

**ENVIRONMENTAL
GUIDELINES**
FOR THE SUMMER OLYMPIC GAMES
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SYDNEY 2000

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It is natural that the International Olympic Committee, as leader of a world-wide humanistic Movement, should be concerned with the Integration of the activities of the Olympic movement with the well-being of the world in which we live. Indeed, the Olympic Movement is predicated on holistic principles of balance between body and mind, between, action and contemplation, between sport and culture. It would be inconceivable for the IOC to divorce, itself from recognition of the desirable balance between the needs of the present and those of the future. Expressed in more concrete terms, the IOC must seek a balance between the needs of our generation and those of the next and succeeding generations. It is, after all, the youth of the world who will inherit the earth which we leave them.

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The IOC and the Environment.
Olympic Message
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EXECUTIVE SUMMARY

The promotion of sport and culture are the foundations of the Olympic movement and the protection of the environment should strengthen these ideals. The organisers of the Winter Games at Lillehammer have already acknowledged the relevance of environmental issues to the Olympic movement, and this commitment should continue. The Sydney Olympics 2000 Bid Ltd. has developed environmental guidelines based on the principles adopted at the United Nations Earth Summit, and expressed in National Ecologically Sustainable Development policies

This document introduces the environmental issues which the Sydney 2000 Olympic Bid considers relevant to the summer Olympic games and outlines guidelines that ideally should apply to them.

The first part of the document outlines global environmental issues and suggests specific environmental guidelines which should be considered by summer Olympic host cities. The second part outlines the Australian and New South Wales Governments' policy record on environmental protection and lists Sydney's compliance with these environmental guidelines.

The Australian and New South Wales governments are committed to ecologically sustainable development (ESD), a concept which aims to protect the environment with a range of initiatives to halt global warming, ozone depletion and toxic chemical pollution, and to protect biodiversity. Ecologically sustainable development principles provide an appropriate basis for planning to host an Olympic games.

Olympic host cities should commit themselves to:

- **energy conservation and the use of renewable energy sources**
- **water conservation**
- **waste avoidance and minimisation**
- **protecting human health with appropriate standards of air, water, and soil quality**
- **protecting significant natural and cultural environments.**

This document is a contribution, by the Sydney 2000 Olympic Bid to the Olympic movement. It is offered in a spirit of goodwill to further the fundamental principles of the Olympic Charter.

ENVIRONMENTAL GUIDELINES

GLOBAL ENVIRONMENTAL ISSUES

Earth is a special place; every element is linked together in diverse and complex ecosystems that sustain life as we know it. Together these inter-related systems of oceans, reefs, dunes, rivers, wetlands, forests, bushlands and plains support a marvellous and diverse range of plant and animal life, including the human species. After two hundred years of rapid industrial growth, this life support system is under severe stress. Many scientists question earth's capacity to sustain an acceptable environment for human beings unless we change the way we live.

Threats to biodiversity

One of the most serious threats to the planet's biological diversity is the loss of species. Destruction of habitats such as coral reefs, forests and wetlands, and damage to marine systems like those of the Arctic and Antarctic have already resulted in the loss of up to a million species worldwide.

The greenhouse effect

The greenhouse effect is a more recent problem which results in global warming. Human activities, particularly the burning of fossil fuels, have combined with natural processes to generate gases including carbon dioxide, methane and nitrous oxide. These trap the sun's heat inside the atmosphere and the result is global warming. Many scientists predict that, unabated, the greenhouse effect will significantly influence global weather patterns, cause rising sea levels and change both the urban environment and natural ecosystems.

Ozone depletion

Damage to the Earth's protective ozone layer is caused by synthetic halon-based chemicals, particularly chlorine-based chemicals like CFCs and HCFCs. These substances decrease the atmosphere's ability to screen out ultraviolet (UV) radiation and it is predicted that many species, including humans, could suffer health damage as a result. Exposure to UV radiation suppresses the immune system and causes eye damage and skin diseases. Ozone depletion may also cause a significant loss of phytoplankton from the surface of the oceans, placing additional stress on the marine food web.

Air, water and soil pollution

Degradation of natural resources by pollution reduces the capacity to protect human health. Toxic waste can pollute ground water, rivers and oceans. Waste gases from factories and cars can create a mixture of toxic chemicals in city air. Uncontrolled power station emissions can cause acid rain, and agricultural chemicals can pollute air, soil and water in rural areas.

Over-consumption of resources

The resources that Earth provides are limited, but with expanding populations there is an ever-increasing demand for raw materials and energy. The over-use of natural resources like minerals, fossil fuels, water and forests can damage the environment. Mining and smelting can create pollution of rivers and air, and poorly controlled logging can result in destruction of both temperate and tropical forests.

CRITERIA FOR SUSTAINABLE DEVELOPMENT

Olympic host cities have a great opportunity to promote the principles of sustainable urban development. opportunities are also available for private sector initiatives in the provision of environmentally responsible products and services. In this sense, hosting the Olympic games can be used as a catalyst for the transition to ecologically sustainable cities, by going beyond formal compliance with current environmental requirements.

To demonstrate their concern about the implementation of sustainable development, it is desirable that the national governments of Olympic host cities be signatories on the *1992 Climate Change Convention and Convention on the Conservation of Biological Diversity*, and be committed to:

- the *1987 Montreal Protocol for the Protection of the Ozone Layer* and the *1988 Toronto target* of a 20 per cent reduction in greenhouse gas emissions by 2005
- the implementation of all relevant elements of the *Rio Declaration on Environment and Development and Agenda 21*.

