

**FACING THE ENVIRONMENTAL CHALLENGE**

**PRODUCING ENVIRONMENTALLY SUSTAINABLE OLYMPIC GAMES AND 'GREENING' MAJOR PUBLIC EVENTS**

*Tom Roper*

In awarding the 2012 Olympic Games to London the International Olympic Committee (IOC) drew attention to the London bid's environmental centerpiece "which would create a large new urban parkland, featuring wetland and waterways restoration, natural corridors, environmental solutions to resources, water, waste and energy management, and sustainable building development."

According to Paul King, director of the World Wildlife Fund-UK, London's low waste, low carbon Olympics will "bring about long-term environmental and social benefits to London long after the Olympic Games have ended." London's Olympic Park will be a low emission (carbon dioxide) zone, utilizing low or no emission vehicles. In addition, the UK will promote investments in developing country renewable energy projects, to counterbalance carbon emissions resulting from international air travel by athletes, officials, and others who will be flying to London for the 2012 Olympics.

All five of the final bidders for the 2012 Olympics committed their cities to fulfilling exemplary environmental standards. Paris proposed a specially designed eco-financing package to ensure the funding of innovative environmental initiatives based on 1 percent of all Olympic revenues, along with funds from the Paris 2012 Olympic Committee, and public/private partnership environmental investments. The "Solar Stadium" in Paris would have tripled the number of solar panels in France.

At the 2002 Metropolis World Congress in Seoul, Korea, the impact of major events on city development was highlighted in a report based on eight urban case studies presented by Ile-de-France, the urban region surrounding the city of Paris. The four key elements were: 1) the importance of city image and international recognition; 2) the impact on national development and tourism; 3) the contribution to urban development; and 4) the issue of environmental improvement.

This article will concentrate on the pluses and minuses of major events including sports, entertainment, conventions, and conferences. In particular, the article focuses on the drive for environmental sustainability, carbon neutrality, and reducing potentially harmful ecological impacts of major events. The 1994 Winter Olympics in Lillehammer, Norway, placed the environment on the sporting world's agenda. For the first time comprehensive environmental action was planned and implemented at a large-scale sports event.

Sydney, Australia, raised the bar six years later during the Summer Olympics in 2000 with its extremely successful "green games." Klaus Toepfer, Executive Director of the United Nations Environment Program (UNEP), supported Sydney's efforts: "No other event captures the imagination of people more than an Olympic competition . . . it is completely appropriate that the Sydney Olympics gave priority to the environment."

Sport is a vehicle for capturing the public's attention, and therefore can be important for helping to change public attitudes. The legacy and knowledge gained from one major event can become the minimum standard for future events so that learning curves can become less steep, and even further progress can be encouraged. Replication, adaptation, and innovation are the touchstones for initiating a long-term cycle of continuous environmental improvement. There is no reason why any major public event, from its planning to execution, should not be sustainably "green".

In this scenario, we are not just referring to headline getting Olympic games and World Cup competitions. A large number of other activities contribute to urban development and tourism with international

meetings and many more domestic events held each year all over the world. During 2001, the US alone had 11,800 major conventions attended by 12.5 million delegates.

Major events can harm the environment by, among other negative effects:

- Changes in land-use and the destruction of natural environments through building construction, transportation, and other forms of physical development;
- The consumption of non-renewable resources;
- Emissions to soil, air, and water, and the generation of large amounts of waste;
- Contributing to ozone depletion, global warming, and air pollution; and diminishing biodiversity.

Urban hosts of major events increasingly seek to minimize the negative environmental effects and maximize the positive impacts. The growing number of successful experiences has resulted in lowering the costs of best practices and enhancing long-term gains. Major events and the design and construction of their facilities represent a key opportunity to advance the level of accomplishment and awareness about the urban environment and sustainable development.

One good source of comprehensive advice is the publication entitled *Leaving a Greening Legacy: Guidelines for Event Greening* which was prepared by the World Conservation Union (IUCN), the United Nations Commission on Sustainable Development, and several partner organizations. This useful document highlights experiences drawn from the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, and the WSSD's 22,000 delegates. The report offers generic guidelines for "greening" major events, complemented by many practical tips and numerous examples.

The basic principles of "greening" major events that should be incorporated by the host organization include:

- Environmental best practices – reduce negative environmental effects by employing technologies and behavioral practices that minimize waste, energy usage, and air and water pollution, by utilizing resources sustainably and conserving biological diversity;
- Social and economic development – select options that raise public awareness of environmental issues, involve communities in all levels of decision-making, create local jobs, and stimulate urban economies;
- Education and awareness – communicate and explain greening plans and their benefits with the aim of changing public attitudes and future actions;
- Monitoring, evaluation, and reporting – assess the effectiveness of greening activities before, during, and after the major event;
- Leave a positive legacy – ensure that both the short and long-term impacts of decisions and actions in producing a major event lead to a substantial improvement in environmental sustainability.

