

Plan of Management

Nelson Square Driftway Reserve Dirrabari Reserve

Nelsons Ridge, Pemulwuy



Final Issue for Public Exhibition
October 2006

Prepared by
GUY STURT + ASSOCIATES
Landscape Architecture / Environmental Design

For
**Delfin**
Lend Lease

Plan of Management

Nelson Square Driftway Reserve Dirrabari Reserve

Nelsons Ridge, Pemulwuy

Final Issue for Public Exhibition
October 2006

Prepared by
Guy Sturt & Associates Pty Ltd

For
Delfin Lend Lease

And
Holroyd City Council

CONTENTS

1.0	INTRODUCTION	1
1.1	Background	1
1.2	Land to which this Plan of Management Applies	1
1.3	Scope of this Plan of Management	2
1.4	Supplementary Reports	2
1.5	Community Consultation	3
2.0	CONTEXT	6
2.1	Regional Context	6
2.2	Local Context	6
2.3	Cultural & Historical Significance	6
	2.3.1 Archaeological investigations	6
	2.3.2 Site History	7
2.4	Physical Site Factors	8
	2.4.1 Management Zones	8
	2.4.2 Climate	8
	2.4.3 Vegetation	8
	2.4.4 Wildlife	9
	2.4.5 Landform & Drainage	9
	2.4.6 Geology and Soils	10
	2.4.7 Access and Circulation	10
	2.4.8 Improvements & Structures	11
	2.4.9 Services	13
2.5	Visual Assessment	15
2.6	Current Recreational Usage	15
	2.6.1 Introduction	15
	2.6.2 User Demand	15
2.7	Planning Considerations	16
	2.7.1 Adjoining Land Use	16
	2.7.2 Zoning and Planning Controls	16
2.8	Statutory Requirements	19
	2.8.1 Local Government Act 1993	19
	2.8.2 Classification and Categorisation	20
2.9	Management	22
	2.9.1 Tennis Courts	22
2.10	Maintenance	22
	2.10.1 Introduction	22
	2.10.2 Description of Activities	22

2.10.3	Staffing	22
2.11	Community Involvement	23
2.12	Funding	23
2.13	Asset Register	23
3.0	MANAGEMENT STRATEGIES	24
3.1	Introduction	24
3.2	Management Objectives	24
3.2.1	State government objectives for managing community land	24
3.2.2	Council's goals and objectives for open space	24
3.3	Access and Circulation	24
3.4	Provision of Facilities	25
3.4.1	Interpretive information and signage	25
3.4.2	Artwork	25
3.4.3	Additional Facilities	25
3.5	Health and Safety Issues	25
3.5.1	Flood Zone	25
3.5.2	Cycleways	25
3.5.3	Water Quality	26
3.5.4	Playgrounds	26
3.5.5	Dog Off-Leash Area	26
3.6	Soil and Erosion Control and Monitoring	26
3.7	Vegetation Management	26
3.7.1	Introduction	26
3.7.2	Vegetation Management Plan	26
3.7.3	Bushland Management Plan	27
3.7.4	Monitoring and Review of Vegetation	27
3.7.5	Fire Management	27
3.8	Maintenance	28
3.9	Planning Issues	28
3.9.1	Introduction	28
3.9.2	Open Space Links	28
3.9.3	Adjoining Land Uses	28
3.9.4	Heritage Listings	29
3.9.5	Interpretation and Education	29
4.0	IMPLEMENTATION	30
4.1	Introduction	30
4.2	Management Structure	30
4.2.1	Community Involvement	30
4.3	Funding	30

4.4	Priorities	31
4.5	Staffing	33
4.6	Commercial Development Opportunities	33
4.7	Permitted Use of the Land	33
4.8	Easements, Leases and Licences	34
4.8.1	Existing leases, licences and other estates	34
4.8.2	Authorisation of future leases, licences and other estates	34
4.9	Plan of Management Review	34
5.0	REFERENCES	35
6.0	APPENDICES	36
6.1	Appendix A - Plant Species	36
6.2	Appendix B – Asset Register	37
6.3	Appendix C – Arborists Report	39
6.4	Appendix D – Playground Audit	54

LIST OF FIGURES

Figure 1.1	Location Map	4
Figure 1.2	Ownership and Management	5
Figure 2.1	Landscape Plan	14
Figure 2.2	Zoning and Land Use	18
Figure 2.3	Categorisation	21

LIST OF TABLES

Table 1.1	Summary of Site	2
Table 2.1	Reserve Areas	6
Table 2.2	Nelsons Ridge at a Glance	6
Table 2.3	Reserve Name Significance or Meaning	8
Table 2.4	Improvements and Structures	12
Table 2.5	Expected future population characteristics	16
Table 2.6	SEPP Residential zone objectives and controls	16
Table 2.7	Council zone objectives and development controls	17
Table 2.8	Requirements for Plans of Management under the Local Government Act	19
Table 2.9	Classification of Land	20
Table 2.10	Guidelines for categorisation	20
Table 3.1	Council Heritage Listing	29
Table 4.1	Implementation Categories	31
Table 4.2	Priority Table	32

1.0 INTRODUCTION

1.1 Background

Nelson Square, Dirrabari and Driftway Reserves were established as part of a new residential development, Nelsons Ridge at Pemulwuy. Undertaken by Delfin Lend Lease (DLL) in partnership with Boral, the development process commenced in 2002, with the reserves being handed over to the ownership and control of Holroyd City Council (HCC) in 2006.

Under the Local Government Act, 1993, Holroyd City Council is required to prepare Plans of Management for its community land, including its parks and open spaces. In anticipation of the transfer of ownership of the reserves, Delfin Lend Lease commissioned Landscape Architects, Guy Sturt & Associates to undertake preparation of a Plan of Management in August 2005.

1.2 Land to which this Plan of Management Applies

This Plan of Management (POM) applies to Nelson Square, Driftway Reserve and Dirrabari Reserve in Nelsons Ridge, Pemulwuy. Figure 1.1 shows the study area in relation to the surrounding locality.

Nelson Square and Driftway Reserve are bounded by Driftway Drive to the east, Naying Drive to the west, with Naoi Avenue dividing the reserve into its north & south sections. Butu Wargun Drive terminates the northern end of Nelson Square. Dirrabari Reserve with its tennis courts and a fenced dog exercise area, is located across Driftway Drive to the south-east, on Watkin Tench Parade and Edward Drive.

Table 1.1 summarises the property and title information, existing features and management of Nelson Square, Dirrabari and Driftway Reserves.

Table 1.1 Summary of Site

Item	Description
Site Name	Nelson Square, Driftway Reserve & Dirrabari Reserve, Nelsons Ridge, Pemulwuy
Address	Driftway Drive, Nelsons Ridge, Pemulwuy
Title information	Lots 135, 136, 137, 138 & 141 DP1061621 Lot 4102 DP1081249
Ownership	Holroyd City Council
Location	Parish of Prospect, County of Cumberland LGA of Holroyd Bounded by, Naying Drive to the west, Driftway Drive and Greystanes Road to the east, Watkin Tench Parade to the south, and Butu Wargun Drive to the north.
Area	Lot 135 DP1061621 – 1.520Ha Lot 136 DP1061621 – 1.157Ha Lot 137 DP1061621 – 1.111Ha Lot 138 DP1061621 – 3.372Ha Lot 141 DP1061621 – 0.3681Ha Lot 4102 DP1081249 – 0.0445Ha Total Area – 7.5726Ha
Zoning	Residential under SEPP 59
Classification	Community land
Categorisation	Park
Care, control and management	Holroyd City Council
Conditions of park	The reserves are newly established and as such the reserves and associated structures are in good condition.
Maintenance	Holroyd City Council maintains the site.
Assets	Paths, playground, pedestrian bridges, paving, fencing, seating, shelters, BBQ's, dog exercise area, tennis courts, (refer to Appendix 6.2 Asset Register).
Existing uses	General passive recreation, children's play, tennis, basketball, dog exercise.
Leases, licences, bookings	Tennis Courts – bookings through HCC
Caveats, easements	Water services easement to north of lot 135. Easement for substation (lot 138)

1.3 Scope of this Plan of Management

Nelson Square, Driftway Reserve and Dirrabari Reserve will form an important recreational and visual amenity for the residents of Nelsons Ridge and the surrounding areas.

The Plan of Management aims to incorporate the needs of the community into the future development and management of the Reserves, while achieving the following objectives, defined by legislation and as set out by Council.

The objectives of this Plan of Management are to:

- meet legislative requirements for the preparation of Plans of Management for Community Land;
- provide a strategic platform for long term management of the development of the reserves;
- reflect community values and expectations for future use of the reserves;
- develop detailed management actions to resolve issues, consistent with community values and expectations.

1.4 Supplementary Reports

The objectives of this Plan of Management should be implemented in conjunction with the objectives of the other Plans previously prepared for the site, including:

Environmental Management Plan (2001)

Greystanes Estate – Residential Lands Precinct Plan (2002)

Bushland Management Plan (2003)

Vegetation Management Plan (2002)

1.5 Community Consultation

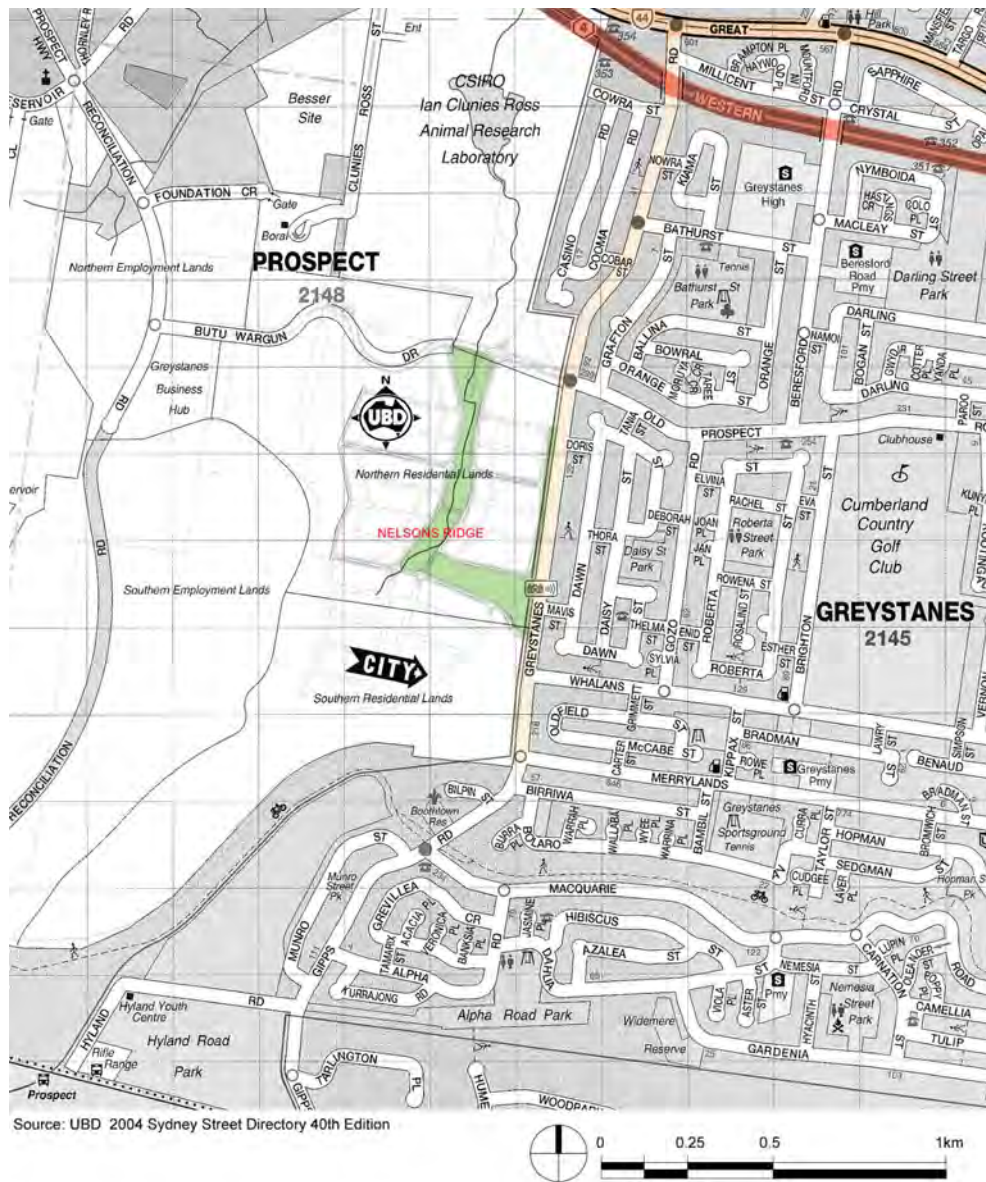
Ongoing consultation with community groups was undertaken during the various stages of the development of Nelsons Ridge. The feedback from these consultations was taken into consideration when developing the landscape plan for the reserves.

Consultation with Aboriginal groups and their involvement during the archaeological investigations helped to establish guidelines for the treatment of significant sites within the development area.

Public Exhibition Period

This Draft Plan of Management will be placed on exhibition at Council for a period of 28 days to provide the public with an opportunity to comment on the Draft Plan of Management. Comments received from the public will be considered by Council, with any necessary amendments made prior to adoption of the final Plan of Management.

Figure 1.1 Location Map



2.0 CONTEXT

2.1 Regional Context

Nelson Square, Dirrabari and Driftway Reserves are located in the development of Nelsons Ridge, at Pemulwuy, a recently designated suburb adjacent to Greystanes. Located 7 kilometres from the Parramatta CBD and 30 kilometres from Sydney City, the reserves form part of the community facilities provided within the 104 hectare master planned community.

2.2 Local Context

Nelson Square, Dirrabari and Driftway Reserves cover 7.5726Ha (Table 2.1) and form part of the over 40% of Nelson Ridge consisting of parks, conservation areas and recreational facilities.

Table 2.1 Reserve Areas

Reserve	Area (ha)
Nelson Square	1.520Ha
Driftway Reserve	2.3125Ha
Dirrabari Reserve	3.7401Ha
Total Reserves Area	7.5726Ha

The growing community surrounding the reserves (Table 2.2) incorporates a variety of opportunities for differing individuals, needs, lifestyles and budgets. Housing ranges from apartments to terraces and larger homes.

Table 2.2 Nelsons Ridge at a Glance

Feature	Comment
Total area	110 hectares (including retail site)
Total number of dwellings	1,575 approx
Total expected population	up to 4,253 people approx.
Lake area	approximately 3,650sq m

Source: (www.nelsonsridge.com.au, 2005 and Holroyd SEPP 59 Residential Lands Contribution Plan, 2004)

2.3 Cultural & Historical Significance

2.3.1 Archaeological investigations

A Heritage and Biodiversity Report was previously undertaken in 1999 by Environmental Resources Management. In addition, as part of the development process for Nelsons Ridge an archaeological investigation was commissioned by Delfin Lend Lease and undertaken by Jo McDonald Cultural Heritage Management Pty Ltd (2004). Although not specific to the location of the reserves, the investigations included areas now within these reserves.

Pre-European History

Salvage excavations of the Nelsons Ridge site uncovered a variety of artefacts, although “densities across the site are generally low”, with the report authors hypothesising that the site “was a transient use site, largely because of overall low artefact densities and its association with a minor, first order creek. It could thus be expected that people would have practised stone portability and rationing strategies. If so, people would have carried little equipment – perhaps only that needed to carry out designated tasks and to meet personal needs.” (Jo McDonald 2004).

A potentially scarred tree has been identified within the study area and has been retained within Dirrabari Reserve. Consultation with Aboriginal representatives during preparation of the landscape plans for the reserve advised that retaining the tree without bringing attention to it by way of signage or interpretation would be the best way of preserving the tree. Any arboriculture works required to preserve the existence during park maintenance works will require further consultation through the aboriginal land council.

European History

Prior to the development of the site as open space associated with the Nelsons Ridge development, the site and its environs was found to have “clearly undergone a range of disturbance factors – including land clearance, Army accommodation, pastoral activities, and infrastructure development (eg. tracks, roads and culverts) associated with quarrying activity.” (Jo McDonald 2004).

During the archaeological investigation mixed soil profiles and “significant amounts of modern material (glass, plastic, ceramics, wiring, road base gravels) were present in the test squares...despite areas of known or expected disturbance ... being avoided.”

2.3.2 Site History

The area around Prospect Hill was known to have been settled by 1791, with convict land grants being taken up by this time, and also has important associations with Captain Phillip, Charles Darwin and William Lawson (ERM 2002). Consequently the land occupying what we now know as Nelson Square, Dirrabari and Driftway Reserves has a long history of European use in comparison to most of Australia.

The agricultural land was progressively consolidated over the following years, and by 1846 the Greystanes pastoral estate occupied 3000 acres, at which time ‘Greystanes House’ the dwelling from which the surrounding suburb gets its name was built.

The land was used primarily for agriculture until WWII when a US Army camp was established on the site. After the war, in 1946 ‘Greystanes House’ was demolished to make way for quarrying operations. The original gates of Greystanes House remain today and are listed on Council’s Heritage Schedule.

Most recently, the site was part of the Boral owned quarry and brickworks. In 1999 SEPP59 “resulted in the Prospect Quarry lands being rezoned for urban development ... including residential land uses.” (Jo McDonald 2004).

The subsequent development of the Nelsons Ridge estate and its dedicated open space has provided the local residents with a number of new reserves including those covered by this Plan of Management. As with the suburbs name Pemulwuy, the Reserves names reflect both the Aboriginal and European history of the site.

Table 2.3 Reserve Name Significance or Meaning

Nelson Square Nelson Lawson accumulated land to form Greystanes Estate. It is proposed to assign the name 'Nelson' to the central meeting place in Nelson's Ridge.

Driftway Reserve Name for the linear park abutting Driftway Drive and the original location of the driftway created from the issuing of the first land grants during the 1790s.

Dirrabari Reserve Aboriginal name meaning "tree". The subject park is scattered with trees and also is the site of a potential archaeological deposit.

(www.holroyd.nsw.gov.au, 2005)

2.4 Physical Site Factors

2.4.1 Management Zones

The reserves can be divided into three distinct zones, by nature of the physical layout and development of the reserves. Figure 1.2 shows the boundaries of each zone.

Nelson Square: including formal square and facilities

Driftway Reserve: revegetation and passive recreation

Dirrabari Reserve: includes the tennis courts

2.4.2 Climate

While there is no specific data on climate for Nelsons Ridge, the climate for the site can be considered as typical to that region of western Sydney.

Climate averages collected for the nearby Prospect Reservoir show a temperature range from 0.0 – 44.7 with a mean daily minimum of 12.3 and the mean daily maximum of 22.9 degrees Celsius.

Mean annual rainfall is 871.3mm with the wettest month being March receiving an average of 97.3mm of rainfall. The annual evaporation rate of 1350mm for the area, exceeds rainfall, with the highest daily evaporation of 5.9mm occurring in December.

2.4.3 Vegetation

Original Vegetation

Typical of the Cumberland Plain Woodland (Shale Plains Woodland) the vegetation in the area of Prospect Hill was described in 1790 by Hunter as being a "very pleasant tract of country, which from the distance the trees grew from each other, and the gentle hills and dales, and rising slopes covered with grass, appeared like a park" (Jo McDonald 2004).

River Flat Forest communities (BMP 2003) would have been found along the creek lines. Both the Shale Plains Woodland and the Sydney Coastal River-flat communities are considered endangered. (VMP 2002).

Little of the original vegetation of the area remains within the area, past land use has resulted in the removal of most remnant vegetation, with only a few trees remaining. It is known that by late 1791, when Watkin Tench visited convict land grants in the area land had already been cleared for maize and wheat. (Jo McDonald 2004).

Present Day Remnant Vegetation

Within Nelson Square and Driftway Reserve, the reshaping of the creek line during the development of the reserves resulted in the removal of some of the remnant trees, with only a few remaining in Driftway Reserve. An Arborist's report was prepared describing these remnant trees, and is included in Appendix 6.3.

Dirrabari Reserve has some remnant vegetation despite intensive land use since the 1800's. The Bushland Management Plan notes, "a native tree canopy remains scattered across the site" with groundcovers represented by "a scattering of native species occurring in places (principally at the base of existing trees)." BMP (2003). The threatened *Pimelea spicata* was recorded within the boundaries of the Greystanes Estate (VMP 2002) but has not been recorded within the reserves.

The section of Dirrabari Reserve running parallel to Greystanes Road has a number of trees of high and moderate significance (Perkins 2001). The BMP (2003) identifies two management zones for this area, a regeneration zone where remnants of the Shale Plains Woodland vegetation remain and a revegetation zone where areas have been extensively disturbed.

Recent Plantings

Substantial planting of indigenous and native species was undertaken during the development of the reserves during 2004 – 2005. These plantings were undertaken in line with approvals by Council and DLWC and the recommendations of the BMP and VMP. The landscape plan (Figure 2.1) describes the extent of this planting with Appendix 6.1 listing the species used.

2.4.4 Wildlife

A range of fauna surveys of the broader Greystanes Estate site have been undertaken since 1998, with four threatened species recorded, the Greater broad-nosed bat, Eastern freetail bat, Eastern falsistrelle and the Powerful Owl. However, no threatened species have been recorded on the site.

The Environmental Management Plan (ERM 2001) notes the presence of feral animals within the Greystanes Estate. Rabbits, Hares, Foxes, Cats, Dogs and a variety of introduced birds can threaten native flora and fauna.

"Rabbits and hares have the potential to directly affect the integrity of the flora" while "foxes, introduced birds and feral and domestic cats and dogs have the potential to directly remove native fauna and indirectly affect native flora." (ERM 2001).

2.4.5 Landform & Drainage

Nelson Square, Driftway Reserve and Dirrabari Reserve are located to the east of Prospect Hill on gently undulating land.

Nelson Square

The landform of Nelson Square forms a bowl, with both the plaza and the playground opposite, sloping towards the central water feature. The water feature forms the collection and retention system for stormwater runoff from the surrounding development.