Planning and Construction of Olympic Facilities

The Olympic Games can have a significant impact on the cities that host them, and ultimately on the global environment. Large sports venues and residential complexes have to be built, often concentrated within prominent sites. In addition, host cities must provide transport and communication systems for hundreds of thousands of athletes, officials, media and spectators. The International Olympic Committee is concerned that the conduct of the Games should provide benefits to the host city, without incurring long-term debts or environmental damage.

Olympic host cities should commit themselves to:

- ***thorough assessment of opportunities to use or adapt existing facilities, together with consideration of the long term financial viability of all new facilities***
- ***building and infrastructure design that considers environmental issues***
- ***building material selection being subject to consideration of environmental implications, for example timber should be from sustainably managed sources***
- ***environmental and social impact assessment, with community participation in the planning process.***

Energy Conservation

The major goals of an urban energy policy are to improve efficiency and to reduce consumption of fossil fuels. These goals may be achieved by a commitment to energy conservation and, the use of renewable energy sources. In an Olympic context, achievement of those goals may be assisted by integrating planning and transport strategies and by implementation of appropriate low energy design options for buildings and urban infrastructure.

Planning and Transport Integration

The provision of transport is an integral part of sustainable urban planning. The future viability of modern cities requires a shift in the balance from private to public transport and the adoption of transport technologies that maximise energy efficiency, minimise pollution and ensure 'user-friendly' public transport options.

Olympic host cities should commit themselves to:

- ***location of games facilities close to public transport systems***
- ***provision of satellite car-parking sites to facilitate use of public transport***
- ***provision of cycle ways and pedestrian walkways at Olympic sites.***

Low-Energy Design for Buildings and Urban Infrastructure

Since the oil/energy crisis of the early nineteen seventies, there has been extensive research into technologies that can substantially reduce energy consumption in modern cities. The result has been the development of more efficient power generation techniques, and refinements to building and interior design that facilitate 'low energy use' life-styles.

Olympic host cities should commit themselves to:

- **passive solar building design wherever appropriate**
- **selection of appropriate development densities**
- **election of materials for thermal performance**
- **use of insulation and natural ventilation**
- **the widest possible use of renewable sources of energy**
- **high efficiency lighting systems with maximised use of natural light**
- **use of energy efficient appliances**
- **use of recycled and recyclable building materials.**

Water Conservation

Cities use enormous quantities of water, and this places stress on regional ecosystems. The need to protect water quality and use existing water supplies more efficiently is well recognised.

Infrastructure programs that maximise waste water recycling are being developed and some household appliances are being redesigned to minimise water use. The aim is to achieve sustainable management systems for Urban water resources.

Olympic host cities should commit themselves to:

- **encouragement of sound sustainable water resource management through public and Industry education programs**

- **water conservation and recycling practices**
- ***protecting the usability of recycled water by. minimising the use of pesticides in landscape maintenance***
- ***recycling of treated storm water and sewage effluent***
- ***landscape design that decreases water requirements in parks, gardens and other recreational areas with emphasis on selection of plants appropriate to climate***
- ***use of water conservation devices such as dual flush toilet systems, root-fed water tanks, water-saving shower roses, and appropriate irrigation devices***
- ***selection of low-water use appliances including dishwashers & washing machines***
- ***Introduction of pricing policies that reflect the real cost of supplying water.***

Waste Avoidance and Minimisation

Throughout the world, there is agreement on the need to minimise and ideally avoid the amount of industrial, commercial and domestic waste produced by society. The most common methods of waste disposal are land-fill and incineration, both of which can be economically wasteful. and may place unacceptable stresses on natural ecosystems. Land-fills can lead to ground and surface water pollution by toxic chemicals, heavy metals and bacteria, and produce methane, a greenhouse gas. Incineration of waste can lead to air pollution problems, as hazardous organic chemicals may be released during or after combustion. Many cities are introducing new approaches to domestic waste management, with excellent domestic waste minimisation programs, and improved opportunities for recycling of paper, glass, plastics, metals, batteries, engine oil, paints and organic matter.

Olympic host cities should commit themselves to:

- *integrated management programs based on the principles of waste avoidance and minimisation*
- *maximum effort to achieve recycling of paper, glass, metals, plastics & W organic matter.*

Improving Air, Water, and Soil Quality.

The protection, of human health requires high standards of air, water and soil quality. When implemented, such standards provide protection from excessive exposure to heavy metals, noxious gases, toxic chemicals and bacteria. World Health Organisation guidelines are commonly used by national governments when establishing their own environmental health criteria and may also, be used as a yardstick against which to assess performance of governments. Pollution is widespread throughout the World Cities in particular have pollution problems, and many are now addressing them. Typical innovations to improve air, water and soil quality include:

- urban consolidation and planning strategies supported by improved public transport to reduce car dependence and associated air pollution
- introduction of low pollution. transport fuels such as electricity and gas

- regional air quality strategies such as open burning controls and pollution prevention regulations to minimise industry emissions
- improvement of drinking water quality standards to limit peoples' exposure to toxic chemicals and reduce risk of disease
- improved management of urban run-off, supported by planning that minimises use of paved surfaces and reduces storm water run-off to waterways
- effective remediation of former industrial sites.

