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**SPORTS TOURISM GOES SUSTAINABLE  
THE LILLEHAMMER EXPERIENCE**

**BY**

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**ABSTRACT**

The 1994 Winter Olympics in Lillehammer, Norway were the first ever "green games." The local organizers demonstrated a new model not only for sports events but for the tourism that usually accompanies these events. A good marriage of sport promotion and environmentalism can guarantee several things for tourism: a better event, satisfied visitors and a positive reputation as a clean and attractive destination. The benefits of more "sustainable" sports tourism go beyond major events, however. Ongoing sports and recreation-related attractions can equally implement greener practices, with similar economic and environmental results. Any sports facility, wilderness attraction or hotel would do well to study the lessons of Lillehammer. By protecting the natural features which attract tourists, by preserving healthy local environmental conditions, by keeping local residents in favour of on-going sports/recreation activities and by saving money through efficiency conservation, you can guarantee a sustainable future for sport-based tourism in your region.

**BACKGROUND**

The Commonwealth Games in Victoria, British Columbia are estimated to have pumped close to \$500 million into the local and regional economy. Forty million dollars were spent on hospitality, hotels and shopping alone, with 420,000 bednights recorded in the Victoria area. Clearly the economic spinoff of hosting a major sports event can be substantial.

This past winter, the town of Lillehammer Norway was at the centre of a similar boom in sports tourism when it played host to the biggest event there is: the Olympic Games. But whereas Victoria, a city of 300,000, had to accommodate some 50,000 daily visitors, Lillehammer, a town of only 24,000, had to contend with an average daily influx of 100,000 people. Naturally, local residents anticipated traffic gridlock, mountains of waste and irreversible environmental damage to the vicinity. Yet, somehow none of this materialized. Lillehammer managed not only to cope with this monumental sports event without noticeably harming the environment, it did so in a manner which won praise from commentators world-wide.

How did Lillehammer achieve such seemingly contradictory goals: running a mega sports event and pleasing hordes of participants and tourists while achieving its ambitious environmental goals? How did the Norwegians succeed in showing the world that there is a better way of sports tourism? That there is a greener way to hold our games?

### **THE SUCCESS STORY: LILLEHAMMER'S ROAD TO A GREEN PROFILE**

A week after Lillehammer was chosen to host the XVII Winter Games, the chief environmental officers of Lillehammer and Oppland County initiated a meeting at the Ministry of Environment (MoE) in Oslo, out of which came a commitment to give the Games a "green profile". An annual budget was approved for these efforts, including funding for a nongovernmental pressure group, known as Project Environment Friendly Olympics (PEFO).

The term "environmental showcase" was later coined by the MoE to describe the overall goal for standards of development in the Lillehammer/Oppland region. This goal was endorsed by Norway's parliament which approved the following mandate:

"Any development must conform to the natural and cultural landscape and other regional features. In the long run this will be crucial in preserving and enhancing qualities that are already assets to tourism. For local people it will be most important to construct the arenas and other buildings needed for the event in an environmentally friendly way."

Once the goal had been defined new working methods and techniques had to be developed and new alliances forged.

### **CONFLICTING INTERESTS**

Lillehammer had first launched a bid for the winter Olympics in 1982, on the initiative of a group of local businessmen, bankers, politicians and sports personalities. Their aim was to revitalize the region, which suffered from declining investment and rising unemployment.

A bid for the 1994 Winter Games emphasized the potential for a "compact Games", in which all events could be staged within a few miles of each other. On September 15, 1988, Lillehammer was declared host of the 1994 Winter Games.

While many Norwegians involved in sport and tourism were jubilant, environmentalists were dismayed. At the outset, environmental concerns were forgotten as other interests competed for a piece of the action; the modest "compact Games" concept was abandoned as construction plans and cost estimates became ever more grandiose.

### **PLANNING BY NEGOTIATION**

The hills and forests to the east of Lillehammer are a recreational area for the local population. Plans to build new arenas in this wilderness area provoked the first conflict between environmentalists and developers. Several environmental authorities opposed building new arenas for crosscountry skiing and biathlon in the forest. (Previous plans had sited the arenas near an army camp to the northwest of the town.) The County Governor, whose

environmental office is empowered to block development in natural habitats of national importance, played a particularly important role in the negotiations. By serving notice that the development would be stopped, the Governor initiated a process of negotiation with the municipal authorities that resulted in the construction of the skiing venues in the forest, but with strict regulations curbing further development and access by road.

This process of "planning by negotiation" turned out to be far more practical and efficient than working up a final plan that would inevitably attract opposition from competing interests. Instead, local and regional authorities collaborated from the beginning, dealing with specific objections as they arose. A "planning forum" was created to encourage informal discussion.

