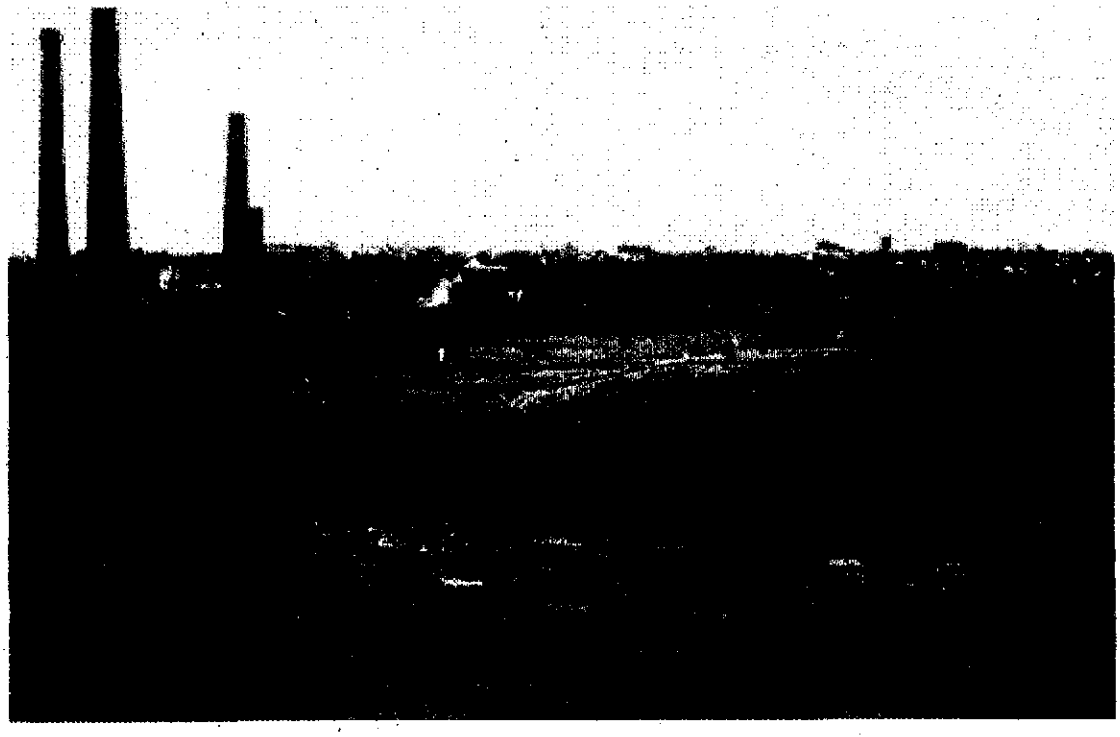
SOUTH SYDNEY CITY COUNCIL

SYDNEY PARK

PLAN OF MANAGEMENT



EDAW

August 1995

SOUTH SYDNEY CITY COUNCIL

SYDNEY PARK

PLAN OF MANAGEMENT

EDAW (Aust) Pty Ltd

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August 1995

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FIGURES

1. INTRODUCTION

1.1 Background

Sydney Park is being developed by South Sydney City Council (SSCC) as a major public open space recreation facility of regional significance. The former landfill site covering about 44ha is located at St Peters approximately 4km south of the Sydney Central Business District (CBD) and 2km north of Sydney Airport. (Refer to Figure 1)

Responsibility for care, control and management of the site was transferred to SSCC from the Department of Planning (DOP) in 1991. Immediately prior to the transfer the DOP proposed a development strategy that would have involved selling 6 ha of the site to generate approximately $14 million for construction of the Park. However, that strategy was not implemented and as a result the availability of funding for development of the Park has been constrained . Nevertheless SSCC is committed to development of the entire site over time as funding becomes available. Development of the Park by SSCC has generally been in accordance with the Plan of Management (POM) prepared in 1982 and the Master Plan prepared in 1989.

To ensure that future development of recreation opportunities effectively responds to community expectations and requirements, SSCC engaged EDAW (Aust) Pty Ltd to prepare this Plan of Management (POM) for the Park. A major focus in preparing this POM has therefore been an extensive community consultation process, the results of which are presented in section 3.

The primary role of the POM is to guide future development of the Park within the framework of community expectations and resources available to SSCC. The Plan aims to balance the unique site conditions with community requirements for open space recreation opportunities and facilities. Given that community expectations and requirements will change over time the POM incorporates a degree of flexibility that will allow it to be adapted to changing circumstances.

1.2 POM Preparation

Sydney Park has been the subject of extensive planning and design over a period of more than ten years. Consequently a thorough review of previous studies and other available information has been carried out to ensure the relevant aspects of those previous studies are taken into account in the POM.

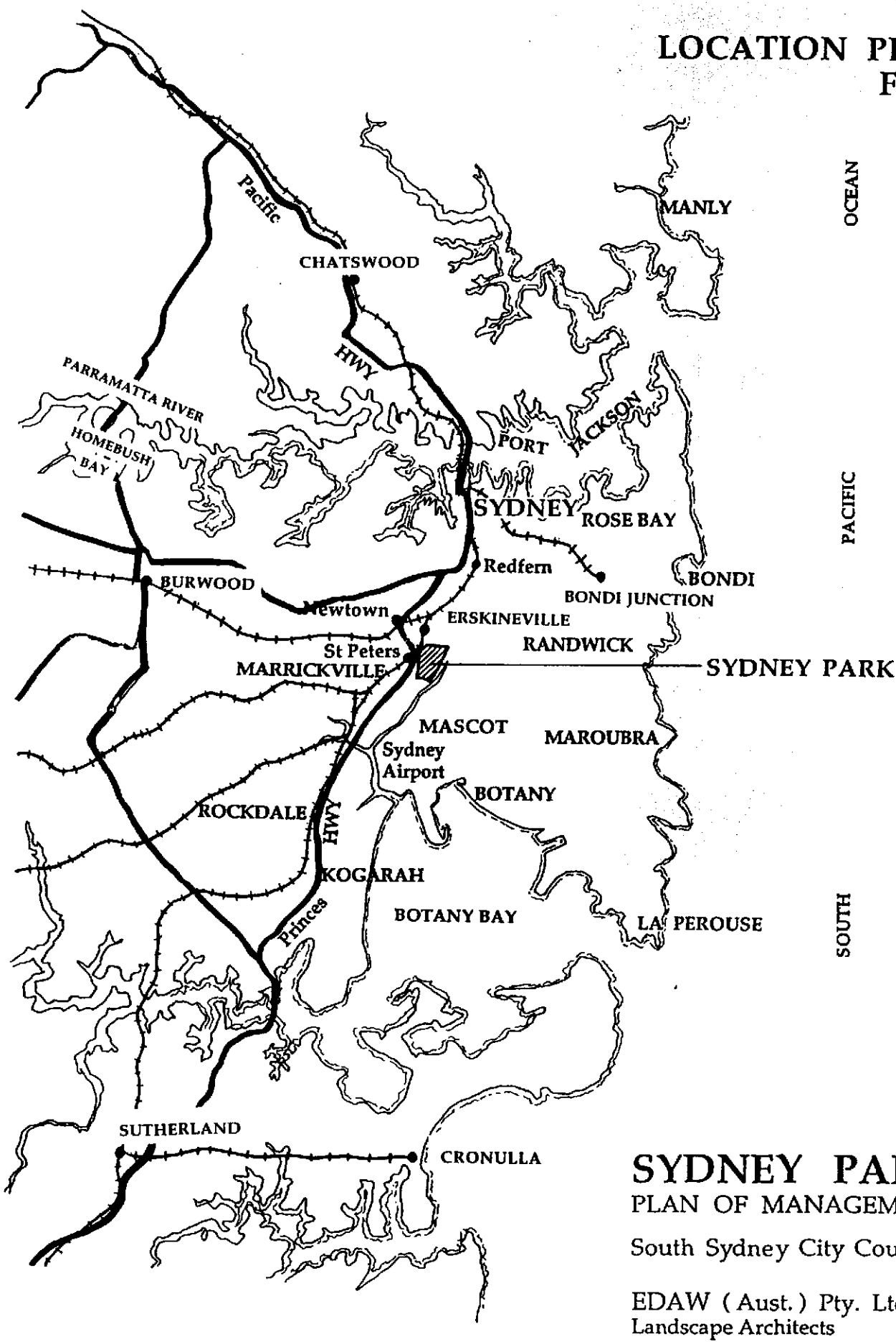
Due to the history of the site as a largescale waste disposal facility, the physical conditions potentially create major issues that need to be addressed in development of the Park. Therefore a comprehensive review of physical site conditions was also carried out as part of the POM study process.

The POM has been prepared in accordance with the consultancy brief issued by SSCC. Specific objectives stated in the brief were to:

- preserve Sydney Park in perpetuity, exclusively for recreational use.
- ensure the identification and reinforcement of the distinctive industrial, architectural and symbolic characteristics of the Park and the precincts surrounding it.
- ensure the conservation and reinforcement of the Park's open space areas and items of cultural significance for future generations of users.
- ensure a consistent and responsible approach to the management and maintenance of the Park's resources.
- ensure the inviolability of the Park and it's resources for future generations of users.
- ensure the development of facilities in the Park that are community based and provide long term benefits to the community.
- address issues specific to Sydney Park such as methane gas contamination.

To achieve these objectives a systematic study process was followed, that incorporated community consultation as an integral component. The POM Preparation Process is illustrated by the following diagram.

LOCATION PLAN
Fig. 1



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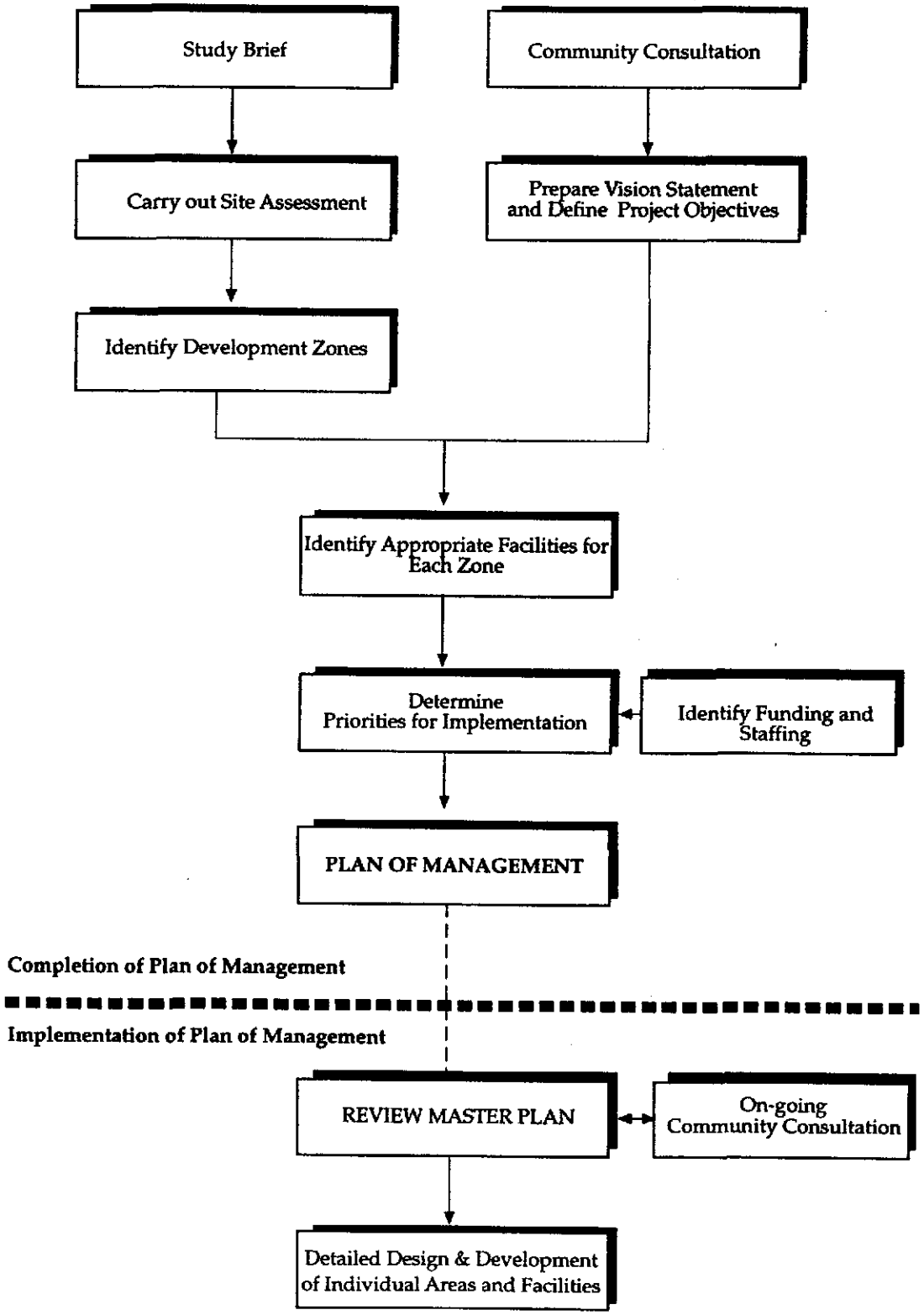
POM Preparation Process



1.3 Report Structure

The Report incorporates the following major sections:

Section 1 Introduction
Provides background information about Sydney Park as well as the objectives of the POM and the process followed in preparing it.

Section 2 Context
Presents information about the history and significance of the Park as well as existing physical conditions and relevant planning considerations.

Section 3 Community Consultation
Details the community consultation process followed in preparing the POM together with the community expectations identified through that process.

Section 4 Plan of Management
Presents details of the POM as well as the planning and design considerations that influenced its preparation.

Section 5 Implementation
Outlines various issues that will need to be addressed in the process of implementing the POM.

2. CONTEXT

2.1 Regional Significance

Covering an area of some 44ha, Sydney Park represents a major component of the open space/recreation resources of Southern Sydney. The relationship between Sydney Park and the open space areas within the region is illustrated on Figure 2. Not only does Sydney Park provide a regional destination park but it could potentially be connected to the open space corridor along Cooks River and Botany Bay to the south as well as to Moore Park and Centennial Park to the north-east.

The relative size of Sydney Park compared to the well established open space recreation areas of Centennial Park, Moore Park , Parramatta Park and the Royal Botanic Gardens is shown by Figure 3. It illustrates that Sydney Park is comparable in scale to these major open space recreation areas that are familiar to the majority of Sydney residents. While there are similarities in the scale of these major parks their landscape character and the range of facilities provided in them is very variable. Sydney Park currently has a distinctive landscape character as a result of its history as a landfill site and the landforms created by disposal of soil and other inert material. The POM seeks to reinforce the distinctive characteristics of the Sydney Park site.

Possible future development of open space incorporating parts of the current landfill and railway land to the south of Sydney Park would offer an opportunity to connect Sydney Park to the public open space at Tempe, forming part of the Cooks River Open Space Corridor.

Similarly the creation of an open space strip alongside Alexandra Canal could provide an opportunity to connect Sydney Park to the regional open space corridor along Cooks River.

Given the location, accessibility and relatively large size of Sydney Park it performs an important regional recreation role as well as serving the local community. This regional role was recognised by the Department of Planning(DOP) at the time it purchased the site. The extent to which the Park has performed this regional role has to date been limited by the lack of significant recreation opportunities and facilities offered in the Park. However this situation should change now that land filling has been completed and SSCC is proceeding with development of the Park as quickly as possible within the constraints of available funding.

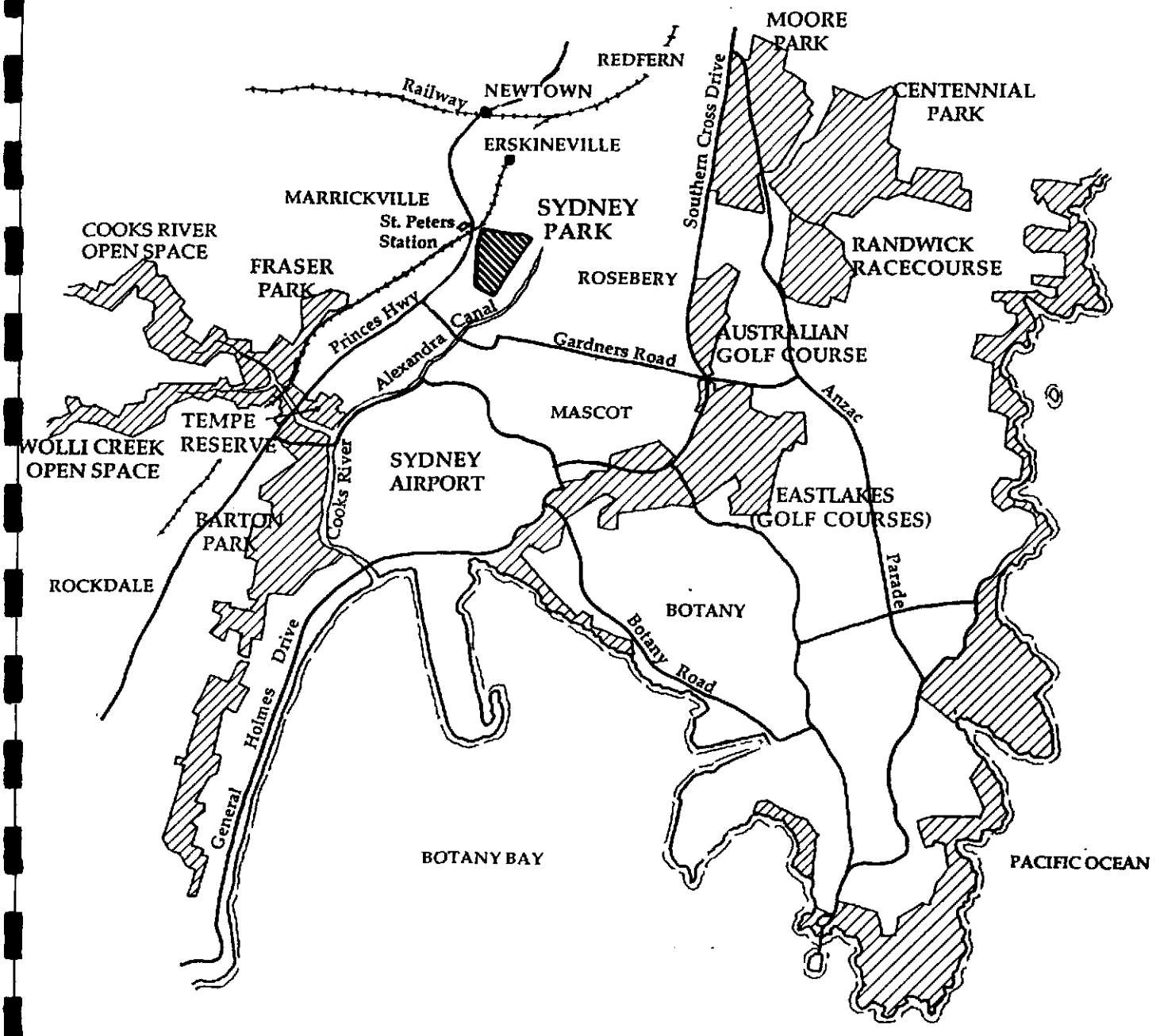
2.2 Cultural and Historical Significance

The Sydney Park site is located on the boundary between two district geological units. The north-west portion of the site consists of Wianmatta Shale from which the brick-making clay was extracted. Prior to European settlement it is most likely this area would have supported a forest cover of Turpentine-Ironbark association (Ref. Benson & Howell, 1990, *Taken for Granted*). The south-eastern portion is located on Botany Sands on which swamps, marshes and heath associated with Shears Creek had developed prior to European settlement. This low lying area was filled and drained through the construction of Alexandra Canal, to allow industrial development.

Agricultural use of the site apparently commenced with Thomas Smyth, marine sergeant with the first fleet, who cleared the forest cover to plant fruit trees and grain crops.

The Sydney Park site has played a significant role in the development of Sydney since the middle of the last century. That role primarily relates to brick making which commenced on the site in the 1840s when Henry Goodsell established the first brickworks on the site. Brickmaking subsequently became a major industry in 1871 with the introduction of machine manufactured bricks. Bricks manufactured on the site were used in construction of residential and commercial buildings throughout the Sydney Metropolitan Area over a period of more than 100 years. The first lot of machine-made bricks was used in the construction of the farmers building on the corner of Market Street, Sydney.

REGIONAL CONTEXT
Fig. 2



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LEGEND

OPEN SPACE

MAJOR ROADS

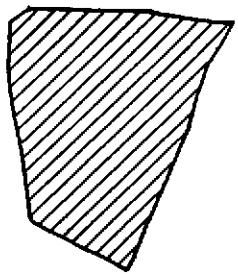
RAILWAY

N

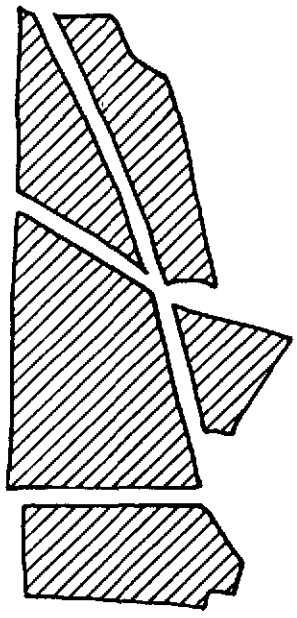
0 500 1000 2500m

RELATIVE SCALE OF MAJOR PARKS

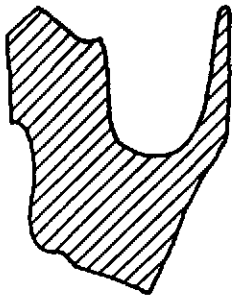
Fig. 3



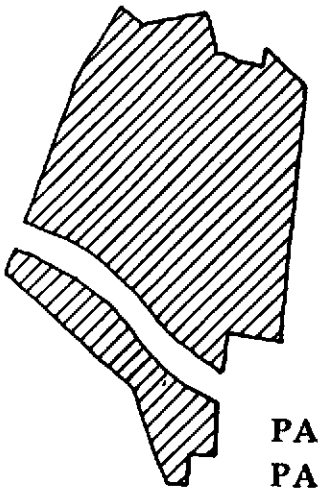
SYDNEY PARK



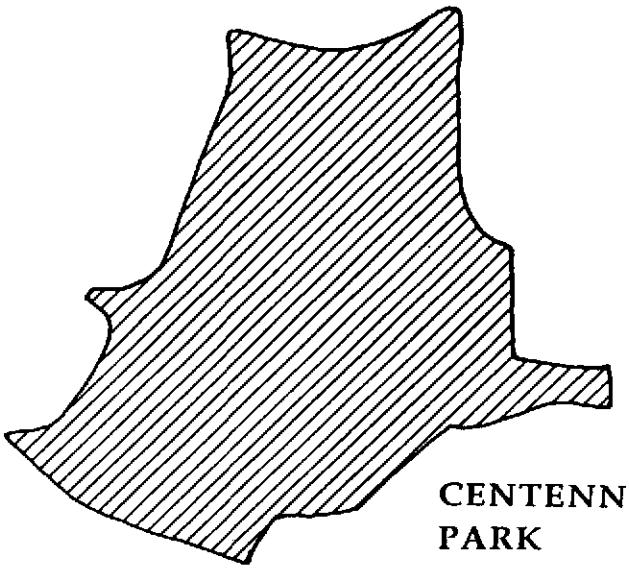
MOORE PARK



ROYAL BOTANIC GARDENS



PARRAMATTA PARK



CENTENNIAL PARK

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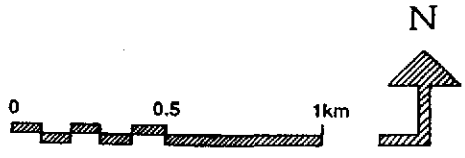


The Sydney Park site has also been used for a range of other industrial developments including two gas storage tanks, manufacturing and warehousing.

Landfill operations commenced on the site in 1948. It involved backfilling the pits that had been created by clay extraction for brick manufacturing. In the 1970s the site became a major regional waste disposal depot under the Control of the Council of the City of Sydney . The site therefore contains waste material from various parts of the Sydney Metropolitan Area. This role as a regional waste disposal facility adds another dimension to the cultural significance of the site which should be reflected in the development of Sydney Park.

Disposal of putrescible waste is reported to have ceased in 1976. Since then a final layer of material including soil and building rubble has been placed over the site to create a final landform that is generally in accordance with the 1989 Master Plan Concept.

This landform consists of a series of visually prominent hills combined with flat recreation areas and ponds. The rounded hills that provide opportunities for panoramic views of the city skyline and Sydney Airport, are recognised as unique landscape elements by those people passing the Park along the Princes Highway and Sydney Park Road as well as those using the Park for recreation. The hills, combined with the remnant elements of the brickworks (chimneys and kilns), form cultural landscape elements of regional significance.

The cultural and historical significance of Sydney Park reflects the diversity of major uses that have occurred on the site over a period of more than 100 years. This provides a rare opportunity to incorporate references to elements of cultural and historical significance in future development of the Park. Those existing elements that are relevant should be incorporated while opportunities to create new elements should be sought. The aim should be to provide an integrated set of references to the site's varied history and cultural significance.

2.3 Previous Studies

Early in 1980 the Sydney Park Steering Committee was formed to coordinate the development of the Park. Since then the Park has been the subject of a series of studies and investigations which are summarised below.

Sydney Park Plan of Management, 1982

The Department of Environment and Planning, now the Department of Planning (DOP), commissioned Conybeare Morrison and Partners and Bruce McKenzie in association with Ove Arup to prepare a Plan of Management for the Park. The 1982 Report recommended a Plan for Sydney Park that incorporated the following aspects:

- the basic purpose of the Park was to provide the local community with a cross-section of recreation opportunities close to home.
- limited facilities for organised, active sports.
- opportunities for learning about the history of the site and environmental education.
- opportunities for performances and exhibitions.
- creation of a new 'naturalised' environment incorporating landforms that introduce drama and interest to the site by contrasting with the generally flat surrounding areas.
- development of an urban farm and agricultural activities.
- a surface drainage system integrated with the proposed natural landforms and providing for ponding to simulate an eco-system providing opportunities for activity and visual benefits.
- a planting theme primarily incorporating indigenous species and reflecting some of the pre-settlement character of the site as well as aquatic and rainforest species plantings associated with drainage ways and ponds.
- a casual, self-sustaining character with woodland and forest interspersed with clearings and tracks.

- staged development in accordance with detailed plans to be prepared for each area within the Park.
- management provisions and a framework for management of the Park.
- a proposal for the State Government to eventually purchase all land within the Park 'superblock' bordered by Sydney Park Road, Euston Road, Campbell Road, Barwon Park Road and Princes Highway and incorporate that land within the overall Park development.

Stage One Development

On the basis of the concepts presented in the 1982 Plan of Management Report, Stage 1 of the Park development was implemented and included:

- restoration of the kilns and chimneys on the site of the former brickworks at the corner of Sydney Park Road and the Princes Highway together with associated landscaping.
- development of the car park and playing field in the north-east corner of the site adjoining Euston Road.
- construction of a pond and associated landscape works in the south-east corner of the site adjoining the Euston Road/ Campbell Street intersection.

Stage Two Development

Stage Two development of the Park involved a strip of land approximately 200m wide immediately south of Sydney Park Road. These works were carried out by the Public Works Department of NSW on behalf of the Department of Environment and Planning between January 1984 and December 1987.

The development was generally in accordance with the original Plan of Management concepts and included:

- earthworks and final grading
- topsoiling, grassing and planting
- car park and pedestrian/cycleway path construction.

Landfill Gas Study 1987

This Study was carried out by the Public Works Department on behalf of the Department of Environment and Planning. It involved drilling 58 shallow bores within the north-east section of the site and examined the presence of landfill gas and its impact on vegetation at Sydney Park. The findings of this Study included:

- generally the percentage of landfill gas increased with depth, although in some areas gas was constantly observed at shallow depths.
- oxygen content of the soil decreased as the landfill gas increased.
- the areas containing large volumes of landfill gas included Stage 2 (north-east section) and the north-west section of the site.
- landfill gas was not detected outside the Park boundaries.