Olympic host cities should commit themselves to:

- **building design at Olympic sites to maximise indoor air circulation, without compromising energy saving features**
- **improved fitout and management procedures at Olympic sites to minimise toxic fume emission and out-gassing from paints, carpets, glues and pest control practices**
- **comprehensive contamination testing of former industrial sites being redeveloped for the Olympic games, with remediation and risk reduction programs as appropriate**
- **elimination of leaded fuels**
- **use of CFC and HCFC-free refrigerants and processes**
- **minimising and ideally avoiding the use of chlorine based product (organochlorines) such as PCBs, PVCs and chlorine bleached paper.**

Protecting Significant Natural and Cultural Environments

Remnant natural ecosystems often exist in modern cities and there is a need to preserve ecological, health and biological diversity by protecting these areas. It is also desirable for cities to demonstrate a commitment to the protection of culturally significant environments.

Olympic host cities should commit themselves to:

- **preservation and protection of the integrity of natural ecosystems including native bushland, forest and waterways**
- **assessment of habitat and species with special attention to endangered species and ecosystems that are subject to international conservation treaties**
- **Implementation of non-chemical pest Control at Olympic Sites**
- **landscape programs that minimise disruption of wildlife habitat, protect indigenous plant species, with selection of species to complement existing habitats**
- **planning to minimise any adverse, impacts of Olympic sites A events on nearby residents**
- **heritage assessment of proposed Olympic sites.**

CRITERIA FOR RESPONSIBLE EVENT MANAGEMENT

The staging of the Olympic games is a substantial undertaking. All human needs of some 50,000 members of the Olympic family, staff and guests, together with up to 300,000 spectators on each of the 16 days of the games must be met. At the most recent Olympic games, over 200 million sheets of paper were circulated for event results and summaries. It is important that this, and other environmentally irresponsible practices, be absent from any future Olympic games. The need for paper should be minimised by the extensive use of electronic information systems. High standards of event management are essential, and these can be assisted through the adoption of appropriate environmental guidelines by Olympic organising committees and corporations.

The summer Olympic games should be a show case for high environmental standards. They generate an enormous amount of economic activity, and offer unparalleled opportunities for sponsors and suppliers to take a leading role in environmental protection through innovative marketing strategies and actions. By adherence to responsible criteria for processes, products and packaging, industry can share environmental responsibility and take credit for investing in ecologically sustainable development.

The Valdez Principles can guide this process. These principles were established as a project of the US Social Investment Forum, an internationally recognised corporation promoting ethical business practice. They affirm that:

- corporations and their shareholders have direct responsibility for the environment
- corporations must conduct business as responsible stewards of the environments, seeking profit only in a manner that leaves the Earth healthy and safe.

The Valdez Principles also provide guidelines for evaluating corporate activity. They are intended to help business set policy regarding environmental issues including protection of the biosphere, sustainable use of natural resources, waste minimisation, wise energy use and the marketing of safe products and services.

Olympic host cities should commit themselves to:

Merchandising

- all official merchandise appropriate environmental standards in manufacture use and disposal
- avoiding unnecessary waste generated by products with a short useful life or unnecessary packaging
- not using materials from threatened environments or species
- maximum use of recyclable and recycled materials
- promotional clothing being made from natural fibres wherever possible.

Ticketing

- *ticketing systems integrating event admission with public transport*
- *tickets printed on recycled and recyclable paper, using non- toxic ink*

Catering

- *minimal packaging of foodstuffs subject to appropriate health standards being maintained*
- *use of recyclable or reusable packaging.*

Waste Management

- *minimising waste and maximising recycling*
- *education of athletes, officials, media and spectators on correct waste disposal.*

Transport

- *the successful Implementation of transport strategies to ensure efficient movement of the Olympic family and spectators*
- *selection of specific Olympic transport systems which minimise energy use and reduce pollution.*

Noise Control

- *noise abatement techniques which minimise disturbance tor nearby residents.*

Other considerations

Other considerations which. are not specifically environmental include a commitment to equal opportunity principles, accessibility for the disabled, and adoption of crowd management techniques that reduce the potential for stress and danger.

COMPLIANCE WITH ENVIRONMENTAL GUIDELINES

INTERNATIONAL RESPONSES TO GLOBAL ENVIRONMENTAL ISSUES

Two decades of international concern

In 1972 the *Club of Rome* published *Limits to Growth* which suggested that the limits to the physical growth of the planet would be reached within 100 years if growth trends continued unchanged. Nine years later the United Nations established the World Commission on the Environment. Its mission was to develop 'a global agenda for change' and chairman Gro Harlem Brundtland, the Prime Minister of Norway, produced *Our Common Future*, a report which provided a strategy for achieving sustainable development for the year 2000 and beyond.

The 1992 Earth Summit

In June 1992, the first Earth Summit was held in Rio De Janeiro. This United Nations conference aimed to set the agenda for our environmental future. Topics discussed included the greenhouse effect and ozone depletion, international trade in toxic chemicals, loss of biodiversity and land management issues including forestry, desertification and unsustainable farming practices.

A major result was the *Rio Declaration on Environment and Development* which was endorsed by a consensus resolution of the 178 countries present at the Earth Summit. The Declaration set out 27 principles to guide the international community to the achievement of global sustainable development.