Driftway Reserve

Driftway Reserve is located along the line of the original creek which flowed through the area. The reserve generally slopes towards the north, with the central drainage line replicating the creek which previously flowed in this general location. The creek line has been extensively reshaped

and reconstructed during the development of Nelsons Ridge and forms the collection and control system for stormwater runoff from the surrounding development. Gross pollutant traps (GPT's) are located on the major inlet points where stormwater from the surrounding development enters the modified creek line.

The creek line was reformed to accommodate the expected run off from the new development, with the restored watercourse widening to form the water feature at the northern end of the reserve, adjacent to Nelson Square. Driftway Reserve falls within the 1:100 flood level and the reserve has been designed to accommodate and contain this flow.

Dirrabari Reserve

The main section of the reserve slopes gently from east to the west, towards where it meets Driftway Reserve at Driftway Drive. Slightly steeper towards its eastern end, the reserve is relatively flat at the western end, where the playground and tennis courts are located.

The section of Dirrabari Reserve which follows Greystanes Road consists of a gently undulating strip of land running parallel to the road. The land rises gently towards the historic gates of Greystanes House, which are set on one of the high points along the road. Drainage to Dirrabari Reserve relies predominantly on overland flow across the contours, this flow is collected by the road drainage system along the reserves boundaries.

2.4.6 Geology and Soils

Geotechnical investigations of the soil profiles of the reserves which were undertaken during the projects construction phase, show that parts of the site have been previously filled. Clay underlays this fill layer, with bedrock at depths ranging from 3.3m to 10.5m. "Based on local geology and previous work in the area it is expected that the bedrock will comprise Bringelly Shale." (Douglas Partners 2003).

Regrading works carried out during construction further altered the soil profile of the site, particularly along the watercourse which runs through Driftway Reserve. Dirrabari Reserve is the least disturbed of the reserves, with less disturbed soils expected to be found in conjunction with the remnant vegetation.

Soil Improvement

During construction of the reserves and the subsequent planting operations, soil improvements including cultivation, spreading of site and/or imported topsoil, and the incorporation of compost were undertaken over much of the lawn and revegetation areas.

2.4.7 Access and Circulation

Nelsons Ridge is located just south of the M4 and the Great Western Highway. Access to the development and the reserves is from Greystanes Road. The reserves themselves are easily accessed from the surrounding streets, with parking bays, including designated disabled parking, located at the kerb. Low fencing is provided to the boundaries to limit access by vehicles to the reserves.

Local residents can also access the reserves by way of the cycle and pedestrian paths provided throughout the development. These paths will connect to nearby suburbs and are intended to provide links to the surrounding regional cycleway network. Paths within the reserves link the various facilities and are graded to provide access for the disabled and those with young children.

2.4.8 Improvements & Structures

The reserves provide a variety of recreational facilities, both active and passive, linked by a network of cycle paths and pedestrian walkways. These paths extend throughout the development and further connect the facilities within Nelsons Ridge to those of the wider community.

The landscape plan, (Figure 2.1) shows the location of the improvements and structures within the reserves. These facilities were designed to meet the needs of the growing community of Nelsons Ridge. The major features in each of the management zones are described in Table 2.4, with Appendix 6.2 outlining the improvements in more detail. The playground areas developed within the reserves were the subject of a separate audit, and this report is included as Appendix 6.4.



The Bridge at Nelson Square



The Playground within Nelson Square



Naoi Bridge across Driftway Reserve



Children's cycle path at Dirrabari Reserve



Play area and reconstructed creek line, Driftway Reserve



Fenced dog exercise area in Dirrabari Reserve

Table 2.4 Improvements and Structures

Nelson Square

Item*	Improvement	Condition	Use	Comment
1	Square	good	Community events and activities	Paved area for community events and activities
2	Water Feature Lake	good	Stormwater collection	Central feature of Nelson Square, acts as stormwater collection point.
8	Reconstructed Creek line	good	Collection and distribution of stormwater	Central feature through reserve, provides flow path for stormwater.
3	Pedestrian Bridge	good	Pedestrian and cycle access.	Provides link to facilities on opposite side of the creek line.
4	Pedestrian and Cycle paths	good	Pedestrian and cycle access, exercise.	Provide links to the surrounding areas and to other activities within the reserves
5	Shelter	good	Protected seating for picnics etc.	Shelter with tables and seating adjacent to the playground.
5	BBQ	good	Picnics & BBQ's	Electric BBQ for use by local residents & visitors, close to picnic tables, playground and shelter.
6	Seating	good	Seating, relaxing	Formal and informal seating on benches, stairs and walls.
	Site Furniture, bins, bubblers, fencing, bollards, lighting	good		Provide safety & amenity to users of the reserves
7	Playground	good	Children's and teens play and exercise.	Children's play for ages from toddler to teens, includes play equipment, shade structure and half court.
1	Feature Planting to Square	good	Amenity planting	Planting for shade and amenity
11	Revegetation Areas	good	Habitat and amenity	Revegetation to provide amenity, habitat areas, and erosion control.

* Refer to Figure 2.1 Landscape Plan for location of improvements.

Driftway Reserve

Item*	Improvement	Condition	Use	Comment
5	Shelter	good	Protected seating for picnics etc.	Shelter with tables and seating adjacent to the playground.
8	Reconstructed Creek line	good	Collection and distribution of stormwater	Central feature through reserve, provides flow path for stormwater.
9	Pedestrian Bridge	good	Pedestrian and cycle access.	Provide links to the surrounding areas and to other activities within the reserves
10	Pedestrian and Cycle paths	good	Pedestrian and cycle access, exercise.	Provide links to the surrounding areas and to other activities within the reserves
11	Revegetation Areas	good	Habitat and amenity	Revegetation to provide amenity, habitat areas, and erosion control.

12	Playground	good	Children's play	Adventure playground for children of varying ages, adjacent to shelter.
6	Seating	good	Seating, relaxing	Formal and informal seating on benches, stairs and picnic tables.
	Site Furniture, bins, bubblers, fencing, bollards, lighting	good		
13	Basketball half court	good	Basketball and sports, exercise court	Half court for public use.

* Refer to Figure 2.1 Landscape Plan for location of improvements.

Dirrabari Reserve

Item*	Improvement	Condition	Use	Comment
14	Tennis Courts	good	Tennis	Fenced tennis courts, with lighting available for public use.
15	Playground	good	Children's Play	Play equipment for children, centrally located near tennis and BBQ facilities.
16	Children's Cycle Track	good	Children's Play, exercise, education.	Mini cycle track for younger children to learn bicycle and road skills.
17	Shelter	good	Protected seating for picnics etc..	Shelter with tables and seating adjacent to the playground and BBQ.
18	BBQ	good	Picnics & BBQ's	Electric BBQ for use by local residents & visitors, close to picnic tables, playground and shelter.
	Site Furniture, bins, bubblers, fencing, bollards, lighting	good		Provide safety & amenity to users of the reserves
19	Fenced Dog Exercise Area	good	Exercising and training dogs	Fenced area to safely let dogs run off the lead, dog agility equipment allows for advanced training.
20	Pedestrian and Cycle paths	good	Pedestrian and cycle access, exercise.	Provide links to the surrounding areas and to other activities within the reserves
21	Revegetation Areas	good	Habitat and amenity	Revegetation to provide amenity and habitat areas.
22	Feature Planting to Historic Gates	good	Amenity planting, focal point	Planting to signify importance of historic gates

* Refer to Figure 2.1 Landscape Plan for location of improvements.

2.4.9 Services

The reserves are provided with a range of services, including water supply to BBQ areas bubblers and hose taps. Water is also provided to the dog exercise area.

Electricity is connected to the BBQ areas and the plaza area of Nelson Square. Lighting is located to the perimeter of the reserves along the roads of the development, it is also provided along the cycleways and at the tennis courts.

Figure 2.1 Landscape Plan



2.5 Visual Assessment

The reserves provide a central visual element to this section of Nelsons Ridge, with much of the surrounding land overlooking these green spaces. The section of Dirrabari Reserve along Greystanes Road provides both a visual and physical barrier between the reserves and the road. Once development of the surrounding lots is complete the reserves importance as a visual amenity will increase.

2.6 Current Recreational Usage

2.6.1 Introduction

As part of a newly created suburban development the reserves provide important open spaces and community facilities for Nelson Ridge residents. The reserves will add to the existing parks maintained within the Holroyd LGA, and will provide recreation opportunities for the wider Holroyd community.

The Holroyd SEPP 59 Residential Lands Contribution Plan 2004 states that the Open Space Strategy prepared by Manidis Roberts Consultants (1998) identifies that the:

- provision of open space is considered an important part of Holroyd Council's service to its ratepayers and residents;
- there is currently an hierarchical range of regional, district and local open space within the LGA;
- 5% of total open space is regional open space, 13% is district open space and 82% is local open space;
- there is a lack of parks offering district or regional attraction; and
- that there is a need for improvements to existing regional open space and additional local and district facilities.

2.6.2 User Demand

With an expected population of over 4000, over 20% of which will be under the age of 15 (refer Table 2.5), Nelsons Ridge will create an increased demand for open space and recreation facilities. The anticipated increase in residential population will, as identified in the Holroyd SEPP 59 Residential Lands Contribution Plan 2004:

- place greater demands on existing public amenities and services in the Holroyd LGA; and require the provision of new, additional or improved public amenities and services, including;
- require a range of active and passive open space areas;
- require 6.4816 ha of open space within Nelsons Ridge, as identified in the Holroyd SEPP 59 Residential Lands Contribution Plan 2004.

Previous studies of recreation use by residents within Holroyd LGA have noted that "parks throughout Holroyd are primarily used for passive recreational purposes by various informal user groups" including local school groups, visitors, family picnickers and playgroups. (EDAW 1997).

The reserves have an important role in meeting the increase demand for recreation facilities, providing approximately 7.5726Ha of the total proposed 44Ha of open space for Nelsons Ridge.

Table 2.5 Expected future population characteristics

Population by age	%	Population (persons)
0 – 4 years	7.3%	425
5 – 14 years	13.3	774
15 – 24 years	14.4	838
25 - 64 years	53.2	3095
65+ years	11.8	687
Total	100%	5819

Source: Holroyd SEPP 59 Residential Lands Contribution Plan 2004

2.7 Planning Considerations

2.7.1 Adjoining Land Use

The reserves are predominantly surrounded by residential developments, with a variety of housing types, including attached and detached dwellings, multi unit housing, medium density, zero lot line and terrace style dwellings, residential flat buildings and housing for the over 55's. The land across Driftway Drive to the north-east of the Nelson Square is proposed for use for retail and community uses with a seniors living development to be constructed just to the south of this opposite Driftway Reserve.

2.7.2 Zoning and Planning Controls

The reserves are zoned residential under SEPP 59, with the Precinct Plans adopted by the Department of Planning, a requirement of the SEPP 59, identifying the reserves as being part of the open space system. The objectives of the residential zoning include the provision of local open space, as described in Table 2.6.

Table 2.6 SEPP Residential zone objectives and controls

The zone objectives are:

- (a) to ensure that development within the zone is primarily used for residential purposes and associated facilities, and
- (b) to provide for a range of housing types, including medium density housing, in areas well served by public transport and near local shops, and
- (c) to allow people to carry out a reasonable range of activities from their homes while maintaining neighbourhood amenity, and
- (d) to allow for a variety of small scale local non-residential uses that primarily serve local residents and are compatible with the character of the living area, and
- (e) to allow home-based occupations where such activities are unlikely to adversely affect the living environment of neighbours, and
- (f) to prohibit development that is of an offensive, hazardous, noisy, intrusive or environmentally inappropriate nature, and
- (g) to allow for local open space that is accessible and well located, that promotes the use and enjoyment of local open space for both residents and the workforce, that may include elements of the natural environment, and that provides for active and passive recreation.

Development that does not require consent. Development:

- (a) for the purpose of public utility undertakings, or
- (b) that:
 - (i) is of minimal environmental impact, and
 - (ii) is specified as exempt development in Schedule 2.

Development that requires consent. Development:

- (a) that meets the zone objectives, or
- (b) that is specified under the heading "Use" in Schedule 3 and that satisfies the requirements specified opposite the development under the heading "Requirement" in that Schedule.

Prohibited development

Development other than that specified in paragraph 2 or 3

Source: SEPP 59

Although the SEPP overrides many of the planning controls of the Holroyd LEP 1991, Council intends to manage the reserves with reference to the same criteria as its other reserves. Typically, reserves managed by Holroyd are zoned 6(a) public open space, under the HLEP (1991). The objectives for the reserves will be those outlined for other open space areas within the Holroyd LGA, refer to Table 2.7.

Table 2.7 Council zone objectives and development controls

Zone 6(a) - Public Open Space Zone

The objectives of this zone are:

- (a) to identify land which is currently used or is intended to be used for the purposes of open space or public recreation;
and
- (b) to allocate sufficient open space to serve the present and future recreational needs of residents and visitors; and
- (c) to enable development associated with, ancillary to or supportive of public recreational use.

Without development consent

Works for the purposes of landscaping, gardening or bushfire hazard reduction.

Only with development consent

Advertising structures; agriculture; building works; buildings for the purposes of landscaping; caravan parks; change of building use; child care centres; children's playgrounds; community uses; drill grounds; forestry; public baths; public reserves; racecourses; recreation areas and facilities; showgrounds; sportsgrounds; tourist facilities; utility installations; uses or buildings associated with those purposes which are under the care, control and management of the Council.

Prohibited

Any purpose other than a purpose included in Item 2 or 3.

Source: Holroyd LEP 1991

Figure 2.2 Zoning and Land Use



2.8 Statutory Requirements

2.8.1 Local Government Act 1993

Nelson Square, Driftway and Dirrabari Reserves are classified as “community land” under the Local Government Act 1993, and as such this Plan of Management has been prepared according to the requirements of the Local Government Act. The Act provides Councils with a specific approach to the management of community land. The general requirements of the Local Government Act 1993 for community land are that it:

- must have a Plan of Management prepared for it.
- must be kept for the use of the general community, and must not be sold.
- cannot be leased for a period of more than 21 years.
- the use and management of community land is regulated by a Plan of Management. Until a Plan of Management is adopted, the nature and use of the land must not change.

The preparation and contents of this Plan of Management are in accordance with the requirements of the Local Government Act, 1993, and the Local Government (General) Regulation, 2005, for the contents of Plans of Management, as shown below in Table 2.8.

Table 2.8 Requirements for Plans of Management under the Local Government Act

A Plan of Management needs to identify:	Relevant Sections of The Local Government Act, 1993:	How this Plan of Management satisfies the Act:
The category of the land.	Section 36(3)(a)	Section 2.2.2, Figure 2.3
Objectives for categories of land.	Section 36E to 36N	Section 3.2.1
Condition of the land and existing facilities.	Section 36(3A)(a)	Section 2.4, Table 2.4
The objectives and performance targets of the plan with respect to the land.	Section 36(3)(b)	Sections 2.7.2, 3.2
The means by which Council proposes to achieve the plan's objectives and performance targets.	Section 36(3)(c)	Section 4.4
The manner in which Council proposes to assess its performance with respect to the plan's objectives and performance targets.	Section 36(3)(d)	Performance indicators and methods of measurement in Priority Table 4.2 (Section 4.4).
Permitted future uses of the land.	Section 36(3A)(b)	Section 4.7
Leases, licences and other estates that can be granted.	Sections 46 to 47F	Section 4.8

2.8.2 Classification and Categorisation

The reserves are intended to be classified as “community land” by resolution of Council under Section 31 of the Local Government Act 1993. Under Section 31 of the Act, Council must resolve to classify land within three months of it acquiring the land. If land is not classified by Council it is taken to be classified as community land (refer Table 2.9).

Table 2.9 Classification of Land

Section 31 Of The Act 31(2) Before a council acquires land, or within 3 months after it acquires land, a council may resolve (in accordance with this Part) that the land be classified as community land or operational land.

(2A) Any land acquired by a council that is not classified under subsection (2) is, at the end of the period of 3 months referred to in that subsection, taken to have been classified under a local environmental plan as community land.

(2B) While the land remains unclassified:

(a) the land may not be used for any purpose other than that for which it was being used immediately before it was acquired, and

(b) the council may not dispose of any interest in the land.

Land Categorised as Park

The reserves are categorised as “Park” in accordance with section 36 of the Local Government Act 1993. Core objectives for the “park” category are described in Section 3.2.1 of this POM. The guidelines for categorising community land as a park are set out in Section 104 of the Local Government (General) Regulation 2005 (refer to Table 2.10). The reserves and their categorisation are set out in Figure 2.3.

Table 2.10 Guidelines for categorisation

S104 Guidelines for categorisation of land as a park

Land should be categorised as a park under Section 36(4) of the Act if the land is, or is proposed to be, improved by landscaping, gardens, or the provision of non-sporting equipment and facilities, for use mainly for passive or active recreational, social, educational and cultural pursuits that do not unduly intrude on the peaceful enjoyment of the land by others.

Figure 2.3 Categorisation



2.9 Management

Management of the reserves is the responsibility of Holroyd City Council. Council will be responsible for the coordination of any future committees or interest groups who may become involved in the ongoing management of the reserves or of facilities such as the tennis courts.

2.9.1 Tennis Courts

The tennis courts have the potential to be managed separately from the rest of the reserves, either through a separate committee or lease. However, after the initial hand over by the developer of the reserves to Council, the management of the tennis courts will be by Council.

Council has a schedule of fees and charges for use and hire of its facilities, including tennis courts.

2.10 Maintenance

2.10.1 Introduction

Maintenance of the reserves is the responsibility of Holroyd City Council.

2.10.2 Description of Activities

Maintenance requirements for the reserves will include the following activities:

- Bush regeneration / weeding
- Ongoing revegetation works / monitoring
- Monitoring success of riparian revegetation
- Monitoring of tree health and ongoing maintenance/ remedial works.
- Mowing
- Rubbish removal including dog waste bins
- Ongoing maintenance of playground/ safety audits
- Mulch replenishment
- Ongoing maintenance of tennis courts and basketball half courts
- Graffiti control

2.10.3 Staffing

The maintenance of the reserves will be incorporated into Council's existing parks maintenance program. Maintenance of any designated conservation areas and bush regeneration areas within the reserves will be managed by Council's Bushland Management Officer.

2.11 Community Involvement

Council undertakes consultation with the community for all major works undertaken in its parks and reserves. However, as the reserves are newly established it is unlikely that further consultation will be required for the duration of this POM.

Council has existing bushcare groups that work in Alpha Road Park, Hyland Road and Greystanes Creek. It is likely that a similar group will be set up for any designated bushcare areas.

The tennis courts are likely to be managed by Council, and community involvement in management during the lifespan of this POM (approx 5-10 years) should be minimal.

2.12 Funding

Council has access to a variety of funding sources for both ongoing maintenance and capital works. As the reserves are recently established and the facilities provided are relatively new, capital works expenditure in the near future should be minimal. Potential sources of funding include:

- Council's Discretionary Budget
- Council's Parks and Footpath Program
- Section 94 funds
- Grants (Metropolitan Greenspace, Dept of Sport and Recreation's Capital Assistance Program and possible grants from the new Catchment Management Authorities)

Council is currently preparing a Council wide Open Space and Recreation Strategy which will set out the direction of future improvements to reserves under its management.

2.13 Asset Register

Council's Asset Management Database (TAMS) includes the property details and a list of facilities within the reserves. This register contains information on the facilities, their condition, value and the maintenance responsibility.

3.0 MANAGEMENT STRATEGIES

3.1 Introduction

This section of the Plan of Management sets out management strategies to address management issues, consistent with the objectives for the reserves as outlined in the previous sections.

Issues regarding the management of the reserves were identified through site investigation and assessment, and during consultation with Delfin Lend Lease and Council staff.

3.2 Management Objectives

3.2.1 State government objectives for managing community land

Section 36G of the Local Government Act 1993 sets out core objectives for management of community land categorised as a park (refer to Section 2.8.2). These objectives are to:

- encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities, and
- provide for passive recreational activities or pastimes and for the casual playing of games, and
- improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management.

3.2.2 Council's goals and objectives for open space

Council objectives for open space are defined in Holroyd Councils generic Parks Plan of Management (1997). They are:

- to ensure the parks are managed predominantly for passive recreational purposes to ensure a safe environment available and accessible for use by all sections of the community
- to achieve a consistent and responsible approach to the management and maintenance of the resources within Councils parks
- to provide adequate, equitable and appropriate services for the community in the Parks and to ensure they are managed efficiently to manage, develop, protect, restore, enhance and conserve the environmental values of each Park, to ensure that they are sustainable for future generations while being visually attractive and pollution free.

3.3 Access and Circulation

Current design layout has adequately addressed all councils concerns regarding access.

Future stages and adjacent development should ensure paths connect to nearby suburbs and provide links to the surrounding regional cycleway network.

3.4 Provision of Facilities

The facilities and improvements provided within the reserves have been developed to meet the needs of the increasing population of Nelsons Ridge, and in response to the objectives set out in the SEPP 59 and those of Holroyd City Council. In addition to the facilities provided, the future provision of interpretive information, signage and artwork has the potential to encourage residents and users to claim ownership of the reserves. Involving the community in the provision of facilities can increase awareness of the reserves, provide a feeling of ownership, with the potential benefit of reducing vandalism and anti-social behaviour.

3.4.1 Interpretive information and signage

The future provision of interpretation information and additional signage throughout the reserves will allow Council to further involve the community in the reserves.

3.4.2 Artwork

The addition of public art, as set out in the Holroyd SEPP 59 Residential Lands Contribution Plan 2004, can fill a myriad of functions in the public domain including:

- Act as a signature for local identity, history and contemporary value;
- Reflect the values and aspirations of the local community;
- Act as a focal point for cultural activities, tourism and community development;
- Add interest and aesthetic elements to public parks and civic places.

