



SydneyOlympicPark

2003-04

Sydney Olympic Park Authority State of Environment Report



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Our Mission

Our mission is to develop and maintain, to international standards, a unique integrated township called Sydney Olympic Park.

Serving the public

Sydney Olympic Park Authority is committed to the highest standards in serving the public of NSW. In achieving its mission it seeks to support three key Government priorities:

- Promotion of sustainable urban development outcomes and liveable cities
- Development of a healthy community
- Generation of social, environmental and economic returns on Government investment in Sydney Olympic Park and, in turn, the realisation of a lasting Olympic legacy.





I am very pleased to
present Sydney Olympic
Park Authority's third State
of Environment Report.

Foreword

It is only four years since Sydney welcomed the world to Sydney Olympic Park for the highly successful Sydney 2000 Olympic Games. A key innovation of the Sydney Games was our ability and commitment to integrate environmental sustainability into all aspects of the event. Maurice Strong, the Chairman of the Earth Council, has described the Sydney 2000 Games and Sydney Olympic Park as:

The best ever and the greenest or most sustainable Games ever...Without question Sydney 2000 has set the bar high...I am confident that your example has set new standards that not only other Olympics, but also other events, construction, infrastructure, urban redevelopment and suburban development projects, will need to follow.

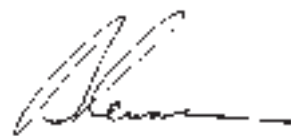
Sustainable urban design excellence and environmental innovation remain core drivers in all of the Sydney Olympic Park Authority's functions, particularly as we progress our vision for the creation of a sustainable township.

During 2004, Sydney Olympic Park Authority celebrated the Year of the Built Environment by participating in activities that promoted an appreciation of environmentally sustainable, practical and aesthetic built environments. Themes explored included: Towards Sustainable Communities, Healthy Environments, Excellence in Building, Our Built Heritage, Imagining the Future and Design for All.

As the place-maker for the Sydney Olympic Park township, Sydney Olympic Park Authority has adopted a triple bottom line approach to sustainability, which integrates the achievement of best practice environmental, social and economic sustainability. This approach is informing the development of Vision 2025, which will provide the blueprint for ecologically sustainable development in the Park until 2025. To this end, we have strengthened our partnerships with several local Councils and identified key areas where, by working together, we can better connect Sydney Olympic Park to its surrounding communities.

Sydney Olympic Park Authority has also begun to establish partnerships and strategies that will position the Park as a natural location for the development of a 'Green Economy'. That is, one that incorporates Australia's emerging and potentially highly profitable sustainable business sector.

I am proud of the Sydney Olympic Park Authority's many achievements in championing sustainable outcomes in all aspects of planning, management and development during 2003-04 and recognise that there is still much to be done. I encourage you to follow our journey as we create a new urban model for a dynamic, sustainable and liveable community at Sydney Olympic Park.



Brian Newman
Chief Executive Officer



2003-04 at a Glance



- **Vision 2025**, a model for sustainable urban development of Sydney Olympic Park into a township over the next 20 years, was presented to the NSW Government
- A minimum **4 Green Stars**, based on the Green Building Council Australia's Environmental Design Rating (Commercial Office), was mandated for all future commercial building developments at Sydney Olympic Park. Twenty staff were trained to use the rating tool
- Detailed **design negotiations** for proposed commercial and residential developments set new benchmarks for sustainable design excellence at the Park
- A review of the **Environmental Guidelines (1993)** commenced in June 2004
- Staff worked closely with the Year of the Built Environment Secretariat and commenced planning to host the **Houses of the Future Exhibition** in 2005
- Joined more than 30 education, research, Government and industry organisations in a consortium to develop the **International Centre of Excellence in Water Resources Management**
- **Conservation Master Plan Millennium Parklands Precinct** endorsed by NSW Heritage Council
- Became a key partner of the **National Water Roadmap** which will research and analyse sustainable management of Australia's water supply
- Launch of the **Second Environment Industry Action Agenda**, a progress report on the growth of Australia's sustainable businesses
- A major conference sponsor for: **Green Building Conference 2003**, **Enviro 04**, **Buying Green 2004**
- Participated in its first **Earthwatch Institute Employee Fellowship Program** which enabled a staff member to participate for two weeks in an ecological research team looking at the complex impacts of climate change on biodiversity and ecosystem processes



- Partner in a successful collaborative **research application on aquatic biota** awarded by the Australian Research Council (ARC)
- Continued to develop innovative options for a sustainable **leachate strategy**
- Implementation of the **Sydney Olympic Park Bicycle Strategy**, including major capital works projects, which has led to the Park being recognised in 2004 as a premier cycling destination
- Management Plan prepared for **Wilsonia backhousei**, a threatened saltmarsh plant
- **A second hybrid (petrol/electric) fleet vehicle** was purchased
- Innovative **environmental educational programs** for schools, tertiary students and professional groups were expanded
- Three **Wetland Education and Training (WET) Workshops** were conducted on macrophyte and algal identification, mangrove and saltmarsh management, and wetland management
- Winner **National Trust Energy Australia Heritage Award 2004** for Ecotourism at the Newington Armory
- Winner **Energy Green Globe Award 2003** for energy management strategies
- Winner **StreamWatch Award 2003** for environmental education



1



Introduction

Sydney Olympic Park Authority was established on 1 July 2001 as a statutory body of the NSW Government under the *Sydney Olympic Park Authority Act 2001*. Its charter is to manage and promote the 640-hectare Sydney Olympic Park site, including protection of its 425-hectare parklands.

Under the Sydney Olympic Park Authority's Act, Sydney Olympic Park Authority is required to produce an annual report on the state of the environment in Sydney Olympic Park in relation to: land, air, water, biodiversity, waste, noise, Aboriginal heritage and non-Aboriginal heritage.

The 2003-04 State of Environment Report describes the environmental and ecological programs, educational opportunities, operational management functions and events at Sydney Olympic Park during the reporting year, 1 July 2003 to 30 June 2004.

Consistent with Sydney Olympic Park Authority's holistic approach to best practice sustainability, this report also identifies future environmental, social and economic directions for Sydney Olympic Park Authority and highlights continuing improvements in its operational management of Sydney Olympic Park.

The Report covers four key environmental performance areas:

- Biodiversity
- Resource Conservation
- Site Impacts
- Involving People

and their sustainable outcomes. It also includes an Environmental Compliance Report.

Electronic copies of the 2003-04 State of Environment Report are available from the corporate section of the Sydney Olympic Park website:

www.sydneyolympicpark.com.au



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Triple Bottom Line Sustainability

Sydney Olympic Park Authority's framework for sustainability strives to balance economic, environmental and social factors in a way that will ensure resource conservation and protection of the environment now and for future generations. This interface between environmental, social and economic sustainability is referred to as the 'Triple Bottom Line'.

Framework for Environmental Sustainability

Sydney Olympic Park Authority's corporate framework for environmental sustainability draws on the legislative

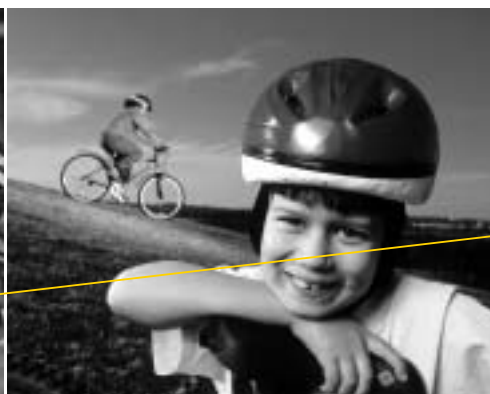
requirements of the *Sydney Olympic Park Authority Act* and the *Environmental Guidelines* (1993). It includes a Sustainability

Policy, Sustainability Strategy, Operational Compliance Procedures and an Environmental Communication Strategy.

Sydney Olympic Park Authority Act 2001



Fig. 1 Sydney Olympic Park Authority's Framework for Environmental Sustainability.



Sydney Olympic Park Authority Act

Under the *Sydney Olympic Park Authority Act*, Sydney Olympic Park Authority's core functions are to:

- Promote, coordinate and manage the orderly and economic development and use of Sydney Olympic Park, including the provision and management of its infrastructure
- Promote, coordinate, organise, manage, undertake, secure, provide and conduct cultural, sporting, educational, commercial, tourist, recreational, entertainment and transport activities and facilities
- Protect and enhance the natural and cultural heritage of Sydney Olympic Park, including the parklands
- Provide, operate and maintain public transport facilities within Sydney Olympic Park
- Liaise with and maintain arrangements with Olympic organisations, such as the International Organising Committee and the Australian Olympic Committee
- Maintain and extend the Water Reclamation and Management Scheme (WRAMS) as far as possible

- Maximise the use of renewable energy sources
- Produce an annual State of the Environment Report.

The Environmental Guidelines

The Environmental Guidelines (1993) were an integral part of Sydney's bid for the Sydney 2000 Olympic Games. Under the *Sydney Olympic Park Authority Act*, they continue to inform ecologically sustainable management, development and landuse at Sydney Olympic Park including:

- protecting biological diversity
- conserving energy
- conserving water
- minimising waste
- enhancing significant natural and cultural environments.

In June 2004, Sydney Olympic Park Authority commenced a review of the Environmental Guidelines in accordance with s. 49 of the *Sydney Olympic Park Authority Act*. The review aims to align the Environmental Guidelines with the next phase of the Park's development, that is, the creation of a sustainable township. It will expand the Environmental Guidelines to consider social as well as environmental issues.

It is anticipated that a draft of the Revised Environmental Guidelines will be released for public consultation in mid 2005. The working group guiding the review is composed of representatives from Government, environmental, business, health and community organisations and agencies. A representative of the US Rocky Mountain Institute also brings an important international perspective to the review process.



Sustainability Policy

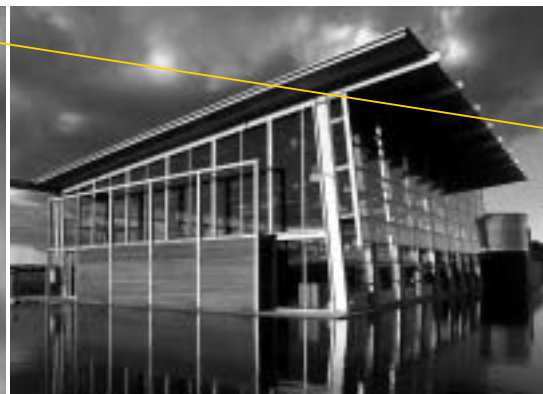
Sydney Olympic Park Authority is committed to the principles of ecologically sustainable development as defined in the *Local Government Act 1993*. This commitment focuses in particular on the conservation of species and natural resources, managing site impacts and ensuring the continued protection and promotion of existing and future environmental features of the Park.

In establishing Sydney Olympic Park as a vibrant, diverse and exciting destination for commercial and residential development, community recreation, employment and education, Sydney Olympic Park Authority aims to:

- Provide a safe, amenable, accessible and socially cohesive environment for all workers, residents and visitors at Sydney Olympic Park
- Protect and enhance remnant and constructed ecosystems on all lands owned and/or managed by Sydney Olympic Park Authority
- Manage the remediated lands owned by Sydney Olympic Park Authority and ensure their ongoing integrity and suitability for use
- Minimise the demand for potable water from the Sydney mains supply by promoting wastewater reuse and effective water demand management practices
- Maximise the use of renewable energy sources and encourage efficient and responsible energy management practices, including a strong commitment to public transport
- Maintain and advance implementation of water sensitive urban design, development and management principles
- Encourage innovation and best practice sustainable design for the built environment
- Monitor emerging environmental technologies for potential use in future developments, activities or events on lands owned by Sydney Olympic Park Authority
- Encourage the use of recycled materials and reduce waste generation for all future development, commercial operators, event managers and patrons of Sydney Olympic Park
- Improve the quality of water entering waterways from lands owned by Sydney Olympic Park Authority
- Protect soil and sediments within areas for which Sydney Olympic Park Authority is responsible
- Minimise emissions of greenhouse gases and minimise use of ozone depleting substances in developments, activities and events managed at Sydney Olympic Park
- Minimise the use of materials that deplete natural resources or create toxic pollution
- Manage noise and night lighting so that adverse impacts on residential and parkland areas are minimised
- Minimise impacts on air quality.

Sydney Olympic Park Authority will comply with all relevant environmental and conservation legislation and regulations including statutory planning instruments and the principles of the Environmental Guidelines. Sydney Olympic Park Authority will implement ongoing development and management practices for Sydney Olympic Park to further integrate the principles of sustainability.

Appropriate environmental management systems will be implemented to ensure understanding of and compliance with Sydney Olympic Park Authority's environmental objectives and other mechanisms. Sydney Olympic Park Authority is committed to continuous improvement of environmental performance, best practice in environmental management, and to sharing its knowledge and experiences with the community and other key stakeholders to promote and achieve positive environmental values and outcomes.



