

CRI Australia Pty Limited

UTS Kuring-gai
*Management Plan Contents –
Draft Outline*

February 2008

**Environmental Resources Management
Australia**

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For and on behalf of
Environmental Resources Management
Australia

Approved by: _____

Signed: _____

Position: _____

Date _____

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1.1**BACKGROUND**

The UTS Kuring-gai campus ('the site') is located in the northern suburbs of Sydney on a sandstone ridge that slopes away on all sides except for the north. It is situated in a bushland setting, and existing buildings and car parking areas are interspersed throughout. The site is bound to the south, east and west by the Lane Cove National Park (LCNP) and to the north by the Film Australia site and residential lots.

The site and surrounds include bushland that is contiguous with the LCNP and the site lies within the catchments of Sugarbag, College and Blue Gum Creeks. The College Creek catchment is a steep-sided gully with sandstone outcrops which cuts into the south-western section of the site. Blue Gum Creek drains the south-eastern part of the site and Sugarbag Creek drains the eastern sector. All these creeks are tributaries of the Lane Cove River.

The bushland associated with the site adjoins the narrow valley of LCNP. Much of the ridgetop vegetation in this area has been impacted by urban development including residential and industrial development, which in many areas has encroached on the remaining remnant bushland.

1.2**PURPOSE AND OBJECTIVES**

The purpose of this document is to provide an outline of the environmental management measures that will be implemented as part of the proposed development at the site.

The proposed management plans will mitigate and manage the potential impacts associated with the construction of the development and the ongoing use of the site for residential purposes. The specific details of the management plans will be formulated once the project has been approved. The plans will be formulated and implemented prior to any works beginning at the site and will be formally audited, reviewed and updated every five years. Informal annual review will be undertaken to ensure the plans are continuing to fulfil their intended purpose. The management plans will be registered on title such that any long term owner of the land will need to maintain the land in accordance with the plans.

Specifically, this document provides site-specific environmental management measures that aim to:

- ensure potential impacts to conserved areas of the site and the adjacent LCNP are minimised and adequately managed; and
- ensure long-term viability of flora and fauna habitats at the site.

This document outlines the following individual site-specific management plans that will be implemented to address environmental management issues at the subject site:

- Weed Management Plan;
- Threatened Species Management Plan; and
- Feral and Domestic Animal Management Plan.

The final management plans will be implemented for a five year period from the time of approval of the project and reviewed annually. The plans will be updated at the end of the five year period.

2.1 WEED MANAGEMENT

Currently, the site has weeds at the interface of the development footprint and the bushland, particularly in the south and the east, and along the drainage channels in the east and the south bushland areas. Weed introduction and spread may also occur during the construction phases of the development and through spread of weed propagules via construction activities. Residential and road development can also increase the likelihood of weed invasion from gardens or weed invasion in watercourses. These impacts will be similar to those already occurring at the site.

To manage any future impact of weeds and to improve the current condition of the bushland on site, a weed specialist/consultant will be appointed by the land manager to prepare a Weed Management Plan (WMP) prior to any works being undertaken on the site.

2.1.1 *Contents Of The Weed Management Plan*

The WMP for the site will include:

- a site assessment to identify and map the type and extent of weeds on the site;
- identification of specific weed management issues;
- a risk assessment specific to the site; and
- measures to be implemented to remove the existing weed problem and to manage the introduction and spread of weeds at the site through all stages of development and thereafter from the proposed use of the site for residential and commercial purposes. This will include measures such as the education of residents regarding appropriate garden plantings and caring for the surrounding environment.

2.1.2

Weed Management Actions

The following actions will be detailed in the WMP:

- contractor education;
- guidelines to be incorporated within a Construction Management Plan to be developed for the site;
- measures to educate residents and the public (signage/public notices/pamphlets) about the impacts that weeds may have on the local environment, the types of weeds in the area and measures to minimise their spread;
- methods of discouraging the planting of introduced plant species and the banning of environmental or noxious weeds from the development;
- specific measures to protect the bushland including appropriate fencing and methods to prevent garden escapes from entering;
- specific measures to prevent weeds entering the drainage lines on site;
- recommendations regarding signage that will assist in preventing weed spread; and
- a program for monitoring and updating of weed mapping and review of the WMP and management actions.

Table 2.1 provides an example of actions provided in a preliminary WMP.