3.4.3 Additional Facilities

The reserves are newly established with a range of facilities in good condition. Any future requirement for Council to provide additional facilities such as shelters, toilets and site furniture will only be determined, after usage patterns within the reserves are defined, and the growing community's needs are assessed by Council.

3.5 Health and Safety Issues

Although at present no health and safety issues have been identified for the new reserves, all public areas have the potential to develop health and safety issues. In addition to the potential for vandalism and anti-social behaviour which occurs in many public spaces, the location of Driftway Reserve within a flood zone, the water feature at Nelson Square, and areas such as the shared paths, cycleways, playgrounds and dog exercise area also have the potential to impact on community health and safety.

3.5.1 Flood Zone

The 1:100 flood zone, which occurs throughout Driftway Reserve has the potential to cause safety concerns during high rainfall events. A report on the floodway and safety has been prepared by Patterson Britton.

3.5.2 Cycleways

The potential for conflicts between bicycles and pedestrian has been addressed with the inclusion of cycleway markings designed both to the RTA standard and to HCC approval.

3.5.3 Water Quality

The quality of the water within the creek line and the water feature at Nelson Square has the potential to impact on users of the reserve. The monitoring and control of water quality is the subject of a separate report.

3.5.4 Playgrounds

An audit of the playground areas has been undertaken, and this report is included as Appendix 6.4.

3.5.5 Dog Off-Leash Area

The fenced dog exercise area provides a separation of dogs off the leash and the general public. Signage at the gates to this area warns the public of the specific use of this area. Outside this zone, dogs are subject to the rules set out in the Companion Animals Act 1998, which states in section 13(1) that “a dog that is in a public place must be under the effective control of some competent person by means of an adequate chain, cord or leash” and the controls proscribed by HCC standard ordinance signage installed within the reserve.

3.6 Soil and Erosion Control and Monitoring

As Driftway Reserve and Nelson Square contain the reconstructed creek line and water feature, which act as the collection and control system for stormwater management for the surrounding development, the ongoing monitoring or erosion along the creek line is essential.

3.7 Vegetation Management

3.7.1 Introduction

Ongoing monitoring of planting will need to be undertaken to ensure the establishment of vegetation to Nelson Square, Driftway Reserve and Dirrabari Reserve.

During the planning and establishment of the reserves a number of reports have outlined the various requirements for successful ongoing establishment and monitoring of the vegetation found within the reserves. These works are outlined in the Vegetation Management Plan (VMP) (Spackman & Mossop 2002) endorsed by the Department of Land and Water Conservation (DLWC), the Bushland Management Plan (BMP 2003) (Spackman & Mossop 2003).

3.7.2 Vegetation Management Plan

As part of the conditions set by DLWC for works undertaken during the establishment of the reserves, the works outlined in the VMP are to be undertaken.

These conditions include works ensuring the establishment of vegetation along the creek line corridor to Driftway Reserve, works to restore and maintain a dense corridor of native vegetation local to the area and rehabilitation of the riparian zone along the creek line, in accordance with the final Department of Land and Water Conservation (DLWC) endorsed version of the Vegetation Management Plan (VMP) by Spackman & Mossop and Ian Perkins Consultancy Services, dated 19 November 2002.

Works, including watering, weed control, litter removal, pest and disease control, staking and tying, inspection and replanting as required, pruning, mulching, topdressing will need to be carried out by HCC or contractors appointed by HCC. Refer to Table 11, page 19 of the VMP.

3.7.3 Bushland Management Plan

The BMP (2003) outlines requirement and methods for the ongoing monitoring and establishment of vegetation to Nelson Square, Driftway Reserve and Dirrabari Reserve.

Driftway Reserve

When assessed prior to development, Driftway Reserve was “considered to have a very low relative level of bushland management requirements due to the highly degraded nature of the existing site, (and) the degree of proposed landscape works” (Spackman & Mossop 2003, p27).

There are “targeted bushland restoration and management techniques that can be integrated in to the management of the Driftway Reserve landscape to promote the development (in places) of a sustainable plant community that is reflective of the original plant communities that once existed on the site.” (Spackman & Mossop 2003, p27).

Targeted methods listed in the BMP, include; the use of locally indigenous species and ongoing maintenance undertaken by qualified Bushland Regeneration Contractors. (Spackman & Mossop 2003, p28).

Dirrabari Reserve

The mature vegetation of Dirrabari Reserve as described in the BMP, “represents a remnant area of Cumberland Plain Woodland that has been subjected to intensive land use” (Spackman & Mossop 2003, p29).

Despite being identified as having ‘only low bushland management requirements’ the BMP identified several impacts on the vegetation and, processes and treatments appropriate to the managing the vegetation (BMP, p31).

Dirrabari Reserve – Greystanes Road

The linear section of Dirrabari Reserve along Greystanes Road contains a mixture of remnant Shale Plains woodland community, non-locally indigenous native species, and exotic species. The BMP identifies the primary role of this area as one of open space, “as an ecological corridor and development buffer.” “It is proposed that the remnant native canopy trees in good condition will be retained in conjunction with regeneration and reconstruction of the original plant community.”

3.7.4 Monitoring and Review of Vegetation

The monitoring and review of the success of the regeneration and revegetation areas is a requirement of the BMP. Additional planting works which are identified under the requirements of the BMP should be undertaken with approved species. Appendix A lists species selection to be used for any additional or future works, only species listed as approved by DIPNR are to be used in the revegetation areas along the riparian zones of Driftway Reserve.

3.7.5 Fire Management

The BMP states, “fire management will need to consider the ecological role (and necessity) of fire as part of the management and restoration of the remnant plant communities on the site, as well

as the hazard reduction needs". (Spackman & Mossop 2003, p40). While no substantial remnant vegetation currently exists, the reestablishment of plant communities and their future management may necessitate the introduction of a fire management policy, both to ensure the safety of residents and the successful establishment and survival of the plant communities.

3.8 Maintenance

As these reserves are recently established and are newly acquired, Holroyd City Council will need to undertake an audit of all facilities and improvements and establish a maintenance regime for the reserves. Maintenance of the reserves will be incorporated into Council's existing maintenance program.

Bushland Areas

Specific maintenance issues will need to be addressed with regard to the regeneration and revegetated bushland areas. Council's Bushland Management Officer will look after these designated areas.

Water Features

The water features and reconstructed creek line in Nelson Square and Driftway Reserve will require specific management practices. In addition to the monitoring of erosion and vegetation establishment along the creek line, the reeds and rushes which help stabilise these areas and provide filtration to the water will need to be maintained so they do not impede the flow of the stormwater. The open water area at Nelson Square will need to be maintained to provide a visual focus for the Square.

3.9 Planning Issues

3.9.1 Introduction

The Nelson Square, Dirrabari and Driftway Reserves Plan of Management is affected by planning issues not just relating to the reserves themselves but to the surrounding land uses. These issues have been identified in the Precinct Plan and include; open space corridors, residential development, transport links, heritage and conservation areas.

3.9.2 Open Space Links

The reserves form part of a series of linked reserves and paths extending throughout the Holroyd area and beyond. These reserves provide for:

- links for habitat, biodiversity and wild-life corridors,
- pedestrian and cycle links

The continued expansion and integration with existing and proposed links should be part of the ongoing management of the reserves.

3.9.3 Adjoining Land Uses

As the reserves form part of a newly established subdivision, it is not expected that the adjoining land uses (or those proposed) will change substantially during the life of this Plan of Management. With the majority of adjoining land being residential, it is the residents who will have the greatest effect on the open space areas.

Education regarding invasive plant species and weeds will be an ongoing requirement. Publications such as the “essential guidelines for preparing your landscape plan: Designing your garden-inside and out” prepared by Delfin Lend Lease will assist in this approach.

3.9.4 Heritage Listings

The gates of “Greystanes House” are the only item found within the reserves currently listed on any relevant heritage register. No other part of the reserves, items within the reserves, or improvements found within the reserves are at present listed on either, local, state or national heritage registers.

The “Greystanes House” gates or Boral Gates and the nearby Prospect Hill are listed as heritage items in the Holroyd LEP 1991, with Prospect Hill also listed on the NSW Heritage Register.

The Precinct Plan approved for the development, notes the significance of the “potential scarred tree” within Dirrabari Reserve, and recommends its protection. The Precinct Plan also recommends the retention and maintenance of the “Greystanes House Gates” (Boral Gates) located along Greystanes Road in Dirrabari Reserve, refer to Figure 2.1.

Table 3.1 Council Heritage Listing

Schedule 1 – Heritage Items in the HLEP 1991

70 Greystanes Road, Prospect	Boral Main Gate, formerly known as the Greystanes Gates, c1830
------------------------------	--

Schedule 1B - Known or potential archaeological sites

Part 1 Archaeological sites

3 Great Western Highway	Boral Quarry Site
-------------------------	-------------------

3.9.5 Interpretation and Education

The Precinct Plan outlines the need for an education strategy, community involvement and where appropriate, interpretive signage as part of the ongoing management of the reserves.

In addition to the requirements of the Precinct Plan, the BMP (2003) prepared during the development of Nelsons Ridge recommends that the placement of signage within open space areas, both “to interpret the works being undertaken” and in “recognition of the ecological significance of sites, ... would be of benefit to the local community and the restoration program.”

The inclusion within the reserves of interpretation and education material applicable to natural heritage, biodiversity, rehabilitation, and the aboriginal and European heritage aspects of the reserves would provide the community with information appropriate to the objectives of both the Precinct Plan and the BMP.

A range of interpretive signage has been installed in the reserves, as identified in the Development Application conditions, the Precinct Plan and the BMP.

4.0 IMPLEMENTATION

4.1 Introduction

The effective care and control, and the ongoing management of the reserves is addressed by this Plan of Management. It is an ongoing process that needs to respond to the expectations of the growing community, their requirements, the availability of funds, and the ability of Council staff.

Whilst the reserves current facilities and improvements are in good condition due to the relative young age of the recent works; maintenance to this current standard will require Council allocating appropriate resources and skilled labour to the necessary maintenance tasks.

4.2 Management Structure

Holroyd City Council will be solely responsible for the management of the reserves after they are handed over by the developer, Delfin Lend Lease, following completion of the twelve month maintenance period.

4.2.1 Community Involvement

There is potential for the formation of community or interest groups, including bush care groups to be generated from the newly established residential community. These groups could be encouraged to help with the maintenance of riparian corridors, bush regeneration areas and park improvements. Any future work would necessarily be under the direction of Council officers, its Bushland Management Officer, or qualified bush regenerators.

The tennis courts also have the potential to be managed separately from the rest of the reserves, either through a separate committee or lease.

4.3 Funding

With the hand over of the reserves to Holroyd City Council, the Council will be required to allocate funds to the reserves. Funding will be required to cover recurrent costs for repairs and maintenance in addition to any future capital expenditure. In allocating funds Holroyd City Council needs to consider such expenditure within the context of its overall annual budget limits and priorities.

Ongoing funding will have to be established from Councils budget for repairs and maintenance and the provision of services including electricity and water. Funding will also be required for the ongoing vegetation establishment that is required in line with the various management plans and approvals for the development of the reserves.

Potential funding sources for capital or recurrent costs include:

- Council's Discretionary Budget
- Council's Parks and Footpath Program
- Section 94 funds
- Grants (Metropolitan Greenspace Program, Department of Sport and Recreation's

- Capital Assistance Program and possible grants from the new Catchment Management Authorities)
- Tennis court funding could be established through the hiring of the courts.

4.4 Priorities

In order to provide a framework within which to implement this POM, a prioritised schedule of actions has been prepared. Prioritisation of works will assist Council to allocate the financial, human and physical resources required for implementation of the POM.

Implementation Schedule

The following schedule lists each proposed management action, giving it a priority rating in accordance with the criteria below. Each activity is also listed against a performance indicator and its current status is noted. The criteria should be used in the annual review to determine the priority of proposed activities within the reserves. The criteria may require modification over time in response to special circumstances as well as changing community attitudes and expectations.

Table 4.1 Implementation Categories

Activity

Activity, objective or desired outcome, that is consistent with community expectations.

H - High Priority

- safety issues in situations where there is a high probability of injury occurring
- work needed to ensure the essential function of the reserve is not compromised
- work needed to eliminate and/or reduce severe environmental problems, (eg. erosion, water pollution), in line with the requirements of the Environmental Protection Act and Soil Conservation Act.

M - Moderate Priority

- ongoing preventative and remedial maintenance of existing assets in the reserves
- work needed to ameliorate adverse environmental conditions: (shade planting, screen planting, noise intrusion, pedestrian circulation and access)
- work aimed at protecting and conserving remnant indigenous vegetation in the reserves works aimed at reducing ongoing maintenance costs

L- Low Priority

- works aimed at improving the aesthetic quality of the reserve
- works aimed at enhancing habitat values in areas associated with the reserve.

The status ratings used in the table are as follows:

O- Ongoing - this denotes activities which are carried out on an ongoing basis as required and as funds permit.

P-Proposed - these activities have been proposed by the Plan of Management, but work on these activities has not commenced.

Co-Commenced - this refers to proposed activities for which work has already begun.

Cp-Complete- this refers to activities which have been completed (their performance indicators have been fulfilled).

Table 4.2 Priority Table

ACTIVITY	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR	STATUS
Management				
Establish maintenance regime and staffing requirements for reserves	H	HCC	Maintenance program established	P
Establish budget for ongoing maintenance works	H	HCC	Budget established	O / P
Management of Tennis court (lease)	M	HCC	Management structure established	P
Access and circulation				
Provide connection to regional cycle network	M	HCC	Path connections provided	P
Interpretation and education				
Install interpretive information signs	M	HCC	Signs installed	P
Prepare educational material for new residents	H	DLL	Education material distributed	P
Install public artwork or interpretive artwork	L	HCC	Artwork commissioned and installed	P
Health and safety				
Assess lighting needs, provide security lighting if required	M	HCC	Lighting installed, if required	P
Monitor and maintain water quality to water feature.	H	HCC	Water quality maintained	O / P
Heritage protection				
Ongoing protection of scarred tree, through continued establishment of buffer vegetation.	H	HCC	Buffer vegetation established	O / P
Vegetation Management				
Conserve and protect remnant indigenous vegetation.	H	HCC	Remnant vegetation conserved	O / P
Limit competition from aggressive environmental weed species (BMP)	H	HCC	Weed species removed	O / P
Limit disturbance and compaction in root zones of mature trees. (BMP) Provide protective fencing, mulched zones.	H	HCC	Root zones protected	O / P
Monitor establishment of riparian revegetation areas	H	HCC	Vegetation established	O / P
Monitor establishment of vegetation	H	HCC	Vegetation established	O / P
Plan for succession planting of remnant Cumberland Plain trees	M	HCC	Succession plan prepared	P
Maintenance				
Carry out regular monitoring and maintenance of landscape improvements	H	HCC	Reserves maintained	O / P
Carry out regular maintenance and monitoring of park facilities.	H	HCC	Facilities maintained	O / P
Periodic inspection of remnant canopy trees to ensure hazardous defects are rectified and trees are maintained in good health. (BMP)	M	HCC / Qualified Arborist	Inspection completed, report	O / P
Develop and implement Fire management strategy	M	HCC	Strategy finalised	P
Monitor and control potential erosion areas to creek line	H	HCC	Erosion controlled	O / P
Water Feature Lake, maintain water quality and visual amenity	H	HCC	Water feature maintained	O / P
Monitoring and maintenance of playgrounds and equipment, including safety audits.	H	HCC	Audit undertaken, playgrounds maintained.	O / P
Maintenance of sports areas, tennis and basketball half courts.	H	HCC	Courts maintained.	O / P

4.5 Staffing

The hand over of these new reserves to Council will increase the demand on Council's existing maintenance regime. The increased maintenance requirements resulting from the new reserves will require changes to the allocation of existing staff and potentially the need for new staff.

If new facilities are implemented then additional staff may be required. The development of new facilities could also be carried out by contractors engaged by Council, where identified as being appropriate.

4.6 Commercial Development Opportunities

Opportunities for commercial development within the reserves is limited by the objectives applied to the reserves.

Any future commercial development undertaken within the reserves would need to be in keeping with the guidelines and objectives for land categorised as a park, as set out in the Local Government Act (refer section 2.8.2 and 3.2.1). Councils own zoning controls (section 2.7.2) and Councils objectives for the reserves (section 3.2.2) would also need to be considered.

At this stage there are no current proposals for commercial or entrepreneurial development within Nelson Square, Driftway Reserve and Dirrabari Reserve.

All potential commercial development within the reserves would require development consent, including short term or small scale commercial uses such as kiosks, mobile cafes and markets.

4.7 Permitted Use of the Land

Section 36(3A)(b) of the Local Government Act, 1993 requires that a Plan of Management that applies to just one area of community land must specify how the land will be permitted to be used in the future.

Permitted use

Recreation purposes, including informal recreation activities, and uses in line with the core objectives for land categorised as a park (refer to Section 3.2.1 State Government objectives for managing community land).

Further development

Any further development of the land will not be permitted under this Plan of Management.

Scale and intensity of any such permitted use or development

The scale and intensity of permitted developments are shown on the Landscape Plan in Figure 2.1. The use of the reserves for recreational activities, such as community events, will be permitted where damage to the reserves and inconvenience to local residents is minimised.

4.8 Easements, Leases and Licences

4.8.1 Existing leases, licences and other estates

There are no existing leases or licenses relating to Nelson Square, Driftway Reserve or Dirrabari Reserve.

An existing easement for water supply mains is located along the northern boundary of Nelson Square, and a small easement for an electricity substation is located within lot 138, refer to Figure 1.2 for location.

4.8.2 Authorisation of future leases, licences and other estates

To comply with the Local Government, 1993, this Plan of Management must clearly specify the leases, licences and other estates that are authorised on community land within Nelson Square, Driftway Reserve and Dirrabari Reserve. Occupation of community land by leases, licences and other estates that apply to the reserves are set out in Sections 46, 46A, 47, 47A, 47C and 47D of the Local Government Act, 1993.

As mentioned in Section 2.9.1, the tennis courts located in Dirrabari Reserve have the potential to be managed separately from the rest of the reserves. Council will manage the tennis courts after the initial hand over from the developer but there is the potential of Council to grant a future lease of these tennis courts (under the requirements set out in Sections 46 & 47 of the Local Government Act 1993).

Terms and conditions of a lease, licence or other estate should generally reflect the interests of Council and the public, and ensure proper management and maintenance. Under these conditions, this Plan of Management expressly authorises the granting of short-term licences that fall within the following categories: markets; concerts; delivering a public address; commercial photographic sessions; picnics and private celebrations such as weddings and family gatherings; filming for cinema and television; and community, educational and/or sporting activities/uses for single one-off events. In regard to such licences, Council must take into consideration the following matters in deciding to grant such a licence:

- Whether the use or activity is in the public interest.
- Whether the use or activity would not cause any significant detrimental impact on the reserves or on the local community.
- No permanent buildings or structures may be erected.

4.9 Plan of Management Review

This Plan of Management should be reviewed every five years, and updated as necessary according to changing circumstances and to reflect changing community and Council priorities and issues. Review of this Plan of Management should also take into account the outcomes of concurrent reviews of open space and recreation planning documents, and the Section 94 Contributions Plan.

The Priority tables have a shorter life and therefore require more frequent reviews and updating. The Priority tables should be reviewed and revised every year in accordance with Council's budgets and changing priorities.

5.0 REFERENCES

Delfin Lend Lease (2005), **Nelsons Ridge Website**, www.nelsonsridge.com.au,

Douglas Partners (2003), **Report on Geotechnical Investigation**, Nelson Ridge Development, Greystanes Road, Greystanes, Prepared for Delfin Lend Lease, November 2003.

EDAW (1997), **Parks Plan of Management** for Holroyd City Council.

Environmental Resources Management Australia ERM (2002), Greystanes Estate – Residential Lands **Precinct Plan**, prepared for Holroyd City Council.

Environmental Resources Management Australia ERM (2001), Greystanes Estate Residential Lands. **Environmental Management Plan**, prepared for Boral Resources (NSW) Pty Ltd.

Holroyd City Council (2005), **Holroyd City Council Website**, (www.holroyd.nsw.gov.au), Public exhibition of proposed park names at Nelsons Ridge, August 2005.

Holroyd City Council (2005), **Holroyd Local Environmental Plan 1991**, Gazetted 15 November 1991, Reprinted 7 November 2005.

Holroyd City Council (2004), **Holroyd SEPP 59 Residential Lands Contribution Plan 2004**, For Open Space & Recreation, Community Facilities and External Road Works & Traffic Management.

Jo McDonald Cultural Heritage Management Pty Ltd (2004), **Archaeological Salvage Excavations in the Greystanes Estate Residential Lands**; Site PH 2+3 (NPWS #45-52547), Former CSR Lands, Greystanes, NSW, March 2004.

New South Wales Government, (2005), **State Environmental Planning Policy No 59** Central Western Sydney Economic and Employment Area (1999–78), www.legislation.nsw.gov.au

New South Wales Government, (2005), **Local Government Act 1993** No 30, www.legislation.nsw.gov.au

Spackman & Mossop Landscape Architects and Ian Perkins Consultancy Services (2002), Greystanes Estate, Northern Residential Lands, **Vegetation Management Plan**, 19 November 2002.

Spackman & Mossop Landscape Architects and Ian Perkins Consultancy Services (2003), **Bushland Management Plan**, Northern Residential Lands – Greystanes Estate, Final Report, 4 December 2003.