Sustainability Strategy

The Sustainability Strategy builds on the principles of sustainability established by the Environmental Guidelines and Sydney Olympic Park Authority's Sustainability Policy. It establishes objectives, actions and performance outcomes under four key environmental performance areas:

- **Biodiversity**
- **Resource Conservation**
- **Site Impacts**
- **Involving People.**

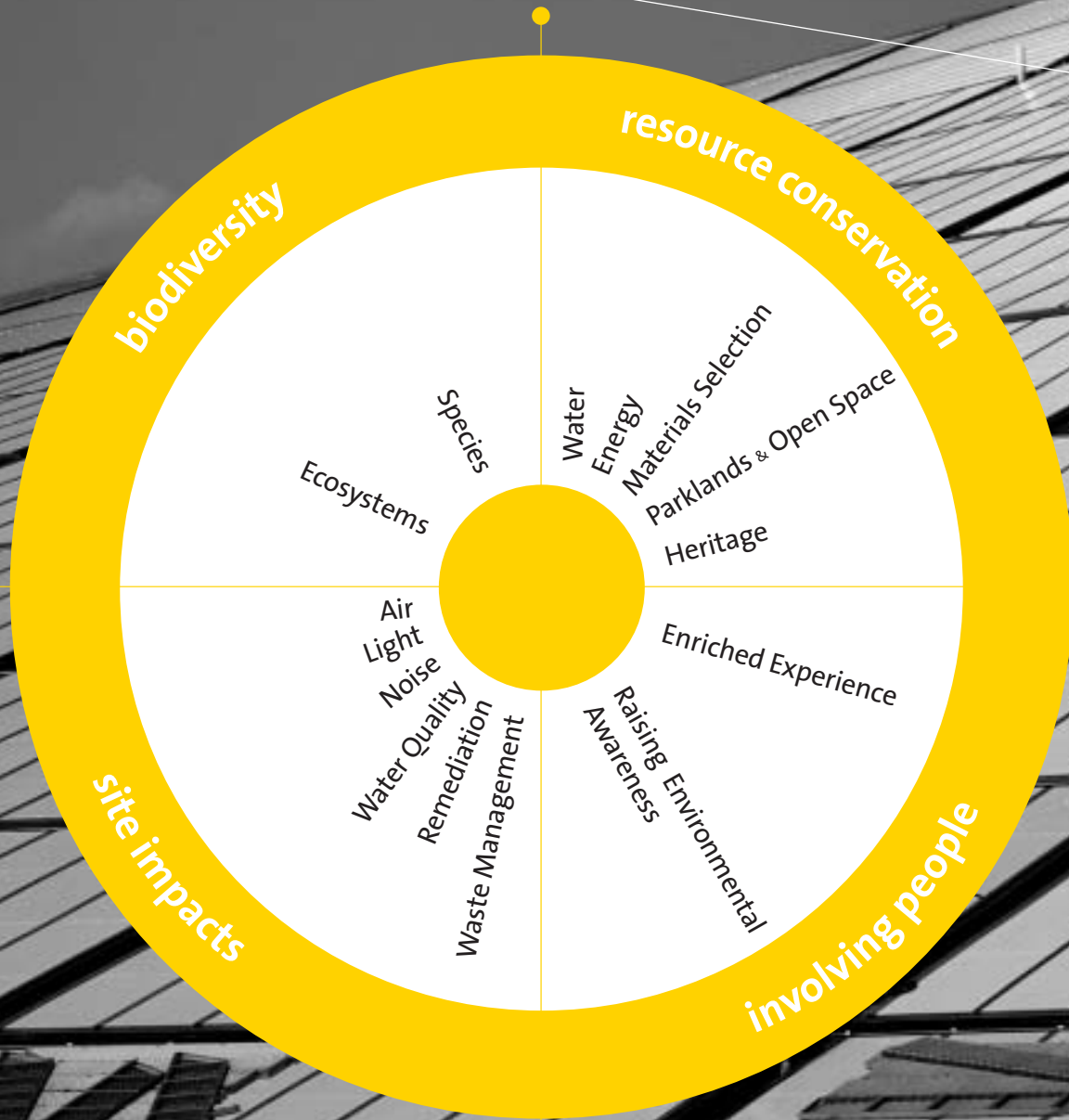
The Sustainability Strategy gives a high priority to identifying and making use of new and innovative technologies and up-to-date research evidence to ensure improved environmental outcomes.

Sydney Olympic Park Authority's commitment to urban design excellence in planning for future developments is guided by its corporate framework for sustainability. All developments at the Park must:

- connect to its innovative Water Reclamation And Management Scheme (WRAMS)
- achieve a minimum 4.5 star energy efficiency rating
- prioritise sustainable materials selection
- implement waste minimisation and management
- minimise site impacts during construction and operation
- demonstrate high environmental awareness and due diligence at all times.

In October 2003 Sydney Olympic Park Authority became the first large-scale precinct in Australia to mandate a minimum **4 Green Stars** (equivalent to Best Practice), under the Green Building Council Australia's environmental design rating tool, for all new commercial developments.

Fig. 2 Sydney Olympic Park Authority's Environmental Performance Areas.



Social Sustainability

Connecting Sydney Olympic Park to its surrounding local communities is critical in ensuring the successful evolution of the Park into a future township. Sydney Olympic Park Authority has a strong commitment to social sustainability and has worked hard to build relationships with surrounding local communities in 2003-04.

In late 2003, Sydney Olympic Park Authority developed a draft Social Plan that identifies the following key principles for social sustainability at Sydney Olympic Park:

- Social infrastructure (facilities, services etc)
- Social diversity (including housing mix)
- Community engagement and participation
- Amenity safety and well-being
- Regional leadership
- Social equity and accessibility.

Inclusion of these principles in **Vision 2025** will help ensure social sustainability remains a key consideration in planning the township at Sydney Olympic Park. (See Case Study 1, Vision 2025: Building a Sustainable Town, page 18).

During 2004 Sydney Olympic Park Authority undertook a recreational needs analysis and cultural needs analysis in the parklands. These are providing valuable information about visitors' and residents' expectations about Sydney Olympic Park.

Sydney Olympic Park Authority worked closely with Auburn and Parramatta Councils to develop Statements of Cooperation that identify shared social priorities and strengthen ties with neighbouring communities. (See also 'Liaison with Councils', page 50).

Economic Sustainability

– Growing the Green Economy

A green economy can be described as ‘a range of activities which are dependent on the regions’ natural and historic built environment or which are involved in protecting or improving the environment’ (East Midlands Development Agency 2002). Sydney Olympic Park Authority’s Corporate Plan includes **the environment** as one of six core economic drivers in the creation of a town centre and **Vision 2025** has identified opportunities for establishing a green economy at Sydney Olympic Park.

The Commonwealth Government’s **Environment Industry Action Agenda 2nd Progress Report**, launched at Sydney Olympic Park in May 2004, predicts growth in the Australian environmental sustainability industry to a value of \$40 billion per year by 2012. Sydney Olympic Park Authority is well positioned to take a lead role in promoting further investment in Sydney’s and Australia’s sustainable business industry and is currently developing strategies to invigorate township development and achieve Commonwealth and NSW Government recognition of its pivotal role in showcasing Australian environmental management expertise to national and international markets.

Sydney Olympic Park Authority’s recognised commitment to urban design excellence and technology and management practices that maximise the use of renewable energy sources, reduce energy consumption and minimise greenhouse gas emissions has assisted it to attract major sustainability showcase events.

For example, Green Building Conference 2003, Buying Green Conference 2004, and the selection of Sydney Olympic Park as a host location for the Houses of the Future exhibition (which will commence in early 2005).

Strategies to build a green economy in the Park include attracting sustainable industries, businesses, research institutions, environmental organisations and Government agencies to work in partnership with Sydney Olympic Park Authority and encouraging such agencies and organisations to locate at Sydney Olympic Park.



Fig. 3 Elements of a green economy.



Case Study 1

Vision 2025: Building a Sustainable Town

During 2003-04, Sydney Olympic Park Authority continued to develop Vision 2025, a comprehensive long-term urban design process that builds on the existing Sydney Olympic Park Master Plan (2002).

Vision 2025 will guide sustainable urban development within the Park for the next 20 years and beyond. It proposes that Sydney Olympic Park retain its current amenity and event capacity while incorporating residential, commercial and mixed use developments that will increase its economic and social viability, activate the precinct and make it a more balanced place to live, work and visit.

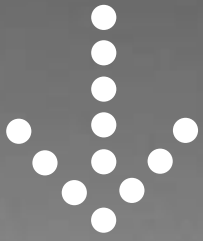
Sydney Olympic Park offers a unique sustainable solution to Sydney's burgeoning population while enhancing the quality of life of people in Western Sydney.

Under Vision 2025, Sydney Olympic Park will:

- become a city within a city
- offer a unique lifestyle
- embody healthy liveable communities
- become a national centre for wellbeing
- incorporate a green hub that brings together sustainable industries, research organisations, centres of excellence, environmental and community groups
- champion best practice sustainable design.

Vision 2025 includes suggested land uses, an overall design of the urban core, recommendations on sustainability and the provision of adequate public transport to service the increased population. It also aligns the precinct's development over the next 20 years with the NSW Government's Metropolitan Strategy.





Vision 2025 will guide sustainable urban development within the Park for the next 20 years and beyond.

3



Environmental Performance

Sydney Olympic Park Authority's corporate framework for sustainability provides practical guidance to its managers and other users in applying an evidence based approach to sustainability in all management activities at Sydney Olympic Park. The following overview of activities progressed during 2003-04 covers the four key environmental performance areas of Sydney Olympic Park Authority's Sustainability Strategy: Biodiversity, Resource Conservation, Site Impacts and Involving People.

Biodiversity

Species and Ecosystems

Sustainable Outcomes

The biological diversity of the remnant and constructed landscapes of Sydney Olympic Park is protected and enhanced through sustainable practices applied to visitation, operational management and development activities. The parklands are recognised and appreciated as a place that contains high species diversity and abundance including species of local, regional, national and international conservation significance.

Protection of biodiversity values at Sydney Olympic Park requires ongoing active management due to the constructed and altered nature of habitats and competing land management objectives. Its significant flora and fauna habitats include:

- **Sydney Turpentine Ironbark Forest** – an endangered ecological community of Cumberland Plain woodland
- Breeding populations of regionally rare **White-striped Mastiff Bats**, **White-fronted Chats** and **Red-rumped Parrots**
- The largest remaining stand of **Coastal Saltmarsh** on the Parramatta River. This endangered ecological community contains *Wilsonia backhousei* – a threatened saltmarsh plant in the Sydney Region
- One of the largest populations of the endangered **Green and Golden Bell Frog** in NSW
- High abundance and diversity of small passerine birds such as the **Superb Fairy Wren** which are disappearing from surrounding urban habitats
- Extensive waterbird breeding, feeding and roosting habitats, including those used by internationally-protected migratory birds such as **Sharp-tailed Sandpipers**.



Conservation and management

During 2003-04, Sydney Olympic Park Authority's biodiversity conservation activities included:

- Training more than 90 landscape, construction and security contractors in habitat management
- Incorporating best practice techniques into landscape management and parklands development to protect the Green and Golden Bell Frog and its habitat. This included maintaining water levels in constructed freshwater ponds to minimum 'frog levels' during the summer breeding season
- Preparing and implementing a management plan for *Wilsonsia backhousei*. The plan was approved under the Threatened Species Conservation Act 1995. (See Case Study 2, Conserving *Wilsonsia backhousei*, on page 23)
- Implementing a cyclic drainage program in frog habitat ponds to control the introduced fish *Gambusia holbrooki*, which eats on Green and Golden Bell Frog tadpoles. Bunds were installed between habitat ponds in Narawang Wetland to minimise the risk of *G. holbrooki* re-infesting in floodwaters
- Installing screening around the Wharf Pond at Newington Nature Reserve to reduce disturbance to waterbirds
- Developing a Mangrove Management Plan which was issued with a permit under the *Fisheries Management Act 1994*. This allows for the conditional removal and pruning of mangroves for saltmarsh and migratory bird conservation, infrastructure protection and retention of public access and vistas
- Supplementary planting of 20,000 grasses and sedges in Green and Golden Bell Frog and Latham's Snipe habitats
- Mosquito control by strategic application of a biological larvicide
- Developing and implementing vegetation management plans for the remnant wetland and woodland of Newington Nature Reserve and adjoining buffer zone
- Implementation of a feral animal control program
- Inclusion of measures to protect flora and fauna in approvals issued under the Plan of Management for the Parklands for operations, capital works, events and site hire
- Repair of the weir at Newington Nature Reserve to enable tidal exchange control
- Trial plantings of saltmarsh at Haslams Creek Flats
- Collection of local provenance seed from endangered plant communities for planting within the parklands.