On the basis of these findings, the Report recommended that only species which are known to be tolerant of landfill gas be used in the Park.

Soil Properties and Amelioration Requirements, 1988

Sydney Environmental and Soil Laboratories Pty Ltd was engaged to carry out an assessment of soil properties at Sydney Park. This information was used for preparation of the Master Plan and concept sketches for Sydney Park on behalf of the Department of Planning.

The assessment confirmed the harsh growing environment prevailing on the Sydney Park site due to the very poor physical and nutrient conditions of the imported soil cover. Recommendations were made on suitable procedures to overcome these poor conditions in specific areas.

Methane Gas Control Report, 1989

Mr Robert Amaral was engaged as a specialist geotechnical engineer on behalf of the Department of Planning to address the issue of methane gas at the Sydney Park site. (Report to Land Systems EBC on Methane Gas Control Measures for Proposed Sydney Park, St Peters, June 1989). The Report prepared by Mr Amaral included an assessment of the likely presence of methane gas and the implications of such gas for development and management of the Park. It also made recommendations on gas treatment and control methods to allow the safe development of Sydney Park.

Methane Gas Survey, 1989

Mr Amaral was subsequently engaged to carry out a survey to detect methane gas around the perimeter of the site and identify combustible levels of gas in areas of Sydney Park accessible to the public. (Preliminary Report to Land Systems EBC on Perimeter Gas Survey at Sydney Park, November 1989).

On the basis of tests at 77 sites around the perimeter of the Park, it was concluded that there should be no significant danger to the general public. It was noted however, that the potential existed for lateral movement of gas into buildings around the perimeter of the site.

The report recommended checking of the leachate/gas monitoring wells as an indicator of lateral gas migration.

Gas Survey/Monitoring Report, 1990

Mr Amaral was engaged on behalf of the Department of Planning to carry out a gas monitoring survey within eight leachate/gas wells within the Park over a period of five months. The survey indicated elevated levels of methane and carbon dioxide together with depressed oxygen levels in the five monitoring wells located on deep waste fill. (The Report to Land Systems EBC on Gas Survey/Monitoring of Sydney Park, May 1990).

The well near the residential terrace along Campbell Road had slightly elevated levels of methane (with no carbon dioxide) and a slightly depressed level of oxygen. This indicated some lateral migration of methane through the sandy soils which have a high water table.

The two other wells in the area (not located on the area of Botany sands) that were not used for waste disposal (along eastern edge of Harber Street and near southern boundary of McPhersons site) showed negligible methane levels indicating minor lateral migration of landfill gas. The Report concluded that insignificant movement of leachate had occurred in the groundwater.

Master Plan, 1989

The Department of Planning engaged Land Systems Pty Ltd in association with Binne and Partners Pty Ltd in 1989 to prepare a Master Plan for development of the whole of Sydney Park.

A design review was carried out to reassess the recommendations of the 1982 Plan of Management. It placed a good deal of emphasis on park development and maintenance budgets as well as opportunities to minimise capital expenditure.

The Review concluded that the original concept of an urban woodland incorporating informal passive landuses was still valid and could be achieved despite the substantial environmental and economic constraints.

The design review reinforced and extended the concept of Sydney Park as an urban woodland dedicated primarily to informal, passive uses with natural landforms and drainage patterns. Indigenous plant communities were to be established where possible to reflect the pre-settlement character of the Site.

The concept incorporated a series of stormwater detention ponds which were to be designed as an inter-connected wetland and lake system. This system was to provide wildlife habitat as well as a visual landscape resource for the enjoyment of recreational users of the Park.

On the basis of this design review, the consultants prepared a Master Plan for the Park together with a set of sketch design drawings. These drawings included grading contours, layout of facilities and general planting structure.

South Sydney City Council has used these sketch design drawings to guide the formation of the final landform and the layout of initial structure planting which has largely been carried out by volunteer community labour.

The original proposal was for the Department of Planning to acquire the whole site, develop it as a park and then to transfer management responsibility to South Sydney City Council.

However, as a result of the State Government's determination that future development of the Park should be self-funding, it was proposed to sell publicly owned land to the north and south of the McPhersons site. This included the former gasometer site and industrial land between McPhersons and the Metro Mix batching plant. Sale of land was anticipated to generate approximately $14 million and the intention was to use this revenue to find the development of the Park.

In 1990 South Sydney City Council approached the NSW State Government to forego the sale of public land to transfer the land already purchased by the Department of Planning to the Council for development and maintenance of park facilities.

When SSCC took over responsibility for development of the Park in 1990 it adopted a policy to develop all of the land purchased by DOP, including the 6 ha of land DOP had proposed to sell. As a result of that policy decision the potential revenue from land sales was not available to SSCC. Consequently the rate of Park development has not been as rapid as anticipated by the 1989 Master Plan.

Services Master Plan, 1990

The Department of Planning engaged Binnie and Partners to prepare a Services Master Plan so that the conceptual design could take into account the location and capacity of all services. The Report also outlined the procedures and costs required to extend those services and to connect to them.

The Report concluded that as the site is located within an established industrial/residential area, services requirements for development of the Park are relatively minor (except for stormwater drainage). Existing services were considered to be adequate to allow Park development. As the stormwater drainage in adjoining streets was considered inadequate particularly in the south-east corner, it was recommended that retention of runoff from the site be maximised.

2.4 Physical Site Factors

2.4.1 Introduction

The original site conditions prior to excavation of brick making clay reflected two distinct geomorphological systems.

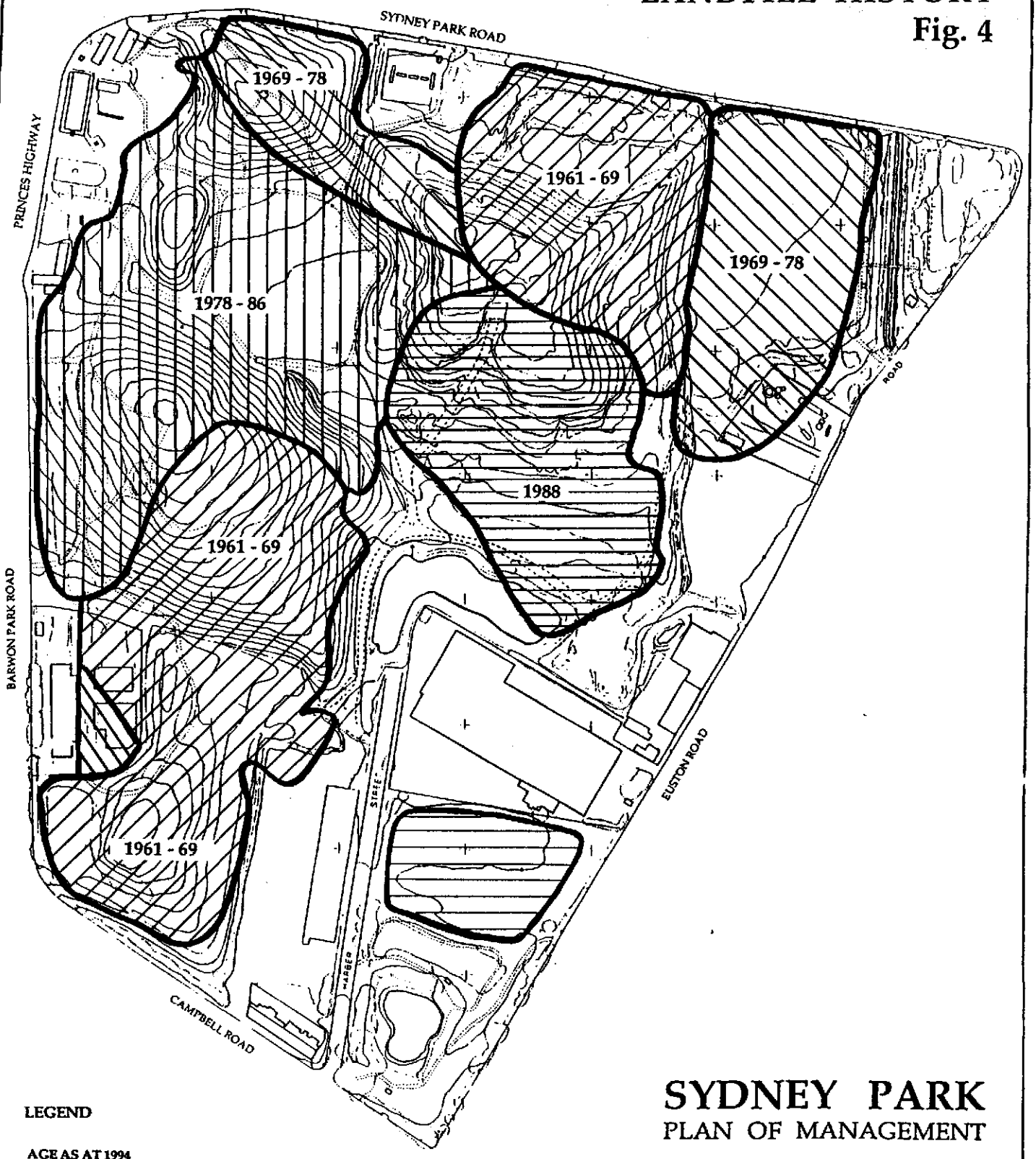
- the eastern portion of the site drained to a low lying system of swamps and marshes developed on alluvial sands and draining into Botany Bay via Sheas Creek which is now Alexandra Canal.
- the western portion of the site composed of gentle slopes rising from the low lying swamp areas to a high point in the north-west corner of the site.

These natural systems have largely been eliminated on more than half of the site through excavation of clay material for brick making over a period of more than a hundred years. Backfilling the pits with waste and cover material has created a man-made site that presents a complex set of physical conditions that must be addressed in the Park development process. These physical conditions and their implications for Park development and management are discussed in the following sections of the Report.

2.4.2 Landfill History (Figure 4)

Landfill operations commenced on the site in 1948 and involved backfilling the pits which had been created by clay extraction for brick

LANDFILL HISTORY
Fig. 4



LEGEND

AGE AS AT 1994

- GREATER THAN 25 YEARS
- 16 - 25 YEARS
- 8 - 16 YEARS
- LESS THAN 6 YEARS
- AREA NOT USED FOR LANDFILL

Source: Plan provided by SSCC

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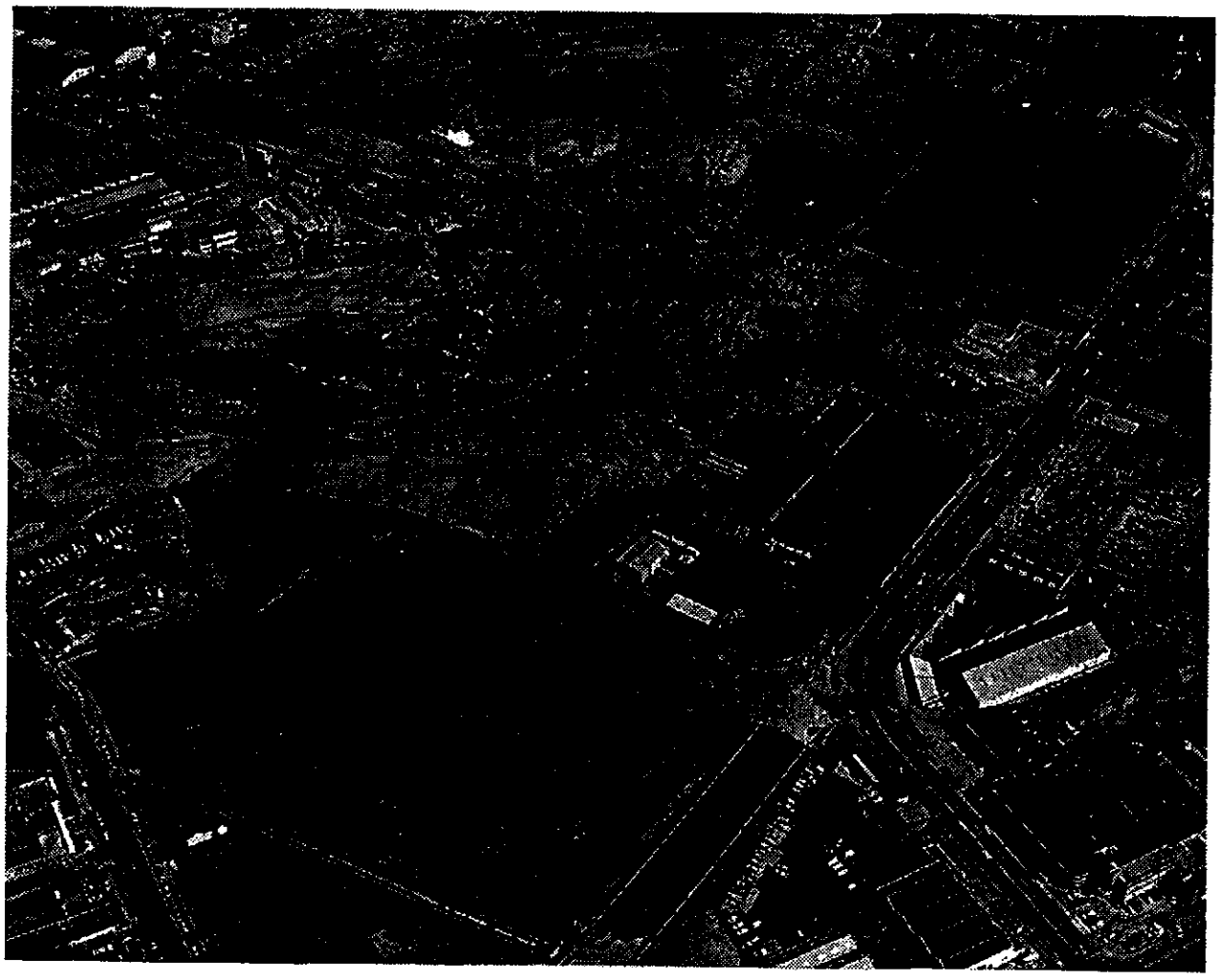
making. Disposal of putrescible waste generally ceased in 1976 (Ref. Conybeare Morrison Plan of Management, 1982). After that date it appears that no significant amount of putresible material was disposed of at Sydney Park.

Since SSCC took charge of the filling operations in 1990 cover material consisting predominantly of natural material and some building rubble and soil excavated from construction sites has been placed on the Park to create the final landform and capped with a clay layer. This material has been brought on to the site from various locations throughout the Sydney Metropolitan Area and is therefore very variable.

Timing of the landfill operations was also variable and depended on the availability of particular portions of the clay pits in which the waste material was placed. Consequently the age of landfill material is also variable. This is illustrated by Figure 4 which is based on information provided by SSCC and indicates the age of landfill in various portions of the site.

The landfill operations have created a unique combination of physical site conditions due to the nature of material placed in the former



Aerial photo at time of landfill operations in former clay pits showing Euston Road and Metromix site in bottom left corner, McPhersons site in top left corner, Sydney Park Road to the right, playging field in foreground and kilns/chimneys in top right corner; the plant nursery adjoining Sydney Park Road/Mitchell Road intersection was subsquently relocated to the south-west corner of Sydney Park.

clay pits and the methods used to place it. During the initial years of landfilling, the site was operated as an open tip without the daily placement of a cover of soil. During the later years of operation the landfill process generally would have involved the placement of a soil cover over the waste material, on a daily basis. As a result of this filling process the material within the former clay pits is a mixture of waste material and soil which is highly variable in composition and the degree to which it has been compacted. As the organic component decomposes and soil is washed into voids within the waste material, a high degree of settlement occurs. Not only does the whole site settle but there is a high degree of differential settlement at the ground surface reflecting the variability of the waste material below.

This settlement has a number of implications for development of the Park including:

- interference with surface drainage on flat areas and a reduction in the gradient of drainage channels and pipes.
- potential damage to hard surfaces as well as buildings and structures constructed on the landfill areas.
- potential damage to underground services including sewerage, water, and drainage pipes as well as power and telephone lines.

While many of these constraints can be overcome by appropriate design, the cost and maintenance implications must be considered during the planning process and the necessary design solutions applied.

The biological degradation of organic material within the landfill by microbes, either under aerobic (with oxygen) or anaerobic (without oxygen) conditions, creates methane and other gases as by-products. Methane in it's pure form is colourless, odourless and lighter than air. However, as a by-product of biodegradation methane is only one of many gases which together are referred to as landfill gases. This mixture of gases almost always has an unpleasant odour and is generally lighter than air.

Methane mixed with air at about 5 to 15 percent will explode if ignited. Below this level it will not ignite or explode. Above 15 percent the mixture will burn with a blue flame without exploding.

The rate of methane production varies greatly depending upon the:

- proportion of organic material in the landfill
- moisture content of the waste material
- temperature
- availability of oxygen following compaction, soil cover and relation of the waste material to the water table

Methane has been detected on other landfill sites up to 50 years after the placement of organic material had ceased. However, EPA has apparently informed SSCC that methane gas is only likely to be a problem at Sydney Park for a period of about 20 years after the cessation of the tipping of putrescible waste.

Because it is lighter than air, methane will rise to the surface of the landfill, following the path of least resistance. Given the highly variable nature of the landfill material and the presence of cracks and fissures created by settlement, the pattern of gas movement is extremely variable. If the passage of gas is blocked by a surface cover of impermeable material then it is likely to move laterally until it finds an escape route. In the case of Sydney Park this escape route is most likely to occur along the interface between the landfill and the vertical face of the former clay pit.

The implications of methane gas escaping through the surface of the landfill area include:

- creation of a potential explosion/fire hazard if the methane is trapped within a confined space (buildings, drainage pipes etc)
- an impact on plants resulting from the displacement of soil oxygen that can result in plant damage or death as a result of oxygen starvation of plant roots.

While these potential problems can be overcome through appropriate planning and design they will need to be addressed.

The issue of methane gas at Sydney Park has been addressed through a series of reports which are summarised in section 2.3.

In general these Reports confirmed that the pattern of methane gas discharged at the ground surface throughout the site is highly variable. Consequently it is necessary to deal with the potential implications of methane gas on an individual area or facilities basis rather than the whole site as a single unit.

An inspection of the Park has indicated that in some areas plant growth is likely to have been adversely affected and in some cases killed by methane gas. However, plant growth is also being affected by other factors including the highly variable cover material that produces great variation in growing conditions over short distances. It is therefore extremely difficult to clearly identify those areas directly affected by methane gas.

South Sydney City Council has adopted a strategy in which areas of planting that fail are replanted. If the planting continues to fail the area is left unplanted until some time in the future when methane gas levels are expected to be sufficiently low to allow plant growth.

As pointed out by Mr Amaral in his report in November 1989 there is a potential for lateral movement of methane gas particularly through the Botany Sands. Consequently there is a need for monitoring to detect any lateral movement aground the perimeter of the landfill areas within the Park.

2.4.3 Soils (Figure 5)

The original soils occurring on the low-lying eastern portion of the site were developed on the Botany Sands. They are characterised by a very shallow top soil layer with low fertility and a high water table.

Soils on the western portion of the site were developed on Wianamatta Shales. These soils have been described as "shallow to moderately deep (< 100cm) red and brown podsolic soils on crests, upper slopes and well drained areas; deep (>150cm) yellow podsolic soils and soloths on lower slopes and areas of poor drainage; limitations result from moderately reactive, highly plastic subsoil, low soil fertility, poor soil drainage. "

However, these original soil resources have been extensively removed by the excavation of clay pits and development of industrial uses on most of the remainder of the site. The extent of landfill operations is shown on Figure 5 together with approximate distribution of the two major soil types described above.

A survey of soil conditions was carried out in 1988 by Sydney Environmental and Soil Laboratories Pty Ltd and involved an analysis of soil samples from ten areas throughout the Park. These tests confirmed the high variability in soil conditions due to landfill operations and site formation works for industrial development. It also indicated that severe soil compaction and low soil fertility were affecting plant growth.

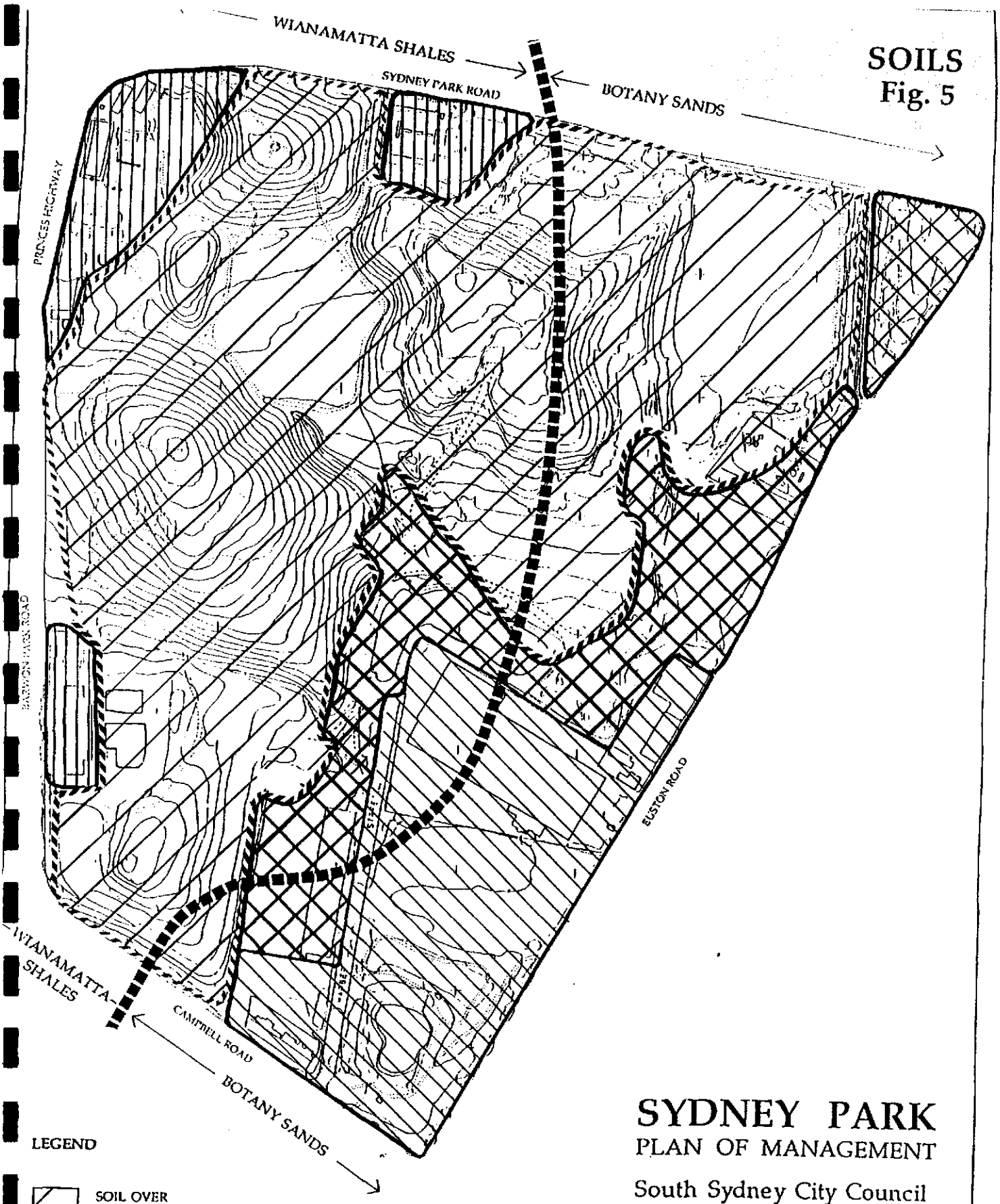
2.4.4 Landform (Figure 6) and Drainage (Figure 7)

The original landform would have consisted of gentle slopes grading from a high point of about 20m. RL in the north-west corner of the site to the flat low-lying areas at about 4m. RL along the eastern portion of the site. These low swampy areas were associated with Sheas Creek prior to the construction of Alexandra Canal and filling of the area.

Clay extraction for brick making over a period of more than a century and backfilling of the pits with waste material together with earthworks and filling associated with industrial development on the remainder of the site, have substantially changed most of the original landform.

The current landform is illustrated by Figure 6 and summarised by the following points.

- three visually prominent hills have been constructed by placement of building rubble and soil material.