6.0 APPENDICES

6.1 Appendix A - Plant Species

Species	Riparian Zone	Cumberland Plain
Tree Planting		
Acacia decurrens		*C
Acacia paramattensis	*r	
Angophora floribunda	*r	
Angophora subvelutina	*r	
Callistemon salignus	*r	
Casuarina glauca	*r	
Eucalyptus crebra		*C
Eucalyptus moluccana		*C
Eucalyptus tereticornis	*r	
Melaleuca decora		*C
Shrub Planting		
Bursaria spinosa	*r	
Dillwynia sieberi		*C
Indigofera australis		*C
Groundcovers & Grasses		
Carex appressa	*r	
Chloris truncata		*C
Chloris ventricosa		*C
Cyperus polystachyos	*r	
Dianella longifolia		*C
Echinopogon caespitosus		*C
Hardenbergia violacea		*C
Juncus usitatus	*r	
Lomandra longifolia	*r	
Microlaena stipoides	*r	
Pericaria decipiens	*r	
Themeda australis	*r	
Wahlenbergia gracilis	*r	
Macrophyte Planting		
Baumea articulata	*r	
Bolboschoenus fluviatilis	*r	
Cyperus exaltatus	*r	
Eleocharis acuta	*r	
Phragmites australis	*r	
Schoenoplectus validus	*r	

Note:

*r - plants used for riparian zone revegetation

*c - Cumberland Plain species for revegetation works

6.2 Appendix B – Asset Register

Driftway Reserve and Nelson Square – Asset Register

Asset	Material	Manufacturer	Number
Item			
Cycle Path	Concrete	Boral	580m
Cycle Stand	Steel	Secure post	6
Cycle Stand		Street Park Furniture	3
Play Equipment		Megatoy	1
Play Equipment		Kompan	1
Softfall	EPDM		75m2
Softfall	Mulch	ANL	390m2
Standpipe			
Seats	Tim/Steel	SFA	13
Picnic Shelter	Tim/Steel	Fleetwood	2
Picnic Table	Tim/Steel	SFA	5
Barbecue	Steel		1
Litter Bin		SFA	3
Bubbler	Steel	SFA	2
Ordinance Sign	Steel	HDS	6
Interpretive Sign	Steel	HDS	6
Park Sign			
Retaining walls	Block /concrete	Daracon	278m2
Retain Wall	Block/ Stone Face Finish		57.2
Rock Feature	Basalt	Boral	155m
Linear Grass Terracing			
Fencing	Steel/ timber	Fleetwood	1060m
Lighting Poles/ Light Fitting & connection	Steel/ Gal	Vic Pole	22
Blade walls	Concrete/ steel	Daracon	38.5m2
Stone Paving	Stone	Boral	75m2
Exposed Aggregate pave	Concrete/ Steel	Daracon	736m2
Block Paving			
Stairs			
Granite Paving	Deco	Boral	25m2
Tree/Shrubs Groundcovers/Tubes	plants		150,000
Trees/shrubs (150mm&above)	plants		30,000
Trees/shrubs (45litre)	plants		40
Trees/shrubs (75litrelitre)	plants		42
Trees/shrubs (400litre)	plants		10

Turfing		Lowlands	
Mulched Garden Beds	Mulch	Recycled	18520
Mini Courts & goal tower	Con/Steel	Game plan	2
Ornamental Pool			
			Total

Dirrabari Reserve – Asset Register

Asset	Material	Manufacture	Number
Item			
Cycle Path	Concrete	Boral	880
Cycle Stand	Steel	Leda	12
Play Equipment	Steel	Mega Toy/Amazon	4
Softfall	EPDM / mulch	Gadsby Daracon	250m2
Standpipe			
Seats	Timber / Steel	Street Furniture Australia	3
Picnic Shelter	Timber /Steel	Fleetwood Pty Ltd	1
Picnic Table	Timber/ Steel	Street Furniture Australia	2
Barbecue	Brick /Steel/ Porphyry	Scully & Associates	1
Dog Drinking Bowl and Tap	Stainless Steel/ Copper	Daracon	1
Litter Bin	Steel Dog Litter Bin	The Dog Tidy Company	2
Bubbler	Steel	Street Furniture Australia	1
Ordinance Sign			
Interpretive Sign			
Park Sign			
Rock Feature	Site Rock	Daracon	Various
Boundary			
Dog Off Leash Fence	Steel	Colmans Fencing	230
Fencing	Timber / Steel	Fleetwood Pty Ltd	685m
Gates			
Boom Gates			
Security Fence			
Lighting Poles			
Lighting Fitting			
Entry Feature	Porphyry Rock Face finish	Sydney Brick & Pave	2
Tree/Shrubs Groundcovers/Tubes	Cultivated Plants	Andreasens Green	26,823
Trees/shrubs (150mm&above)	Cultivated Plants	Andreasens Green	1,963
Turfing	Cultivated Grass	Low Land Turf	17,110
Mulched Garden Beds	Recycled Mulch	Daracon	9,515
Tennis Courts including fences	Steel Concrete	Daracon Sub Contract	2
Revegetation works	Existing Trees	Arborist Active Trees	Varies
			Total

6.3 Appendix C – Arborists Report



Commercial Operations

Unit 23 / 35 Foundry Rd, Seven Hills, NSW 2147

Telephone: 02 9620 6444

Facsimile: 02 9620 5177

E Mail: enquiries@activetreeservices.com.au

Box 6414, Post Office Blacktown, NSW, 2148

A.C.N. 002 919 299 A.B.N. 56 002 919 299

*All aspects of tree
maintenance.*

*Providing safe,
quality services and
product to customers
with high
expectations.*



TREE INSPECTION

1st September 2004

Client: Delfin Lend Lease

Subject: Ridgeline Park

Location: Northern Residential Lands - Nelson's Ridge, GREYSTANES

Arborist: Cameron Watson

Certificate 3 Horticulture (Landscape) 1989 Ryde School of Horticulture, Ryde NSW

Arborist Assessment 1995 S/W Counties Training Centre, Avon UK

The trees in Linear Park, Scattered Tree Park and Greystanes Road Landscape from 001 - 173 have had all dead wood removed larger than 20mm diameter (or shortened where retention was required for habitat purposes) and are in similar condition as previously worked on.



Huntlydale Holdings Pty Ltd
t/as Active Tree Services Australia
6a/77 Bassett Street, Mona Vale, NSW 2103
Telephone: 02 9997 0600 Facsimile: 02 9997 4411
EMail: rescomenquiries@activetreeservicesaust.com.au
PO Box 905, Mona Vale, NSW, 1660
A.C.N. 104 864 646
A.B.N. 51 104 864 646

*All aspects of tree
maintenance.*

*Providing safe,
quality services and
product to
customers with high
expectations.*

Date: 4th May 2004
Client: Delfin Lend Lease
Subject: Follow up report – Scattered Tree Park, Linear Park & Greystanes Road Landscape
Location: Nelson's Ridge, Greystanes Road, Greystanes

Recent inspection shows all trees are in good health with the exception of trees # 110 and 112 (both *Eucalyptus moluccana*). On a visit one week prior to this inspection Tree # 110 had a large section torn off due to termite activity (refer Figure 1) however tree has since totally collapsed (refer Figure 2) and will be put through a tub grinder and used to mulch native landscape areas on site. Tree 112 has a large basal scar and only 20% of its canopy alive (refer Figure 3) and should be removed as recommended in the initial report.

Tree 55 (*Eucalyptus fibrosa*) had a hanger present on the date of inspection and the offending branch has since been removed by Active Tree Services. Tree # 16 (*Eucalyptus moluccana*) recently lost a limb due to wind. Trees # 1, 23 and 24 (all *Pinus radiata*) are currently encroaching on young species indigenous to the Cumberland Plain (refer Figures 4,5 & 6) and have no habitat potential and therefore should be removed to allow for future growth of the natives.

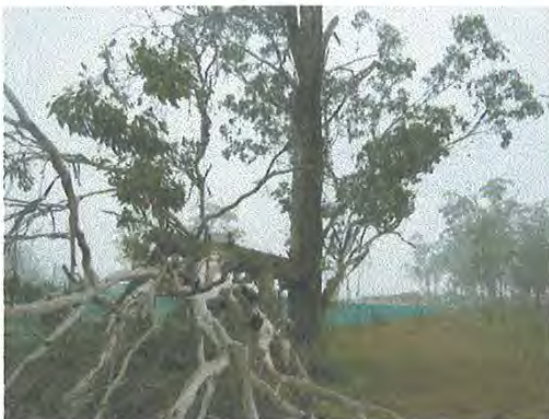


Figure 1



Figure 2

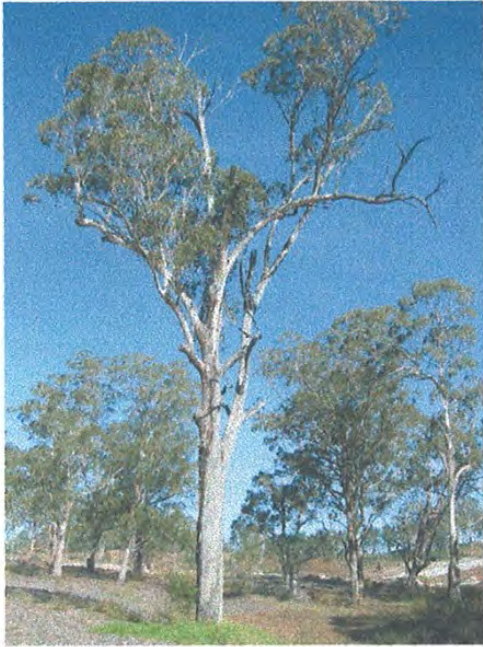


Figure 3

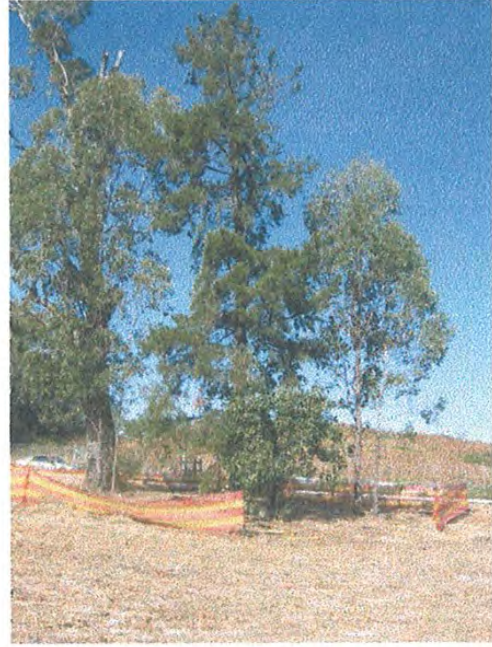


Figure 4



Figure 5



Figure 6



ID No.	Species	Condition	Habitat Value	Hollows Present	Vigour	Pest & Disease	Dead Wood (mm)	Epicormic Growth	SULE	Remedial Works Required	Priority
1	<i>Pinus radiata</i> (Monterey Pine)	Fair	Low	No	Good	Nil	Nil	Nil	2D	Nil	
2	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Good	High	Yes	Fair to Good	Nil	150	5%	1B	Slight lean to N, reshape, remove deadwood	2
16	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	High	Yes	Fair to Good	Old termite mud	400	5%	1B	Basal scar, aerial inspection, remove deadwood	1
21	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Medium	Yes	Fair to Poor	Nil	75	15%	3D	Reshape (reduce long cantilevered branches)	2
22	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Low	Yes	Fair to poor	Nil	250	10%	2D	Reshape, remove deadwood	2
23	<i>Pinus radiata</i> (Monterey Pine)	Fair	Low	No	Good	Nil	Nil	Nil	1B	Nil	
24	<i>Pinus radiata</i> (Monterey Pine)	Fair	Low	No	Fair	Nil	25	Nil	2D	Leaning, monitor	4



25	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	High	Yes	Fair	Termite damage	100	10%	4C	Extensive basal cavity/trunk cracking, hangers - remove	1
26	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Fair	Medium	Yes	Fair	Nil	150	Nil	2D	Hanger, remove deadwood	1
27	<i>Pinus radiata</i> (Monterey Pine)	Fair	Low	No	Poor	Shoot blight	25	Nil	3A	Remove	3
55	<i>Eucalyptus fibrosa</i> (Broad-leaved Ironbark)	Fair	Low	No	Fair	Basal scar to W, appears sound	150	5%	2D	Remove deadwood, lean and crown asymmetry to N.	2
56	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Poor	Medium	Yes	Poor	Lost large dominant stem	600	30%	4C	Remove	1
60	<i>Eucalyptus creba</i> (Narrow leaved Ironbark)	Fair	Low	No	Fair	Nil	150	Nil	1B	Hanger, remove deadwood	1
61	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	High	Yes	Fair	Lost top of dominant stem	150	5%	2D	3x co-dominant stems, large diameter cavity, remove deadwood	3



62	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	Forming, Galahs present	Fair	Nil	120	5%	2D	Slight lean and crown asymmetry to E, remove deadwood	3
63	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Low	Yes	Fair	Nil	250	Nil	2D	Reshape, remove deadwood, hanger	1
64	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Medium	No	Fair to Good	Nil	150	Nil	2D	Reshape, hanger, remove deadwood	1
65	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	Medium	Yes	Fair to Poor	Bees	300	10%	4H	Remove or reduce subject to SULE classification	1
66	<i>Eucalyptus fibrosa</i> (Broad-leaved Ironbark)	Good	Low	No	Fair	Nil	150	Nil	1B	Co-dominant @ 5m, hangers, remove deadwood	1
67	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Good	Low	No	Fair	Nil	150	Nil	1B	Remove deadwood	3
68	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Fair	Low	No	Fair	Nil	100	Nil	1B	Remove deadwood	3



69	<i>Eucalyptus moluccana</i> Box)	(Grey	Poor	Low	No	Poor	Termites	300	60%	4A	Remove, declining	1
70	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair to Poor	Low	No	Poor	Nil	150	5%	2D	Remove deadwood	1
71	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair to Poor	Medium	No	Fair	Branch failure W side of crown	150	10%	2D	Reshape, remove deadwood	1
72	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair	High	Yes	Fair	Large diamete r co- dominan t stem failure W	100	5%	Pend ng	Remove old codom stub and investigate cavity	1
100	<i>Eucalyptus moluccana</i> Box)	(Grey	Good	Low	No	Fair	Active termites , fungal fruiting body in small diamete r basal cavity	100	5%	2D	Treat termites via licensed pest controller, monitor basal cavity	1



101	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Low	No	Fair to good	Nil	50	Nil	1B	Remove deadwood	4
110	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Low	No	Fair	Fungal fruiting body basal scar to S.	300	20%	4H	Lost top of codorn, reshape, reduce.	1
113	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Medium	Yes	Fair to poor	Bees, dieback entire NW side of tree	500	30%	4A	Remove, declining	2
115	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	No	Fair	Nil	150	Nil	2D	Remove deadwood	2
116	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Low	No	Fair	Nil	80	10%	1B	Remove deadwood	3
117	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	No	Fair	Nil	150	5%	2D	Hanger, remove deadwood	1
118	<i>Eucalyptus moluccana</i> (Grey Box)	? Requires drilling old basal scar	Low	No	Fair to Good	Nil	150	5%	2D	Hanger, remove deadwood	1

119	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	No	Fair	Nil	150	Nil	2D	Basal scar, lean SE, hanger, remove deadwood	1
150	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Fair	High	Yes	Fair	Termite mud upper crown	150	15%	2D	Aerial inspection, reshape, remove deadwood	1
151	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Fair	Medium	No	Fair	Decay S root flare	50	25%	2D	Basal cavity 450mm decay/800mm diameter stem, monitor, remove deadwood	3
152	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	Low	No	Fair	Bees	100	20%	3A	Hangers, remove deadwood	1
153	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Medium	No	Fair	Nil	50	10%	2D	Crown asymmetrical to E, remove deadwood	3
154	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	High	Yes	Fair	Bees active in basal cavity nest	50	20%	Pending	Asymmetrical to W, assess cavity after destroy bees.	1



155	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	Low	No	Fair	Termites	100	10%	4C	Basal cavity 660mm decay/825mm diameter, tree hangers, likely to fail, remove	1
156	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	Low	Forming	Fair	Nil	200	30%	3D	Hangers, reshape	1
157	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	No	Fair	Madeira Vine	100	5%	2D	Hangers, remove deadwood	1
158	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Medium	Yes	Fair	Old borer termites	150	Nil	4H	Lost top at 6m, reshape, asymmetrical to NE	1
159	<i>Eucalyptus fibrosa</i> (Broad-leaved Ironbark)	? Stem requires drilling	Low	No	Fair	Fungal fruiting Body	50	Nil	3A	Failed co- dominant stem scar, requires drilling at basal swelling	1
160	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Medium	Yes, Galahs present	Fair	Nil	120	40%	2D	Hangers, remove deadwood	1



161	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	Medium	Yes	Poor	Fungal fruiting body, bees	150	10%	4C	Cracking stem, lost top at 8m, remove	1
162	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	No	Fair	Madeira Vine	75	10%	2D	Remove vine & hangers, remove deadwood	2
163	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Low	No	Good	Nil	50	5%	1B	Remove deadwood	3
164	<i>Eucalyptus tereticornis</i> (Forest & Red Gum) <i>Eucalyptus moluccana</i> (Grey Box)	Good	Medium	Forming	Good	Madeira Vine	75	5%	1B	Remove deadwood	3
165	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Medium	No	Good	Nil	Nil	Nil	1B	Thin by 10% co-dominant structure with minor inclusions	4
166	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Medium	No	Fair	Nil	25	Nil	1B	Remove deadwood and hangers	2



167	<i>Eucalyptus moluccana</i> Box)	(Grey	Good	Medium	No	Good	Nil	40	2%	1B	Remove deadwood	4
171	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair to Poor	High	Yes	Fair to Poor	Nil	150	20%	2D	Basal scar, long cantilevered branches, reduce lever and remove deadwood	1
72	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair to Poor	High	Yes	Fair to Poor	Bees	50	5%	2D	Remove deadwood	1
173	<i>Eucalyptus moluccana</i> Box)	(Grey	Poor	Medium	Yes, galahs present	Poor	Nil	200	40%	3A	One stem is dead	1

KEY TO EXISTING VEGETATION

REMNANT WOODLAND TREES

Trees which are remnants of the Cumberland Plain Woodland community.

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

Retained

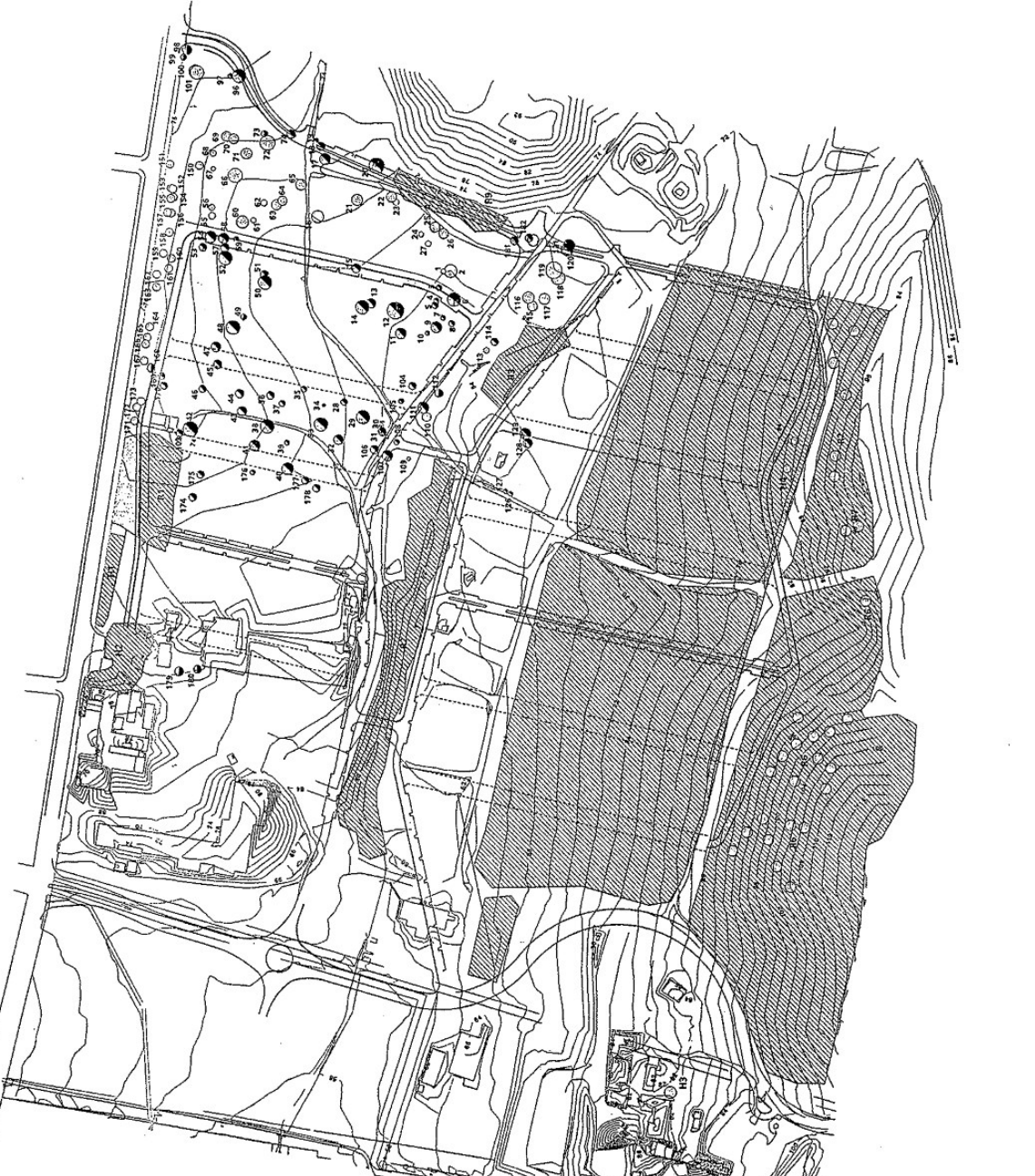
Retained

Retained

Retained

Retained

Retained



NOTE
This plan is to be read in conjunction with Item Greystones Estate - Final Report by Ian Perkins Consultancy Services, July 2001.