Case Study 2

Conserving *Wilsonia backhousei*

Wilsonia backhousei is a low-growing, mat forming saltmarsh plant that grows within the estuarine wetlands of Sydney Olympic Park. It is often found in a mixed community with other saltmarsh species and can be recognised by its dark-green succulent leaves and small white tubular flowers, which appear in late spring. *W. backhousei* is listed as a vulnerable species on Schedule 2 of the *Threatened Species Conservation Act* and the Park contains the largest remaining population in the Sydney region.

In order to meet statutory obligations, Sydney Olympic Park Authority has developed a *Wilsonia* Management Plan to promote the long-term viability of the species. The plan approves the conditional conduct of site management and operational activities in areas containing *W. backhousei* and provides guidance for its conservation. It was approved by the Department of Environment and Conservation on 9 December 2003 with the issue of a certificate under s. 95(2) of the *NSW National Parks and Wildlife Act 1974*.

In 2003-04, implementation of the plan included:

- Works and activities that minimised disturbance on saltmarsh communities, in accordance with the plans, protocols and guidelines
- Instructing 55 staff and contractors on the environmental significance, locations and identification of *W. backhousei*
- Monitoring the extent and condition of the species over six months.

Both qualitative and quantitative monitoring were used to survey the extent and condition of *W. backhousei*. Three equally spaced transects were extended across the saltmarsh at each site and quadrats placed at regular intervals. Within each quadrat the percentage of *W. backhousei* cover was recorded as well as its health, the presence of other saltmarsh species or weeds, soil moisture and any management recommendations. The extent and condition of patches outside the quadrats was also assessed.



Fig. 4 T3/Q3 Species present: *Wilsonia backhousei* *Sarcocornia quinqueflora*. An example of monitoring data to record distribution of *W. backhousei* where each quadrat has been photographed and sketched in the field for comparisons over time.

Monitoring indicates that the species is generally in good condition and increasing at all monitoring sites within the Park. Its main threats, which were identified during monitoring, are:

- mangrove seedlings which shade out saltmarsh if unchecked
- trampling by visitors and domestic animals.

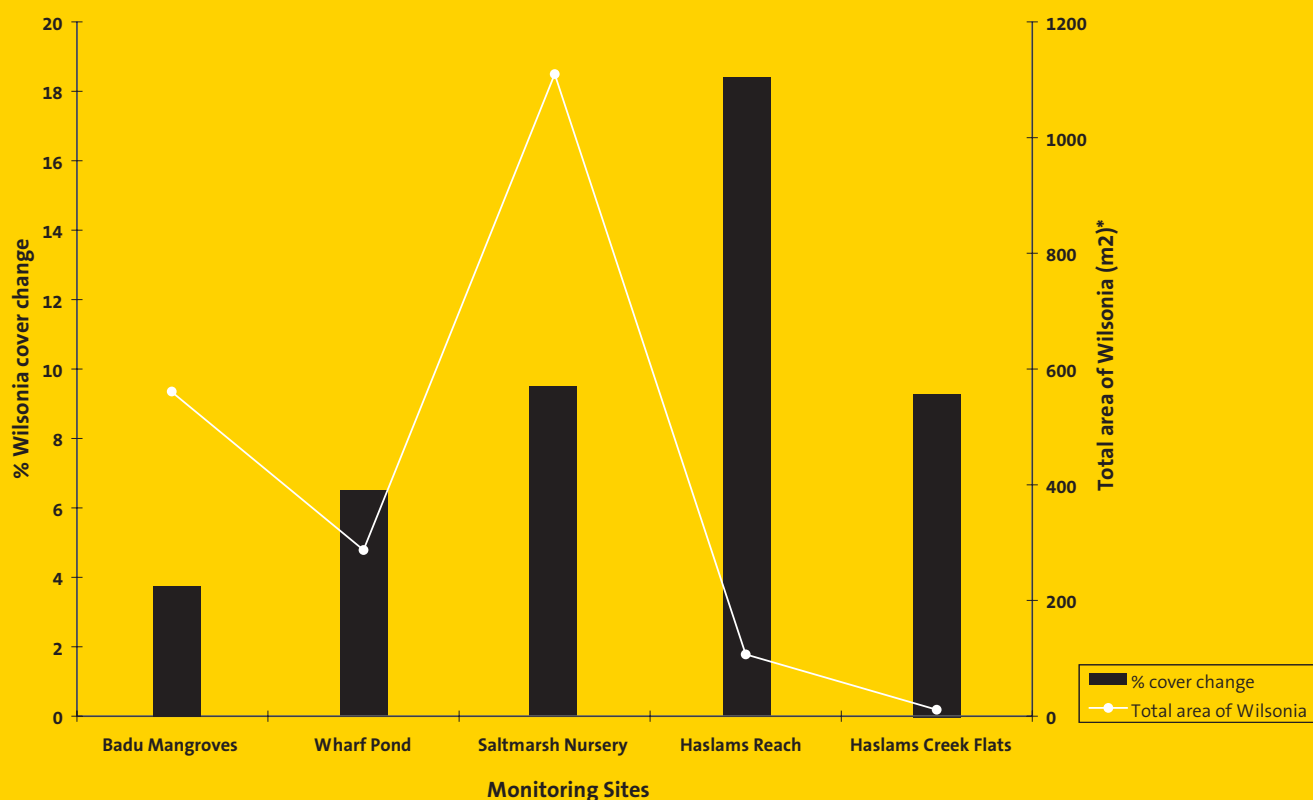
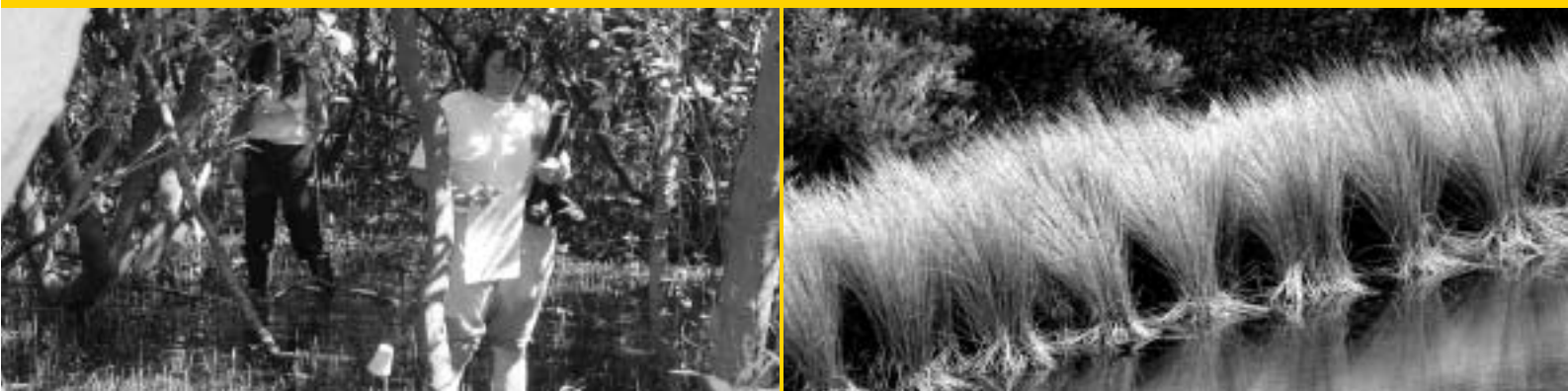


Fig. 5 * Total area of *Wilsonia backhousei* based on Sainty mapping 2002. Changes in cover of *Wilsonia backhousei* within survey quadrats during the monitoring period, January-June 2004, and total area of *W. backhousei* at each monitoring site.

To aid conservation, Sydney Olympic Park Authority has recently obtained a NSW Fisheries permit to remove mangrove seedlings that are threatening saltmarsh communities. It is also supporting a PhD research project that will contribute to better understanding and more effective management of the species. These initiatives and the provision of signage and barriers to deter access are expected to effect protection of the population and habitat.

In June 2004, Coastal Saltmarsh within the Sydney Basin Bioregion was formally listed as an endangered ecological community under the *Threatened Species Conservation Act 1995*. Its definition covers a broad range of species occurring at Sydney Olympic Park including common species such as *Sarcocornia* and *Suaeda*, threatened species such as *W. backhousei*, and sedges such as *Juncus kraussii* and *Isolepis nodosa*. As a result, Sydney Olympic Park Authority will be seeking to extend the scope of

the *Wilsonia* Management Plan to include the sustainable management of the saltmarsh community.



Ecological monitoring and research results

Sydney Olympic Park Authority staff, external ecologists and scientists, community volunteers and research students carry out monitoring and research programs which provide valuable information about the ecological health of Sydney Olympic Park.

Long-term bird monitoring program

The data will be stored in a comprehensive database with bird monitoring data collected since 1993. It will contribute to more effective management of important bird species and groups of species.

Wetland macro-invertebrate fauna survey and cataloguing

Specimen samples were preserved and a photo-library developed for research and education purposes. Abundance varied between waterbodies:

- Freshwater wetlands accommodate a broad, moderately diverse range of macroinvertebrate orders
- Saltwater wetlands had a low abundance and diversity of macroinvertebrates. Poor ecological conditions, where they existed, were found to be due to poor tidal exchange over a long period.

Green and Golden Bell Frog populations

Monitoring of habitats showed that the frog population is being affected by continuing drought conditions. Although still large and viable, it is heavily dependant upon its strong numbers in the Brickpit habitats. Reduced frog numbers have been recorded in the Northern Water Feature and surrounding habitats this season, but the population in Narawang Wetland remained fairly consistent in size and is so far responding positively to new habitat management strategies.

Saltmarsh replanting

During 2003-04, an extensive saltmarsh replanting and rehabilitation program continued for the Haslam Creek flats.

Mangrove Plume Moth larvae infestation

While normally found in low numbers in mangrove ecosystems, the larvae was found to be responsible for a severe outbreak of herbivory in Grey Mangrove forests across the Park. The attack affected more than 70 per cent of leaves and flowers and prevented many trees from fruiting. Moth numbers have since declined and the trees are slowly recovering. Sydney Olympic Park Authority has enlisted the assistance of the University of Sydney, University of Western Sydney, NSW Fisheries and Royal Botanic Gardens to conduct a detailed investigation to gauge the incidence of these episodes in other regional wetlands.

Hydrology, algal growth and hydrogen sulfide gas

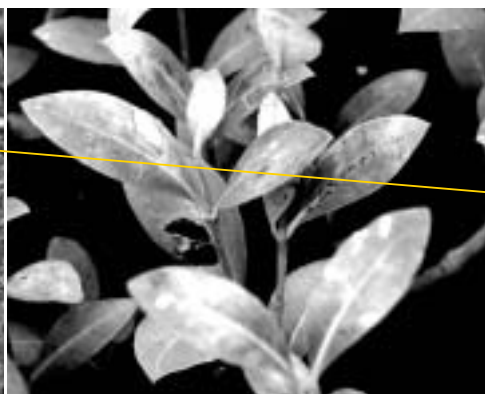
Studies of their production were conducted in three estuarine wetlands that have limited tidal exchange due to historic land reclamation works. Management options to improve ecological health and functioning in these wetlands are being evaluated.

Hydrographic surveys of Haslams Creek and Powells Creek

These will assist understanding of the potential impacts of catchment activities, stormwater runoff and tidal circulation on sedimentation in tidal waterways. The surveys and ongoing research into the transport of cohesive sediment into Homebush Bay are being used to assess possible sedimentation changes now and in the future and to assist in ongoing management of their effects.

Estuarine Sedimentation Model

This computer-based model is designed to identify the potential impacts of sea level rise on the on-site containment system and wetland conservation. Initial model runs have shown potential adverse impact on areas of saltmarsh. This will allow management to prepare contingency plans for the future conservation of key assets in the Park.



Saltmarsh

Graduate research into optimum saltmarsh requirements and new methods of using mangrove algae and estuarine macroinvertebrates to detect catchment pollution impacts and further studies in saltmarsh communities of the bioaccumulation risks in aquatic animals and the role of saltmarsh in our estuarine system.

Constructed soils

Research into the function and health of constructed soils and planting successes will contribute to the effective management of different soils and inform a sitewide planting strategy.

Databank

Ongoing collection and cataloguing of research information into the Databank in spatial (GIS) and aspatial (tables, documents and images) format for further analysis (including modelling) included data for: leachate assessment, bird monitoring and archaeological data (historic plans and related data). Modelling of risk scenarios, such as remediated land and fire risk (see Case Study 3, GIS Modelling of Fire Risk page 27) have also been undertaken. Initial modelling of visitation impacts has commenced with information used for the sitewide bike strategy and venue use.

Australian Research Council grant

In June 2004, Sydney Olympic Park Authority was successful – as part of a consortium with University of Technology, Sydney (UTS), CSIRO Land and Water, Department of Environment and Conservation NSW and Landcare NZ – in winning an Australian Research Council (ARC) grant to conduct research into the impacts of industrially based endocrine disrupting chemicals on aquatic biota.