The report also emphasizes six basic sectoral strategies to be incorporated into the planning and implementation of major events: 1) waste minimization; 2) water efficiency and conservation; 3) energy efficiency; 4) air, land, and water pollution reduction; 5) biodiversity conservation; and 6) social and economic development measures.

High-level economic and financial support together with strong political commitment is the essential first step for creating "green" major events. This initial impetus must be quickly reinforced by the adoption of comprehensive policies and plans communicated to staff, the general public, event participants, and visitors. It must be further enhanced by the allocation of adequate funds and the development of strategic public-private partnerships.

Korea strove to make the 2002 World Cup Football (soccer) games a more environmentally sustainable event through the construction of “eco” stadiums, energy and water conservation, water quality improvements, and waste reduction. Among the specifics were the replacement of polluting diesel-powered buses, the use of low sulfur fuels, the planting of 10 million trees, and the creation of several new urban parks. Both Seoul Stadium and the World Cup Ecological Park were constructed on a former landfill site, and the methane gas produced by the landfill was recycled to help provide sustainable and renewable electrical energy.

The Royal and Ancient Golf Club of St. Andrews, Scotland, has taken advantage of its world renown to promote environmental issues – such as the use of water, chemicals, climate change, and the planning of new golf courses – considered by the entire golfing industry. During 2002 two organizations, UK Sport and the Committed to Green Foundation, produced guidelines to assist venue managers and event organizers in planning environmentally sustainable golf tournaments and similar athletic competitions.

Cities have even used a “green” image for marketing purposes. Pittsburgh, Pennsylvania, built the world’s first certified green convention center which has succeeded in attracting additional conventions and related business activities. Pittsburgh’s new convention center was built on a well-located downtown site convenient for walking, bicycling, and public transportation. The land development involved the reclamation and clean-up of a formerly environmentally damaged “brownfield”. In addition, the convention center structure includes special features such as natural ventilation and lighting, increased energy efficiency, high internal air quality, water conservation, waste minimization, and procurement of goods and services from local environment-friendly businesses.

The US Green Building Council held two recent annual international conferences in “green” convention centers (Pittsburgh in 2003, and Portland, Oregon, in 2004). In planning these conferences, the US Green Building Council chose hotels and catering services that use good environmental practices. It also minimized the waste of food and beverages, utilized conservation techniques in constructing and managing exhibits and programs, purchased recycled badges and paper, and used recycled carpet for exhibit booths. The decorator/exhibit company, Stetson, permanently changed its operations as a result of working on these two conferences. Stetson recently published a paper entitled “Case Study: Raising the Bar for Greening a Conference” on its website ([www.meetingstrategiesworldwide.com](http://www.meetingstrategiesworldwide.com)) explaining this transformation in its environmental awareness and actions.

The US Green Building Council’s annual Greenbuild International Conference and Expo in Portland, with 7,700 attendees, used 600,000 kilowatt-hours of electricity, 29,000 therms of gas, and resulted in 11.6 million air-travel and 478,000 vehicle miles. The 8 million pounds of carbon dioxide pollution was more than offset by business and individual commitments, and the same pattern of environmental offsets held true for sulfur dioxide, nitrogen oxide, particulates, and mercury emissions.

The Coalition for Environmentally Responsible Conventions promoted environmentally smart practices at the 2004 US Democratic Party Convention in Boston; the recent Solar Conference encouraged attendees to “green” their travel as part of their registration, and the Clinton Global Initiative inaugural meeting held in New York City during September 2005 offset its carbon emissions by funding three solar villages in Nigeria through the Solar Electric Light Fund (SELF).

The 2006 World Cup Football competition in Germany has set itself a “Green Goal” to reduce resource utilization by 20 percent including plans to develop renewable energy projects in Tamil Nadu, India, and elsewhere to offset the 100,000 tons of carbon dioxide emissions resulting from increased traffic volume. All 2006 World Cup stadiums in Germany will particularly focus on rainwater storage, waste water recycling, waste reduction, and the use of construction waste foundation materials. Germany’s Environment Minister, Jurgen Trittin, stated that “Green Goal is a fantastic initiative . . . truly breaking new ground by introducing an environmental concept into the World Cup.”

The 2006 Melbourne, Australia, Commonwealth Games are committed to setting new benchmarks in reducing the negative impacts on natural resources while staging a world class sports event. Melbourne's sustainable initiatives include:

- "Waterwise" – venues with the capacity to collect and recycle water and use water efficient fittings and fixtures;
- Low waste – minimizing waste generation from buildings and operations, promoting recycling and anti-litter campaigns;
- Carbon neutral – installing energy-efficient appliances at venues, encouraging the free use of public transportation by waiving the fares for people attending the sports events, and planting a million trees to offset participant and spectator emissions. Every house in the Athletes Village will have a six star energy rating and use its own renewable energy (solar hot water and photovoltaic panels).