## NATURAL LILLEHAMMER

In preparing for the 1994 Winter Games, town planners sought to make the most of Lillehammer's natural landscape while respecting its historical and economic context. Development in connection with the Games was kept to a minimum in areas designated "especially valuable" for historical, scientific or recreational reasons. Any changes to such sites had to be shown to improve the original amenity values. Some farmlands were also designated "valuable"; these, and most areas of woodland, were protected. Major development work was therefore restricted to areas already subject to relatively intensive residential or industrial use.

The Lillehammer area has always attracted large numbers of hikers, fishermen and hunters. Several natural areas of national

importance are protected by law, foremost among them the delta of the river Lagen. Since the arrival of the railway in 1894, tourism has flourished in Lillehammer. Many homes and hotels were built in order to exploit the healthy climate and landscape. Even after the Games, the foundation of tourism in the Lillehammer region will remain unchanged: beautiful scenery, virgin forests, clean air and water. Lillehammer is basically a pretty, small town, and its residents wanted to keep it that way.

## PLANNING AND DESIGN

The process of analyzing Lillehammer's natural and cultural landscape began immediately after it was awarded the Games. The object was to set down on paper those qualities appreciated by everyone in Lillehammer but not reflected in municipal planning documents.

All buildings made for the Games had to conform to four main principles:

- Norwegian character, comprising simplicity, suitability to the landscape, the use of natural materials such as wood and stone and traditional colours
- Environmentally friendly design and construction, often involving new solutions to standard architectural problems
- Unity and coherence
- Work by leading Norwegian designers

Guidelines were strictly spelled out:

- Designs adapted to existing landscape and architecture

- Permanent buildings conforming to local architectural traditions while temporary structures reflect the unique visual profile of the Games

- Permanent buildings expressing their character in natural materials and colours

- Some temporary structures for festive use in strong, clear, light colours

- Ceremonial elements expanding on Nordic themes--northern lights ice snow, crystal

Strict specifications were applied to each individual construction site. Architectural suitability was only part of an extensive environmental impact assessment. Noise, emissions from cooling and heating installations, and interior climate were all taken into account. Low energy consumption was standard for all buildings. The buildings therefore combine the virtues of local craftsmanship and new technology.

### **FIRST IMPRESSIONS**

Road and rail approaches to Lillehammer, and entry points to the sub sites and arenas were designed, redesigned or refurbished in order to ensure that visitors' first impressions were favourable. In fact, preparing for the Olympics meant taking a fresh look at familiar surroundings. Norwegian Rail collaborated with PEFO, the MoE and municipal authorities to tidy up the rail corridor between Oslo and Lillehammer under the slogan "your backyard is our view".

A similar approach was taken to the roads. In addition to clean-up operations, regulations for traffic signs and commercial bill-

boards were revised in order to remove or camouflage eyesores. Local businesses and land-owners were encouraged to clean up their properties.

### **ENVIRONMENTAL "MOM"**

To ensure that all Games buildings would be safe, built of sound materials, well heated and ventilated and reasonably quiet, organizers developed a system of specifications known as "MOM"--management, operation, maintenance--intended to address such environmental considerations. Building materials do not as a rule carry environmental impact labels; but contractors were obliged to satisfy the authorities that materials used for Olympic installations satisfied a number of environmental criteria at all levels: production, construction, use and dismantling. A specimen environmental impact assessment was given to would-be suppliers and contractors, with a range of forms listing the various requirements. These considerations were made an integral part of the bidding process.

The MOM system is a "cradle-to-grave" approach to building materials and their use, covering every step from drawing board to operation and maintenance costs long after the Olympics, when buildings might be used for other purposes. Bidders for building contracts were required to supplement the usual specifications with detailed answers to a wide range of environmental questions concerning construction materials, long-term energy use, cleaning and maintenance routines, glues and solvents, security systems for coolants, waste disposal, and treatment of soil and vegetation in the construction area.

## ENERGY SAVING

One of the most important environmental criteria for the Olympic arenas was that they be as energy-efficient as possible, consuming at least 30 percent less energy than similar buildings following standard Norwegian specifications. As a result, annual savings in running the giant Hamar Olympic Hall alone average 2.5 GWh---worth approximately \$100,000---even allowing for the low cost of power in Norway. Authorities hope the hall will become a national showcase for a wide range of energy-saving devices and techniques, including heat recycling through ventilation and a heat pump using surplus power from the ice-making machinery.