Case Study 3

GIS Modelling of Fire Risk

Sydney Olympic Park Authority has developed a model that considers how the difficulties of preparing a fire risk assessment can be met through the application of a Fuzzy Geographic Information System (GIS) model.

Bushfires are a natural part of the Australian environment with the potential to devastate rural and urban communities through loss of life, property and infrastructure.

Although better fire risk assessment offers some hope of ameliorating the impacts of bushfires, they remain challenging due to the complexity of physical and social landscapes, the limited amount of available data describing these landscapes and the community's subjective assessment of the inherent value of natural and built environments.

The factors of fire risk were divided into four categories: Physical Factors, Asset Values, Conservation Values and Mitigation. Thresholds were predefined by expert knowledge and past experience of site fires.

When historic fire spots were overlaid on the modelled result, it showed a high correlation between actual and modelled fire risk.

This tool will assist in developing bushfire management strategies for Sydney Olympic Park.



Fig. 6 Fuzzy GIS model is a valuable management tool for fire risk mitigation and management planning.

Resource Conservation

Water

Sustainable Outcomes

All new developments and activities (including venues, events, landscaping and asset management) at Sydney Olympic Park minimise potable water demand from Sydney Mains Supply and use best practice environmental design principles, technology and management practices to conserve water. All future developments within Sydney Olympic Park will connect to the Water Reclamation and Management Scheme (WRAMS). WRAMS is maintained and extended to the greatest extent practicable.

Sydney Olympic Park contains a large scale integrated urban water management system. The Water Reclamation Management Scheme – or WRAMS – has realised significant environmental benefits at Sydney Olympic Park in terms of water conservation, waste minimisation and pollution control. It has also contributed to a dramatic increase in knowledge and understanding of these areas, particularly in regard to social expectations.

Overall, Sydney Olympic Park used 835 megalitres of water during 2003-04. Remarkably, only seven per cent (57 megalitres) of this water was sourced from the Sydney Mains Supply. The remaining 93 per cent was sourced from WRAMS, or stormwater collection ponds.

WRAMS incorporates the collection and treatment of sewage and stormwater and supplies recycled water for non-drinking uses to all residents, commercial premises, sporting venues and for irrigation of parklands and playing fields.

While the recycled water from WRAMS is not suitable for human consumption (drinking), showering or swimming, it has been approved for use in:

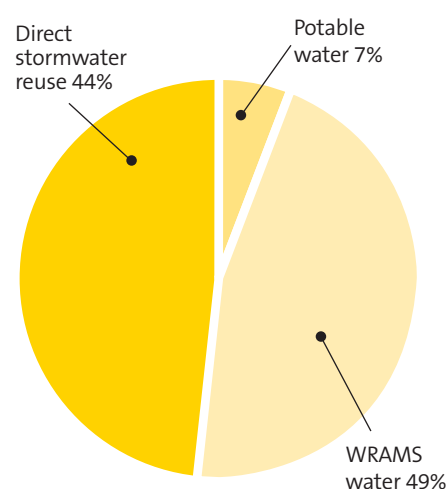
- toilet flushing
- washing clothes
- washing pets
- watering gardens (including vegetables), lawns and parks
- filling ornamental ponds and water features
- fire-fighting
- washing cars, windows, brickwork
- air-cooling towers.

Sydney Olympic Park Authority has continuously monitored the quality of recycled water since WRAMS commenced and it has achieved all mandatory chemical, physical and biological performance standards.

In June 2004, Sydney Olympic Park Authority commenced construction of a new sewer mining pump station in the southern part of the site to

increase the supply of sewage to WRAMS. This will increase the supply of recycled water and further reduce the volume of sewage entering the ocean.

Sydney Olympic Park Authority, with Sydney Water Corporation, is also reviewing the possibility of expanding WRAMS to new developments in Homebush Bay West and Rhodes.



Total water usage 2003-04 at Sydney Olympic Park = 835 ML

Fig. 7 Water use at Sydney Olympic Park.



Case Study 4

Drought Management at Sydney Olympic Park

On 1 October 2003, the NSW Government introduced mandatory water restrictions in the Sydney, Blue Mountains and Illawarra regions. In response, Sydney Olympic Park Authority developed a Water Usage Operational Policy to comply with Government requirements and further strengthen its commitment to responsible water management.

The policy aimed to maximise the benefits gained from Sydney Olympic Park Authority's significant investment in its water recycling and management system, WRAMS, and ensure compliance in all activities while maintaining the function and integrity of the Park's landscape, habitat and other water dependent features.

Sydney Olympic Park Authority implemented the following actions which contributed to a reduced demand on recycled water supplied by WRAMS and potable water supplied by Sydney Mains Supply. As a result, stormwater storage levels in the Brickpit reservoir did not fall below 70 per cent capacity during the dry period and were adequately replenished when rain fell in late summer.

Reduced customer use

Although water restrictions do not apply to recycled water, Sydney Olympic Park Authority worked closely with its water customers over the spring/summer to conserve both recycled water and stormwater stored in the Brickpit reservoir. For example, recycled water customers voluntarily reduced garden/landscape watering.

Irrigation

Water for irrigation is generally sourced from WRAMS or directly from stormwater collection ponds at Sydney Olympic Park and an extensive computer controlled irrigation system has been installed which includes over 300 km of pipework, 59 pump stations and approximately 50,000 sprinkler heads.

To reduce demand, Sydney Olympic Park Authority reviewed its irrigation requirements, reprogrammed irrigation times and durations, and restricted irrigation to plant survival requirements. Bicentennial Park water usage was audited and its irrigation system reviewed and upgraded.

In July 2004, the Concord West area of Bicentennial Park was connected to the recycled water supply.

Water features

During 2003-04 the main water features (Fig Grove, Cauldron, Northern Water Feature, Misting Masts at Holker Street and the Treillage at Bicentennial Park) were connected to recycled water following NSW Health approval of its use in public fountains/water features. The operating times of water features were also adjusted to reduce water loss due to evaporation.



International Centre of Excellence in Water Resources Management

Sydney Olympic Park Authority is joining more than 30 educational, research, Government and industry organisations to establish an International Centre of Excellence in Water Resources Management. As well as its Australian partners, international partners include leading water research and management bodies such as UNESCO.

The Centre's guiding principles are: national focus; inclusive, synergistic relationships; and the pursuit of excellence in water management, environmental innovation and stakeholder cooperation. It will:

- facilitate cooperation within Australia, including between industry, universities, the professions, community, and Government
- act as a bridge between national and international levels of understanding
- provide a knowledge base for evidence-based water resources management and policy development
- bring together people and institutions effectively
- coordinate the exchange of scientific knowledge and management expertise, and

- enhance cooperation between the research and education sectors.

Prime Minister's Science, Engineering and Innovation Council

Sydney Olympic Park Authority's expertise in the environmental and social benefits of urban water recycling and integrated water management was acknowledged when the Prime Minister's Science, Engineering and Innovation Council invited it to join its working group to advise on the reuse of urban waste water.

National Water Roadmap

During 2003-04, Sydney Olympic Park Authority was an active member of the Barton Group's National Water Roadmap project. The Barton Group brings together environment industry leaders responsible for overseeing the Commonwealth Government's Environment Industry Action Agenda (EIAA). The water industry constitutes more than 50 per cent of the environment industry and the development of the National Water Roadmap is a key EIAA initiative.

The National Water Roadmap will identify and address the water security challenges associated with urban growth, higher environmental and public health standards, severe drought and climate effects, efficiency and pricing issues, and ageing infrastructure. Using the best available evidence, it will investigate strategies to best address these technological and supply challenges and will leverage recent major Australian innovative programs.

A strategic blueprint for sustainable water industry development will be developed and distributed. It will compliment current State water strategies and the Council of Australian Governments' (CoAG) National Water Initiative. The National Water Roadmap will also provide opportunities for Australia to become a leading contractor in water sector development in South East Asia and the Pacific.

Water Innovation – A new era for Australia

Sydney Olympic Park Authority was a key sponsor of *Water Innovation – A new era for Australia*. The book features technological innovations in the water industry and case studies including, for example, the Park's water recycling system – WRAMS.



Resource Conservation

Energy

Sustainable Outcomes

All new developments and activities (including events and asset management) within Sydney Olympic Park use the best available environmental design principles, technology and management practices to maximise the use of renewable energy sources, reduce energy consumption and minimise greenhouse gas emissions.

Sydney Olympic Park has a unique potential for individual buildings and precincts to capitalise on its sustainable energy infrastructure. During 2003-04 Sydney Olympic Park Authority progressed a range of activities designed to produce ongoing future energy savings and raise public awareness of renewable energy options as a mechanism for reducing greenhouse gas emissions.

Energy management initiatives implemented at Sydney Olympic Park resulted in Carbon Dioxide (CO₂) emissions being reduced by approximately 1873 tonnes.

These initiatives included:

- Continued procurement of a minimum 25% Green Power (energy derived from accredited renewable sources) – four times higher than that required by NSW Government agencies
- Reviewed and reduced operating times of water features to minimise water and energy consumption
- Replaced older style prototype solar street lights in Bicentennial Park with three new solar lights, consistent with Sydney Olympic Park Authority's Urban Design Elements Manual
- Mandated a minimum 4.5 star energy efficiency rating for the commercial office developments on Sites 5,6,7 by Charter Hall AMP
- Developed interpretive signage to highlight sustainable energy generation and use across the Park
- Installed solar arrays at Bicentennial Park, Blaxland Common, Woo-la-ra and Haslams Reach to power leachate pumps, which allow surplus energy generated at Haslams Reach to be fed into the grid
- Undertook a detailed feasibility assessment of installing co-generation facilities in the Sydney Olympic Park Aquatic Centre to supply heating, cooling and electricity requirements. Results of the proposal are now being evaluated in terms of their technical, environmental and economic feasibility.
- Reviewed the State Government Electricity Contract as it applies to Sydney Olympic Park to identify opportunities for further environmental, energy and/or administrative savings (with the NSW Department of Commerce)



- Changed Sydney Olympic Park Authority's car fleet strategy to progressively reduce the number of six-cylinder vehicles within its fleet and replace them with four-cylinder vehicles
- Purchased a second hybrid technology vehicle (a Toyota Prius) as a fleet car. The Prius is a petrol/electric hybrid vehicle that reduces emissions and fuel consumption by approximately 50 per cent. Sydney Olympic Park Authority's hybrid vehicles will participate as part of a 'sustainable fleet' for the upcoming meeting of the International Climate Change Taskforce in November 2004
- Implemented the Sydney Olympic Park Bicycle Strategy which included improving infrastructure and marketing. As a result Sydney Olympic Park is becoming increasingly well known as a leisure and cycling events venue. (See Case Study 5, Bicycle Strategy, page 34)

Double recognition at 2003 Energy Smart Green Globe Awards

Sydney Olympic Park Authority was one of six winners of the Energy Smart Green Globe Awards for innovations that make real gains in sustainable energy generation and reducing greenhouse emissions. The Award recognises Sydney Olympic Park Authority's ongoing commitment to purchasing a minimum 25% Green Power for the public domain and parklands, which far exceeds the 6% requirement set by the NSW Government.

Sydney Olympic Park Authority's Manager of Energy and Water, Mr Andrzej Listowski, was also acknowledged as a Government Energy Champion for his role in implementing management strategies to reduce greenhouse gas emissions and conserve energy.



Case Study 5

Sydney Olympic Park Authority's Bicycle Strategy

The Sydney Olympic Park Bicycle Strategy was developed after thorough research into available cycling information, national and international reference points and Australian Standards as well as consultation with Government, industry and community and user groups. The strategy reflects Sydney Olympic Park Authority's active commitment to making Sydney Olympic Park a pre-eminent cycling destination in Sydney.

Key achievements in 2003-04 included:

- Development of cycling routes and tours
- Completion of the River Walk, Louise Sauvage Pathway, Ferry Terminal Links, Silverwater Marker Links and Wentworth Common Children's Loop
- Installation of bicycle and road safety signage
- Update of cycle way maps for Sydney Olympic Park, RTA and Auburn Council
- Monitoring of cyclists on shared pathways in the parklands
- Bicycle facilities included in new commercial, residential and Visitor Gateway developments
- Establishment of a bicycle hire facility
- Cycle events secured: **Ride the Park 2004**, presented by Strathfield Rotary; **2005 Bicycle Australia Show** and two allied major cycle races
- Significant expansion of Sydney Olympic Park Cycling Team
- Continued development of strong working relationships with key bicycle industry stakeholders
- Development of marketing campaigns directed to key cyclist profiles.

As a result, Sydney Olympic Park was named one of the 12 best cycling routes in Sydney in the *sydney magazine*, May 2004, and one of the top 25 rides in Bicycle NSW's *Cycling Around Sydney – the complete guide to Sydney's best rides* (June 2004).