Drawing No. **NRL 400**
Scale
Date the No. **2004/10**
Project **GREYSTONES**

Existing Vegetation Plan

CRU Australia Pty Limited
Level 22, Australia Square
200 George Street
Sydney NSW 2000
Project: **GREYSTONES ESTATE - NORTHERN RESIDENTIAL LANDS**

SORAL RESOURCES
Level 2, Oxford Street
PO Box 860
Geelong VIC 3214
Project: **GREYSTONES ESTATE - NORTHERN RESIDENTIAL LANDS**

RECREATION SERVICES
Level 2, Oxford Street
PO Box 860
Geelong VIC 3214
Project: **GREYSTONES ESTATE - NORTHERN RESIDENTIAL LANDS**

RECORDS SHOWN IN THE MARGINS INDICATE THE STAGES UNDER WHICH THE DRAWING APPROVAL PROCESS WAS COMPLETED. THE ORIGINAL SIGNATURE CAN BE FOUND ON THE SPACED OUT LINES. ONLY A NOTED FOR DATE IS REQUIRED. ONLY A NOTED FOR DATE IS REQUIRED.

Date	Approved	By
08.10.01	MS	MS
02.10.01	MS	MS

Date	By	Approved	Date
08.10.01	MS	MS	08.10.01
02.10.01	MS	MS	02.10.01

DRG STATUS:

Issue	Date	By	Approved
ROAD LAYOUT CHANGED	08.10.01	MS	MS
Final Submission	02.10.01	MS	MS



**Commercial
Operations**

Unit 23 / 35 Foundry Rd,
Seven Hills, NSW 2147
Telephone: 02 9620 6444
Facsimile: 02 9620 5177
E Mail:
enquiries@activetreeservices.com.au Box 6414,
Post Office Blacktown,
NSW, 2148

A.C.N. 002 919 299 A.B.N. 56
002 919 299

*All aspects of tree
maintenance.
Providing safe,
quality services and
product to customers
with high expectations.*



TREE INSPECTION

1st September 2004

Client: Delfin Lend Lease

Subject: Ridgeline Park

Location: Northern Residential Lands - Nelson's Ridge, GREYSTANES **Arborist:**

Cameron Watson

Certificate 3 Horticulture (Landscape) 1989 Ryde School of Horticulture, Ryde NSW

Arborist Assessment 1995 S/W Counties Training Centre, Avon UK

The trees in Linear Park, Scattered Tree Park and Greystanes Road Landscape from 001 - 173 have had all dead wood removed larger than 20mm diameter (or shortened where retention was required for habitat purposes) and are in similar condition as previously worked on.

6.4 Appendix D – Playground Audit



MAKING PLAYGROUNDS SAFE

PLAYFIX PTY LTD

32 Woodfield Blvd Taren Point, NSW 2229

E-mail: playfix@playfix.com.au

Website: www.playfix.com.au

Ph: 02 9540 4949 Fax: 02 95404322



James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards - Playgrounds

Certificate of Compliance

NO 52798/2004

Re: Adventure Playground South

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Adventure Playground South Nelson Ridge Greystanes

Equipment : Corocord net supplied by Kompan

Date : 29th October 2004

Based on our assessment Playfix are satisfied that the installed equipment meets the current Australian Standard as outlined above.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Grant Humphreys'.

Grant Humphreys
Director



Photos 1



Photo 2



Photo 3
PLAYFIX PTY
LTD



MAKING PLAYGROUNDS SAFE

32 Woodfield Blvd Taren Point, NSW 2229
E-mail: playfix@playfix.com.au
Website: www.playfix.com.au
Ph: 02 9540 4949 Fax: 02 95404322



James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards - Playgrounds

Certificate of Compliance

NO 52798A/2004

Re: Adventure Playground South

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Adventure Playground South Nelson Ridge Greystanes

Equipment : Megatoy equipment supplied by Megatoy

Date : 17th December 2004

Based on our assessment Playfix is satisfied that the installed equipment meets the current Australian Standard as outlined above.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Grant Humphreys'.

Grant Humphreys
Director

Photos 1



Photo 2



Photo 3





MAKING PLAYGROUNDS SAFE

32 Woodfield Blvd Taren Point, NSW 2229
E-mail: playfix@playfix.com.au
Website: www.playfix.com.au
Ph: 02 9540 4949 Fax: 02 95404322



James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards – Playgrounds

Certificate of Compliance

NO 52798B/2005

Re: Cycle Playground

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Cycle Area Playground Nelson Ridge Greystanes

Equipment : Megatoy equipment supplied by Megatoy

Date : 18 Febuary 2005

Based on our assessment Playfix is satisfied that the installed equipment meets the current Australian Standard as outlined above.

Yours Sincerely

Grant Humphreys
Director



Photos 1



Photo 2



Photo 3



Photo 4



32 Woodfield Blvd Taren Point, NSW 2229
E-mail: playfix@playfix.com.au
Website: www.playfix.com.au
Ph: 02 9540 4949 Fax: 02 95404322

James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards - Playgrounds

Certificate of Compliance

NO 55289 /2005

Re: Cycle Playground

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Cycle Area Playground Nelson Ridge Greystanes

Equipment : Megatoy equipment supplied by Megatoy

Date : 18 February 2005

Based on our assessment Playfix is satisfied that the installed equipment meets the current Australian Standard as outlined above.

A handwritten signature in black ink, appearing to read 'Grant Humphreys'.

Yours Sincerely

Grant Humphreys
Director



Photos 1



Photo 2



Photo 3



Photo 4



32 Woodfield Blvd Taren Point, NSW 2229
E-mail: playfix@playfix.com.au
Website: www.playfix.com.au
Ph: 02 9540 4949 Fax: 02 95404322

James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards - Playgrounds

Certificate of Compliance

NO 56760/2005

Re: Neighbourhood Playground

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Neighbourhood Area Playground Nelson Ridge Greystanes

Equipment : Megatoy equipment and Kompan

Date : 05 May 2005

Based on our assessment Playfix is satisfied that the installed equipment meets the Australian Standard as outlined above.

A handwritten signature in black ink, appearing to read 'Grant Humphreys'.

Yours Sincerely

Grant Humphreys
Director



Photos 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6

2.0 CONTEXT

2.1 Regional Context

Nelson Square, Dirrabari and Driftway Reserves are located in the development of Nelsons Ridge, at Pemulwuy, a recently designated suburb adjacent to Greystanes. Located 7 kilometres from the Parramatta CBD and 30 kilometres from Sydney City, the reserves form part of the community facilities provided within the 104 hectare master planned community.

2.2 Local Context

Nelson Square, Dirrabari and Driftway Reserves cover 7.5726Ha (Table 2.1) and form part of the over 40% of Nelson Ridge consisting of parks, conservation areas and recreational facilities.

Table 2.1 Reserve Areas

Reserve	Area (ha)
Nelson Square	1.520Ha
Driftway Reserve	2.3125Ha
Dirrabari Reserve	3.7401Ha
Total Reserves Area	7.5726Ha

The growing community surrounding the reserves (Table 2.2) incorporates a variety of opportunities for differing individuals, needs, lifestyles and budgets. Housing ranges from apartments to terraces and larger homes.

Table 2.2 Nelsons Ridge at a Glance

Feature	Comment
Total area	110 hectares (including retail site)
Total number of dwellings	1,575 approx
Total expected population	up to 4,253 people approx
Lake area	approximately 3.650sq m

Source: (www.nelsonsridge.com.au, 2005 and Holroyd SEPP 59 Residential Lands Contribution Plan, 2004)

2.3 Cultural & Historical Significance

2.3.1 Archaeological investigations

A Heritage and Biodiversity Report was previously undertaken in 1999 by Environmental Resources Management. In addition, as part of the development process for Nelsons Ridge an archaeological investigation was commissioned by Delfin Lend Lease and undertaken by Jo McDonald Cultural Heritage Management Pty Ltd (2004). Although not specific to the location of the reserves, the investigations included areas now within these reserves.

Pre-European History

Salvage excavations of the Nelsons Ridge site uncovered a variety of artefacts, although “densities across the site are generally low”, with the report authors hypothesising that the site “was a transient use site, largely because of overall low artefact densities and its association with a minor, first order creek. It could thus be expected that people would have practised stone portability and rationing strategies. If so, people would have carried

little equipment – perhaps only that needed to carry out designated tasks and to meet personal needs.” (Jo McDonald 2004).

A potentially scarred tree has been identified within the study area and has been retained within Dirrabari Reserve. Consultation with Aboriginal representatives during preparation of the landscape plans for the reserve advised that retaining the tree without bringing attention to it by way of signage or interpretation would be the best way of preserving the tree. Any arboriculture works required to preserve the existence during park maintenance works will require further consultation through the aboriginal land council.

European History

Prior to the development of the site as open space associated with the Nelsons Ridge development, the site and its environs was found to have “clearly undergone a range of disturbance factors – including land clearance, Army accommodation, pastoral activities, and infrastructure development (eg. tracks, roads and culverts) associated with quarrying activity.” (Jo McDonald 2004).

During the archaeological investigation mixed soil profiles and “significant amounts of modern material (glass, plastic, ceramics, wiring, road base gravels) were present in the test squares...despite areas of known or expected disturbance ... being avoided.”

2.3.2 Site History

The area around Prospect Hill was known to have been settled by 1791, with convict land grants being taken up by this time, and also has important associations with Captain Phillip, Charles Darwin and William Lawson (ERM 2002). Consequently the land occupying what we now know as Nelson Square, Dirrabari and Driftway Reserves has a long history of European use in comparison to most of Australia.

The agricultural land was progressively consolidated over the following years, and by 1846 the Greystanes pastoral estate occupied 3000 acres, at which time ‘Greystanes House’ the dwelling from which the surrounding suburb gets its name was built.

The land was used primarily for agriculture until WWII when a US Army camp was established on the site. After the war, in 1946 ‘Greystanes House’ was demolished to make way for quarrying operations. The original gates of Greystanes House remain today and are listed on Council’s Heritage Schedule.

Most recently, the site was part of the Boral owned quarry and brickworks. In 1999 SEPP59 “resulted in the Prospect Quarry lands being rezoned for urban development ... including residential land uses.” (Jo McDonald 2004).

The subsequent development of the Nelsons Ridge estate and its dedicated open space has provided the local residents with a number of new reserves including those covered by this Plan of Management. As with the suburbs name Pemulwuy, the Reserves names reflect both the Aboriginal and European history of the site.

Table 2.3 Reserve Name Significance or Meaning

Nelson Square	Nelson Lawson accumulated land to form Greystanes Estate. It is proposed to assign the name 'Nelson' to the central meeting place in Nelson's Ridge.
Driftway Reserve	Name for the linear park abutting Driftway Drive and the original location of the driftway created from the issuing of the first land grants during the 1790s.
Dirrabari Reserve	Aboriginal name meaning "tree". The subject park is scattered with trees and also is the site of a potential archaeological deposit. (www.holroyd.nsw.gov.au, 2005)

2.4 Physical Site Factors

2.4.1 Management Zones

The reserves can be divided into three distinct zones, by nature of the physical layout and development of the reserves. Figure 1.2 shows the boundaries of each zone.

Nelson Square: including formal square and facilities

Driftway Reserve: revegetation and passive recreation

Dirrabari Reserve: includes the tennis courts

2.4.2 Climate

While there is no specific data on climate for Nelsons Ridge, the climate for the site can be considered as typical to that region of western Sydney.

Climate averages collected for the nearby Prospect Reservoir show a temperature range from 0.0 – 44.7 with a mean daily minimum of 12.3 and the mean daily maximum of 22.9 degrees Celsius.

Mean annual rainfall is 871.3mm with the wettest month being March receiving an average of 97.3mm of rainfall. The annual evaporation rate of 1350mm for the area, exceeds rainfall, with the highest daily evaporation of 5.9mm occurring in December.

2.4.3 Vegetation

Original Vegetation

Typical of the Cumberland Plain Woodland (Shale Plains Woodland) the vegetation in the area of Prospect Hill was described in 1790 by Hunter as being a "very pleasant tract of country, which from the distance the trees grew from each other, and the gentle hills and dales, and rising slopes covered with grass, appeared like a park" (Jo McDonald 2004).

River Flat Forest communities (BMP 2003) would have been found along the creek lines. Both the Shale Plains Woodland and the Sydney Coastal River-flat communities are considered endangered. (VMP 2002).

Little of the original vegetation of the area remains within the area, past land use has resulted in the removal of most remnant vegetation, with only a few trees remaining. It is known that by late 1791, when Watkin Tench visited convict land grants in the area land had already been cleared for maize and wheat. (Jo McDonald 2004).

Present Day Remnant Vegetation

Within Nelson Square and Driftway Reserve, the reshaping of the creek line during the development of the reserves resulted in the removal of some of the remnant trees, with only a few remaining in Driftway Reserve. An Arborist's report was prepared describing these remnant trees, and is included in Appendix 6.3.

Dirrabari Reserve has some remnant vegetation despite intensive land use since the 1800's. The Bushland Management Plan notes, "a native tree canopy remains scattered across the site" with groundcovers represented by "a scattering of native species occurring in places (principally at the base of existing trees)." BMP (2003). The threatened *Pimelea spicata* was recorded within the boundaries of the Greystanes Estate (VMP 2002) but has not been recorded within the reserves.

The section of Dirrabari Reserve running parallel to Greystanes Road has a number of trees of high and moderate significance (Perkins 2001). The BMP (2003) identifies two management zones for this area, a regeneration zone where remnants of the Shale Plains Woodland vegetation remain and a revegetation zone where areas have been extensively disturbed.

Recent Plantings

Substantial planting of indigenous and native species was undertaken during the development of the reserves during 2004 – 2005. These planting were undertaken in line with approvals by Council and DLWC and the recommendations of the BMP and VMP. The landscape plan (Figure 2.1) describes the extent of this planting with Appendix 6.1 listing the species used.

2.4.4 Wildlife

A range of fauna surveys of the broader Greystanes Estate site have been undertaken since 1998, with four threatened species recorded, the Greater broad-nosed bat, Eastern freetail bat, Eastern falsistrelle and the Powerful Owl. However, no threatened species have been recorded on the site.

The Environmental Management Plan (ERM 2001) notes the presence of feral animals within the Greystanes Estate. Rabbits, Hares, Foxes, Cats, Dogs and a variety of introduced birds can threaten native flora and fauna.

"Rabbits and hares have the potential to directly affect the integrity of the flora" while "foxes, introduced birds and feral and domestic cats and dogs have the potential to directly remove native fauna and indirectly affect native flora." (ERM 2001).

2.4.5 Landform & Drainage

Nelson Square, Driftway Reserve and Dirrabari Reserve are located to the east of Prospect Hill on gently undulating land.

Nelson Square

The landform of Nelson Square forms a bowl, with both the plaza and the playground opposite, sloping towards the central water feature. The water feature forms the collection and retention system for stormwater runoff from the surrounding development.

Driftway Reserve

Driftway Reserve is located along the line of the original creek which flowed through the area. The reserve generally slopes towards the north, with the central drainage line replicating the creek which previously flowed in this general location. The creek line has

been extensively reshaped and reconstructed during the development of Nelsons Ridge and forms the collection and control system for stormwater runoff from the surrounding development. Gross pollutant traps (GPT's) are located on the major inlet points where stormwater from the surrounding development enters the modified creek line.

The creek line was reformed to accommodate the expected run off from the new development, with the restored watercourse widening to form the water feature at the northern end of the reserve, adjacent to Nelson Square. Driftway Reserve falls within the 1:100 flood level and the reserve has been designed to accommodate and contain this flow.

Dirrabari Reserve

The main section of the reserve slopes gently from east to the west, towards where it meets Driftway Reserve at Driftway Drive. Slightly steeper towards its eastern end, the reserve is relatively flat at the western end, where the playground and tennis courts are located.

The section of Dirrabari Reserve which follows Greystanes Road consists of a gently undulating strip of land running parallel to the road. The land rises gently towards the historic gates of Greystanes House, which are set on one of the high points along the road. Drainage to Dirrabari Reserve relies predominantly on overland flow across the contours, this flow is collected by the road drainage system along the reserves boundaries.

2.4.6 Geology and Soils

Geotechnical investigations of the soil profiles of the reserves which were undertaken during the projects construction phase, show that parts of the site have been previously filled. Clay underlays this fill layer, with bedrock at depths ranging from 3.3m to 10.5m. "Based on local geology and previous work in the area it is expected that the bedrock will comprise Bringelly Shale." (Douglas Partners 2003).

Regrading works carried out during construction further altered the soil profile of the site, particularly along the watercourse which runs through Driftway Reserve. Dirrabari Reserve is the least disturbed of the reserves, with less disturbed soils expected to be found in conjunction with the remnant vegetation.

Soil Improvement

During construction of the reserves and the subsequent planting operations, soil improvements including cultivation, spreading of site and/or imported topsoil, and the incorporation of compost were undertaken over much of the lawn and revegetation areas.

2.4.7 Access and Circulation

Nelsons Ridge is located just south of the M4 and the Great Western Highway. Access to the development and the reserves is from Greystanes Road. The reserves themselves are easily accessed from the surrounding streets, with parking bays, including designated disabled parking, located at the kerb. Low fencing is provided to the boundaries to limit access by vehicles to the reserves.

Local residents can also access the reserves by way of the cycle and pedestrian paths provided throughout the development. These paths will connect to nearby suburbs and are intended to provide links to the surrounding regional cycleway network. Paths within the reserves link the various facilities and are graded to provide access for the disabled and those with young children.

2.4.8 Improvements & Structures

The reserves provide a variety of recreational facilities, both active and passive, linked by a network of cycle paths and pedestrian walkways. These paths extend throughout the development and further connect the facilities within Nelsons Ridge to those of the wider community.

The landscape plan, (Figure 2.1) shows the location of the improvements and structures within the reserves. These facilities were designed to meet the needs of the growing community of Nelsons Ridge. The major features in each of the management zones are described in Table 2.4, with Appendix 6.2 outlining the improvements in more detail. The playground areas developed within the reserves were the subject of a separate audit, and this report is included as Appendix 6.4.



The Bridge at Nelson Square



The Playground within Nelson Square



Naoui Bridge across Driftway Reserve



Children's cycle path at Dirrabari Reserve



Play area and reconstructed creek line, Driftway Reserve



Fenced dog exercise area in Dirrabari Reserve

Table 2.4 Improvements and Structures

Nelson Square

Item*	Improvement	Condition	Use	Comment
1	Square	good	Community events and activities	Paved area for community events and activities
2	Water Feature Lake	good	Stormwater collection	Central feature of Nelson Square, acts as stormwater collection point.
8	Reconstructed Creek line	good	Collection and distribution of stormwater	Central feature through reserve, provides flow path for stormwater.
3	Pedestrian Bridge	good	Pedestrian and cycle access.	Provides link to facilities on opposite side of the creek line.
4	Pedestrian and Cycle paths	good	Pedestrian and cycle access, exercise.	Provide links to the surrounding areas and to other activities within the reserves
5	Shelter	good	Protected seating for picnics etc.	Shelter with tables and seating adjacent to the playground.
5	BBQ	good	Picnics & BBQ's	Electric BBQ for use by local residents & visitors, close to picnic tables, playground and shelter.
6	Seating	good	Seating, relaxing	Formal and informal seating on benches, stairs and walls.
	Site Furniture, bins, bubblers, fencing, bollards, lighting	good		Provide safety & amenity to users of the reserves
7	Playground	good	Children's and teens play and exercise.	Children's play for ages from toddler to teens, includes play equipment, shade structure and half court.
1	Feature Planting to Square	good	Amenity planting	Planting for shade and amenity
11	Revegetation Areas	good	Habitat and amenity	Revegetation to provide amenity, habitat areas, and erosion control.

* Refer to Figure 2.1 Landscape Plan for location of improvements.

Driftway Reserve

Item*	Improvement	Condition	Use	Comment
5	Shelter	good	Protected seating for picnics etc.	Shelter with tables and seating adjacent to the playground.
8	Reconstructed Creek line	good	Collection and distribution of stormwater	Central feature through reserve, provides flow path for stormwater.
9	Pedestrian Bridge	good	Pedestrian and cycle access.	Provides link to facilities on opposite side of the creek line and those further afield.
10	Pedestrian and Cycle paths	good	Pedestrian and cycle access, exercise.	Provide links to the surrounding areas and to other activities within the reserves
11	Revegetation Areas	good	Habitat and amenity	Revegetation to provide amenity, habitat areas, and erosion control.

12	Playground	good	Children's play	Adventure playground for children of varying ages, adjacent to shelter.
6	Seating	good	Seating, relaxing	Formal and informal seating on benches, stairs and picnic tables.
	Site Furniture, bins, bubblers, fencing, bollards, lighting	good		Provide safety & amenity to users of the reserves
13	Basketball half court	good	Basketball and court sports, exercise	Half court for public use.

* Refer to Figure 2.1 Landscape Plan for location of improvements.

Dirrabari Reserve

Item*	Improvement	Condition	Use	Comment
14	Tennis Courts	good	Tennis	Fenced tennis courts, with lighting available for public use.
15	Playground	good	Children's Play	Play equipment for children, centrally located near tennis and BBQ facilities.
16	Children's Cycle Track	good	Children's Play, exercise, education.	Mini cycle track for younger children to learn bicycle and road skills.
17	Shelter	good	Protected seating for picnics etc..	Shelter with tables and seating adjacent to the playground and BBQ.
18	BBQ	good	Picnics & BBQ's	Electric BBQ for use by local residents & visitors, close to picnic tables, playground and shelter.
	Site Furniture, bins, bubblers, fencing, bollards, lighting	good		Provide safety & amenity to users of the reserves
19	Fenced Dog Exercise Area	good	Exercising and training dogs	Fenced area to safely let dogs run off the lead, dog agility equipment allows for advanced training.
20	Pedestrian and Cycle paths	good	Pedestrian and cycle access, exercise.	Provide links to the surrounding areas and to other activities within the reserves
21	Revegetation Areas	good	Habitat and amenity	Revegetation to provide amenity and habitat areas.
22	Feature Planting to Historic Gates	good	Amenity planting, focal point	Planting to signify importance of historic gates

* Refer to Figure 2.1 Landscape Plan for location of improvements.