The other major document arising from the Rio conference was *Agenda 21*. It is a 'how to' document, providing a comprehensive action plan, for the 21 st century which the international community can use to develop programs 'to combat environmental degradation and promote sustainable development into the next century.,

Global Conventions, Treaties and Protocols

The 1992 Earth Summit confirmed that human activities are putting the planets life-support systems at risk and many governments are working actively to protect the environment. In this they are guided by the 'Earth first' Management principles expressed at the Rio Summit, and also by those principles contained in the many* international conventions, treaties and agreements that exist to protect the planet and its cultural heritage. These include, conventions to protect wetlands, world heritage, endangered species and the ozone layer. Two of the most important of these conventions were signed by more than 150 countries at the Rio Earth Summit:

- the *Climate Change Convention* aims to stabilise greenhouse gas -concentrations in the atmosphere to avoid damage to the environment
- the *Convention on the Conservation of Biological Diversity* provides governments with a framework to safeguard Earth's genetic heritage.

AUSTRALIA'S RESPONSE TO GLOBAL ENVIRONMENTAL ISSUES,

National Government Responses

The Australian Government has a well-established tradition of environmental responsibility and in the last 50 years has ratified a significant number of treaties, conventions and protocols, including:

- International Whaling Convention, 1946
- Convention on Wetlands of International Importance (RAMSAR), 1971
- World Heritage Convention, 1974
- Convention on International Trade on Endangered Species (CITES), 1979
- Agreement between the Government of Australia and the Government of Japan for the protection of migratory birds in danger of extinction and their environment (JAMBA), 1981
- Montreal Protocol for the protection of the ozone layer, 1987.
- Agreement between the Governments of Australia and the Peoples' Republic of China for the protection of migratory birds and their environment (CAMBA) 1988
- Convention on the Conservation of Biological Diversity, 1992
- Climate Change Convention, 1992

The Australian Government has also enacted legislation to protect World Heritage areas:

- The Great Barrier Reef
- Kakadu National Park
- Western Tasmania Wilderness
- National Parks (Franklin River)
- Australian East Coast Temperate and Sub-tropical Rainforest Parks.
- Uluru (Ayers Rock)
- Lord Howe Island Group
- Willandra Lakes Region
- Fraser. Island
- Shark Bay
- Wet Tropics of Queensland.

The Australian Heritage, Commission maintains a register of over 10,000 items of National Estate, including historic buildings, national parks, and historic or Aboriginal sites. Heritage assessment and management is extended by an active National Trust organisation which started in Sydney in 1945 and now lists over 23,000 sites throughout Australia including buildings, urban areas, landscapes and industrial sites.

Ecologically Sustainable Development

In December 1992, the Australian and State governments agreed on a National strategy for Ecologically Sustainable Development, which aims to meet the needs of Australians today, while conserving our ecosystems for the benefit of future generations

The guiding principles of ecologically sustainable development include the need to:

- maintain intergenerational equity
- consider the global dimensions of our decisions
- adopt the precautionary principle
- develop a strong economy capable of embracing environmental protection
- conserve biological diversity and ecological integrity.

To advance the goals of ecologically sustainable development, the Australian and State governments have established initiatives including:

- Intergovernmental Agreement on the Environment
- National Greenhouse Response Strategy.
- National Strategy for the Conservation of Biological Diversity
- National Waste Minimisation and Recycling Strategy
- National Pollutants Registry
- National Water Quality Management Strategy
- National Forests Policy.

The Australian Government also identified reforms in key industry sectors as crucial, to the implementation of ecologically sustainable development. Studies have targeted the following industries; agriculture, fisheries, forestry, mining, energy, tourism and transport. These industries rely on natural resources as their productive base and require reforms to resource management, environmental impact assessment, taxation and toxic chemical control.

State Government Response

The New South Wales Government has over 50 pieces of legislation, policies, and programs which aim to protect both the urban and natural environment. Such legislation includes:

- Clean Waters Act 1961
- Clean Air Act 1961
- Waste Disposal Act 1970
- Pollution Control Act 1970
- Noise Control Act 1975
- Heritage Act 1977
- Environmental Planning and Assessment Act 1979
- Land and Environment Court Act 1979
- Environmentally Hazardous Chemicals Act 1981
- Environmental Offences and Penalties Act 1989
- Ozone Protection Act 1989
- Environmental Restoration and Rehabilitation Trust Act 1990
- Protection of the Environment Administration Act 1991

Independent Environmental Bodies

A high proportion of the Australian population is concerned about environmental issues, and there is ongoing debate on a broad range of issues which is supported by extensive media coverage. Whilst environmental protection standards in Australia are higher than in many areas of the world, there is a strong desire to maintain or improve these standards. The activities of many national and local bodies have often resulted in policy changes by government.

Sydney Olympics 2000 Bid Ltd has consulted with a broad cross-section of environmental and community groups including the NSW Aboriginal Land Council, and an undertaking has been given that there will be ongoing consultation should Sydney be selected as the host city. The following groups have participated in the preparation of these Environmental Guidelines:

- Greenpeace Australia
- Clean-up Australia & Clean-up the World
- Ark Australia Environmental Foundation.

SYDNEY: AN ECOLOGICALLY SUSTAINABLE CITY.