“ Sydney Olympic Park is becoming Sydney’s (and Australia’s for that matter) cycling heaven... a wonderful cycling environment among the sporting venues and natural ecology. It’s a large place, so cycling is a natural and practical way to explore...”

Bruce Ashley

Cycling Around Sydney – the complete guide to Sydney’s best rides, June 2004.



Resource Conservation

Sustainable Materials

Sustainable Outcomes

Wherever practicable, the selection of materials for use in new developments and the modification, maintenance, repair and/or refurbishment of existing assets within Sydney Olympic Park should consider whole-of-life impacts on the environment. Development, events and management practices at Sydney Olympic Park should minimise the use of materials that deplete natural resources or create toxic pollution in their manufacture, use or disposal.

Sydney Olympic Park Authority's Sustainability Strategy requires sustainably sourced timber, consideration of life cycle impacts and materials with a low embodied energy, maximising opportunities for use of natural, recycled and recyclable materials, maximising the use of non toxic, non off-gassing materials, minimal use of PVC, non use of ozone depleting substances.

Other considerations include:

- Energy consumption
- Greenhouse gas emissions
- Nature of waste generated by disposal of the product
- Commercial availability of the product
- Supply lead-times
- Transport and distribution requirements
- Operational effectiveness
- Maintenance
- Durability
- Impact on project cost.

Sustainable materials selection is a key consideration in the assessment of new development proposals. Specific clauses on sustainable materials selection are included in all minor and major works contracts, cleaning, waste, landscape and pest management contracts.

Sydney Olympic Park Authority's urban design manual specifies sustainable materials and they are also prioritised in Sydney Olympic Park Authority's asset management plans as part of asset maintenance and/or refurbishment. During 2003-04 Sydney Olympic Park Authority made changes to its procurement strategy to ensure greater uptake of environmentally superior products. It was also involved in developing a prototype for an ecologically sustainable umbrella. (See Case Study 6, Sustainable Umbrellas – A Prototype, page 37)

Sustainable marketing materials

In collateral and signage on-site, Sydney Olympic Park Authority seeks suppliers who share its environmental values. For example, Sydney Olympic Park Authority has begun using 100 per cent post-consumer waste recycled papers that have been manufactured using non-polluting, wind-generated electricity. Environmentally superior alternatives to vinyl are used for large-scale graphic reproduction and merchandise is designed and manufactured from recycled materials, such as paper, hemp, vinyl and fully recycled plastic.



Case Study 6

Sustainable Umbrellas – A Prototype

During 2004 Sydney Olympic Park Authority explored the idea of developing a 'sustainable umbrella' for installation in the parklands and public domain of Sydney Olympic Park. The design brief specified:

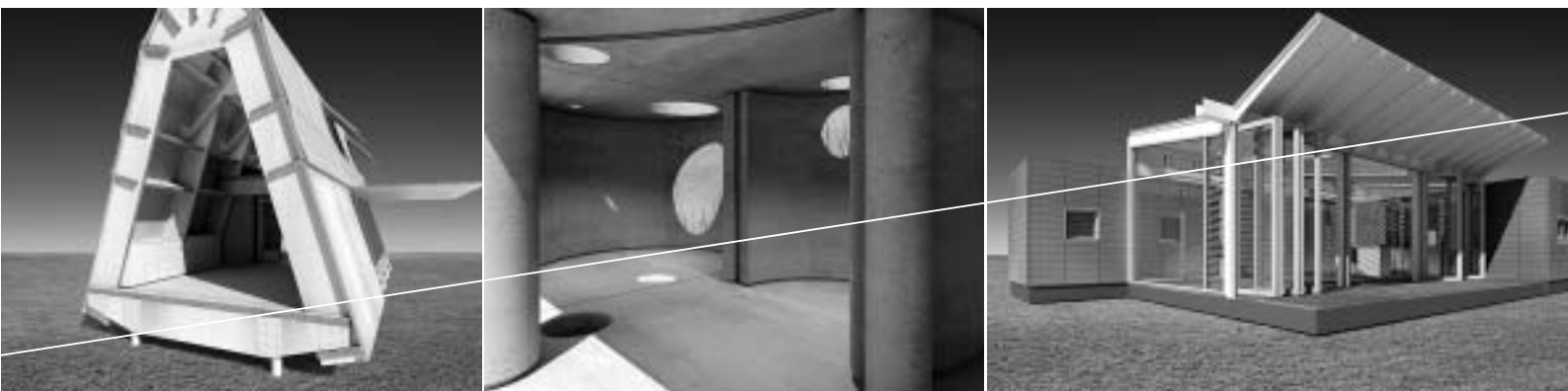
- 100% recycled aluminium structure
- high tensile strength non-PVC material
- fire resistant
- easy maintenance
- durable.

Sydney Olympic Park Authority approached four major umbrella manufacturers but only one was willing to participate.

An umbrella prototype was developed using a treated sailcloth. Unfortunately, in this instance the prototype was not successful. After a one month field trial it was clear the fabric had inadequate tensile strength (stitching tore, fabric stretched and sagged). This created potential wind loading issues and required higher maintenance levels.

As a result, Sydney Olympic Park Authority discontinued the trial but will continue to explore sustainable options for its parkland furniture and assets.

Sydney Olympic Park Authority has a strong interest in prototyping new and innovative ideas. While some trials (like the umbrellas) are not always successful, in many circumstances prototyping a new initiative can assist in the future commercial development of environmentally superior products – thus broadening the supply chain and creating further opportunities for sustainable procurement.



Sustainable industry showcase

Sydney Olympic Park Authority's commitment to the sustainable procurement and promotion of sustainable products is reinforced in Vision 2025 as part of the Green Economy. This highlights the significant potential for Sydney Olympic Park to become a recognised business hub for environmentally sustainable industries and products. Sydney Olympic Park Authority is actively involved in two events that are strongly related to sustainable materials selection: Buying Green Conference 2004 and planning to host the Houses of the Future Exhibition at Sydney Olympic Park during 2005.

Buying Green Conference

As a major sponsor of the Buying Green 2004 Conference, to be held at Telstra Stadium on 10-12 November 2004, the conference includes a range of streams focusing on sustainable procurement, environmental products (case studies) and workshops, and is a showcase for innovative environmental technologies, products, services and research.

Houses of the Future

During 2004 as a major part of celebrations for the Year of the Built Environment, Sydney Olympic Park Authority commenced planning to host the Houses of the Future exhibition at Sydney Olympic Park in 2005. The exhibition will be a major interpretive visitor experience and educational event and will promote the benefits of sustainable building design, environmental innovation and design excellence. It features six houses constructed of:

- Cardboard
- Steel
- Clay
- Concrete
- Glass
- Timber.

Each house presents possibilities in the use of sustainable materials and challenges our perception of house design in relation to ventilation, water use and thermal efficiency. The exhibition also features innovations in landscape architecture and an orientation/learning pavilion that will outline the proposed future township at Sydney Olympic Park.

The Houses showcase an integrated approach to sustainable design in terms of water and energy conservation, sustainable material selection, incorporating renewable energy and waste minimisation. They are compliant with BASIX (the NSW Government's sustainable design requirements for water and energy) and will be connected to WRAMS, Sydney Olympic Park's innovative water recycling system.

Sydney Olympic Park Authority is working with the Department of Education and Training, TAFE and a number of tertiary institutions to develop a diverse array of educational experiences to support the Houses of the Future exhibition.

Resource Conservation

Parklands and Open Space

Sustainable Outcomes

Further use, management and development activities at Sydney Olympic Park complement, protect and enhance the conservation of the parklands and recognise their significance as an open space resource for current and future generations.

The 425 hectares of parklands at Sydney Olympic Park are divided into five major precincts:

- North Newington
- Hill Road Corridor
- Haslams Creek
- Brickpit
- Bicentennial Park.

During 2003-04, significant capital works programs within the parklands were carried out to improve pedestrian and cycling connections between precincts, establish performance and entertainment spaces and restore heritage elements. These works have enabled a significant expansion in the scope and scale of public events that can be held within the various parkland areas.

Newington Armory

In order to facilitate increased visitation through open days, tours and events in Newington Armory, Sydney Olympic Park Authority completed several development projects:

The Amphitheatre

Capable of accommodating a 70 piece orchestra and up to 2000 people for outdoor musical and dance performances, it also enjoys commanding views over the Armory towards the Wanngal Wetland.

A timber pedestrian bridge

This will facilitate access for school groups and other visitors from Louise Sauvage Pathway into the southern part of the Armory.

Adaptive Reuse of Building 22

The former non-explosive store now provides a flexible intimate performance space with back of house facilities, stage and seating.

A new bridge and pathway

Links Burma Road across the drainage canal to the existing pathway to Building 18, the explosive store. This was previously concealed behind the typical grass berms of the Armory. It has been converted to a flexible exhibition space that will host the Art Express Exhibition in February 2005.

Narrawang Wetland

Timber decks have been constructed at two ponds in Narrawang Wetland to augment the school education programs. They enable school groups to undertake water quality testing in the habitat park.

Brickpit

Concept development is underway for an elevated walkway in the Brickpit that will facilitate public access.

Bicentennial Park

To increase connectivity in the parklands, the cycleway has been extended from Bicentennial Park to Wentworth Common (see Case Study 7, Wentworth Common, page 40). This ties in with the regional cycleway network and provides an excellent link into the parklands from Concord West Station.



Case Study 7

Wentworth Common

Wentworth Common provides a new recreational parkland experience for young families, school groups, international tourists and general visitors, thus assisting to reduce the number of visitors to Bicentennial Park. Its design creates a pattern of spaces, defined by a combination of relatively dense planting, existing and extended path layout and designated view corridors. It enables visitors to progressively discover the various aspects and facilities being planned. Smaller enclosed clearings within the forest are intended as intimate enclosures, contrasting with the larger more formalised areas, and there are broad areas for informal recreation such as ball game activities and kite flying.

The establishment of a children's cycleway and an internal circular pathway will provide further new uses and future works will include the provision of picnic shelters, picnic and play areas, and shade structures in advance of maturing tree growth. Once the planting has matured (3-5 years), consideration will be given to establishing an integrated play environment throughout the site.

Previously an 18-hectare brickworks site, Wentworth Common now includes a large turfed open space, the elevated landform of Bay Marker, a decomposed granite horse exercise trail (used during the Royal Easter Show), ecological habitat areas including frog ponds, the Eastern Water Quality Control Pond, triangle pond and the Water Treatment Plant.

The works undertaken at Wentworth Common demonstrate best practice in adaptive re-use of landfill sites and water recycling innovations. The area has significant ecological value as a primary habitat for the Green and Golden Bell Frog and several species of water birds and insect eating birds. Therefore, as well as being used for passive and active recreational uses and events, also performing important habitat and water treatment functions.

With the new connection along the Badu Pathway and planned traffic calming works along Bennelong Road, a more natural movement from Bicentennial Park to Wentworth Common is anticipated. The Brickpit will provide a parkland link from the town centre to Wentworth Common.

Ongoing interpretation will be a core part of site development.

Resource Conservation

Heritage

Sustainable Outcomes

All activities recognise the significance of heritage areas within Sydney Olympic Park and complement, protect and enhance these areas.

Throughout 2003-04 Sydney Olympic Park Authority further developed management protocols that deal with the adaptive reuse of heritage buildings and landscape.

A significant body of work was the Conservation Master Plan for the Millennium Parklands Heritage Precinct which has been endorsed by the NSW Heritage Council.

Sydney Olympic Park Authority also established a Heritage and Conservation Register as required by s.170 of the *Heritage Act 1977*. The items on the register are the Abattoir Heritage Precinct and the Millennium Parklands Heritage Precinct (Newington Armory, Wanngal Woodland and Wetland).

As 2004 is the Year of the Built Environment, Sydney Olympic Park Authority focussed on one of its key themes: Our Built Heritage. Public events and tours were held throughout the year to celebrate the Park's unique heritage precincts and, in addition, Sydney Olympic Park Authority undertook significant capital works programs to restore heritage elements.

Newington Armory

The Newington Armory is a 52-hectare site, rich in naval, heritage and environmental history and includes more than 100 heritage buildings dating from the late 19th Century. Monthly Open Days at the Armory attracted more than 2,650 visitors in the first part of 2004. Projects to augment Armory Open Day programs include the Light Rail and Amphitheatre.

As well as the Open Days, the Armory hosted exhibitions and performances, specially tailored tours, meetings and lectures for special interest groups. It has become a unique cultural tourism venue.

Restoration of the light rail system

This small gauge historic light rail system is a key heritage element of the Armory Precinct and was originally used by the Navy to convey armaments to and from warships and storage facilities within the Armory.