## KEEPING IT CLEAN

Supplying clean water, food, sanitation and waste disposal on an Olympic scale add up to a formidable challenge, which inspired LOOC organizers to seek new solutions to old problems. Close to 300,000 meals were consumed per day. The main strategies for waste treatment and disposal were simple: prevent or reduce the production of waste in the first place; encourage the recycling of materials and energy associated with such waste as is unavoidable; and at all times ensure proper treatment.

In preparation for the Games, Lillehammer encouraged local homes and businesses to separate waste at source, and opened a new recycling plant. As a result, the quantity of rubbish dumped locally has declined by 60 percent by weight. All companies supplying the LOOC had to comply with certain environmental demands. Products and packaging carrying the Nordic "swan" label

were preferred, as were recycled and reusable materials.

All visitors--spectators, participants, journalists and officials--were encouraged to minimize waste. Even competition programmes were touted as collectors' items and designed to be so.

Commercial sponsors were persuaded to assist in reducing waste. Kodak, for example, took steps to reduce the photochemical wastes produced by thousands of press photographers. Partena, the principal caterer to the Games provided dishes and cutlery made almost entirely of potato and corn starch which, after use, was composted or turned into animal fodder.

Many of the demands made by the authorities would have back-fired without very practical follow-up measures. Separating waste, for example, would have been useless without local facilities for processing and recycling. The town could not afford to build a recycling plant with all the financial risks involved in a pilot project. A state-run project was therefore established to handle the recycling of waste for Oppland and Hedmark counties. As a result, there are now hundreds of local projects in the region supporting household composting of food scraps, collection of hazardous waste, and source separation systems.

## WATCHFUL EYES

In order to ensure that the long lists of standards and demands really did safeguard the environment, new and more accurate ways of measuring the impact of the Games had to be invented. A specific environmental audit was developed. It was wide-

ranging, starting not with technical specifications but with leadership. Auditors visited the various authorities involved in the organization of the Games, checking that they were aware of their responsibilities, properly trained and running their offices efficiently. Auditors looked at standards of staff training and analyzed arrangements for controlling contractors, or suppliers' goods and services.

Only then, in a detailed study of four arenas, did the auditors turn their attention to such technical criteria as potential pollution of air, water and soil; waste, noise, energy consumption, interior climate, architecture and landscaping. The four arenas selected for audit were in fact testing the efficiency of this new procedure at the same time as they were themselves assessed. Findings and recommendations were passed to the builder, who was expected to act on them wherever possible.

## **GREENS GO FOR GOLD**

Norwegian environmentalists were predictably opposed to Lillehammer's bid for the 1994 Winter Games. But once the bid was successful, an important decision was taken: instead of fighting, the activists would work with the authorities to minimize adverse effects.

PEFO, the umbrella organization for the various pressure groups, invited IOC President Juan Antonio Samaranch to its cramped office in Lillehammer. Much to their surprise, he accepted and made a visit in March 1989 to hear their views on the upcoming Games. Despite this encouragement, early negotiations with the LOOC were unsuccessful. Venues were sited

against the advice of the environmentalists, roads they opposed were built nonetheless, and, worst of all, plans were drawn up for a huge speed-skating hall which threatened an internationally recognized bird sanctuary at Akersvika in Hamar.

When Samaranch next visited Lillehammer in December 1990, he met a full complement of angry, chanting demonstrators. He responded by encouraging all parties to avoid further conflict through mediation. As a result of his and higher domestic political pressure, the plans were modified after several rounds of negotiation.

The Akersvika controversy was a turning point. Previously the LOOC had paid only lip service to the stated ambition of a "green" Olympics, doing little to fulfill such a goal. Now environmental concerns were centre stage. An environmental coordinator was appointed, and the LOOC made haste to draw up environmental specifications for prospective contractors.

A unique, collaborative process was also developed involving the key interested parties. Every Thursday from mid-1991 until the end of the Games, environmentalists, officials from LOOC, the MoE, the County Governor's office and the local authorities met to discuss the environmental implications of preparations for the Games.

During the lead-up to the 1994 Games, PEFO was deluged with media requests, as the sport-environment connection was finally being recognised internationally as an issue of importance. Interest in Lillehammer's environmental efforts peaked during the Games itself, with several thousand stories being filed on this topic alone by the world's journalists.

## THE LEGACY OF LILLEHAMMER

Opinions vary on how profound the legacy of the Lillehammer Games will be. The MoE concluded that Lillehammer demonstrated how intelligent planning, research and development can help to make the Olympic Games more environmentally friendly. Environmental goals must be accepted as a joint responsibility, to which appropriate financial resources are allocated as a matter of course. The Ministry concluded that cooperation and negotiation at all levels is probably the key to a successful environmental approach.