SOILS
Fig. 5

LEGEND

- SOIL OVER LANDFILL MATERIAL
- IMPORTED SOIL COVER ON ORIGINAL GROUND SURFACE
- NATURAL SOIL ON WIANAMATTA SHALES
- NATURAL SOIL ON BOTANY SANDS
- APPROXIMATE BOUNDARY OF QUARRY
- APPROXIMATE BOUNDARY BETWEEN BOTANY SANDS & WIANAMATTA SHALES

Source: Report by Bob Amaral for Land Systems EBC/Dept. of Planning, May 1990

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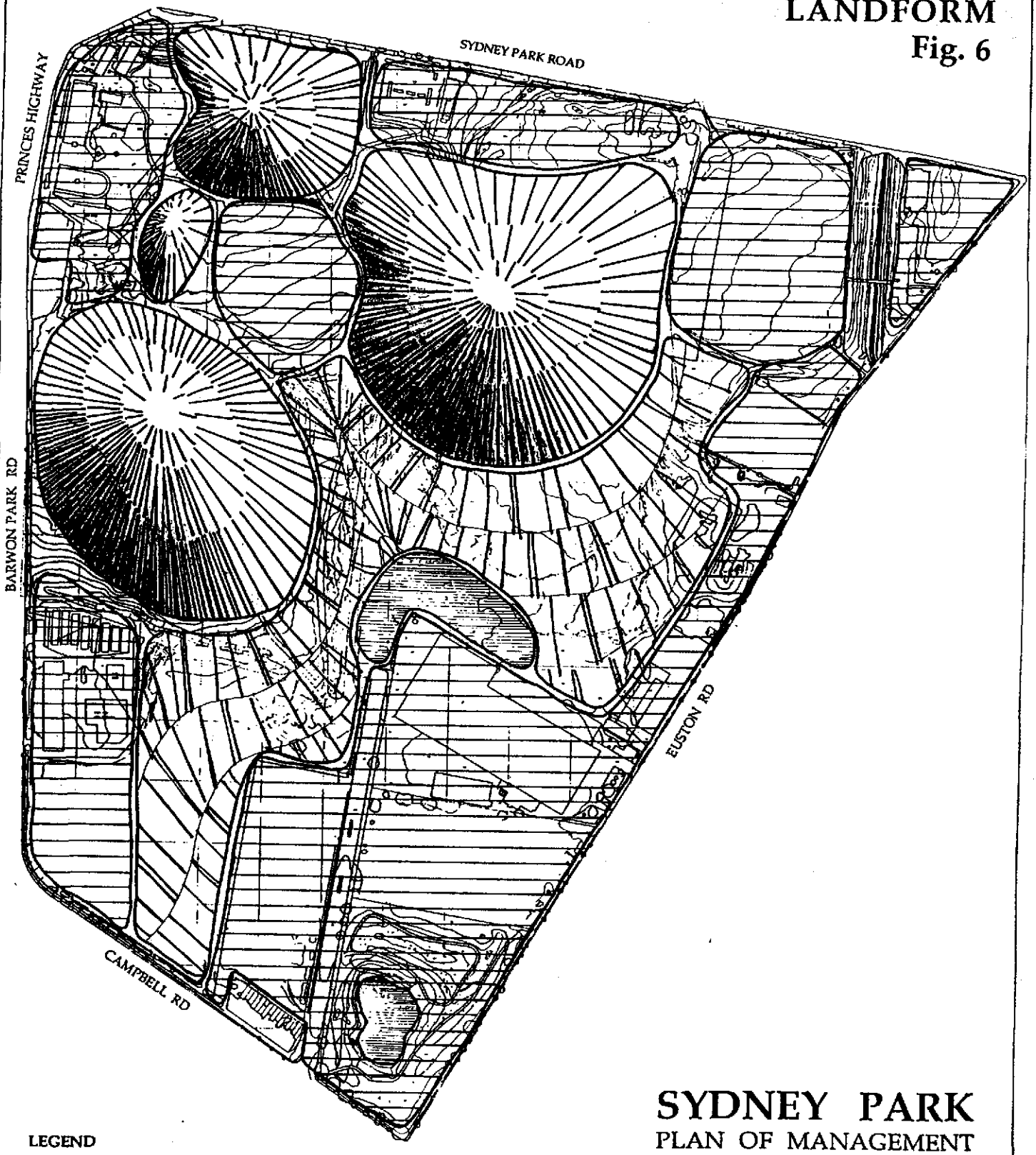
N

0 100m 200m

LANDFORM
Fig. 6



LEGEND

- HILL
- GENTLE SLOPE
- FLAT AREA
- POND

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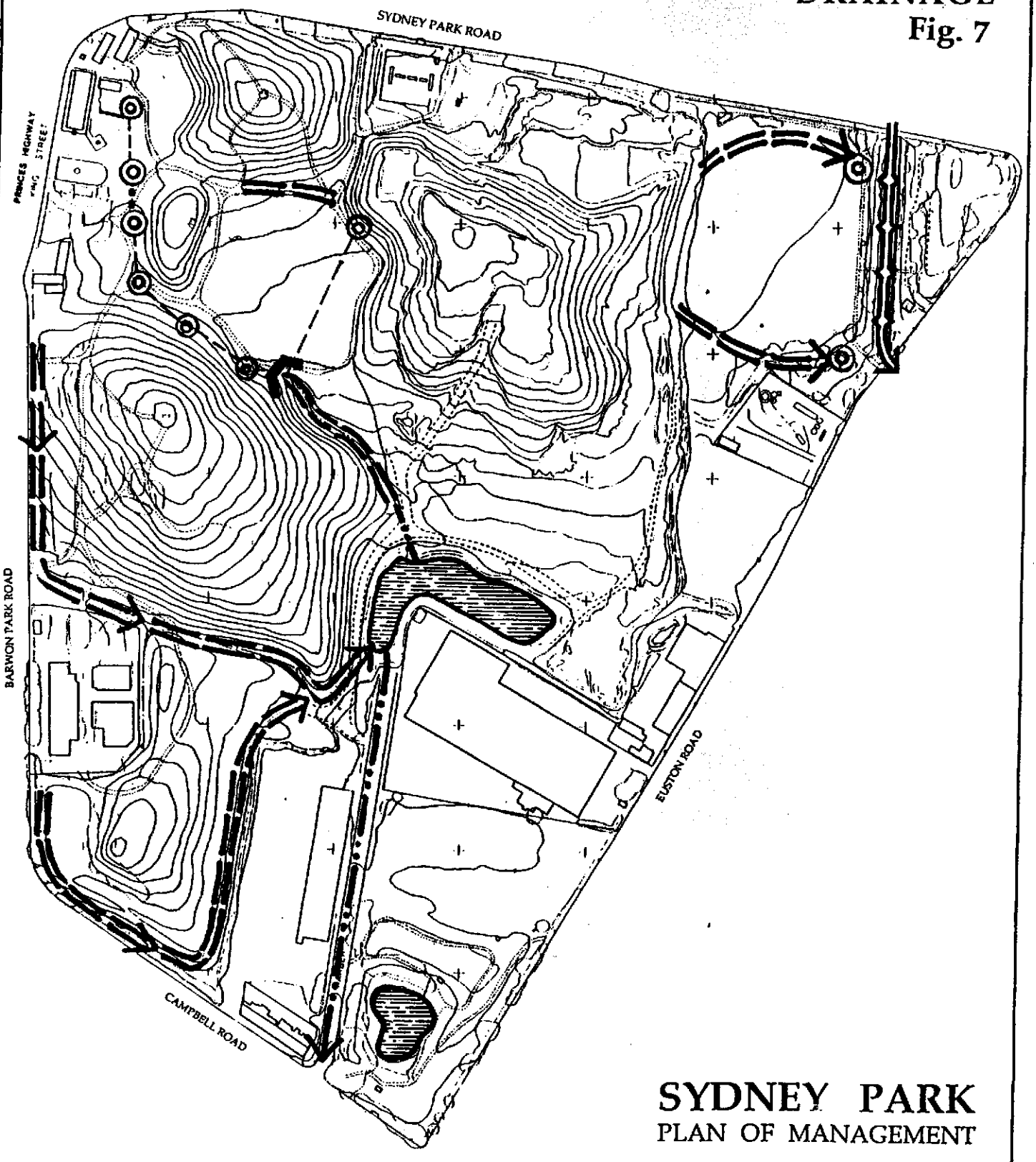
DRAINAGE
Fig. 7



LEGEND

- EXISTING PONDS
- CONCRETE LINED STORMWATER CHANNEL
- STORMWATER PIPE
- DRAINAGE SWALE
- STORMWATER PIT
- HEADWALL

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PLAN OF MANAGEMENT

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0 100m 200m

- flat areas of unfilled land occur in the north-west corner of the site in the location of the brickworks and the plant nursery adjoining Barwon Park Road as well as in the south-east and north-east portions of the site.
- flat areas of filled land have been created between the three hills, as well as in south-west and north-east portions of the site.

The natural drainage pattern of the site has been completely changed by these operations. The current drainage pattern is shown in Figure 7. Most of the Park drains to the south-east corner from where it enters the stormwater system which discharges into Alexandra Canal.

Both the 1992 Plan of Management and subsequent Master Plan Concept Report included for a central drainage system to extend from the north-west corner of the site down to a series of ponds in the south-east corner with provision for overflow into the stormwater system leading into Alexandra Canal. SSCC has adopted a policy of retaining the maximum amount of stormwater on site using the system of existing and proposed ponds in the south-east portion of the Park.

2.4.5 Existing Vegetation (Figure 8)

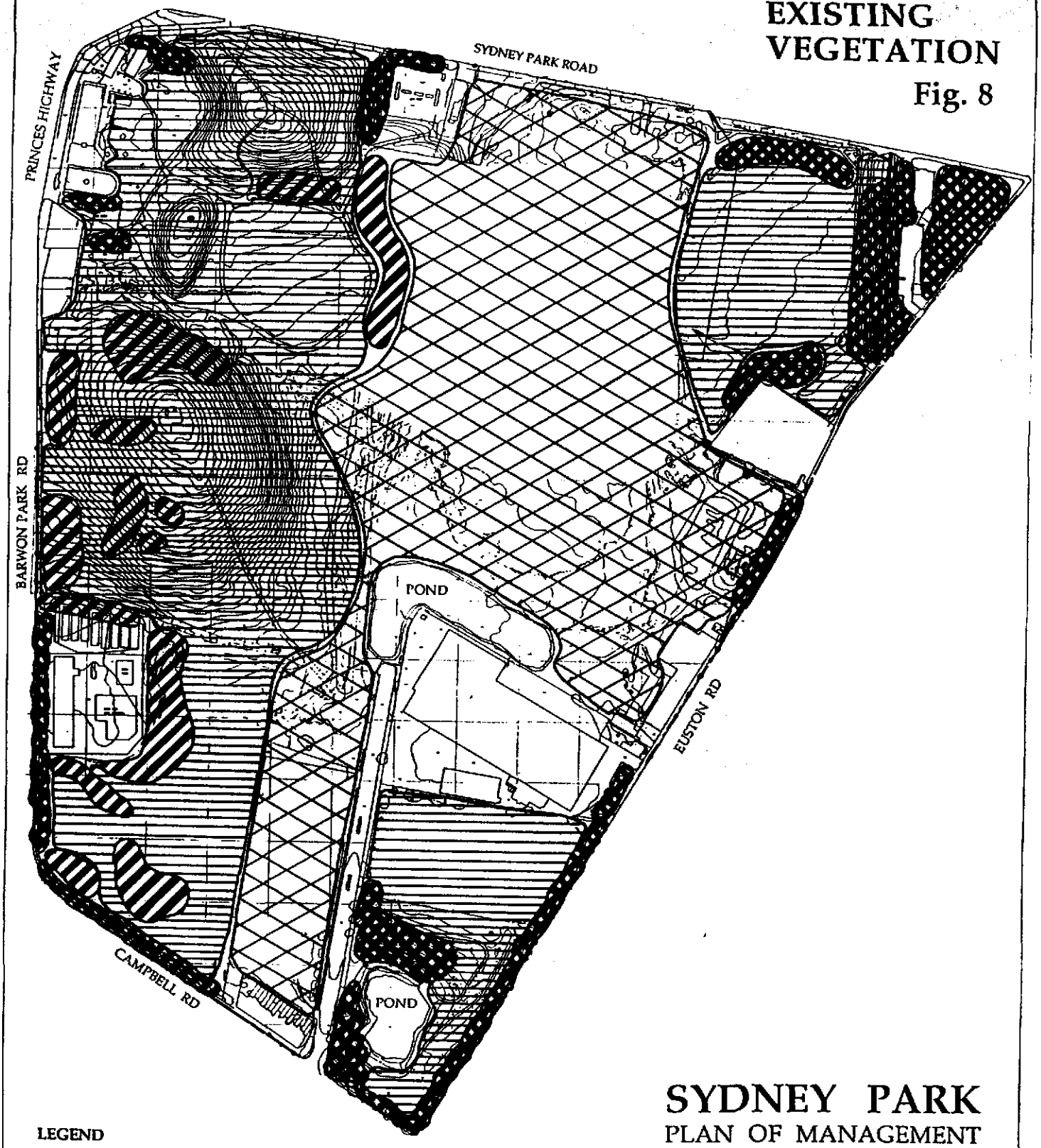
The Sydney Park site has been completely disturbed by quarrying, landfill operations and industrial development. Consequently, none of the original vegetation remain. Extensive areas of grass have been established wherse the final landform has been created. Tree and shrub planting has also been carried out on various areas within the Park. Figure 8 indicates the distribution of this tree and shrub planting which can be placed in two categories.

- Stage 1 planting associated with the initial development of facilities by the Department of Environment and Planning in the north-west, north-east and south-east corners of the Park.
- recent planting carried out under the direction of SSCC over the last 2-3 years generally within the western portion of the Park.

Plants established in the Stage 1 development range in height up to about 10 metres and predominantly include tree and shrub species indigenous to the coastal areas of Botany Bay.

The more recent planting has mostly been carried out by volunteer community groups under the supervision of Council officers. These plantings included the following native species listed on the following page.

EXISTING VEGETATION
Fig. 8



LEGEND

- ESTABLISHED PLANTING (Indigenous trees and shrubs)
- RECENT PLANTING (Indigenous trees and shrubs)
- GRASS
- BARE SOIL

SYDNEY PARK
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0 100m 200m

Stage 1 planting adjoining the drainage channel and car park in north-east corner of the Park.

Casuarina planting in right of photo associated with pond in south-east corner of the Park.

Recently planted clump of vegetation with fast growing Acacias providing improved growing conditions for Eucalypts and other species.

Plant List

ACACIA	*decurrens*
	floribunda
	longifolia
	myrtifolia
	suaveolen
	sophorae
	terminalis
BANKSIA	*ericifolia*
	robur
	serrata
	spinulosa
CALLISTEMON	*citrinus*
	saligna
EUCALYPTUS	*eximia*
	gummifera
	haemastoma
	piperita
	robusta
	saligna
GREVILLEA	*"robyn gordon"*
	sericea
HAKEA	*sericea*
KUNZIA	*ambigua*
LEPTOSPERMUM	*laevigatum*
LOMANDRA	*longifolia*
MELALEUCA	*armillaris*
	ericifolia
	erubescens
	thymifolia
TRISTANIOPSIS	*laurina*
WESTRINGIA	*fruticosa*

2.4.6 Climate

Sydney Park is located approximately 2km north of Sydney Airport. Climatic data recorded over a 57 year period at the Airport has therefore been adopted as the most relevant. This data is taken from *Climatic Averages Australia*, Bureau of Meteorology, April 1988.

Rainfall

The pattern of rainfall throughout the year at Sydney Airport is illustrated by the following graph. It shows that the months of highest rainfall generally occur within the first half of the year and the months of lowest rainfall are in the second half of the year. The total rainfall for the year is 1,100mm which is slightly lower than the mean of 1,213mm at Sydney Observatory.

Temperature

The pattern of temperatures for Sydney Airport is shown by the following graph. The lowest mean maximum and minimum occur in July while the highest mean maximum and minimum temperatures occur in Jan/Feb.

Wind

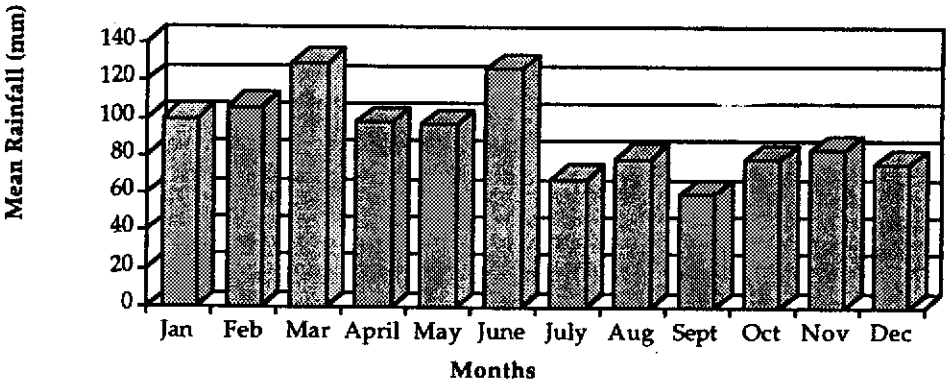
The pattern of wind direction and strength for Sydney Airport is shown by the wind roses presented on the following page.

They indicate that:

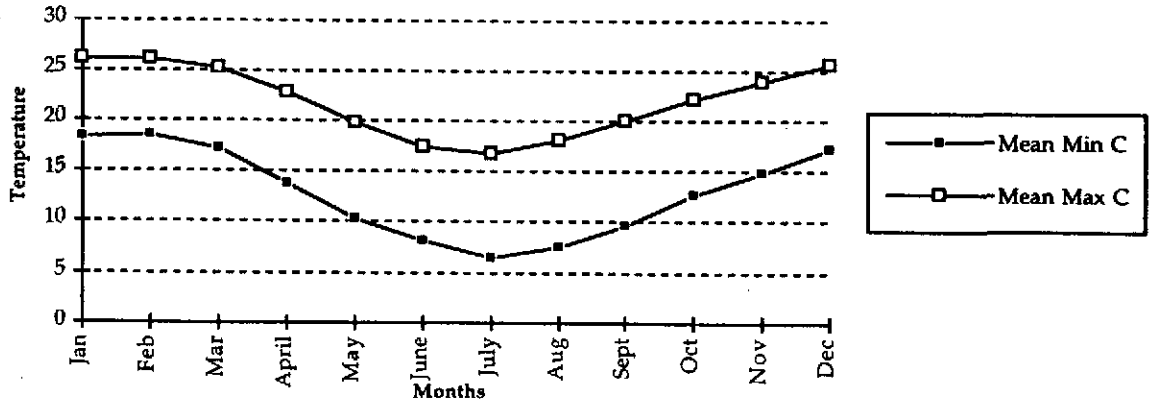
- in summer the predominant winds are from the south in the morning, swinging to the north-east in the afternoon
- in winter the predominant morning winds are from the west and north-west while in the afternoon it is from the south.

Except in winter there is a high incidence of winds from the north-east sector in the afternoon. Given the low lying topography extend-

Rainfall Data for Sydney Airport



Temperature for Sydney Airport



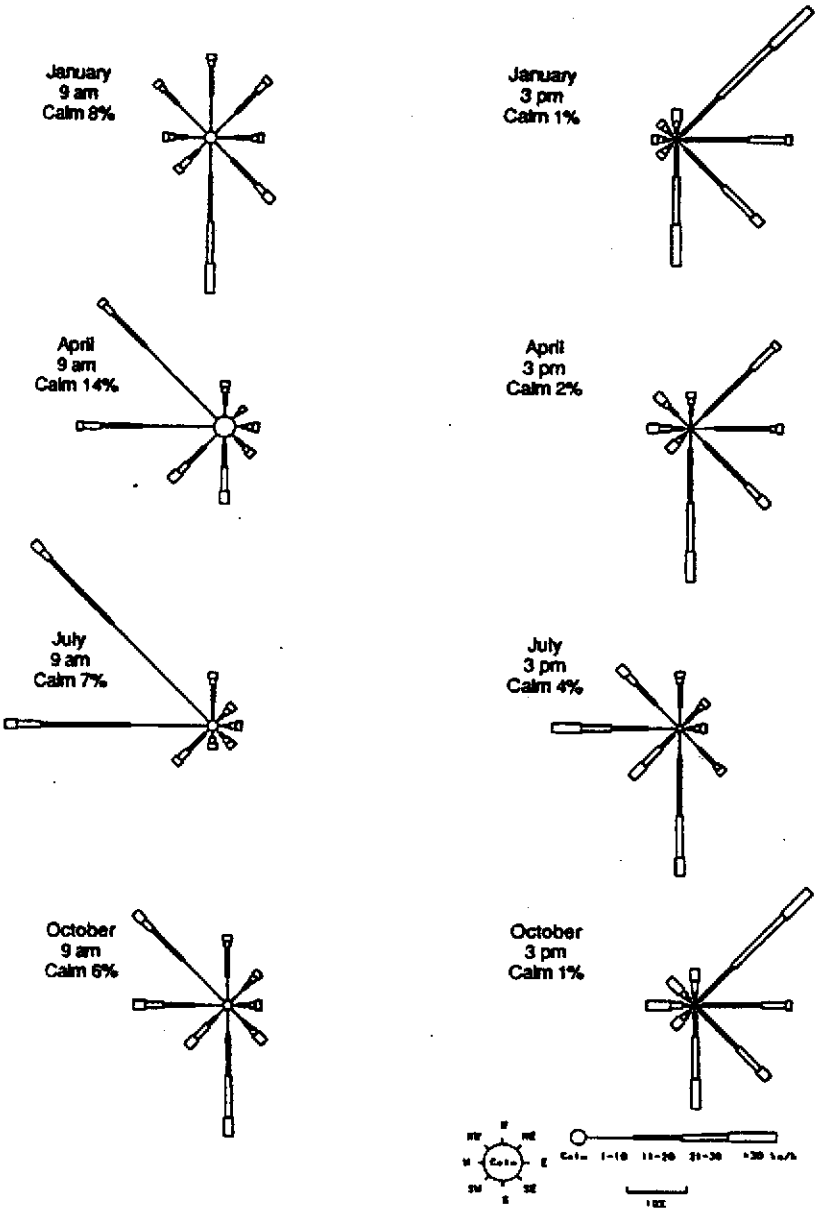
ing from Sydney Park to Botany Bay, these southerly winds are usually associated with a welcome drop in temperature in the afternoon during summer.

Throughout the Park there is a significant variation in microclimate conditions which have a direct impact on the physical comfort of people using the Park as well as growing conditions for vegetation.

These variations in microclimate include:

- exposure to cooling breezes and strong winds on top of the hills.
- protection from wind in the central green and other areas of lower elevations in the southern portion of the Park.
- reduced temperatures resulting from shading within the existing tree stands in the north-east and south-east corners of the site.
- higher humidity in areas around the perimeter of the two existing ponds in the southern portion of the site.

Extensive tree planting is required to provide shade throughout the Park while maintaining the opportunity to benefit from cooling breezes on the tops of the three major hills.



Wind-roses - Sydney Airport (1939-1986).

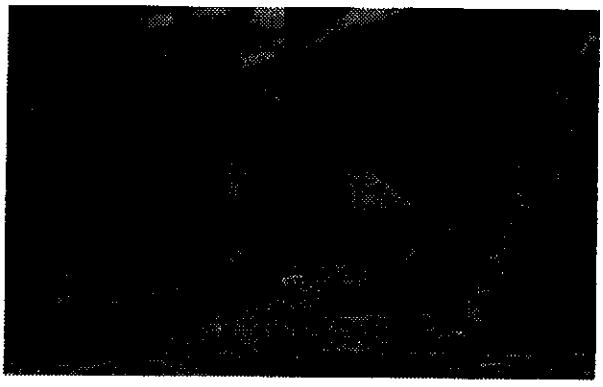
2.4.7 Buildings and Structures (Figure 9)

A number of buildings and structures are located around the perimeter of the site. These generally relate to existing or former industrial or commercial uses. The one exception is a row of residential terraces located along the southern boundary adjoining Campbell Road.

The location of these major buildings and structures are described separately below in terms of their character, condition and relationship to future development of the Park.

Brick Kilns and Chimneys

- the former Austral Brickworks ceased operation in 1970 and restoration works were carried out on the kilns and chimneys as part of the Stage 1 development of Sydney Park; while these restoration works have stabilised the structures, considerably more work would be required to allow adaptive re-use of the kilns for public purposes.
- the remaining structures include four (4) brick chimneys and six (6) individual kiln structures.
- security grilles and doors have been installed to prevent public access to the kilns because they are not in a condition suitable for public use.



Brick kilns, chimneys and paved plaza within heritage precinct.

Car Sales Office

- a single storey office building is located in the north-west corner of the Park on a privately owned commercial site that is currently used for car sales and service.

Plant Nursery Buildings

- the South Sydney City Council plant nursery adjoining Barwon Park Road includes a single storey industrial building used for plant and equipment storage as well as offices and staff facilities
- other structures include shade and propagation buildings.

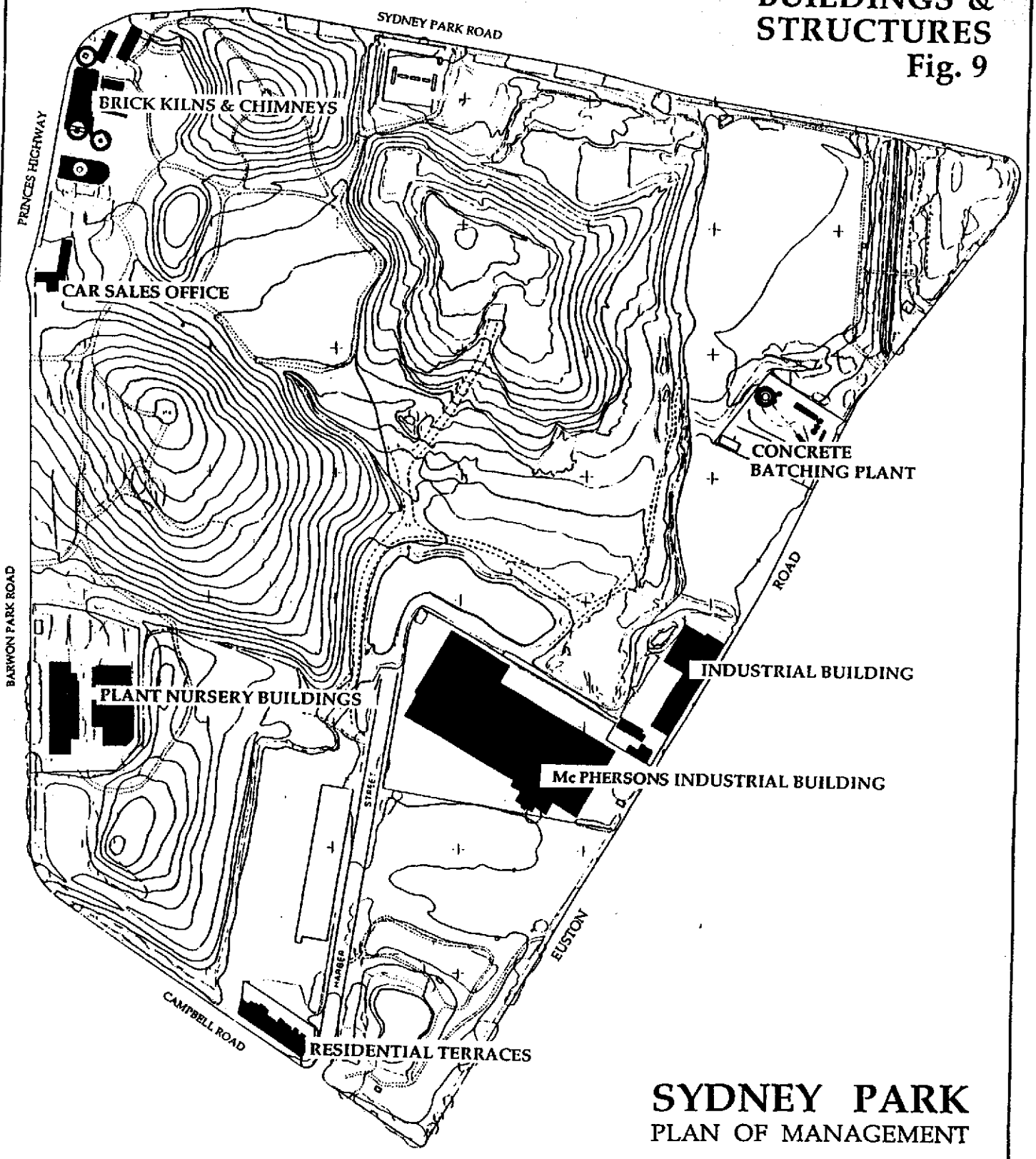
Residential Terraces

- a row of 2 storey residential terraces is located on privately owned land on the southern boundary of the Park fronting on to Campbell Road.

Brick kilns and chimneys in north-west corner of Park viewed from Southern Hill with urban development of Newtown beyond.

Terrace houses fronting Campbell Road.

BUILDINGS & STRUCTURES
Fig. 9



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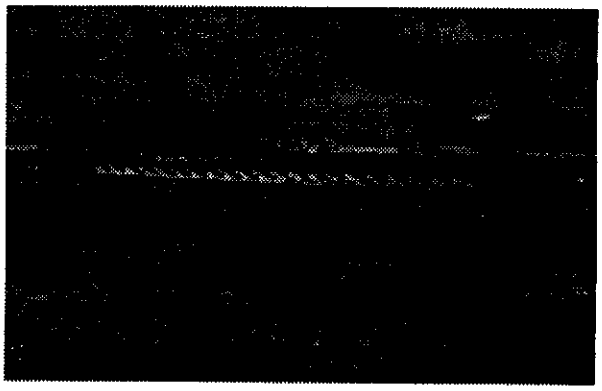
0 100m 200m

McPhersons Industrial Building

- this large single level industrial building is located on privately owned land; it was originally used for engineering manufacturing but is currently used for goods storage and transit.



McPhersons building at base of slope of Eastern Hill with high rise buildings associated with Sydney Airport in distance.

Industrial Buildings

- this includes a group of single storey brick buildings owned by SSCC and fronting on to Euston Road; part of one building is currently used with the remainder being vacant.
- a single storey brick residential building is located at the northern entrance gate of the McPhersons site fronting on to Euston Road and owned by SSCC.

Metro Mix Concrete Batching Plant

- the plant located in the north-east portion of the Park and fronting on to Euston Road includes tall metal bins used to store materials for concrete batching, a central conveyor system and a vehicle ramp for concrete trucks.

2.4.8 Existing Services (Figure 10)

An assessment of services in Sydney Park was carried out by Binnie and Partners on behalf of the Department of Planning in February 1990. As the Park is located within an established industrial/residential area and services requirements are relatively minor, the existing services are generally considered to be adequate and can be extended to service future development in the Park. However, stormwater drainage provisions are currently not adequate and will require additional detention ponds to cater for peak storm conditions. Results of the assessment by Binnie and Partners are summarised below.

Sewerage

- there are existing sewer mains along Euston Road (eastern boundary), Campbell Road (southern boundary) and Barwon Park Road/Princes Highway (western boundary).
- there is no sewer line along the northern boundary adjoining Sydney Park Road.
- there are no sewer lines within the Park itself due to its history as a clay extraction site and subsequent waste disposal operations.