During 2003-04 the light rail was extended to create a loop which fits seamlessly into the existing natural and cultural landscape. It provides:

- access to parts of the Heritage Precinct that would otherwise be inaccessible to the public
- a unique visitor experience which enhances the significant cultural and natural values of the Newington Armory
- a transport system that facilitates the delivery of educational programs within the parklands.



National Trust Energy Australia Heritage Award 2004

Sydney Olympic Park Authority won the Award in the category of Tourism Corporate/Government for its work in restoring the Newington Armory as a tourism precinct.

Respecting, valuing and promoting Indigenous and non-Indigenous cultures

Sydney Olympic Park Authority gives particular attention to the cultural richness of the environment. As well as taking into account the need to highlight the historical reality of the place – including its Indigenous, colonial, pastoral, naval and post-industrial past – there is an equal commitment to build on this heritage by engaging with contemporary community groups.

Initiatives in 2003-04 included:

- Establishment of an Aboriginal History and Connections Program engaged in archaeological site examination, community networking and consultation, oral history and literature research

- Preliminary scanning of relevant historical material to establish the principal elements of post-contact history
- Initiation of a community familiarisation program to introduce local community groups to the parklands
- Development of community events and activities that support participation of local, especially multicultural, community groups
- Development of a heritage tour program, featuring both Indigenous and naval histories, for the enjoyment of the community.

These will ensure Sydney Olympic Park and its parklands remain historically and culturally relevant to the peoples of Western Sydney and beyond.

In March 2004 the Metropolitan Local Aboriginal Land Council joined with the Aboriginal History and Connections Program to host the first in its Connections Network Forum series. The Forums are open to Aboriginal people only and will guide recommendations on Indigenous cultural knowledge management.

Site Impacts

Air, Noise, Light, Water Quality

Sustainable Outcomes

Air

All new developments and activities (including events and asset management) at Sydney Olympic Park have minimal negative impacts on Sydney's air quality. All new developments and activities minimise the use of ozone-depleting or high greenhouse gas-producing products. The use of public transport to Sydney Olympic Park is strongly promoted to reduce the negative impacts on Sydney's air quality and reduce greenhouse gas emissions.

Noise

Adverse impacts of noise from Sydney Olympic Park on surrounding land uses and the parklands are minimised.

Light

Developments, events and operational activities at Sydney Olympic Park minimise the adverse impact of night lighting on the environment surrounding Sydney Olympic Park, especially in residential areas and the parklands, whilst contributing to public safety and amenity.

Water Quality

New developments and activities at Sydney Olympic Park do not adversely impact the water quality of adjacent creeks and the Parramatta River.

Sydney Olympic Park Authority continues to manage Sydney Olympic Park with a strong focus on environmental awareness and due diligence. During 2003-04 site impacts associated with ongoing asset management, major and minor capital works projects, events and other operational activities have not resulted in any adverse environmental impacts.

Air

Sydney Olympic Park Authority does not undertake air quality

monitoring within Sydney Olympic Park. The closest air quality monitoring station is at Lidcombe. It forms part of the Department of Conservation's East Sydney monitoring region which produces daily Regional Pollution Index data (RPI). The air pollutants and meteorological variables measured at Lidcombe include:

- O₃
- NO, NO₂ & NO_x
- Fine particles (by nephelometry)

- Fine particles (PM_{2.5} & PM₁₀ using a tapered element oscillating microbalance)
- Wind speed, wind direction and sigma theta
- Ambient temperature
- Relative humidity.

RPI data is available from the NSW Department of Environment and Conservation website: www2.epa.nsw.gov.au/airqual/aqupd.asp



Odour

Approximately one third of the parklands at Sydney Olympic Park are natural and constructed wetlands. During summer months there are odours in some areas that are associated with the natural breakdown of organic material. Sydney Olympic Park Authority continues to investigate methods of improving tidal flushing to these areas, in order to reduce the incidence of the odours.

Noise

There were no significant complaints relating to noise during 2003-04. Noise limits are specified in environmental management plans for major construction works and major events at Sydney Olympic Park.

Light

Lighting at Sydney Olympic Park is designed to reduce light-spill and contribution to night glow. During 2003-04 there were no complaints relating to light spill at Sydney Olympic Park. In 2004 Sydney Olympic Park Authority installed a number of new solar powered lights within Bicentennial Park and further solar installations are planned for other parkland areas to improve safety and amenity.

Water quality

Sydney Olympic Park has 40 stormwater traps that filter out gross pollutants. The traps are regularly checked and cleaned. During 2003-04, they collected 216 tonnes of litter, vegetation and sediment that would otherwise have entered the on-site water collection ponds or local waterways.

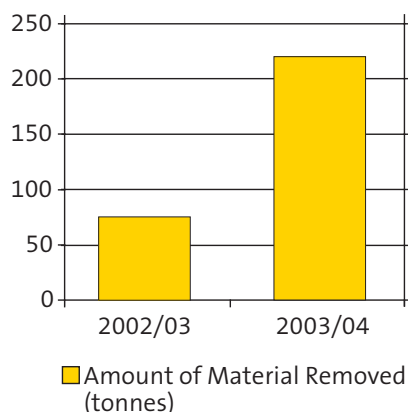


Fig. 9 Material removed by stormwater traps.

In addition, Sydney Olympic Park Authority has installed three floating pollution booms in Powells and Haslams Creeks that flow adjacent to the site. The booms trap floating litter that originates from upstream sources in the local catchments. During 2003-04, a total 21 tonnes of litter was collected in the pollution booms that would otherwise have floated into Homebush Bay and the Parramatta River.

| Litter Type | Weight (kg) | % of Total Weight |
|--|---------------|-------------------|
| Domestic plastics (food packaging, chip packs, straws etc) | 6,468 | 32 |
| Industrial packaging (polystyrene, foam) | 3,445 | 17 |
| Metals (aluminium) | 1,951 | 10 |
| Plastic bottles | 5,232 | 26 |
| Sediments | 271 | 1 |
| Organic | 2,375 | 11 |
| Paper (cigarette butts, magazines) | 708 | 3 |
| Total | 20,450 | 100 |

Table. 1 Quantity of litter collected by pollution booms at Sydney Olympic Park.

Site Impacts

Remediation

Sustainable Outcomes

Remediated sites at Sydney Olympic Park continue to be maintained, monitored and managed so as to protect human health and the surrounding environment.

Sydney Olympic Park has experienced many different industrial land uses:

- Armaments Depot (1882-1996)
- State Abattoirs (1907-1988)
- State Brickworks (1911-1988)
- Town Gas Manufacturing Facility (1946-1974)
- Commercial landfilling operations (1960s – 1970s).

These industrial activities and, in particular, legal and illegal landfilling activities, resulted in approximately nine million cubic metres of domestic, commercial and industrial waste being dumped at the site, causing significant soil and water pollution.

The remediation of past domestic, commercial and industrial waste at Sydney Olympic Park in the lead up to the Sydney 2000 Summer Olympic Games was the largest project of its kind in Australia.

Approximately 20 per cent of the site (160 hectares) required some form of remediation, including the pioneering of on-site scheduled chemical waste treatment.

Now, some four years later, the enduring environmental legacy is the transformation of this once degraded urban industrial site into world class sporting venues with parklands, commercial and residential precincts.

Management of remediated lands

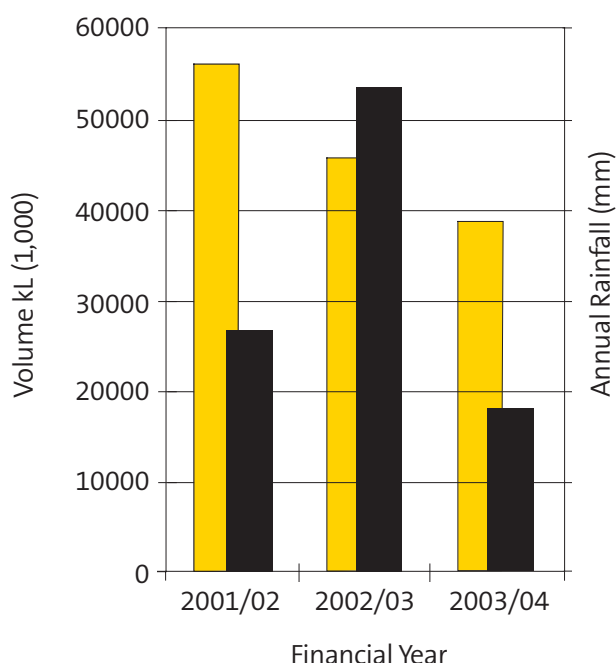
The remediated landfill areas of Sydney Olympic Park continue to be maintained and monitored in accordance with strict management plans developed in consultation with the NSW Environment Protection Authority (now part of the Department of Environment and Conservation).

The landfill areas produce groundwater, known as 'leachate', which is collected in a below ground drainage system. The volume of leachate generated fluctuates between 75 to 210 kilolitres per day and is highly

dependant upon the rainfall. On average the volume of leachate generated has reduced over the last few years. While much of this reduction is attributable to decreased rainfall, Sydney Olympic Park Authority has been researching ways to reduce leachate volume and improve systems for its capture, transfer and treatment.

New pipeline

For the leachate system's first three years of operation, 17 per cent was transported by road tanker to the Lidcombe Liquid Waste Treatment Plant. This ceased in September 2003 when a new pipeline began transporting leachate from Haslams Creek North and Archery Park directly to the treatment plant. This has reduced the potential for environmental incidents and created significant operational efficiencies.



Key

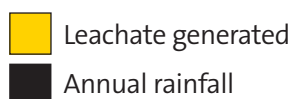
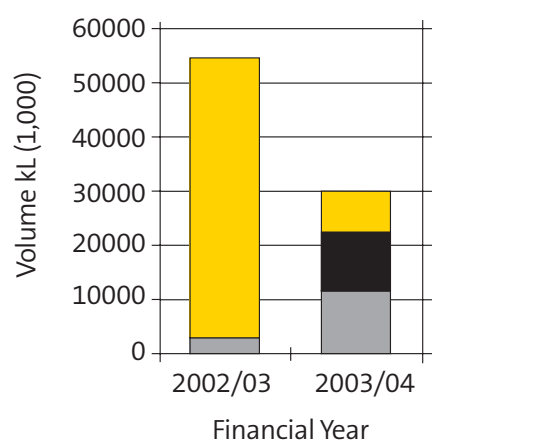


Fig. 10 Annual volume of leachate generated.



Key

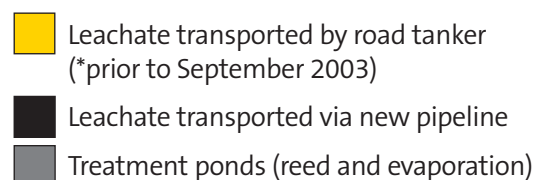


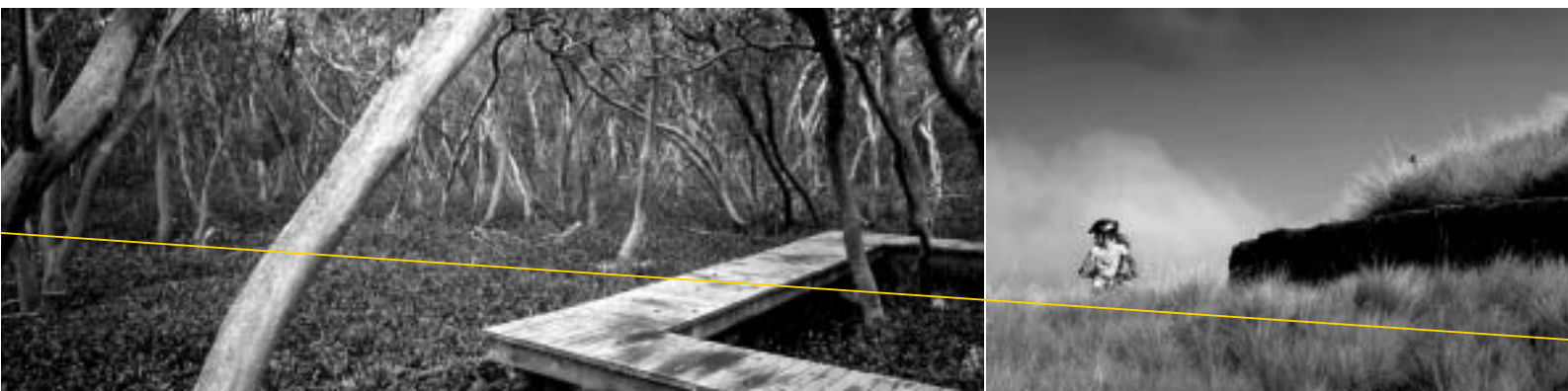
Fig. 11 Leachate transport and treatment for Haslams Creek North and Archery Park.

Leak detection and repair work

Performance monitoring of the leachate system identified broken underground irrigation and stormwater pipes in some landfill areas which had resulted in the production of excessive leachate. A systematic program of leak detection and repair was undertaken during 2003 which has resulted in a significant reduction in leachate production when it rains.