2.4.9 Services

The reserves are provided with a range of services, including water supply to BBQ areas bubblers and hose taps. Water is also provided to the dog exercise area.

Electricity is connected to the BBQ areas and the plaza area of Nelson Square. Lighting is located to the perimeter of the reserves along the roads of the development, it is also provided along the cycleways and at the tennis courts.

Figure 2.1 Landscape Plan



2.5 Visual Assessment

The reserves provide a central visual element to this section of Nelsons Ridge, with much of the surrounding land overlooking these green spaces. The section of Dirrabari Reserve along Greystanes Road provides both a visual and physical barrier between the reserves and the road. Once development of the surrounding lots is complete the reserves importance as a visual amenity will increase.

2.6 Current Recreational Usage

2.6.1 Introduction

As part of a newly created suburban development the reserves provide important open spaces and community facilities for Nelson Ridge residents. The reserves will add to the existing parks maintained within the Holroyd LGA, and will provide recreation opportunities for the wider Holroyd community.

The Holroyd SEPP 59 Residential Lands Contribution Plan 2004 states that the Open Space Strategy prepared by Manidis Roberts Consultants (1998) identifies that the:

- provision of open space is considered an important part of Holroyd Council's service to its ratepayers and residents;
- there is currently an hierarchical range of regional, district and local open space within the LGA;
- 5% of total open space is regional open space, 13% is district open space and 82% is local open space;
- there is a lack of parks offering district or regional attraction; and
- that there is a need for improvements to existing regional open space and additional local and district facilities.

2.6.2 User Demand

With an expected population of over 4000, over 20% of which will be under the age of 15 (refer Table 2.5), Nelsons Ridge will create an increased demand for open space and recreation facilities. The anticipated increase in residential population will, as identified in the Holroyd SEPP 59 Residential Lands Contribution Plan 2004:

- place greater demands on existing public amenities and services in the Holroyd LGA; and
- require the provision of new, additional or improved public amenities and services, including;
- require a range of active and passive open space areas;
- require 6.4816 ha of open space within Nelsons Ridge, as identified in the Holroyd SEPP 59 Residential Lands Contribution Plan 2004.

Previous studies of recreation use by residents within Holroyd LGA have noted that "parks throughout Holroyd are primarily used for passive recreational purposes by various

informal user groups” including local school groups, visitors, family picnickers and playgroups. (EDAW 1997).

The reserves have an important role in meeting the increase demand for recreation facilities, providing approximately 7.5726Ha of the total proposed 44Ha of open space for Nelsons Ridge.

Table 2.5 Expected future population characteristics

Population by age	%	Population (persons)
0 – 4 years	7.3%	425
5 – 14 years	13.3	774
15 – 24 years	14.4	838
25 - 64 years	53.2	3095
65+ years	11.8	687
Total	100%	5819

Source: Holroyd SEPP 59 Residential Lands Contribution Plan 2004

2.7 Planning Considerations

2.7.1 Adjoining Land Use

The reserves are predominantly surrounded by residential developments, with a variety of housing types, including attached and detached dwellings, multi unit housing, medium density, zero lot line and terrace style dwellings, residential flat buildings and housing for the over 55's. The land across Driftway Drive to the north-east of the Nelson Square is proposed for use for retail and community uses with a seniors living development to be constructed just to the south of this opposite Driftway Reserve.

2.7.2 Zoning and Planning Controls

The reserves are zoned residential under SEPP 59, with the Precinct Plans adopted by the Department of Planning, a requirement of the SEPP 59, identifying the reserves as being part of the open space system. The objectives of the residential zoning include the provision of local open space, as described in Table 2.6.

Table 2.6 SEPP Residential zone objectives and controls

The zone objectives are:

- (a) to ensure that development within the zone is primarily used for residential purposes and associated facilities, and
- (b) to provide for a range of housing types, including medium density housing, in areas well served by public transport and near local shops, and
- (c) to allow people to carry out a reasonable range of activities from their homes while maintaining neighbourhood amenity, and
- (d) to allow for a variety of small scale local non-residential uses that primarily serve local residents and are compatible with the character of the living area, and
- (e) to allow home-based occupations where such activities are unlikely to adversely affect the living environment of neighbours, and
- (f) to prohibit development that is of an offensive, hazardous, noisy, intrusive or environmentally inappropriate nature, and
- (g) to allow for local open space that is accessible and well located, that promotes the use and enjoyment of local open space for both residents and the workforce, that may include elements of the natural environment, and that provides for active and passive recreation.

Development that does not require consent. Development:

- (a) for the purpose of public utility undertakings, or
- (b) that:
 - (i) is of minimal environmental impact, and
 - (ii) is specified as exempt development in Schedule 2.

Development that requires consent. Development:

- (a) that meets the zone objectives, or
- (b) that is specified under the heading "Use" in Schedule 3 and that satisfies the requirements specified opposite the development under the heading "Requirement" in that Schedule.

Prohibited development

Development other than that specified in paragraph 2 or 3.

Source: SEPP 59

Although the SEPP overrides many of the planning controls of the Holroyd LEP 1991, Council intends to manage the reserves with reference to the same criteria as its other reserves. Typically, reserves managed by Holroyd are zoned 6(a) public open space, under the HLEP (1991). The objectives for the reserves will be those outlined for other open space areas within the Holroyd LGA, refer to Table 2.7.

Table 2.7 Council zone objectives and development controls

Zone 6(a) - Public Open Space Zone

The objectives of this zone are:

- (a) to identify land which is currently used or is intended to be used for the purposes of open space or public recreation; and
- (b) to allocate sufficient open space to serve the present and future recreational needs of residents and visitors; and
- (c) to enable development associated with, ancillary to or supportive of public recreational use.

Without development consent

Works for the purposes of landscaping, gardening or bushfire hazard reduction.

Only with development consent

Advertising structures; agriculture; building works; buildings for the purposes of landscaping; caravan parks; change of building use; child care centres; children's playgrounds; community uses; drill grounds; forestry; public baths; public reserves; racecourses; recreation areas and facilities; showgrounds; sportsgrounds; tourist facilities; utility installations; uses or buildings associated with those purposes which are under the care, control and management of the Council.

Prohibited

Any purpose other than a purpose included in Item 2 or 3.

Source: Holroyd LEP 1991

Figure 2.2 Zoning and Land Use



2.8 Statutory Requirements

2.8.1 Local Government Act 1993

Nelson Square, Driftway and Dirrabari Reserves are classified as “community land” under the Local Government Act 1993, and as such this Plan of Management has been prepared according to the requirements of the Local Government Act. The Act provides Councils with a specific approach to the management of community land. The general requirements of the Local Government Act 1993 for community land are that it:

- must have a Plan of Management prepared for it.
- must be kept for the use of the general community, and must not be sold.
- cannot be leased for a period of more than 21 years.
- the use and management of community land is regulated by a Plan of Management. Until a Plan of Management is adopted, the nature and use of the land must not change.

The preparation and contents of this Plan of Management are in accordance with the requirements of the Local Government Act, 1993, and the Local Government (General) Regulation, 2005, for the contents of Plans of Management, as shown below in Table 2.8.

Table 2.8 Requirements for Plans of Management under the Local Government Act

A Plan of Management needs to identify:	Relevant Sections of The Local Government Act, 1993:	How this Plan of Management satisfies the Act:
The category of the land.	Section 36(3)(a)	Section 2.2.2, Figure 2.3
Objectives for categories of land.	Section 36E to 36N	Section 3.2.1
Condition of the land and existing facilities.	Section 36(3A)(a)	Section 2.4, Table 2.4
The objectives and performance targets of the plan with respect to the land.	Section 36(3)(b)	Sections 2.7.2, 3.2
The means by which Council proposes to achieve the plan's objectives and performance targets.	Section 36(3)(c)	Section 4.4
The manner in which Council proposes to assess its performance with respect to the plan's objectives and performance targets.	Section 36(3)(d)	Performance indicators and methods of measurement in Priority Table 4.2 (Section 4.4).
Permitted future uses of the land.	Section 36(3A)(b)	Section 4.7
Leases, licences and other estates that can be granted.	Sections 46 to 47F	Section 4.8

2.8.2 Classification and Categorisation

The reserves are intended to be classified as “community land” by resolution of Council under Section 31 of the Local Government Act 1993. Under Section 31 of the Act, Council must resolve to classify land within three months of it acquiring the land. If land is not classified by Council it is taken to be classified as community land (refer Table 2.9).

Table 2.9 Classification of Land

Section 31 Of The Act

31(2) Before a council acquires land, or within 3 months after it acquires land, a council may resolve (in accordance with this Part) that the land be classified as community land or operational land.

(2A) Any land acquired by a council that is not classified under subsection (2) is, at the end of the period of 3 months referred to in that subsection, taken to have been classified under a local environmental plan as community land.

(2B) While the land remains unclassified:

(a) the land may not be used for any purpose other than that for which it was being used immediately before it was acquired, and

(b) the council may not dispose of any interest in the land.

Land Categorised as Park

The reserves are categorised as “Park” in accordance with section 36 of the Local Government Act 1993. Core objectives for the “park” category are described in Section 3.2.1 of this POM. The guidelines for categorising community land as a park are set out in Section 104 of the Local Government (General) Regulation 2005 (refer to Table 2.10). The reserves and their categorisation are set out in Figure 2.3.

Table 2.10 Guidelines for categorisation

S104 Guidelines for categorisation of land as a park

Land should be categorised as a park under Section 36(4) of the Act if the land is, or is proposed to be, improved by landscaping, gardens, or the provision of non-sporting equipment and facilities, for use mainly for passive or active recreational, social, educational and cultural pursuits that do not unduly intrude on the peaceful enjoyment of the land by others.

2.9 Management

Management of the reserves is the responsibility of Holroyd City Council. Council will be responsible for the coordination of any future committees or interest groups who may become involved in the ongoing management of the reserves or of facilities such as the tennis courts.

2.9.1 Tennis Courts

The tennis courts have the potential to be managed separately from the rest of the reserves, either through a separate committee or lease. However, after the initial hand over by the developer of the reserves to Council, the management of the tennis courts will be by Council.

Council has a schedule of fees and charges for use and hire of its facilities, including tennis courts.

2.10 Maintenance

2.10.1 Introduction

Maintenance of the reserves is the responsibility of Holroyd City Council.

2.10.2 Description of Activities

Maintenance requirements for the reserves will include the following activities:

- Bush regeneration / weeding
- Ongoing revegetation works / monitoring
- Monitoring success of riparian revegetation
- Monitoring of tree health and ongoing maintenance/ remedial works.
- Mowing
- Rubbish removal including dog waste bins
- Ongoing maintenance of playground/ safety audits
- Mulch replenishment
- Ongoing maintenance of tennis courts and basketball half courts
- Graffiti control

2.10.3 Staffing

The maintenance of the reserves will be incorporated into Council's existing parks maintenance program. Maintenance of any designated conservation areas and bush regeneration areas within the reserves will be managed by Council's Bushland Management Officer.

2.11 Community Involvement

Council undertakes consultation with the community for all major works undertaken in its parks and reserves. However, as the reserves are newly established it is unlikely that further consultation will be required for the duration of this POM.

Council has existing bushcare groups that work in Alpha Road Park, Hyland Road and Greystanes Creek. It is likely that a similar group will be set up for any designated bushcare areas.

The tennis courts are likely to be managed by Council, and community involvement in management during the lifespan of this POM (approx 5-10 years) should be minimal.

2.12 Funding

Council has access to a variety of funding sources for both ongoing maintenance and capital works. As the reserves are recently established and the facilities provided are relatively new, capital works expenditure in the near future should be minimal. Potential sources of funding include:

- Council's Discretionary Budget
- Council's Parks and Footpath Program
- Section 94 funds
- Grants (Metropolitan Greenspace, Dept of Sport and Recreation's Capital Assistance Program and possible grants from the new Catchment Management Authorities)

Council is currently preparing a Council wide Open Space and Recreation Strategy which will set out the direction of future improvements to reserves under its management.

2.13 Asset Register

Council's Asset Management Database (TAMS) includes the property details and a list of facilities within the reserves. This register contains information on the facilities, their condition, value and the maintenance responsibility.

3.0 MANAGEMENT STRATEGIES

3.1 Introduction

This section of the Plan of Management sets out management strategies to address management issues, consistent with the objectives for the reserves as outlined in the previous sections.

Issues regarding the management of the reserves were identified through site investigation and assessment, and during consultation with Delfin Lend Lease and Council staff.

3.2 Management Objectives

3.2.1 State government objectives for managing community land

Section 36G of the Local Government Act 1993 sets out core objectives for management of community land categorised as a park (refer to Section 2.8.2). These objectives are to:

- encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities, and
- provide for passive recreational activities or pastimes and for the casual playing of games, and
- improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management.

3.2.2 Council's goals and objectives for open space

Council objectives for open space are defined in Holroyd Councils generic Parks Plan of Management (1997). They are:

- to ensure the parks are managed predominantly for passive recreational purposes
- to ensure a safe environment available and accessible for use by all sections of the community
- to achieve a consistent and responsible approach to the management and maintenance of the resources within Councils parks
- to provide adequate, equitable and appropriate services for the community in the Parks and to ensure they are managed efficiently
- to manage, develop, protect, restore, enhance and conserve the environmental values of each Park, to ensure that they are sustainable for future generations while being visually attractive and pollution free.

3.3 Access and Circulation

Current design layout has adequately addressed all councils concerns regarding access.

Future stages and adjacent development should ensure paths connect to nearby suburbs and provide links to the surrounding regional cycleway network.

3.4 Provision of Facilities

The facilities and improvements provided within the reserves have been developed to meet the needs of the increasing population of Nelsons Ridge, and in response to the objectives set out in the SEPP 59 and those of Holroyd City Council. In addition to the facilities provided, the future provision of interpretive information, signage and artwork has the potential to encourage residents and users to claim ownership of the reserves. Involving the community in the provision of facilities can increase awareness of the reserves, provide a feeling of ownership, with the potential benefit of reducing vandalism and anti-social behaviour.

3.4.1 Interpretive information and signage

The future provision of interpretation information and additional signage throughout the reserves will allow Council to further involve the community in the reserves.

3.4.2 Artwork

The addition of public art, as set out in the Holroyd SEPP 59 Residential Lands Contribution Plan 2004, can fill a myriad of functions in the public domain including:

- Act as a signature for local identity, history and contemporary value;
- Reflect the values and aspirations of the local community;
- Act as a focal point for cultural activities, tourism and community development;
- Add interest and aesthetic elements to public parks and civic places.

3.4.3 Additional Facilities

The reserves are newly established with a range of facilities in good condition. Any future requirement for Council to provide additional facilities such as shelters, toilets and site furniture will only be determined, after usage patterns within the reserves are defined, and the growing community's needs are assessed by Council.

3.5 Health and Safety Issues

Although at present no health and safety issues have been identified for the new reserves, all public areas have the potential to develop health and safety issues. In addition to the potential for vandalism and anti-social behaviour which occurs in many public spaces, the location of Driftway Reserve within a flood zone, the water feature at Nelson Square, and areas such as the shared paths, cycleways, playgrounds and dog exercise area also have the potential to impact on community health and safety.

3.5.1 Flood Zone

The 1:100 flood zone, which occurs throughout Driftway Reserve has the potential to cause safety concerns during high rainfall events. A report on the floodway and safety has been prepared by Patterson Britton.

3.5.2 Cycleways

The potential for conflicts between bicycles and pedestrian has been addressed with the inclusion of cycleway markings designed both to the RTA standard and to HCC approval.

3.5.3 Water Quality

The quality of the water within the creek line and the water feature at Nelson Square has the potential to impact on users of the reserve. The monitoring and control of water quality is the subject of a separate report.

3.5.4 Playgrounds

An audit of the playground areas has been undertaken, and this report is included as Appendix 6.4.

3.5.5 Dog Off-Leash Area

The fenced dog exercise area provides a separation of dogs off the leash and the general public. Signage at the gates to this area warns the public of the specific use of this area. Outside this zone, dogs are subject to the rules set out in the Companion Animals Act 1998, which states in section 13(1) that “a dog that is in a public place must be under the effective control of some competent person by means of an adequate chain, cord or leash” and the controls proscribed by HCC standard ordinance signage installed within the reserve.

3.6 Soil and Erosion Control and Monitoring

As Driftway Reserve and Nelson Square contain the reconstructed creek line and water feature, which act as the collection and control system for stormwater management for the surrounding development, the ongoing monitoring or erosion along the creek line is essential.

3.7 Vegetation Management

3.7.1 Introduction

Ongoing monitoring of planting will need to be undertaken to ensure the establishment of vegetation to Nelson Square, Driftway Reserve and Dirrabari Reserve.

During the planning and establishment of the reserves a number of reports have outlined the various requirements for successful ongoing establishment and monitoring of the vegetation found within the reserves. These works are outlined in the Vegetation Management Plan (VMP) (Spackman & Mossop 2002) endorsed by the Department of Land and Water Conservation (DLWC), the Bushland Management Plan (BMP 2003) (Spackman & Mossop 2003).

3.7.2 Vegetation Management Plan

As part of the conditions set by DLWC for works undertaken during the establishment of the reserves, the works outlined in the VMP are to be undertaken.

These conditions include works ensuring the establishment of vegetation along the creek line corridor to Driftway Reserve, works to restore and maintain a dense corridor of native vegetation local to the area and rehabilitation of the riparian zone along the creek line, in accordance with the final Department of Land and Water Conservation (DLWC) endorsed version of the Vegetation Management Plan (VMP) by Spackman & Mossop and Ian Perkins Consultancy Services, dated 19 November 2002.

Works, including watering, weed control, litter removal, pest and disease control, staking and tying, inspection and replanting as required, pruning, mulching, topdressing will need to be carried out by HCC or contractors appointed by HCC. Refer to Table 11, page 19 of the VMP.

3.7.3 Bushland Management Plan

The BMP (2003) outlines requirement and methods for the ongoing monitoring and establishment of vegetation to Nelson Square, Driftway Reserve and Dirrabari Reserve.

Driftway Reserve

When assessed prior to development, Driftway Reserve was “considered to have a very low relative level of bushland management requirements due to the highly degraded nature of the existing site, (and) the degree of proposed landscape works” (Spackman & Mossop 2003, p27).

There are “targeted bushland restoration and management techniques that can be integrated in to the management of the Driftway Reserve landscape to promote the development (in places) of a sustainable plant community that is reflective of the original plant communities that once existed on the site.” (Spackman & Mossop 2003, p27).

Targeted methods listed in the BMP, include; the use of locally indigenous species and ongoing maintenance undertaken by qualified Bushland Regeneration Contractors. (Spackman & Mossop 2003, p28).

Dirrabari Reserve

The mature vegetation of Dirrabari Reserve as described in the BMP, “represents a remnant area of Cumberland Plain Woodland that has been subjected to intensive land use” (Spackman & Mossop 2003, p29).

Despite being identified as having ‘only low bushland management requirements’ the BMP identified several impacts on the vegetation and, processes and treatments appropriate to the managing the vegetation (BMP, p31).

Dirrabari Reserve – Greystanes Road

The linear section of Dirrabari Reserve along Greystanes Road contains a mixture of remnant Shale Plains woodland community, non-locally indigenous native species, and exotic species. The BMP identifies the primary role of this area as one of open space, “as an ecological corridor and development buffer.” “It is proposed that the remnant native canopy trees in good condition will be retained in conjunction with regeneration and reconstruction of the original plant community.”

3.7.4 Monitoring and Review of Vegetation

The monitoring and review of the success of the regeneration and revegetation areas is a requirement of the BMP. Additional planting works which are identified under the requirements of the BMP should be undertaken with approved species. Appendix A lists species selection to be used for any additional or future works, only species listed as approved by DIPNR are to be used in the revegetation areas along the riparian zones of Driftway Reserve.

3.7.5 Fire Management

The BMP states, “fire management will need to consider the ecological role (and necessity) of fire as part of the management and restoration of the remnant plant

communities on the site, as well as the hazard reduction needs". (Spackman & Mossop 2003, p40). While no substantial remnant vegetation currently exists, the reestablishment of plant communities and their future management may necessitate the introduction of a fire management policy, both to ensure the safety of residents and the successful establishment and survival of the plant communities.

3.8 Maintenance

As these reserves are recently established and are newly acquired, Holroyd City Council will need to undertake an audit of all facilities and improvements and establish a maintenance regime for the reserves. Maintenance of the reserves will be incorporated into Council's existing maintenance program.

Bushland Areas

Specific maintenance issues will need to be addressed with regard to the regeneration and revegetated bushland areas. Council's Bushland Management Officer will look after these designated areas.

Water Features

The water features and reconstructed creek line in Nelson Square and Driftway Reserve will require specific management practices. In addition to the monitoring of erosion and vegetation establishment along the creek line, the reeds and rushes which help stabilise these areas and provide filtration to the water will need to be maintained so they do not impede the flow of the stormwater. The open water area at Nelson Square will need to be maintained to provide a visual focus for the Square.

3.9 Planning Issues

3.9.1 Introduction

The Nelson Square, Dirrabari and Driftway Reserves Plan of Management is affected by planning issues not just relating to the reserves themselves but to the surrounding land uses. These issues have been identified in the Precinct Plan and include; open space corridors, residential development, transport links, heritage and conservation areas.

3.9.2 Open Space Links

The reserves form part of a series of linked reserves and paths extending throughout the Holroyd area and beyond. These reserves provide for:

- links for habitat, biodiversity and wild-life corridors,
- pedestrian and cycle links

The continued expansion and integration with existing and proposed links should be part of the ongoing management of the reserves.

3.9.3 Adjoining Land Uses

As the reserves form part of a newly established subdivision, it is not expected that the adjoining land uses (or those proposed) will change substantially during the life of this Plan of Management. With the majority of adjoining land being residential, it is the residents who will have the greatest effect on the open space areas.