Table 2.1 Example of general actions for a preliminary WMP

Phase	Action	Priority	Timeframe	Responsibility
Post Construction	1. Engage qualified weed contractors post construction and provide with clear and documented identification of weed removal in areas not proposed to be developed.	Priority 1 - High	Within 1 month of construction	Land Owner / manager
	2. Provide contract workers with information on appropriate hygiene practices to prevent the spread of weeds at the site.	Priority 1 - High	Within 1 month of construction	Land Owner / manager
	3. Undertake Baseline weed survey and Weed Control Program	Priority 1 - High	Within 1 month of construction	Contractor
	<p>a. Undertake weed control in a manner that minimises soil disturbance. This reduces opportunities for weeds to re-establish (thus reducing overall weed management costs)</p> <p>b. Minimise the use of herbicides. If herbicides are used, selective application (i.e. spot spraying) is preferable to broad scale spraying.</p> <p>c. Ensure vehicles move from non-contaminated areas to weed-contaminated whilst undertaking weed control activities</p> <p>d. Avoid moving through weed infestations whenever possible, particularly when weeds are flowering or in seed</p> <p>e. Remove and dispose of any weed seed and plant parts found on clothing. This will help prevent new weed infestations and the spread of existing weeds</p> <p>f. Minimise Areas of bare soil and re-establish vegetation as soon as possible on bare ground to prevent conditions favouring weed establishment</p> <p>g. Inspect and clean Vehicles of weed and their seeds at weed-contaminated sites. This includes removing mud and dirt from vehicles/ machinery</p>			
Ongoing	4. Undertake Short term monitoring of weed control success to identify any outbreaks following weed removal or suppression.	Priority 1 - High	One month after completion of construction	Land Owner / manager and contractor

2.2

FERAL AND DOMESTIC ANIMAL MANAGEMENT

Feral and domestic or stray animals are likely to include foxes, dogs, cats, rabbits, black rats and house mice. Feral and domestic animals can impact on native flora and fauna through predation, competition, soil degradation and by disturbing foraging and nesting patterns of native fauna.

Development of the site has the potential to enhance feral animal populations and may result in an increase in the number of domestic animals in the National Park. In order to mitigate potential impacts of feral and domestic animals as a result of the proposal, the land manager will appoint a fauna specialist/consultant to develop a Feral and Domestic Animal Management Plan (F&DAMP) for the site.

2.2.1

Contents Of The Feral And Domestic Animal Management Plan

Development of the F&DAMP will be undertaken in consultation with local government environment conservation agencies (such as neighbouring LCNP) and will include:

- identification of feral and domestic animals of most concern/high management priority at the site;
- flora and/or fauna species and vegetation communities most at risk from feral and domestic pest animals; and
- management measures to be implemented to manage the introduction/spread/impact of feral and domestic animals at the site.

The plan will address control measures required during construction and post-construction phases and set out restrictions and controls for domestic cats and dogs.

2.2.2 *Feral and Domestic Animal Management Actions*

The following actions will be detailed in the F&DAMP:

- a site-specific risk assessment;
- measures to minimise habitat and resources available for feral animals including:
 - requirements for the removal of rubbish and debris left at the site from development activities during the construction phase; and
 - the use of fauna-proof bins in open space areas;
- measures to educate residents and the public (signage/public notices/pamphlets) about the impacts that feral and pest animals and dogs and cats may have on the local flora and fauna and measures to minimise their impact;
- recommendations regarding necessary fencing;
- methods of control of feral and pest animals;
- a recommended monitoring program; and
- recommendations regarding control of domestic dogs and cats.

Table 2.2 provides an example of actions provided in a F&DAMP.

Table 2.2 Example of Actions for F&DAMP

Phase	Action	Priority	Timeframe	Responsibility
Construction	1. Instruct workers to place building rubbish and debris in dedicated waste bins	Priority 1 - High	Immediate	Land Owner / Manager
	2. Install temporary fauna proof bins to construction workers for food scraps and litter and empty regularly	Priority 1 - High	Immediate	Land Owner / Manager and contractor
	3. Ensure houses are rodent proof during construction by closing roof vents covering drain pipes with mesh and grates, limiting access under houses and closing sheds and limiting access	Priority 2 - Moderate	During Construction	Building Contractor
	4. Install fauna-proof bins in open space areas	Priority 2 - Moderate	Upon completion of development	Contractor
Post-construction - ongoing	5. Limit human access to the bushland and/or confine to specific areas or tracks. Pest animals are known to thrive in disturbed environments, therefore minimising human disturbance may influence the abundance and distribution of pest animals within the bushland	Priority 2 - Moderate	Upon completion of development	Land Owner / Manager
	6. Control weeds that may facilitate pest animal harbour and establishment, particularly shrubby weeds such as Blackberry <i>Rubus fruticosus aggregate</i> , Lantana <i>Lantana camara</i> and Gorse <i>Ulex europaeus</i> etc	Priority 2 - Moderate		Weed Control Contractor
	7. Ban cats from the development under a covenant to be included on each title under section 88B of the <i>Conveyancing Act 1919</i> .	Priority 1 - High	Immediately	Land Owner / Manager
	8. Ban dogs from the bushland and dogs to remain on leads at all times.	Priority 1 - High	Immediately	Land Owner / Manager
	10. Inform residents and public (signage/public notices/pamphlets) about the impacts that pest animals, their behaviour and their dogs behaviour may have on the local fauna and measures to minimise their impact and discourage feeding of birds (particularly with old bread or seed) within the housing estate and within the EZ	Priority 2 - Moderate	Upon completion of development	Land Owner / Manager

