

Appendix 4: Landscape Management and Maintenance Plan

The landscaping management and maintenance plan includes sustainable landscaping management practices that mitigates and addresses problems of potential environmental harm caused by human practices in the process of constructing, implementing and managing residential landscapes.

The sustainable landscape management and maintenance practices and components applicable for the residential development include:

Principles and components	Applicable project lifecycle	Responsible person	Additional information
Sustainability audit	Pre-construction, construction and operational phase	ECO, Proponent	Conduct a sustainability audit to determine the status quo of EMPr mitigation measures implementation and to monitor progress
Use plants appropriately to maximise their benefits	Construction and Operation phase	ECO, Proponent	Use indigenous plants suited for the residential development with phytoremediating properties (where possible)
Reduce solar heat gain in summer and increase it in winter; reduce the urban heat-island effect	Construction and Operation phase	ECO, Proponent	Utilising suitable indigenous plants with architectural and interior considerations (where possible)
Address water quantity and quality	Project Lifecycle	ECO, Proponent	Implementing EMPr measures and ongoing monitoring and reporting
Manage storm water as a resource instead of a problem	Project Lifecycle	ECO, Proponent	Implementing EMPr mitigation measures including erosion and silt control and implementing grass swales
Understand and improve soil health	Project Lifecycle	ECO, Proponent	Implementing EMPr mitigation measures including planting vegetation with phytoremediating and soil improvement properties

Minimise the impact of chemical pesticides and herbicides together with responsible fertilising	Project Lifecycle	ECO, Proponent	Implementing EMPr and as far as possible use chemical pesticides and herbicides that are not harmful to the environment and ecosystem
Conserve energy and reduce air pollution	Project Lifecycle	ECO, Proponent	Implementing EMPr with implemented architectural and interior considerations to conserve energy
Manage resources and reduce the waste stream	Project Lifecycle	ECO, Proponent	Implementing EMPr with additional resource management and waste stream reduction measures such as promoting waste separation, - recycling
Grass swales maintenance	Project Lifecycle	ECO, Proponent	Regular mowing (if required), re-seeding when required, weed and alien plant control, sediment control and management, watering during dry periods (if required), clearing of litter and debris
Landscaping around residential units to include sustainable landscaping practices where possible	Project Lifecycle	ECO, Proponent	Practices include rainwater harvesting, energy and resource conservation, planting of indigenous vegetation and compliance to green star building practices where practically possible
A Landscape maintenance plan reporting to include: Erosion control and silt management, rehabilitation activities, grass swales, water quality and issues, sustainable landscaping practices, energy consumption, utilities, EMPr performance	Construction and Operation	ECO	It is proposed that monthly reports be compiled and circulated to the responsible management committee for review and management actions

The maximum storm water run-off volume is 6,22 m³ and it is therefore recommended by the engineer (BC Theron) that a “soak-away” drain be made 6x6x2m to where storm water is guided to. This will mitigate any possible erosion conditions. Although the position of an optional retention pond has been indicated on the drawing 3535-D01 in Appendix 2 it is recommended that the swales rather be implemented at the bottom of each stand as indicated on the same drawing. The swales to be located outside the 30m wetland.

The “soak- away” drain is more to resemble a swale that is reed and or grass-lined. These swales will assist in reducing runoff volumes and peak storm water flows. The swales have been sized accordingly to the calculated run offs for the 1 in 20 year return period. Maintenance activities on the swales, inter alia, will include the regular mowing or maintenance of the grassed or reed surface, weed control, watering during extended dry periods (if required), re-seeding of uncovered areas and the frequent clearing of litter, debris and visible blockages. The most important maintenance period is the first two years during the ‘plant establishment period’ when frequent weed control and replanting may be required. The flow inlet and outlet areas will need to require attention at the establishment of the swales as they may need to be protected against possible erosion. Accumulated sediment should also be removed once it exceeds about 100m in depth or when it starts to overwhelm the vegetation cover. The swales should be inspected at least twice a year, generally at the beginning and end of the wet season, to check for areas of erosion and channelisation.

The figure below indicates the cross sections of various swales. It is recommended that a standard vegetated swale be placed as indicated by drawing 3535-D01 below each stand.

The vegetation in the swale to include indigenous phytoremediating vegetation suitable for the area.

Illustration 1: General designs for swales (Wilson et al, 2004; Woods-Ballard et al, 2007; Haubner et al, 2001)