Education regarding invasive plant species and weeds will be an ongoing requirement. Publications such as the “*essential guidelines for preparing your landscape plan: Designing your garden-inside and out*” prepared by Delfin Lend Lease will assist in this approach.

3.9.4 Heritage Listings

The gates of “Greystanes House” are the only item found within the reserves currently listed on any relevant heritage register. No other part of the reserves, items within the reserves, or improvements found within the reserves are at present listed on either, local, state or national heritage registers.

The “Greystanes House” gates or Boral Gates and the nearby Prospect Hill are listed as heritage items in the Holroyd LEP 1991, with Prospect Hill also listed on the NSW Heritage Register.

The Precinct Plan approved for the development, notes the significance of the “potential scarred tree” within Dirrabari Reserve, and recommends its protection. The Precinct Plan also recommends the retention and maintenance of the “Greystanes House Gates” (Boral Gates) located along Greystanes Road in Dirrabari Reserve, refer to Figure 2.1.

Table 3.1 Council Heritage Listing

Schedule 1 – Heritage Items in the HLEP 1991

70 Greystanes Road, Prospect	Boral Main Gate, formerly known as the Greystanes Gates, c1830
------------------------------	--

Schedule 1B - Known or potential archaeological sites

Part 1 Archaeological sites

3 Great Western Highway	Boral Quarry Site
-------------------------	-------------------

3.9.5 Interpretation and Education

The Precinct Plan outlines the need for an education strategy, community involvement and where appropriate, interpretive signage as part of the ongoing management of the reserves.

In addition to the requirements of the Precinct Plan, the BMP (2003) prepared during the development of Nelsons Ridge recommends that the placement of signage within open space areas, both “to interpret the works being undertaken” and in “recognition of the ecological significance of sites, ... would be of benefit to the local community and the restoration program.”

The inclusion within the reserves of interpretation and education material applicable to natural heritage, biodiversity, rehabilitation, and the aboriginal and European heritage aspects of the reserves would provide the community with information appropriate to the objectives of both the Precinct Plan and the BMP.

A range of interpretive signage has been installed in the reserves, as identified in the Development Application conditions, the Precinct Plan and the BMP.

4.0 IMPLEMENTATION

4.1 Introduction

The effective care and control, and the ongoing management of the reserves is addressed by this Plan of Management. It is an ongoing process that needs to respond to the expectations of the growing community, their requirements, the availability of funds, and the ability of Council staff.

Whilst the reserves current facilities and improvements are in good condition due to the relative young age of the recent works; maintenance to this current standard will require Council allocating appropriate resources and skilled labour to the necessary maintenance tasks.

4.2 Management Structure

Holroyd City Council will be solely responsible for the management of the reserves after they are handed over by the developer, Delfin Lend Lease, following completion of the twelve month maintenance period.

4.2.1 Community Involvement

There is potential for the formation of community or interest groups, including bush care groups to be generated from the newly established residential community. These groups could be encouraged to help with the maintenance of riparian corridors, bush regeneration areas and park improvements. Any future work necessarily be under the direction of Council officers, its Bushland Management Officer, or qualified bush regenerators.

The tennis courts also have the potential to be managed separately from the rest of the reserves, either through a separate committee or lease.

4.3 Funding

With the hand over of the reserves to Holroyd City Council, the Council will be required to allocate funds to the reserves. Funding will be required to cover recurrent costs for repairs and maintenance in addition to any future capital expenditure. In allocating funds Holroyd City Council needs to consider such expenditure within the context of its overall annual budget limits and priorities.

Ongoing funding will have to be established from Councils budget for repairs and maintenance and the provision of services including electricity and water. Funding will also be required for the ongoing vegetation establishment that is required in line with the various management plans and approvals for the development of the reserves.

Potential funding sources for capital or recurrent costs include:

- Council's Discretionary Budget
- Council's Parks and Footpath Program
- Section 94 funds

- Grants (Metropolitan Greenspace Program, Department of Sport and Recreation's Capital Assistance Program and possible grants from the new Catchment Management Authorities)
- Tennis court funding could be established through the hiring of the courts.

4.4 Priorities

In order to provide a framework within which to implement this POM, a prioritised schedule of actions has been prepared. Prioritisation of works will assist Council to allocate the financial, human and physical resources required for implementation of the POM.

Implementation Schedule

The following schedule lists each proposed management action, giving it a priority rating in accordance with the criteria below. Each activity is also listed against a performance indicator and its current status is noted. The criteria should be used in the annual review to determine the priority of proposed activities within the reserves. The criteria may require modification over time in response to special circumstances as well as changing community attitudes and expectations.

Table 4.1 Implementation Categories

Activity

Activity, objective or desired outcome, that is consistent with community expectations.

H - High Priority

- safety issues in situations where there is a high probability of injury occurring
- work needed to ensure the essential function of the reserve is not compromised
- work needed to eliminate and/or reduce severe environmental problems, (eg. erosion, water pollution), in line with the requirements of the Environmental Protection Act and Soil Conservation Act.

M - Moderate Priority

- ongoing preventative and remedial maintenance of existing assets in the reserves
- work needed to ameliorate adverse environmental conditions: (shade planting, screen planting, noise intrusion, pedestrian circulation and access)
- work aimed at protecting and conserving remnant indigenous vegetation in the reserves
- works aimed at reducing ongoing maintenance costs

L- Low Priority

- works aimed at improving the aesthetic quality of the reserve
- works aimed at enhancing habitat values in areas associated with the reserve.

The status ratings used in the table are as follows:

O- Ongoing - this denotes activities which are carried out on an ongoing basis as required and as funds permit.

P-Proposed - these activities have been proposed by the Plan of Management, but work on these activities has not commenced.

Co-Commenced - this refers to proposed activities for which work has already begun.

Cp-Complete- this refers to activities which have been completed (their performance indicators have been fulfilled).

Table 4.2 Priority Table

ACTIVITY	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATOR	STATUS
Management				
Establish maintenance regime and staffing requirements for reserves	H	HCC	Maintenance program established	P
Establish budget for ongoing maintenance works	H	HCC	Budget established	O / P
Management of Tennis court (lease)	M	HCC	Management structure established	P
Access and circulation				
Provide connection to regional cycle network	M	HCC	Path connections provided	P
Interpretation and education				
Install interpretive information signs	M	HCC	Signs installed	P
Prepare educational material for new residents	H	DLL	Education material distributed	P
Install public artwork or interpretive artwork	L	HCC	Artwork commissioned and installed	P
Health and safety				
Assess lighting needs, provide security lighting if required	M	HCC	Lighting installed, if required	P
Monitor and maintain water quality to water feature.	H	HCC	Water quality maintained	O / P
Heritage protection				
Ongoing protection of scarred tree, through continued establishment of buffer vegetation.	H	HCC	Buffer vegetation established	O / P
Vegetation Management				
Conserve and protect remnant indigenous vegetation.	H	HCC	Remnant vegetation conserved	O / P
Limit competition from aggressive environmental weed species (BMP)	H	HCC	Weed species removed	O / P
Limit disturbance and compaction in root zones of mature trees. (BMP) Provide protective fencing, mulched zones.	H	HCC	Root zones protected	O / P
Monitor establishment of riparian revegetation areas	H	HCC	Vegetation established	O / P
Monitor establishment of vegetation	H	HCC	Vegetation established	O / P
Plan for succession planting of remnant Cumberland Plain trees	M	HCC	Succession plan prepared	P
Maintenance				
Carry out regular monitoring and maintenance of landscape improvements	H	HCC	Reserves maintained	O / P
Carry out regular maintenance and monitoring of park facilities.	H	HCC	Facilities maintained	O / P
Periodic inspection of remnant canopy trees to ensure hazardous defects are rectified and trees are maintained in good health. (BMP)	M	HCC / Qualified Arborist	Inspection completed, report	O / P
Develop and implement Fire management strategy	M	HCC	Strategy finalised	P
Monitor and control potential erosion areas to creek line	H	HCC	Erosion controlled	O / P
Water Feature Lake, maintain water quality and visual amenity	H	HCC	Water feature maintained	O / P
Monitoring and maintenance of playgrounds and equipment, including safety audits.	H	HCC	Audit undertaken, playgrounds maintained.	O / P
Maintenance of sports areas, tennis and basketball half courts.	H	HCC	Courts maintained.	O / P

4.5 Staffing

The hand over of these new reserves to Council will increase the demand on Council's existing maintenance regime. The increased maintenance requirements resulting from the new reserves will require changes to the allocation of existing staff and potentially the need for new staff.

If new facilities are implemented then additional staff may be required. The development of new facilities could also be carried out by contractors engaged by Council, where identified as being appropriate.

4.6 Commercial Development Opportunities

Opportunities for commercial development within the reserves is limited by the objectives applied to the reserves.

Any future commercial development undertaken within the reserves would need to be in keeping with the guidelines and objectives for land categorised as a park, as set out in the Local Government Act (refer section 2.8.2 and 3.2.1). Councils own zoning controls (section 2.7.2) and Councils objectives for the reserves (section 3.2.2) would also need to be considered.

At this stage there are no current proposals for commercial or entrepreneurial development within Nelson Square, Driftway Reserve and Dirrabari Reserve.

All potential commercial development within the reserves would require development consent, including short term or small scale commercial uses such as kiosks, mobile cafes and markets.

4.7 Permitted Use of the Land

Section 36(3A)(b) of the Local Government Act, 1993 requires that a Plan of Management that applies to just one area of community land must specify how the land will be permitted to be used in the future.

Permitted use

Recreation purposes, including informal recreation activities, and uses in line with the core objectives for land categorised as a park (refer to Section 3.2.1 State Government objectives for managing community land).

Further development

Any further development of the land will not be permitted under this Plan of Management.

Scale and intensity of any such permitted use or development

The scale and intensity of permitted developments are shown on the Landscape Plan in Figure 2.1. The use of the reserves for recreational activities, such as community events, will be permitted where damage to the reserves and inconvenience to local residents is minimised.

4.8 Easements, Leases and Licences

4.8.1 Existing leases, licences and other estates

There are no existing leases or licenses relating to Nelson Square, Driftway Reserve or Dirrabari Reserve.

An existing easement for water supply mains is located along the northern boundary of Nelson Square, and a small easement for an electricity substation is located within lot 138, refer to Figure 1.2 for location.

4.8.2 Authorisation of future leases, licences and other estates

To comply with the Local Government, 1993, this Plan of Management must clearly specify the leases, licences and other estates that are authorised on community land within Nelson Square, Driftway Reserve and Dirrabari Reserve. Occupation of community land by leases, licences and other estates that apply to the reserves are set out in Sections 46, 46A, 47, 47A, 47C and 47D of the Local Government Act, 1993.

As mentioned in Section 2.9.1, the tennis courts located in Dirrabari Reserve have the potential to be managed separately from the rest of the reserves. Council will manage the tennis courts after the initial hand over from the developer but there is the potential of Council to grant a future lease of these tennis courts (under the requirements set out in Sections 46 & 47 of the Local Government Act 1993).

Terms and conditions of a lease, licence or other estate should generally reflect the interests of Council and the public, and ensure proper management and maintenance. Under these conditions, this Plan of Management expressly authorises the granting of short-term licences that fall within the following categories: markets; concerts; delivering a public address; commercial photographic sessions; picnics and private celebrations such as weddings and family gatherings; filming for cinema and television; and community, educational and/or sporting activities/uses for single one-off events. In regard to such licences, Council must take into consideration the following matters in deciding to grant such a licence:

- Whether the use or activity is in the public interest.
- Whether the use or activity would not cause any significant detrimental impact on the reserves or on the local community.
- No permanent buildings or structures may be erected.

4.9 Plan of Management Review

This Plan of Management should be reviewed every five years, and updated as necessary according to changing circumstances and to reflect changing community and Council priorities and issues. Review of this Plan of Management should also take into account the outcomes of concurrent reviews of open space and recreation planning documents, and the Section 94 Contributions Plan.

The Priority tables have a shorter life and therefore require more frequent reviews and updating. The Priority tables should be reviewed and revised every year in accordance with Council's budgets and changing priorities.

5.0 REFERENCES

Delfin Lend Lease (2005), **Nelsons Ridge Website**, www.nelsonsridge.com.au,

Douglas Partners (2003), **Report on Geotechnical Investigation**, Nelson Ridge Development, Greystanes Road, Greystanes, Prepared for Delfin Lend Lease, November 2003.

EDAW (1997), **Parks Plan of Management** for Holroyd City Council.

Environmental Resources Management Australia ERM (2002), Greystanes Estate – Residential Lands **Precinct Plan**, prepared for Holroyd City Council.

Environmental Resources Management Australia ERM (2001), Greystanes Estate Residential Lands. **Environmental Management Plan**, prepared for Boral Resources (NSW) Pty Ltd.

Holroyd City Council (2005), **Holroyd City Council Website**, (www.holroyd.nsw.gov.au), Public exhibition of proposed park names at Nelsons Ridge, August 2005.

Holroyd City Council (2005), **Holroyd Local Environmental Plan 1991**, Gazetted 15 November 1991, Reprinted 7 November 2005.

Holroyd City Council (2004), **Holroyd SEPP 59 Residential Lands Contribution Plan 2004**, For Open Space & Recreation, Community Facilities and External Road Works & Traffic Management.

Jo McDonald Cultural Heritage Management Pty Ltd (2004), **Archaeological Salvage Excavations in the Greystanes Estate Residential Lands**; Site PH 2+3 (NPWS #45-5-2547), Former CSR Lands, Greystanes, NSW, March 2004.

New South Wales Government, (2005), **State Environmental Planning Policy No 59** Central Western Sydney Economic and Employment Area (1999–78), www.legislation.nsw.gov.au

New South Wales Government, (2005), **Local Government Act 1993** No 30, www.legislation.nsw.gov.au

Spackman & Mossop Landscape Architects and Ian Perkins Consultancy Services (2002), Greystanes Estate, Northern Residential Lands, **Vegetation Management Plan**, 19 November 2002.

Spackman & Mossop Landscape Architects and Ian Perkins Consultancy Services (2003), **Bushland Management Plan**, Northern Residential Lands – Greystanes Estate, Final Report, 4 December 2003.

6.0 APPENDICES

6.1 Appendix A - Plant Species

Species	Riparian Zone	Cumberland Plain
Tree Planting		
<i>Acacia decurrens</i>		*C
<i>Acacia paramattensis</i>	*r	
<i>Angophora floribunda</i>	*r	
<i>Angophora subvelutina</i>	*r	
<i>Callistemon salignus</i>	*r	
<i>Casuarina glauca</i>	*r	
<i>Eucalyptus crebra</i>		*C
<i>Eucalyptus moluccana</i>		*C
<i>Eucalyptus tereticornis</i>	*r	
<i>Melaleuca decora</i>		*C
Shrub Planting		
<i>Bursaria spinosa</i>	*r	
<i>Dillwynia sieberi</i>		*C
<i>Indigofera australis</i>		*C
Groundcovers & Grasses		
<i>Carex appressa</i>	*r	
<i>Chloris truncata</i>		*C
<i>Chloris ventricosa</i>		*C
<i>Cyperus polystachyos</i>	*r	
<i>Dianella longifolia</i>		*C
<i>Echinopogon caespitosus</i>		*C
<i>Hardenbergia violacea</i>		*C
<i>Juncus usitatus</i>	*r	
<i>Lomandra longifolia</i>	*r	
<i>Microlaena stipoides</i>	*r	
<i>Persicaria decipiens</i>	*r	
<i>Themeda australis</i>	*r	
<i>Wahlenbergia gracilis</i>	*r	
Macrophyte Planting		
<i>Baumea articulata</i>	*r	
<i>Bolboschoenus fluviatilis</i>	*r	
<i>Cyperus exaltatus</i>	*r	
<i>Eleocharis acuta</i>	*r	
<i>Phragmites australis</i>	*r	
<i>Schoenoplectus validus</i>	*r	

Note:

*r - plants used for riparian zone revegetation

*c - Cumberland Plain species for revegetation works

6.2 Appendix B – Asset Register

Driftway Reserve and Nelson Square – Asset Register

Asset	Material	Manufacturer	Number
Item			
Cycle Path	Concrete	Boral	580m
Cycle Stand	Steel	Secure post	6
Cycle Stand		Street Park Furniture	3
Play Equipment		Megatoy	1
Play Equipment		Kompan	1
Softfall	EPDM		75m2
Softfall	Mulch	ANL	390m2
Standpipe			
Seats	Tim/Steel	SFA	13
Picnic Shelter	Tim/Steel	Fleetwood	2
Picnic Table	Tim/Steel	SFA	5
Barbecue	Steel		1
Litter Bin		SFA	3
Bubbler	Steel	SFA	2
Ordinance Sign	Steel	HDS	6
Interpretive Sign	Steel	HDS	6
Park Sign			
Retaining walls	Block /concrete	Daracon	278m2
Retain Wall	Block/ Stone Face Finish		57.2
Rock Feature	Basalt	Boral	155m
Linear Grass Terracing			
Fencing	Steel/ timber	Fleetwood	1060m
Lighting Poles/ Light Fitting & connection	Steel/ Gal	Vic Pole	22
Blade walls	Concrete/ steel	Daracon	38.5m2
Stone Paving	Stone	Boral	75m2
Exposed Aggregate pave	Concrete/ Steel	Daracon	736m2
Block Paving			
Stairs			
Granite Paving	Deco	Boral	25m2
Tree/Shrubs Groundcovers/Tubes	plants		150,000
Trees/shrubs (150mm&above)	plants		30,000
Trees/shrubs (45litre)	plants		40
Trees/shrubs (75litrelitre)	plants		42
Trees/shrubs (400litre)	plants		10
Turfing		Lowlands	
Mulched Garden Beds	Mulch	Recycled	18520
Mini Courts & goal tower	Con/Steel	Game plan	2
Ornamental Pool			
			Total

Dirrabari Reserve – Asset Register

Asset Item	Material	Manufacture	Number
Cycle Path	Concrete	Boral	880
Cycle Stand	Steel	Leda	12
Play Equipment	Steel	Mega Toy/Amazon	4
Sofffall	EPDM / mulch	Gadsby Daracon	250m2
Standpipe			
Seats	Timber / Steel	Street Furniture Australia	3
Picnic Shelter	Timber /Steel	Fleetwood Pty Ltd	1
Picnic Table	Timber/ Steel	Street Furniture Australia	2
Barbecue	Brick /Steel/ Porphyry	Scully & Associates	1
Dog Drinking Bowl and Tap	Stainless Steel/ Copper	Daracon	1
Litter Bin	Steel Dog Litter Bin	The Dog Tidy Company	2
Bubbler	Steel	Street Furniture Australia	1
Ordinance Sign			
Interpretive Sign			
Park Sign			
Rock Feature	Site Rock	Daracon	Various
Boundary			
Dog Off Leash Fence	Steel	Colmans Fencing	230
Fencing	Timber / Steel	Fleetwood Pty Ltd	685m
Gates			
Boom Gates			
Security Fence			
Lighting Poles			
Lighting Fitting			
Entry Feature	Porphyry Rock Face finish	Sydney Brick & Pave	2
Tree/Shrubs Groundcovers/Tubes	Cultivated Plants	Andreasens Green	26,823
Trees/shrubs (150mm&above)	Cultivated Plants	Andreasens Green	1,963
Turfing	Cultivated Grass	Low Land Turf	17,110
Mulched Garden Beds	Recycled Mulch	Daracon	9,515
Tennis Courts including fences	Steel Concrete	Daracon Sub Contract	2
Revegetation works	Existing Trees	Arborist Active Trees	Varies
			Total

6.3 Appendix C – Arborists Report



Commercial Operations
Unit 23 / 35 Foundry Rd, Seven Hills, NSW 2147
Telephone: 02 9620 6444
Facsimile: 02 9620 5177
E Mail: enquiries@activetreeservices.com.au
Box 6414, Post Office Blacktown, NSW, 2148
A.C.N. 002 919 299 A.B.N. 56 002 919 299

*All aspects of tree
maintenance.*

*Providing safe,
quality services and
product to customers
with high
expectations.*



TREE INSPECTION

1st September 2004

Client: Delfin Lend Lease

Subject: Ridgeline Park

Location: Northern Residential Lands - Nelson's Ridge, GREYSTANES

Arborist: Cameron Watson

Certificate 3 Horticulture (Landscape) 1989 Ryde School of Horticulture, Ryde NSW

Arborist Assessment 1995 S/W Counties Training Centre, Avon UK

The trees in Linear Park, Scattered Tree Park and Greystanes Road Landscape from 001 - 173 have had all dead wood removed larger than 20mm diameter (or shortened where retention was required for habitat purposes) and are in similar condition as previously worked on.



Huntlydale Holdings Pty Ltd
t/as Active Tree Services Australia
6a/77 Bassett Street, Mona Vale, NSW 2103
Telephone: 02 9997 0600 Facsimile: 02 9997 4411
EMail: rescomenquiries@activetreeservicesaust.com.au
PO Box 905, Mona Vale, NSW, 1660
A.C.N. 104 864 646
A.B.N. 51 104 864 646

*All aspects of tree
maintenance.*

*Providing safe,
quality services and
product to
customers with high
expectations.*

Date: 4th May 2004
Client: Delfin Lend Lease
Subject: Follow up report – Scattered Tree Park, Linear Park & Greystanes Road Landscape
Location: Nelson’s Ridge, Greystanes Road, Greystanes

Recent inspection shows all trees are in good health with the exception of trees # 110 and 112 (both *Eucalyptus moluccana*). On a visit one week prior to this inspection Tree # 110 had a large section torn off due to termite activity (refer Figure 1) however tree has since totally collapsed (refer Figure 2) and will be put through a tub grinder and used to mulch native landscape areas on site. Tree 112 has a large basal scar and only 20% of its canopy alive (refer Figure 3) and should be removed as recommended in the initial report.