Solar powered leachate pumps

A majority of leachate pumps are solar powered and, until recently, any excess power generated was not utilised. The system is currently being modified to enable excess solar power generated to be returned to the grid.



Wilson Park Bioremediation Project

Wilson Park is the site of a former gas manufacturing plant which closed in 1974, leaving approximately 12,000 tonnes of tarry waste buried on the site. In 1983 the site was developed as playing fields but closed in

1992 after waste materials were discovered seeping onto the surface of the playing fields and into the Parramatta River.

Remediation activities over the years have allowed approximately three-quarters of the land to be re-opened for public use. The north-eastern corner of Wilson Park contains residual

contamination and remains fenced off to the general public. For three years a unique bioremediation technique has been applied which uses microorganisms (found naturally on-site) to break down hydrocarbon contamination in the soil and groundwater.

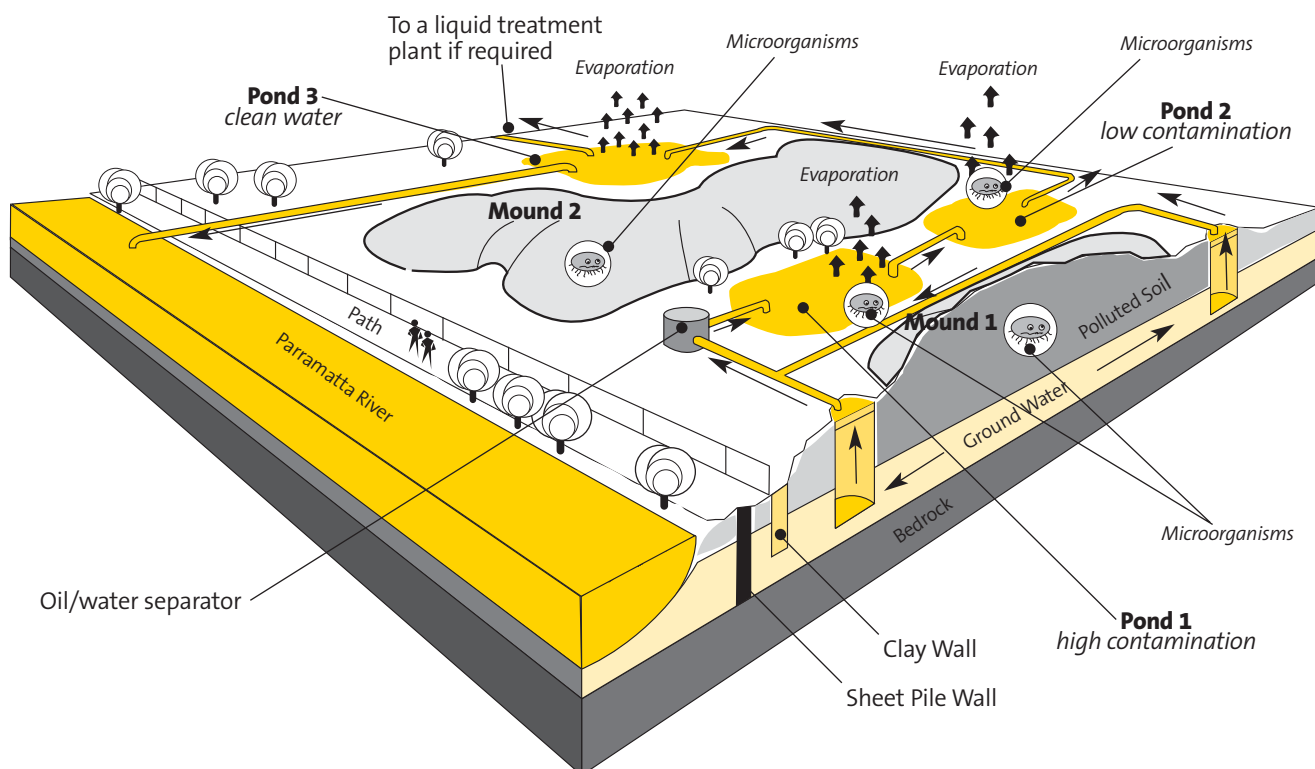
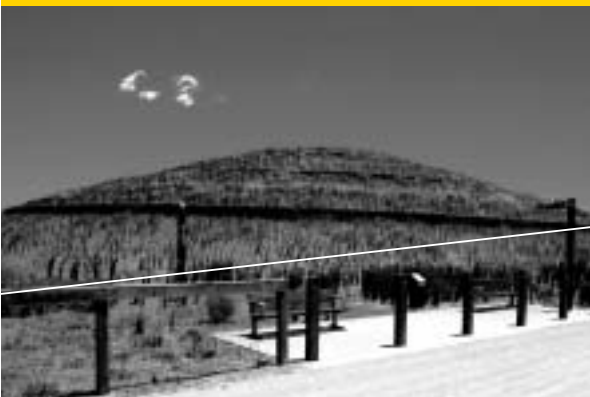


Fig. 12 Bioremediation at Wilson Park.



Case Study 6

Sustainable Leachate Management Strategy

Leachate generated from remediated lands at Sydney Olympic Park is currently treated via a commercial liquid waste treatment plant.

During 2003-04 Sydney Olympic Park Authority began investigating the cost effectiveness of various alternative sustainable leachate treatment and re-use options. Possibilities include:

- pre-treatment through a constructed wetland and using the treated leachate for irrigation
- collection and re-injection into landfills
- greater use of evaporation ponds
- on site ammonia stripping
- discharge into WRAMS, Sydney Olympic Park's Water Reclamation and Management Scheme.

Further research is continuing to fully evaluate these options before they can be presented for public discussion. As well as being cost effective, any alternative options must be:

- acceptable to the community
- have a relatively low environmental impact
- meet the principles of ecologically sustainable development
- comply with relevant environmental and health regulations, and
- highlight environmental innovation.

Site Impacts

Waste Management

Sustainable Outcomes

Minimal waste is generated from all new developments and activities at Sydney Olympic Park. Opportunities for waste reduction and recycling are maximised.

Sydney Olympic Park Authority has a strong waste management strategy and, during 2003-04, continued to implement its Waste Reduction and Purchasing Plan (WRAPP). The WRAPP aims to minimise the generation of waste and maximise the use of materials with recycled content and/or that can be recycled after use.

The WRAPP establishes operational strategies that will:

- Minimise the generation of waste
- Require separation of wastes generated by all activities for re-use and recycling
- Recommend the purchase of products with recycled and/or low waste content, wherever these products are cost and performance competitive.

The WRAPP identifies the types and volumes of wastes currently produced by Sydney Olympic Park Authority and the tools that will be adopted to reduce waste.

The WRAPP recognises that the greatest opportunities to minimise waste and maximise recycling opportunities are in construction and demolition activities, landscaping, event management and administrative services.

During 2003-04, additional improvements were made to Sydney Olympic Park Authority's administrative procurement processes to further reduce waste generation. These included:

- New laser printers with double sided printing capability for each office area
- Recycling of all used toner cartridges and the proceeds donated to charity
- All obsolete computer equipment either auctioned or donated to charity groups for re-use
- Flat screen computers purchased
- Approximately 2,500 cubic metres of mulch containing recycled sugar cane refuse purchased for landscaping purposes.

Involving People

An Enriched Experience

Sustainable Outcomes

Sydney Olympic Park offers a high quality and enriched experience to those who live, work or visit the site. Sydney Olympic Park is recognised as a highly desirable recreational, environmental, educational and cultural destination.

Connecting Sydney Olympic Park to its surrounding local communities is critical in ensuring the successful evolution of the Park into a future township. During 2003-04 Sydney Olympic Park Authority continued to build strategic partnerships with surrounding councils, Government agencies, Indigenous communities and surrounding local communities.

Liaison with Councils

Statement of Cooperation – Sydney Olympic Park Authority and Parramatta Council

In September 2003 Sydney Olympic Park Authority and Parramatta City Council signed a Statement of Cooperation that will lead to greater economic development and improved services to the region. The agreement identifies a range of regional planning, economic development, marketing, tourism, recreation, planning, education and environmental initiatives that will be the subject of cooperative development.

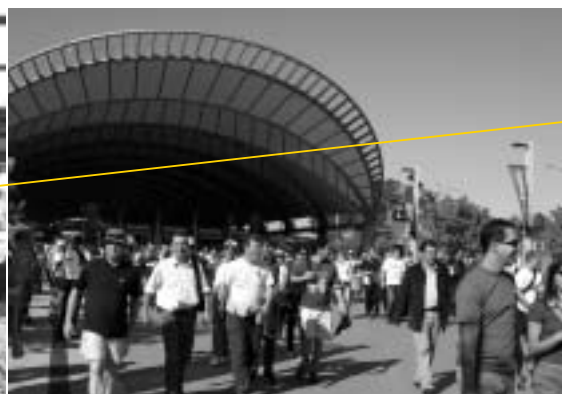
A key initiative will be the joint promotion of the establishment and marketing of the Westmead-Burwood Economic Zone as a major sub regional economic, environmental and social development area. In addition, the organisations will work together to:

- Improve all commuter and recreational transport services including the ferry, Transitway and cycle tracks
- Jointly market Parramatta and Sydney Olympic Park to potential investors at a domestic and international level
- Explore opportunities to develop a joint public event that will link the City of Parramatta and Sydney Olympic Park, as well as identify other entertainment, arts and tourism initiatives
- Share knowledge and expertise on environmental technology towards improving regional environmental outcomes, especially Parramatta River/Duck Creek catchment improvements.

Statement of Cooperation – Sydney Olympic Park Authority and Auburn Council

The Statement of Cooperation between Sydney Olympic Park Authority and Auburn Council will enable greater collaboration and planning for the future development needs of the Park. It demonstrates a commitment to achieving shared economic, social and environmental objectives for the benefit of the wider community. Initiatives currently being considered are:

- Joint marketing of Auburn local government area and Sydney Olympic Park to harvest potential investment opportunities including the Carter Street precinct as a significant business park and commercial interface
- Improving sporting amenities in Wilson Park
- Developing a community based childcare centre and a public library



- Improving local wildlife corridors including those around Haslams Creek, and other environmental initiatives
- Transforming the Bennelong and Hill Roads into user friendly thoroughfares for pedestrians and cyclists as well as vehicles
- Building on the success of the joint Australia Day celebrations with sponsorship of art, entertainment and cultural events including the Auburn Festival.

Powells Creek Harbour to Hinterland Landscape Design Framework

Sydney Olympic Park Authority continued to coordinate the Steering Committee for the Powells Creek Harbour to Hinterland Landscape Design Framework in 2003-04. Other stakeholders involved in this process included Strathfield Council, City of Canada Bay Council, Auburn Council, Department of Infrastructure, Planning and Natural Resources, the Roads and Traffic Authority, Sydney Water and local landowners.

The design framework will create new, and revive existing, recreational space in an area with expanding residential and commercial development, and result in a recreational corridor that links pedestrian and cycle pathways. Projects include open space enhancement such as walking or bike trails, landscaping, tree planting and bush regeneration.

Involving People

Raising Environmental Awareness

Sustainable Outcomes

The programs and activities at Sydney Olympic Park will foster a greater community understanding of ecologically sustainable development which stirs the imagination and challenges all people to work towards sustainability.

This year Sydney Olympic Park Authority strengthened existing partnerships with environmental organisations and Government working groups aimed at raising environmental awareness both within Sydney Olympic Park and the broader community. A key focus was the continued development of Sydney Olympic Park Authority's extensive schools program and also a range of public tours, talks and other interpretive experiences. Sydney Olympic Park Authority also hosted a range of Green Dates to highlight ecologically significant events. See page 55.

Innovative schools program

Given the central importance of protecting and enhancing the parklands' environment, Sydney Olympic Park Authority has developed an innovative schools excursion program in cooperation with other stakeholders including the Department of Education and Training, the metropolitan Catholic Education Office, Sun Micro Systems and the University of Wollongong.

The program involves on-line educational content which is able to be interrogated by students using Sun Micro Systems software. It is a world first, syllabus-related program that will engage students' interest in interactive education and heighten their awareness of environmental issues.

Approximately 14,000 students (from Kindergarten to Year 12) participated in the educational parkland tours and programs in 2003-04.

Walks, talks and tours

Sydney Olympic Park's rich and varied ecological environment provided opportunities for a range of public talks and interpretive tours. The Parklands Express Tour, which includes a ride on Bicentennial Park's road train, is one of the most popular public tours.





Case Study 7

Earthwatch Employee Fellowship – Climate Change in the Rainforest

Earthwatch programs promote the sustainable conservation of natural resources and cultural heritage by creating partnerships among scientists, the general public, educators and business.