If Sydney is awarded the right to host the Olympic games, the provisions 'outlined in the *Environmental Guidelines* will be honoured. The Organising Committee will include an Environment Officer, and an Environment Committee will be formed to oversee preparation of environmental management practices and performance standards for use during construction.

The New South Wales Government- is committed to ecologically sustainable development. It is currently developing a *Metropolitan Strategy* and an *Integrated Transport Strategy* to guide the direction and form of the city's growth and ensure that transport systems best serve the city into the future. Another specific program is *Building Better Cities* which is providing funding to commence a number of major urban planning projects. Strategies adopted under this program involve urban renewal and public transport improvements, both central to the achievement of ecologically sustainable development.

State planning and environmental laws which dated from the 1950's were radically updated with the enactment of the *Environmental Planning and Assessment Act, 1.97.9*. This Act requires consideration of environmental, conservation and heritage issues for all development proposals, and provides for the preparation of environmental planning instruments at State, regional and local levels to recognise and protect specific environments. The Act also provides for extensive public participation. New South Wales has a special Land, and Environment Court which allows access to any member of the public to remedy or restrain breaches of major environmental legislation.

Planning and Construction of Olympic Facilities

Sydney has adopted stringent environmental criteria which in some areas exceeds the governments. requirements. These include:

- all new Olympic projects being subject to assessment of, their environmental impact

This work has been completed for all projects in, construction, and is well advanced for other projects.

- all new Olympic projects being in accordance with environmental planning instruments prepared under the Environmental Planning and Assessment, Act

The Regional Environmental Plan covering the site of Sydney Olympic Park -has been publicly exhibited twice in the last five years, and is currently being reviewed in response to community feedback and detailed environmental studies. Three master plan options for the proposed redevelopment were publicly. exhibited during 19.92, and the master plan is, currently subject to re ew

- all new Olympic projects being constructed wherever possible, on previously used industrial and commercial sites so that undeveloped land remains untouched

The redevelopment of Homebush Bay, which incorporates. Sydney Olympic Park, is one of the world's largest urban renewal. projects. The Darling Harbour redevelopment completed 'in 1988 will be the second largest of Sydney's Olympic sites, and is an excellent example of urban renewal. The construction of the new' canoeing and rowing course at Penrith Lakes is an innovative arrangement between government and industry. to return areas being mined for gravel and sand back to. public use.

- care being taken to protect native bushland, forests, wetlands, fauna or threatened ecosystems

The Regional Environmental Plan for Homebush Bay includes strong provisions to preserve, protect and minimise impact upon environmentally sensitive areas adjacent to Sydney Olympic Park. An independent ecological Expert Review Panel has been formed to provide advice to government on ecological studies.

- all Olympic sites being accessible by public transport

Accessibility by public transport was a key factor in site selection for Sydney Olympic Park and all other venues.

- minimal construction of new facilities consistent with satisfying all needs to conduct the games.

Sydney's Olympic plan involves simple adaptation and/or temporary expansion of many existing facilities, such as at Darling Harbour and Rushcutters Bay. New projects have been integrated wherever possible into pre-existing development proposals such as the City West redevelopment and the Western Sydney Recreation Area. All new projects have a clearly identified, economically viable future use. Permanent seating will be constructed only where there is a long-term requirement. Only four venues are 'bid dependent'.

Additional environmental initiatives for the Olympic Games in Sydney include.

- ***companies tendering for construction contracts will be required to submit details demonstrating how, they will satisfy the requirements of the Environmental Guidelines***
- ***selection of components that go into new projects will be subject to life-cycle costing and consideration of environmental implications during manufacture, use and disposal.***

These provisions have been considered for all projects currently in construction, with specific examples being:

- within the Aquatic Centre, heat reclaimed from space cooling **will** be recycled into the water heating system
- within the State Hockey Centre, the new Wet pitches are the world's first to incorporate a water recycling system
- within Sydney Olympic Park, mature trees were relocated instead of **being destroyed, and** crushed concrete from buildings demolished on the site is being used for roadworks and general
- fill research into solar powered street lighting for Sydney Olympic Park.

Energy Conservation

Australia is a large country with the bulk of its population concentrated in the low density cities of the east and south coasts. Although transport costs and car ownership are high, Australia's total greenhouse emissions are small in relation to those of larger industrial countries, due principally to the country's small population and mild climate.

The Australian government acknowledges the potential impact of climate change that may result from the greenhouse effect and supports the need to meet the challenge of such change. In December 1992, the *National Greenhouse Response Strategy* was launched and an interim planning target was established to stabilise greenhouse gas emissions based on 1988 levels, and to reduce these emissions by 20 per cent by the year 2005.

As signatory to the *Greenhouse Response Strategy*, the State government supports improvements in energy efficiency by industry and the public. To facilitate this, it has initiated programs to improve energy and transport efficiency in cooperation with environment organisations.

Planning and Transport Integration

A major part of the *Greenhouse Response Strategy* is the rationalisation of the national transport system.. -Reforms to the rail and road systems and promotion of public transport in major cities are planned, and the Australian government is assisting the states to upgrade urban transport systems. The State governments *Integrated Transport Strategy*, currently in preparation, is considering all requirements for metropolitan Sydney. It will be implemented in tandem with planning strategies to direct the nature, scale and location of urban development in the Sydney region. *Transit West* is a *-Building Better Cities* strategy, which includes expanding the rail network and improving bus transport in Sydney's west. The State government is also considering measures to reduce the environmental and other costs of travel. These programs demonstrate the commitment to transport improvements in Sydney.