Tree 55 (*Eucalyptus fibrosa*) had a hanger present on the date of inspection and the offending branch has since been removed by Active Tree Services. Tree # 16 (*Eucalyptus moluccana*) recently lost a limb due to wind. Trees # 1, 23 and 24 (all *Pinus radiata*) are currently encroaching on young species indigenous to the Cumberland Plain (refer Figures 4,5 & 6) and have no habitat potential and therefore should be removed to allow for future growth of the natives.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



ID No.	Species	Condition	Habitat Value	Hollows Present	Vigour	Pest & Disease	Dead Wood (mm)	Epicormic Growth	SULE	Remedial Works Required	Priority
1	<i>Pinus radiata</i> (Monterey Pine)	Fair	Low	No	Good	Nil	Nil	Nil	2D	Nil	
2	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Good	High	Yes	Fair to Good	Nil	150	5%	1B	Slight lean to N, reshape, remove deadwood	2
16	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	High	Yes	Fair to Good	Old termite mud	400	5%	1B	Basal scar, aerial inspection, remove deadwood	1
21	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Medium	Yes	Fair to Poor	Nil	75	15%	3D	Reshape (reduce long cantilevered branches)	2
22	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Low	Yes	Fair to poor	Nil	250	10%	2D	Reshape, remove deadwood	2
23	<i>Pinus radiata</i> (Monterey Pine)	Fair	Low	No	Good	Nil	Nil	Nil	1B	Nil	
24	<i>Pinus radiata</i> (Monterey Pine)	Fair	Low	No	Fair	Nil	25	Nil	2D	Leaning, monitor	4



25	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	High	Yes	Fair	Termite damage	100	10%	4C	Extensive basal cavity/trunk cracking, hangers - remove	1
26	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Fair	Medium	Yes	Fair	Nil	150	Nil	2D	Hanger, remove deadwood	1
27	<i>Pinus radiata</i> (Monterey Pine)	Fair	Low	No	Poor	Shoot blight	25	Nil	3A	Remove	3
55	<i>Eucalyptus fibrosa</i> (Broad-leaved Ironbark)	Fair	Low	No	Fair	Basal scar to W, appears sound	150	5%	2D	Remove deadwood, lean and crown asymmetry to N.	2
56	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Poor	Medium	Yes	Poor	Lost large co-dominant stem	600	30%	4C	Remove	1
60	<i>Eucalyptus creba</i> (Narrow leaved Ironbark)	Fair	Low	No	Fair	Nil	150	Nil	1B	Hanger, remove deadwood	1
61	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	High	Yes	Fair	Lost top of co-dominant stem	150	5%	2D	3x co-dominant stems, large diameter cavity, remove deadwood	3



62	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	Forming, Galahs present	Fair	Nil	120	5%	2D	Slight lean and crown asymmetry to E, remove deadwood	3
63	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Low	Yes	Fair	Nil	250	Nil	2D	Reshape, remove deadwood, hanger	1
64	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Medium	No	Fair to Good	Nil	150	Nil	2D	Reshape, hanger, remove deadwood	1
65	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	Medium	Yes	Fair to Poor	Bees	300	10%	4H	Remove or reduce subject to SULE classification	1
66	<i>Eucalyptus fibrosa</i> (Broad-leaved Ironbark)	Good	Low	No	Fair	Nil	150	Nil	1B	Co-dominant @ 5m, hangers, remove deadwood	1
67	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Good	Low	No	Fair	Nil	150	Nil	1B	Remove deadwood	3
68	<i>Eucalyptus tereticornis</i> (Forest Red Gum)	Fair	Low	No	Fair	Nil	100	Nil	1B	Remove deadwood	3



69	<i>Eucalyptus moluccana</i> Box)	(Grey	Poor	Low	No	Poor	Termites	300	60%	4A	Remove, declining	1
70	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair to Poor	Low	No	Poor	Nil	150	5%	2D	Remove deadwood	1
71	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair to Poor	Medium	No	Fair	Branch failure W side of crown	150	10%	2D	Reshape, remove deadwood	1
72	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair	High	Yes	Fair	Large diameter for dominant stem failure W	100	5%	Pending	Remove old codom stub and investigate cavity	1
100	<i>Eucalyptus moluccana</i> Box)	(Grey	Good	Low	No	Fair	Active termites, fungal fruiting body in small diameter basal cavity	100	5%	2D	Treat termites via licensed pest controller, monitor basal cavity	1



101	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Low	No	Fair to good	Nil	50	Nil	1B	Remove deadwood	4
110	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Low	No	Fair	Fungal fruiting body basal scar to S.	300	20%	4H	Lost top of codom, reshape, reduce.	1
113	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Medium	Yes	Fair to poor	Bees, dieback entire NW side of tree	500	30%	4A	Remove, declining	2
115	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	No	Fair	Nil	150	Nil	2D	Remove deadwood	2
116	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Low	No	Fair	Nil	80	10%	1B	Remove deadwood	3
117	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	No	Fair	Nil	150	5%	2D	Hanger, remove deadwood	1
118	<i>Eucalyptus moluccana</i> (Grey Box)	? Requires drilling old basal scar	Low	No	Fair to Good	Nil	150	5%	2D	Hanger, remove deadwood	1

119	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair	Low	No	Fair	Nil	150	Nil	2D	Basal scar, lean SE, hanger, remove deadwood	1
150	<i>Eucalyptus tereticornis</i> Red Gum)	(Forest	Fair	High	Yes	Fair	Termite mud upper crown	150	15%	2D	Aerial inspection, reshape, remove deadwood	1
151	<i>Eucalyptus tereticornis</i> Red Gum)	(Forest	Fair	Medium	No	Fair	Decay S root flare	50	25%	2D	Basal cavity 450mm decay/800mm diameter stem, monitor, remove deadwood	3
152	<i>Eucalyptus moluccana</i> Box)	(Grey	Poor	Low	No	Fair	Bees	100	20%	3A	Hangers, remove deadwood	1
153	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair	Medium	No	Fair	Nil	50	10%	2D	Crown asymmetrical to E, remove deadwood	3
154	<i>Eucalyptus moluccana</i> Box)	(Grey	Poor	High	Yes	Fair	Bees active in basal cavity nest	50	20%	Pending	Asymmetrical to W, assess cavity after destroy bees.	1



155	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	Low	No	Fair	Termites	100	10%	4C	Basal cavity 660mm decay/825mm diameter, tree hangers, likely to fail, remove	1
156	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	Low	Forming	Fair	Nil	200	30%	3D	Hangers, reshape	1
157	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	No	Fair	Madeira Vine	100	5%	2D	Hangers, remove deadwood	1
158	<i>Eucalyptus moluccana</i> (Grey Box)	Fair to Poor	Medium	Yes	Fair	Old borer termites	150	Nil	4H	Lost top at 6m, reshape, asymmetrical to NE	1
159	<i>Eucalyptus fibrosa</i> (Broad-leaved Ironbark)	? Stem requires drilling	Low	No	Fair	Fungal fruiting Body	50	Nil	3A	Failed co-dominant stem scar, requires drilling at basal swelling	1
160	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Medium	Yes, Galahs present	Fair	Nil	120	40%	2D	Hangers, remove deadwood	1



161	<i>Eucalyptus moluccana</i> (Grey Box)	Poor	Medium	Yes	Poor	Fungal fruiting body, bees	150	10%	4C	Cracking stem, lost top at 8m, remove	1
162	<i>Eucalyptus moluccana</i> (Grey Box)	Fair	Low	No	Fair	Madeira Vine	75	10%	2D	Remove vine & hangers, remove deadwood	2
163	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Low	No	Good	Nil	50	5%	1B	Remove deadwood	3
164	<i>Eucalyptus fereticornis</i> Red Gum & <i>Eucalyptus moluccana</i> (Grey Box)	Good	Medium	Forming	Good	Madeira Vine	75	5%	1B	Remove deadwood	3
165	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Medium	No	Good	Nil	Nil	Nil	1B	Thin by 10% co-dominant structure with minor inclusions	4
166	<i>Eucalyptus moluccana</i> (Grey Box)	Good	Medium	No	Fair	Nil	25	Nil	1B	Remove deadwood and hangers	2



167	<i>Eucalyptus moluccana</i> Box)	(Grey	Good	Medium	No	Good	Nil	40	2%	1B	Remove deadwood	4
171	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair to Poor	High	Yes	Fair to Poor	Nil	150	20%	2D	Basal scar, long cantilevered branches, reduce lever and remove deadwood	1
72	<i>Eucalyptus moluccana</i> Box)	(Grey	Fair to Poor	High	Yes	Fair to Poor	Bees	50	5%	2D	Remove deadwood	1
173	<i>Eucalyptus moluccana</i> Box)	(Grey	Poor	Medium	Yes, galahs present	Poor	Nil	200	40%	3A	One stem is dead	1

KEY TO EXISTING VEGETATION

REMNANT WOODLAND TREES

Trees which are remnants of the Cumberland Plain Woodland community.



These trees are to be retained and protected



These trees are in close proximity to development and are to be retained where possible. Additional protection during construction will be provided.



These trees are to be removed



These native plantings are to be retained and protected during construction.



These native plantings are to be removed



These pine plantations are to be retained and protected during construction.



These pine plantations are to be removed

PINE PLANTATIONS

Even-aged plantings of Pinus radiata. Established within the last 20 years and nearing the end of their viable lifespan.

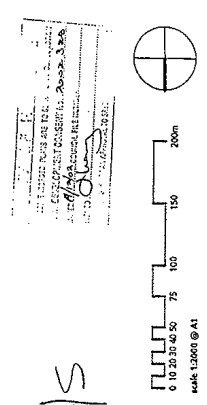
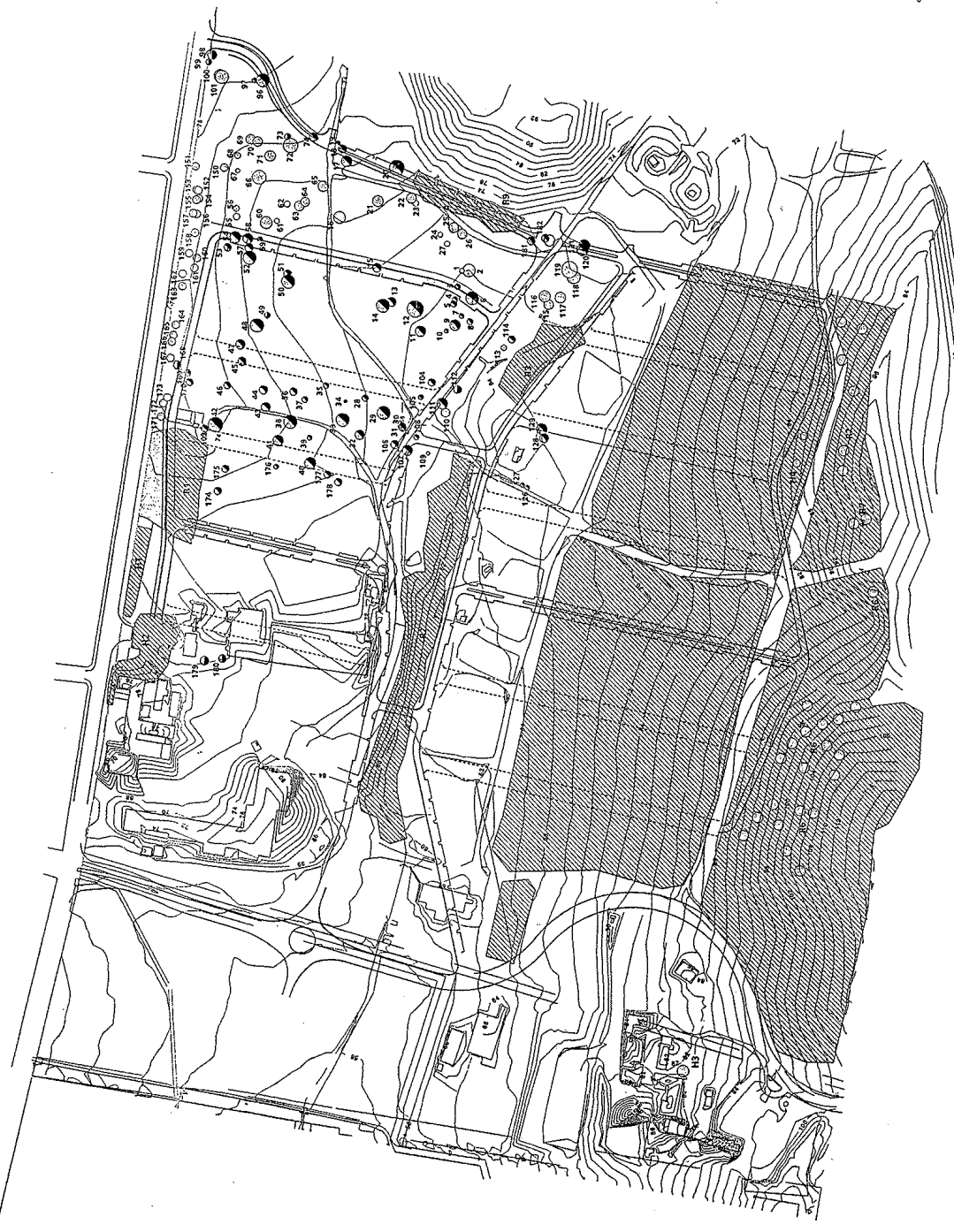


These trees are retained and protected during construction.



These trees are removed by development

NOTE
This plan is to be used in conjunction with Item Greystones Estate - Northern Residential Lands - Final Report by Ian Perkins Consultancy Services, July 2001.



S/S

DRG STATUS :

Issue	Detail of Issue	Date	Approved
LA	LA	08.10.01	MS
TC	TC		AV
Dm	Dm		
Ch'd	Ch'd		

INITIALS SHOWN IN THE MARGINAL ISSUE RECORDS INDICATE THE STAGES UNDERGONE IN THE DRAWING APPROVAL PROCESS. THE ORIGINAL SIGNATURE CAN BE FOUND BY SPACEMAN # AND DATE. THIS ONLY APPLIES TO ORIGINAL DRAWINGS. TRANSFERRED DRAWINGS WILL BE IDENTIFIED BY SPACEMAN # AND DATE.

Item 2, 3, David Ross
PO Box 800
Greystanes NSW 2145
Tel: 02 9637 1311
Fax: 02 9637 1312
www.ianperkins.com.au

EXERCISES IN PROGRESS
BUT NOT FINISHED

GOBI
Resources
5/11/01
Greystanes NSW 2145
NSW
Project No: 2145

CR Australia Pty Limited
Project Manager
14/01/01
Greystanes NSW 2145
NSW
Project No: 2145

CR I

Drawing No: **NRL 400**
Scale: **AS1**
Date: **08/10/01**
Client: **GOBI**

Existing Vegetation Plan



Commercial Operations
Unit 23 / 35 Foundry Rd, Seven Hills, NSW 2147
Telephone: 02 9620 6444
Facsimile: 02 9620 5177
E Mail: enquiries@activetreeservices.com.au
Box 6414, Post Office Blacktown, NSW, 2148
A.C.N. 002 919 299 A.B.N. 56 002 919 299

*All aspects of tree
maintenance.*

*Providing safe,
quality services and
product to customers
with high
expectations.*



TREE INSPECTION

1st September 2004

Client: Delfin Lend Lease

Subject: Ridgeline Park

Location: Northern Residential Lands - Nelson's Ridge, GREYSTANES

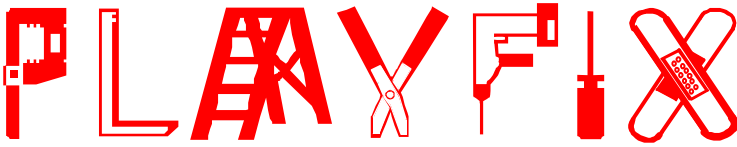
Arborist: Cameron Watson

Certificate 3 Horticulture (Landscape) 1989 Ryde School of Horticulture, Ryde NSW

Arborist Assessment 1995 S/W Counties Training Centre, Avon UK

The trees in Linear Park, Scattered Tree Park and Greystanes Road Landscape from 001 - 173 have had all dead wood removed larger than 20mm diameter (or shortened where retention was required for habitat purposes) and are in similar condition as previously worked on.

6.4 Appendix D – Playground Audit



MAKING PLAYGROUNDS SAFE

PLAYFIX PTY LTD

32 Woodfield Blvd Taren Point, NSW 2229

E-mail: playfix@playfix.com.au

Website: www.playfix.com.au

Ph: 02 9540 4949 Fax: 02 95404322



James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards - Playgrounds

Certificate of Compliance

NO 52798/2004

Re: Adventure Playground South

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Adventure Playground South Nelson Ridge Greystanes

Equipment : Corocord net supplied by Kompan

Date : 29th October 2004

Based on our assessment Playfix are satisfied that the installed equipment meets the current Australian Standard as outlined above.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Grant Humphreys'.

Grant Humphreys
Director

Photos 1

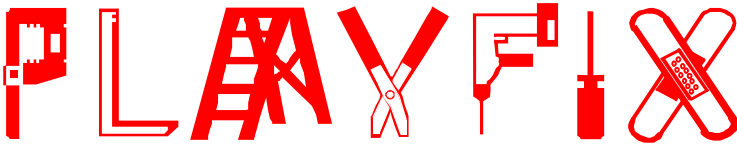


Photo 2



Photo 3





MAKING PLAYGROUNDS SAFE

PLAYFIX PTY LTD

32 Woodfield Blvd Taren Point, NSW 2229

E-mail: playfix@playfix.com.au

Website: www.playfix.com.au

Ph: 02 9540 4949 Fax: 02 95404322



James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards - Playgrounds

Certificate of Compliance

NO 52798A/2004

Re: Adventure Playground South

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Adventure Playground South Nelson Ridge Greystanes

Equipment : Megatoy equipment supplied by Megatoy

Date : 17th December 2004

Based on our assessment Playfix is satisfied that the installed equipment meets the current Australian Standard as outlined above.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Grant Humphreys'.

Grant Humphreys
Director



Photos 1

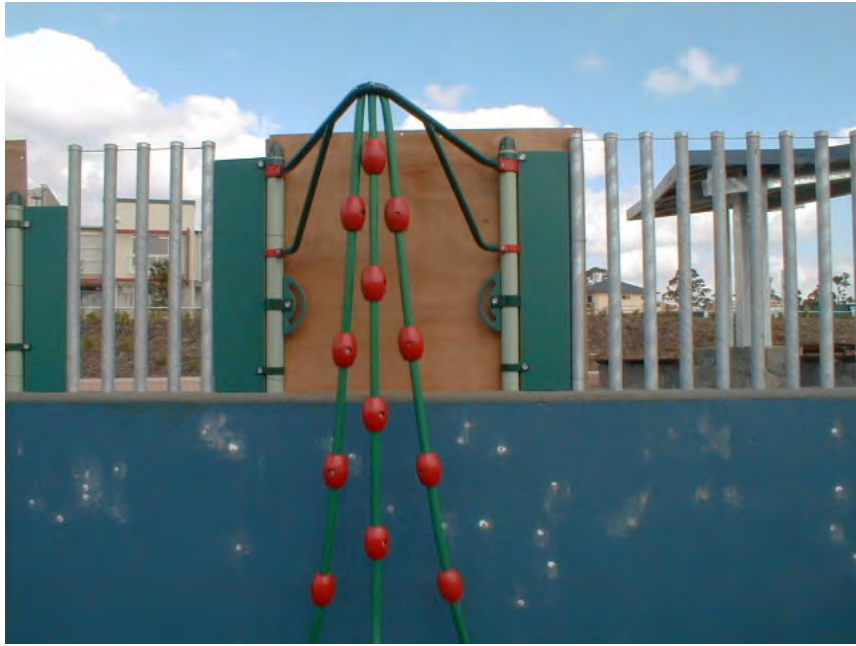


Photo 2



Photo 3



PLAYFIX PTY LTD

32 Woodfield Blvd Taren Point, NSW 2229

E-mail: playfix@playfix.com.au

Website: www.playfix.com.au

Ph: 02 9540 4949 Fax: 02 95404322

James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards - Playgrounds

Certificate of Compliance

NO 52798B/2005

Re: Cycle Playground

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Cycle Area Playground Nelson Ridge Greystanes

Equipment : Megatoy equipment supplied by Megatoy

Date : 18 Febuary 2005

Based on our assessment Playfix is satisfied that the installed equipment meets the current Australian Standard as outlined above.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Grant Humphreys'.

Grant Humphreys
Director



Photos 1



Photo 2



Photo 3



Photo 4



PLAYFIX PTY LTD

32 Woodfield Blvd Taren Point, NSW 2229

E-mail: playfix@playfix.com.au

Website: www.playfix.com.au

Ph: 02 9540 4949 Fax: 02 95404322

James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards - Playgrounds

Certificate of Compliance

NO 55289 /2005

Re: Cycle Playground

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Cycle Area Playground Nelson Ridge Greystanes

Equipment : Megatoy equipment supplied by Megatoy

Date : 18 Febuary 2005

Based on our assessment Playfix is satisfied that the installed equipment meets the current Australian Standard as outlined above.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Grant Humphreys'.

Grant Humphreys
Director



Photos 1



Photo 2



Photo 3



Photo 4



PLAYFIX PTY LTD

32 Woodfield Blvd Taren Point, NSW 2229

E-mail: playfix@playfix.com.au

Website: www.playfix.com.au

Ph: 02 9540 4949 Fax: 02 95404322

James Hamel
Delfin Lend Lease
Greystanes Road
Greystanes NSW 2145

Fax: 02 9688 8735

Australian Standards - Playgrounds

Certificate of Compliance

NO 56760/2005

Re: Neighbourhood Playground

The playground has been inspected to the Playground Standard AS 1924 part 1,2 :1981 AS4486:1997, AS4422:1996 and determined to comply to all sections of the standards

Location : Neighbourhood Area Playground Nelson Ridge Greystanes

Equipment : Megatoy equipment and Kompan

Date : 05 May 2005

Based on our assessment Playfix is satisfied that the installed equipment meets the Australian Standard as outlined above.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Grant Humphreys'.

Grant Humphreys
Director



Photos 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6