In late 2003 Sydney Olympic Park Authority commenced its Earthwatch Employee Fellowship. This enabled Jennifer O'Meara (Ecology Officer, Place Management Division) to participate in an Earthwatch research program, 'Climate Change in the Rainforest' in the wet tropics of Northern Queensland during April 2004. The research team, lead by Dr Steven Williams, included seven Earthwatch volunteers from China, Indonesia, UK, America and Australia.

The project focussed on the complex impacts associated with climate change and, in particular, predictions about the effects of global warming on individual species, biodiversity and ecosystem processes. The study sites were all located in deep rainforest and the project aimed to discover changes in animal distribution over altitude (100, 400, 600, 800, 1000 and 1200m above sea level). The team undertook dawn bird surveys, day reptile surveys and night spotlight surveys for each transect of each study site totalling 66 transects and approximately 198 surveys.

“ I chose to participate in this particular project as it offered a wide range of experiences in conservation biology, a subject very relevant to my role at Sydney Olympic Park. I was able to contribute my skills and, in return, the project gave me further experience and understanding of biodiversity, data collection, survey and monitoring techniques and modelling of animal distribution, animal handling and habitat management. I was also able to learn not only from my leaders but also from my fellow volunteers... The experience of being part of an Earthwatch program reiterated the benefits of volunteering and being part of an experienced team working towards a common goal.”

Jennifer O'Meara





Green dates

14 October 2003 **Inaugural Sydney Olympic Park Bird Week Lecture**, 'Olympians of the Wetlands' by Mark Barter, international migratory shorebirds expert

Threatened Species Day 2003. Sydney Olympic Park Authority hosted a public seminar with 70 people attending to listen to guest speakers from the Ku-ring-gai Bat Conservation Society

14-26 October 2003 **Bird Week at Sydney Olympic Park.** Featured bird-related tours and programs focusing on biodiversity and habitat issues as they relate to Sydney Olympic Park

26 January 2004 **Australia Day 'Many Cultures One Community'.** A successful partnership with Auburn Council for this award-winning community event

15 February 2004 **'Secrets Revealed' - Opening of Newington Armory Heritage Precinct.** Included a diverse mix of activities such as nature and heritage programs, multicultural performances, an ArtExpress retrospective exhibition and a unique Aboriginal program based on the past and present experiences of Indigenous people within the Homebush Bay area

7 March 2004 **Clean Up Australia Day**

21 March 2004 **Harmony Day at Newington Armory**

27 April 2004 **Energy Australia National Trust Heritage Awards.** First Prize in the Tourism Category awarded to 'Secrets Revealed' program celebrating the rich natural and cultural heritage richness of Newington Armory

2 May 2004 **National Trust Heritage Festival – Secrets Revealed.** Celebrating our built heritage, a key event during the National Trust Heritage Festival 2004

6 June 2004 **World Environment Day and Western Sydney Environment Month**

Wetland Educational and Training workshops

In 2003-04, Sydney Olympic Park Authority ran three highly successful Wetland Educational and Training (WET) workshops, which combined experiential learning with formal skills development in wetland ecology management. Participants included representatives from universities, all tiers of Government, non-Government organisations and industry.



Conferences

Green Buildings

14 – 16 October 2003

Sydney Olympic Park Authority participated as a principal exclusive sponsor for the inaugural Green Buildings Conference held at Telstra Stadium in October 2003. The conference was organised by the Green Building Council Australia and the Property Council. Sydney Olympic Park Authority hosted a VIP function to welcome several international guest speakers and staff presented papers on sustainable procurement and social sustainability.

Enviro 04

28 April – 1 March 2004

This biennial event is recognised as the biggest environment industry gathering in Australia and the Asia Pacific.

As a gold sponsor at Enviro 04, Sydney Olympic Park Authority hosted the event's VIP dinner and staff presented papers on remediation, integrated water management and sustainability management, and hosted a site tour of the Park.

Enviro 04 had dedicated conference streams on water, waste management, remediation, odour control, sustainable industry, sustainable energy and sustainable businesses. It also included a commercial forum and an extensive trade show featuring emerging and existing

technologies, products, services and research. Attended by 1382 delegates and 2168 trade visitors.

EIAA Launch

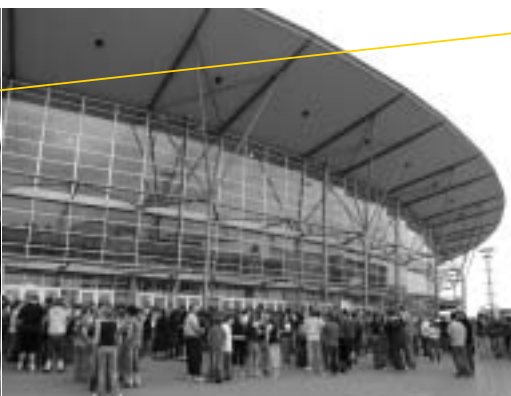
16 June 2004

On 16 June 2004 Sydney Olympic Park Authority hosted the launch of the second progress report of the Commonwealth Government's Environment Industry Action Agenda (EIAA). The report highlights the importance of cooperation and coordination between all levels of Government in promoting the role of sustainable technologies in resolving environmental challenges.

Buying Green 2004

10 – 12 November 2004

Sydney Olympic Park Authority is a major sponsor for the Buy Green 2004 Conference and Exhibition, which will be held at Telstra Stadium on 10-12 November 2004. It will include a range of streams on sustainable purchasing strategies, environmental products (case studies), and workshops. Buy Green 2004 also includes an extensive trade show and showcase of technologies, products, services and research. Sydney Olympic Park Authority personnel will present a paper on sustainable procurement and its application at Sydney Olympic Park.



Partnerships

Green Building Council, Australia

Sydney Olympic Park Authority continues to participate in the Advocacy Committee of the Green Building Council, Australia. It has strongly supported the Green Building Council's national Green Star environmental design rating tool, which recognises the importance of incorporating green building practices at the design phase. In October 2003 Sydney Olympic Park Authority adopted a minimum 4 Green Stars as a requirement for all new commercial buildings and since then over 20 Sydney Olympic Park Authority personnel have been trained in the use of the environmental design rating tool for commercial offices.

Earthwatch Institute

Sydney Olympic Park Authority is a corporate partner of the Earthwatch Institute, which is an international non-profit organisation. The Earthwatch Institute works in partnership with scientists, individuals, corporations, foundations, Government agencies, educational and research institutions to support scientific research, conservation and public education.

During 2003-04 Sydney Olympic Park Authority continued to work closely with the Earthwatch Institute to identify potential

future ecological research opportunities at Sydney Olympic Park that will provide a unique live-in research experience. The research is likely to include studying migratory birds, benthic invertebrates, and other flora and fauna.

Property Council

Sydney Olympic Park Authority is a member of the Property Council and is represented on its Sustainability Policy Committee. In this capacity, Sydney Olympic Park Authority works closely with other Committee members to identify opportunities for increasing the focus on sustainable management practices within the property sector and promoting the application of an integrated approach to sustainable building design.

4



Environmental Compliance Report

This report is a summary of the environmental regulatory licences held by Sydney Olympic Park Authority and any compliance issues that have arisen in 2003-04.

Licenses, Certificates, Permits

Threatened species

Sydney Olympic Park Authority holds two certificates issued under the *Threatened Species Conservation Act 1995*. These are for conservation management of the Green and Golden Bell Frog (*Litoria aurea*) and conservation management of the saltmarsh plant *Wilsonia backhousei*.

It also holds two licences issued under the *National Parks and Wildlife Act 1974*. These allow for the care of a small number of captive Green and Golden Bell Frogs, and for environmental education activities within Narawang Wetland, which is a Green and Golden Bell Frog primary habitat.

All licences and certificates were complied with during 2003-2004.

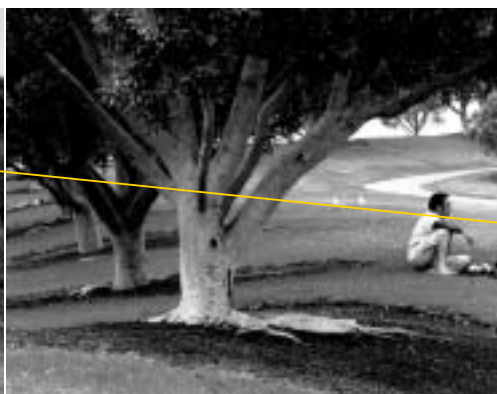
Environment Protection Licences

Sydney Olympic Park Authority holds two Environment Protection Licences issued under Protection of the *Environment Operations Act 1997*. The licences are for the operation of the Water Reclamation and Management Scheme (WRAMS) and the Wilson Park bioremediation ponds.

There were no instances of non-compliance with Sydney Olympic Park Authority's Environment Protection Licences during 2003-04.

A number of legal notices were issued to Sydney Olympic Park Authority by the former Environment Protection Authority (now the Department for Environment and Conservation) related to the ongoing management and monitoring of the remediated landfill systems at Sydney Olympic Park. All required maintenance and monitoring conditions were complied with.

Sydney Olympic Park Authority also developed a standard operating procedure for minor excavation works within remediated landfill areas. The standard operating procedure, which was endorsed by the Department, continued to ensure the integrity of the remediated landfill system and reduced the administrative approval requirements.



NSW Fisheries permits

In the period July 2003-June 2004 Sydney Olympic Park Authority held four NSW Fisheries permits. These related to capital works projects, conditional mangrove removal for saltmarsh and shorebird protection, mangrove pruning for view and access requirements, and the manual harvesting of macroalgae to reduce potential odour problems in Nuwi Wetlands. All NSW Fisheries permit conditions have been complied with.

In May 2004 an additional site-wide NSW Fisheries permit was issued to allow for the management of mangroves for conservation and asset protection over a five year period. This permit provides Sydney Olympic Park Authority with a holistic framework for sustainable management of mangroves and negates the need for individual permits for operational issues.

New activities will continue to require separate assessment by NSW Fisheries.

Plan of Management – Parklands

The Plan of Management for the Parklands at Sydney Olympic Park is the predominant statutory instrument controlling the use and management of the parklands and it was in effect in 2003-04.

Conditional approvals were issued for 126 activities classified as 'restricted activities' under the Management Plan, each with numerous conditions. These included capital works projects, regular parkland operational activities, site hires, events and research. While there were some approval conditions not fully complied with (eg, parking in the wrong areas), breaches did not result in significant environmental harm or safety problems. All reported issues were addressed, and measures to improve compliance were progressively implemented throughout the year.

Environmental Incidences

Graffiti

The incidence of graffiti within the Park continues to be an issue, with 152 separate graffiti incidents recorded during 2003-04. While the majority of incidents are minor (eg, small felt pen tags) Sydney Olympic Park Authority maintains a policy of removing graffiti as soon possible after an incident has been reported.

Tar seepage

In January 2004 a minor amount of tar was observed to be seeping from the western side of the Woola-ra remediated landfill. The tar was dumped in the area in the late 1970s and originated from a former gas works site that was located in the area now known as Wilson Park. Safety barricades were immediately erected around the seep to direct the public away from the area and the Department of Environment and Conservation was advised of the situation.

The impact is localised and there is no evidence that environmental harm has occurred. The area remains fenced off pending the results of further geotechnical investigations and advice on permanent rectification works.

Venues

The venues at Sydney Olympic Park continued to manage their operations with a focus on best practice sustainability and environmental management. This was particularly evident in the positive response from venues and facilities during the extended period of drought, where significant efforts were made by venues and facilities to reduce their potable and recycled water consumption.

Environmental compliance

There were no environmental compliance incidences associated with any of the venues during 2003-04.

Sustainable business events

During 2003-04 the number of sustainability/environment business events hosted at Sydney Olympic Park venues and facilities has grown significantly. This growth is attributed to the ongoing commitment by Sydney Olympic Park Authority and the venues and facilities at Sydney Olympic Park to superior sustainability standards.

A range of State and Federal Government agencies have hosted seminars and training sessions on environmental management at Sydney Olympic Park. Sydney Olympic Park Authority personnel have provided comprehensive briefings on Sydney Olympic Park Authority's approach to sustainable management practices. Sydney Olympic Park Authority has also facilitated technical tours for visiting national and international delegations.

Sustainable business sector representatives hosting events at Sydney Olympic Park during 2003-04 included:

- NSW Property Council/Green Building Council Australia (Green Building Conference)
- Australian Water Association (Water Efficiency 2004 Conference)
- Barton Group (National Water Roadmap and EIAA launch)
- International Water Association (Conference Gala Dinner)
- Australian Greenhouse Office (workshop)
- Federal Department of Defence (meetings, conference seminars, tours)

- NSW Department of Environment and Conservation (Buying Green 2004 Conference)
- SEDA (workshop)
- NSW Department of Infrastructure, Planning and Natural Resources (seminar).



The venues at Sydney Olympic Park continued to manage their operations with a focus on best practice sustainability and environmental management.

Accessing Sydney Olympic Park Authority

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www.sydneolympicpark.com.au

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