The Sydney Olympic transport strategy does not require major **infrastructure improvements beyond** those already planned for the city **within the next decade**.

The venues selected for Sydney's Olympic sites strongly support transport efficiency.

- ***21 of the 25 sports will be conducted in two compact zones, Sydney.. Olympic Park and the Sydney Harbour Zone, which are 14 km apart and linked by an efficient network of road, rail and water-based transport services***
- ***the rail system provides access to all Olympic sites and will be augmented by buses***
- ***ferries will be able to provide transport for spectators, VIP91 athletes and media between Sydney Olympic Park and the Sydney Harbour Zone***
- ***satellite parking areas will be established at major and rail Interchanges at major bus***
- ***all venues and the majority of training venues are within 30 minutes travel of the Olympic Village***
- ***cycle ways and pedestrian walk ways will be linked to interchanges.***

Low-Energy Design for Buildings and Urban Infrastructure

Australia is a world leader in research, into solar technologies and other forms of renewable energy, and these skills will be incorporated into many aspects of the Olympic facilities

Additional environmental initiatives for the Olympic Games, in Sydney include:

- *sophisticated building management and control systems will assist management of engineering services at each venue to minimise energy requirements*
- *mechanical ventilation will be zoned to allow ventilation flow to be switched off when spaces are unoccupied.*

The Olympic Village is planned as a prototype for energy efficient, medium density housing in Australia and internationally. It aims to achieve a low environmental impact because of the adoption of stringent guidelines developed in consultation with *Greenpeace Australia*. The use of solarthermal co-generation of electricity, with clean, efficient back-up energy sources is being seriously considered.

Preliminary estimates show that energy needs for the typical household in the Village could be around 33 per cent less than current energy demand and result in a 95 per cent reduction in carbon dioxide emissions. It is anticipated that about half of the village's energy demand will be met by solar energy.

Water Conservation

Water resource -management. is a key feature of the *National Strategy for Ecologically Sustainable Development*. The challenge is to protect coastal and inland river systems and at the same time meet economic, social and community demands. The Government's aim -is to promote integrated catchment management strategies, including better use of storm water, waste water and effluent by- products, and revise water pricing to a full 'user pays' system.

The Department of Planning coordinates the development of urban areas and aims, with other government authorities, to ensure that city growth 'does not place excessive demand on available water resources.

Sydney's Water Board has responsibility for water supply and sewage, - and with local councils, manages storm water and urban run-off Since 1988, the Board has improved man aspects of urban water management and there are' major planning programs to ensure that the City's future water needs are provided in an ecologically sustainable way The Board has also conducted extensive public education campaigns on the need for water conservation and the protection of water' quality.

Additional environmental Initiatives for the Olympic Games in Sydney include:

- *building and infrastructure design to collect waste water for recycling*
- *use of artificial wetlands or other appropriate methods to remove pollutants from waste water prior to recycling.*

Waste Avoidance and Minimisation

Like many other countries, Australia has traditionally used land-fill to dispose of domestic waste. While responsible management of landfill disposal sites has been established for some years, both Australian and State governments recognise that total reliance on this approach is not ecologically sustainable. To address the problem, they are developing an integrated approach to waste management, based on the hierarchy of measures outlined in the *National Waste Minimisation Strategy*. The strategy has set a target of a 50 per cent reduction in waste by the year 2000, based on a broad range of strategies. Recycling of waste products by local councils is increasingly common, and a major local government recycling depot is being established in close proximity to Sydney Olympic Park. Australia is already one of the world's leaders in the recycling of paper.

Non-government organisations are also taking initiatives. In 1993, the Sydney-based *Clean Up Australia* campaign enlisted the support of 409,000 people to remove 17,500 tonnes of rubbish from 5142 sites throughout Australia and its territories. The clean up extended from Thursday Island to the Antarctic, and from Lord Howe Island across to Christmas Island, in the Indian Ocean. Sister organisation *Clean Up the World*, also based in Sydney, is planning the first UNEP endorsed global clean up program for the 17-19th September 1993, and has enlisted the support of 105 cities to actively demonstrate their commitment to improving the health of the planet. Tens of thousands of people from every continent will 'think globally, act locally'.

Another Sydney initiative is the daily television series, *Save the Planet*, produced by *Channel Seven Australia* with the *Ark Australia Environment Foundation*. This educational series, which is concerned with environmental issues such as waste minimisation, will shortly be broadcast worldwide.

Domestic waste recycling services have been extensively implemented throughout Sydney. There has been a steady rise in recycling rates, particularly of paper, glass and aluminium, and by the end of the decade the national target of a 50 per cent reduction in waste should be achieved.

Additional environmental initiatives for the Olympic Games in Sydney include:

- ***best practice waste reduction and avoidance, with performance criteria to apply to services, materials and appliances***
- ***the co-operation of sponsors and service providers in developing responsible corporate purchasing and waste management policies***
- ***best practice recycling of waste including use of colour-coded waste, recycling stations, use of compost from organic waste in landscaping, use of recycled paper, and public education on waste minimisation***

Air, Water and Soil Quality

Air Quality

Air quality in Sydney is significantly better than in most cities of similar size. **However it is not perfect** and both government and independent environmental groups are seeking improvements. In 1961, the NSW Clean Air Act was passed, and by 1986 **all new cars were required to use lead-free petrol**. These and other regulatory measures are having a positive impact on Sydney's air quality.