Beijing, China, has pledged to achieve World Health Organization air quality standards for the 2008 Olympics, and is being assisted by experts from the US Department of Energy (DOE). Beijing's strategy depends on reductions in the use of coal, as well as tougher fuel quality and emission standards. As part of a public/private partnership, DOE will assist in managing a hydrogen park in the Olympic Village by operating hydrogen/natural gas buses. General Motors will donate zero emission buses, and solar panels will generate electricity (including to heat swimming pools). More effort will be put into developing a protective green belt, planting trees in the city, and rejuvenating 40 kilometers of rivers in and around Beijing. The joint China/US effort has identified 10 areas of cooperation which can be replicated nationwide in China and throughout the world.

### **Why Carbon Neutral?**

The scientific consensus is that human activity, particularly the burning of fossil fuels, is changing our climate – temperatures and sea levels have already risen. Major events can help address the greenhouse problem in many different ways, including improved planning and building of facilities, the promotion of non-polluting public transit vehicles, reducing waste, and encouraging participants and visitors to offset their travel and accommodation emissions. The basic emissions offsets, relevant to major events, are planting trees to reabsorb carbon dioxide and/or investing in energy conservation and renewable energy production projects which either reduce emissions or replace polluting fossil fuel power generation.

It is possible for individuals, businesses, and governments involved with major events to offset either part or all of the harmful emissions. There are many methods that can be used, and numerous organizations that provide good advice along with technical and financial assistance. The UK-based Climate Care ([www.climatecare.org](http://www.climatecare.org)) has web-based tools which determine emissions, calculate the costs, and promote investments in forestry, energy-efficient lighting, and solar and wind energy generation. For example, an airline flight from Berlin to New York City produces an estimated 1.79 tons of carbon dioxide emissions per person, which cost approximately 11.62 British pounds (US\$20.36) to offset.

One of the first major events to address the emissions problem was the 2002 Salt Lake City, Utah, Winter Olympics, which encouraged US companies to donate emission credits equal in value to the costs of the estimated 180,000 tons of carbon dioxide that were emitted.

Similarly, the German Renewables 2004 Conference successfully became one of the world's first "climate-neutral" conferences by offsetting carbon emissions through the financing of 12 solar powered community kitchens in developing countries to provide meals for 30,000 people, and replacing the typical use of charcoal to cook food in these communities.

The UK Government has decided to offset emissions arising from the recent G8 meeting in Gleneagles, Scotland, as well as other international travel by Ministers and senior officials. The G8 meeting's 4,000

tons of carbon dioxide emissions will be compensated through a small-scale Clean Development Mechanism project in Cape Town, South Africa. Cape Town's Kuyasa low-cost urban housing energy upgrade involves installing solar hot water heaters, ceiling insulation, and efficient compact fluorescent lightbulbs.

"Trippin," the new environmental adventure series hosted on Music Television (MTV) by Cameron Diaz, is purchasing enough renewable energy to offset all of the greenhouse gases emitted during production. In the same way, "Carbonneutral" formerly "Future Forests" has enrolled popular musicians and performers on international tours to offset emissions from concerts, travel, and production facilities.

### **'Footprint' Neutral**

Another evolving concept is "ecological footprinting" — measuring a population, business, or event's demands for natural resources. The energy footprint represents the area of forest that would be required to absorb the carbon dioxide emissions from a region's, corporation's, or event's direct and indirect energy consumption. The land footprint includes the area necessary for all crops, meat production, forest products, and the fishing grounds for seafood. They are measured by "global hectares per person."

A coalition of the United Nations Development Program (UNDP), Conservation International, The Nature Conservancy, and the reinsurance company Swiss Re is developing a system for business firms and major event hosts to voluntarily offset harmful emissions by supporting projects that protect biodiversity, enhance water quality, and promote local economic development. The 2006 World Cup Football competition in Germany and the Commonwealth Games in Australia will utilize "ecological footprinting" as a measurement tool.

Professor Andrea Collins of Cardiff University in Wales has calculated the ecological footprint of the UK city of Cardiff, its International Sports Village, and the 2004 championship football match between Manchester United and Millwall. The 73,000 people attending the match — their travel, food, and beverage consumption, their waste products, and a proportion of the stadium's infrastructure — yielded an ecological footprint of 3000 hectares. Travel made the largest contribution: 43 million kilometers, an average of 591 kilometers per person, nearly half of which was by private automobiles. Greater use of public transit will substantially reduce these negative environmental impacts.

Ever since the 1994 Winter Olympics in Lillehammer, hosts and organizers of major events have been challenged to reduce the harmful environmental effects of their events. There is now overwhelming evidence and justification of the need for all negative impacts to be examined and either eliminated, reduced, or in relation to carbon emissions, offset. Examples of good and best practices are now plentiful. Developing nations for whom technology or finance may be a barrier, such as the 2010 World Cup Football competition in South Africa, should receive the necessary financial assistance from global public and private donors.

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