Hundreds of individual steps were taken to address environmental concerns at Lillehammer, with varied success. Some steps that should or could have been taken were not. The Norwegian Society for the Conservation of Nature (NSCN) prepared an assessment of the Games, which attempts to answer two questions:

Did any changes take place as a result of the 1994 Winter Olympics?

If so, was this enough to give the Games a "green profile"?

They concluded that changes did take place: "For the first time serious attempts were made to increase environmental awareness and allow this to be reflected in practical action in connection with a major international sports event". This actually gave the Lillehammer Games a "green" profile and started an important process.... However, [there] is a very long way to go and basic changes must be undertaken before the Olympic Games can be called "environmentally friendly".

The NSCN found both negative and positive results of the Games:

### Negative results

- extensive use of land for arenas and roads
- protective forest belt and hillside forest lost to construction and infrastructure development
- Lynx habitat severely affected
- valuable wetland lost in Akersvika and because of landfills
- birds hurt or killed when hitting glass facades and noise barriers
- recreational paths and greenspace lost in Lillehammer area
- commercialization of previously public recreation areas
- increased post-games use of private cars as a result of road and parking lot building

- increased traffic on newly-built roads

### Positive results

- increased awareness of environment and nature-protection issues
- good cooperation between private, public and non-governmental sectors as well as various levels of governments
- off-shoot projects established to improve "green tourism" and to monitor the construction of a new national airport
- creation of useful planning tools for large scale construction and road building

- thorough involvement of public in planning processes resulted in significant improvements at certain sites (Hakons Hall, bobsled tracks)
- comprehensive, joint solutions with public sector (sewage, solid waste )
- environmental tendering criteria developed
- Remediation of many of the instances of damage to the landscape
- Remedial efforts in connection with road construction
- aesthetic improvements in towns and along highways and railroads

#### General assessment

- By defining common goals and creating cooperative partnerships to achieve them, partners with different motivations were able to achieve results that none of them could have obtained working alone
- Total environmental damage was less than feared, although some groups and areas were more adversely affected than others
- The enormous consumption of resources demands further critical evaluation
- Behind event the smallest solutions lay cooperation and hard work by many parties
- The watchdog role of the NSCN (through its sub-project PEFO) was important, even if it led to criticism from some environmental groups that the NSCN was providing a convenient alibi for LOOC. Compared to the alternative--non-involvement--considerable positive environmental achievements were realized

- Even if many people are not impressed with the results of the environmental efforts, they represent an important first step in an ongoing process. Enthusiasm and readiness to take responsibility became the hallmark of organizers, sponsors, business in general, sports federations and the environmental movement. It is important to maintain this momentum
- It is equally important to anchor environmental responsibility firmly within the IOC, sports federations and partners from trade and industry for the future

#### WHAT CAN BE LEARNED FROM THE LILLEHAMMER EXPERIENCE

Lillehammer's Green Games efforts demonstrated to the world that there is a better way of designing event-based sports tourism. It was clearly demonstrated that steps can be taken which reduce the environmental impact of a major sports event on the host region. Best of all, those steps do not detract from the event. Lillehammer showed that they improved the quality of the experience for all visitors, generated positive media attention, saved money for the organizers and left an important legacy for local residents and for the tourism industry of not just Lillehammer but the country of Norway.

The key to Lillehammer's green profile lies in the comprehensiveness of their efforts. We can nevertheless highlight some of the key principles involved in designing more sustainable sports tourism:

1. Recognize the value of the goal of sustainability from the outset

2. Design all structures and processes with sustainability in mind
3. Get all "players" involved in the quest for a greener games
4. By reducing the amount of resources consumed you limit the quantity of waste produced, saving twice
5. Develop a transportation plan which curtails individual car use, encourages active modes and promotes public means of transportation
6. Plan building construction that: encourages use of environmentally-preferred materials; cuts or diverts construction waste; conserves energy and water; ensures good indoor air quality
7. Work directly with tourism officials (hotels, restaurants, caterers, etc.) to encourage and assist them to limit their environmental impact.
8. Ensure a positive environmental legacy for the sports event by: instilling new

practices in all sectors, including tourism; preserving and enhancing natural spaces; ameliorating air, water and soil conditions

9. Capitalize on successful greening effort to promote the attractiveness of the region as a tourist destination

A good marriage of sport promotion and environmentalism can guarantee several things for tourism: a better event, satisfied visitors and a positive reputation as a clean and attractive destination. The benefits of more sustainable sports tourism go beyond major events, however. Ongoing sports and recreation-related attractions can equally implement greener practices, with similar economic and environmental results.

By protecting the natural features which attract tourists, by preserving healthy local environmental conditions, by keeping local residents in favour of on-going sports/recreation activities and by saving money through efficiency and conservation, you can guarantee a sustainable future for sport-based tourism in your region.