Landscape Protection Guidelines for the Australian National University Campus

1. Aims of the Guidelines

The most significant characteristic of the Acton campus of The Australian National University is the landscape – a mix of native and exotic plantings, with the Sullivans Creek waterway reinforcing this natural environment. Over the last ten years there has been a significant amount of new buildings and other work on the campus that has sometimes impacted negatively on the quality of the landscape. Procedures have been developed with the aim of protecting the landscape and to keep damage to a minimum. The purpose of this document is to clearly articulate the aims, methods and procedures to protect the landscape during any works that have the potential to cause damage, and to identify the respective responsibilities of University staff and external consultants and contractors in these processes.

These guidelines are applicable to the whole landscape of the campus, includes lawns, planting beds, native grassland, etc. However, because of their visual significance, their age, and the time it may take for damage to them to become apparent, it is damage to trees that is of most concern, and towards which these guidelines are largely directed. The major causes of damage to trees are vehicles and *machinery* (directly by damage to trunks and branches, or indirectly by soil compaction in the root zone) and new service reticulation (particularly through trenching within root zones). These guidelines seek to minimise such damage by:

Surveying and classifying all trees on campus, to provide a database for informed advice and action.

Making reference to this database a precondition for all work on the campus that has the potential to damage trees.

Requiring the responsible project officer, consultant, or contractor to seek the appropriate approvals before carrying out any such work on the campus.

Financial penalties may be enforced in cases of non-compliance with these policies, as set out in Section 7 below. However the emphasis is on prevention of landscape damage, through following correct procedures, rather than on penalties after the damage has occurred. In addition to financial penalties, contractors and consultants who consistently fail to comply with these policies will not be considered for future work at the University.

2. Definitions

For the purposes of this document, the following definitions are used:

Arborist
: a specialist in the care and cultivation of trees. Note that the ANU has a dedicated Arborist who is to be involved in all matters pertaining to trees.

DBH
: *Diameter at breast height*

Drip line
: The area of ground directly below the outer edges of the canopy.

Root zone
: The space within the soil occupied by the root system of a tree. Unless otherwise defined by the ANU Arborist, the root zone will be assumed to be equivalent, in plan, with the Tree Protection Zone.

Structural root zone
: Is the area required for tree stability. Please see page 13 of the Australian standard or contact the University Arborist.

Significant tree
: A tree that has been categorised as Exceptional, High or Medium quality (see definitions in section 3).

Tree canopy
: The space that is occupied by the branches and leaves.

Tree Protection Zone
: A defined area of ground where no activity is to be undertaken. Unless defined otherwise by the ANU Arborist, this zone will comprise a circular area, with its centre the trunk of the tree the TPZ is DBH x 12 (as per the Australian standards)

3. Access to the Tree Survey Database

A digital survey of all trees on the Acton campus currently exists, each tree has been rated according to the following categories:

Exceptional trees

These are the most significant and valuable trees on the campus – because of their age, rarity, prominence within the landscape etc. Except in exceptional circumstances, **no** activity involving disturbance of the *Tree Protection Zone* of these trees will be allowed, other than that carried out by Gardens & Grounds staff, or contractors under their immediate supervision. In exceptional circumstances, application may be made for a specific Works Approval for such activity, from the National Capital Authority.

High Quality Trees

These comprise the bulk of mature, healthy trees on the campus. Any work within the *Tree Protection Zone* of high quality trees will require the specific approval of the ANU Arborist or other University officer designated by the Manager, Gardens & Grounds.

Medium Quality Trees

This class covers trees that tend to be immature. Whilst every effort should be made to minimise damage to such trees, their value to the landscape is less than that of the other two classes. The level of protection to be accorded to such trees will be at the discretion of the ANU Arborist or designated University Officer.

Low Quality trees

Trees that have been placed in this category are usually small trees, mostly new plantings. The level of protection to be accorded to such trees will be at the discretion of the ANU Arborist or designated University Officer.

Thus it will be seen that, although the values of trees on the ANU campus varies, in **all** cases where work may impact on the Tree Protection Zone of a tree (irrespective of its particular classification), the ANU Arborist, or designated University Officer, is to be consulted before any work commences.

Information pertaining to the location, species, and category of trees on the ANU Acton campus is stored on the Tree Survey database. Access to this database is through the Drawing Office/Plan Registry or the ANU Arborist.

Note: The criteria by which trees are categorised is detailed in the University's Tree Management Plan.

4. Procedures for Obtaining Clearances

The earlier that the issue of landscape protection is raised in any project—whether the project be a new building, building extension or an underground service—the more easily will the requirements for such landscape protection be integrated into the program and budget of that project. Therefore the emphasis is always to be on early rather than late investigation of this issue. Examples include:

For a new building project in feasibility and planning phase, the consultants, under the direction of the University project officer, are to consider the impact on the existing environment. A preliminary tree report produced by the University Arborist is required to guide the development design layout so the proposed building footprint has minimal effect on the trees and landscape. It is crucial that service easements are also considered at this stage. Once the design has been reviewed and finalised the University arborist produces a final tree report for the Campus Planning Development Committee and the National Capital Authority, detailing the overall impact on the trees and landscape.