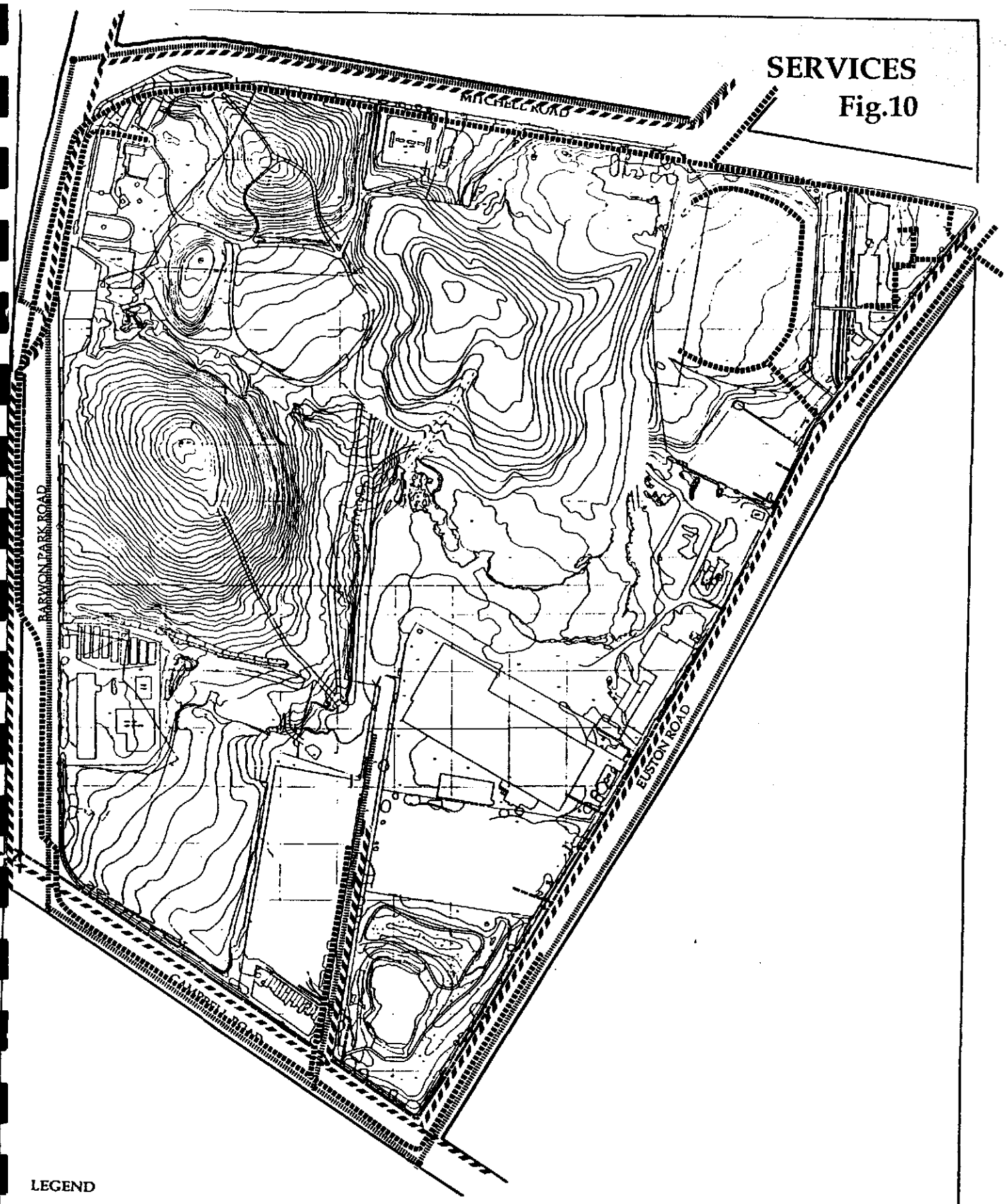
Stormwater Drainage

- during the period of clay extraction on the site, stormwater was generally collected within the clay pits and subsequently pumped into the stormwater system of adjoining public roads; backfilling of the pits has removed this system.
- a stormwater detention pond has been constructed at the northern end of Harber Street adjoining the McPhersons site to reduce the rate of discharge into the stormwater system along Harber Street.

Stormwater detention pond adjoining McPhersons site at northern end of Harber Street.

- pits collect stormwater from near the eastern edge of the brick kilns as well as the central green and discharges it to the open drainage channel starting at the south-east corner of the central green.

SERVICES
Fig.10



LEGEND

OVERHEAD POWER

S.C.C.CABLES

WATER SUPPLY

SEWER

0 100m 200m

NOTE: INFORMATION BASED ON SERVICES MASTER PLAN PREPARED BY BENNIE PARTNERS (NOV. 1989).

SYDNEY PARK
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Central drainage channel at south-east corner of the Central Green, looking towards the detention pond.

- open earth lined channels carry stormwater from the SSCC plant nursery to the detention pond at the northern end of Harber Street.
- additional stormwater detention ponds will be required to provide adequate capacity for peak storm conditions.

Electricity

- overhead power lines and underground Sydney County Council (SCC) cables extend around the whole perimeter of Sydney Park and up to the northern end of Harber Street.
- path lighting has been installed in the north-west sector of the Park associated with the kilns and the central green.
- lighting has also been installed in the south-east and north-east corners of the Park associated with carparking and recreation facilities.
- low voltage electricity supply for amenity blocks, barbeques, pedestrian path lighting and pumps (irrigation and pond water recirculation) can be provided by SCC subject to lodging an application; solar power could be used to provide electricity for lighting and operating recirculation water pumps for the storage ponds.

Telephone

- Telecom cables are located in all of the streets adjoining the Park and connected to some existing buildings.
- there are no public telephones in any of the streets adjoining the Park.
- there is sufficient capacity in the existing Telecom cables in adjoining streets to accommodate any new connections within the Park.

Gas

- gas mains are located in all streets adjoining the Park.
- gas could be supplied to facilities to be developed around the perimeter of the Park subject to an assessment of potential safety hazards relating to landfill gases on the site.

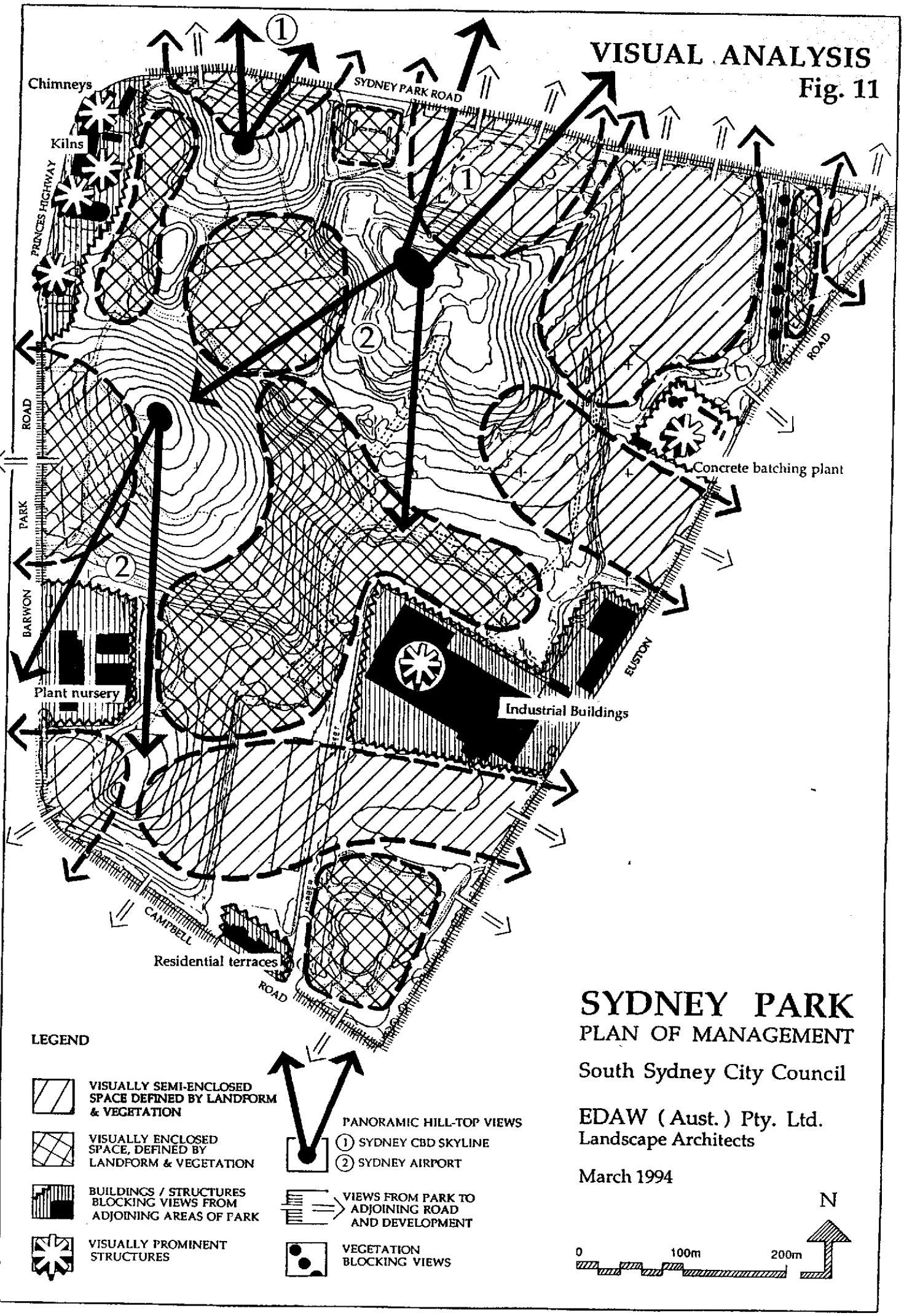
Fire Fighting

- the NSW Fire Brigade will require access throughout the Park to allow for fire fighting.
- any proposed buildings in the Park will need to be located within 90 metres of a hydrant in an adjoining street.
- buildings with a floor area of 500 - 2,000 square metres will require fire hose reels while buildings greater than 2,000 square metres will require internal hydrants.
- design of all fire services must be in accordance with Ordinance No. 70 of the Local Government Act, 1919.

2.5 Visual Considerations (Figure 11)

The visual character of Sydney Park has undergone a fundamental change as the original clay pits have been backfilled with waste material and a series of artificial hills created. Landscape development including top-soiling, grassing, path construction and planting is converting the grossly disturbed character of the landfill operations to an attractive public parkland.

In parallel with these changes to the visual character of the Park itself there are changes occurring in parts of the surrounding urban areas as some industrial land-uses are converted to residential accommodation and others are re-developed.


VISUAL ANALYSIS
Fig. 11
Chimneys
Kilns
SYDNEY PARK ROAD
PRINCES HIGHWAY
ROAD
PARK
BARWON
Concrete batching plant
EUSTON
Plant nursery
Industrial Buildings
CAMPBELL
HARBER
Residential terraces
ROAD
LEGEND
VISUALLY SEMI-ENCLOSED SPACE DEFINED BY LANDFORM & VEGETATION
VISUALLY ENCLOSED SPACE, DEFINED BY LANDFORM & VEGETATION
BUILDINGS / STRUCTURES BLOCKING VIEWS FROM ADJOINING AREAS OF PARK
VISUALLY PROMINENT STRUCTURES
PANORAMIC HILL-TOP VIEWS
1 SYDNEY CBD SKYLINE
2 SYDNEY AIRPORT
VIEWS FROM PARK TO ADJOINING ROAD AND DEVELOPMENT
VEGETATION BLOCKING VIEWS
SYDNEY PARK
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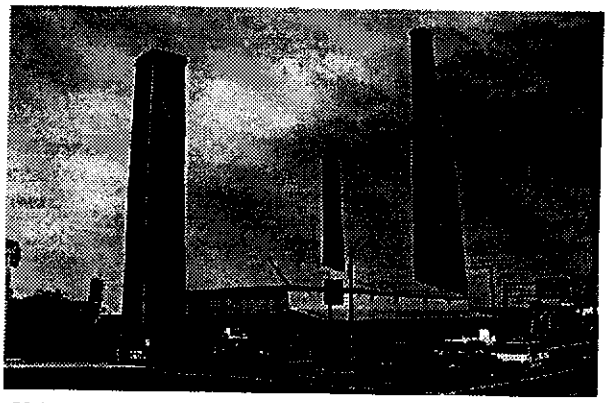
200m

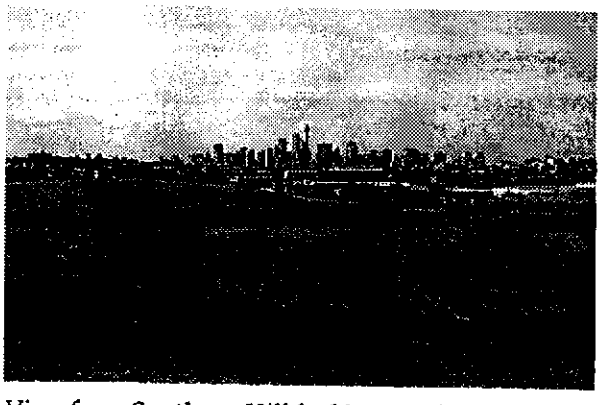


Chimneys and kilns form a regional landmark on the corner of Princes Highway and Sydney Park Road.

View from Eastern Hill looking south to Sydney Airport.

Major visual considerations of Sydney Park are summarised by the following points:

- the historic brick kilns and tall chimneys at the Princes Highway/Sydney Park Road intersection provide a visual landmark of regional significance.
- the grass-covered sculptured landforms that have been created in the north-west portion of the Park are visually distinctive and provide an attractive visual contrast to the adjoining urban environment that is dominated by buildings and structures.
- panoramic views form the tops of these hills provide visual connections from the Park to the skyline of Sydney C.B.D. to the north and Sydney Airport to the south.



View from Southern Hill looking north across the Central Green and Northern Hill to the Sydney Skyline beyond.

- areas surrounding the Park are predominantly industrial in character with some residential development along the Sydney Park and Barwon Park Road frontages.
- structures within the boundary along Euston Road (McPhersons and Metromix) together with the brick kilns and chimneys are distinctly industrial in character.
- due to the fact that the Park is still under construction, there is a general lack of trees and a predominance of grass or bare soil which creates a visually open landscape character with few opportunities to experience a sense of enclosure.
- the aesthetic attraction of water is currently limited to the detention pond north of Harber Street and to the ornamental pond in the south-east corner of the Park.

While there is considerable variation in landform within the Park, there is little existing aesthetic diversity provided by vegetation, water, rock outcrops or built elements.

2.6 Recreation Opportunities

2.6.1 Introduction

Existing recreation opportunities within the Park are primarily provided by pedestrian paths and open grass areas. Shaded areas suitable for picnicking are generally confined

to the south-east and north-east corners of the Park.

Recreation opportunities currently available within Sydney Park are illustrated on Figure 12 and include the following :

- walking/cycling along those sections of sealed pathway in the western portion of the Park as well as the south-east and north-east corners.
- lookout points on the northern and southern hills.
- kite flying from these hills.
- dog owners exercising their animals over the grassed areas primarily in the western portion and north-east and south-east portions of the Park.
- picnicking in areas associated with the ornamental pond in the south-east corner of the Park and areas of tree planting around the playing field in the north-east corner.
- team sports and/or informal active games on the playing field in the north-east corner of the Park.
- informal play on the central green and associated hills in the north-west portion of the site as well as grassed areas in the south-west and south-east corners of the Park.

The Park is generally used by individuals or small groups and families. There are currently few recreation opportunities in the Park for a number of sectors of the community including children, juveniles, school groups or elderly people.

At this early stage in the development of the Park there is a general lack of shade trees, toilets, picnic facilities, signage (information and directional), water features and play facilities. This is a major major deterrent to recreation opportunities throughout the Park.

2.6.2 User Demand

Recreation Planning generally involves a process of identifying demand for recreation opportunities/facilities and making provisions to satisfy those demands. The traditional approach of setting standards for the provision of recreation facilities based on population numbers has given way to an approach that seeks to analyse demand thorough community consultation and surveys and to identify community expectations and perceived inadequacies in recreation opportunities.

The community consultation process followed in preparing this POM has identified community expectations about the recreation role of Sydney Park. This issue is discussed in some detail in Section 3.

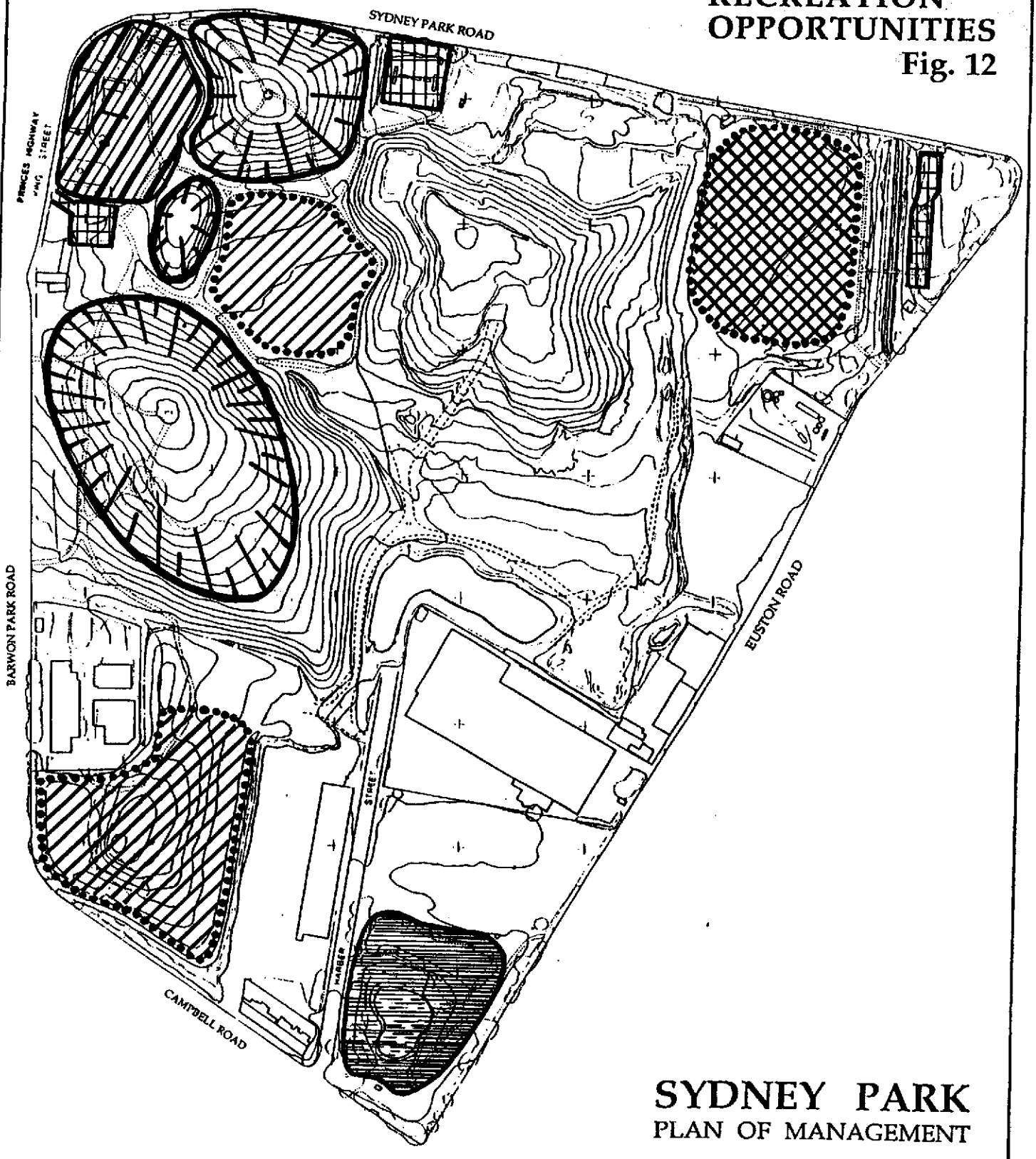
A community survey carried out by SSCC in early 1994 provides an indication of resident attitudes to open space and recreation issues. The survey included;

- survey forms letterboxed in early 1994 (900 completed forms were returned to SSCC)
- area-based consultations (total 18)
- consultation with Specific Needs Groups

Approximately 2,000 people participated in the survey. The Draft Report on the survey prepared by SSCC noted the following findings that are relevant to Sydney Park.

- open space is highly valued not only for recreation uses but simply to know it is available and visually accessible.
- most people considered that more open space was needed and the quality needs to be higher
- the sale or leasing of open space for long periods was generally opposed unless there was strong justification and extensive community consultation was carried out
- leasing major sporting facilities such as Redfern and Erskineville Oval was not generally supported
- a variety of open space types and sizes to facilitate a broad range of experiences was supported
- safe and convenient access to open space recreation areas for all user groups was considered to be very important.

RECREATION OPPORTUNITIES
Fig. 12



PLAYING FIELD

GRASSED INFORMAL PLAY AREA

GRASSED HILL WITH PANORAMIC VIEWS

HISTORIC PRECINCT OF BRICK KILNS & CHIMNEYS (VISUAL FUNCTION ONLY)

CAR PARKING

ORNAMENTAL POND AND ASSOCIATED LANDSCAPE DEVELOPMENT

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0 100m 200m

- design quality and variety of recreation facilities were considered important to provide "something for everyone"
- public and community art was considered to be an excellent way to make open spaces more attractive and interesting
- a high standard of open space maintenance was considered essential for the enjoyment by the community
- there was support for SSCC to actively promote more community involvement in improving and maintaining open space / recreation areas
- establishment of a community composting programme was supported
- SSCC should encourage local schools to *adopt-a-park* and be actively involved in beautification and maintenance
- SSCC should continue to stage *Music in the Park* and other community events in local parks
- Section 94 contributions should be used for open space development that is of value to and accessible to the general community

2.7 Planning Considerations

2.7.1 Current Land Use (Figure 13)

The current pattern of land uses in areas adjoining Sydney Park is illustrated on Figure 13 and summarised by the following points:

- land use along the eastern side of Euston Road is primarily industrial/commercial including freight handling and light industrial manufacturing; this pattern of industrial land use extends through to Alexandra Canal which generally runs parallel to Euston Road.
- south of Campbell Road along the southern boundary of the Park, current land use is a mixture of residential and industrial.
- a former clay pit south of Campbell Road is currently being used for waste disposal operation managed by Sydney City Council.
- land uses in the area along Barwon Park Road facing the western edge of the Park is primarily a mixture of residential/ commercial/light industrial uses
- land uses along the section of Princes Highway fronting the north-west corner of the Park are generally commercial.
- further west of Princes Highway the land use pattern is a mixture of residential, commercial and industrial.
- along the section of Sydney Park Road facing the northern boundary of the Park the land use is primarily industrial together with a major electrical substation.
- a medium density residential development has recently been completed on the corner of Mitchell Road and Sydney Park Road.
- further to the north of this area the landuse is a mixture residential, commercial and light industrial uses.
- an application for a medium density residential development has been submitted to SSCC for the site immediately west of Mitchell Road and fronting Sydney Park Road. SSCC anticipates that all of the area adjoining Sydney Park Road, except for the Sydney Electricity site, will eventually be re-developed for medium density residential land use.

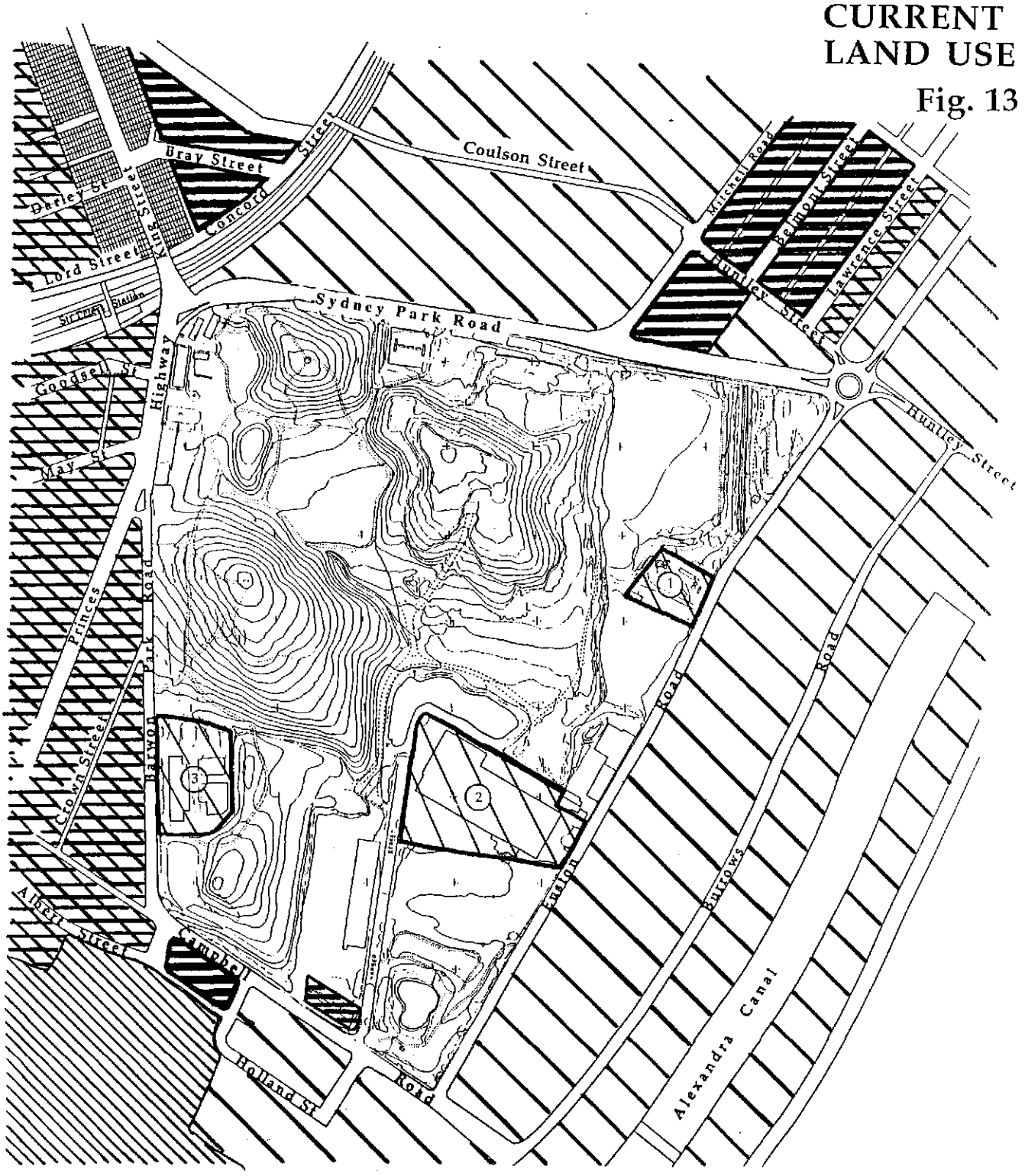
2.7.2 Zoning and Planning Controls

The areas currently incorporated in Sydney Park are predominantly zoned for Public Open Space uses. Those privately owned sites that have not yet been purchased by Council (McPhersons, Metromix, the car sales/service development south of the brick kilns) are zoned for industrial or open space uses.

The boundary between South Sydney City Council and Marrickville Council follows the Princes Highway for a short distance south of the St. Peters Railway Station and then along Barwon Park Road.

CURRENT LAND USE

Fig. 13



LEGEND

- INDUSTRIAL / COMMERCIAL
- RESIDENTIAL
- MIXED RESIDENTIAL / COMMERCIAL
- COMMERCIAL
- CURRENT WASTE DISPOSAL OPERATIONS

1. CONCRETE BATCHING PLANT
2. WAREHOUSING/STORAGE
3. PLANT NURSERY

SYDNEY PARK

PLAN OF MANAGEMENT

South Sydney City Council

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Landscape Architects

March 1994

N

0 100m 200m

Zoning within the SSCC. administrative area is in accordance with Local Environmental Plan No. 114 (1994). This Plan indicates that most of the Sydney Park site is Zone No.6. (Recreation Existing Zone). This zoning includes the following provisions.

1. *Objectives of Zone*
   The objectives are:
   a) to identify open space areas to meet the active and passive recreation needs of all residents and the work force of the district; and
   b) to allow a diversity of recreation activities suitable for all residents of the district.
2. *Without development consent*
   Works for the purpose of landscaping or gardening.
3. *Only with development consent*
   Amenities buildings, child care centres, community centres, advertising structures, recreation areas, sports clubs, subdivision and any other purpose which by virtue of its type, function, scale and services is in the opinion of the Council, consistent with the objectives of the zone.
4. *Prohibited*
   Any purpose other than a purpose included in item 2 or 3.