In September, the time when Sydney wishes to host the Year 2000. Games, 'air pollution levels are generally found to be low. Recent monitoring of pollutants like lead, carbon monoxide and fine particles indicate that their levels are gradually declining throughout the metropolitan area, and further initiatives planned by the State government will speed up the rate of decline over the next decade.

These initiatives include the introduction of 250 buses running on low polluting natural gas, and a pilot programme currently underway at Sydney Olympic Park using buses running on the new fuel, 'diesohol', a blend of alcohol and diesel fuels.

In addition, the Government has hosted several 'smog summits' to discuss air pollution issues with the community. As a result, the government has established a 3 year, \$10 million Metropolitan Air Quality Study. Health studies are also planned to ensure that cost-effective air pollution control strategies are instituted. By the Year 2000, the NSW government anticipates considerably, improved air quality for Sydney, brought about by stricter regulations on vehicle emissions, bans on outdoor burning and urban transport policies that reduce car dependence.

Indoor air quality is also being addressed to achieve reduced air pollutant emissions within Olympic venues.

Additional environmental initiatives for the Olympic Games in Sydney include:

- the selection wherever practicable of materials and processes that are non-toxic in use such as natural fibre insulation, and non-toxic paints, glues, varnishes, polishes, solvents and cleaning products*
- use of building techniques and interior design that minimise the need for chemical post control and maximise opportunities for integrated, post management*

Water Quality

By world standards, Sydney's drinking water is of high quality and the State government aims to maintain and improve this situation. The government, is actively promoting responsible catchment management for both water supply catchments and urbanised catchments, and the Water Board has introduced new technologies that will achieve full treatment and filtration of the Sydney supply by 1998.

The government is also committed to better monitoring of bacterial and chemical pollution levels in coastal and harbour waters. The Environment Protection Authority has detected sporadic heavy bacterial densities because of sewer overflow and urban run-off after heavy rain, and is working with the Water Board and local councils to develop strategies to reduce these pollution sources. The State government is also planning to reduce pollution in the many waterways that characterise the Sydney region through its *'Clean' Waterways Program*.

These efforts are complementary to: Australian Government initiatives outlined in the *National Strategy for Ecologically Sustainable Development*. These aim to:

- promote, integrated catchment management strategies
- ensure that development decisions do not impact on water quality.
- **improve water** resource management.

Additional environmental initiatives for the Olympic Games in Sydney include:

- *the water quality of the mangrove, estuarine and saltmarsh environments near Sydney Olympic Park being protected during construction by erosion and run-off controls*
- *similar provisions being adopted as appropriate at other sites.*
-

Soil Quality

Sydney Olympic Park, which includes the Athletes Village, is located at Homebush Bay. This site is a former industrial area which has been selected for urban renewal. A history of largely uncontrolled landfilling together with former industrial uses has led to contamination of parts of the site. Homebush Bay has been the subject of one of the largest soil contamination investigation programmes in the southern hemisphere with the result that thoroughly researched remediation strategies have been developed for the site. Implementation of remedial works is well underway. Contaminated soils are being concentrated and contained within well defined and properly encapsulated sites, peripheral to the main development areas.

The rehabilitated land will be used as recreational open space and in some cases, temporary overflow carparks, but always providing valuable buffer space between the built environment and areas of significant natural beauty and ecological value.

Similar testing and, where appropriate, remediation programs will be completed at all other Olympic sites.

Protecting Significant Natural and Cultural Environments

One of the most valuable ecosystems in Sydney can be found adjacent to the Olympic Park at Homebush Bay. This site has been the subject of extensive ecological studies and **these are ongoing**. The ecological importance of the area has been the subject of a major public exhibition at the Australian Museum.

Homebush Bay contains remnants of original wetlands and woodlands, together with extensive areas of modified environment, which now provide habitat for a variety of plant and animal species. These include more than 160 species of birds, with approximately half of these being regular users of the site. Five species are listed as endangered under the NSW National Parks and Wildlife Act, while 29 species of migratory wading birds found at Homebush Bay during the summer months, are protected, by international treaties between Australia and Japan and Australia and China.

Homebush Bay also contains a diverse range of lizards and frogs, including the rare and **Endangered** Green and *Golden Bell Frog*, and an impressive variety of plantlife. Its forest is the last Eucalypt stand of its type in the Sydney region, and it contains species considered at risk. -The Wetlands feature the largest remaining stand of mangroves on the Parramatta River and there are* Extensive salt-marshes comprised of three distinct significant types The redevelopment of Homebush Bay will demonstrate that urban development can co-exist with a natural ecosystem and function to Preserve biodiversity.