For a building already under construction, where it has become apparent that work will be required within the drip line of a significant tree (and this work was not identified in the course of previous approvals) specific application will need to be made to the ANU Arborist for clearance.

For new sub-surface services reticulation, the relevant ANU officer or the contractor will confirm any impact on significant trees at the planning stage, and the contractor will obtain relevant clearances from the ANU Arborist **before** work commences on site. Once a clearance has been signed off the contractor must contact the University Arborist again if the work/job has changed eg. a trenching location.

Note: It is a mandatory requirement to obtain a clearance to excavate prior to undertaking any activity that will disturb the landscape on the property of The Australian National University. This clearance procedure requires individuals to gain permission from all relevant authorities (both internal and external) prior to undertaking work.

A clearance form can be downloaded from Forms & permits or a hard copy can be obtained from the Drawing Office/Plan Registry.

5. Landscape Protection Plan

When instructed to by the ANU Arborist or relevant University officer, the consultant, project manager or contractor will, through consultation with the ANU Gardens & Grounds staff, prepare a *Landscape Protection Plan* (LPP). The LPP is then to be signed off by the ANU Arborist or designated University officer. The scope of this Plan will vary according to the nature of the project. Generally the LPP will take the form of a site plan marked up with notes relating to the various landscape protection issues. Amongst the issues that may need to be addressed in the LPP are:

Site features: Site features requiring particular protection include underground irrigation, lawn areas and/or significant trees and sensitive landscape sites. The Gardeners Section will identify such features within proximity of the project. Such features may need to be protected by fencing, and the Superintendent will be responsible for ensuring that these protected areas are not entered or used for any purpose associated with the project.

Site access: This is to be agreed on the basis of minimizing landscape damage while providing convenient access. Where boom gates are installed, they will be used to regulate each entry/exit to the site. Where heavy or special vehicle access is required (cranes, trucks, etc.) suitable damage minimization measures are to be undertaken (eg. timber boards positioned in wheel traverse areas over 'soft' landscape).

Contractor vehicle parking: Contractor vehicles are subject to ANU parking regulations unless the Manager, Parking Administration, has approved other arrangements. Where parking in areas other than official carparks is unavoidable, a special area will be fenced off and designated 'Construction Parking Only'.

Where this area encompasses 'soft' landscape features, strategies to minimise damage/compaction will be practiced.

Storage of Materials: All building materials will be stored in a manner that does not compromise the safety of the public or impact negatively on the landscape. It is strictly prohibited to use garden or shrub beds to store materials (or waste). Stored materials are not to be placed on garden or shrub beds. Where turf areas and/or an area on a pedestrian route have to be used as storage areas, the area will be fenced off and reinstated following completion of the project. An agreed access route will be identified and the subsequent documentation passed to the contractor

Rubbish Skips: Rubbish skips will be positioned in a manner that does not compromise the safety of the public or impact negatively on the landscape. It is strictly prohibited to use garden or shrub beds to place rubbish skips. Where turf areas and/or an area on a pedestrian route have to be used to place rubbish skips, the area will be fenced off and reinstated following completion of the project. Because of the enormous amount of potential damage that may be caused by waste removal trucks, it is crucial that rubbish skips be placed in a location where they may be emptied without the need for the truck to traverse any 'soft' landscape. An agreed access route will be identified and the subsequent documentation passed to the contractor.

Individual Tree Protection: See Section 6 below.

Landscape reinstatement: On completion of the project, the landscape is to be reinstated to the satisfaction of the designated Gardens & Grounds staff.

6. Individual Tree Protection

The following procedures for protecting individual trees will form part of the Landscape Protection Plan for any project impacting on a significant tree. In addition, even where a LPP is not required, these procedures are to be followed whenever activity is taking place within the drip line of any tree deemed worthy of retention.

Trees on development sites shall be protected in accordance with the current version of AS 4970 Protection of trees on development sites.

In order to protect significant trees, the following procedures are to be followed:

1. *Identifying a Tree Protection Zone:* Where there is the likelihood of a project impacting on existing trees, the consultant, contractor or project officer is to contact the ANU Arborist to ascertain if any significant trees will be affected. The size and shape of a particular protection zone will vary according to individual tree species and the site. The zone will be determined by an Arborist prior to commencing the project and will remain in place until project completion.

2. *Pruning:* Prior to establishing a tree protection zone, trees to be protected will be pruned focusing on removal of dead or broken branches. The purpose of this activity is primarily safety, but it serves as a monitor for any damage that may occur during construction. The ANU Arborist will instigate this activity with the cost borne by the Grounds department. Construction contractors are prohibited from undertaking any additional pruning as this activity, if not performed properly, can be harmful to the tree.