There are three (3) privately owned lots within the general envelope of Sydney Park that are zoned as "Industrial". These include the SSCC Plant Nursery as well as the McPherson and Metromix sites fronting Euston Road. The privately owned row of terrace buildings fronting Campbell Road are located on land zoned Residential 2(a).

Areas along the eastern edge of Euston Road and fronting on to Sydney Park are zoned Industrial. Immediately south of Campbell Road is a corridor zoned as "Reservation (Arterial Road)" which runs parallel to that road.

Areas north of Sydney Park Road fronting on to the Park are covered by LEP 107. SSCC approved a rezoning of this area from Industrial to Mixed Use Residential in accordance with its policy of encouraging re-development of the existing industrial land uses to medium density residential uses incorporating compatible commercial and community services facilities.

The western boundary of Sydney Park forms the boundary between South Sydney City Council and Marrickville Council. Zoning of areas west of the Park is therefore subject to Marrickville Council planning controls that generally provide for industrial land uses.

Although the current zoning of areas adjoining the Sydney Park is the principal statutory control on development, it is relevant to note that in some cases SSCC has demonstrated a willingness to encourage re-development of existing industrial properties for medium density residential use.

The former industrial site on the eastern corner of Mitchell Road and Sydney Park Road immediately north of Sydney Park was recently re-developed for medium density residential. A proposal for a similar development on the western corner of this intersection is currently under consideration by SSCC.

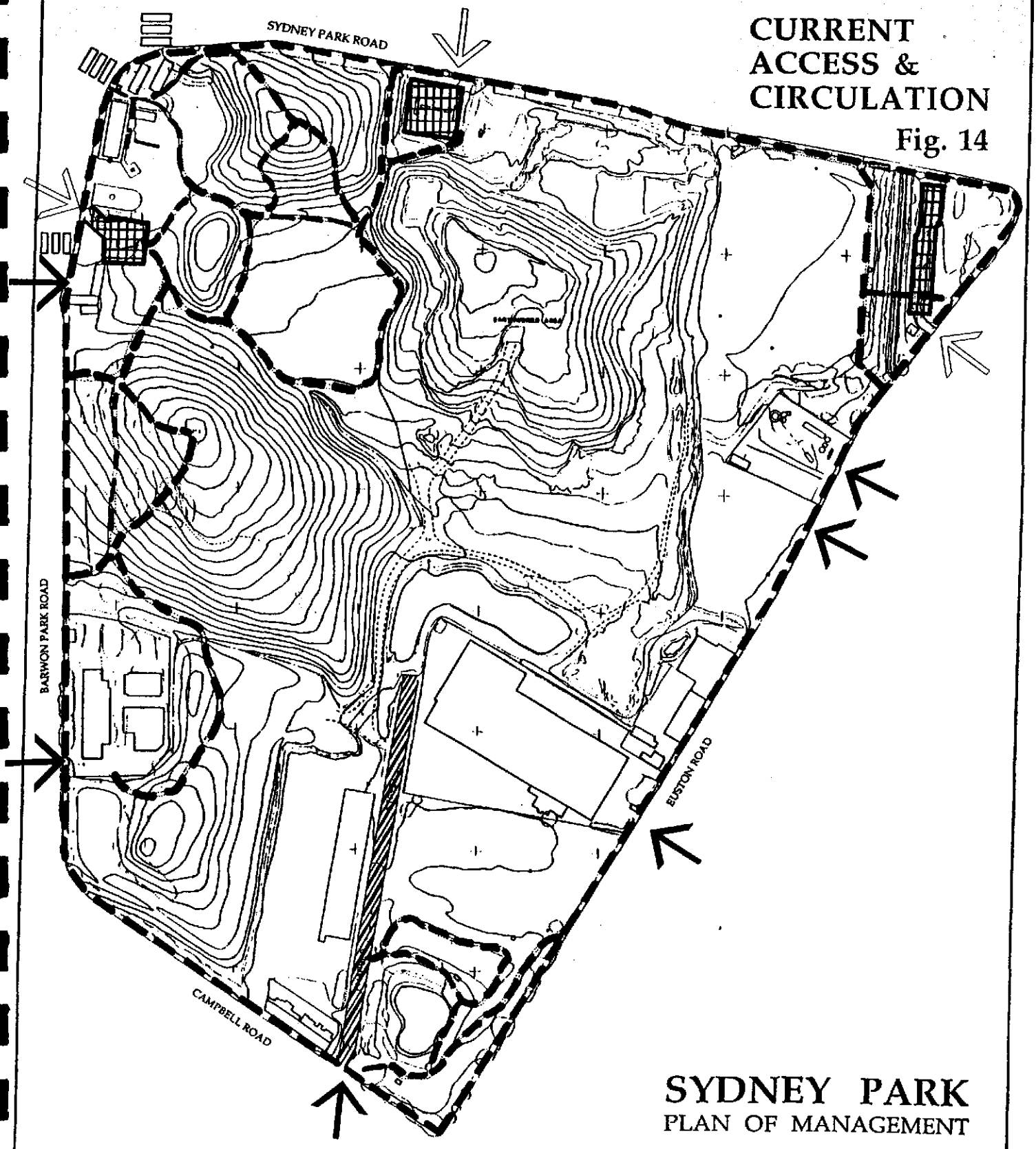
Any future development of buildings and structures on those parts of the Park formerly subject to land filling will require approval from the Environmental Protection Authority (EPA) as well as SSCC.

2.7.3 Access and Circulation (Figure 14)

The north west section of the Park is relatively well serviced by public transport that includes:

- St Peters Railway Station.
- public buses travelling along the Princess Highway and Sydney Park Road.

However, other portions of the Park are not readily accessible via public transport. Sydney Park is completely surrounded by public roads. The volume and composition of traffic flow around the Park is highly variable and includes heavy industrial traffic as well as passenger vehicles generated by residential development and employment in the area. The pattern of traffic around Sydney Park can be summarised by the following points:



CURRENT ACCESS & CIRCULATION

Fig. 14

LEGEND

- PEDESTRIAN PATHS
- PEDESTRIAN CROSSING
- CAR PARKING
- VEHICLE ACCESS (Public)
- VEHICLE ACCESS (Private)
- HARBER STREET (Temporarily closed to the public)

SYDNEY PARK
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0 100m 200m

- the section of Princes Highway that adjoins the north-west corner of the Park is classified as a State Highway.
- Sydney Park Road is an arterial road that carries a mixture of trucks and passenger vehicles with an Annual Average Daily Traffic (AADT) of 16, 226 in 1991.
- Euston Road is a major road that carries a predominance of commercial vehicles, including a significant proportion of heavy trucks. The AADT on Euston Road north of Campbell Road was 7, 438 in 1985.
- Campbell Road is a local road that carries a mixture of passenger and commercial vehicles, including trucks carrying waste to the landfill site immediately south of Campbell Road. In 1985 the AADT in Campbell Road east of Princes Highway was 11,308.

Princes Highway and Sydney Park Road intersection looking north along King Street, Newtown.

The high traffic flows along the Princes Highway and Sydney Park Road create major barriers to pedestrian access from St Peters Railway Station, the residential development areas of Coulson Street and west of the Princes Highway together with the commercial centre of Newtown. While Euston Road carries high traffic flows, this potential barrier to pedestrian flow is not considered to be a major problem because the area east of Euston Road is mainly industrial.

The high traffic flow along Sydney Park Road creates difficulties for vehicles entering and leaving the existing carpark along the northern boundary of the Park. Similarly, access to the car park immediately south of the brick kilns is restricted due to the high traffic flows along the Princes Highway.

Annual Average Daily Traffic (AADT) counts in one direction in 1993 provided by RTA include;

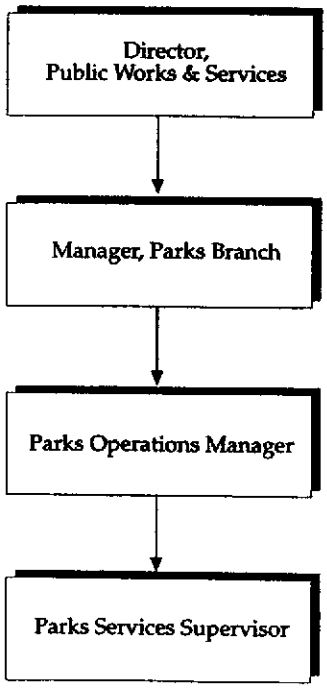
- from the east (Sydney Park Road) 15, 635 AADT
- from the north (Princes Highway) 9,515 AADT
- from the south (Princes Highway) 22, 469 AADT

2.8 Management and Maintenance

2.8.1 Introduction

Sydney Park is still in the early stages of development and there are relatively few public recreation opportunities or facilities. Consequently, there has been little need for a formalised management structure. However, with the completion of landfill operations over the next six months or so, the need for a management structure will increase greatly. Current management responsibilities for Sydney Park are illustrated by the following diagram.

Management Structure



2.8.2 Staffing

Sydney Park is a large regional open space covering 44ha and therefore requiring substantial staff resources to maintain it in a satisfactory condition.

As the development of basic park facilities is completed it will be necessary for SSCC to increase this staffing level to ensure the landscape works and recreation facilities are maintained at a satisfactorily standard.

2.8.3 Community Involvement

The local community has played a significant role in development of Sydney Park. That role has related primarily to providing volunteer labour to carry out tree and shrub planting in the Park. A total of 10 planting days have been organised by local community groups resulting in the planting of 31,700 plants covering an area of approximately 5-6ha by March 1994. Council has assumed responsibility for on-going maintenance of these planted areas.

2.8.4 Funding

Development of Sydney Park has been funded from various sources including:

- the Greenspace Programme funded by the New South Wales Government and administered by the Department of Planning prior to the SSCC assuming responsibility for the Park in 1990
- SSCC annual budget allocation through the Works Program and Section 94 contributions.

Current funding is provided entirely by SSCC as part of its general expenditure on parks and recreation facilities. Council allocates approximately $ 200,000 per year to Sydney Park.

Significant funds have been generated through the fees charged for the disposal of predominantly natural fill material on the Park. These funds will be available for future development of Sydney Park.

Section 94 contributions generated by development in the general vicinity of Sydney Park should generate significant funds. A portion of these funds could be used for further development of Sydney Park to provide adequate open space recreation facilities for the additional residents and workers resulting from the new development.

3. COMMUNITY CONSULTATION

3.1 Introduction

It was clearly recognised by SSCC and EDAW at the commencement of this study that community consultation was essential to ensure that the Plan of Management meets the expectations and requirements of the community and thus receives their support and involvement.

The process of community consultation followed in preparing this Plan of Management involved:

- public advertisement and letter-box drop inviting the local community to attend a public meeting about the Plan of Management for Sydney Park.
- a public meeting at which the Plan of Management study was explained and those attending were invited to nominate representatives to be members of a Management Advisory Group for the Study.
- the Management Advisory Group included:
  - five (5) community representatives
  - representatives from the Department of Planning and Department of Sport, Recreation and Racing
  - SSCC officers
- community opinions about future development of the Park were sought through the distribution of questionnaires and placement of signs in Sydney Park inviting community involvement.

The primary objectives of the community consultation process were to:

- identify a clear vision statement for future development of the Park that reflects community expectations and needs.
- identify community demand for a broad range of recreation opportunities and facilities that could potentially be developed in Sydney Park.
- determine community priorities for future development of Sydney Park.

Results of the community consultation process, which are discussed in the following subsections, have been incorporated into the Plan of Management which is described in detail in Section 4.

3.2 Vision Statement

To provide a framework for preparation of the Plan of Management it was considered essential to define a "vision" for Sydney Park that captured the essential character to be created throughout the Park. This "vision" statement provides the basis for a planning philosophy that has guided the process of identifying the nature and location of future development in Sydney Park.

The following Vision Statement has been prepared by the Management Advisory Group.

Sydney Park will be developed as a major public open space of local and regional significance. Development of the Park will respond to the expectations of the local community and visitors from the broader Sydney region, while taking account of the unique site conditions.

The Park will have a relaxed informal character allowing safe and convenient access for all community groups to a diverse range of outdoor environments and recreation opportunities including appropriate facilities for park users.

The Park will reflect the varied history of the site as well as the cultural diversity of the surrounding community. A strong emphasis will be placed on community arts projects throughout the Park to interpret these historical and cultural values.

The principles of Ecological Sustainable Development will be adopted throughout the planning, design and maintenance of the Park. The Planting Strategy will emphasise vegetation associations indigenous to the Sydney Region as an important element of environmental education in the Park. Exotic

species will be used with native species at the Park entrances and within building zones located around the perimeter of the Park.

On-going community involvement will be an essential component of the Park development and management.

3.3 Community Comments

A standard survey form was distributed to the local community through community representations on the Management Advisory Group. A copy of the form is presented in Appendix A. Only 30 forms were completed and returned. While the completed forms provided an indication of demand for various recreation opportunities suitable for Sydney Park this information was considered in combination with a range of other information and inputs.

Results of the analysis are presented in Appendix A. The summary table includes all recreation facilities and activities that were considered to be both desirable and undesirable for inclusion in Sydney Park.

In addition to the various recreation facilities and activities identified through the community consultation process, South Sydney City Council has received a number of proposals for the development of specific recreation facilities. These proposals have been submitted by commercial organisations as well as community service groups.

The various proposals received by Council are summarised below.

- **CARES Childrens Road Safety Training Cycle Track** would include a bitumen track, traffic signs and facilities for outdoor features
- **City Farm** including community gardens, orchard and farm animal exhibits together with alternative energy and waste recycling projects.
- **Mountain Bike Tracks** which would involve unsealed tracks on the slopes of one or more of the existing hills in the Park.
- **Cricket Wickets** (turf) proposed by the NSW Cricket Association to be developed on the playing field in the north-east corner of the Park.
- **Golf Driving Range** that would occupy a site of about 120m by 250m and be operated on a commercial basis to generate revenue to SSCC; approximately 1200 people per week expected to use the facility.
- **Commercial Markets** including kiosk, toilets and outdoor market area.

Council has generally responded to these proposals by advising the proponents that a decision will be made in the context of the Plan of Management when it is completed. Development consent would need to be obtained from SSCC to allow any of the proposals to proceed.

The suitability and feasibility of developing these various recreation/commercial facilities at Sydney Park were assessed in the process of preparing this Plan of Management. The assessment took account of the vision statement and project objectives defined in consultation with the Management Advisory Group. Those facilities considered appropriate were incorporated in the lists of potential facilities that are presented for each development zone throughout the Park in the following section of this Report.

4. PLAN OF MANAGEMENT

4.1 Introduction

The primary function of the Plan of Management (POM) is to provide a framework for planning and design of future development throughout Sydney Park over the next 10—20 years. It is intended to provide a vision for the future character of Sydney Park and to define the objectives that will need to be met in order to realise the stated vision.

It should be noted that the POM does not include details of individual development proposals as these will be dealt with through a review of the Master Plan and detailed design of individual facilities at a later date. However, the POM is based on the existing Master Plan and will provide the basis upon which detailed design of individual recreation facilities can be prepared over time.

The POM integrates a complex set of considerations that will influence the development and management of Sydney Park. These considerations include physical, social, economic, visual and management issues.

Following the completion of this POM, the existing Master Plan will be reviewed to provide the basis for detailed design for development of individual components throughout the Park. The exact timing for implementation of individual facilities will depend on the demand for such facilities and the availability of funding. An indication of the likely sequence of development is given in Section 5 which contains a table listing the various components of the POM and their relative priority for implementation.

4.2 Planning Philosophy and Objectives

The planning philosophy adopted for Sydney Park incorporates the "Vision Statement" prepared through community consultation together with professional judgement in relation to physical, visual, social and management issues associated with the Park. The following points summarise the planning philosophy adopted in preparing the POM;

- acknowledge the role of Sydney Park as a regional recreation resource serving not only the local community but the broader population of Sydney.
- reflect the diverse history of the site by conserving significant buildings and structures, together with development of information signs, interpretive displays and community projects.
- create a diversity of recreation opportunities and facilities that caters for the needs of all sections of the local and regional community.
- create a landscape character that will provide a transition from the formality of urban development surrounding the site to the central portion of the Park which will feature an informal natural landscape character.
- give priority to recreation opportunities that are not typically found in local open space areas such as outdoor performance areas, heritage precincts, public art and environmental education facilities.
- place a strong emphasis on public art throughout the Park to reflect historical aspects of the site as well as the multicultural character of the local community.
- place emphasis on the development of environmental education opportunities that focus on issues of sustainability such as waste management and recycling, energy conservation, water management and ecology.
- provide for pedestrian/cycle path system throughout the Park that allows connections to the existing and future path network of the surrounding areas.
- confine vehicle access, apart from maintenance vehicles, to a series of car parks around the perimeter of the Park.
- implement a water management strategy to retain the maximum volume of surface run-off within a series of ponds in the Park.

- maintain the unique visual character of the three major existing grass-covered hills while establishing throughout the Park a range of vegetation associations indigenous to the Sydney Region.

4.3 Potential Development Zones

On the basis of the site assessment, a review of circulation and recreation planning issues as well as consideration of the existing Master Plan, the Park has been divided into a series of potential development zones for the purpose of presenting this POM. These zones are areas in the Park that are similar in character and form logical development units.

The potential development zones provide a framework in which a range of suitable recreation opportunities and facilities were identified through the community consultation process. In determining these potential opportunities consideration was given to;

- physical site conditions
- relation to adjoining facilities
- access and circulation
- the overall combination of recreation opportunities and facilities throughout the Park.

Determination of the recreation opportunities and facilities suitable for development in each zone will take account of community responses to the public display of the POM as well as funding considerations by SSCC.

It should be recognised that parts of some of the zones are not currently owned by Council and therefore future development of recreation facilities will depend on Council acquiring them. The timing of such acquisition will depend on Council's priorities for expenditure of available funds. However, these zones have been included in the POM in order to provide a clear indication of how they can ultimately be incorporated in the overall development of Sydney Park.

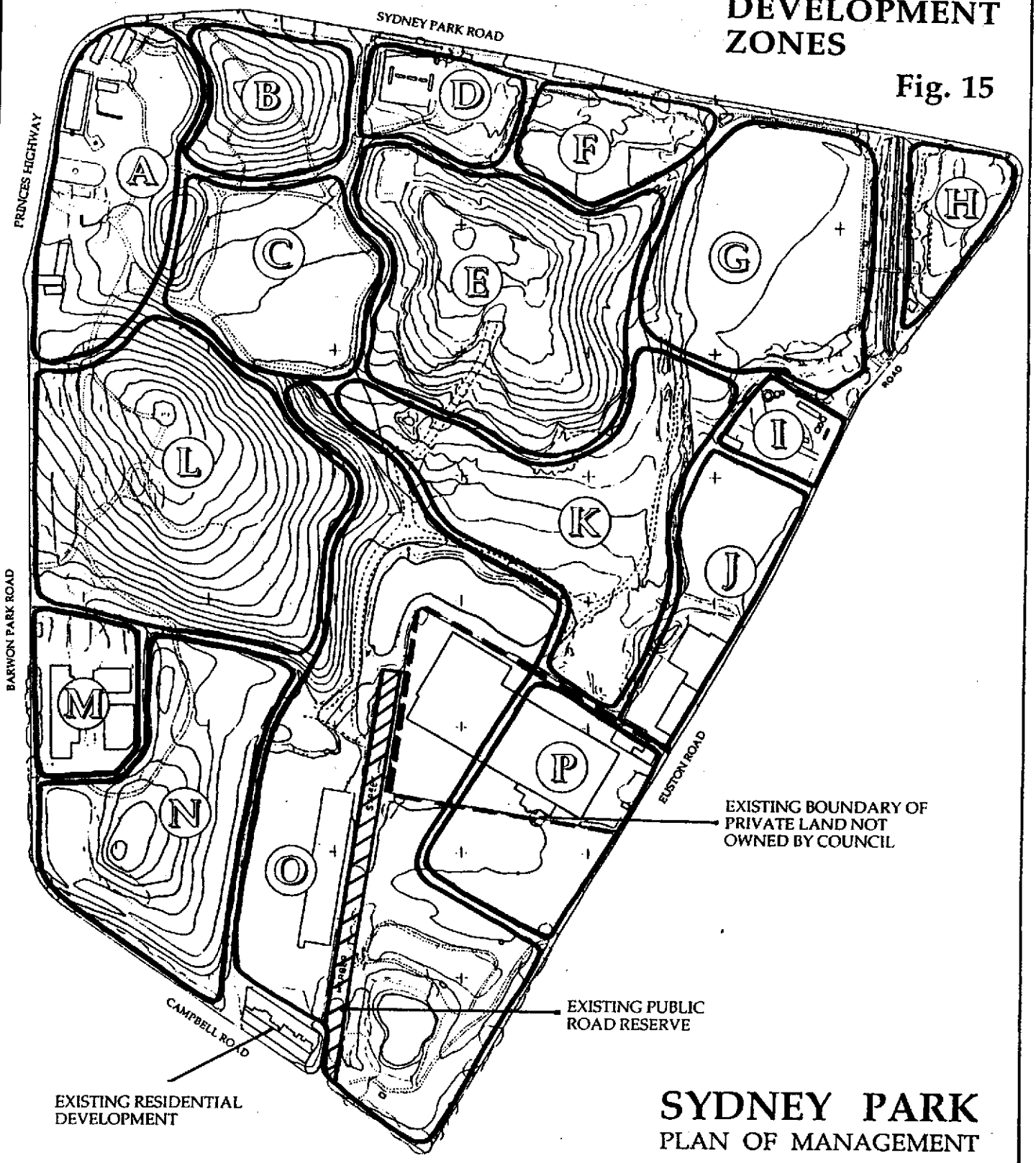
The potential development zones are described separately in terms of their character and the range of suitable facilities that could potentially be incorporated in them.

The character of these zones ranges from the precinct that is visually dominated by brick kilns, chimneys and paving through to areas of natural landscape character consisting primarily of grass and tree planting.

To provide an overall concept of the POM each potential development zone is described separately in terms of the landscape character to be created as well as the recreation opportunities and facilities that could potentially be developed in them. The distribution of these potential development zones is shown in Figure 15.

POTENTIAL DEVELOPMENT ZONES

Fig. 15



LEGEND

- A - BRICK KILNS AND CHIMNEYS
- B - NORTHERN HILL
- C - CENTRAL GREEN
- D - CAR PARKING
- E - EASTERN HILL
- F - MITCHELL ROAD ENTRANCE AREA
- G - PLAYING FIELD
- H - CAR PARKING
- I - CONCRETE BATCHING PLANT
- J - INDUSTRIAL BUILDINGS AND STORAGE AREA
- K - SOUTHERN SLOPES OF EASTERN HILL
- L - SOUTHERN HILL
- M - PLANT NURSERY
- N - ENVIRONMENTAL EDUCATION AREA
- O - CENTRAL DRAINAGE CORRIDOR
- P - McPHERSON SITE (PART)

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0 100m 200m

Brick kilns on left with paved pedestrian precinct and lawn area.

View of kilns from the Northern Hill.

ZONE A - BRICK KILNS AND CHIMNEYS

Character

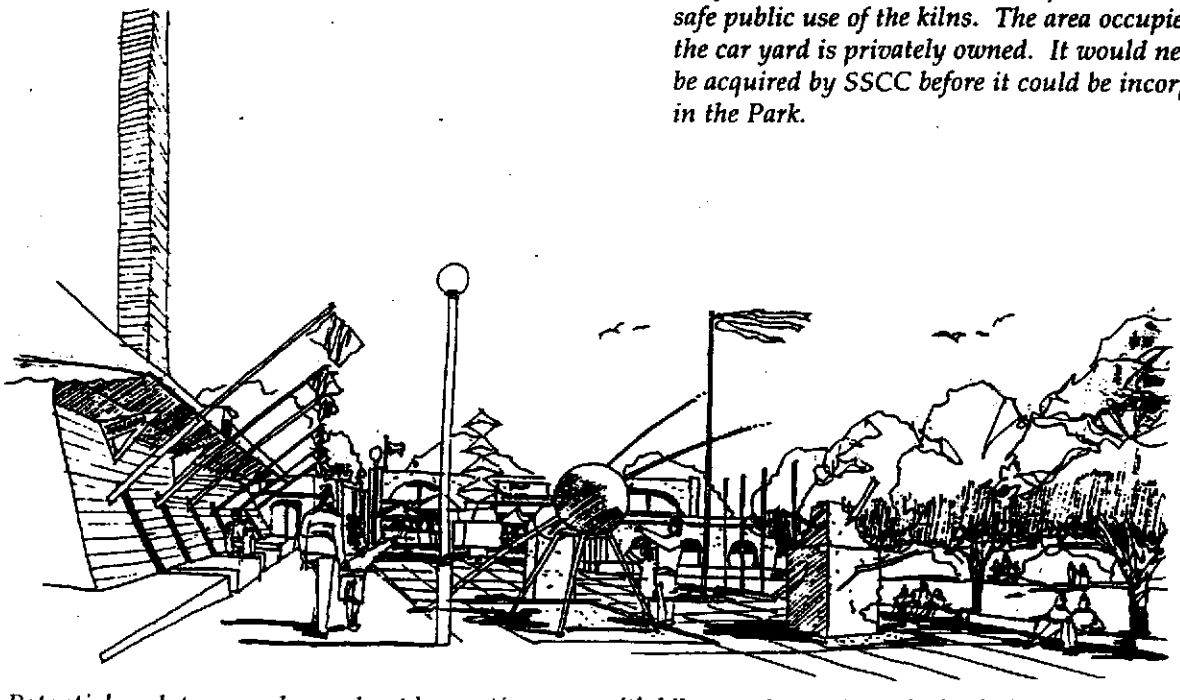
Urban character dominated by visually distinctive brick kilns and chimneys forming a regional landmark, combined with exotic shade/flowering trees, turf and seasonal floral displays in formal layout.

Facilities

- Community arts studios and galleries.
- Cafe/outdoor eating areas.
- Outdoor sculpture garden.
- Exhibition on history of Sydney Park site.
- Information signs about facilities throughout the Park.
- Potential re-development of existing car yard site to create recreation/cultural facilities (health club, squash, indoor pool, restaurant, art studios, galleries)
- Toilets and drinking fountains
- Playground

Comments

Very extensive work would be required to allow safe public use of the kilns. The area occupied by the car yard is privately owned. It would need to be acquired by SSCC before it could be incorporated in the Park.



Potential sculpture garden and outdoor eating area with kilns used as indoor display/exhibition spaces.

Sculptures on hill top with chimneys of brickworks (Zone A) beyond.

ZONE B - NORTHERN HILL

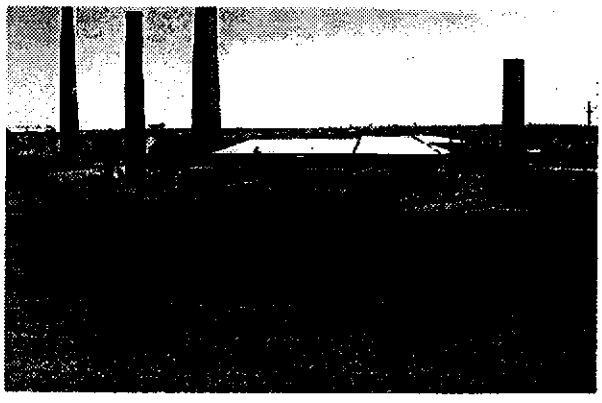
Character

Grass covered sculptured landform with tree planting confined to base of hills maintaining panoramic views north to Sydney City skyline and south to Sydney Airport.

Facilities

- Lookout area with seating, site information display and map.
- Sculpture reflecting hill top location.
- Paths providing access to hill top.

View from Northern Hill across Central Green (Zone C) and Southern Hill (Zone L) to Sydney Airport beyond.



View from hill top to brickworks (Zone A).

View from Central Green towards brickworks (Zone A) with Northern Hill (Zone B) on the right providing visual enclosure.

