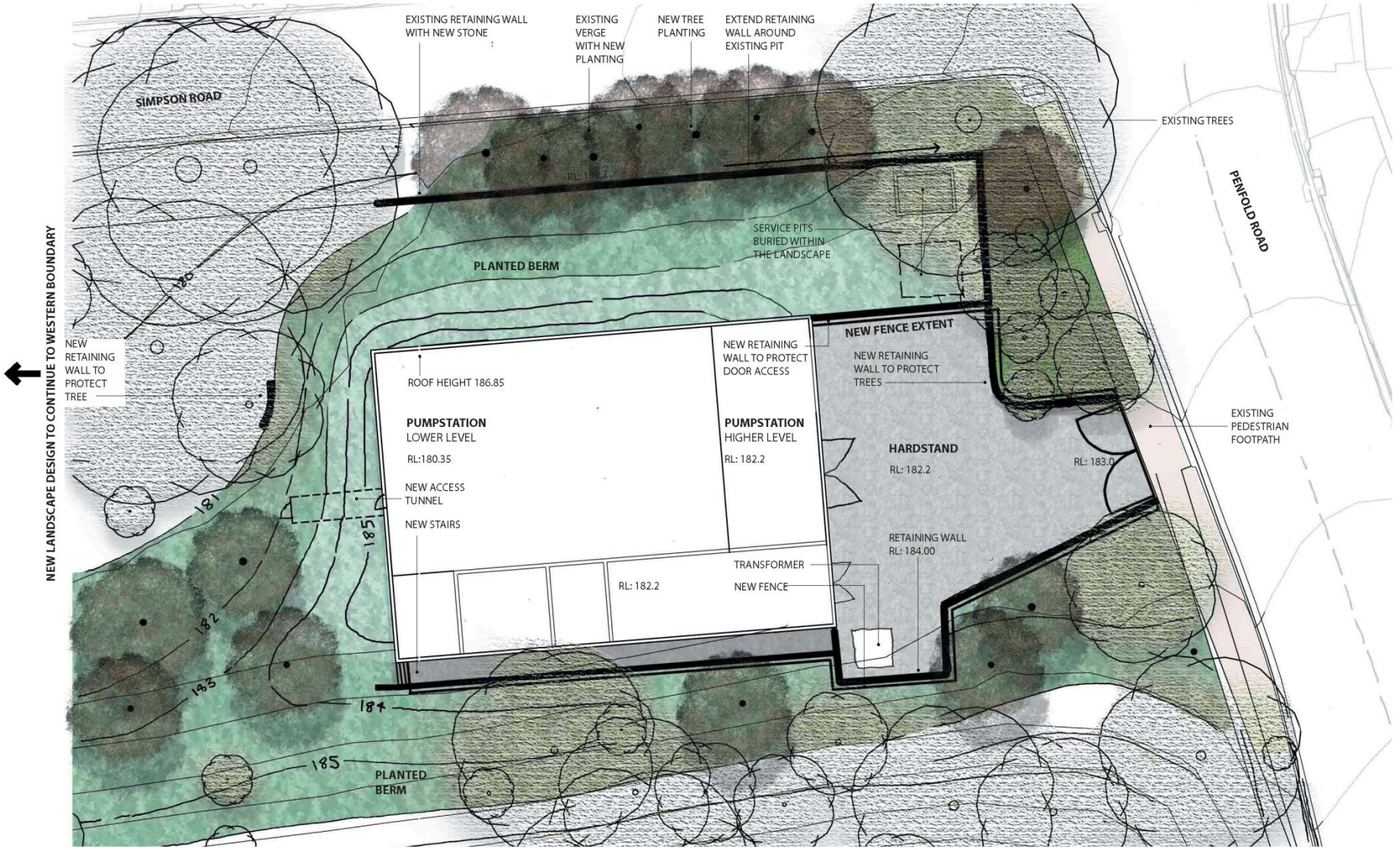
Location and layout



Total area: 2500m²

Concept design





WATTLE PARK PUMP STATION
 CONCEPT STAGE - NOV 2010

LANDSCAPE PLAN