3. *Establishing the Tree Protection Zone:* The following measures will be taken to protect the tree (long term projects only):

    - *Fencing* – Secure posts with 1.8m high Chain link or equivalent sturdy fencing to be erected, maintained and removed by the contractor to the outer edges of the protection zone.

    - *Trunk protection* – 1.8m high palings strapped to the trunk

    - *Mulching* – 100mm of composted mulch cover over the ground within the tree protection zone in order to retain soil moisture and encourage microbial activity.

    - *Irrigation* – natural moisture levels should be maintained. Ideally an automated drip irrigation system should be installed.

    - *Drainage* – the natural drainage patterns around the root zone should not be altered.

    - *Signage* – (to be supplied and erected by the Grounds Section) as follows:
      Tree Protection zone
      No vehicle movement
      No storage of building materials
      No washing of equipment
      Contact name and number for enquires

4. *Activities Within the Tree Protection Zone:* Undertaking any activity inside the tree protection zone is considered a serious breach of these guidelines. If during the course of a project, it becomes unavoidable for activities to take place inside the protection zone, then consent should first be gained from the ANU Arborist. Such activities may include the erection of scaffolding, vehicle movement, trenching or excavation. The ANU arborist will determine whether it is appropriate to undertake that activity and advise of the most appropriate way to undertake such activities or suggest possible alternatives. Pruning of branches and/or roots may be required; if so these activities should be undertaken under the direction of an Arborist.

5. *Trenching and Excavation:* When trenching or excavation is to be undertaken within the root zone of any tree, roots will be severed cleanly rather than torn with a backhoe or other excavation equipment. All roots are to be exposed first and then cut cleanly with a sharp saw or loppers. Exposed roots are to be kept moist and covered with hessian for the duration of the exposure. Where roots with a diameter larger than 50mm are encountered excavation should be undertaken by hand and such roots tunnelled under.

6. *Vehicle and Pedestrian Movements:* Continuous vehicle and pedestrian movement can be particularly damaging to trees, causing soil compaction and subsequent death of roots. A thick layer of mulch or recycled crushed concrete spread over the soil to a depth of 150 –200mm is mandatory in order to reduce the effects of soil compaction within the root zone of any tree.

7. *Monitoring and Reporting:* Regular monitoring is necessary for long-term projects. A monthly site inspection will be conducted to ensure that protection measures are being adhered to. Following this inspection a report will be generated and kept on file. This report will be used to issue warnings or to pursue claims for compensation for damaged trees. Such inspections will to be conducted by the ANU Arborist.

8. *Soil Injections:* If deemed necessary by the ANU Arborist a soil injection treatment will be applied to the root zone of any tree that has been adversely affected by a project or preferably, prior to project commencement. The soil injection treatment is a combination of water, nutrients and other agents that promote root growth. At a cost to the project an arborist will administer this treatment.

7. Financial Sanctions

Failure to follow the above policies may result in a financial penalty being applied to the relevant contractor or consultant. It should be noted that these penalties relate to non-compliance with University policies, rather than proven landscape damage. (This approach has been selected because of the difficulty in assigning value to landscape damage, and the fact that such damage may not become apparent for some considerable time after the work has occurred.) However the monies recoverable through this process will be used by the Gardens & Grounds Department for remedial landscape work.

Where the contractor or consultant can be shown to have failed to follow the procedures set out in this document, regardless of whether landscape damage has occurred as a result of the work for which they are responsible, The Australian National University may deduct an amount up to $10,000 from monies otherwise owing from the ANU to that contractor or consultant.

In addition, in cases of work near trees of particular high value, the ANU Arborist or other University Officer may require a bond to be lodged with the University by the contractor or consultant to cover any remedial or other work that may be required after completion of the contract. The value of the bond will reflect the value of the tree of landscape feature potentially effected by the work, and will be determined on a case by case basis by the University Arborist.

8. Point of Contact

Should any individual experience difficulties in interpreting or implementing these guidelines that person should not hesitate to contact a representative of the ANU Gardens & Grounds Department. Generally, the contact officer will be the ANU Arborist, Melinda Walker, contactable on 6125 8969.

9. Summary of Procedures to be Followed

The following is a summary of procedures to be followed by any consultant or contractor working on the ANU campus. Failure to do so may result in penalties being levied, as detailed at Section 7.

1. At the earliest practicable stage in the planning of any project which will potentially impact on the landscape (including trees, shrubs, lawns etc.)—be it a new building, a building extension, new services reticulation, or other—the responsible consultant or contractor is to contact the ANU Arborist to seek advice and ascertain the implications of the project for the existing landscape.

2. When directed by the ANU Arborist, the contractor or consultant will prepare a *Landscape Protection Plan* as set out at Section 5. This Plan is to be approved by the ANU Arborist prior to any work commencing on site. Regardless of any other requirements of the ANU Arborist, the consultant or contractor is to abide by the procedures set out in Section 6: *Individual Tree Protection* wherever any work is taking place within the Tree Protection Zone of a significant tree, unless specifically exempted by the ANU Arborist.