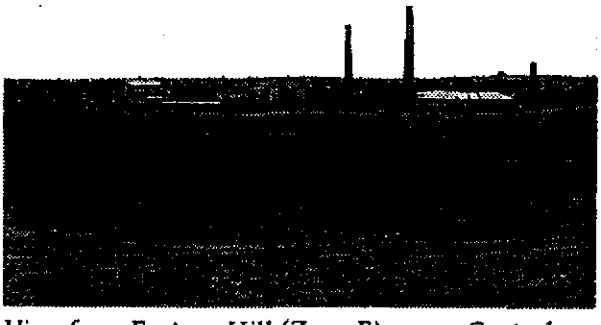
ZONE C - CENTRAL GREEN

Character

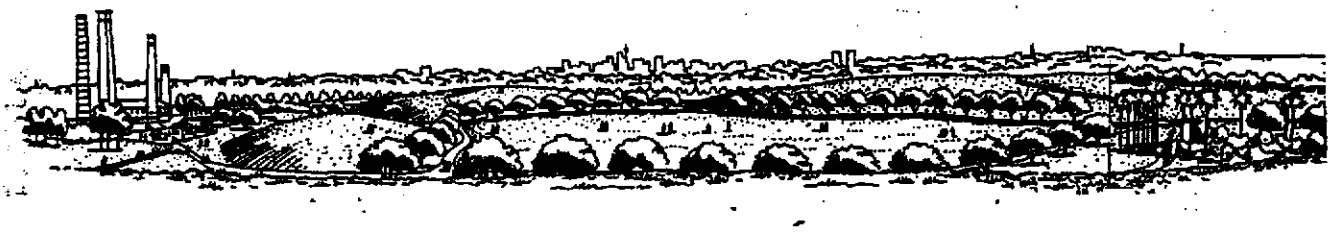
Cultural landscape characterised by flat area of turf surrounded by Fig trees and visually enclosed by hills.

Facilities

- Power and water connections to allow use of flat lawn for markets, festivals and performances.
- Seating associated with large shade trees adjoining the pedestrian path around the central green.



View from Eastern Hill (Zone E) across Central Green (Zone C) to brickworks (Zone A).



Sketch of view from Southern Hill (Zone L) looking north across Village Green surrounded by Fig trees.

ZONE D - CAR PARKING

Character

Industrial history of site reflected by robust materials (timber, stone, metal) together with shade tree planting throughout car park.

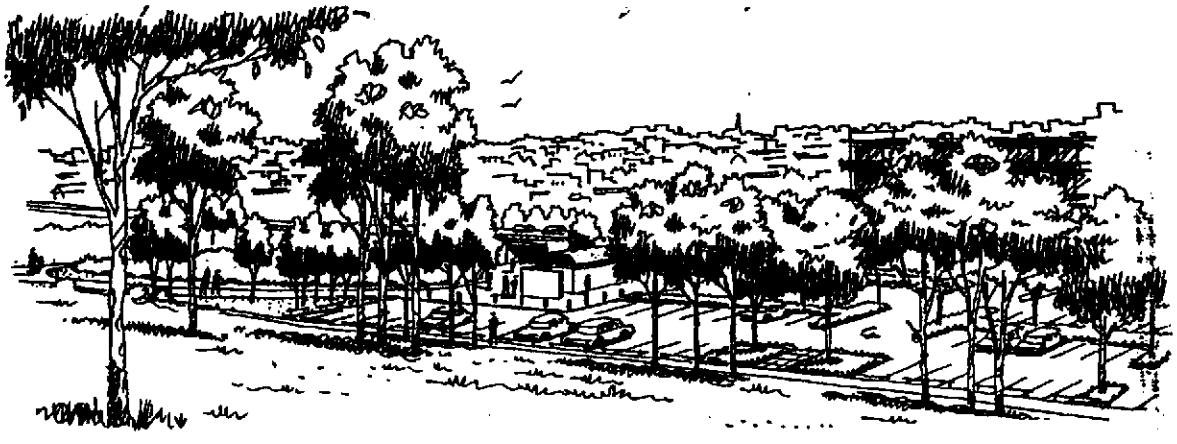
Facilities

- Entrance to pedestrian tunnel providing access below Sydney Park Road to proposed adjoining residential development.
- Information and directional signs.
- Carparking
- Toilets

Comments

Sewerage is not currently available to this site. Development of toilets will therefore require a sewer connection below Sydney Park Road in association with the proposed pedestrian underpass or the use of composting toilets or similar technology that does not rely on a connection to a main sewer line.

View from Eastern Hill (Zone E) to western end of car park showing location of proposed pedestrian tunnel below Sydney Park Road to future residential development north of the Park.



Sketch of car park after establishment of shade trees and toilets.

ZONE E - EASTERN HILL

Character

Grass covered sculptured landform with tree planting confined to base of hill to maintain panoramic views to Sydney City Skyline and Sydney Airport.

Facilities

- Lookout with observation platform and information signage.
- Pedestrian paths providing access to top of hill.

Comments

Views to the north and south are unique aspects of Sydney Park that must be retained through careful planting design and control of building heights in adjoining areas.

View to north across Zone F in foreground, Sydney Park Road and Mitchell Road in mid-distance and Sydney skyline in distance

View to south from hill top across pond in Zone O, lower slopes of Southern Hill (Zone L) and grassed area of Zone N with Sydney Airport beyond.

ZONE F - SYDNEY PARK ROAD ENTRANCE AREA

Character

Semi-formal entrance forming transition from adjoining urban development to informal character within the core of the Park.

Facilities

- Entrance structure with information and directional signage.
- Brick and metal entrance gate / structure.
- Pedestrian paths connecting entrance to internal path system of Park.
- Seating, lighting, drinking fountain and ornamental pond near Sydney Park Road entrance.
- Bicycle hire and children's practice area.
- Exotic shade trees, turf and ground cover.
- Fragrant plants garden.

Comments

This zone provides an opportunity for development of an ornamental pond associated with the stormwater retention system.

View to east from embankment adjoining the playing field.

ZONE G - PLAYING FIELD

Character

Large flat turfed area semi-enclosed by surrounding native tree planting (Eucalypts, Casuarinas, Melaleucas) in informal layout.

Facilities

- Change rooms and toilets to be connected to existing sewer line in Euston Road.
- Shelters, seating and drinking fountains associated with path around perimeter of field.
- Turfed playing field.
- Seating embankment for spectators along western edge of the field.
- Turf cricket wickets proposed by NSW Cricket Association.

View to north from playing field with residential development on corner of Sydney Park Road and Mitchell Road.

ZONE H - CAR PARKING

Character

Industrial character reflected by robust materials (timber, stone, brick and metal).

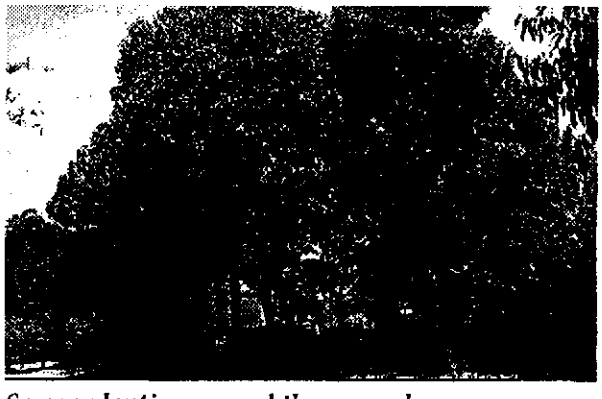
Visually enclosed by planting with native species of trees and ground covers.

Facilities

- Carparking with shade trees.
- Information and directional signage.
- Toilet facilities and drinking fountain.
- Extensive tree and shrub planting of native species.

Comments

Proposed toilets would need to be connected to the existing sewer line in Euston Road south of the concrete drainage channel. Alternatively composting toilets or similar technology could be used.



Screen planting around the car park.

ZONE I - CONCRETE BATCHING PLANT

Character

Industrial character created by tall materials storage structures and concrete trucks.

Facilities

- Perimeter fencing and planting to screen views of batching towers and trucks from adjoining areas of Park while the plant continues to operate.

- Acquisition of the site by SSCC would create an opportunity for development of a major recreation facility including buildings incorporating recreation/ cultural facilities.

Comments

This site is privately owned and would need to be acquired by SSCC either through purchase or a land swap before it could be incorporated into Sydney Park.

View of batching plant from Zone K.

Industrial building owned by Council and fronting Euston Road.

Industrial buildings with potential for adaptive re-use.

ZONE J - INDUSTRIAL BUILDINGS AND STORAGE AREA

Character

Flat site fronting Euston Road formerly used for industrial purposes and currently used as a storage area by SSCC.

Urban character relating to brick industrial building and flat storage area adjoining the concrete batching plant (Zone I).

Facilities

- Commercial recreation (tennis squash, etc) and cultural facilities (art studios / galleries, craft workshops) incorporating existing buildings together with new structures accessible from Euston Road, up to three storeys and relating to adjoining areas of Park.

  Open space within courtyards and plazas with buildings to be integrated with the adjoining Park areas.

- Entrance to facilities from Euston Road with associated car parking.

- Landscape treatment along the western edge to integrate development within the Park.

Comments

If the proposed widening of Euston Road by RTA does not proceed additional space will be available in the Park and the existing industrial buildings could be retained for community and/or commercial recreation use.

Area of natural ground north of industrial buildings currently used by Council as a storage area.

View across southern slopes to the McPhersons building (Zone P) and Sydney Airport beyond.

ZONE K - SOUTHERN SLOPES OF EASTERN HILL

Character

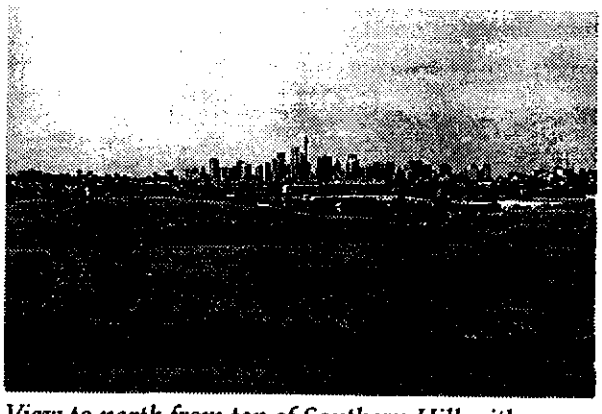
Woodland planting of species indigenous to Sydney Region incorporating scattered openings with native grassland species.

Facilities

- Informal picnic facilities associated with grassed openings in the woodland planting.
- Playground in western portion adjoining the Central Green.
- Information signs about the vegetation association established in the zone.

Comments

The playground is a long term development that would not proceed until the surrounding area of landscape is developed and planting is well established.



View to north from top of Southern Hill with Central Green (Zone C) in foreground, Northern Hill (Zone B) in mid-distance and Sydney skyline beyond.

ZONE L - SOUTHERN HILL

Character

Sculptured landform generally turf covered on the upper portion of hill with panoramic views of Sydney Airport to the south and Sydney City skyline to the north.

Facilities

- Lookout point on hill top including information signage and seating
- Shelter/sculpture element on top of hill emphasising views of Sydney City Skyline and Sydney Airport.
- Major pedestrian entrance from Barwon Park Road
- Turfed hill top area to allow kite flying.

View from Southern Hill (Zone L) with Plant Nursery behind trees on right and open grass area of Zone E on left.

Interpretation garden with labelled plants and information displays.

Cycle track through environmental interpretation area of woodland.

ZONE M - PLANT NURSERY

Character

Regular layout of shade structures, storage / office buildings and plant storage areas.

Facilities

- Plant production facilities (existing).
- Information signage for organised tour groups.

Comments

The nursery could potentially perform an environmental education role through organised tours by school groups and interested community organisations.

ZONE N - ENVIRONMENTAL EDUCATION AREA

Character

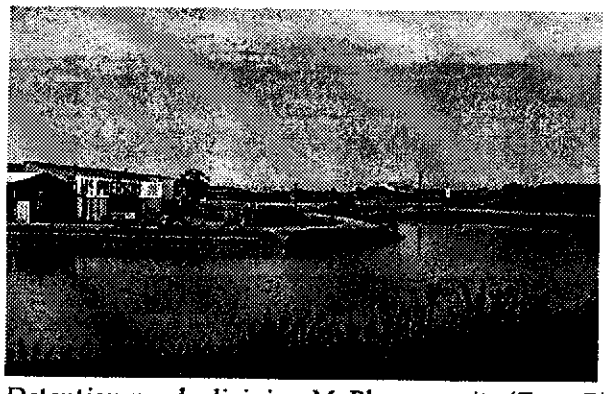
Integrated education facilities are to be developed on an area of gently sloping landform surrounded by woodland tree planting and adjoining the SSCC Plant Nursery.

Facilities

- Indoor environmental education facilities.
- Organic material composting facilities and recycling demonstration facility.
- Alternative energy (solar, wind, biogas, methane from landfill) exhibits and education display.
- Outdoor environmental education facilities including wetland boardwalk, information signage and displays.
- Toilets.
- Playground.

Comments

Development of these integrated facilities will be subject to detailed planning and design, funding and a clear definition of the management responsibilities of the implementing organisation.



Detention pond adjoining McPhersons site (Zone P).

ZONE O - CENTRAL DRAINAGE CORRIDOR

Character

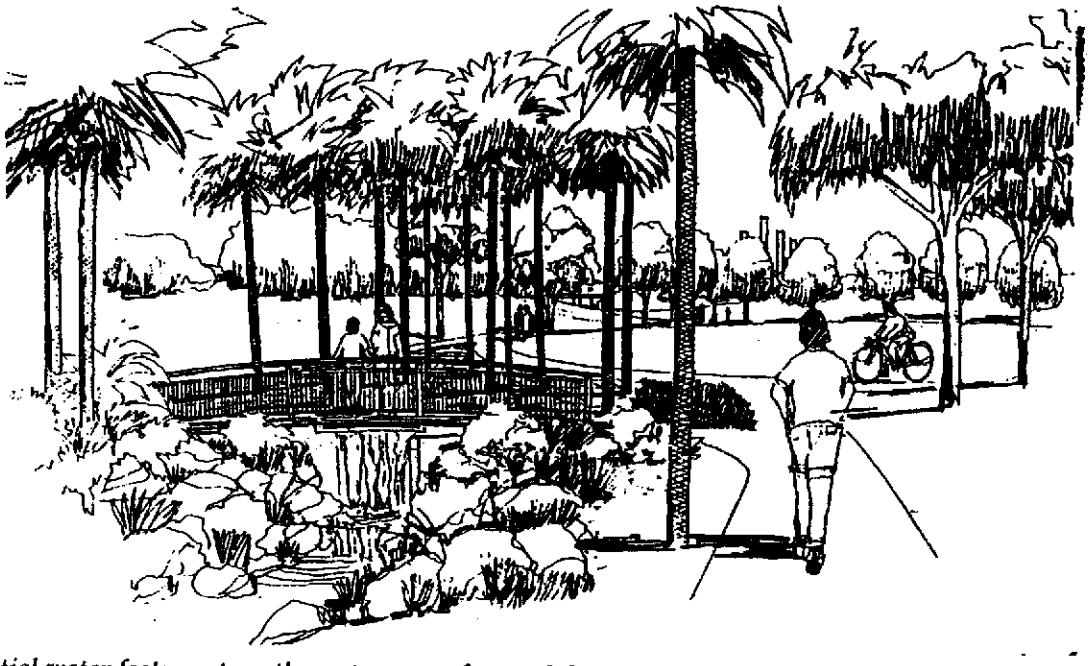
Lush forest vegetation including palms and wet-sclerophyll forest associated with a series of ponds and central drainage line. Development would require permanent closure of Harber Street and acquisition of part of McPhersons site

Facilities

- Picnic facilities associated with ponds.
- Pedestrian/cycle path to provide access along the edge of the drainage line and ponds.
- Playgrounds associated with picnic facilities.
- Major entrance from Campbell Road with associated car parking and toilets.

Existing pond in south-east corner of Sydney Park.

Casuarina adjoining existing pond.



Potential water feature at north-west corner of central drainage corridor with Central Green (Zone C) beyond.

Site of former gasometer immediately south of McPhersons building.

ZONE P - McPHERSON SITE

Character

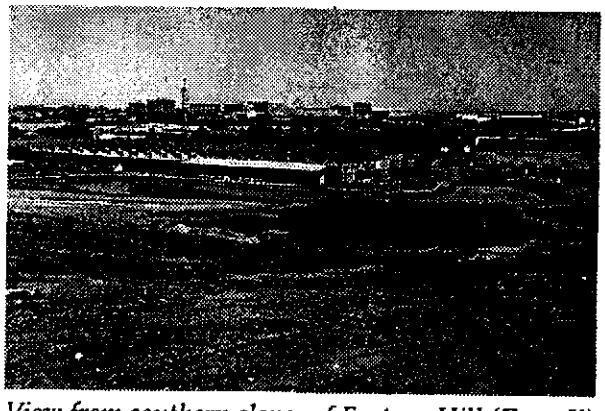
Redevelopment of site to replace large existing industrial building with low rise commercial and /or community buildings.

Facilities

- Community institutional facilities (school, TAFE) or medium density residential development.
- Shape of site to be adjusted to incorporate former gasometer site and exclude western portion of McPhersons site which would be incorporated in Zone O.
- Extensive landscape treatment required to integrate development with adjoining portion of Park

Comments

SSCC does not own this site and therefore the facilities listed above should only be considered as potential developments subject to SSCC acquiring the site (either by purchase or land swap) at some time in the future. The facilities are listed in order to indicate how the site could be integrated into the overall Park development.



View from southern slopes of Eastern Hill (Zone K) with McPhersons building in mid-distance, Harber Street to the right and Sydney Airport on the skyline.

4.4 Suitability Assessment

The suitability of each development zones for a range of alternative recreation opportunities and facilities was assessed on the basis of the following criteria and the results presented in the matrix that follows. The criteria included:

- physical site conditions
- existing development
- potential for re-development
- access and circulation
- visual factors
- relation to other adjoining urban development and public roads

While this suitability assessment involved a considerable degree of professional judgement, it will provide a basis for assessing future proposals to develop recreation facilities within Sydney Park.

4.5 Landform and Drainage

The landform and drainage pattern throughout the Park has generally been developed in accordance with the original Master Plan prepared by consultants on behalf of the Department of Planning. The basic principle is to retain water on site as much as possible.

Upon completion of the eastern hill to the south of the Sydney Park Road car park it is not anticipated that significant additional fill material will need to be imported on to the Park. However, regrading in some areas will be required to achieve satisfactory landforms and top soil will need to be imported for landscape development works.

Primary aspects of the overall landform design of Sydney Park that have been incorporated in the POM can be summarised by the following points:

- the Park generally slopes from the highest point in the north-west corner to the lowest point in the south-east corner
- a high degree of visual diversity has been created through the construction of three major hills together with the creation of a series of outdoor spaces that are visually enclosed by varying combinations of landform, buildings and vegetation
- a flat central green is surrounded by the three major hills
- a flat playing field in the north east corner of the Park adjoins one of the major hills
- a central drainage corridor will extend from the edge of the central green in the north-west portion of the Park to a series of storage ponds in the south-east portion of the Park
- most of the surface run-off from the site will be directed to the central drainage corridor and collected in the storage ponds.

4.6 Proposed Access and Circulation (Figure 16)

The Plan of Management aims to provide convenient and safe access and circulation throughout the Park by minimising conflict between vehicles and pedestrians. In accordance with this aim, public vehicle access will be confined to a series of car parks located immediately within the perimeter of the Park.

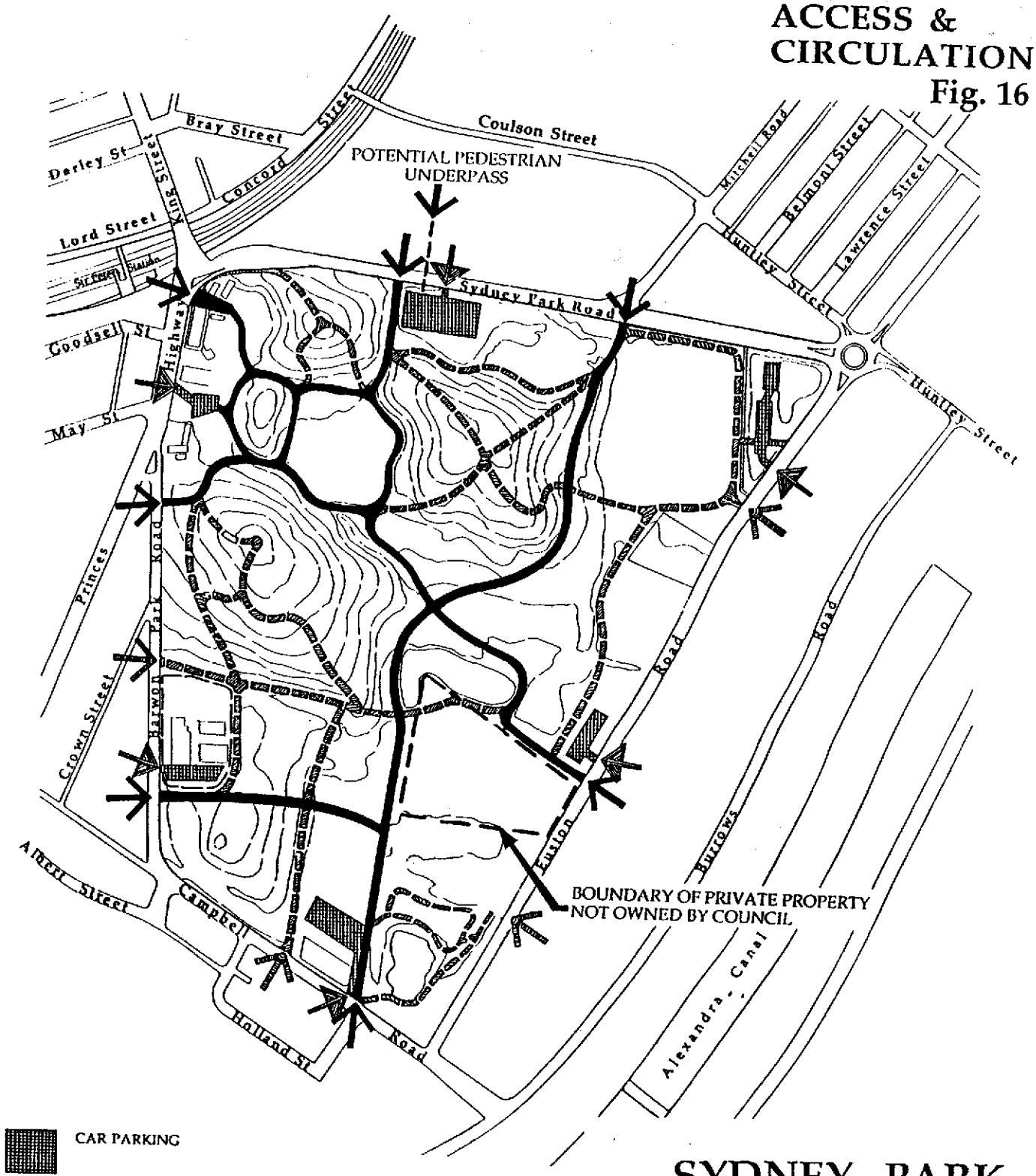
Access and circulation within the Park will be confined to pedestrian and cyclists not only for safety reasons but also to provide an opportunity for relief from visual and noise impacts of traffic within adjoining urban areas.

As a result of the landfill operations over a large proportion of the site, the cost of constructing and maintaining roads for regular vehicle traffic would be very high.

The pattern of pedestrian and cycle paths throughout the Park will not only provide access to recreation opportunities and facilities but will also allow cross-flows through the Park connecting to pedestrian and cycle paths

PROPOSED ACCESS & CIRCULATION

Fig. 16



CAR PARKING

VEHICLE ACCESS POINT

PRIMARY PEDESTRIAN/CYCLE PATH SYSTEM

SECONDARY PEDESTRIAN PATH SYSTEM

PRIMARY PEDESTRIAN ENTRANCE

SECONDARY PEDESTRIAN ENTRANCE

SYDNEY PARK

PLAN OF MANAGEMENT

South Sydney City Council

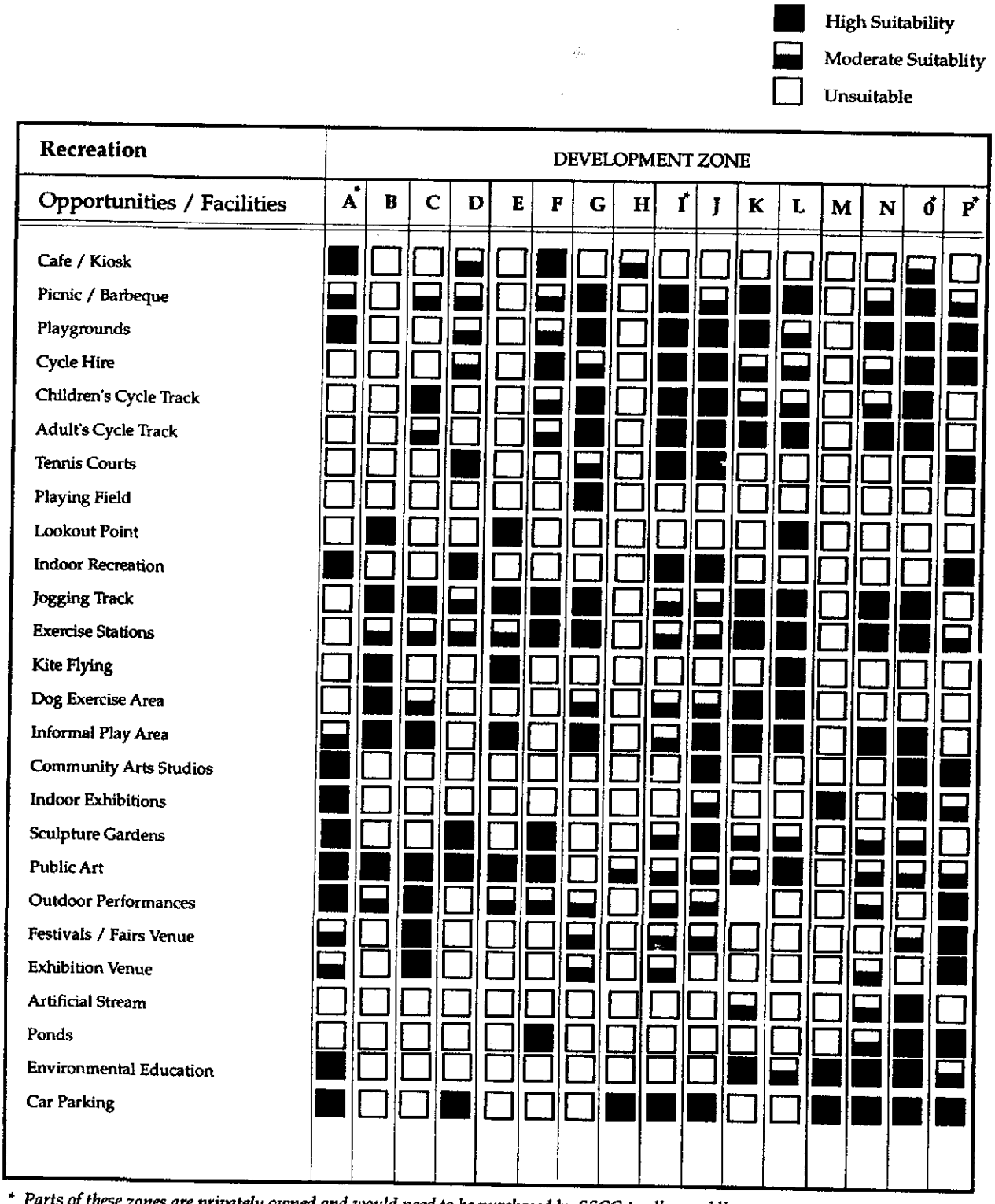
EDAW (Aust.) Pty. Ltd.
Landscape Architects

March 1994

N

0 100m 200m

Development Zones Recreation Suitability Matrix



* *Parts of these zones are privately owned and would need to be purchased by SSCC to allow public use*

extending through adjoining urban areas and connecting to a regional open space network.