2.3

THREATENED SPECIES MANAGEMENT

Threatened species recorded at the site that may be impacted by the proposal include *Darwinia biflora* (a shrub) and the Red-Crowned Toadlet (*Pseudophryne australis*).

The land manager will appoint an ecological specialist/consultant to develop a Threatened Species Management Plan (TSMP) to ensure the long-term survival of these species and their habitats on the site and in the locality.

2.3.1

Contents Of The Threatened Species Management Plan

Identification and mapping of habitats of threatened flora and fauna on the subject site has been undertaken. This information will be used to formulate the TSMP which will include:

- identification of priority management species and areas (i.e. known habitat of threatened flora and fauna species);
- identification of management objectives (such as habitat protection and/or threat abatement) including consultation with government environment conservation agencies and local environment groups (where appropriate) relevant to the management of each of the threatened species known to occur or considered likely to occur; and
- identification of relevant management measures, incorporating recommendations from published Recovery Plans and advice and input from industry experts, DECC and DEWR.

2.3.2

Management Actions

The TSMP will include details of the following generic management actions:

- vegetation clearance will be timed to avoid disruption to breeding activity of fauna species. Surveys will be conducted in the months leading up to commencement of construction to identify locations of breeding for key threatened species. Where breeding activity is located, clearing practices will be modified to avoid disruption of breeding;
- recommendations for staging of the construction works to allow fauna sufficient time to move to alternative suitable habitat;
- appropriate fire regimes;
- measures to ensure conservation of riparian corridors and trees within the APZs to retain foraging habitat; and
- recommendations of appropriate landscaping trees within the development footprint.

In addition, more specific management actions will address management of the following threatened species and ecological communities identified from the site (ERM 2006):

Darwinia Biflora

Specifically, the TSMP will include measures for the management and conservation of *D. biflora* and will include input and review from DECC and DEWR.

Red-Crowned Toadlet

The management actions for these species will include recommended ongoing monitoring programs to ensure that the management plans are effective. The plan will be reviewed annually and formally reviewed every five years.

Table 2.3 provides an example of actions provided in a TSMP.

Table 2.3 Example of actions in a TSMP

Phase	Action	Priority	Timeframe	Responsibility
Construction - ongoing	1. Fencing of development areas to ensure no access to bushland - fencing should be erected prior to any works beginning at the site. Fencing should not prevent movement of the Bristlebird through the site or across the Wool Road.	Priority 1 - High	2 month	Land Owner/ Manager
Planning - ongoing	2. Cats banned from the development - includes education of residents and development of a system where cat sightings can be reported and acted upon. Includes material (pamphlets etc. being placed at strategic locations such as shop fronts).	Priority 1 - High	Immediately	Land Owner/ Manager
Construction - ongoing	3. Any works that disturb soil that are carried out in the bushland adhere to <i>Phytophthora</i> hygiene protocols (see Annex C).	Priority 1 - High	At all times	Contractor
Ongoing	4. Annual surveys of EBB - to detect the continued use of the site by the birds. Results are to be reported to DECC.	Priority 2 - Moderate	Annual	Land Owner/ Manager and Consultant
Ongoing	5. Fire Management - no burning in greater than a 30 year period. Last burning of EBB habitat occurred in 2000 so burning should not occur for at least 25 years from the implementation of this plan.	Priority 1 - High	Immediately	Land Owner/ Manager and RFS
Ongoing	6. Control of Black Rat - provided for in FDAMP	Priority 1 - High	1 month	Land Owner/ Manager and Pest control contractor
Construction - ongoing	7. Installation of fauna -sensitive lighting - lighting (high-pressure sodium lighting or luminare shields) to be installed should not be directed towards the bushland.	Priority 1 - High	Immediately	Land Owner/ Manager