The canoeing and rowing course is being developed as part of the Penrith Lakes scheme. This project is being implemented by a consortium of private companies as the environmental rehabilitation program for extensive sand and gravel quarrying operations. It includes the development of seven takes which will be used for aquatic recreation, with the first two takes forming

the canoeing and rowing course. A landscape strategy for revegetating the area with native grasses, trees and shrubs, has been devised, and planting of some 20,000 trees is well underway. Similar care in protecting natural environments will be taken at all other Olympic sites

Assessment of cultural significance is a well developed skill within Sydney. The Australia ICOMOS *Charter for the Conservation of Places of Cultural Significance*, the *Burra Charter*, provides an internationally recognised basis for this assessment. The *NSW Heritage Act 1977* provides for the conservation of special elements of the natural and cultural environment. The sites at Homebush Bay and City West both have a history of previous development. Both have been the subject of comprehensive heritage studies, and specific requirements in relevant planning instruments protect the cultural significance of their built environments.

Additional environmental initiatives- for the Olympic Games in Sydney include:

- *preservation of existing landscape features*
- *rehabilitation, of wetlands*
- *use of extensive indigenous planting to attract birds and other animals*
- *establishment of buffer zones between recreation and conservation areas*
- *control of feral animals and weed invasion*
- *establishment of a **management plan** for the protection of natural ecosystems use of low wash terry transport to minimise Impact on mangrove ecosystems.*

OLYMPIC EVENTS IN SYDNEY

Sydney Olympics 2000 Bid endorses the *Valdez Principles* and will require all sponsors and service providers to guarantee responsible event management. State law requires that corporate directors and managers take personal- responsibility for environmental protection. To assist business to conform to Olympic requirements, an expert panel will be established, with membership drawn from the business, government and environment sectors.

Sydney's Organising Committee will investigate opportunities to provide a. data base to assist organisations planning to tender for Olympic contracts. The data base would be based upon existing Australian and overseas data bases, and would provide a* window, on, new technologies suitable for use at the Olympic games. The environment organisations *Greenpeace* and *Ark International* have already offered access to 'clean technology' data bases to the Sydney Olympic. 2000 Bid Ltd.

Additional environmental initiatives for the Olympic Games in Sydney include:

Merchandising

- *every company tendering for a merchandise contract. will be required to provide environmental information in its submission in relation to manufacture, use and disposal*
- *the design and packaging of products will embody an educational message about the environment wherever possible*

Ticketing

- *the price of the public transport cost will be included in the entrance ticket wherever possible.*

Catering

- *non-disposable cutlery and crockery will be used at food outlets where ever possible.*

Waste Management

- *recyclable packaging will be suitably Identified to facilitate separation from other recyclables and assist ease of collection*
- *recycling bins for waste will be supplied at all Games venues, supported by education programs on proper disposal methods*
- *information will be carried electronically where possible to reduce unnecessary use of paper, supplemented by effective paper recycling procedures*
- *special procedures will be adopted for the disposal or recycling of chemicals film and other photographic materials.*

Transport

- *public transport will be the only means by which spectators will be able to directly access events at major Olympic sites*
- *satellite car-parking venues will be established so people can transfer to trains, buses and ferries for access to Olympic sites*
- *special concession transport tickets will be available allowing spectators to use all forms of public transport for a defined period sale of admission tickets. and public transport tickets will be at the same outlets.*

Noise Control

- *all event sites, including the Olympic shooting facility at Holsworthy will be required to conform with existing State regulations and policies governing noise and safety.*

Other Considerations

- *all Olympic venues will be accessible to disabled athletes, officials and spectators*
- *venue management, security **and volunteer personnel will be trained in crowd management techniques***
- *State Government legislation requires the enforcement of equal opportunity principles.*

CONCLUDING COMMENTS

The process which led to the preparation of Sydney's *Environmental Guidelines* commenced with the conduct of a design competition for the Olympic Village in early, 1992. This competition, which was organised by Sydney Olympics 2000 Bid Ltd in association with the Royal Australian Institute of Architects, the Royal Australian Planning Institute, the Housing Industry Association and Auburn Municipal Council included stringent conditions in relation to the environment. One of the five winning entries was a Greenpeace Australia submission.

This brought about a strong working association between Greenpeace and the Bid office, leading to the development and adoption of the *Greenpeace Australia Guidelines for the Olympic Village*. The strong national and international interest in this work resulted in the formation of an Environment Committee to prepare comprehensive guidelines for the planning and management of the summer Olympic games in Sydney. The committee included independent environmental practitioners and representation from:

- Ark Australia Environmental Foundation
- Australian Centre for Environmental Law
- Chamber of Manufactures of NSW
- Clean Up Australia
- Department of Planning
- Environment Protection Authority
- Greenpeace Australia.
- Property Services Group
- Sydney Olympics 2000 Bid Ltd
- Water Board

Draft guidelines were widely circulated in March 1993, and these drew a broad range of responses which have been considered in the preparation of this final document.

Sydney is an ideal place for the summer Olympic Games of 2000. Australia's environmental credentials are well established, particularly in New South Wales,, with government and non government organisations playing pivotal roles in environmental education and, planning. Many Australian industries are at the forefront of responsible. technology development and appreciate the new market opportunities which will be developed should Sydney's bid, be successful.

Australia's record on sport and multiculturalism is also impressive., Both play a major part in contemporary culture. The nation has experienced over one hundred years of intensive immigration and is now home to people from, over 120 nations. Millions of Australians are involved in sports and the country is both able and ready to welcome athletes from all the world's nations. Australians, have participated at every modern summer Olympics games, and Australia is one of only three countries, that can make this claim.

When the Games are over, the legacy of environmental responsibility, will remain to inspire future generations. They will carry an enhanced Olympic spirit into the 21 st century.

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