Major aspects of the access and circulation strategy incorporated in the Plan of Management are illustrated by Figure 16 and summarised by the following points:

- public vehicle access is limited to car parks adjoining the following roads:
  - Sydney Park Road
  - Barwon Park Road (adjoining brick kilns and associated with the plant nursery)
  - Campbell Road (adjoining the former Harber Street entrance)
  - Euston Road (associated with buildings south of Metromix batching plant)
- pedestrian circulation throughout the Park will be provided by a network of major and minor paths.
- the pedestrian paths will also be suitable for use by cyclists.
- major entrances for pedestrians/cyclists will be located at the following points:
  - a level crossing with traffic lights at the corner of Princes Highway and Sydney Park Road leading into the brick kilns zone
  - a pedestrian underpass below Sydney Park Road from the north-west corner of the existing carpark immediately north of the eastern hill
  - a level crossing with traffic lights at the intersection of Mitchell Road and Sydney Park Road
  - from the pedestrian path adjoining Euston Road near the north-east corner of the Park
  - north of the McPhersons site
  - from the pedestrian path adjoining Campbell Road at the Harber Street intersection and west of the residential terrace buildings
  - from the pedestrian path adjoining Barwon Park Road at the southern edge of the plant nursery, immediately north of the plant nursery and at a location south of the brick kilns precinct
- the major paths will allow pedestrian/cycle circulation across the Park in both north-south and east-west directions while providing access to the recreation opportunities and facilities throughout the Park.
- the secondary paths will provide access to recreation opportunities that generally attract less intense usage including the hill top lookouts.

4.7 Environmental Education

A major issue identified through the community consultation process was the potential role of Sydney Park as a venue for a range of environmental education initiatives. These would reflect the history of the site which has been used for;

- grazing and cultivation during the early 1800's
- extraction of clay for brick production that supplied the Sydney metropolitan area for more than a hundred years.
- disposal of waste from various areas throughout the Sydney area from 1948 to the early 1980's.
- development of a public park of regional significance since the early 1980's.

The Plan of Management provides for the development of the following environmental education opportunities and facilities.

- displays and exhibitions in the brick kilns and associated precinct reflecting various aspects of the history of the site.
- Environmental Education Area in the south-west corner of the Park incorporating a range of facilities to address issues such as:

- sustainable land use and development
- re-cycling and composting
- energy conservation
- alternative energy sources
- wetland ecology based on the adjoining ponds to the east
- terrestrial ecology based on the urban bushland areas to be established in the Park.

- displays and information boards explaining the Park development process and providing details of vegetation associations established throughout the Park.

It is intended that the Park will provide a venue for environmental education activities by schools and community groups from throughout the region.

4.8 Public Art and Performances

A unique aspect of Sydney Park that will distinguish it from other large public parks in the region will be the incorporation of public art throughout the Park. This aspect was strongly supported through the POM community consultation process as well as the survey carried out by the Health and Community Service Department of SSCC in early 1994. It reflects a particular interest in public art expressed by a large proportion of the local community.

The public art elements could include sculptures, water features, murals, special paving design and ephemeral art exhibits/events. A major role of public art in Sydney Park should be to reinforce its unique character by interpreting various aspects of its history and the role of the Park within the context of the surrounding multi-cultural community.

Individual elements of public art may also reflect other aspects of the site such as:

- strong winds occurring on the tops of the three major hills
- views to the Sydney City skyline to the north and Sydney Airport to the south from the hilltops
- methane gas generated by the landfill.
- the central drainage line and associated ponds.

Given the landfill history of the site, it will be essential to take account of site conditions for each element of public art. Similarly the location of each element will need to take account of the landscape character of the area in which it is located as well as its relationship to adjoining recreation facilities and activities.

Sydney Park also provides a unique venue for a wide range of performances, festivals and celebrations. In assessing the suitability of Sydney Park as a venue for particular performances and events, the SSCC should apply the following criteria:

- the event should not result in physical damage to the Park.
- the event should be available to all sectors of the community.
- the event should not result in a significant impact on adjoining residents or other users of the Park.
- organisers of the event should be responsible for cleaning up the site and repairing any damage that may occur.
- revenue generated by leasing part of the Park as a venue should be used to assist with the on-going management and maintenance of the Park.

A record should be kept of all events including the approximate number of people who attend, the nature of the performance or event, and any problems such as complaints about excessive noise or damage to the Park. Such records should be referred to when assessing subsequent applications for similar events.

While the current zoning of Sydney Park requires development consent for the recreation facilities proposed in this POM the appropriate planning controls should be amended to allow the provisions of the POM to over-ride the existing zoning.

4.9 Health and Safety Issues

In addition to the usual considerations of health and safety associated with public parks, Sydney Park involves additional considerations due to its history as a landfill site. These issues include:

- landfill gas control
- surface subsidence
- ground water quality
- safety issues associated with water storage ponds and associated drainage lines
- child safety associated with playgrounds, sculptures, buildings and structures.

Each of these issues are addressed separately below.

Landfill Gas
SSCC has adopted a strategy in relation to the issue of landfill gases that is based on the concept of placing a thick layer of inert fill material on top of the layer of organic landfill material that is generating landfill gases.

The intent of this strategy is to disperse the landfill gases sufficiently within the layer of inert fill to prevent the gases creating a safety hazard or killing vegetation at the ground surface.

While in general this approach appears to be adequate, there is some evidence of damage to vegetation including the Fig trees around the central green. SSCC has indicated that the EPA had stated that methane in landfill sites becomes a negligible problem after 20 years. While a complete gas control system for the whole Park is probably not warranted or feasible in terms of cost, it will be necessary to install gas control measures in various specific situations including the following:

- installing gas control below any buildings or structures in which landfill gas could potentially concentrate and thus create an explosion/fire hazard.
- avoiding stormwater pits in car parks where landfill gases could concentrate in the pits.
- installing gas control trenches along sections of the original interface between the edge of the clay extraction pit and the landfill material to ensure the safe discharge of gases that concentrate in that situation and could potentially kill vegetation and/or create an explosion hazard in confined spaces; the extent of these works would be subject to detailed investigations.

Detailed design of these gas control measures will require specialist engineering input.

In addition to these specific measures, monitoring of potential lateral movement of landfill gases into existing buildings on the site will be necessary. These buildings include:

- the residential terrace buildings fronting Campbell Road
- buildings on the McPhersons site and immediately to the north
- the Metromix concrete batching plant site
- the brick kilns at the corner of Princes Highway and Sydney Park Road
- the car service and sales development on private land south of the brick kilns
- the plant nursery site fronting Barwon Park Road

If the monitoring indicates lateral movement of landfill gas, then gas control works will need to be installed under the supervision of an experienced engineer familiar with landfill gas control.

Surface Subsidence
Those portions of the site that were used for landfill operations will continue to subside for many years as the organic material in the landfill decomposes. Due to the variable nature of the waste material in the landfill, there will be differential settlement at the ground surface. If rigid paving material is used in those areas subject to differential settlement, it will be damaged unless special design provisions are made. Concrete paving will be subject to cracking while unit paving will become uneven. This will create a safety hazard for people using the paved areas.

Bitumen can be suitable in areas subject to settlement provided an adequate sub-base is provided. Compacted decomposed granite has been successfully used on other landfill sites provided the area is relatively flat. Regular inspection of the paths and paved areas will be required to identify any safety hazards that may occur and to immediately carry out necessary repairs.

Regular top-dressing and regrading of flat areas of turf will also be required to avoid depressions that create safety hazards and interfere with effective drainage.

Any buildings, structures or paved areas constructed on areas of former landfill will need to be designed to accommodate the differential settlement without suffering structural damage.

Ground Water Quality
The Botany Sands that occur naturally on the eastern side of the site contain significant ground water resources. These will be used to supplement water levels in the storage ponds in the southern portion of the Park and as a source of irrigation water. Water quality testing carried out by SSCC has indicated some contamination that is possibly related to the landfill operations on the site. While the level of contamination is not expected to create a health hazard, regular monitoring will be required to detect any changes in water quality that makes it unsuitable for use in the ponds or for irrigation.

Water Storage Ponds
The water storage ponds will perform a range of functions including:

- retention of stormwater on the site
- creation of a major passive recreation element with strong visual appeal
- supply of irrigation water
- establishment of wetland habitats that will have an environmental education role as well as a conservation function.

Design of the edge conditions around these ponds and associated drainage channels will need to take account of safety issues particularly in relation to children. This will involve:

- gentle slope angles around lake edges where they are constructed of soil material
- stepping profiles where edges are constructed with rock
- hand rails where boardwalks are constructed over the water in the ponds.

Signage will need to alert visitors to potential dangers associated with the ponds. Information pamphlets could also be provided to visiting school groups as part of an environmental education resource kit for the Park.

The potential for intense run-off during severe storms, particularly along the central drainage corridor, will also need to be accounted for in designing public access along and across the drainage lines and ponds.

4.10 Water Resources Management

A major aspect of the POM Strategy for Sydney Park is to maximise the conservation of water resources on the site. This will involve creation of a series of ponds with adequate capacity to retain the maximum volume of stormwater on site.

This strategy will provide a range of benefits, both on the site and in adjoining areas, including;

- minimising the volume of stormwater that leaves the site and contributes to local flooding associated with Alexandra Canal in areas adjoining the south-east corner of the Park .
- water supply for irrigation of landscaped areas within selected areas of the Park.
- creation of a major landscape element with high passive recreation values.
- creation of a wetland habitat that is valuable for wildlife conservation as well as environmental education.

Grading and drainage in the Park will direct most of the stormwater run-off into a series of

ponds in the central and south-east portion of the site. However, run-off from the playing field and adjoining car park in the north-east corner of the Park will continue to discharge into an open concrete channel and therefore will not contribute to the water resources of the Park.

4.11 Soil Resources Management

While large volumes of fill material have been placed to provide a final layer on the site this material generally consisted of excavated sub-soil from construction sites and a limited amount of building rubble from various locations throughout the inner city area. The nature of this material is highly variable and consequently there are significant areas that provide relatively poor growing conditions for trees and shrubs.

In order to create a good growing medium for tree and shrub planting it will be essential to incorporate large volumes of organic matter into the existing soil profile. This organic matter will greatly improve the water holding capacity of the soil, allow easier root penetration and improve the nutrient supply to plants.

The community survey carried out by SSCC identified support for a composting facility. Sydney Park potentially provides an appropriate site for such a facility as part of the Environmental Education Area in the south-west corner of the Park. The feasibility of such a facility would need to be clearly established through detailed assessment. However, if it was determined to be feasible it would supply the organic material in sufficient quantities to improve the soil resources of Sydney Park.

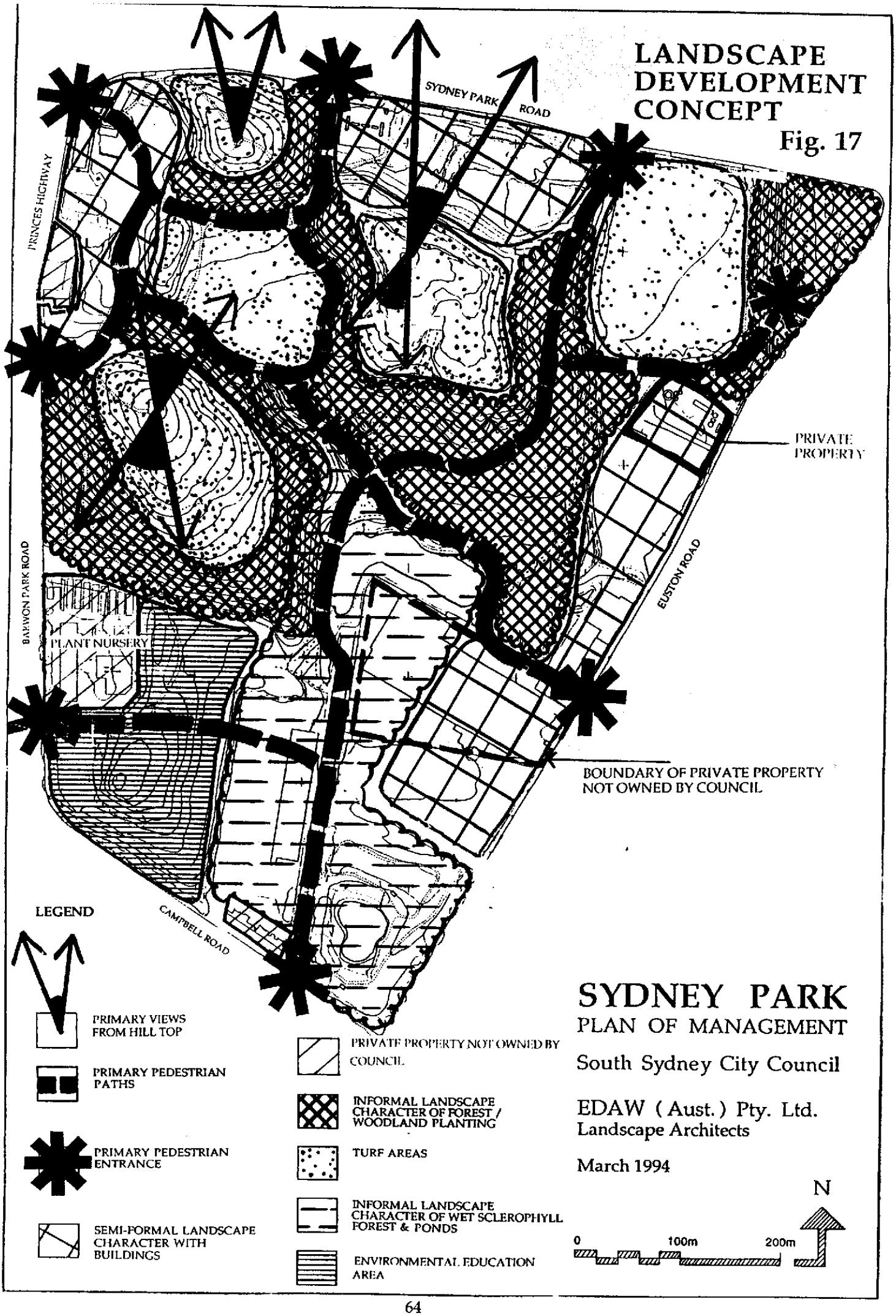
4.12 Landscape Development Concept (Figure 17)

The POM provides for the development of a landscape character throughout the Park that is integrated with recreation opportunities, public art and environmental education facilities.

The landscape character to be developed in various zones of the Park is illustrated on Figure 17 together with the relationship of those zones to the primary pedestrian access and circulation pattern.

Major principles adopted in the landscape development concept are summarised by the following points.

- a semi-formal landscape character is to be developed at the major pedestrian entry points into the Park to provide a transition from adjoining urban development into the central portion of the Park; landscape development at these entrances will include:
  - a mixture of exotic and native Australian plant species planted in formal and semi-formal patterns
  - emphasis on attractive paving patterns
  - entrance structures, gateways, seating, signage, lighting
  - use of colour in planting and the design of structures.
- a semi-formal landscape character associated with zones around the perimeter of the Park in which existing or proposed buildings dominate the visual character; this will involve:
  - mixed exotic and native plant species used in formal and semi-formal planting patterns in response to landscape design requirements such as shade, screening, and visual emphasis
  - use of plant material in a manner that will visually integrate buildings into the Park
  - emphasis on interesting paving patterns related to the character of buildings and structures
  - signage and lighting systems
  - consideration of public security particularly at night
  - design of buildings and structures to ensure they are compatible with the landscape character of the Park


LANDSCAPE DEVELOPMENT CONCEPT
Fig. 17
SYDNEY PARK ROAD
PRINCES HIGHWAY
BARWON PARK ROAD
PLANT NURSERY
CAMPBELL ROAD
EUSTON ROAD
PRIVATE PROPERTY
BOUNDARY OF PRIVATE PROPERTY NOT OWNED BY COUNCIL
LEGEND
PRIMARY VIEWS FROM HILL TOP
PRIMARY PEDESTRIAN PATHS
PRIMARY PEDESTRIAN ENTRANCE
SEMI-FORMAL LANDSCAPE CHARACTER WITH BUILDINGS
PRIVATE PROPERTY NOT OWNED BY COUNCIL
INFORMAL LANDSCAPE CHARACTER OF FOREST / WOODLAND PLANTING
TURF AREAS
INFORMAL LANDSCAPE CHARACTER OF WET SCLEROPHYLL FOREST & PONDS
ENVIRONMENTAL EDUCATION AREA
SYDNEY PARK
PLAN OF MANAGEMENT
South Sydney City Council
EDAW (Aust.) Pty. Ltd.
Landscape Architects
March 1994
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100m
200m

- the sculptured character of the three major hills is to be emphasised by maintaining a grass cover that is regularly mown.
- panoramic long distance views from the hills are to be maintained by limiting tree planting to the lower slopes of the hills.
- a natural landscape character will be created by forest/woodland vegetation to be planted on the lower slopes of the three major hills.
- the Environmental Education Area and associated plant nursery will have a distinctly man-made landscape character reflected by:
  - regular pattern of paths and fencing
- a semi-natural landscape character of the wet sclerophyll forest to be created in areas adjoining the central drainage corridor and storm-water collection ponds by:
  - establishing a forest structure including a shrub understorey as well as an overstorey of tall trees
  - investigate the feasibility of a solar powered water re-circulating system to maintain permanently flowing water in the central drainage line in order to maintain a satisfactory water quality
  - rock outcrops and small water falls along the central drainage line
  - use of natural landscape materials such as rock, timber and mulch
  - screening views of buildings, structures and vehicles in adjoining zones.

4.13 Planting Strategy

4.13.1 Summary

The Landscape Master Plan prepared by Land Systems Pty Ltd in 1989, incorporated a planting concept summarised by the following points.

- four primary vegetation communities occuring naturally in the Sydney Region were to be used
  - Closed Forest
  - Open Woodland
  - Heath
  - Wetland/Swamp
- tall closed forest communities were to be established in south-eastern section of the Park
- open woodland was to be established on the lower slopes of the hills
- heath type plants were to be established on the more exposed side slopes and ridge tops
- wetland/swamp vegetation was to be established along the margins of permanent ponds and intermittent drainage lines
- the overall Park development concept is for an urban woodland dedicated primarily to informal, passive uses with natural landform and drainage patterns and indigenous plant communities which reflect the pre-settlement character of the site wherever possible.

The POM Planting Strategy incorporates the Landscape Master Plan planting concepts to provide a framework for detailed planting plans that will need to be prepared for individual areas throughout the Park development.

The POM Planting Strategy has taken account of a range of site factors including:

- growing conditions (soil, drainage, wind exposure)
- potential landfill gas damage
- views from hill tops to be maintained
- undesirable views to be screened
- relation to existing and potential development of recreation facilities throughout the Park.

In response to these considerations, the proposed planting strategy incorporates the following principles:

- a series of planting zones have been identified that are relatively uniform in terms of their physical condition and the landscape character that is proposed to be developed within them.
- individual vegetation associations have been identified for each zone (species lists for each zone are provided in the following section).
- the vegetation associations to be established at Sydney Park have been selected from those which occur naturally throughout the Sydney Region and incorporate the broad vegetation communities identified in the Landscape Master Plan.
- the vegetation associations to be established are intended to perform a valuable environmental education function and to be as self-sustaining as possible.

4.13.2 Vegetation Associations (Figure 18)

Benson and Howell in their book titled "Taken for Granted: The Bushland of Sydney and its Suburbs" presented a map showing the probable distribution of vegetation associations throughout the Sydney Region in 1788. This map was based on extensive research and the map is generally accepted as a fairly accurate indication of the distribution of these associations. The species composition of these associations is generally reflected by remnant patches of vegetation occurring throughout the Sydney metropolitan area.

The Landscape Master Plan Planting Concept has been refined in the following ways;

- the closed forest referred to in the Landscape Master Plan has been divided into two associations, namely;
  - Blue Gum High Forest
  - Turpentine-Ironbark Forest
- grassland areas have been identified
- heath vegetation is to be confined to the boundary between the grassland and forest vegetation on the mid to lower slopes of the three major hills.

The Planting Strategy will involve establishing four (4) of the major vegetation associations identified by Benson and Howell. The distribution of the vegetation associations are shown on Figure 18.

The species to be planted in each zone will be selected from those occurring naturally in the appropriate vegetation association shown on the Vegetation Associations Plan. It should be noted however that other species will also need to be used where necessary to perform specific landscape functions (such as shade, screening, visual accent) or to create a particular landscape character.

Detailed planting plans will need to be prepared for individual areas throughout the Park as they are developed. At that time the final selection of plant species to be used and the planting layout will need to be finalised. It should be noted that in adopting the vegetation associations indicated in Figure 18, it is not intended to recreate the natural vegetation structure but rather to use species listed as the primary species where possible.

The species that occur in each of the vegetation associations are listed below:

A. RIVER / WETLAND ASSOCIATION

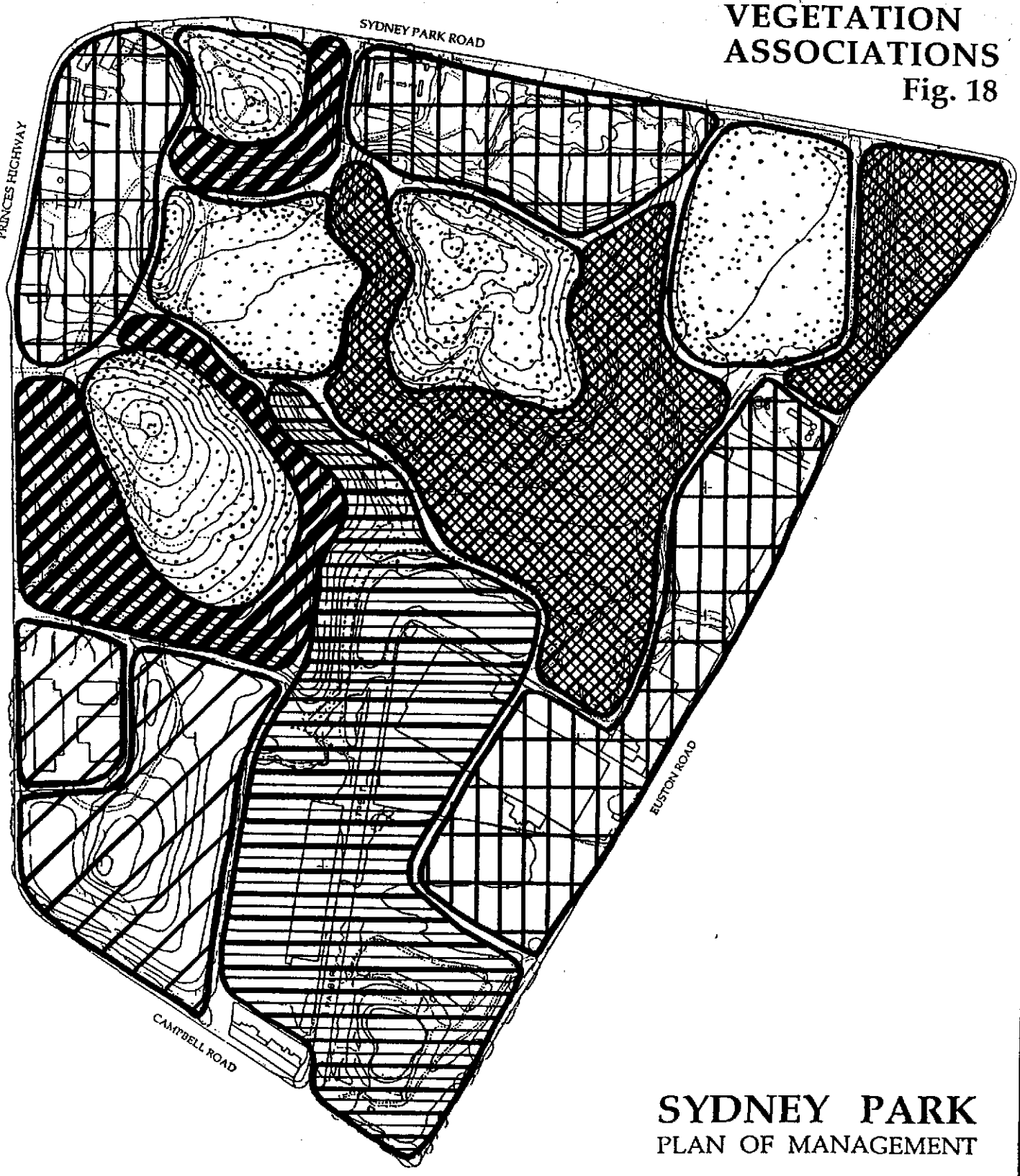
A1. Freshwater Wetlands (Floodplains)

- Low lying back-swamps that occur on floodplains of major rivers, particularly the Hawkesbury-Nepean River.
- *Juncus usitatus* (Common Rush) on waterlogged areas subject to periodic flooding.
- *Melaleuca linarifolia* and *M. styphelioides* (Prickly-leaved Paper Bark) adjoining the zone of *Juncus*.
- *Eucalyptus robusta* (Swamp Mahogany) adjoining the *Melaleuca zone*.

A2. Freshwater Wetlands (Coastal Sands)

- Occuring on swales and drainage lines associated with sand dunes.
- *Melaleuca quinquenervia* (Broad-leaved Paper Bark) around edge of ponds.

PROPOSED VEGETATION ASSOCIATIONS
Fig. 18



LEGEND

- RIVER / WETLAND
- BLUE GUM HIGH FOREST
- TURPENTINE - IRONBARK FOREST
- CUMBERLAND PLAIN WOODLAND
- GRASSLAND
- EXOTIC / NATIVE SPECIES MIX

SYDNEY PARK
PLAN OF MANAGEMENT

South Sydney City Council

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Landscape Architects

March 1994

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0 100m 200m

- *Callistemon citrinus* (Red Bottlebrush), *C. linearis* (Narrow-leaved Bottlebrush), *Leptospermum juniperinum* (Prickle Tea-tree) and *Kunzea ambiqua* (Tick Bush) associated with *Melaleucas.*

A3. River-flat Forests

Occuring on alluvial levee banks adjoining rivers.

Tree species:

Eucalyptus saligna	(Sydney Blue Gum)
E. deanei	(Deane's Gum)
E. tereticornis	(Forest Red Gum)
E. viminalis	(Ribbon Gum)
E. botryoides	(Bangaloy)
E. elata	(River Peppermint)
Angophora subvelutina	(Broad-leaved Apple)
A. floribunda	(Rough-barked Apple)
Casuarina cunninghamiana	(RiverOak)
Tristaniopsis laurina	(Water Gum)
Livistona australis	(Cabbage Tree Palm)

Understorey species:

Bursaria spinosa	(Blackthorn)
Eragrostis brownii	
Aristida vagans	
Gahnia species	(Sedge)
Lomandra longifolia	(Mat Rush)
Acacia floribunda	(Sally Wattle)
Acacia binervatia	(Coast Myall)
Backhousia myrtifolia	(Grey Myrtle)
Acmena smithii	(Lillypilly)

B. BLUE GUM HIGH FOREST ASSOCIATION

Occurring in high rainfall areas on Wianamatta Shale soils of Sydney

Tree species:

E. saligna	(Sydney Blue Gum)
E. pilularis	(Blackbutt)
E. paniculata	(Grey Ironbark)
E. globoidea	(White Stringybark)
Angophora costata	(Smooth-barked Apple)
Syncarpia glomulifera	(Turpentine)
Allocasuarina torulosa	(Forest Oak)

Understorey species

Breynia oblongifolia	(Breynia)
Persoonia linearis	(Narrow-leaf Geebung)
Pittosporum revolutum	(Yellow Pittosporum)
Leucopogon juniperinus	(Prickly Beard-heath)
Platylobium formosum	(Handsome Flat-pea)
Hibbertia aspera	(Rough Guinea Flower)

C. TURPENTINE - IRONBARK FOREST ASSOCIATION

Occuring on lower rainfall areas of Wianamatta Shale soils of inner western suburbs of Sydney.

Tree species:

Syncarpia glomulifera	(Turpentine)
E. globoidea	(White Stringybark)
E. resinifera	(Red Mahogany)
E. paniculata	(Grey Ironbark)
E. fibrosa	(Broad-leaved Ironbark)

Understorey species:

Acacia falcata	(Sickle Wattle)
Acacia parramattensis	(Sydney Green Wattle)
Dodonea triquetra	
Pittosporum undulatum	(Sweet Pittosporum)
Hardenbergia violacea	(Purple Coral Pea)
Kennedia rubicunda	(Dusky Coral Pea)
Dillwynia juniperina	(Prickly Parrot Pea)
Daviesia ulicipolia	(Gorze Bitter Pea)
Platylobium formosum	(Flat Pea)
Viola hederacea	(Native Violet)

D. CUMBERLAND PLAIN WOODLAND ASSOCIATION

Occuring on deep clays developed on Bringelly, Wianamatta and Ashfield Shales.

Tree species:

E. moluccana	(Grey Box)
E. tereticornis	(Forest Red Gum)
E. crebra	(Narrow-leaved Ironbark)
E. fibrosa	(Broad-leaved Ironbark)
E. eugenoides	(Stringybark)
E. longifolia	(Wollybutt)

Understorey species:

Bursaria spinosa	(Black Thorn)
Dillwynia juniperina	(Prickly Parrot Pea)
Daviesia ulicifolia	(Gorze Bitter Pea)
Indigofera australis	(Australian Indigo)
Themeda australis	(grass)
Eragrostis leptostachya	(grass)
Aristida vagans	(grass)
A. ramosa	(grass)
Brunoniella australis	(herb)
Lomandra filiformis	(herb)
Dianella laevis	(herb)

E. GRASSLAND

The areas of grassland associated with the three major hills, central green and playing field will be covered by turf species. The intent is to allow these areas to be maintained without irrigation, except on the playing field and central green. Native grasses will be established progressively in the non-irrigated areas to replace the exotic grass species.

F. MIXED EXOTIC/NATIVE SPECIES

The Planting Strategy includes the use of exotic species together with Australian native species in those zones of the Park where existing or proposed buildings and structures dominate the visual character. The use of exotic species in these zones will form a transition to be created between the urban character of areas surrounding the Park and the informal landscape character within the central portions of the Park.

Australian native species will also be used with the exotic species in these zones. The final selection of species and the layout of planting in these zones will be determined during the detailed landscape design process for each development area.

4.14 Planning Issues

4.14.1 Introduction

The Sydney Park POM will be influenced by various planning issues not only relating to the Park itself but also the surrounding areas of urban development. The character of that urban development will continue to change over time. It is therefore important to ensure that these changes do not adversely affect the function and amenity of the Park.

While most of the planning issues identified in the following sections are under the direct control of SSCC some of them involve other authorities and organisations. Council will therefore need to maintain regular communications with those authorities to adequately address the various issues.

4.14.2 Privately Owned Sites

Although SSCC now owns most of the area bounded by Sydney Park Road, Euston Road, Campbell Road, Barwon Park Road and Princes Highway there are four privately owned sites within these boundaries, namely

- the McPhersons site on which a large industrial building is located fronting onto Euston Road
- the Metromix concrete batching plant fronting Euston Road in the north-east portion of the Park
- a relatively small site used for car sales/service adjoining the Princes Highway immediately south of the brick kilns in the north-west corner of the Park
- a row of residential terraces fronting onto Campbell Road.

Due to the large size of the McPherson site and the extent to which it extends into the centre of the Park, it severely restricts effective development of the Park.

As the site is privately owned and zoned for it's current use it would need to be purchased by Council through a commercial transaction before it could be incorporated it in the Park. Alternatively Council may be able to negotiate an arrangement under which the western half of the site would be incorporated in the Park

while the eastern half fronting Euston Road would be redeveloped for use that is compatible with the adjoining Park. Another alternative could be a land swap involving Council owned land at Sydney Park or possibly another site.

Unless Council decides to purchase the whole site the process of re-development to make it compatible with the long-term planning objectives of the Park will require innovative planning solutions on the part of Council.

While the Metromix site is much smaller than the McPherson site it has a significant impact on the adjoining portion of Sydney Park, due to the noise and dust generated by the concrete batching operations. These impacts may be reduced by more stringent planning controls but in the longer term it would be preferable for Council to purchase the site or arrange a land swap to allow the site to be incorporated into the Park.

The small privately owned site immediately south of brick kilns will be important to the long-term development of Sydney Park because:

- it is on ground that has not been subject to landfill operations and is therefore suitable for construction of substantial buildings
- it adjoins the heritage precinct of the brick kilns and chimneys
- it fronts on to the Princes Highway and is readily accessible from St Peters Railway Station

Consequently the long term planning objective should be for Council to purchase the site and allow the development of community and/or commercial recreation facilities that will contribute to the quality of the Park.

4.14.3 Environmental Protection Authority Requirements

A basic planning philosophy of Sydney Park has been to locate new buildings on land that has not been used for landfill. If it becomes necessary in the future to develop buildings on filled land then approval from the Environment Protection Authority (EPA) will be required. Issues of particular concern to the EPA will include the design, implementation and monitoring of an effective landfill gas control system.

The EPA may require that potential lateral movement of gases be assessed in the design of buildings and structures on solid ground adjoining the areas of landfill.

4.14.4 Re-development of Adjoining Area

SSCC has adopted a planning policy that encourages the re-development of existing industrial development immediately north of Sydney Park Road for residential and commercial uses. As a result of that policy one medium density residential development was recently completed and an application for a much larger residential/commercial development has been received by Council.

These residential development projects will increase the population living alongside Sydney Park by up to 2,000 people. This will greatly increase the intensity of use and therefore involve facilities with higher capacities and maintenance requirements. On the other hand it will provide a potential benefit by increasing community involvement in the development and management of the Park.

The planning approval process provides Council with opportunities to ensure that redevelopment of sites adjoining the Park contribute in a positive way to the quality of Park facilities. Issues to be addressed will include:

- potential visual impact on Park users, particularly in relation to maintaining the panoramic views from the tops of the three major hills in the Park
- safer pedestrian/cycle access across major roads surrounding the Park
- effective use of Section 94 contributions generated by the developments to assist further provision of facilities in the Park that will be required by additional residents
- traffic generation by the urban developments in relation to access and circulation patterns relating to the Park.

The issue of safe pedestrian/cycle access to the Park could involve the development of grade - separated crossings , pedestrian bridges and underpasses as well as pedestrian crossings with traffic lights. Consultation will be essential with RTA as well as the developers involved in each project.

4.14.5 Open Space Corridor to South

Current land uses to the south of Sydney Park include a landfill operation managed by South Sydney City Council adjoining Campbell Road with rail freight handling and warehouses further south.

A large area formerly used for landfill and open space recreation is located further to the south at the junction of the Cooks River and Alexandra Canal adjoining the Sydney Airport international terminal. (Refer to Fig, 2)

Strategic planning is required to take advantage of the opportunity to develop an open space corridor along the Alexandra Canal that would connect Sydney Park to the open space recreation corridor along the Cooks River extending to the foreshore of Botany Bay.

4.14.6 Major Road Developments

The Road and Traffic Authority (RTA) is currently reviewing the regional road network including the potential for widening Euston Road and a major road following the alignment of Campbell Road. These developments will potentially create significant impacts on Sydney Park including:

- noise impacts resulting from increased traffic flows
- visual impacts created by road construction and additional traffic flows
- barriers to pedestrian/cycle access to the Park from adjoining urban areas.

When reviewing RTA proposals Council will need to carefully consider potential impacts on those people using Sydney Park.

4.14.7 Dog Management

The potential conflict between dog owners using Sydney Park to exercise their dogs and other Park users was identified as a major issue in the community consultation process.

Issues of particular concern included:

- safety of children in relation to aggressive unleashed dogs.
- dog faeces creating a nuisance and health hazard.
- the desire of dog owners to allow their animals to run freely without the constraint of a leash.

The potential conflict between dog owners and others using the Park needs to be resolved by appropriate management provisions. It is therefore proposed that the following arrangements are implemented:

- dog owners will be required to restrain their animals on a leash except during the morning period before 8.00am and in the evening after 6.00pm at which time animals would be allowed to exercise without being constrained in the open.
- dog owners will be encouraged to collect any faeces produced by their animals and to place it in special bins to be provided throughout the Park.
- an education programme will be implemented to inform dog owners of the above requirements and encourage a responsible attitude to the use of Sydney Park.
- a specific area within the Park is to be dedicated for the exercising of unleashed dogs.

5. IMPLEMENTATION

5.1 Introduction

Implementation of the Sydney Park POM will be an ongoing process that requires an appropriate management structure and adequate funding to achieve the objectives of the Plan. The POM itself will require regular review to ensure it accurately reflects the needs and expectations of the community while ensuring the availability of resources required to implement it. Given the constant changes in community values, the POM should be thoroughly reviewed and updated at least every five years. This review would be in addition to annual reviews of the progress in implementing specific components of the Plan.

Community involvement will be an essential requirement for the successful implementation of the POM. It is proposed that the community will liaise with the Public Works and Services Department (PWSD) through established channels i.e. via elected representatives or direct liaison with Council Offices. The PWSD will assume responsibility for co-ordinating the implementation of the POM.

5.2 Management Structure

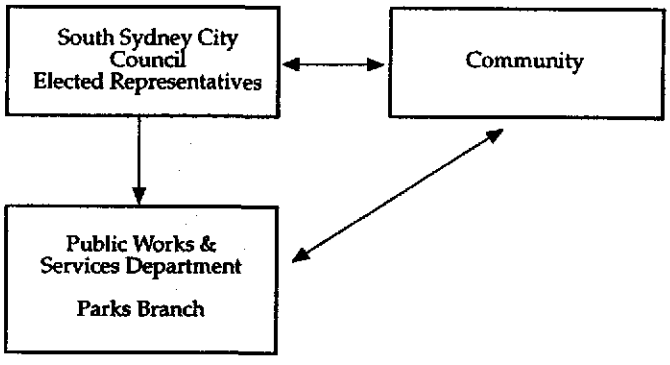
As the formation of the basic landform of Sydney Park is completed, the focus of management will need to shift from bulk earthworks to the implementation of landscape works and development of recreation facilities. The management structure will need to continue to perform a range of functions simultaneously, including:

- coordinating development of new recreation and community facilities together with landscape works
- maintenance of existing and future landscape works and recreation facilities
- management of a range of user groups
- planning and budgeting capital works, maintenance and management throughout the Park
- maintaining effective community involvement in implementing the POM

It will therefore be essential to have a clear definition of management responsibilities as well as the involvement of a range of people with the necessary management skills and experience.

The following diagram illustrates the proposed management structure for Sydney Park.

Proposed Sydney Park Management Structure



The roles and responsibilities of the various groups is this management structure are summarised below:

South Sydney City Council

- ultimate responsibility for development and management of Sydney Park
- budget allocation for development and maintenance
- assessment and determination of development applications on sites adjoining Sydney Park

Community

- presentation of requests and proposals to Council for development of facilities in Sydney Park

Public Works and Services Department (Parks Branch)

- seeking opinions, expectations and needs of community in relation to Sydney Park
- advise Public Works and Services Department officers on the requirements of the community as well as those of relevant authorities and organisations
- planning, design and management of capital works and maintenance of Sydney Park
- allocation of resources (financial, human and physical) for effective development and management of Sydney Park
- preparation of annual budgets and works programme
- reporting to Council on development and management of Sydney Park
- liaison with special user groups
- assessment of applications for development of commercial recreation facilities and preparation of recommendations to Council
- identification of sources of funding to supplement the annual budget allocation by Council
- liaison with authorities that have responsibilities that are relevant to development and management of Sydney Park.
- maintenance of landscape works and recreation facilities
- monitoring and reporting on maintenance requirements
- coordinating uses of the Park by special user groups taking bookings, collecting fees and reporting on uses that are likely to include:
  - concerts / performances
  - festivals
  - exhibitions
  - fairs
  - school groups
  - community / social groups
  - environmental education facilities
- reporting on vandalism and misuse of the Park and proposing actions to prevent these.

5.3 Funding

Funding for development, management and maintenance of Sydney Park is currently provided through SSCC's annual budget allocation. In addition the revenue generated through tipping fees charged for disposing of "clean" fill material has been placed in a fund for use in developing the Park.

As there are no other regular sources of funding for development and maintenance of the Park, it will be necessary to seek opportunities for commercial recreation facilities that are compatible with the planning objectives of Park and capable of generating funds to assist in its development and maintenance.

Section 94 contributions that are generated by development in South Sydney are a potential source of significant funding for the Park as it is a regional Park. However, the value and timing of such funds are very difficult to anticipate. Section 94 contributions are available for capital works only and these funds are not available for maintenance as specified in the EPA Act.

Funding for implementation of the POM falls into two categories:

- capital works involving construction and development of new facilities
- maintenance and management of the Park

The amount of funds allocated to capital works in the Park is likely to vary from year to year depending on the requirements for specific development projects. On the other hand annual maintenance and management funding, is anticipated to increase steadily as the intensity of usage in the Park increases over time. This increase is likely to result from population growth, community awareness of the Park and an increase in the availability of recreation opportunities in the Park.

5.4 Priorities

To provide a framework within which to commence implementation of the Plan of Management a matrix of priorities has been prepared and presented on the following page. Major elements in the Park development are listed and their priority for implementation in each development zone is indicated in the matrix. These priority categories are defined in the following way:

- High Priority (to be implemented in next 12 months)
- Moderate Priority (to be implemented between 1 and 3 years time)
- Low Priority (to be implemented after more than 3 years)

These priorities will need to be reviewed annually to eliminate those elements that have been developed in the proceeding year and to add others that may be considered appropriate.

While the allocation of the priority ratings is based on a substantial degree of judgement, the following factors were taken into account in preparing the ratings:

- community opinions, expressed through the survey carried out by Health and Community Services as well as other written submissions and discussions with community representatives
- the pattern of existing development of the Park and availability of specific zones within the Park
- access and circulation patterns
- the need to provide basic services (toilets, paths, parking, etc) at an early stage
- the existing Master Plan
- the time required for planning, design and funding of major facilities such as the Environmental Education Area.

The Priority Matrix is primarily intended to assist Council to start allocating the financial, human and physical resources required to commence implementation of the Plan of Management. The Development Zones referred to in the Matrix are shown in Figure 15.

It should be noted that acquisition of the privately owned property within the Park precinct will remain a high priority. Council will need to respond to opportunities to acquire these properties as they become available.

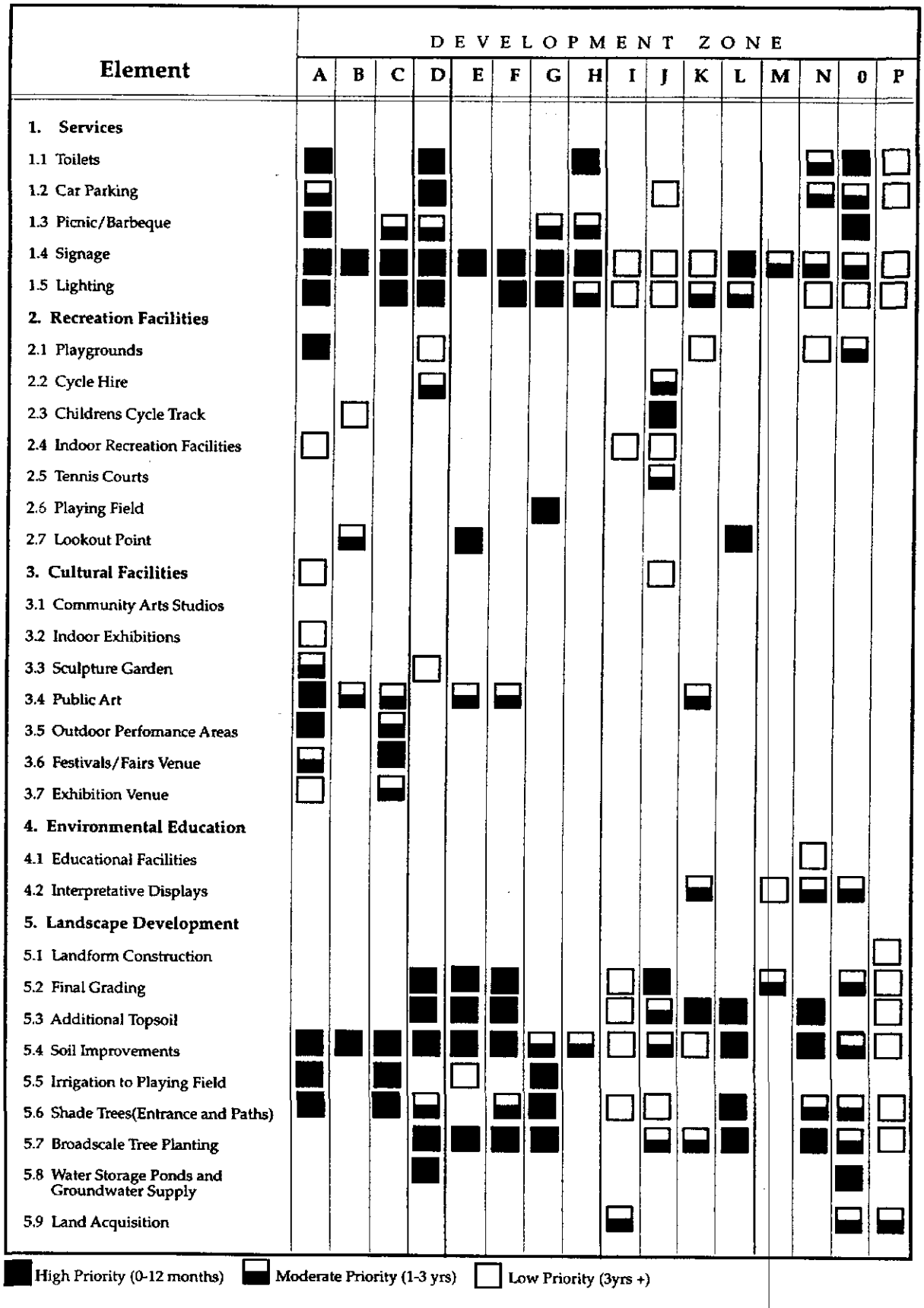
5.5 Staffing

The current level of staffing at Sydney Park is adequate to achieve a minimum standard of maintenance. As the Park is developed the number of staff will need to be increased and the range of skills of those staff will also need to be broadened.

Sydney Park is under the control of the **Parks Branch Manager** whose responsibilities include;

- overall management of Sydney Park
- reporting directly to the Director of Public Works and Services
- management of all capital works and maintenance activities within the annual budget allocation
- coordination with landscape architects to obtain design and documentation services required for development of new facilities and landscape works

Implementation Priority Matrix



The Parks Services Supervisor for Sydney Park (and Nursery) is responsible for:

- day-to-day management of staff, scheduling of work and control of expenditure
- reporting directly to Park Manager

Maintenance Staff numbers under the supervision of the Sydney Park Leading Hand will need to be increased as the Park is developed. The responsibilities of the staff include;

- maintenance of all planted areas including watering, weeding, fertilising, pest control and supplementary planting
- maintenance of paths, paved areas, fencing, lights, irrigation system and drainage
- repair of accidental damage as well as vandalism to structures, plants and paving
- keeping records of maintenance works

The Parks **Branch Manager** and **Councils Media Unit** will perform the following tasks in addition to their other responsibilities;

- coordinating bookings from special user groups to hold events in the Park
- monitoring use of the Park to keep records of use patterns and to identify conflicts or other problems that need to be addressed in managing the Park
- liaison with residents and property owners adjoining the Park
- coordinating school groups using the Park for environmental education and recreation
- liaison with community groups with special interests in the Park
- reporting directly to the Director of Public Works and Services
- coordination with community groups responsible for development and management of the Environmental Education Area
- preparation of a regular newsletter, media releases and other information to keep the community informed about development and management of Sydney Park and to seek their involvement and support
- development of information pamphlets on various aspects of the Park as well as an Environmental Education Kit
- coordination of indoor and outdoor displays as well as information signage throughout the Park

5.6 Commercial Development Opportunities

A number of proposals have already been received by SSCC in relation to the development of commercial recreation facilities at Sydney Park. While these proposals have the potential to generate revenue for Council some of them are considered inappropriate. In particular the following proposals are not compatible with the objectives of the Plan of Management.

- **Golf Driving Range**

  This facility requires a minimum area of 250m by 120m together with car parking and a building for equipment hire, changing and storage. Such a facility would preclude general public access from about 3ha in the Park. As the area for the golf driving range would generally need to be fairly flat there are few suitable locations in Sydney Park that are not already allocated or intended for development of other recreation opportunities or facilities.

- **Mountain Bike Trail**

  This facility would use slopes on one or more of the three major hills in the Park. Such usage would conflict with passive creation activities including views from lookouts, kite flying and informal recreation. It would also result in damage to the turf and possible soil erosion.

Commercial recreation facilities would be most appropriate on those areas around the perimeter of the Park that have not been subject to landfill operations and therefore provide satisfactory foundation conditions for buildings and large playing surfaces. These include the following development zones that are shown on Fig. 15.

Zone A - Brick Kilns Precinct

- the privately owned site currently used for car sales and services immediately south of the brick kilns would be suitable for commercial recreation development; it should be emphasised however, that this site has only been identified as an opportunity for the purpose of presenting a comprehensive POM. It would be subject to satisfactory negotiations for that purchase of the site by Council.
- after purchasing the site Council could lease it to a commercial operator who would generate annual revenue to assist funding for management and maintenance of the Park.
- suitable commercial facilities could include:
  - indoor sports facilities and gymnasium
  - art gallery and studios
  - restaurant / cafe

Zone I - Metromix Site

- if Council were to purchase the Metromix site, removal of the concrete batching facilities would provide an opportunity for Council to lease the site for development of commercial recreation facilities on an area of solid ground adjoining a playing field and the relatively close to residential areas north of Sydney Park Road
- revenue generated by the lease of this site would be available for maintenance of the Park and development of other public recreation facilities
- suitable development could include indoor sports and club facilities that would contribute to the overall mix of recreation opportunities throughout the Park

Zone J - Former Industrial Site

- this large area, which was not subject to landfill operations, is owned by Council and could be leased for suitable development of commercial or community facilities within a relatively short period
- suitable commercial and/or community facilities could include:
  - tennis courts
  - children's road safety training centre (CARES)
  - squash courts
  - bicycle hire
  - community recreation complex including indoor swimming pools, basketball courts.
  - staff training centre
- these facilities would compliment other recreation opportunities throughout the Park to broaden the sectors of the community that the Park services.
- revenue generated from the lease would be available for maintenance of the Park and development of other public recreation facilities.

Zone P - McPhersons Site

- if Council purchases this site or reaches an agreement with the owner to redevelop it , an opportunity would be created for commercial development on that half of the site fronting on to Euston Road together with a portion of the former gasometer site immediately to the south
- suitable developments that would be compatible with the adjoining section of Sydney Park could include:
  - a training centre or school
  - community recreation facilities including indoor swimming pool, basketball courts, gymnasium

- commercial recreation such as health club, indoor cricket, squash, roller skating

In assessing proposals for commercial development on any of the sites discussed above it will be essential to ensure that they not only contribute to the ongoing funding of Sydney Park but also make a positive contribution to the overall amenity of the Park. Such development should not alienate significant areas of the Park from access by the general public.

5.7 Environmental Monitoring

Due to the long history of Sydney Park as a major landfill site it will be essential to monitor various environmental aspects of the site. In particular provision should be made for the following monitoring:

- checking for potential lateral movement of landfill gases into adjoining properties
- monitoring water quality in the ponds located in the southern portion of the Park, including ground water pumped into the ponds
- checking for evidence of gas affecting plant growth particularly along the alignment of the interface between the landfill and natural ground
- testing soil fertility and physical conditions in relation to plant growth
- monitoring plant survival and growth rates
- monitoring the built-up of wildlife populations and relating them to habitat conditions

A schedule of monitoring and checking for each of these items will need to be prepared. Reporting procedures will also need to be defined together with responsibilities for appropriate action.

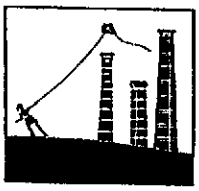
5.8 Plan of Management Review

The Plan of Management will require regular review and upgrading to ensure that it reflects current community expectations. The following review provisions are proposed

- an annual review to be carried out by SSCC to determine progress in implementing the Plan and to set the implementation programme for the following year
- a complete revision of the Plan at the end of each five years or sooner if considered appropriate by SSCC.

Appendix A

Recreation Survey Form and Summary of Responses



MANAGEMENT ADVISORY GROUP
Sydney Park
Plan of Management

WE SEEK YOUR COMMENT AND INPUT INTO THE PLAN OF MANAGEMENT FOR SYDNEY PARK.

The plan of management is currently being prepared by South Sydney City Council in association with a community liaison planning group that was elected at a public meeting held on the 23rd October 1993.

The plan of management will define how the community want the park to be developed and used.

The plan will outline development and management strategies that will enable these community goals to be met.

As part of defining how the community want the park to be developed and used,

- WE SEEK YOUR INPUT IN RELATION TO WHAT YOU WOULD LIKE TO SEE IN THE PARK IN TERMS OF FACILITIES PLANTING, ETC.
- WE WOULD ALSO LIKE TO KNOW WHAT ACTIVITIES YOU WOULD LIKE TO SEE IN THE PARK SUCH AS USE OF THE OLD BRICK BUILDINGS, CONCERTS IN THE PARK, BIKE RIDING, DOG EXERCISE AREAS, ETC.
- IF YOU HAVE ANY ADDITIONAL COMMENT, ADVICE OR REQUEST, WE WOULD LIKE TO HEAR FROM YOU.

Please record your comments on the back of this form.

Could you forward your comments to

Myra Karasik
South Sydney Council
Administration Offices
140 Joynton Avenue
ZETLAND NSW 2017

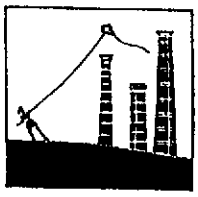
or

John van Pelt
EDAW
551 Pacific highway
ST. LEONARDS
NSW

We will keep you informed on the development of the plan that we will exhibit in a draft form for your comment , prior to the initial plan of management being prepared.

Yours faithfully
EDAW (Aust) Pty Ltd

John van Pelt
Director



MANAGEMENT ADVISORY GROUP
Sydney Park
Plan of Management

FACILITIES YOU WOULD LIKE:

FACILITIES YOU WOULD NOT LIKE:

ACTIVITIES YOU WOULD LIKE:

ACTIVITIES YOU WOULD NOT LIKE:

Summary of Community Opinions on Facilities and Activities

FACILITIES	DESIRABLE	UNDESIRABLE
Trees	10	0
Adventure Playgrounds	5	1
Cafe / Kiosk	5	2
Dog Exercise Area	12	0
Amphitheatre	5	0
Public Toilets	6	0
Youth Centre	2	0
Preserve Brick Buildings	6	0
Sports Club / Ovals	3	5
Skateboard Ramps	3	2
Fitness Stations	2	0
City Farm	3	0
Arts and Crafts Area	2	0
McDonalds	0	1
Golfing Range	1	1
Rubbish Bins	3	0
Existing Sculpture on hill	0	2
BBQ areas	1	1
Bike Tracks	8	1
Tennis Courts	1	0
Basketball Courts	3	0
Swimming Pool	1	0
Information Signs	2	0
Sculpture Park	4	1
Fixed Buildings	0	1
Windbreaks	3	0
Lighting	2	0
Commercial Activities,eg Hire gear	0	4
Fenced Safe Playground	1	0
Wild natural areas	4	0
Water Feature / Lake	6	0
Better access	5	0
Covering seating	6	0
Walk tracks	3	0
Paving	1	1

ACTIVITIES	DESIRABLE	UNDESIRABLE
Dog Walking	6	2
Sports Activities	1	5
Bushwalks	3	0
Picnics	5	0
Bike riding	3	0
Jogging	2	0
Kite flying	6	0
Outdoor concerts	10	0
Tennis	1	0
Basketball	1	0
Tree planting	10	0
Passive Recreation	2	0
City Farm	3	0
Arts and Crafts Area	2	0
Trail Bikes	0	2
Golf	0	1
Grass skiing	0	1
Rollerblading	1	1